



MEETING : DISTRICT PLANNING EXECUTIVE PANEL
VENUE : COUNCIL CHAMBER, WALLFIELDS, HERTFORD
DATE : THURSDAY 15 SEPTEMBER 2016
TIME : 7.00 PM

MEMBERS OF THE PANEL

Councillors L Haysey (Chairman), E Buckmaster and G Jones

All other Members are invited to attend and participate if they so wish.

Members are requested to retain their copy of the agenda and bring it to the relevant Executive and Council meetings.

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DISCLOSABLE PECUNIARY INTERESTS

1. A Member, present at a meeting of the Authority, or any committee, sub-committee, joint committee or joint sub-committee of the Authority, with a Disclosable Pecuniary Interest (DPI) in any matter to be considered or being considered at a meeting:
 - must not participate in any discussion of the matter at the meeting;
 - must not participate in any vote taken on the matter at the meeting;
 - must disclose the interest to the meeting, whether registered or not, subject to the provisions of section 32 of the Localism Act 2011;
 - if the interest is not registered and is not the subject of a pending notification, must notify the Monitoring Officer of the interest within 28 days;
 - must leave the room while any discussion or voting takes place.

2. A DPI is an interest of a Member or their partner (which means spouse or civil partner, a person with whom they are living as husband or wife, or a person with whom they are living as if they were civil partners) within the descriptions as defined in the Localism Act 2011.

3. The Authority may grant a Member dispensation, but only in limited circumstances, to enable him/her to participate and vote on a matter in which they have a DPI.

4. It is a criminal offence to:

- fail to disclose a disclosable pecuniary interest at a meeting if it is not on the register;
- fail to notify the Monitoring Officer, within 28 days, of a DPI that is not on the register that a Member disclosed to a meeting;
- participate in any discussion or vote on a matter in which a Member has a DPI;
- knowingly or recklessly provide information that is false or misleading in notifying the Monitoring Officer of a DPI or in disclosing such interest to a meeting.

(Note: The criminal penalties available to a court are to impose a fine not exceeding level 5 on the standard scale and disqualification from being a councillor for up to 5 years.)

Audio/Visual Recording of meetings

Everyone is welcome to record meetings of the Council and its Committees using whatever, non-disruptive, methods you think are suitable, which may include social media of any kind, such as tweeting, blogging or Facebook. However, oral reporting or commentary is prohibited. If you have any questions about this please contact Democratic Services (members of the press should contact the Press Office). Please note that the Chairman of the meeting has the discretion to halt any recording for a number of reasons, including disruption caused by the filming or the nature of the business being conducted. Anyone filming a meeting should focus only on those actively participating and be sensitive to the rights of minors, vulnerable adults and those members of the public who have not consented to being filmed.

AGENDA

1. Apologies

To receive apologies for absence.

2. Chairman's Announcements

3. Minutes

To approve as a correct record the Minutes of the meeting of the Panel held on 8 September 2016 (to follow).

4. Declarations of Interests

To receive any Member(s)' Declaration(s) of Interest

5. East Herts Draft District Plan – Bishop's Stortford – Settlement Appraisal and New Draft Chapter 5 (Pages 7 - 98)

6. East Herts Draft District Plan – Chapter 10 – Villages: Response to Issues Raised During Preferred Options Consultation (Pages 99 - 154)

7. East Herts Draft District Plan – Villages Appraisal and New Draft Chapter 10

Report to follow

8. East Herts Draft District Plan – Appendices: Response to Issues Raised During Preferred Options Consultation and Updated Appendix C: Monitoring Framework and Appendix D: Glossary (Pages 155 - 202)

9. East Herts District Plan - Proposed Amendments to Final Text of the East Herts District Plan Pre-Submission Version, 2016 (Pages 203 - 222)

10. Harlow Strategic Site Assessment, September 2016

Report to follow

11. Strategic Flood Risk Assessment, August 2016 (Pages 223 - 360)

Note – Appendices are enclosed as a separate document pack.

12. Sustainability Appraisal (SA) of the East Herts District Plan - Pre-Submission Version 2016 (Pages 361 - 366)

Note – Essential Reference Paper 'B' to follow.

13. Habitat Regulations Assessment (HRA) of the East Herts District Plan - Pre-Submission Version 2016 (Pages 367 - 454)

14. Infrastructure Delivery Plan (IDP) Version 1, September 2016 (Pages 455 - 490)

15. East Herts District Plan – Pre-Submission Version 2016 (Pages 491 - 512)

Note – Essential Reference Paper 'B' is enclosed as a separate document pack.

16. Urgent Business

To consider such other business as, in the opinion of the Chairman of the meeting, is of sufficient urgency to warrant consideration and is not likely to involve the disclosure of exempt information.

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EAST HERTS COUNCIL

DISTRICT PLANNING EXECUTIVE PANEL – 15 SEPTEMBER 2016

REPORT BY LEADER OF THE COUNCIL

EAST HERTS DRAFT DISTRICT PLAN – BISHOP’S STORTFORD – SETTLEMENT APPRAISAL AND NEW DRAFT CHAPTER 5

WARD(S) AFFECTED: ALL

Purpose/Summary of Report

The purpose of this report is:

- To present to Members a Settlement Appraisal for Bishop’s Stortford, together with a draft revised chapter, for subsequent incorporation into the Pre-Submission District Plan.

<u>RECOMMENDATIONS FOR DISTRICT PLANNING EXECUTIVE PANEL:</u> That Council, via the Executive, be advised that:	
(A)	the Bishop’s Stortford Settlement Appraisal as detailed at Essential Reference Paper ‘B’ to this report, be agreed; and
(B)	the draft revised Chapter 5 (Bishop’s Stortford), as detailed in Essential Reference Paper ‘C’ to this report, be agreed as a basis for inclusion in the Pre-Submission District Plan.

1.0 Background

1.1 The Council published its Draft District Plan Preferred Options for consultation for a period of twelve weeks between 27th February and 22nd May 2014.

1.2 The issues raised through the consultation with regard to the Bishop’s Stortford Chapter were considered at the District Planning Executive Panel on the 8th September 2016.

1.3 This report presents a Settlement Appraisal for Bishop’s Stortford. The Bishop’s Stortford Appraisal provides the Council’s justification

for the proposed redrafted chapter having regard to the issues raised during the Preferred Options consultation, further technical and delivery assessment and sustainability appraisal.

1.4 **Essential Reference Paper ‘B’** contains the Settlement Appraisal for Bishop’s Stortford and **Essential Reference Paper ‘C’** contains the revised draft chapter.

2.0 Report

2.1 The Preferred Options District Plan presented a draft development strategy for Bishop’s Stortford that included five proposed allocations:

- The Goods Yard (200 homes);
- East of Manor Links (150 homes);
- Hadham Road Reserve Secondary School (0 to 250 homes);
- Bishop’s Stortford South (750-1,000 homes); and
- Bishop’s Stortford North (2,350 or 2,600 homes).

2.2 The Settlement Appraisal identifies how the proposed strategy for the town has been refined following the Preferred Options consultation. A significant amount of technical work has been undertaken on the District Plan to ensure deliverability of its proposed site allocations. Discussion of this and other evidence is summarised in the Appraisal where it relates to the town. It also sets out how alternative approaches have been considered and contains a sustainability appraisal of the potential impacts arising from the proposed approach. The Appraisal also forms the basis for the content of the District Plan chapter for Bishop’s Stortford.

2.3 In light of the evidence available, the revised draft chapter proposes that eight strategic sites should be allocated in Bishop’s Stortford:

- Bishop’s Stortford North – 2,529 dwellings
- Hadham Road Secondary School Reserve Site – 0-163 dwellings
- Bishop’s Stortford South – 750 dwellings
- The Bishop’s Stortford High School, London Road 0-150 dwellings
- The Goods Yard – at least 400 dwellings
- Old River Lane – up to 100 dwellings
- East of Manor Links – 50 dwellings
- The Mill Site

- 2.4 In respect of employment, the Settlement Appraisal and revised chapter set out the need for new employment opportunities within the town, to be delivered through mixed use development in the town centre sites and within the urban extensions at Bishop's Stortford North and South.
- 2.5 In respect of education, the Settlement Appraisal and revised chapter set out the need for new education facilities within the town to be delivered through the urban extensions at Bishop's Stortford North and South.
- 2.6 The policies contained in the draft revised chapter set out what the proposed development in Bishop's Stortford will be expected to deliver. These requirements will form the basis of Masterplanning for the area and inform future planning applications.
- 3.0 Implications/Consultations
- 3.1 Information on any corporate issues and consultation associated with this report can be found within **Essential Reference Paper 'A'**.

Background Papers

None

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ESSENTIAL REFERENCE PAPER 'A'

IMPLICATIONS/CONSULTATIONS

Contribution to the Council's Corporate Priorities/ Objectives:	Priority 1 – Improve the health and wellbeing of our communities Priority 2 – Enhance the quality of people's lives Priority 3 – Enable a flourishing local economy
Consultation:	The Report refers to the Draft District Plan consultation carried out between 27 th February and 22 nd May 2014.
Legal:	None
Financial:	None
Human Resource:	None
Risk Management:	None
Health and wellbeing – issues and impacts:	The Submission District Plan in general will have positive impacts on health and wellbeing through a range of policy approaches that seek to create sustainable communities.

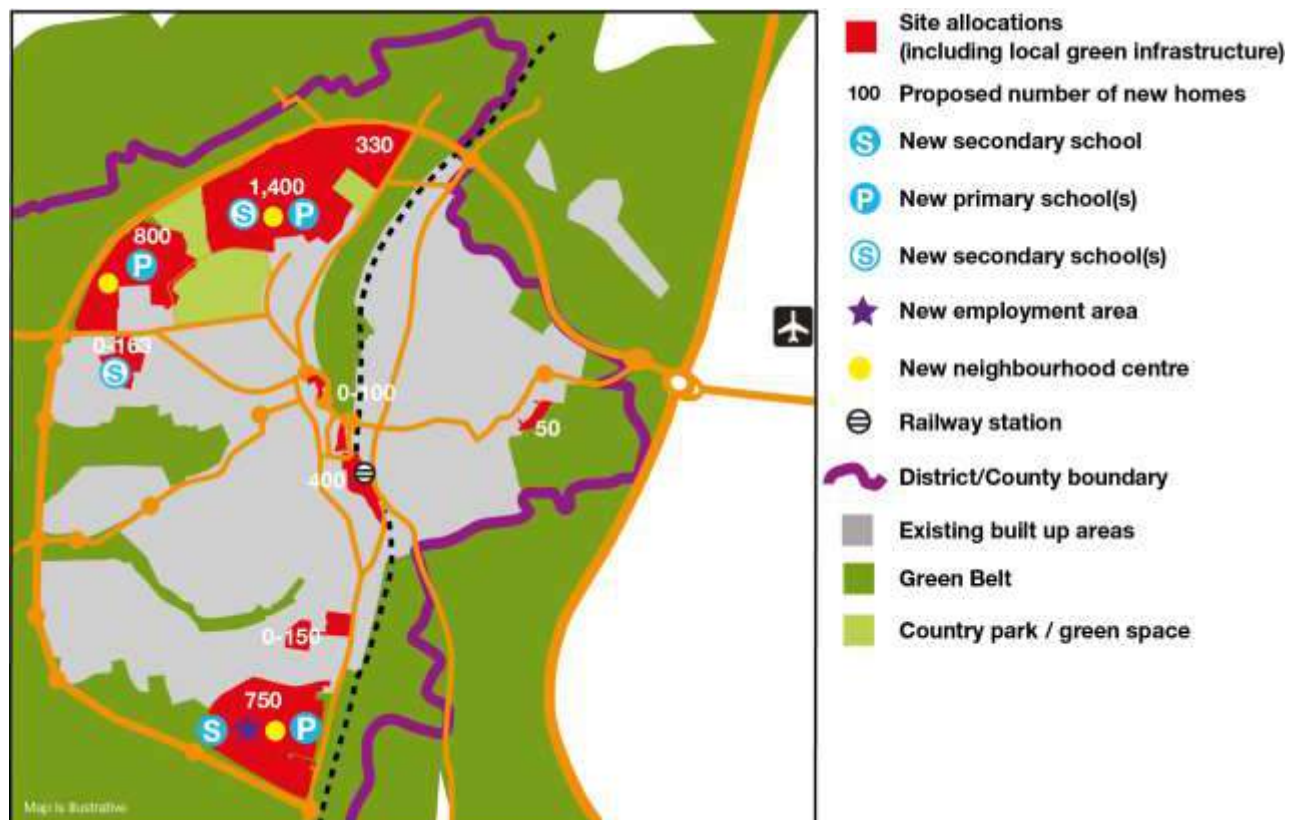
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Bishop's Stortford Settlement Appraisal

1. History

- 1.1 The Preferred Options District Plan proposed development of between 3,697 and 4,447 homes in Bishop's Stortford plus an element of windfall. On the basis of the assessments contained in the Supporting Document, and the rest of the evidence base that was available at that time, the Preferred Options District Plan proposed five sites for allocation: The Goods Yard (200 homes); East of Manor Links (150 homes); Hadham Road Reserve Secondary School (0 to 250 homes); Bishop's Stortford South (750-1,000 homes); and Bishop's Stortford North (2,350 or 2,600 homes). In addition, an element of windfall development was attributed to Bishop's Stortford, along with potential sites brought forward as sites in the Strategic Land Availability Assessment.

Figure 1: Key Diagram for Bishop's Stortford



- 1.2 The [Supporting Document](#) to the Preferred Options District Plan records the various assessment stages that were undertaken as part of the process to inform the Preferred Options version of the Draft District Plan. It therefore provides an essential background to this current Settlement Appraisal. Chapter 4 of the Supporting Document explains the process of shortlisting or 'sieving' options applied to 'Areas of Search' and their initial findings. Chapter 5 details a further appraisal stage based on option refinement.
- 1.3 Chapter 6 draws together the findings of Chapters 4 and 5 for Bishop's Stortford and provides conclusions to issues considered at previous stages.

- 1.4 This document continues the narrative beyond Chapters 4 to 6 of the Supporting Document by detailing information and evidence which has emerged since the Preferred Options consultation.

2 Consultation Responses – town-wide

- 2.1 The Preferred Options consultation elicited a significant response from members of the local community. While these representations covered a variety of topics, the main town-wide issues which were frequently raised through comments received included:
- Bishop’s Stortford receiving too much growth;
 - development on Green Belt land considered to be inappropriate;
 - highway infrastructure being unable to cope with the level of development proposed;
 - lack of social infrastructure to support development, including insufficient school places and healthcare services; and
 - additional development causing harm to the character of the town.
- 2.2 Several land owners and site promoters made representations specific to their sites and further consideration of these locations is covered at appropriate points throughout the remainder of this document.
- 2.3 A full summary of the issues that were raised in respect of Bishop’s Stortford and the Officer proposed responses to them were considered by Members at the District Planning Executive Panel meeting on 8th September 2016. These can be viewed via the following link:
<http://democracy.eastherts.gov.uk/ieListDocuments.aspx?MIId=3028&x=1&>

3. Technical Assessments

[Bishop’s Stortford Town Centre Planning Framework \(Allies and Morrison, 2016 emerging\)](#)

- 3.1 The Council recently commissioned Planning consultants Allies and Morrison to undertake a comprehensive assessment of the town centre of Bishop’s Stortford, which considers the role of the town in retail terms, looks at current pressures including issues such as parking and traffic and considers opportunities to strengthen the town to ensure that it continues to operate successfully in the future, and manage issues such as parking and traffic. The Framework includes an in-depth urban design assessment which takes account of the historic evolution of the town, its historic and current character, its riverside environment and landscape. Issues such as pedestrian and vehicle movements, the diversity of different land uses and how the road, rail and bus network operates within this historic environment is also considered.

- 3.2 The Bishop's Stortford Town Centre Planning Framework will be adopted as a Supplementary Planning Document and will be used to inform planning applications and masterplans moving forward. Where relevant, the Framework has been used to inform the appraisal of site allocations, namely Old River Lane, The Goods Yard and the Mill Site. General principles arising from the Framework have also been used to inform considerations of the town as a whole, particularly on matters such as traffic and public transport.

[The Economic Role and Potential of Hertfordshire's Smaller Towns: Bishop's Stortford – Draft \(Report to Hertfordshire LEP and East Herts Council, SQW, August 2016\)](#)

- 3.3 The Hertfordshire Local Enterprise Partnership, working with East Herts Council, commissioned SQW to prepare a study on the role of market towns within Hertfordshire. Large parts of Hertfordshire are rural and/or within the Green Belt, and in the case of some districts such as North Herts and East Herts, urban centres comprise only of market towns, and as such are the focus for growth. However, the role and potential of smaller towns in Hertfordshire is not fully understood and there is therefore no clear vision as to what roles they should have in the future.
- 3.4 The study focusses initially on Bishop's Stortford as a case study. It considers the characteristics of the town's economy today, the opportunities/challenges which are likely to shape its future, and in the light of both, the types of intervention that might potentially unlock further appropriate forms of economic growth. However, the purpose of the study was not to complete a definitive study of the town, but to draw out some headlines in order to shape future thinking at the level of both the LEP and the District Council.
- 3.5 The study indicates, in line with other economic studies of the town, that Bishop's Stortford's location brings with it both economic opportunities and challenges. The study discusses the influences of Stansted Airport, London, Cambridge and Harlow. Given these influences, the "economic masterplan" for the town should concentrate on being able to meet growing interest in bio-science industries. Being well located between these four economic centres, new employment land proposed for the town should maximise these opportunities. A variety of new employment floorspace will therefore be needed such as a new business park on the outer edge of the town, which could cater for larger businesses, and within the town centre in locations such as Old River Lane and the Goods Yard sites for smaller businesses.

[Transport Modelling \(2016 and ongoing\)](#)

- 3.6 Recent traffic modelling work undertaken by Essex County Council for the Strategic Housing Market Area (SHMA) has identified that there are issues with Junction 8 of the M11. Several junctions within the town also suffer from congestion, particularly at peak times. The Council is working with Essex County Council to bring forward improvements to Junction 8. A Memorandum of Understanding is being prepared with Essex County Council and the Housing Market Area authorities to identify and secure sources of funding for these improvements. Two options are currently being considered. The first is an option of improvement on the roundabout that will provide extra capacity until approximately 2022. The intervening period will be used to develop the second option which will comprise a strategy of junction improvements to accommodate the cumulative impacts arising from growth within

Uttlesford and planned future growth at Stansted Airport.

- 3.7 Essex County Council is currently proposing a new Junction 7a to serve the northern part of Harlow and to relieve congestion at Junction 7. Traffic modelling undertaken for the proposed new Junction 7a indicates that the new junction will divert some vehicles from Junction 8 to the new junction, thus alleviating some congestion in the vicinity of Bishop's Stortford. The modelling also indicates that fewer vehicles will use the A120 and the A1184.
- 3.8 There is an Air Quality Management Area (AQMA) within the town centre, focused on the Hockerill Road junction, which was first designated in 2005. In addition to the general volume of traffic running through this key interchange, the orientation and height of buildings prevent the dispersal of pollutants. Regular monitoring indicates that heavy goods vehicles are the main source of Nitrogen Dioxide pollution. Hertfordshire County Council has considered a number of options, which include signage to divert traffic via the bypass and the prevention of right-hand turns. Signage can only go so far and the no-turn option was not taken forward on the grounds of highway safety concerns.
- 3.9 Junction-specific transport modelling has been undertaken to inform applications in the town (Bishop's Stortford North and The Goods Yard). The emerging Allies and Morrison work considers further options to alleviate traffic flows through the Hockerill junction. These include testing the possibility of options such as 'switching-off' the gyratory system to reduce vehicles circulating the town, the provision of a through-route at the Goods Yard and creation of parking opportunities elsewhere in the town that also prevent the unnecessary circulatory movement of vehicles looking for parking.

[Education Advice \(Hertfordshire County Council, 2016\)](#)

- 3.10 The Council has been working closely with Hertfordshire County Council to ensure that the additional needs arising from the growth planned in the District Plan can be accommodated in school capacity terms. The Plan provides opportunities to create new schools and expand existing schools, through the development of new sites, where such opportunities may not otherwise arise. For Bishop's Stortford, the County Council has advised that there is a need for a two form entry primary school over and above what is anticipated being delivered through the District Plan. There is also a need for six additional forms of entry at secondary school level in the town, and the County Council is currently exploring options with existing schools and through the Plan-making process to identify how this demand can be accommodated.

[Strategic Flood Risk Assessment \(JBA Consulting, 2016\)](#)

- 3.11 A Strategic Flood Risk Assessment was prepared in 2008 to inform the early stages of the Plan-making process. Since that time a number of significant changes have taken place resulting in the SFRA becoming out of date. A new Assessment has therefore been undertaken looking at the whole of the district. It identifies the areas across the District that are at risk of flooding from different sources, including river, surface water, groundwater, sewer and reservoir flooding. Of particular importance for Plan making, and the planning application process, is the identification of the functional floodplain (Flood Zone 3b).

3.12 Where sites are identified as being within Flood Zone 2 or 3, a more detailed Level 2 Flood Risk Assessment is required. In Bishop's Stortford, there are three proposed site allocations that have land within these flood zones and therefore require a detailed assessment:

- The Goods Yard
- Bishop's Stortford South
- Old River Lane

3.13 In addition, the Mill Site lies within Flood Zone 2 and 3, but as the Plan does not allocate the site for residential purposes within the Plan-period a Level 2 Flood Risk Assessment is not required to support the District Plan. Should the site become available for development, a detailed assessment will be required, informed by an understanding of the form of development proposed.

3.14 Where a Level 2 SFRA has been undertaken, a summary of the assessment is included in the relevant site appraisal.

[Economic Evidence to Support the Development of the Objectively Assessed Housing Need for West Essex and East Herts \(Hardisty Jones Associates, 2015\)](#)

3.15 The Council previously commissioned a Town Wide Employment Study for Bishop's Stortford (Wessex Economics, 2013), which has been used to inform this Settlement Appraisal. This report and the Employment Forecast and Strategic Economic Development Advice (DTZ, 2012) indicates that the Council should plan to meet the East of England Forecasting Model forecast of around 9,700 jobs across the District up to 2031. Based on a range of average floorspace ratios, this would result in the need for between 11 to 13 hectares of new employment land.

3.16 More recent technical work undertaken to inform the Strategic Housing Market Area Assessment provides up to date evidence and reinforces the 2013 advice. A growth of between 435 and 525 jobs per year is anticipated in East Herts. Therefore the Council should ensure that there is sufficient land available to accommodate these jobs and that there is a sufficient workforce available to fill these jobs.

3.17 While the Plan identifies land for new employment uses in Buntingford, Hertford and Ware, Bishop's Stortford is a key town within the M11 corridor, the housing market area and the Functional Economic Market Area. Its proximity to Stansted Airport means the town benefits from business links and job opportunities. Many airport workers reside in the town permanently and temporarily during stop-overs. The town also benefits from direct access to the M11 and a rail link into London to the south and Cambridge to the north. Of all the District's towns, Bishop's Stortford is considered to be the town most capable of delivering new employment areas and consequently more jobs.

3.18 The District Plan has a role in identifying sufficient land for employment generating uses. Several urban employment areas have been lost over recent years, often citing constrained sites, lack of parking, poor visibility and a high cost of refurbishment required to meet building standards. The evidence indicates that there is a demand for new high quality employment space in Bishop's Stortford.

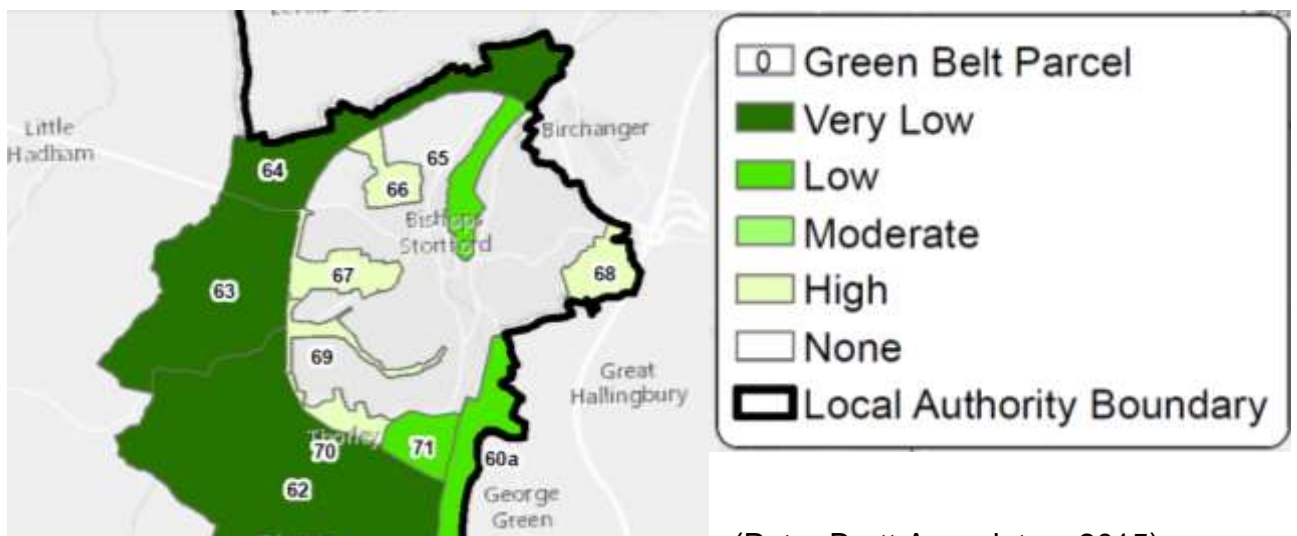
Town centre sites are the preferred location for B1 offices, where access to town centre services and railway access to London are the main requirements. However, there is also demand for edge of town locations where sites can be more visible from the strategic road network, and can provide more generous space for buildings and parking.

- 3.19 East Herts Council Officers are currently exploring the potential expansion of Goodliffe Park off Stansted Road on land within Uttlesford District. However, East Herts Council has no control over this option. The Plan proposes the provision of B1 offices on the three town centre sites (Old River Lane, the Mill Site and the Goods Yard). While it is acknowledged that land to the south of the town is the least preferred location for employment land in the Bishop's Stortford Town Wide Employment Study, this site is one of the few locations in Bishop's Stortford remaining where a new employment site could be accommodated. A location on the A1184 would be accessible and could also provide opportunities for more constrained businesses in the town to relocate and expand. It is therefore proposed that a site of between 4 to 5 hectares should be allocated for a business park to be delivered through the development at Bishop's Stortford South. Should other options become available and there is no proven demand for this site, the land could revert to residential use towards the end of the Plan period.

[Green Belt Review \(Peter Brett Associates, 2015\)](#)

- 3.20 The 2015 Green Belt Review assessed 11 parcels within and around Bishop's Stortford. The three green wedges in Bishop's Stortford, Southern Country Park and the golf course were identified as having a low contribution to Green Belt purposes and as such were considered to have high suitability for development. All other parcels assessed in the Green Belt Review around Bishop's Stortford were considered to have a high contribution to the Green Belt purposes and therefore a low suitability as an area of search for development.
- 3.21 While the map below illustrates the overall findings for the whole settlement, the findings of the Review in relation to specific proposed site allocation areas are covered in greater detail in the relevant sections below.

Figure 2: Green Belt Review 2015 Overall Conclusions



(Peter Brett Associates, 2015)

[Delivery Study / Strategic Sites Delivery Study, 2015](#)

- 3.21 The Delivery Study is a technical document which assesses the financial viability and deliverability of the proposals contained in the Preferred Options District Plan. As Bishop's Stortford North was subject to a planning application at the time, issues of viability were being considered through the application process. Other smaller sites around the town were not individually large enough to be included as strategic sites in the study. However, these were tested through the use of site typologies. The study considered the Goods Yard site as an urban brownfield site with a specific approach based on an assumed higher land value due to existing uses. The study concluded that development schemes in the Bishop's Stortford area that are predominantly or wholly residential in nature, should be considered financially viable when taking into account the policy requirements of the District Plan as a whole.
- 3.22 The East Herts Strategic Sites Delivery Study addressed the larger sites, which in the case of Bishop's Stortford included Bishop's Stortford South, which was tested for 750 homes. The Study concluded that deliverable solutions to critical infrastructure (particularly sewage, utilities, site access and provision of primary and secondary education) needed to enable the development to take place have been identified and are shown to be achievable.
- 3.23 The study makes further recommendations as to the type of infrastructure required which includes the provision of new healthcare facilities to serve the south of the town. The study raises the potential for the site to contribute towards sustainable travel within the town, and also provides suggestions as to the treatment of the Hertfordshire Way through detailed design considerations.

4. Duty to Co-operate

- 4.1 For those areas such as Bishop's Stortford that are located on the eastern side of the District, the main forum for Duty to Co-operate discussions has been the Co-operation for Sustainable Development Member Board. This group comprises the four core authorities that form the West Essex/East Herts housing market area (East Herts, Epping Forest District Council, Harlow District Council and Uttlesford District Council), along with Hertfordshire and Essex County Councils, Highways England, Historic England and other local or related authorities in the wider area.
- 4.2 In the context of Bishop's Stortford, there is a clear relationship between the town and settlements within Uttlesford, for which the town is a major service, employment and education destination. In particular, pupils who live in nearby villages such as Birchanger and Stansted Mountfitchet often go to school in Bishop's Stortford. The 2015 Issues and Options Draft Local Plan Consultation for Uttlesford District considered several options for development around Bishop's Stortford, which East Herts formally objected to through its consultation response.
- 4.3 Co-operation among the constituent authorities will continue beyond the adoption of the Plan in order to address ongoing cross boundary issues.

5 Neighbourhood Planning

- 5.1 There are two neighbourhood plans covering this area. The Bishop's Stortford Silverleys and Meads Neighbourhood Plan was adopted in 2015, the first in East Herts. This Plan therefore forms part of the development plan.
- 5.2 The Bishop's Stortford Neighbourhood Plan for All Saints, Central, South and part of Thorley has been submitted to East Herts Council. Consultation on the Plan is expected to commence in late September/early October. The Plan is expected to go to examination in late 2016 and a referendum in early 2017. Once adopted, this Plan will also form part of the development plan.

6 Emerging Strategy

- 6.1 Following the Preferred Options consultation, and as detailed above, a significant amount of technical work has been undertaken on the District Plan to ensure deliverability of its proposed site allocations. Discussion of this and other evidence which has been presented, leads to the following Officer conclusions for the policy approach to development. In light of the evidence available, it is considered that eight strategic sites should be allocated in Bishop's Stortford:
- Bishop's Stortford North – 2,529 dwellings
 - Hadham Road Secondary School Reserve Site – 0-163 dwellings
 - Bishop's Stortford South – 750 dwellings
 - The Bishop's Stortford High School, London Road 0-150 dwellings
 - The Goods Yard – at least 400 dwellings
 - The Causeway / Old River Lane – up to 100 dwellings

- East of Manor Links – 50 dwellings
- The Mill Site

6.2 The justification for identifying these proposed allocations is presented below.

6.3 Since the Preferred Options consultation there have been planning applications approved on the Bishop's Stortford North sites and associated reserve Secondary School site in Hadham Road. The Council is also in receipt of an application on the Goods Yard site. Where detailed permission has been granted these are detailed in the appraisal below and are reflected in the policy. However, in the event that the planning permissions lapse or significant changes are proposed, it is appropriate for the District Plan to set out its preference for the sites in order to inform future proposals.

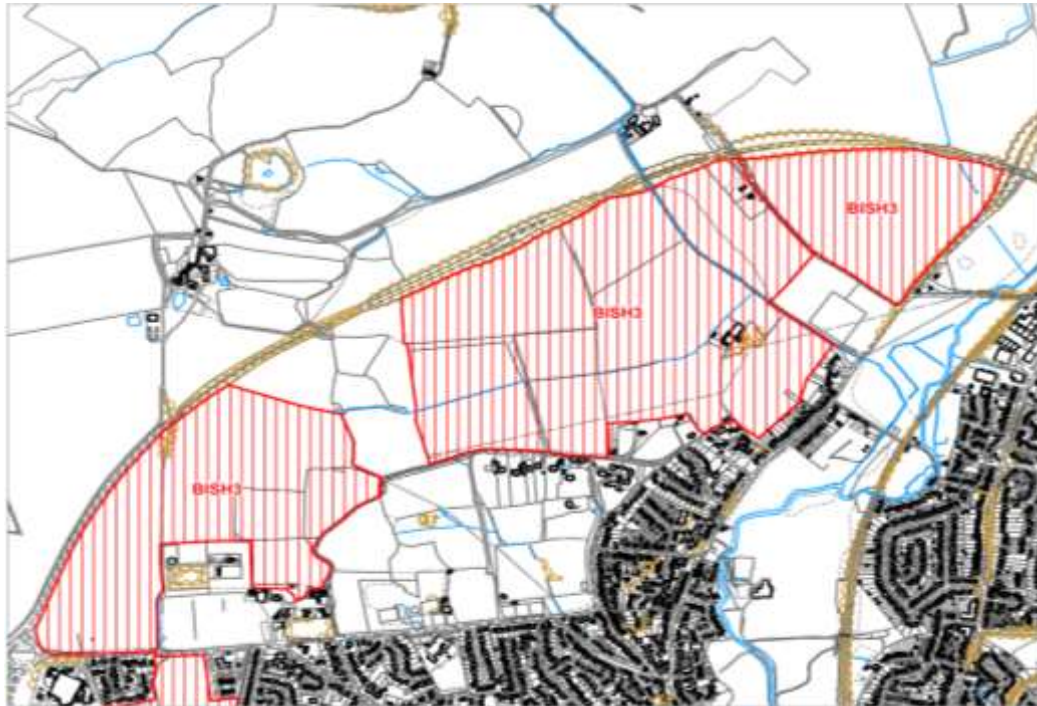
7. Bishop's Stortford North (Policy BISH3)

Introduction

7.1 Land to the north of Bishop's Stortford was identified as a proposed allocation for between 2,350 and 2,600 homes in the Preferred Options District Plan. Land to the north of Bishop's Stortford comprises 5 specific areas known as Areas of Special Restraint (ASRs 1-5). These sites were allocated in the 2007 Local Plan effectively to safeguard the land for future locally arising need and housing needs associated with the growth of Stansted Airport. In 2008, the Council resolved to release the land for housing development as it could not demonstrate a sufficient land supply to meet the needs identified. A consortium of developers was established which proposed development on land at ASR1-4, between the A120/Hadham Road Junction and Farnham Road, including Hoggates Wood and Ash Grove. A separate site promoter was engaged by the landowner of ASR 5, which lies to the east of Farnham Road.

7.2 Since the Preferred Options, outline planning permission has been granted for land at ASRs1-4 and ASR5. Detailed permission was granted in 2015 for the first phase of development on western part of the site, including Hoggate's Wood and Ash Grove (ASRs 1 and 2). Outline planning permission has been granted on ASR5 and the detailed Reserved Matters application relating to the first phase of development was submitted to the Council in late August 2016. However, a detailed application has not yet been submitted for the land between Hoggate's Wood and Farnham Road, apart from the proposed secondary school site, therefore it is considered appropriate to set out in policy terms what is expected of the sites, particularly in the light of technical evidence undertaken to prepare the development strategy for the town and the District. There are a number of links between ASRs 1-4 and ASR5, in terms of infrastructure provision and mitigation. Therefore it is considered that the land to the north of Bishop's Stortford should continue to be identified as an allocation within the Pre-Submission version of the Plan, reflecting the planning permissions where necessary. The site is discussed in further detail below.

Figure 3: Site Location – Bishop’s Stortford North



Consultation Responses – Bishop’s Stortford North

- 7.3 A number of comments were received in respect of the Bishop’s Stortford North site at the 2014 Preferred Options Consultation stage.
- 7.4 The main issues raised related to (in no particular order):
- The policy should be amended to reflect the permissions granted, including the conditions imposed
 - Objection to the additional roundabout on the A120
 - Support for the site to meet housing needs
 - Concern over the impact of traffic on the strategic and local road network, particularly at Junction 8 of the M11.
 - Need to protect ecological assets within the site including through new reference to green infrastructure in the policy
 - Need for indoor and outdoor sports facilities, including football pitches and play areas
 - Should reference the Neighbourhood Plan for Silverleys and Meads Wards
 - Protection and enhancement of heritage assets
 - Provision of appropriate infrastructure required to support development

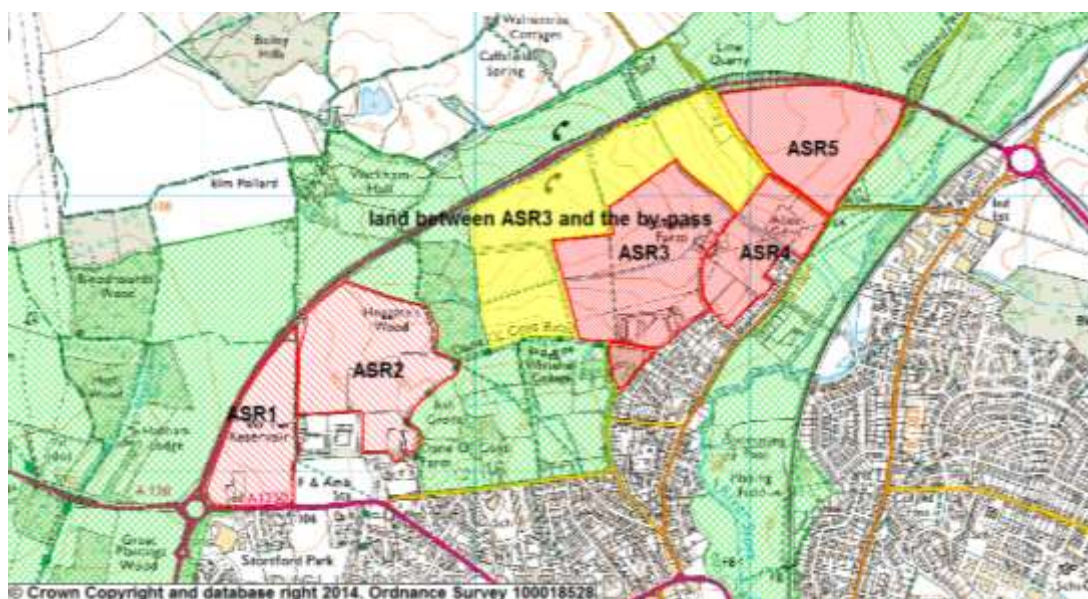
Technical Assessments – Bishop’s Stortford North

- 7.5 The following sections summarise the various technical evidence based assessments that have been undertaken since the Preferred Options consultation to assess this site alongside the wider Plan preparation process, in addition to the technical work undertaken by the site promoters in respect of the applications.

East Herts Green Belt Review 2015 (Peter Brett Associates) / Area of Special Restraint and Special Countryside Area

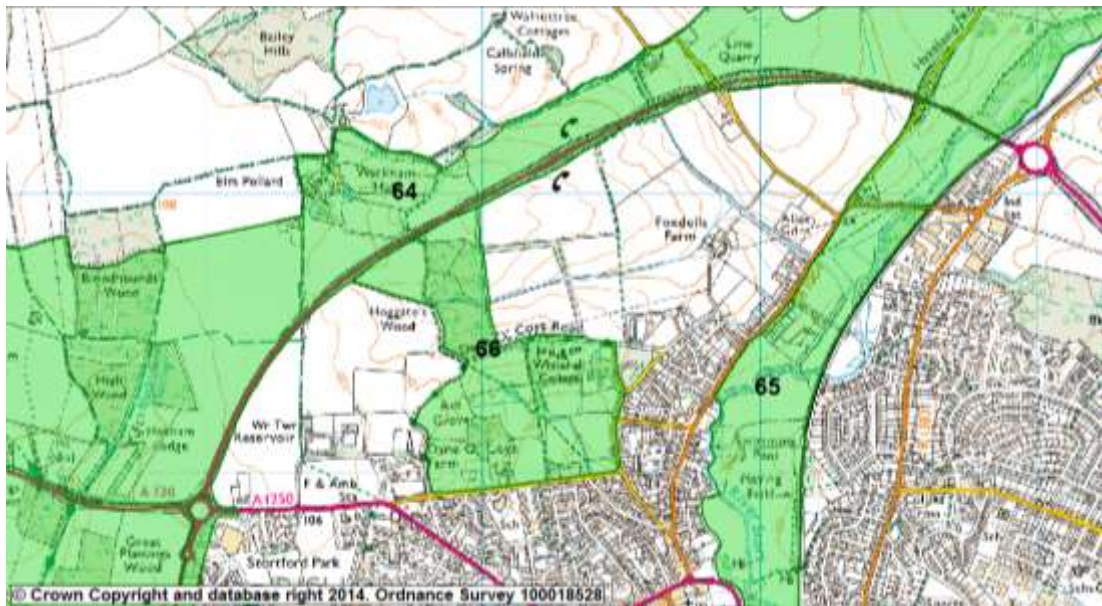
- 7.6 Land to the north of Bishop's Stortford was set aside for development in the Local Plan First Review 1999 and allocated as Areas of Special Restraint (ASRs). Their boundaries were re-appraised in the 2007 Local Plan. ASRs 1 and 2 (land west of Hoggates Wood) was safeguarded to provide sufficient land to provide for airport-related housing if this was not met through other allocations. ASRs 3 to 5 were safeguarded until such time that a need for development was identified through a review of the Local Plan.
- 7.7 Land between ASRs 3 and 4 and the bypass was allocated as a Special Countryside Area where the provisions of the 2007 Local Plan Green Belt Policy GBC1 apply until such time that a strategic need for development is established through the review of the Local Plan.
- 7.8 The only land left within the Green Belt to the north of Bishop's Stortford within the bypass is the land containing Hoggates Wood and Ash Grove. The 2015 Green Belt Review undertaken by Peter Brett Associates therefore only considered this remaining area in Parcel 66. Overall, the study concluded that Parcel 66 makes no contribution to checking unrestricted sprawl as the land forms a wedge of land retained between the two parts of the permitted urban extension, therefore it will be bounded on three sides by urban development. The parcel makes no contribution to the purpose of preventing neighbouring towns from merging. The parcel contains a well-defined pattern of small fields and woodlands, but this will not form part of a wider area of open countryside once the development is built, therefore the parcel makes no contribution to the purpose of assisting in safeguarding the countryside from encroachment. The parcel makes no contribution to the purpose of preserving the setting and special character of historic towns.

Figure 4: Areas of Special Restraint, Special Countryside Area



(Source: East Herts Local Plan 2007)

Figure 5: Map of Green Belt Parcels – Bishop’s Stortford North



(Source: Peter Brett Associates, 2015)

- 7.9 The PBA Green Belt Review suggested that as the parcel made no contribution to the four purposes assessed, the area was therefore considered to have a high suitability as an Area of Search for development and could therefore be removed from the Green Belt and be safeguarded through other policies. The A120 would therefore be defined as the northern Green Belt boundary for the town. However, it is the view of Officers that the green wedge is contiguous to the pattern of development in the town, forming a barrier between the proposed new urban areas, creates a green link from inner parts of the town to the wider countryside beyond and provides an appropriate setting for recreational uses. The green wedge is also home to three Local Wildlife Sites and forms part of the wider green infrastructure network of the town. The wedge will be designated as Local Green Space under Policy CFLR2. Given the development pressures within the town, while it could be possible to release the land from the Green Belt and keep only the Local Green Space designation, it is considered that the Green Belt policy affords additional protection. Therefore, the Submission Plan does not propose to make amendments to the Green Belt in this location.

[Transport Modelling, 2016](#)

- 7.10 Transport modelling has been undertaken to inform the planning applications at Bishop’s Stortford North. A detailed Paramics model was developed to assess ASRs1-4 which was extended to ASR5. The applicant also commissioned a run of the Saturn Harlow Stansted Gateway Transport Model, which as a sub-regional model is less detailed than the Paramics model but covers a much larger area, and is therefore able to take account of cumulative impacts.
- 7.11 Hertfordshire County Council commented on the applications and on the modelling results. Their overall conclusions were that the models confirm that “mitigation measures along the A120 results in nil detriment to the primary route network. Significant increases in traffic and congestion are anticipated on key routes into

town and at key junctions. The mitigation of the impact of this additional traffic on the town is reliant on the achievement of modal shift through successful take up of the improved bus services and the successful application of travel planning and the Smarter Choices campaign. The mitigation measures proposed and secured through the Section 106 Agreements were considered acceptable.

Identification of Site Constraints – Bishop’s Stortford North

Green Belt

- 7.12 As discussed in paragraphs 7.7 to 7.10 above, the only parcel of land in the Green Belt within the Bishop’s Stortford North development site is the land at Hoggates Wood and Ash Grove. This land will be retained as woodland and used for open space and outdoor sports facilities.

Surface water

- 7.13 There are two watercourses within the site; Bourne Brook, a tributary of the River Stort and Farnham Bourne, which runs into Bourne Brook. Therefore, parts of the site are subject to surface water flooding. These floodplains will need to be incorporated into the masterplanning of the site, forming part of a wider green infrastructure network, building in appropriate buffers where necessary.

Heritage

- 7.14 St Michael’s Church, the town’s only Grade I listed building, is a prominent landmark in the town, with glimpsed views seen from the majority of the town. The development should therefore ensure views of the church are protected. Within the site itself, the Grade 2 listed Foxdells Farm and Barn will need to be taken into consideration in terms of its setting. The whole site lies within an Area of Archaeological Significance

Wildlife

- 7.15 There are three local Wildlife Sites within the site at Hoggate’s Wood (34/015), Dane O’Coys Meadows incorporating Ash Grove (34/016) and Whitehall Field (34/018). These sites are designated for their woodland and grassland habitats. There are also individual and group Tree Preservation Orders across the site. These sites will need to be taken into account during the masterplanning stage and be incorporated into a green infrastructure plan.

Landscape

- 7.16 The undulating landscape needs to form the basis of the masterplan, utilising low ground to form sustainable drainage solutions and higher ground to form landmarks and to allow key vantage points towards town centre landmarks.

Stakeholder Engagement – Bishop’s Stortford North

- 7.17 Unlike other proposed strategic allocations, no specific stakeholder partnership group meetings have been held for this site as the planning applications were well underway following the Preferred Options consultation. Therefore stakeholder

discussions were being held where necessary to inform the Council's consideration of the applications.

Developer Meetings and Information – Bishop's Stortford North

- 7.18 At the date of writing (September 2016), no meetings have taken place with the developers or site promoters following the Preferred Options consultation. However, communication has been ongoing in respect of the planning applications. In order to assist in its deliberations, the Council invited further information from landowners, developers and agents in the form of Delivery Statements which form the basis of draft Statements of Common Ground. These statements contain details about required infrastructure and utilities and will be used to support the submission of the Plan to the Planning Inspectorate. Given that the site promoters are already progressing through the planning application stages, they did not feel it necessary to provide further information to assist with the Plan-making process.

Land Uses and Proposals – Bishop's Stortford North

- 7.19 As stated in paragraph 6.3 above, it is considered appropriate to maintain a policy in the Submission District Plan in order to provide a framework for the second phase of development. In the event that the site is reconsidered as a whole or if sub-division of the site occurs, this policy framework will be used to guide development.
- 7.20 This site is proposed for residential-led mixed-use development for in the region of 2,500 homes. In addition to a wide type and mix of new homes, the development will provide supporting infrastructure in the form of neighbourhood centres, providing for day-to-day convenience needs, schools and local job opportunities through the provision of a new employment area.
- 7.21 Schools, homes, neighbourhood centres, employment areas, public transport, green infrastructure, strategic and local highway mitigation, sports provision and other on and off-site infrastructure will provide benefits to new and existing residents alike.
- 7.22 An indicative layout accompanying the approved application is included in Figure 6 below for illustrative purposes.

Figure 6: Indicative Layout – Bishop’s Stortford North



Infrastructure Needs – Bishop’s Stortford North

7.23 The infrastructure requirements arising from a development of this size are significant in comparison to other sites proposed within the District Plan. While it is anticipated that the majority of the infrastructure agreed through the Section 106 Agreement will not change, in the event that the application is reconsidered the list below sets out the minimum infrastructure requirements:

- provision of affordable housing;
- opportunities for self-build and retirement living, including specialist care;
- provision of land for two primary schools and one secondary school;
- quality local green infrastructure, including enhancement to on and off-site wildlife assets;
- public open space/s within the site, including the provision of play areas and opportunities for outdoor health and fitness activities;
- the provision of outdoor playing pitches and indoor sports provided through the community use of the secondary school facilities;
- contributions to off-site provision of sports facilities;
- two mixed-use neighbourhood centres, making provision for healthcare, retail and community/cultural/leisure uses;
- employment land;
- access and new highway junctions (A120, Hadham Road, Rye Street and Farnham Road) and contribution to improvements at Junction 8 of M11;
- public transport route through the site;

- sustainable transport measures, both through improvements to the existing walking and cycling networks in the locality and enhanced passenger transport services;
- utilities, including foul water pumping stations and integrated communications infrastructure to facilitate home working;
- sustainable Drainage Systems (SuDs); and
- all necessary on-site and appropriate off-site infrastructure.

Implementation – Bishop’s Stortford North

7.24 While outline permission has been granted for the whole site, detailed permission exists only for the western neighbourhood. In theory, this development could start at any time. A detailed application is yet to be submitted for the second phase of development, which includes the secondary school. The County Council has submitted and approved an application for the secondary school itself (Applications 3/14/2037/CC). However, provided the application is prepared along the lines of the outline permission, it is anticipated that the decision-making process would proceed swiftly. The site is anticipated to deliver 650 homes between 2017 and 2022, 1,250 homes between 2022 and 2027 and 300 homes after 2027.

8. Hadham Road Secondary School Reserve Site (Policy BISH4)

Introduction

- 8.1 Hertfordshire County Council first acquired land at Hadham Road for secondary school provision in the 1960s. The land by itself however, was not big enough to accommodate a school and associated playing fields, therefore playing fields would be needed in a nearby location. It was anticipated that an alternative strategy would be found to provide adequate school places in the town. As this was not forthcoming, the land was retained within the 2007 Local Plan for a secondary school unless sufficient capacity could be provided elsewhere in the town.
- 8.2 Through negotiations on the Bishop’s Stortford North applications, a ‘land swap’ has been secured through a legal agreement such that land within ASRs3 and 4 will be made available for the development of a secondary school, supported by financial contributions from the development and the County Council site at Hadham Road would be released for residential development. The County Council submitted three simultaneous applications which proposed three different development scenarios; Application A – 3/14/2143/OP (247 dwellings on northern and western fields); Application B – 3/14/2144/OP (163 dwellings on northern field only); and Application C – 3/14/2145/OP (84 dwellings on only the western field). Application A was subsequently withdrawn by the County Council. At the time, it was understood that Application C would be presented at a later time. To facilitate the land swap, Application B was progressed. The application was approved and a Section 106 Agreement has been signed.
- 8.3 The northern field site is therefore proposed for allocation in the District Plan. As the application was for outline only, with all matters reserved for later approval apart

from access, it is considered appropriate to set out how the site should come forward in planning policy terms.

- 8.4 The outline permission was granted on the condition that the County Council confirms that it is the legal owner of the proposed secondary school site provided as part of the second phase of the Bishop's Stortford North development within ASRs 3 and 4. As the land swap arrangement is yet to be triggered, this condition is yet to be met. Therefore this site will be retained for a secondary school until the requirements of the current legal agreement and land swap arrangement, or any subsequent replacement arrangements that achieve the same outcome, are achieved.

Figure 7: Site Location – Reserve Secondary School Site, Hadham Road



Consultation Responses – Hadham Road Secondary School Reserve Site

- 8.5 A number of comments were received in respect of this site at the 2014 Preferred Options Consultation stage.
- 8.6 The main issues raised related to (in no particular order):
- The policy should be amended to reflect the permissions granted, including the conditions imposed;
 - The site should be retained only for educational use (school and/or school playing fields);
 - Sport England object to the loss of the western playing fields, but acknowledge this could be mitigated if playing fields provided in the new school have community use;

- Woodland should be retained and enhanced where possible as part of a green infrastructure plan;
- Hertfordshire County Council comment that the traffic impacts arising from school use would be localised and would only affect the morning peak;
- Hertfordshire County Council comment that the traffic impacts arising from 250 homes would be localised and impacts similar to that of the school;
- Should reference the Neighbourhood Plan for Silverleys and Meads Wards
- Provision of appropriate infrastructure required to support development

Technical Assessments – Hadham Road Secondary School Reserve Site

- 8.7 No specific technical assessments have been carried out on this site as the applications have been well advanced.

Identification of Site Constraints – Hadham Road Secondary School Reserve Site

Woodland

- 8.8 The woodland covering the southern third of the site (Skelleys Wood) should be retained and connections made between it and the rest of the site through buffer planting and tree-lined streets. It should also be managed appropriately.

Open Space

- 8.9 The field covering the western third of the site was in use by Bishop’s Stortford Rugby Club until 2011. Since then the land has been used for informal public open space but has not been managed as a playing pitch. Given there is a deficit of outdoor playing pitches in the town, the retention and management of this land as a formal playing pitch should be secured.

Other Constraints

- 8.10 There is a Public Right of Way to the south of the site which connects the site to the countryside beyond the town, towards Maze Green Road and on through the green wedge. Connection to this route should be explored.

Stakeholder Engagement – Hadham Road Secondary School Reserve Site

- 8.11 Unlike other proposed strategic allocations, no specific stakeholder partnership group meetings have been held for this site as the planning applications were well underway following the Preferred Options consultation. Therefore stakeholder discussions were being held where necessary to inform the Council’s consideration of the applications.

Developer Meetings and Information – Hadham Road Secondary School Reserve Site

- 8.12 At the date of writing (September 2016), no meetings have taken place with the developers or site promoters following the Preferred Options consultation.

However, communication has been ongoing in respect of the planning applications. In order to assist in its deliberations, the Council invited further information from landowners, developers and agents in the form of Delivery Statements which form the basis of draft Statements of Common Ground. These statements contain details about required infrastructure and utilities and will be used to support the submission of the Plan to the Planning Inspectorate. Given that the site promoters are already progressing through the planning application stages, they did not feel it necessary to provide further information to assist with the Plan-making process.

Land Uses and Proposals – Hadham Road Secondary School Reserve Site

- 8.13 This site will be an entirely residential scheme apart from the provision of open spaces, one of which will be equipped for play, three of which will contribute to sustainable drainage. An indicative layout accompanying the application (3/14/2144/OP) for 163 homes is included in Figure 8 below for illustrative purposes.

Figure 8: Indicative layout plan for Hadham Road Secondary School Reserve Site



Infrastructure Needs – Hadham Road Secondary School Reserve Site

- 8.14 The infrastructure requirements arising from a development of this size are relatively small compared to many strategic sites proposed within the District Plan. While it is anticipated that the majority of the infrastructure agreed through the Section 106 Agreement will not change, in the event that the application is reconsidered the list below sets out the minimum infrastructure requirements:

- Provision of affordable housing;
- Appropriate relationship between the site and neighbouring fire station;

- Green infrastructure, amenity, formal and informal open spaces including the provision of outdoor playing pitches on the western field and access to the Public Right of Way footpath 17;
- Access improvements to Hadham Road, including the provision of a safe crossing point across Hadham Road;
- Sustainable Drainage Systems (SuDs); and
- Other financial contributions as appropriate.

Implementation – Hadham Road Secondary School Reserve Site

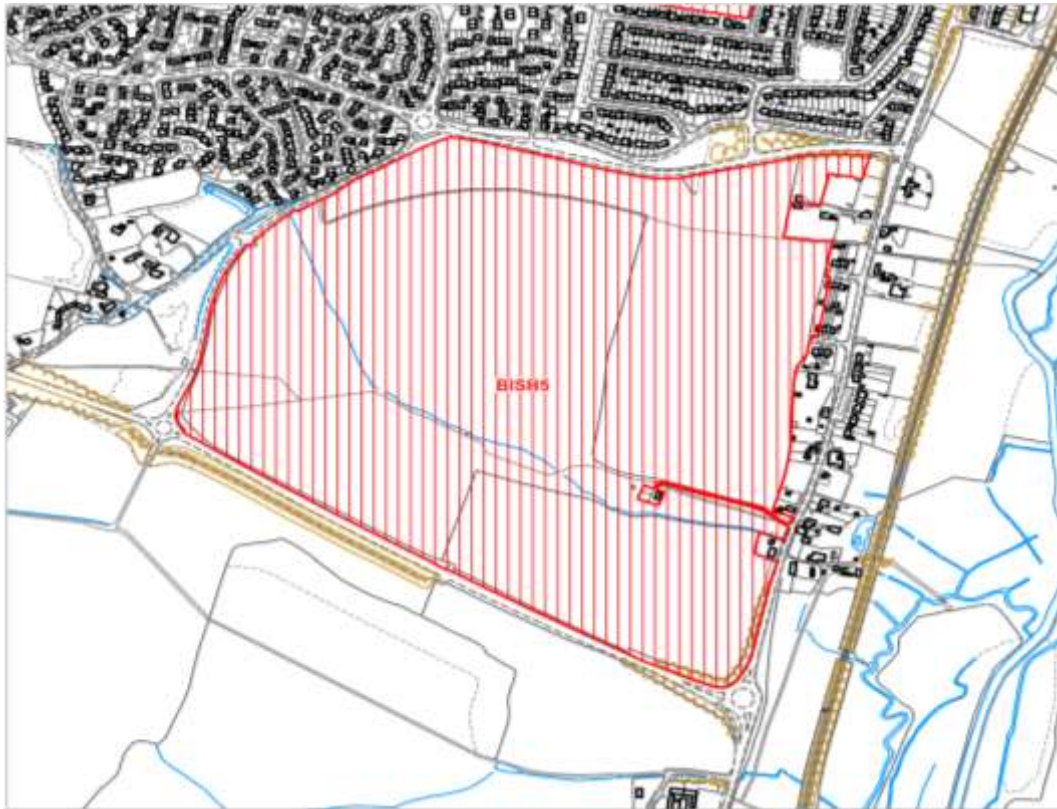
- 8.15 The delivery of this site is dependent upon the delivery of a secondary school on the Bishop’s Stortford North site (or elsewhere if a suitable alternative becomes available). A detailed planning permission is still required to deal with reserved matters. Following this, it is anticipated that the site will provide 163 homes from 2022 with development complete within three years.

9. Bishop’s Stortford South

Introduction

- 9.1 As noted in paragraph 1.2, land to the south of Bishop’s Stortford was identified as a proposed allocation for between 750 and 1,000 homes in the Preferred Options District Plan. This range was identified to include the possibility of the site providing a secondary school if required and/or if a secondary school was not provided at the Reserve Secondary School site at Hadham Road, or through the Bishop’s Stortford North development.
- 9.2 The Preferred Options District Plan set out that the site should be comprehensively masterplanned and a Supplementary Planning Document (SPD) would be produced. It is the view of Officers that this approach should continue as this will ensure that the principles established through collaborative masterplanning are adopted and are given appropriate weight when determining future applications on the site. This approach is vital given the likelihood that different parts of the site (education and employment land for example) will come forward and/or be delivered over a number of years by different parties.
- 9.3 Development has been previously proposed on this site in 2010 through the consideration of a joint application to relocate the Bishop’s Stortford High School and the Herts and Essex High School to a combined site south of Whittington Way (Application reference: 3/10/1012/OP). The application was dismissed at appeal by the Secretary of State in 2012.

Figure 9: Site Location – Bishop’s Stortford South



Consultation Responses – Bishop’s Stortford South

- 9.4 A number of comments were received in respect of the Bishop’s Stortford South site at the 2014 Preferred Options Consultation stage. The main issues raised related to (in no particular order):
- Loss of the Green Belt;
 - Previous refusal for school application on Green Belt grounds prohibits development proposal;
 - Important gateway to the south of the town;
 - Concern about traffic generated and its impact on the town centre highway network, adding to congestion;
 - Concern about an increase in vehicles using rural roads to the south-east of the town;
 - South-eastern bypass should be provided;
 - Noise from Stansted Airport flightpath;
 - Impact on Thorley village;
 - Need for indoor and outdoor sports facilities, including football pitches and play areas;
 - Provision of appropriate infrastructure required to support development.

Technical Assessments – Bishop’s Stortford South

- 9.5 The following sections summarise the various technical evidence based assessments that have been undertaken since the Preferred Options consultation to assess this site alongside the wider Plan preparation process.

Green Belt Review 2015 (Peter Brett Associates)

- 9.6 The Green Belt Review looked at four parcels in the vicinity of Bishop’s Stortford South, as shown in Figure 10 below. Parcel 71 covers the Bishop’s Stortford South site in its entirety. The site is currently within the Green Belt, bounded by London Road to the east, St James’ Way to the south, Obrey Way to the west and Whittington Way to the north. A summary of the assessment of Parcel 71 is included below.

Figure 10: Green Belt Parcels



(Source: Peter Brett Associates, 2015)

- 9.7 The Review concluded that Parcel 71 makes a ‘Major’ contribution to the purpose of checking the unrestricted sprawl of large built up areas. The Review stated that development is likely to appear as sprawl, being unrelated to the existing urban area. However, the Review also notes the role the bypass plays in providing a well-defined alternative Green Belt boundary. The parcel made no contribution to preventing towns from merging into one another or to preserving the setting and special character of historic towns.
- 9.8 The Review again concluded that the Parcel makes a ‘Major’ contribution to safeguarding the countryside from encroachment. The land is currently an open area of countryside forming a rural setting to the southern side of the town. As Obrey Way and Whittington Way currently form a well-defined boundary, any breach of these roads is likely to be perceived as encroachment into the countryside. The Review again acknowledges the role of the bypass in forming a clear boundary between the parcel and the wider countryside beyond. As the parcel scored highly against two of the purposes, the parcel scored ‘Low’ in terms of its suitability as an area of search for development.

- 9.9 While the Green Belt Review concludes that the overall Parcel has low suitability for development, it is considered that with careful master planning new development here would not appear as sprawl. The new neighbourhood would be well-contained within clear boundaries and by connecting to Whittington Way and Obrey Way the site will be well related to the existing urban area. Large parts of the development will not be visible from London Road, being screened by existing properties. The potential creation of landmark buildings on the south-eastern corner of the site could contribute to creating a gateway into the town. Additional buffer planting and the maintenance of open land along the Hertfordshire Way will help to maintain this important right of way's setting.
- 9.10 As discussed in the Development Strategy Chapter, the Council has a duty to meet its identified housing need and, due to the lack of brownfield opportunities, there is a consequential need to release some Green Belt land in order to achieve sustainable development in the district. Officers acknowledge that the assessment of the land to the south of Bishop's Stortford against Green Belt purposes would not in itself suggest that the land contained in this parcel would be suitable for Green Belt release. However, it should be noted that the Study should be viewed in its overall context, whereby the majority of land assessed throughout the district via this process resulted in similar ratings being achieved. Therefore, of necessity, the imperative of meeting the district's housing need brings into deliberation locations that may not otherwise have been considered suitable to be brought forward for development.
- 9.11 On balance, it is considered that, in the absence of alternative options, in order to meet identified housing need and in order to ensure that that the Councils development strategy is sustainable, it is appropriate to allow for an urban extension to the sustainable settlement of Bishop's Stortford and to allow Green Belt release in this instance. It will be important to ensure that any future development can be sensitively planned to respect the most important aspects identified in the Green Belt Review in amending the town's boundaries.

[Strategic Sites Delivery Study \(Peter Brett Associates, 2015\)](#)

- 9.12 The East Herts Strategic Sites Delivery Study assessed the Bishop's Stortford South site in considerable detail. Based on the 750 home option, the Study concluded that deliverable solutions to critical infrastructure (particularly sewage, utilities, site access and provision of primary and secondary education) needed to enable the development to take place have been identified and are shown to be achievable.
- 9.13 The study makes further recommendations as to the type of infrastructure required which includes the provision of new healthcare facilities to serve the south of the town. The study raises the potential for the site to contribute towards sustainable travel within the town, and also provides suggestions as to the treatment of the Hertfordshire Way through detailed design considerations.

[Strategic Flood Risk Assessment \(JBA Consulting, 2016\)](#)

- 9.14 The primary flood risk on this site is from an unnamed drain which runs through the centre of the site. Water is mainly confined to the channel and areas immediately adjacent, but flood hazard is mainly classed as very low outside of these areas.

Factoring in climate change does not significantly affect the area at risk of fluvial flooding.

- 9.15 In terms of implications for development, design tools should be employed to ensure that the area affected by flood zones are undeveloped, sustainable drainage options are possible and should be integrated into the design of the site through multi-functional green infrastructure, including the provision of open spaces.

Identification of Site Constraints: Bishop's Stortford South

Green Belt

- 9.16 The site is currently in the Green Belt. It is acknowledged that this development will require the loss of land from within the Green Belt. As considered in paragraphs 9.5 to 9.10 above, the southern distributor road, St James' Way acts as a new strong, defensible Green Belt boundary within which development can be well contained.

Transport

- 9.17 The site promoters requested an Environmental Impact Scoping Opinion from the Council. In terms of transport, the County Council suggested that a Transport Assessment will be required and that pre-application discussions should occur to ensure all highway safety, capacity and sustainability issues are fully assessed. The cumulative impact of development on Junction 8 of the M11 will also need to be assessed through transport modelling.

Foul Water Drainage

- 9.18 In response to the Scoping Opinion request, Thames Water has indicated that the existing network may be unable to support the demand anticipated from this development. Therefore, in addition to on-site works, the impact of the site on the existing network 'downstream' will also need to be considered and appropriate upgrades will be required.

Flood Risk

- 9.19 The watercourse that runs west to east across the site should become an integrated part of the design to mitigate flood risk and to build in resilience.

Surface Water Drainage

- 9.20 Given the proximity of the site to the River Stort and the Thorley Flood Pound Site of Special Scientific Interest (SSSI), measures taken to address surface water and flood risk need to consider the impact of discharge into the natural water course. Instead of underground storage cells, the use of naturalised interventions such as sustainable drainage filtration beds should be provided as part of a wider green infrastructure strategy for the site. This will also enable water to be treated prior to discharging, thus helping to improve water quality in the River Stort.

Archaeology and Heritage Impact

- 9.21 The site is within an Area of Archaeological Significance within which evidence of regionally important remains have been found. Therefore, appropriate investigations will need to be undertaken in consultation with the Natural, Historic and Built Environment Advisory Team at the County Council. There are a number of listed buildings along London Road which forms the eastern boundary to the site. Care should be taken to address their setting and significance. Opportunities should also be taken to retain views of Thorley Church to the south-west of the site.

Wildlife

- 9.22 While there are no designated wildlife assets within the site, there are designated Wildlife Sites in proximity to the site, including the Thorley Flood Pound SSSI. A full ecological assessment will need to be undertaken to check for the presence of Great Crested Newts and other protected species, and to assess the potential cumulative indirect effects on the SSSI. Opportunities should be taken to create a net gain to biodiversity through buffer planting and other suitable measures.

The Hertfordshire Way

- 9.23 The Hertfordshire Way is a public bridleway/footpath route which traverses the whole of Hertfordshire. The Way runs west-east across the northern part of the site. As the route runs along higher ground it is afforded with wide reaching southerly views. Whilst it is acknowledged that development will by definition impact on these views, the masterplan will be required to retain an open aspect from the route, particularly in a southerly direction.

Stakeholder Engagement – Bishop’s Stortford South

- 9.24 No stakeholder workshop has been held for this site. However, full engagement with necessary stakeholders has been achieved through the request by the site promoter for an Environmental Impact Scoping Opinion. Responses were provided by:

- East and North Herts Clinical Commissioning Group
- Environment Agency
- East Herts Drainage Engineers
- East Herts Environmental Health Officers
- Herts County Council Flood and Water Management
- Herts Ecology
- Herts Fire and Rescue
- Herts Highways
- Highways England
- Herts Historic Environment Unit
- East Herts Landscape Officers
- NATS Safeguarding
- NHS England
- Sport England
- Thames Water
- Uttlesford District Council.

Developer Meetings and Information – Bishop’s Stortford South

- 9.25 Officers have held several meetings with the site promoter Countryside Properties in order to discuss the initial parameter plans provided as part of the Environmental Impact Scoping Opinion Request and with Hertfordshire County Council Property and Schools Planning Teams to discuss education matters.
- 9.26 In addition, in order to assist in its deliberations, the Council invited further information from landowners, developers and agents in the form of Delivery Statements which form the basis of draft Statements of Common Ground. These statements in their final form will contain details about required infrastructure and utilities and will be used to support the submission of the Plan to the Planning Inspectorate.
- 9.27 Countryside Properties has prepared a preliminary draft Statement of Common Ground which sets out the proposed type and mix of development, approach to utilities, constraints and other issues raised in the Environmental Impact Scoping Response. It also sets out initial consideration of mitigation measures, phasing of delivery and the processes required moving towards a planning application. Officers consider that the Draft Delivery Statement for Bishop’s Stortford South provides sufficient assurance that the issues raised have been or are capable of being addressed and that all supporting infrastructure can be provided and forms the basis of the assessment below. The site promoter has prepared a draft Planning Performance Agreement to work together with the Council, moving towards a planning application.

Land Uses and Proposals – Bishop’s Stortford South

- 9.28 Development at Bishop’s Stortford South will create an urban extension to the town. The site will provide 750 homes with a mix of tenure, affordable and aspirational homes as well as opportunities for self-build, retirement living and specialist care. The new homes will be supported by a range of community facilities located around a central hub including a primary school with early-years provision and a secondary school.
- 9.29 Accessed directly off the A1184, Obrey Way and Whittington Way, the site will support bus routes, cycle and pedestrian routes along a clearly defined road hierarchy incorporating tree-lined avenues and smaller residential roads. In addition, a new employment area will provide modern business space providing local job opportunities. This business space could also provide an opportunity for growth in bio-science industries in the town. Open spaces will be created which provide multi-functional drainage solutions as well as space for recreation, creating connections to the wider open countryside of the Stort Valley. An indicative layout accompanying the Draft Statement of Common Ground is included in Figure 11 below for illustrative purposes.

Figure 11: Indicative Site Layout for Bishop’s Stortford South



Infrastructure Needs – Bishop’s Stortford South

- 9.30 The infrastructure requirements arising from a development of this size are significant in comparison to other sites proposed within the District Plan. A development of 750 homes would generate a need for 1.5 forms of entry. However, the County Council has indicated there is a need to provide two forms of entry at primary level in addition to that proposed at Bishop’s Stortford North and anticipated to be delivered at Bishop’s Stortford South to accommodate the needs arising from background growth and other developments in the town. Therefore it is proposed that the primary school provided at Bishop’s Stortford South can be expanded up to three forms of entry to accommodate future demands. The Plan makes provision through the allocation of land at the existing Bishop’s Stortford High School site to facilitate the expansion of Thorley Hill Primary School from 1FE to 2FE. At secondary school level, the County Council has indicated there is a need for an additional six forms of entry in addition to that proposed for Bishop’s Stortford North. The provision of a new six-form entry school will meet these demands but should facilitate expansion to eight forms to accommodate future requirements.
- 9.31 The Bishop’s Stortford High School has indicated a desire to relocate to Bishop’s Stortford South and expand from 5.5 forms to eight forms of entry. There are also plans for the Herts and Essex High School to expand on their current site (from 5.5FE to 8FE) through the relocation of its sports facilities to land at Beldams Lane. The expansion of these two schools will therefore provide an additional five forms of entry. The county Council is currently exploring with other schools in the town as to

their potential to expand. The Bishop's Stortford South development will only be expected to directly enable (fund) 1.5FE and the Council will continue to work with Hertfordshire County Council to achieve the delivery of secondary education in the town.

9.32 The masterplan will set out the on-site and off-site infrastructure required to support the development. Therefore the list below is indicative of the minimum infrastructure requirements:

- provision of affordable housing;
- opportunities for self-build and retirement living, including specialist care;
- 4-5 hectares of employment land in a landmark location and design;
- provision of land for a two-form entry primary school with early years facility with room to expand to three forms of entry to cater for future needs;
- provision of a six-form entry secondary school with room to expand to eight-forms of entry to cater for future demands;
- financial contribution towards 1.5FE at primary and secondary level education;
- a mixed-use neighbourhood centre, making provision for healthcare, retail and community/cultural/leisure uses;
- quality local green infrastructure, including connection to and enhancement of on and off-site wildlife assets;
- public open space/s within the site, including the provision of play areas and opportunities for outdoor health and fitness activities;
- the provision of outdoor playing pitches and indoor sports provided through the community use of the secondary school facilities;
- access and new highway junctions (A1184, Obrey Way and Whittington Way);
- public transport route through the site;
- sustainable transport measures, both through improvements to the existing walking and cycling networks in the locality and enhanced passenger transport services;
- utilities, including sewage networks and integrated communications infrastructure to facilitate home working;
- sustainable Drainage Systems (SuDs); and
- all necessary on-site and appropriate off-site infrastructure.

Implementation – Bishop's Stortford South

9.33 The Draft Statement of Common Ground sets out an anticipated phasing plan. Assuming planning permission is granted soon after adoption of the District Plan, delivery of new homes could start on the site by Autumn 2018, with first completions by the end of 2019. The site promoters suggest that subsequent years can then deliver 100 properties per year. On this time table, serviced land will be available for the schools by 2020. However, it may be necessary to seek to expedite the earlier delivery of the school.

10. The Bishop's Stortford High School London Road

Introduction

- 10.1 As discussed in paragraph 9.30 above, the Bishop's Stortford High School has a desire to relocate to the Bishop's Stortford South site. The current school site is very constrained and shares land with Thorley Hill Primary School. There is no potential to expand on their current site and significant improvements are required to some of the school facilities. The relocation of the school will therefore provide a long term solution to the needs of the school at the same time as providing for some of the additional school capacity needed within the town.
- 10.2 In the event that the school relocates to Bishop's Stortford South, this will make the current school site available for residential development. This will also be necessary in order to part fund the relocation. Given the need for additional capacity at primary school level, as discussed in paragraph 8.24, it is prudent to ensure that existing schools are able to expand where possible. Therefore land adjacent to Thorley Hill Primary School will be allocated through this policy to facilitate expansion of the school from one to two-forms of entry.

Figure 12: Site Location – The Bishop's Stortford High School Site, London Road



Consultation Responses – Bishop's Stortford High School Site

- 10.3 As this site was not included in the Preferred Options District Plan Consultation, there are no specific responses in relation to this site. However, responses made to

the Bishop's Stortford South site do make reference to this site and are therefore summarised below:

- Due to a lack of capacity school children cannot be educated in the town;
- Current school buildings are run down;
- School was built for three forms of entry but currently accommodates 5.3 forms of entry;
- Support for the relocation of the school but land provided should be bigger;
- Sport England state that the provision of a new school provides the most realistic opportunity for providing indoor and outdoor sports facility for community use.

Technical Assessments – Bishop's Stortford High School Site

- 10.4 No specific technical assessments have been undertaken for this site. Issues such as transport modelling were considered through the application to redevelop the school site (application reference 3/10/1013/OP), which was considered as part of the joint application to relocate the boys and girls school to the south of Whittington Way referred to in paragraph 9.3 above. The County Council Highways Department raised no objection to any of the development scenarios considered on the basis of the transport modelling undertaken. The Strategic Sites Delivery Study suggested that this site, in conjunction with the Bishop's Stortford South site would provide good opportunities to create new, and extend public transport networks from the south of the town towards the town centre.

Identification of Site Constraints – Bishop's Stortford High School Site

Open Space

- 10.5 The site currently comprises school buildings and a school playing field. It would be prudent to retain a proportion of the playing field for informal outdoor recreation..

Thorley Hill Primary School and The Blues Nursery

- 10.6 New development will need to ensure an appropriate relationship is maintained between new uses and the existing school. Additional land should be provided on-site to facilitate the expansion of the school, and possibly provide a new access to the school. Where access is proposed to serve new homes in the western part of the site, this should be designed sensitively to ensure an appropriate relationship to the school. Planning permission was previously granted for the relocation of the Blues Pre-School to Cox's Gardens, Elizabeth Road, Bishop's Stortford (application reference 3/11/0423/FP). There are no anticipated reasons why the renewal of this application would not be considered favourable.

Access

- 10.7 The site is currently accessed directly off London Road. Consideration should be given as to whether an additional access could be achieved from Twyford Gardens/Grace Gardens, in order to avoid having to create an access which runs along the back of Thorley Hill Primary School.

Stakeholder Engagement – The Bishop’s Stortford High School Site

- 10.8 No stakeholder workshop has been held for this site. However, full engagement with necessary stakeholders has been achieved through Officer’s request for information regarding education and highway information.

Developer Meetings and Information – The Bishop’s Stortford High School Site

- 10.9 Officers have met with the Bishop’s Stortford High School, Herts County Council Property and School Planning Team to discuss the requirements of the school and to establish the principle of the school’s relocation to Bishop’s Stortford South.

Land Uses and Proposals – The Bishop’s Stortford High School Site

- 10.10 It is anticipated that the site will be predominantly residential with the provision of an area of open space alongside the woodland to the west of the site. Figure 13 below shows the indicative plan for the site when it was being considered as part of the joint school application which was dismissed on appeal. The application proposed 220 homes and a small area of additional playing field for the school (application reference 3/10/1013/OP). However, in order to facilitate the expansion of the school in terms of built facilities, it is suggested that land immediately adjacent to the existing buildings is more appropriate. Furthermore, the previous proposal did not provide an area of open space considered sufficient to compensate for the loss of the school playing fields. Therefore the District Plan proposes to allocate the site for 150 homes to ensure these requirements can be met satisfactorily.

Figure 13: Indicative Site Layout – Bishop’s Stortford High School Site



Infrastructure Needs – The Bishop’s Stortford High School Site

- 10.11 The site will need to ensure essential utilities infrastructure is provided and to provide pedestrian and cycle access through the site to connect to neighbouring residential areas. In addition, the retention of part of the playing fields to create an area of open space for informal recreation will provide for new and existing residents. A safe access on to London Road will be required and consideration should be given to whether additional access can be achieved from Twyford Gardens/ Grace Gardens. The site will also enable the expansion of Thorley Hill Primary School and consideration should be given to whether an additional access to the school can be provided.

Implementation – The Bishop’s Stortford High School Site

- 10.12 As the delivery of this site is dependent upon the provision of land for, and the relocation of the Bishop’s Stortford High School. Based on the proposed time table for the Bishop’s Stortford South site, land will not be available for construction to start on the new school until 2020. Therefore, development would not be able to start until after the school relocation is complete. It is anticipated that once started, the site will not take long to complete given the lack of preliminary infrastructure required. There is a need to ensure sufficient school capacity is provided as soon as possible to address existing issues, and to ensure the delivery of new homes within the first five years of the plan period it may therefore be necessary to seek to expedite the earlier delivery of the school on the Bishop’s Stortford South site. The site is allocated to deliver 150 homes.

11. The Goods Yard

Introduction

- 11.1 The Goods Yard site was first designated as a potential redevelopment site in the 1999 Local Plan. Several development briefs have been prepared in the intervening years to guide development on the site, and an application was submitted but subsequently withdrawn. Being a town centre location, the site is highly accessible, benefitting from direct access to the station and a short walk to the town centre. However, with this comes a number of challenges such as the desire to accommodate competing town centre uses, ensure the opportunity of the site is maximized and, at the same time, ensure appropriate design, scale and size of development and servicing, such as sufficient parking for commuter use. The phasing of development needs to be carefully managed in order to ensure that the busy railway station and associated access and parking operate fully at all times.
- 11.2 The site is currently subject to an application (03/16/0530/OUT), which is currently undetermined. The application is a hybrid application comprising an outline application for the redevelopment of the whole site (for 682 new homes, 607sqm of retail floorspace, 3,034 sqm of hotel floorspace, two multistorey car parks and associated highway and access works), and a detailed application for the first three phases of the site (the first 462 properties, one multistorey car park, station forecourt and access from the north of the site).

- 11.3 In the 1999 and 2007 Local Plans, the designated site incorporated the Former John Dyde Training Centre. This has since been redeveloped for leisure and residential use. The previous limitations on the type and quantum of development on the remainder of the Goods Yard should be replaced by an up-to-date evaluation of what may be possible and acceptable on the site. The Council has commissioned Tibbalds to undertake a design review of the current application and the site is a key area being considered in the Bishop's Stortford Town Centre Planning Framework.

Figure 14: Site Location – The Goods Yard Site



Consultation Responses – The Goods Yard Site

- 11.4 A number of comments were received in respect of the Goods Yard Site at the 2014 Preferred Options Consultation stage. The main issues raised related to (in no particular order):
- Development should be of high quality design
 - A link road through the site should be provided
 - Support for ambitions to integrate the river into the design and improving the riverside environment
 - Support for active ground floor uses, public spaces and direct routes to the town centre
 - Buildings should be set back from the river and building heights should be restricted;
 - Needs to be sufficient parking for all users
 - Parking should be minimised to reduce traffic congestion in the town centre
 - Should enhance the station forecourt to create a transport hub

Technical Assessments – The Goods Yard Site

Bishop's Stortford Town Centre Planning Framework (Allies and Morrison, 2016)

- 11.5 The emerging Town Centre Planning Framework has provided specific advice in relation to the Goods Yard site. The importance of this site in terms of creating a first impression of the town and improving the arrival experience into the town centre should be recognised. Opportunities to improve the riverside environment should be maximised along with strengthening connectivity for pedestrians over the railway line, from the river to the station, from the station to the town centre and along the river corridor. Connections between the site and the Anchor Street Leisure Park should be enhanced. The provision of a link road through the site should be included in the policy.
- 11.6 Reference should be made to creating a high quality of design which reflects the local pallet of materials, creating a variety of character areas across the site. Being a highly accessible location, opportunities should be taken to create new business floorspace as well as some retail uses to reinforce the pedestrian route between the station and the town centre.

Bishop's Stortford Goods Yard Site Urban Design Appraisal (Tibbalds, 2016)

- 11.7 Tibbalds was commissioned to undertake a design review of the application. Tibbalds state that the site is a prominent gateway for the town, but the site lacks legibility and is dominated by surface level car parking. The review states that while the basic structure of the current proposal is sound, the more detailed aspects of the application do not realise the full potential of the site.
- 11.8 The site should include a variety in design (material and build form), size of property (rather than one and two bedroom flats only) and acknowledge the distinctive conditions of the site. More family-sized homes should be provided. The open space strategy should fully exploit the potential for routes and spaces to become distinctive focal points and useable, people friendly spaces.

Strategic Flood Risk Assessment (JBA Consulting, 2016)

- 11.9 The primary flood risk on this site is from the River Stort itself, which runs along the western edge of the site. An area of fluvial flood risk covers the southern part of the site (Flood Zone 2). Factoring in climate change, there may be an increase in the extent of surface water flooding and fluvial flooding.
- 11.10 In terms of implications for development, design tools should be employed to ensure that the area affected by flood zones are undeveloped, sustainable drainage options are possible and should be integrated into the design of the site through multi-functional green infrastructure, including the provision of open spaces. Given the potential for flooding to impact on safe access and egress from the site, development may need to consider the provision of safe refuge in the event of occupiers being unable to evacuate.

Identification of Site Constraints – The Goods Yard Site

Town Centre and Station Parking Requirements

- 11.11 There are clearly conflicts between a policy approach that seeks to meet the parking needs of the uses on site such as the station and residential uses in full, and one which seeks to reduce the number of vehicles driving through the constrained town centre to access this parking. Strategies for balancing the conflicting issues should not result in the creation of impacts elsewhere in the town. For example, reduced parking provision, without a strategy to encourage the use of alternative modes, will simply lead to parking pressure elsewhere.
- 11.12 There is an Air Quality Management Area at the Hockerill junction. Several mitigation options have previously been considered but not taken forward for a number of reasons. The uses and servicing, including parking provided at this site will have an impact on the operation and air quality at the Hockerill junction.

River Stort and Flood Risk

- 11.13 The River Stort is a key asset for the town. Running along the entire west side of the site, development provides a key opportunity to improve the riverside environment, create a riverside access directly to the town centre and create a unique public realm. Being adjacent to the River Stort, there is evidence of surface water flooding. Therefore, any proposals will need to ensure resilience against flooding.

Legibility through the site

- 11.14 As a key gateway in to the town from the station, it is important that the site is easy to navigate and allows visitors to understand how to get to other parts of the town centre. Views of landmarks should be retained and routes should be direct and well signposted.

Stakeholder Engagement – The Goods Yard Site

- 11.15 In order to consider the wider implications and infrastructure requirements arising from development in this location the Council invited the site promoter Solum and other statutory stakeholders to a Stakeholder meeting which was held on 1st July 2014 to discuss the potential for bringing the site forward for development. In addition to East Herts Council Officers, the following stakeholders were represented:
- Network Rail
 - Solum Regeneration (a joint venture between Network Rail and Kier Developments Ltd)
 - Savills representing Solum
 - Herts County Council – Highways
 - Herts County Council – Transport Modelling
- 11.16 The aim of the meeting was to identify the main issues that would require further testing through the District Plan. The following matters were particularly relevant:

- Due to concerns over the Hockerill junction a southern access to the site was considered essential;
- Improvements required to the station forecourt would bring wider benefits;
- Funding should be secured to widen the Station Road Bridge;
- Proposals should provide links to the town centre and to the south-west to the Southmill Trading Estate and Rhodes Centre;
- Solum recommend the site could deliver 450 homes.

Developer Meetings and Information – The Goods Yard Site

- 11.17 Following this initial meeting, several meetings/discussions have taken place with Officers. These have focused on issues such as neighbourhood planning, transport modelling and moving the site towards a planning application. In order to assist in its deliberations, the Council invited further information from landowners, developers and agents in the form of Delivery Statements which form the basis of draft Statements of Common Ground. These statements contain details about required infrastructure and utilities and will be used to support the submission of the Plan to the Planning Inspectorate. Given that the site promoter is already progressing through the planning application stages, they were able to provide detailed phasing plans and an assurance that all infrastructure required (for their current proposals) could be provided.

Land Uses and Proposals – The Goods Yard Site

- 11.18 As the Council has not determined the application, it is prudent to set out in planning policy terms what the Council thinks is an appropriate mix of uses on the site. Various assessments have been undertaken on the viability of various proposals including the link road and the Council has to be mindful of issues such as development viability.
- 11.19 The current application proposes 682 new homes (mainly one and two bedroom flats), 607sqm of retail floorspace, 3,034 sqm of hotel floorspace, two multistorey car parks and associated highway and access works. The application proposes a road running north-south through the site for residential access and buses only.
- 11.20 Both the Tibbalds Urban Design Review and the Town Centre Planning Framework suggest the site should provide a greater mix of uses than currently proposed. Therefore, the site should provide a mix of dwellings, including family-sized homes and affordable homes, retail floorspace and B1 office accommodation. Given this mix, a lower number of homes may be necessary so the Plan proposes a lower limit of 400 homes, with more being possible subject to full proposal and site assessment.
- 11.21 Public realm improvements are a key part of the development of this site, creating a public transport interchange at a redesigned station forecourt, pedestrian and cycle links from the river to the station and to the town centre, opportunities to cross the railway line and the creation of useable people-friendly public spaces.

Figure 15: Site Layout from Planning Application 3/16/0530/OUT



Infrastructure Needs – The Goods Yard Site

11.22 The infrastructure requirements arising from this town centre site focus on connecting the site to its surrounding environment and creating an attractive entrance to the town. As discussions are still ongoing through the planning applications process, many of these issues will already be under consideration. The list below sets out the minimum infrastructure requirements:

- a mix of house type and size;
- provision of affordable housing;
- retail and B1 office floorspace;
- a sustainable link road north-south through the site;
- station and town centre parking;
- a new station forecourt and public transport hub;
- sustainable transport measures, both through improvements to the existing walking and cycling networks in the locality and enhanced passenger transport services;
- a network of public spaces, pedestrian and cycle routes, and a high quality riverside environment, landscaping and tree planting;
- contributions to off-site provision of sports and education facilities;
- utilities, including foul water pumping stations and integrated communications infrastructure to facilitate home working;
- sustainable Drainage Systems (SuDs), including flood mitigation and resilience measures; and
- all necessary on-site and appropriate off-site infrastructure, including education and healthcare provision.

Implementation – The Goods Yard Site

- 11.23 The Delivery Study and work undertaken to support the planning application indicate that the development of this site is considered viable. However, the phasing of development on this site is a key issue. In order for the station to operate effectively during construction, access will need to be maintained at all times and sufficient parking will also need to be available. It is anticipated that 250 homes will be delivered between 2017 and 2022, and 150 homes between 2022 and 2027.

12. The causeway / Old River Lane

Introduction

- 12.1 The Causeway / Old River Lane site provides a unique opportunity to extend the town centre of Bishop's Stortford, creating a range of new uses in the town, including residential uses.
- 12.2 The site was previously granted planning permission for a mixed-use retail and leisure development (3/10/1964/OP). However, the economic downturn prevented this proposal coming to fruition. East Herts Council is now the landowner of the site and wishes to bring forward the site for development appropriate to its location.

Figure 16: Site Location – The Causeway / Old River Lane



Consultation Responses – The Causeway / Old River Lane

- 12.3 A number of comments were received in respect of the Causeway / Old River Lane site at the 2014 Preferred Options Consultation stage. The majority of these related to the previous planning permission for the redevelopment of the town, known as the Henderson proposal.
- 12.4 The main issues raised related to (in no particular order):
- Lack of parking discourages visitors
 - Civic functions should be relocated to the town
 - Smaller shops are needed
 - Too many non-retail units
 - The site is in the flood plain where underground parking should not be considered
 - Town needs more leisure facilities
 - Pedestrianisation would help revitalise the centre
 - Conservation Area setting and heritage assets need to be managed appropriately

Technical Assessments – The Causeway / Old River Lane

Bishop's Stortford Town Centre Planning Framework (Allies and Morrison, 2016)

- 12.5 The emerging Town Centre Planning Framework was commissioned to consider the potential opportunities presented by this town centre location. While the Framework currently remains in preparation, initial advice has been provided to help with the Plan-making process.
- 12.6 The Framework considers that this site is an exciting opportunity to strengthen the town's retail, leisure and community offer with a high quality scheme that sits comfortably between the historic environment and town centre green spaces. This location provides the opportunity to create new, and improve existing connections between the town centre and the Castle Gardens, make improvements to Link Road, provide new frontages and enhance the setting of prominent buildings within the centre, such as Coopers.
- 12.7 The Framework also considers opportunities such as partial pedestrianisation, the creation of new parking areas, streets and public spaces and ways of managing traffic flows through the town such as the 'switching-off' of the gyratory system. New connections should be created to link the town centre to other key locations such as across the river to the Mill Site and Good Yard site.
- 12.8 In terms of uses, the Framework considers a number of potential uses such as retail, office, residential on upper floors, parking, cultural and community facilities which could include a 'civic hub' which could provide services such as GP surgery or polyclinic, Council customer service centre, nursery and gym for example.

Strategic Flood Risk Assessment (JBA Consulting, 2016)

- 12.9 The primary flood risk on this site is from the River Stort itself, which runs along the eastern edge of the site. 83% of the site falls within Flood Zone 2 and 13% within

Flood Zone 3, and the site is identified as having surface water flood risk issues. Factoring in climate change, there may be an increase in the extent of surface water flooding and fluvial flooding.

- 12.10 In terms of implications for development, the site is currently protected by two privately-owned embankments and is the only site considered in the Flood Risk Assessment that would benefit from formal flood defences. Therefore this will need to be taken into account in the masterplanning of this site, including the consideration of the potential for flooding to impact on safe access and egress from the site. Development may need to consider the provision of safe refuge in the event of occupiers being unable to evacuate.

Identification of Site Constraints – The Causeway / Old River Lane

Flood Plain

- 12.11 While land within the Link Road is outside Flood Zone 3b, there has been evidence of flooding in the past on this site. Therefore development proposals will need to provide resilience against flooding.

Conservation Area

- 12.12 The site lies within the Bishop's Stortford Town Centre Conservation Area, and is adjacent to several visually prominent listed buildings and the Scheduled Monument at Waytemore Castle. The development will need to ensure that these heritage assets are protected and enhanced where possible.

Green Wedge / Local Green Space

- 12.13 The site is adjacent to the green wedge that runs from the town centre outwards to and beyond the A120 bypass. The green wedge will be designated as a Local Green Space as it provides land for informal and formal recreation as well as containing features that are valuable to wildlife. However, as the wedge separates two neighbourhoods, it will be necessary for the creation of a sustainable route through or around the wedge and to ensure cycling and pedestrian access between the neighbourhoods.

Stakeholder Engagement – The Causeway / Old River Lane

- 12.14 There has been considerable engagement by key stakeholders in the preparation of the Town Centre Planning Framework which will continue as the Framework is finalised. The consultants have engaged with the Town Council and other local stakeholders including through a wider public consultation exercise. The consultants have also worked with Hertfordshire County Council Highways, Transport Modelling and Passenger Transport Officers in order to understand opportunities and constraints within the highway network.

Developer Meetings and Information – The Causeway / Old River Lane

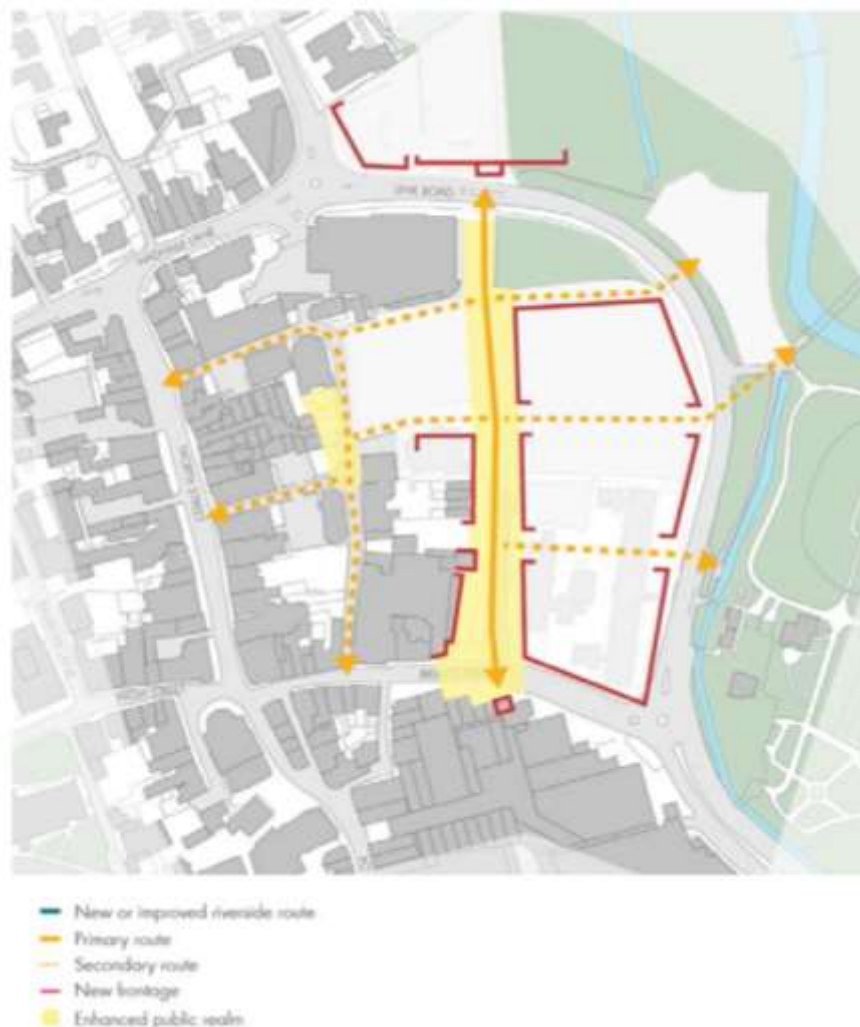
- 12.15 The Council is the land owner and no developer or site promoter is currently in place. The Council will prepare more detailed proposals for the development in due

course, fully informed by the emerging policy in this plan and the guidance in the finalised Town Centre Planning Framework.

Land Uses and Proposals – The Causeway / Old River Lane

- 12.16 As stated in paragraph 11.22, there are no proposals in place as to the form of development. Therefore, this assessment sets out what the site is expected to provide.

Figure 17: The Causeway / Old River Lane Site Illustrative Concept Diagram from the emerging Town Centre Planning Framework (not binding on the Council)



Infrastructure Needs – The Causeway / Old River Lane

- 12.17 The development of this site will require the re-provision of parking if displaced to another equally accessible location. As with the Goods Yard site, there needs to be an appropriate balance between a policy approach which supports the town centre through parking provision and one which seeks to discourage traffic in the constrained town centre and in the vicinity of the Air Quality Management Area at the Hockerill junction. Resilience against flooding will also need to be planned for.

While there are no proposals for the site at this time, the list below sets out anticipated infrastructure requirements:

- a mix of house type and size;
- provision of affordable housing;
- retail, leisure and B1 office floorspace;
- 'civic hub', including D1 uses such as a GP surgery
- replacement town centre parking;
- sustainable transport measures, both through improvements to the existing walking and cycling networks in the locality and enhanced passenger transport services;
- high quality design which respects the Conservation Area location, incorporating landscaping and tree planting;
- a network of public spaces and routes, creating quality linkages to the existing town, to parking areas and towards the Local Green Space;
- utilities, including sewage networks and integrated communications infrastructure to facilitate home working;
- sustainable Drainage Systems (SuDs), including flood mitigation and resilience measures; and
- all necessary on-site and appropriate off-site infrastructure.

Implementation – The Causeway / Old River Lane

- 12.18 Given the importance of this site, a comprehensive masterplanning process will be required, which takes account of other opportunities in the town such as the Mill Site and the Goods Yard. It is therefore not anticipated that development will start on this site until later in the Plan period. Depending upon the final form of development proposals it may be possible to provide up to 100 new homes on the site.

13. East of Manor Links

Introduction

- 13.1 This site was first considered in the Preferred Options District Plan Consultation. At the time, the site promoter put forward a proposal for 150 homes on land which is currently used as a driving range and an area of disused land to the rear of properties on Manor Links. Subsequent to the consultation, the Golf Club has chosen to retain the driving range and therefore a smaller parcel of land is now available for development. Initial assessment indicates that this site could accommodate approximately 50 new homes.

Site Location Map Figure 18: Site Location – East of Manor Links



Consultation Responses – East of Manor Links

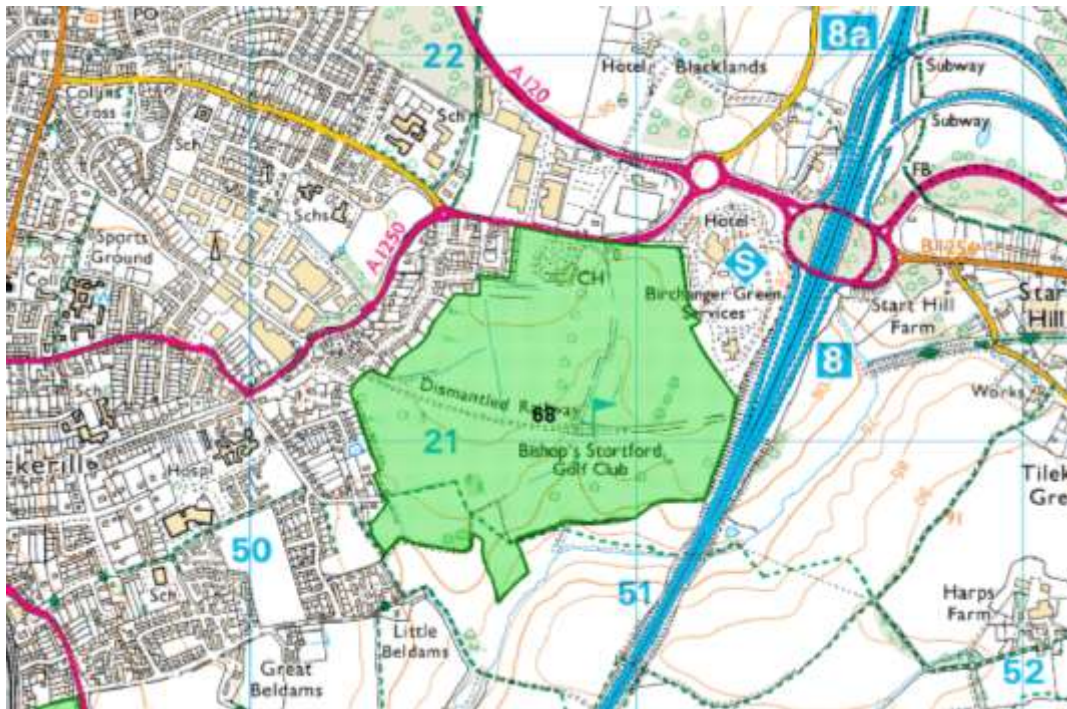
- 13.2 A number of comments were received in respect of the East of Manor Links site at the 2014 Preferred Options Consultation stage. The main issues raised related to (in no particular order):
- Objection against loss of Green Belt
 - Loss of tranquillity
 - Road insufficient width to service this site
 - Dunmow Road access not safe, conflicts with school drop-off
 - Too far from the town centre to walk or cycle, existing routes too narrow or are through private access
 - Insufficient healthcare to serve new residents
 - Protected species on-site
 - Too close to Stansted Airport, new homes will suffer from noise
 - Support for retention of areas of ecological interest
 - Will require an upgrade to the sewage network

Technical Assessments – East of Manor Links

Green Belt Review (Peter Brett Associates, 2015)

- 13.3 Parcel 68 covers the Bishop's Stortford Golf Club land in its entirety. The site is currently within the Green Belt, forming the eastern-most part of Bishop's Stortford, bounded by Dunmow Road to the north, the M11 and Birchanger Green Services to the east, Manor Links to the west and open land to the south. A summary of the assessment of Parcel 68 is included below.

Figure 19: Green Belt Parcel – East of Manor Links



(Source: Peter Brett Associates, 2015)

- 13.4 The Review concluded that Parcel 68 makes a slight/negligible contribution to the purpose of checking the unrestricted sprawl of large built up areas. The Review stated that the Parcel constrains the outward growth of the town, though the M11 to the east provides a well-defined edge further from the town which would provide containment. The parcel made no contribution to preventing towns from merging into one another or to preserving the setting and special character of historic towns.
- 13.5 The Review concluded that the Parcel makes a slight/negligible contribution to the purpose of safeguarding the countryside from encroachment. The Review stated that the Parcel comprises a golf course crossed by a disused railway, part of which is a Local Wildlife Site. Green Belt constrains development from extending into this area, although its character is not that of open countryside. The Review concluded that the Parcel makes no contribution to preserving the setting and special character of historic towns. As the Parcel did not score highly against any of the purposes, the Parcel scored 'high' in terms of its suitability as an area of search for development.
- 13.6 As discussed in the Development Strategy Chapter, the Council has a duty to meet its identified housing need and, due to the lack of brownfield opportunities, there is a consequential need to release some Green Belt land in order to achieve sustainable development in the district. While the Green Belt Review concludes that the Parcel has a high suitability as an area of search for development, it is not considered appropriate to release any more land than required for development from the Green Belt. The emerging proposal for the site will need to provide features and a design approach that creates a clear outer boundary.

Transport Modelling, 2016

- 13.7 Hertfordshire County Council have advised that the proposal for 150 homes was assessed in the Harlow and Stansted Gateway Transportation Model and no particular issues were identified beyond local access which could be dealt with through a planning application. A proposal for 50 homes would therefore also have no particular issues.

Identification of Site Constraints – East of Manor Links

Green Belt

- 13.8 The site is currently in the Green Belt. It is acknowledged that this development will require the loss of Green Belt land.

Wildlife

- 13.9 The disused railway line that runs east to west to the south of the site was identified as a Local Wildlife Site for its grassland properties. It should be noted that the Local Wildlife Site was declassified in 2014 as the area meeting the criteria is too small. While there may be no designated site on the proposed area of land, due to the undisturbed nature of the scrubland, there may be species of ecological interest present, therefore an ecological survey should be undertaken.

Access through Manor Links

- 13.10 Concern was raised through the consultation that Manor Links itself would be unsuitable to accommodate additional vehicle movements associated with the proposed development. Manor Links has direct access to Dunmow Road and is an entirely residential road with single yellow lines, which facilitates the free flow of vehicles. In addition, all properties have driveways. When the road was constructed, two access points were built in, complete with turning space and visibility splays to enable the creation of access to this site. These access points are of sufficient width to accommodate service and emergency vehicles.

Other Constraints

- 13.10 There are two drainage channels that form the boundary of the smaller proposed site. These will need to be considered in preparing the layout of the site.

Stakeholder Engagement – East of Manor Links

- 13.11 Given the relative small scale of this site, it was not considered necessary to hold a stakeholder workshop. However, engagement has been undertaken with key stakeholders through the Plan-making process and direct from the site promoter which is evidenced in documents submitted to the Council.

Developer Meetings and Information – East of Manor Links

- 13.12 In order to assist in its deliberations, the Council invited further information from landowners, developers and agents in the form of Delivery Statements which form

the basis of draft Statements of Common Ground. These statements in their final form will contain details about required infrastructure and utilities and will be used to support the submission of the Plan to the Planning Inspectorate. The site promoter has provided an illustrative layout and indicative breakdown of house size and mix, a transport assessment, and a Draft Statement of Common Ground which sets out the various discussions with key stakeholders, proposed infrastructure and mitigation measures.

Land Uses and Proposals – East of Manor Links

- 13.13 The site will be a predominantly residential scheme with an area of public space separating two culs-de-sacs, which will facilitate cycle and pedestrian routes connecting the two parts of the site.

Figure 20: Illustrative Site Layout – East of Manor Links



Infrastructure Needs – East of Manor Links

- 13.14 There is minimal infrastructure required to facilitate this development. The Draft Statement of Common Ground indicates that improvements can be made to the entrance to Manor Links from Dunmow Road and a new pedestrian crossing can be provided. Off-site contributions will be required for education purposes.

Implementation – East of Manor Links

- 13.15 Given the lack of constraints on this site, it is anticipated that development of 50 homes could start soon after the adoption of the Plan and be complete within two years. The site promoter has suggested that the whole area of land submitted to the Council originally for the 150 home proposal should be removed from the Green Belt to facilitate future development. However as this land is currently not available, it is considered that only the land required to support this development should be removed from the Green Belt in the Plan.

14. The Mill Site

Introduction

- 14.1 The Mill Site occupies a strategic location between the railway station and the town centre and fronting the River Stort. While acknowledging that not all the properties on the site are associated with the Mill, are in Mill usage or in single ownership, for ease of reference, the site is collectively known as the Mill Site. In the long term, the opportunities for sensitive mixed-used development are significant, as set out in the Mill Site Development Brief (2011). However, at present there is no indication that the Mill owners are seeking to relocate to an alternative site. Therefore, this appraisal considers two eventualities; if the occupier of the milling operation wishes to relocate at some point during the plan period; or if only the non-milling use land within the site comes forward for development. For example, the Council is aware that part of the site known as Stonemasons Yard is available for development, independent of the rest of the site. Given the importance of the Mill Site as a whole, it is considered that proposals for parts of the site should not prejudice the ability to plan comprehensively for the site as a whole and will be expected to reflect the provisions of the policy.

Figure 21: Site Location – The Mill Site



Consultation Responses – The Mill Site

- 14.2 A number of comments were received in respect of the Mill Site at the 2014 Preferred Options Consultation stage. The agents representing the landowner responded to the Preferred Options Consultation, objecting to many of the proposed policy criteria. Although the landowner has no intention to bring forward any alternative uses to the current operation, they wanted to ensure they have flexibility

to facilitate future development should their intentions change. In addition, other issues were raised regarding the site (in no particular order):

- Site should provide opportunities for moorings;
- Site provides opportunity to deliver housing in an accessible location;
- Support for the creation of new public realm and pedestrian options, including the widening of Station Road Bridge for pedestrians;
- Support for retention and renovation of the heritage assets such as the Registration Office and Conservation Area;

Technical Assessments – The Mill Site

Bishop’s Stortford Town Centre Planning Framework (Allies and Morrison, 2016)

- 14.3 The emerging Town Centre Planning Framework has provided specific initial advice in relation to the Mill Site. The importance of this site in terms of creating connections between the station and the town centre should be recognised. Opportunities to improve the riverside environment should be maximised along with strengthening connectivity for pedestrians from the station to the town centre and along the river corridor. Connections between the site and the Anchor Street Leisure Park should be enhanced.
- 14.4 The emerging advice suggests that this site could come forward in two stages, separating the operational and non-operational Mill Site. The site is ideally located to create a new leisure and retail quarter with an active public realm fronting the river. New mooring opportunities may be appropriate along with commercial and residential uses. The design of new development should reflect the riverside character, taking reference from the historic mill and industrial riverside buildings in Bishop’s Stortford.

Identification of Site Constraints – The Mill Site

River Stort and Flood Risk

- 14.5 The River Stort is a key asset for the town. Running along the entire west side of the site, it provides a key opportunity to improve the riverside environment, create a riverside access directly to the town centre and create a unique public realm. As the site in total is not available for development at this current time and therefore it is unclear what form development might take, a Strategic Flood Risk Assessment has not been undertaken. However, being adjacent to the River Stort, there is evidence of surface water flooding. Therefore, any proposals will need to ensure resilience against flooding and a detailed flood risk assessment will be necessary to inform any proposal.

Legibility through the site

- 14.6 Given the location of the site between the station and the town centre, it is important that the site is easy to navigate and allows visitors to understand how to get to other parts of the town centre. Views of landmarks should be retained and routes should be direct and well signposted.

Stakeholder Engagement – The Mill Site

- 14.7 As the site is currently not being promoted for development, there has not been a specific stakeholder workshop to discuss this site. However, engagement has been undertaken with key stakeholders through the Plan-making process.

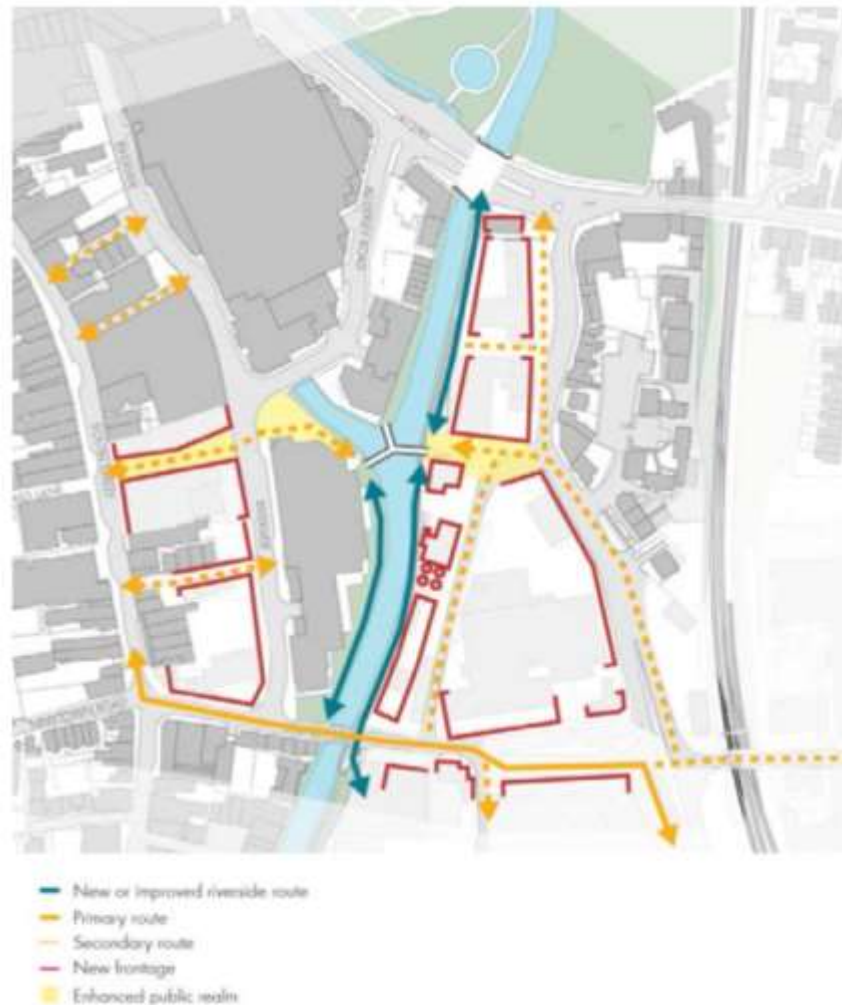
Developer Meetings and Information – The Mill Site

- 14.8 In order to assist in its deliberations, the Council invited further information from landowners, developers and agents in the form of Delivery Statements which form the basis of draft Statements of Common Ground. These statements in their final form will contain details about required infrastructure and utilities and will be used to support the submission of the Plan to the Planning Inspectorate. As the site is currently not being promoted for development no specific meetings have been held with site promoters or landowners.

Land Uses and Proposals – The Mill Site

- 14.9 Given the importance of the site in terms of its location, it is considered prudent to set out in planning policy terms what the Council thinks is an appropriate mix of uses on the site. Should the site come forward for development, the development should comprise a new riverside hub of leisure and commercial uses with active frontages, with B1 offices and residential uses on upper floors. The river frontage could also provide opportunities for residential moorings.

Figure 22: The Mill Site Illustrative Concept Diagram from the emerging Town Centre Planning Framework (not binding on the Council)



Infrastructure Needs – The Mill Site

14.10 In order to support development on this site, the list below sets out the minimum infrastructure requirements:

- new footbridge crossing the River Stort, enabling the site to operate as a connecting route between the town centre to the west and the station to the south;
- the retention and enhancement of listed buildings;
- a design which reflects the riverside and industrial mill heritage;
- a network of public spaces, pedestrian and cycle routes, and a high quality riverside environment, landscaping and tree planting;
- opportunities for mooring and a mix of residential size;
- provision of affordable housing;
- contributions towards a new station forecourt and public transport hub;
- utilities, including sewage networks and integrated communications infrastructure to facilitate home working;
- sustainable Drainage Systems (SuDs), including flood mitigation and resilience measures; and

- all necessary on-site and appropriate off-site infrastructure.

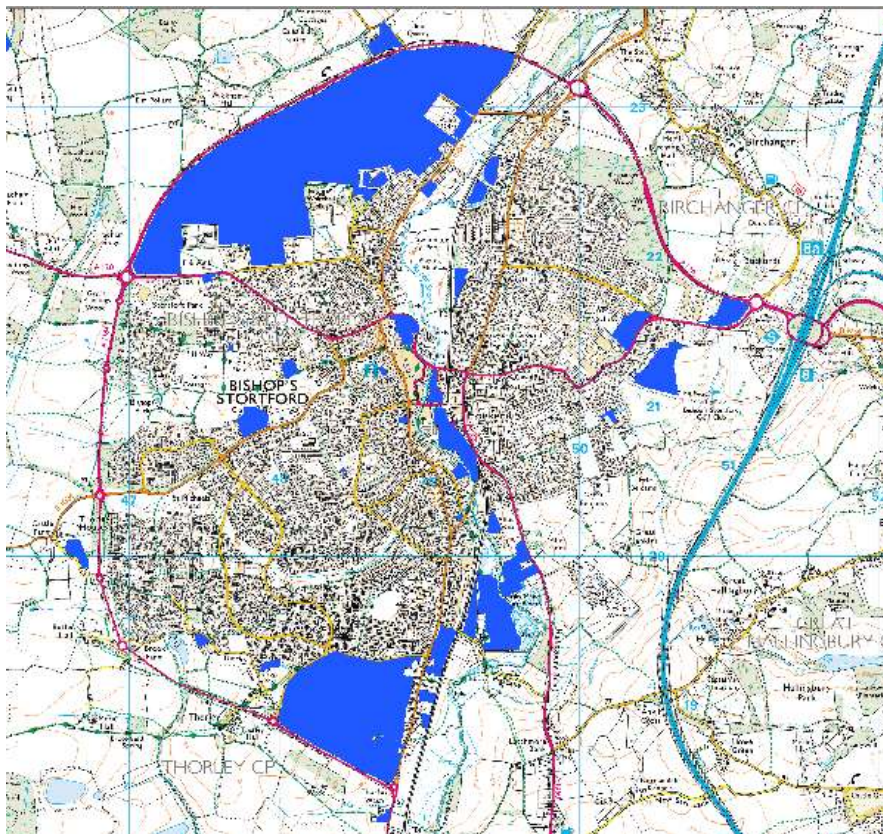
Implementation – The Mill Site

14.11 As indicated in paragraph 13.4, the emerging Town Centre Planning Framework suggests that the development of this site could occur in two stages. The non-operational part of the site could be brought forward for development in advance of the operational Mill. However, the proposal should not prejudice the proper planning of the site as a whole. The Plan does not allocate a particular number of dwellings, nor estimate when or if development will come forward during the Plan period.

15. Consideration of Alternative Sites

15.1 As part of the Plan-making process it is necessary to consider whether there are alternative options to the proposed development. As identified by Paragraph 1.1, the Supporting Document of the Preferred Options District Plan assessed a number of Areas of Search to inform the Preferred Options consultation. In addition, a large number of sites were also submitted to the Council through the ‘Call for Sites’ process. Figure 23 below illustrates the location of sites considered through the Strategic Land Availability Assessment.

Figure 23: SLAA Sites in and around Bishop’s Stortford



15.2 These sites have been considered in detail in the SLAA Report presented to the District Planning Executive Panel on 25th August 2016. Where representations

were received on these sites in the Preferred Options Consultation, they have been considered in the Bishop's Stortford Issues Report which was presented to the District Planning Executive Panel on 8th September 2016.

- 15.3 It is clear that the majority of alternative sites in and around Bishop's Stortford are relatively small, are located in the green wedges, or are outside the town (in Uttlesford). Individually and collectively they would not be capable of providing an alternative to the proposed development strategy considered in this appraisal.
- 15.4 One alternative approach that was raised through the consultation has been given consideration. The alternative proposed is to not locate development to the south of the town on Green Belt land and direct this development to the rural area. This approach has been considered in the village development strategy. It has been determined that there are few locations within the District's rural area that can accommodate development, and those locations that can are not capable of accommodating the same level of development.
- 15.5 The Sustainability Appraisal (SA) for the District Plan considers this point in detail, testing an option whereby no Green Belt release occurs around the District's towns and the equivalent number of homes is directed towards the rural area beyond the Green Belt. This equates to approximately 3,050 homes (800 of which would be from Bishop's Stortford). The SA indicates that this is an inherently unsustainable and undeliverable option. No single site is available to accommodate this level of development, thereby requiring dispersal across a number of locations. This dispersed approach would result in development which would not create the economies of scale to provide new facilities and infrastructure such as schools and bus services for example, and would result in significant increases in journeys by car. Such an approach will be contrary to the NPPF which requires local authorities to plan for sustainable patterns of development.
- 15.6 The NPPF states that Green Belt boundaries can only be amended in exceptional circumstances, through the preparation or review of a Local Plan (paragraph 83). There is no definition in the NPPF of what constitutes exceptional circumstances, as this will vary for each locality.
- 15.7 In East Herts there is a combination of factors that exist locally that together constitute the exceptional circumstances that require the Council to amend its Green Belt boundaries. This includes the high level of housing need, including affordable homes, exacerbated by a significant backlog of unmet need, and the lack of suitable alternative locations to the north of the District.
- 15.8 Chapter 3 (The Development Strategy) therefore sets out that the challenging level of housing need cannot be met in a sustainable way without undertaking a carefully planned review of the Green Belt. As such approximately 6% of the District's Green Belt has been removed in order to help meet a significant proportion of the housing need, both within this Plan period and beyond.

16. SA Objectives

- 16.1 The Sustainability Appraisal is an integral part of Plan-making. This Settlement Appraisal forms part of the Sustainability Appraisal process as it considers the impacts arising from development, and a consideration of alternative options. To assist the broader District-Wide Sustainability Appraisal, each of the urban extension options and the proposed development strategy for each East Herts town has been assessed against the Sustainability Appraisal Framework as updated by the Strategic Housing Market Area Spatial Options Distribution work. The appraisal, below, of proposed development in Bishop's Stortford describes how the sites will meet the objectives as set out in the Sustainability Appraisal Framework.

Air Quality

- 16.2 There is an existing Air Quality Management Area (AQMA) in Bishop's Stortford at the Hockerill junction. As there are two sites within the town centre that the Plan anticipates coming forward for development, it is acknowledged that there may be impacts on this junction through increased vehicle movements. Therefore the policy for each site requires mitigation to be provided in the form of enhancement of existing and provision of new bus routes and priority given to walking and cycling. In addition, the Town Centre Planning Framework is considering options such as the creation of more direct routes, and 'switching-off' the one-way gyratory system, which effectively encourages vehicles to circulate the town rather than using more direct routes.
- 16.3 At a more strategic level, the transport modelling undertaken to inform the planning of a new junction 7a on the M11 shows a reduction in the number of vehicles using the A120 and A1184 and provides an alternative route for vehicles from the south of the town wishing to access the M11.

Biodiversity and Green Infrastructure

- 16.4 The proposed allocations in the town centre will see significant improvement in biodiversity value through the creation of urban planting and landscaping and enhancements to the riverside environment. For the three greenfield sites, north, east and south of the town, the integration of existing landscape features and the creation of multi-functional green infrastructure will minimise and mitigate harm caused by development. Sustainable drainage features such as filtration beds will have beneficial effects on water quality, which is particularly important for the Bishop's Stortford South site which is upstream of the Thorley Flood Pound Site of Special Scientific Interest.

Community and Wellbeing

- 16.5 The proposed housing mix and tenure will support all age ranges, including the needs of an ageing population. Land to the north and south will facilitate the provision of new schools and neighbourhood services providing convenience retail and community facilities such as healthcare, minimising the need to travel to access day-to-day services. New employment areas will also provide local job opportunities, again reducing the need to travel. The creation of cycle and

pedestrian networks will provide healthier modes of travel. All sites will provide financial contributions towards healthcare and education, among other things.

Economy and Employment

- 16.6 The proposed developments to the north and south of the town and the town centre sites will provide new employment opportunities, and the town is well located for Stansted Airport and Harlow where substantial employment opportunities exist.

Historic Environment

- 16.7 The proposed town centre allocations provide opportunities to enhance existing heritage assets and to provide development that reflects better the riverside and industrial mill heritage of the town. In terms of archaeology, site assessments will be required prior to development as there is evidence of artifacts of regional importance in and around Bishop's Stortford.

Housing

- 16.8 The proposals will provide for a wide range of house types and mix, including an appropriate quantum and mix of affordable housing and family sized homes. In addition, opportunities for self-build and specialist accommodation such as care homes and retirement living will be provided. In the town centre, potential new river moorings could provide an alternative form of accommodation.

Land

- 16.9 The town centre sites provide the opportunity to make the effective use of land through high density, accessible development. Whilst it is not anticipated that there are mineral deposits to the north and south of the town, an assessment will need to be made at the planning application stage in order to ascertain whether any material can be extracted to be used during construction.

Landscape

- 16.10 The proposed allocations are all well contained and any significant impact on landscape quality can be mitigated through careful design and the use of landscape buffers and planting. Mature tree belts and hedgerows will be maintained and enhanced and layouts will incorporate tree-lined avenues and areas of open space and water features. The topography will dictate the layout and density of development to maintain a softer outer edge and to ensure building heights on areas of higher ground are appropriate.

Low Carbon Development

- 16.11 The developments to the north and south of the town will provide neighbourhood centres, schools and employment opportunities, thus reducing the need to travel to access day-to-day services. All sites will incorporate footpaths and cycleways and facilitate new or improved bus routes connecting to the town centre, thus facilitating the use of alternative modes of transport. All the sites will comprise buildings that incorporate sustainable building features exceeding building standards. On-site flood attenuation measures will be a fundamental element of the overall design of

each site, particularly the town centre sites, incorporating natural drainage features and the creations of suds and swales where possible.

Transport

- 16.12 The town centre sites are highly accessible being in close proximity to the rail station which provides direct services to London and Cambridge, and public transport routes. Each edge of town site will provide enhancements to or create new bus routes that will connect to the town centre and beyond the town. It is acknowledged that development in the town and the wider area will increase the amount of car borne traffic using the local road network which is constrained particularly at peak times. However congestion is not by itself a reason to prevent development unless it creates an impact that is severe in either highway safety or other terms. Local junction improvements will help to mitigate local impacts, while improvements to the strategic road network are also planned to Junction 8 of the M11 along with the provision of a new Junction 7a on the M11

Water

- 16.13 Methods to minimise water consumption through construction and occupation of the development will be utilised and appropriate connections to water supply and waste water networks are possible. The wider Rye Meads Sewage Treatment Works has capacity with local improvements to connection points required. The use of sustainable drainage such as filtration beds and swales will improve the water quality of surface water discharging into watercourses.

17. Conclusion

- 17.1 The Settlement Appraisal for Bishop's Stortford has demonstrated that, having considered the reasonable alternatives, eight sites should be proposed for allocation within the District Plan in order to deliver between 3,829 and 4,412 homes.
- 17.2 Two sites are located within the Green Belt at present. However, a carefully planned review of Green Belt in East Herts is considered justified by the significant level of housing need that exists across the District. In the case of Bishop's Stortford, these proposed sites are considered to be the most preferable, taking into consideration sustainability and Green Belt criteria.
- 17.3 Officers acknowledge that the assessment of the area to the south of Bishop's Stortford would not in itself suggest that the land would be suitable for Green Belt release. However, it should be noted that the Green Belt Review should be viewed in its overall context, whereby the majority of land assessed throughout the district via this process resulted in similar ratings being achieved. Therefore, of necessity, the imperative of meeting the District's housing need brings into deliberation locations that may not otherwise have been considered suitable to be brought forward for development.

- 17.4 All developments in the town will provide a range of housing mix and tenures, including affordable housing. Development will also provide enhanced education and health services in the town. New retail, leisure and commercial floorspace will increase the offer of the town helping to ensure that it remains competitive. Meanwhile, improvements to local road junctions will help to mitigate the impact of increased traffic, while improvements to Junction 8 of the M11 and the provision of a new Junction 7a on the M11 will alleviate congestion on the strategic road network.
- 17.5 It is considered that this presents a positive and sustainable strategy for Bishop's Stortford.

Chapter 5 Bishop's Stortford

5.1 Introduction

- 5.1.1 Bishop's Stortford is the largest town in the District, with an important sub-regional role related to its retail, leisure and employment offer, which is underpinned by good transport links including the M11 and the railway. It is designated as a Principal Town Centre which reflects the wide range of uses and services present, and its role as a destination for visitors from beyond the town. The town retains a very attractive historic core and has a thriving town centre with a regular market. It has a reputation for good schools and also benefits from numerous areas of green space in the Stort corridor and 'Green Wedges' which penetrate the town. The town is unusual in East Herts in having several remaining brownfield redevelopment opportunities, although the scale of housing need in the local area also necessitates the provision of well-designed urban extensions on land adjoining the town.
- 5.1.2 The main components of the development strategy for Bishop's Stortford are as follows:
- 5.1.3 **Housing:** additional homes will be provided which will consist of a mix of dwelling types and sizes to ensure that the need of residents to access a balanced housing market across all life stages is catered for. The provision of affordable housing will allow emerging households to remain living in Bishop's Stortford in accommodation suited to their needs, while essential opportunities are provided for those seeking retirement accommodation or who are in need of specialist care.
- 5.1.4 **Education:** the educational needs of the town will be achieved at primary level via the expansion of existing facilities at Thorley Hill Primary School, together with the provision of up to three new primary schools at Bishop's Stortford North and one new primary school in Bishop's Stortford South. One new secondary school will be provided at Bishop's Stortford North and one at Bishop's Stortford South.
- 5.1.5 **Transport:** measures introduced within new development will encourage the use of sustainable travel, particularly through the enhancement of walking and cycling links and through the

provision of new bus routes linking new sites to the town centre and beyond. The impact of development on the local road network will be mitigated through upgrades to existing junctions, while improvements to Junction 8 on the M11, and the provision of a new Junction 7a on the M11 which will reduce pressure on the A120 and A1184. The Bishop's Stortford Town Centre Planning Framework will set out initiatives to tackle traffic congestion in and around the town.

5.1.6 **Economic Development:** the proximity of Bishop's Stortford to the M11 and Stansted Airport makes it an attractive place for businesses and new employment opportunities in the town will be provided by a new business park at Bishop's Stortford South. As the District's Principal Town Centre, there is a stronger retail offer than other centres in the District, and has good prospects for expansion. Development at the Causeway/Old River Lane will potentially increase the retail and leisure offer of the town and strengthen links across the river to the railway station to encompass the Goods Yard and, in the long-term, possibly also the Mill Site. An attractive pedestrian circuit from the station through the town centre will enhance the vitality and viability of the town centre as a retail and leisure destination.

5.1.7 **Character:** Bishop's Stortford will preserve its market town character and the quality of the town's historic core will be respected in development proposals. The provision of a new Country Park at Hoggate's Wood and Ash Grove will extend the pattern of Green Wedges which frame the urban area. The A120 and A1184 will continue to provide a boundary to development and retain the town's compact character. Long views to historic features, such as church spires, will be preserved through the layout of new streets. Development of the Goods Yard (and possibly in the long-term, the Mill Site) and other development sites which may come forward, will enhance the River Stort corridor, creating public spaces along the river. The urban extension at Bishop's Stortford South will provide an attractive new gateway to the town. Masterplans produced in collaboration with the local community will promote high quality design.

5.2 Neighbourhood Plans

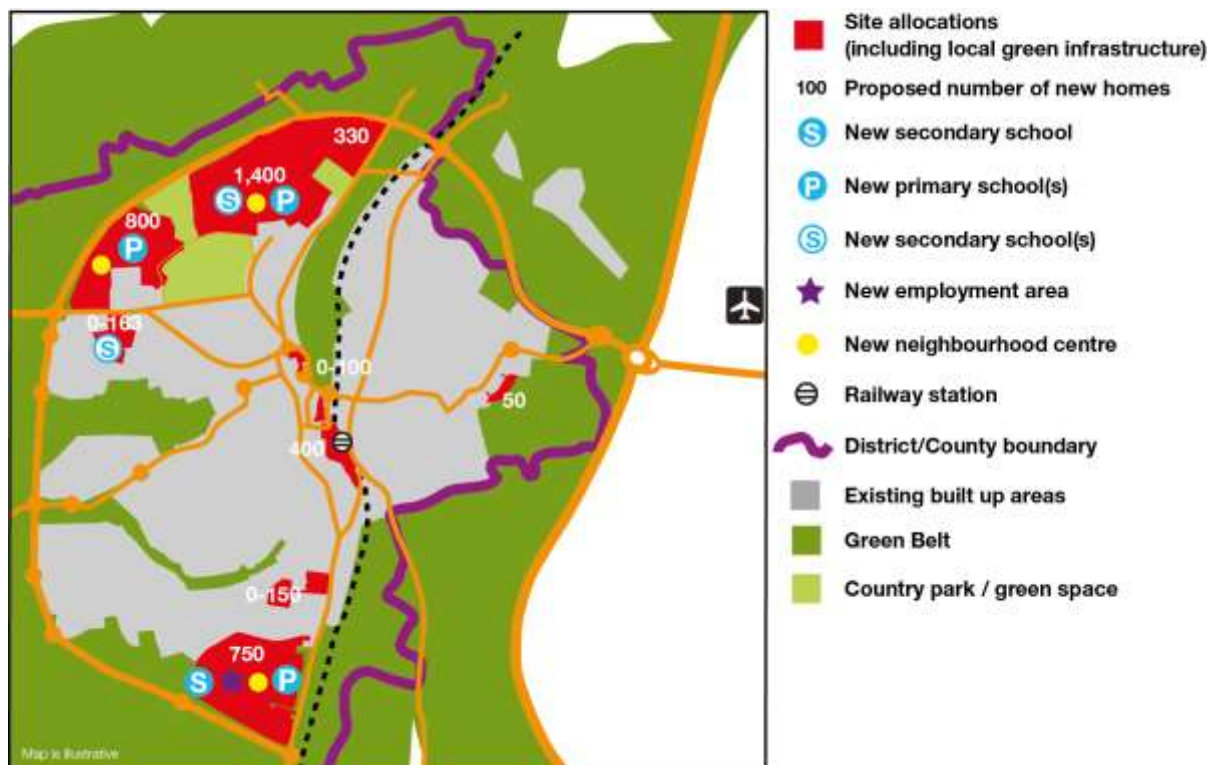
5.2.1 There are two neighbourhood plans covering this area. The Bishop's Stortford Silverleys and Meads Neighbourhood Plan was adopted in 2015, the first in East Herts. This Plan forms part of the development plan and, therefore, proposals within the Neighbourhood Plan Area must also accord with the provisions of the Bishop's Stortford Silverleys and Meads Neighbourhood Plan.

5.2.2 The Bishop's Stortford Neighbourhood Plan for All Saints, Central, South and part of Thorley has been submitted to East Herts Council. Consultation on the Plan is expected to commence in late September/early October 2016. The Plan is expected to reach examination in late 2016 and a referendum in early 2017. Once adopted, this Plan will also form part of the development plan and therefore proposals within the Neighbourhood Plan Area must also accord with the Bishop's Stortford Neighbourhood Plan for All Saints, Central, South and part of Thorley.

5.3 Development in Bishop's Stortford

5.3.1 The main features of the policy approach to development in Bishop's Stortford are shown on Figure 5.1 below:

Figure 5.1 Key Diagram for Bishop's Stortford



5.3.2 Reflecting the District Plan Strategy, the following policies will apply to applications for new development in Bishop's Stortford in addition to general policies in the Plan:

Policy BISH1 Development in Bishop's Stortford

I. In accordance with Policy DPS3 (Housing Supply 2011-2033), Bishop's Stortford will accommodate between 3,729 and 4,142 homes at the following sites:

- (a) 2,529 homes at Bishop's Stortford North, including 2,200 on ASRs 1 to 4 and 329 at ASR 5 as set out in Policy BISH3;
- (b) 0-163 homes at the Reserve Secondary School site at Hadham Road contingent on the provision of a secondary school site at Bishop's Stortford North, as set out in Policy BISH4;
- (c) 750 homes at Bishop's Stortford South as set out in Policy BISH5;
- (d) 0-150 homes at the Bishop's Stortford High School site at London Road contingent on the relocation of the school to Bishop's Stortford South as set out in Policy BISH6;
- (e) 400 homes at the Goods Yard set out in Policy BISH7;
- (f) 0-100 homes at The Causeway/Old River Lane as set out in Policy BISH8;
- (g) 50 homes at land East of Manor Links as set out in Policy BISH9; and
- (h) A proportion of the overall windfall allowance for the District.

II. In the longer term, land at the Mill Site may come forward for mixed-use development as set out in Policy BISH10.

5.3.3 Within Bishop's Stortford's urban area it is expected that a proportion of the overall windfall allowance for the District will be accommodated. These sites will be determined on an individual basis, taking into account the policies of the Plan. In addition, there are several sites with planning permission that are already counted as part of the District's committed delivery of new homes.

Bishop's Stortford Town Centre Planning Framework

- 5.3.4 Bishop's Stortford has the largest shopping centre in the District and provides a wide range of convenience and comparison shopping opportunities in addition to other service needs. This offer serves both its own residents and those of surrounding settlements. Bishop's Stortford's markets, food and drink facilities and successful night-time economy also draw patronage from wider locations.
- 5.3.5 The Council is in the process of preparing a Bishop's Stortford Town Centre Planning Framework which will guide future development in the town centre and provide a comprehensive approach to managing the impact and potential of growth on the town centre. It is anticipated that the Framework will set out a number of strategies to increase the floorspace of the retail core of the town, and to address issues associated with parking, pedestrian accessibility, traffic calming, and traffic flows.
- 5.3.6 To ensure that the aims of the Bishop's Stortford Town Centre Planning Framework can be met, where development is proposed in town centre locations in Bishop's Stortford, Policy BISH11 will apply.
- 5.3.7 It is intended that the Framework will be adopted by East Herts Council as a Supplementary Planning Document in due course.

Policy BISH2 Bishop's Stortford Town Centre Planning Framework

Development proposals in Bishop's Stortford Town Centre will be expected to conform with, and positively contribute to, proposals contained within the Bishop's Stortford Town Centre Planning Framework, as appropriate.

Bishop's Stortford North (Policy BISH3)

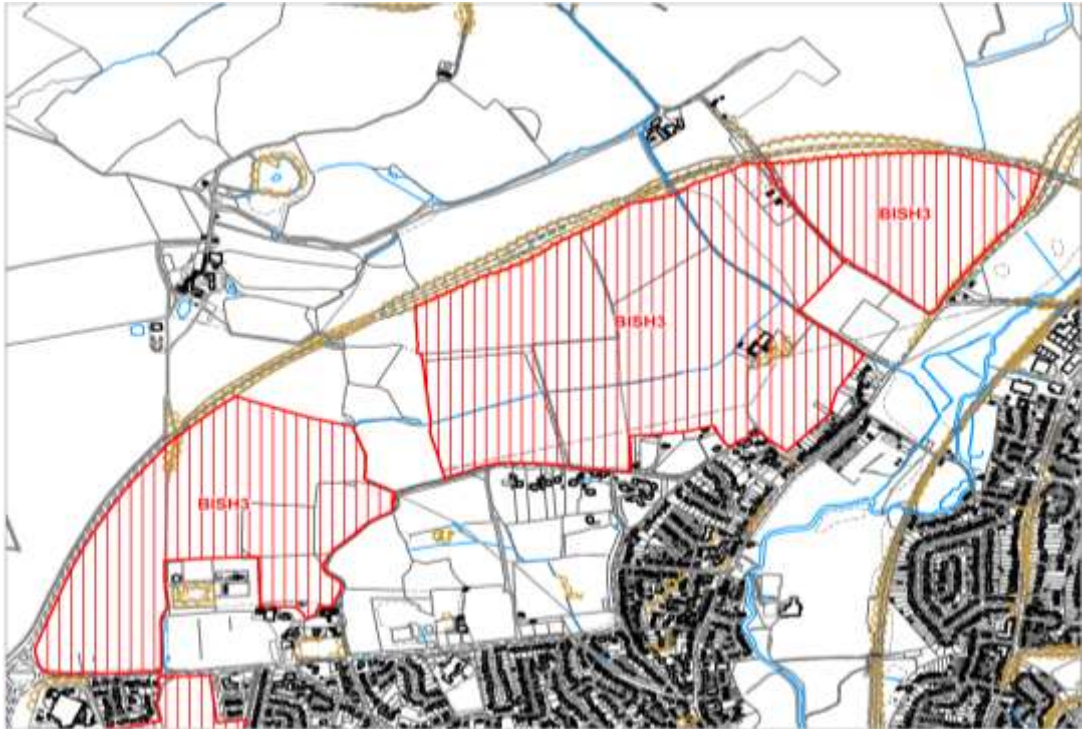
- 5.3.8 To the north of the town, land inset from the Green Belt and safeguarded for future development in previous Local Plans is allocated for mixed-use development. Outline planning permission has been granted on ASRs 1 to 4 for 2,200 homes, with detailed permission granted on ASRs 1 and 2 for 850 homes (the western neighbourhood). ASRs 3 and 4 are earmarked for 1,350 homes,

but there are currently no detailed plans for this eastern neighbourhood. Outline planning permission has been granted for 329 homes on ASR 5.

5.3.9 As a large proportion of this site remains without detailed permission it is considered prudent to set out the requirements of this site in the context of the settlement of Bishop's Stortford and the District as a whole, reflecting the approved applications where appropriate and emerging policy.

5.3.10 The site as a whole will comprise a mix of house types, including provision for specialist and accessible homes, starter homes and self-build properties. The site will provide two neighbourhood centres to accommodate day-to-day retail, service and community facility needs, employment areas, up to two primary schools and a secondary school of at least six forms of entry. If the secondary school is constructed on this site, the resulting housing number will be reduced. In addition, the site will provide enhanced walking and cycling links, green infrastructure and open spaces along with new and enhanced bus routes. Development in this location will offer benefits for the wider community by providing new sports pitches and funding off-site infrastructure where necessary, such as additional burial space, upgrades to sewage networks, support of the Rhodes Centre and museum for example.

Figure 5.2 Site Location: Bishop's Stortford North



Policy BISH3: Bishop's Stortford North

Land at Bishop's Stortford North will accommodate approximately 2,529 homes between 2017 and 2033 (650 homes to be delivered between 2017 and 2022; 1,250 homes between 2022 and 2027; and, 300 homes between 2027 and 2033).

I. West of Hoggate's Wood, will accommodate around 850 homes in accordance with planning application 3/13/0804/OP. The site shall include the provision of:

- (a) a primary school of two forms of entry;
- (b) a neighbourhood centre providing a range of local shops and services;
- (c) a new roundabout on Hadham Road to provide vehicular access to the area;
- (d) outdoor playing pitches at Hoggate's Wood;
- (e) equipped areas for play as part of a wider green infrastructure strategy;
- (f) a sustainable transport spine road (bus route, cycleway and pedestrian use only) connecting Hadham Road through to the land east of Hoggate's Wood, a hierarchy of local roads, including walking and cycling networks.

II. Land between Hoggate's Wood and Farnham Road will accommodate 1,350 new homes between 2017 and 2033. Prior to the submission of a detailed planning application, a Masterplan will be collaboratively prepared, involving site promoters, landowners, East Herts Council, Hertfordshire County Council, Bishop's Stortford Town Council and other key stakeholders. This document will further be informed by public participation in the process. Development in this location shall include the provision of:

- (a) a primary school of two forms of entry with an Early Years facility;
- (b) a secondary school of at least six forms of entry, with potential to expand to eight forms of entry to accommodate future needs. The layout of the schools should be designed to accommodate community use of indoor and outdoor sports facilities;
- (c) vehicular access by a new roundabout on the A120 and also by a new junction on Rye Street;
- (d) continuation of the sustainable transport spine road connecting to the western neighbourhood to access points created for the eastern neighbourhood;
- (e) a neighbourhood centre comprising a mix of local shops and facilities, business incubator units, health facilities, and a play area/open space;
- (f) a new employment allocation to provide modern business premises attractive to B1 employment uses;
- (g) preservation and enhancement of Foxdells Farm as a focus for a public space and appropriate community or leisure facilities; and

III. In order to ensure that the site is planned and delivered comprehensively, any application for development on part of the site will be assessed against its contribution to the masterplan, and will not prejudice the implementation of the site as a whole.

IV. East of Farnham Road, 329 homes shall be provided in accordance with planning permission 3/13/0886/OP. The site shall include the provision of:

- (a) a site for a one form entry primary school, unless appropriate provision is made elsewhere;
- (b) public open and amenity space and appropriate landscaping, including land to the east of Hazelend Road;

- (c) access and highway improvements, including a new roundabout junction to provide suitable access to the site and surrounding land;
- (d) a sustainable transport route through the site;
- (e) essential on-site infrastructure including utilities.

IV. The development across the whole site is expected to address the following provisions and issues:

- (a) a range of dwelling type and mix, in accordance with the full provisions of Policy HOU1 (Type and Mix of Housing);
- (b) Affordable Housing in accordance with Policy HOU3 (Affordable Housing);
- (c) a care home/ flexi-care or sheltered properties in accordance with the provisions of Policy HOU6 (Specialist Housing for Older and Vulnerable People);
- (d) Self Build Housing in accordance with Policy HOU8 (Self Build Housing);
- (e) responding to the existing landform, incorporating existing landscaping within new streets, paths and spaces, creating quality local green infrastructure which maximises opportunities presented by existing landscape features including watercourses, to create net gains to biodiversity through additional planting and other measures. Proposals in the vicinity of Farnham Bourne and Bourne Brook will need to reflect the River Stort Catchment Management Plan;
- (f) a new Country Park shall be provided to include the Green Belt land north and south of Dane O' Coy's Road, including Hoggate's Wood and Ash Grove, including long-term arrangements for management and maintenance. Other open spaces and play areas should also be provided throughout the site;
- (g) the rural character of Dane O' Coys Road shall be preserved, and access along the road shall be reserved for pedestrians and cyclists only;
- (h) a network of well-signposted pedestrian and cycle routes between the development and the town centre;
- (i) a circular bus route connecting with the bus/rail interchange in the town centre;

- (j) the preservation of strategic long views of St. Michael's Church and All Saints, Hockerill, and views of mature trees;
- (k) easy access to the village of Farnham must be maintained along Farnham Road, including during the construction period;
- (l) necessary utilities, including integrated communications infrastructure to facilitate home-working, and upgrades to the localised sewerage network;
- (m) the delivery of all other necessary on-site and appropriate off-site infrastructure;
- (n) other policy provisions of the District Plan, Bishop's Stortford Town Council's Neighbourhood Plan for Silverleys and Meads Wards and any other relevant matters, as appropriate.

Reserve Secondary School Site, Hadham Road (Policy BISH4)

- 5.3.11 One of the main challenges facing development in Bishop's Stortford is the funding and provision of additional secondary school capacity. In order to enable flexibility and avoid jeopardising opportunities for successful resolution of the school sites issues, land has been reserved for an additional secondary school at land adjacent to Patmore Close off Hadham Road.
- 5.3.12 Designated for this purpose in the 2007 Local Plan, part of this site was granted permission for 163 homes in 2014, on the condition that the County Council confirms it is the legal owner of the proposed secondary school site provided as part of the second phase of the Bishop's Stortford North development within ASRs 3 and 4. As detailed planning permission has yet to be secured for this second phase of development, the delivery of the secondary school is currently uncertain. Therefore, this site will be retained for a secondary school until detailed planning permission is granted for the delivery of the Bishop's Stortford North secondary school and the County Council is able to fulfil the above condition.

Figure 5.3 Site Location: Reserve Secondary School Site, Hadham Road



Policy BISH4 Reserve Secondary School Site, Hadham Road

- I. The Reserve Secondary School Site, Hadham Road will only be released for residential development if sufficient additional secondary school capacity is provided within the Bishop’s Stortford North development.
- II. In the event that the site comes forward for non-educational development, 163 new homes will be provided between 2022 and 2027 in line with the approved planning application 3/14/2144/OP.
- III. The development is expected to address the following provisions and issues:
 - (a) a range of dwelling type and mix, in accordance with the full provisions of Policy HOU1 (Type and Mix of Housing);
 - (b) Affordable Housing in accordance with Policy HOU3 (Affordable Housing);
 - (c) retention and enhancement of the outdoor playing pitches in the western parcel of the site for community purposes, providing connections to neighbouring residential areas where possible. Skelleys Wood in the south of the site will be retained and connections made between it and

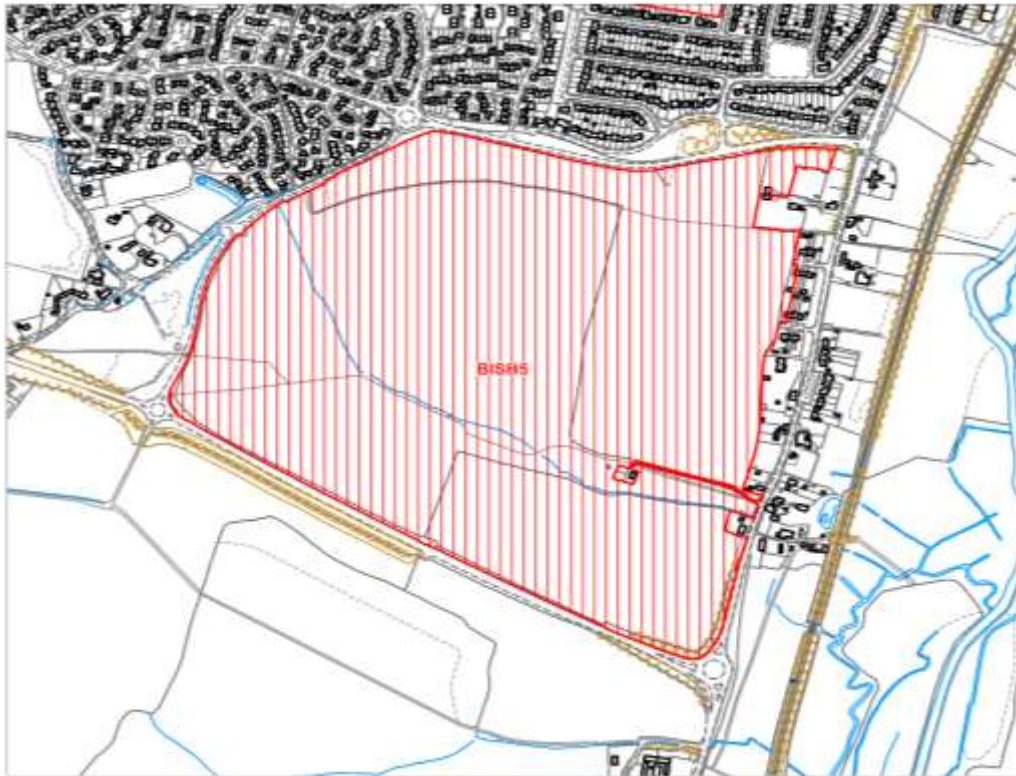
the site through buffer planting, tree-lined streets and it will be subject to appropriate management.

- (d) necessary utilities, including integrated communications infrastructure to facilitate home-working, and upgrades to the localised sewerage network;
- (e) sustainable drainage and provision for flood mitigation;
- (f) access arrangements and wider strategic and local highways mitigation measures;
- (g) sustainable transport measures which encourage walking and cycling, and enhanced passenger transport services;
- (h) public amenity green space and play areas;
- (i) the delivery of all other necessary on-site and appropriate off-site infrastructure;
- (j) other policy provisions of the District Plan, Bishop's Stortford Town Council's Neighbourhood Plan for Silverleys and Meads Wards and any other relevant matters, as appropriate.

Bishop's Stortford South (Policy BISH5)

- 5.3.13 Development of a mixed-use urban extension is required in this area in order to meet housing needs and to facilitate the provision of a new primary and secondary school. To encourage self-containment and improve sustainability, the provision of a neighbourhood centre including local shops will be required. To provide for local and wider job opportunities, a modern business park will provide a gateway to the south of the town.
- 5.3.14 A collaborative approach to masterplanning which forms the basis of a Supplementary Planning Document is considered to be essential to the preparation of this site to guide development in the short and longer term. Close working will be required with the County Council and other parties to ensure essential infrastructure such as schools are provided in a timely manner.

Figure 5.4 Site Location: Bishop's Stortford South



Policy BISH5 Bishop's Stortford South

I. Land to the south of Whittington Way is allocated as a residential-led mixed-use development, to accommodate approximately 750 new homes by 2027.

II. Prior to the submission of any planning application, a Masterplan will be collaboratively prepared, involving site promoters, landowners, East Herts Council, Hertfordshire County Council, Bishop's Stortford Town Council, Thorley Parish Council and other key stakeholders. This document will further be informed by public participation in the process.

III. The development is expected to address the following provisions and issues:

- (a) a range of dwelling type and mix, in accordance with the full provisions of Policy HOU1 (Type and Mix of Housing);
- (b) Affordable Housing in accordance with Policy HOU3 (Affordable Housing);
- (c) a care home/ flexi-care or sheltered properties in accordance with the provisions of Policy HOU6 (Specialist Housing for Older and Vulnerable People);

- (d) Self Build Housing in accordance with Policy HOU8 (Self Build Housing);
- (e) education facilities, including land for a two-form entry primary school with an Early Years facility with room to expand to three-forms of entry; land for a six-form entry secondary school (co-educational or single sex), with room to expand to eight-forms of entry to meet longer term needs;
- (f) indoor and outdoor sports facilities will be provided as part of the secondary school (where available for community use) and/or by other means;
- (g) a neighbourhood centre in an accessible location, providing local retail and community uses including a healthcare facility;
- (h) a 4-5 hectare business park of landmark design, in an accessible location;
- (i) appropriate access arrangements, which will not include direct vehicular access on to London Road, and wider strategic and local highways mitigation measures, including improvements along London Road;
- (j) sustainable transport measures which encourage walking and cycling through the site and beyond, including:
- the provision of cycleways and footways that provide links into the existing residential areas;
 - appropriate treatment of the Hertfordshire Way, including the retention of an open southerly aspect;
 - enhancement of other Public Rights of Way, making new east-west connections across London Road;
 - enhanced passenger transport services to the town centre and station, including the creation of a sustainable route through the site;
- (k) responding to the existing landform, incorporating existing landscaping within new streets, paths and spaces, creating quality local green infrastructure which maximises opportunities presented by existing landscape features including watercourses, to create net gains to biodiversity through additional planting and other measures;
- (l) sustainable drainage and provision for flood mitigation;
- (m) a variety of public open spaces across the site, including the provision of play areas and opportunities for indoor and outdoor health and fitness activities, as well as space for wildlife;

- (n) connections to existing green infrastructure assets such as Southern Country Park and the Thorley Flood Pound SSSI and nature reserve;
 - (o) layout and orientation of spaces to facilitate views and vistas beyond the site, in particular towards Thorley Church, protecting and enhancing the setting of listed buildings along London Road where necessary;
 - (p) necessary utilities, including integrated communications infrastructure to facilitate home-working, and upgrades to the localised sewerage network;
 - (q) the delivery of all other necessary on-site and appropriate off-site infrastructure;
 - (r) other policy provisions of the District Plan, Bishop's Stortford Town Council's Neighbourhood Plan for All Saints, Central, South and parts of Thorley Wards and any other relevant matters, as appropriate.
- IV. In order to ensure that the site is planned and delivered comprehensively, any application for development on part of the site will be assessed against its contribution to the masterplan, and will ensure that such development would not prejudice the implementation of the site allocation as a whole.

The Bishop's Stortford High School Site, London Road (Policy BISH6)

- 5.3.15 Should the Bishop's Stortford High School relocate to the land at Bishop's Stortford South, the existing school site will be released for residential development. However, land will be set aside on the site to accommodate the expansion of Thorley Hill Primary School and to retain some of the land for public open space.

Figure 5.5 Site Location: The Bishop's Stortford High School Site, London Road



Policy BISH6: Bishop's Stortford High School Site, London Road

I. The Bishop's Stortford High School Site will only be released for residential development if sufficient secondary school capacity is provided within the Bishop's Stortford South development or elsewhere in the town.

II. In the event that the site comes forward for non-educational development, approximately 150 new homes will be provided between 2017 and 2022.

III. The development is expected to address the following provisions and issues:

- (a) a range of dwelling type and mix, in accordance with the full provisions of Policy HOU1 (Type and Mix of Housing);
- (b) Affordable Housing in accordance with Policy HOU3 (Affordable Housing);
- (c) retention and enhancement of part of the outdoor playing pitches in the western parcel of the site for community purposes, providing connections to neighbouring residential areas where possible;

- (d) necessary utilities, including integrated communications infrastructure to facilitate home-working, and upgrades to the localised sewerage network;
- (e) sustainable drainage and provision for flood mitigation;
- (f) access arrangements and wider strategic and local highways mitigation measures. Where a new access is required to serve the western part of the site, consideration will need to be given to the relationship of this new access and neighbouring uses, including residential and school uses;
- (g) sustainable transport measures which encourage walking and cycling, and enhanced passenger transport services;
- (h) public amenity green space and play areas;
- (i) the delivery of all other necessary on-site and appropriate off-site infrastructure;
- (j) other policy provisions of the District Plan, Bishop's Stortford Town Council's Neighbourhood Plan for All Saints, Central, South and parts of Thorley Wards and relevant matters, as appropriate.

The Goods Yard (Policy BISH7)

5.3.16 The Goods Yard occupies a strategic location between the railway station and the town centre. Occupying a riverside location, the Goods Yard offers a unique opportunity to create a new area of attractive public realm which connects the river to the station through to the town centre. The northern part of the site lies within the town centre boundary and is appropriate for a mix of retail and commercial development, exploiting its highly accessible location through the creation of a commuter and business hub. This part of the site marks the entry to the town from the station and as such should provide a landmark building or public realm that respects the town's heritage and the site's riverside and railway environment.

Figure 5.6 Site Location: Land at the Goods Yard



Policy BISH7: The Goods Yard

I. The Bishop's Stortford Town Centre Planning Framework will form the basis of a Supplementary Planning Document, which will be used to inform the masterplanning of this site.

II. In the context of this, the Goods Yard will provide for at least 400 homes between 2017 and 2027, as part of a mixed use development including a significant amount of B1a office floorspace and small-scale retail provision. Development of the site shall include:

- (a) a range of dwelling type and mix, in accordance with the provisions of Policy HOU1 (Type and Mix of Housing), including residential apartments on the upper floors of commercial uses and 3-4 bed family homes;
- (b) Affordable Housing in accordance with Policy HOU3 (Affordable Housing);
- (c) Self Build Housing in accordance with Policy HOU8 (Self Build Housing);
- (d) sustainable transport measures which encourage walking and cycling through the site and beyond, including:

- the provision of cycleways and footpaths that provide links through the site, connecting the river to the station, the station and the town centre via the Anchor Street Leisure Park and improved Station Road bridge, and to provide opportunities to cross the railway line;
 - the creation of a new station forecourt that provides a safe and attractive public realm which facilitates the movement of people between various modes of transport;
 - enhanced passenger transport services to the town centre and station, including the creation of a sustainable route through the site;
- (e) high quality, vehicle-free public realm along the river frontage, enabling improved access to the town centre along the waterway. The orientation of buildings will retain an open riverside environment, facilitate views of local landmarks and provide a direct route between the Goods Yard footbridge and the station;
- (f) landscaping and tree planting to reduce urban heat island effects, including retention and enhancement of the area of woodland to the south of the site;
- (g) improvements to the riverside environment in line with the River Stort Catchment Management Programme;
- (h) high quality design which incorporates local material pallets and provides varying character and style across the site, incorporating sustainable design features;
- (i) residential blocks which have access to private amenity green space, separate from parking areas;
- (j) multistorey parking which is appropriately screened and separated from residential buildings, ensuring homes have pleasant outlooks;
- (k) necessary utilities, including integrated communications infrastructure to facilitate home-working, and upgrades to the localised sewerage network;
- (l) the delivery of all other necessary on-site and appropriate off-site infrastructure;
- (m) other policy provisions of the District Plan, Bishop's Stortford Town Council's Neighbourhood Plan for All Saints, Central, South and parts of Thorley Wards and relevant matters, as appropriate.

III. On-site car parking will need to be sufficient to meet the needs of the uses proposed, without encouraging travel to the town centre in order to avoid worsening traffic congestion and further impact on the Hockerill Air Quality Management Area. Parking will need to be provided to serve the town centre as well as commuters.

IV. Site promoters must work with Hertfordshire County Council as the Highways and Transport Authority to undertake transport modelling to assess and provide suitable mitigation measures against vehicular congestion in the town centre.

The Causeway/Old River Lane (Policy BISH8)

- 5.3.17 This is an important site located within the town centre of Bishop's Stortford. As such it provides a valuable opportunity to create a range of new uses in the town as well as the potential for residential development. The masterplan for this site will need to ensure there is an appropriate balance between land uses, including parking, whilst creating an extension to the existing historic town centre. Subsequent to the delivery of this site, the Primary Shopping Frontage will be extended to encompass this site if appropriate.
- 5.3.18 The Bishop's Stortford Town Centre Planning Framework will be adopted as a Supplementary Planning Document and will be used to inform the masterplan for this site. The District Council, as landowner, will work proactively with key stakeholders in bringing this site forward.

Figure 5.7 Site Location: Land at Old River Lane



Policy BISH8: The Causeway/Old River Lane

I. The Bishop's Stortford Town Centre Planning Framework will form the basis of a Supplementary Planning Document, which will be used to inform the masterplanning of this site.

II. The site will provide for a mixed use development and up to 100 new homes between 2022 and 2027.

III. The site will represent an extension of a historic market town. Therefore the masterplan will address the following:

- (a) the creation of a high quality mixed-use development of retail, leisure uses, along with a 'civic hub' of other commercial and community uses such as GP surgery and B1 office floorspace;
- (b) the creation of new streets and public spaces;
- (c) connections between the site and the existing town centre, towards Castle Gardens and to parking areas off Link Road;
- (d) a reduction in traffic speed along Link Road, with new or enhanced crossing points;

- (e) a design and layout which respects the significance and relationship of the site with designated and un-designated heritage assets, within the Bishop's Stortford Town Centre Conservation Area;
- (f) key frontages such as Coopers will be enhanced by new public realm and buildings that reflect locally distinctive materials and design;
- (g) On-site car parking will need to be sufficient to meet the needs of the uses proposed, without encouraging travel to the town centre in order to avoid worsening traffic congestion and further impact on the Hockerill Air Quality Management Area. Parking will need to be provided to serve the town centre as well as commuters.

IV. In addition, the development is expected to address the following provisions and issues:

- (a) a range of dwelling type and mix, in accordance with the provisions of Policy HOU1 (Type and Mix of Housing), including residential apartments on the upper floors of commercial uses;
- (b) Affordable Housing in accordance with Policy HOU3 (Affordable Housing);
- (c) new utilities infrastructure where necessary;
- (d) planning obligations including on and off-site developer contributions where necessary and reasonably related to the development; and
- (e) other policy provisions of the District Plan, Bishop's Stortford Town Council's Neighbourhood Plan for Silverleys and Meads Wards and relevant matters, as appropriate.

East of Manor Links (Policy BISH9)

- 5.3.19 This site is located between the Golf Course and the existing urban area. A predominantly residential development in this location will contribute towards meeting short-term housing needs.

Figure 5.8 Site Location: East of Manor Links



Policy BISH9: East of Manor Links

I. Land to the east of Manor Links will provide 50 new homes between 2017 and 2022.

II. The development is expected to address the following provisions and issues:

- (a) a range of dwelling type and mix, in accordance with the provisions of Policy HOU1 (Type and Mix of Housing), including the provision of bungalows to the rear of Manor Links itself;
- (b) Affordable Housing in accordance with Policy HOU3 (Affordable Housing);
- (c) access arrangements onto Manor Links, wider strategic and local highways mitigation measures, including improvements to Dunmow Road at the entrance to Manor Links;
- (d) sustainable transport measures which encourage walking and cycling through the site, including the provision of a new pedestrian crossing point on Dunmow Road;
- (e) responding to the existing landform, incorporating existing landscaping within new streets, paths and spaces, creating quality local green infrastructure which maximises opportunities presented by existing

landscape features including watercourses, to create net gains to biodiversity through additional planting and other measures;

- (f) public amenity green space and play areas;
- (g) sustainable drainage and provision for flood mitigation;
- (h) necessary utilities, including integrated communications infrastructure to facilitate home-working, and upgrades to the localised sewerage network;
- (i) the delivery of all other necessary on-site and appropriate off-site infrastructure;
- (j) other policy provisions of the District Plan, Bishop's Stortford Town Council's Neighbourhood Plan for All Saints, Central, South and parts of Thorley Wards and relevant matters, as appropriate.

The Mill Site (Policy BISH10)

5.3.20 The Mill Site occupies a strategic location between the railway station and the town centre and fronting the River Stort. While acknowledging that not all properties on the site are associated with or in mill usage, for ease of location, the site is collectively known as the Mill Site. In the long term, the opportunities for sensitive mixed-used development are significant, as set out in the Mill Site Development Brief (2011). However, at present there is no indication that the Mill owners are seeking to relocate to an alternative site. Therefore, Policy BISH10 (The Mill Site) covers two eventualities; if the current occupants of the Mill wish to relocate at some point during the plan period; and if the remaining non-mill land within the site comes forward for development. Proposals for development on this and the adjoining landholding should reflect a comprehensive approach to the whole site.

5.3.21 Depending upon the masterplan and the consideration of uses on the site, it is anticipated that some residential uses could be provided on upper floors. At this stage therefore, it is not considered appropriate to allocate a particular number of homes for the site. However, Policy BISH10 provides a framework for the consideration of the site should the site come forward for development within the Plan period.

Figure 5.9 Site Location: Land at the Mill Site



Policy BISH10: The Mill Site

I. Reflecting the site’s town centre location and proximity to the station, should the site come forward within or beyond the Plan period, the Bishop’s Stortford Town Centre Planning Framework will form the basis of a Supplementary Planning Document, which will be used to inform the masterplanning of this site. This should be undertaken in a collaborative manner involving the District Council, Bishop’s Stortford Town Council and other key stakeholders.

II. Should the whole site, or any part of the site, come forward for development, the Mill Site shall include:

- (a) access along the river frontage connecting to the town centre via a new footbridge over the River Stort;
- (b) a new riverside hub of leisure and commercial uses with active frontages on the ground floor with residential and/or B1 office space on upper floors;
- (c) retention and enhancement of the most significant historic buildings, including improving the setting of the Registration Office and adjacent listed building, reflecting the site’s location within the Conservation Area;

- (d) high quality, vehicle-free public realm along the river frontage, enabling improved access to the town centre along the waterway. The orientation of buildings will retain an open riverside environment and building heights will avoid a 'canyon' effect;
 - (e) a direct pedestrian and cycle-friendly route between the station to the south of the site, along Dane Street towards a new bridge over the river, connecting to the town centre;
 - (f) high quality design which incorporates local material pallets and references the historic mill and industrial riverside heritage, incorporating sustainable design features;
 - (g) opportunities for mooring;
 - (h) landscaping and tree planting to reduce urban heat island effects;
 - (i) the retention of a suitable buffer strip adjacent to Station Road Bridge to enable bridge widening to provide safe and attractive access between the station and the town centre for pedestrians and cyclists;
- III. If residential uses are proposed on upper floors, they should provide:
- (a) a range of dwelling size, in accordance with the provisions of Policy HOU1 (Type and Mix of Housing), including some three-bed apartments;
 - (b) Affordable Housing in accordance with Policy HOU3 (Affordable Housing);
 - (c) necessary utilities, including integrated communications infrastructure to facilitate home-working; and upgrades to the localised sewerage network;
 - (d) the delivery of all other necessary on-site and appropriate off-site infrastructure;
 - (e) other policy provisions of the District Plan, Bishop's Stortford Town Council's Neighbourhood Plan for Silverleys and Meads Wards and relevant matters, as appropriate.

5.4 Employment in Bishop's Stortford

- 5.4.1 Bishop's Stortford is recognised as being well placed to provide new employment land, drawing upon opportunities presented by its proximity to Stansted Airport and its location within the M11 corridor. The employment strategy for Bishop's Stortford is to protect and enhance the existing employment areas, and

supplement these with new Employment Areas at Bishop's Stortford North and Bishop's Stortford South, and new employment generating uses at Old River Lane, the Mill Site and at the Goods Yard.

- 5.4.2 In addition, Millside Industrial Estate and Southmill Trading Estate have been formally designated as Employment Areas.
- 5.4.3 The Council understands that there is interest in expanding the Employment Area at Goodliffe Park off Stansted Road, which is within Uttlesford District Council.

Policy BISH11: Employment in Bishop's Stortford

I. In accordance with Policy ED1 (Employment), the following locations are designated as Employment Areas:

- (a) Raynham Road/Dunmow Road Industrial Estate (incorporating Stortford Hall Industrial Estate, The Links Business Centre, Raynham Road/Myson Way, Raynham Road West, and Raynham Road East between The Links Business Centre and Raynham Close);
- (b) Haslemere Estate;
- (c) Twyford Road;
- (d) Stansted Road (incorporating Goodliffe Park, Stort Valley Industrial Estate, and Birchanger Industrial Estate);
- (e) Woodside;
- (f) Millside Industrial Estate;
- (g) Southmill Trading Estate.

II. New Employment Areas will be identified in the following locations:

- (a) Bishop's Stortford North, as set out in Policy BISH3;
- (b) Bishop's Stortford South, as set out in Policy BISH5.

III. New employment opportunities will come forward through mixed-use development at the following locations:

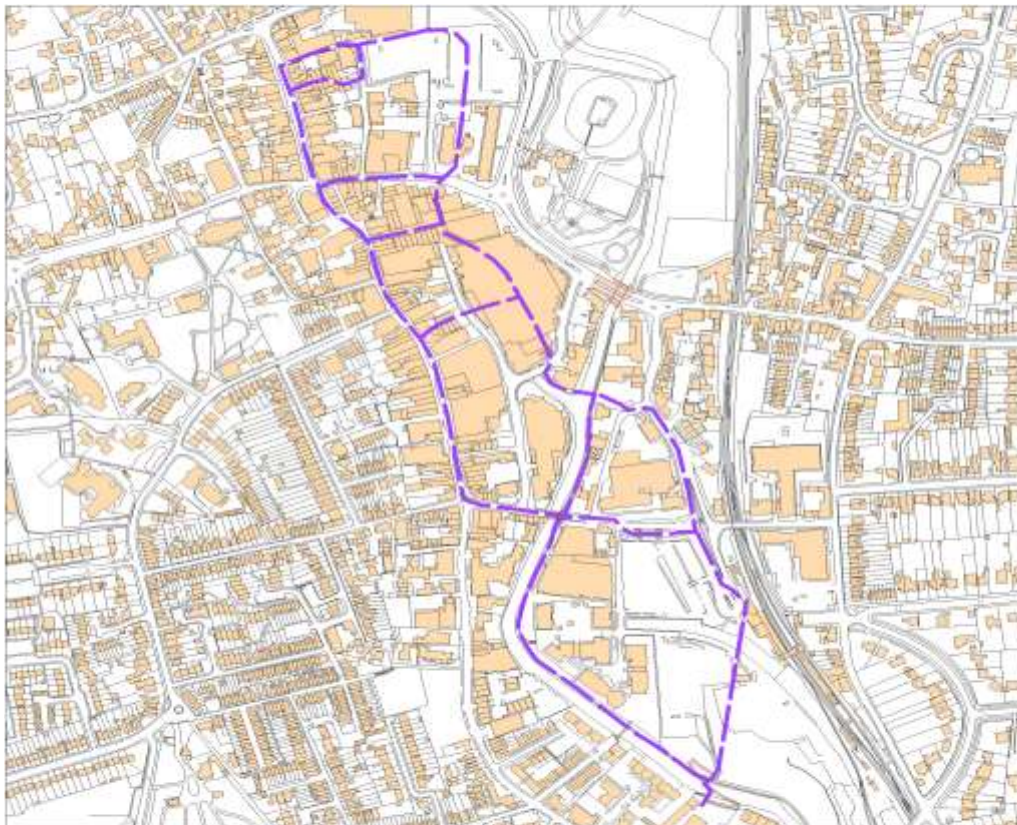
- (a) The Goods Yard, as set out in Policy BISH7; and
- (b) Old River Lane, as set out in Policy BISH8.

IV. The Mill Site in Bishop's Stortford will remain as a designated Employment Area until such time that the land is presented as being available for redevelopment. The site will then be subject to the provisions of Policy BISH10 and should be brought forward for redevelopment as part of a comprehensive masterplan.

5.5 Retail, Leisure and Recreation in Bishop's Stortford

5.5.1 A key part of the Framework is the creation and extension of pedestrian and cycle links between the town's various retail, leisure and cultural facilities, in particular, connecting the river, station and town centre. Figure 5.10 illustrates a pedestrian circuit connecting the town centre, through the Mill Site and towards the station and beyond towards the Rhodes Centre.

Figure 5.10 Pedestrian Circuit



5.5.2 Environmental enhancements will be sought to improve the attractiveness of the town centre as a retail and leisure destination. These could include a range of public realm enhancements including paving, signage and street furniture and an active river frontage. Supporting the town centre, local shopping needs will be

addressed through the designation of new Neighbourhood Centres.

- 5.5.3 Development in Bishop's Stortford and the surrounding area will result in an increased demand for local services and community facilities including, for instance, healthcare and education. Development proposals should contribute to the enhancement of existing provision to ensure that both new and existing residents in the town are able to access community facilities and vital services within Bishop's Stortford, thereby reducing the need to travel to other settlements. Reflecting this, development proposals will be considered in accordance with Policies CFLR7 (Community Facilities), CFLR8 (Loss of Community Facilities) CFLR9 (Health and Wellbeing) and CFLR10 (Education).
- 5.5.4 Improvements to local and strategic highway infrastructure and the creation of new public transport routes, cycleways and walking routes will increase connectivity through the town to the countryside beyond. While developments will protect and create new green infrastructure assets such as open spaces planting and sustainable drainage features.
- 5.5.5 For formal sport provision, new opportunities for indoor and outdoor sports will be created through the Council's Leisure Strategy and through Community Use Agreements with secondary schools. Development proposals will be considered in accordance with Policies CFLR1 (Open Space, Sport and Recreation) and in relation to the Council's most up-to-date evidence. The Council will also continue to work with Uttlesford District Council, together with other partners to identify opportunities to deliver new sports facilities for the town.
- 5.5.6 Bishop's Stortford's Green Wedges ('green fingers'), which penetrate the town, are a recognised local amenity, wildlife and leisure asset and have been designated as Local Green Spaces under Policy CFLR2 (Local Green Space). This designation provides protection for these valuable resources and ensures that development will not be allowed in such locations, other than in very special circumstances.

Policy BISH12: Retail, Leisure and Recreation in Bishop's Stortford

I. New retail and leisure facilities will be focused within the town centre and within the following locations:

- (a) the Goods Yard, in accordance with Policy BISH7;
- (b) the Old River Lane site, in accordance with Policy BISH8; and
- (c) the Mill Site, in accordance with BISH10;

II. Development proposals in Bishop's Stortford should seek to enhance the public realm and create connections between existing and new retail and leisure facilities, including the Rhodes Centre.

III. Opportunities to link into and extend the pedestrian circuit will be supported in principle and proposals that jeopardise such connections will be resisted.

IV. To provide for day-to-day convenience retail and service needs, new Neighbourhood Centres will be designated in the following locations:

- (a) Bishop's Stortford North, west of Hoggate's Wood, in accordance with Policy BISH3 (I);
- (b) Bishop's Stortford North, between Hoggate's Wood and Farnham Road, in accordance with Policy BISH3 (II).
- (c) Bishop's Stortford South, in accordance with Policy BISH5;

V. Opportunities to provide new indoor and outdoor sports facilities will be supported in principle in accordance with Policy CFLR1

VI. The Green Wedges in Bishop's Stortford are designated as Local Green Spaces, within which Policy CFLR2 (Local Green Space) applies.

EAST HERTS COUNCIL

DISTRICT PLANNING EXECUTIVE PANEL – 15 SEPTEMBER 2016

REPORT BY LEADER OF THE COUNCIL

EAST HERTS DRAFT DISTRICT PLAN – CHAPTER 10 – VILLAGES: RESPONSE TO ISSUES RAISED DURING PREFERRED OPTIONS CONSULTATION

WARD(S) AFFECTED: ALL

Purpose/Summary of Report

The purpose of this report is:

- To bring to Members' attention the issues raised through the Preferred Options consultation in connection with Chapter 10 (Villages) of the Draft District Plan Preferred Options version, together with Officer responses to those issues.

<u>RECOMMENDATIONS FOR DISTRICT PLANNING EXECUTIVE PANEL:</u> That Council, via the Executive, be advised that:	
(A)	the issues raised in respect of Chapter 10 (Villages) of the Draft District Plan Preferred Options, as detailed at Essential Reference Paper 'B' to this report, be received and considered; and
(B)	the Officer response to the issues referred to in (A) above, as detailed in Essential Reference Paper 'B' to this report, be agreed.

1.0 Background

1.1 The Council published its Draft District Plan Preferred Options for consultation for a period of twelve weeks between 27th February and 22nd May 2014. Several thousand comments were received through the consultation exercise from over a thousand stakeholders including statutory consultees and members of the public.

- 1.2 In order to manage these comments, the Council's agreed approach, as set out in its Statement of Community Involvement (October 2013), is to summarise the issues raised through the consultation and record how these issues have been used to inform the next draft of the District Plan.
- 1.3 This report presents the Issue Report for the Villages at **Essential Reference Paper 'B'**.

2.0 Report

- 2.1 The Issue Report summarises the issues raised through the Preferred Options Consultation and the issues are grouped according to the section of the Draft Plan they relate to. The table presents an officer response to each issue and sets out whether or not it is proposed that any subsequent proposed amendments to the text or policies of the draft Plan be made as a result.
- 2.2 As there have been significant advances in the technical evidence available to support the development strategy, and changes in local and wider circumstance since the publication of the Preferred Options version of the Draft Plan, it is considered appropriate that the Villages Chapter be rewritten to take these factors into account rather than presenting a 'track change' iteration of the previous version. Therefore, unlike the approach taken for the Topic Chapters, the Issue Report for the Villages Chapter does not specify a form of wording that any proposed amendment should take.
- 2.3 In consequence, it is likewise not proposed that amendments are shown in the form of 'track changes' for the Villages Chapter. Instead, a revised chapter, which incorporates any proposed necessary amendments to the Plan identified in the Issue Report, is included at Agenda Item 7, along with the Villages Appraisal.
- 2.4 The responses to the issues raised and the completion of further technical work, identify that, in the view of Officers, a small number of changes should be made to the village development strategy, from that proposed in the Draft District Plan Preferred Options.
- 2.5 An up to date assessment (August 2016) of village sustainability has been carried out and the Final Village Hierarchy Study was presented to the District Planning Executive Panel on 25th August 2016. This identified 8 Group 1 Villages and 29 Group 2 Villages

in the District. Policies VILL1 and VILL2 should be amended to reflect the final categorisation of villages outlined in this study.

- 2.6 Whilst the housing requirement to be delivered in villages remains the same at, at least 500 dwellings, it is now proposed that development across all villages will contribute to this figure, rather than just development from Group 1 Villages. This is due to there being a reduced number of villages located in the Rural Area Beyond the Green Belt identified as Group 1 Villages.
- 2.7 These five villages are the only villages that have a specific target (at least a 10% increase in housing stock) attributed to them and if these villages only delivered housing growth at this minimum level, it would amount to the delivery of just 327 dwellings. Therefore, it is proposed that the housing requirement for at least 500 dwellings to be delivered in the villages, is amended to include delivery from Group 2 and Group 3 Villages.
- 2.8 Finally, in recognition that all villages can make a contribution to the overall housing requirement for the District, it is the view of Officers that development identified in an adopted Neighbourhood Plan will be permitted in Group 2 and Group 3 Villages. For Group 2 Villages, small-scale development will be permitted where identified in an adopted Neighbourhood Plan. In Group 3 Villages located within the Rural Area Beyond the Green Belt this may include development on the periphery of the main built up area of the village. For Group 3 Villages, limited infill development will be permitted where identified in an adopted Neighbourhood Plan.
- 2.9 Members are therefore invited to agree the Issue Report, as detailed in Essential Reference Paper 'B' to this report, as a basis for informing a redrafted chapter on Villages in the final draft District Plan.
- 3.0 Implications/Consultations
- 3.1 Information on any corporate issues and consultation associated with this report can be found within **Essential Reference Paper 'A'**.

Background Papers

None.

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ESSENTIAL REFERENCE PAPER 'A'

IMPLICATIONS/CONSULTATIONS

Contribution to the Council's Corporate Priorities/ Objectives:	Priority 1 – Improve the health and wellbeing of our communities Priority 2 – Enhance the quality of people's lives Priority 3 – Enable a flourishing local economy
Consultation:	The Report refers to the Draft District Plan consultation carried out between 27 th February and 22 nd May 2014.
Legal:	None
Financial:	None
Human Resource:	None
Risk Management:	None
Health and wellbeing – issues and impacts:	The District Plan in general will have positive impacts on health and wellbeing through a range of policy approaches that seek to create sustainable communities.

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Issue Number	Issue	Officer Response
General Issues		
10.01	Infrastructure in the villages is already at breaking point without further development.	<p>No amendment to Plan in response to this issue</p> <p>The Council continues to work with infrastructure and service providers to determine the impact of new development on existing infrastructure in the villages. Financial contributions will be sought for the provision of enhanced/new infrastructure to mitigate the impact of development through S106 legal agreements, as appropriate.</p>
10.02	The proposed level of development in villages will have a detrimental impact on green belt land.	<p>No amendment to Plan in response to this issue</p> <p>Group 1 villages that are inset from the Green Belt are not required to deliver 10% growth. However, the revised policy does allow for a local Green Belt review in these locations through Neighbourhood Plans. Parish Councils should have regard to the potential impact on the Green Belt when preparing their plans.</p>
10.03	Bishop's Stortford Civic Federation comment that the strategy is not sustainable, villages will die unless they are allowed to expand and forcing the young and old to move to urban settlements because of a lack of suitable housing will turn villages into middle class, middle aged enclaves.	<p>No amendment to Plan in response to this issue</p> <p>It is considered that the revised village strategy provides an appropriate balance between the need to provide new homes in rural locations while also protecting their existing character.</p>
10.04	HCC considers that all the villages listed are historical settlements which contain designated and undesignated assets. The details of any archaeological assessment necessary will be dependent upon the nature of development proposal.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. Planning applications will be expected to be supported by the submission of an archaeological assessment where necessary.</p>
10.05	HCC consider that additional dwellings at each village location would not cause any particular traffic issues when considered in isolation. Where the large residential developments are likely to impact on roads known to be heavily congested (Watton-at-Stone, A602 & Standon, A120) consideration may need to be given to provision of financial contributions towards highway improvements.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. The Council will continue to work with the Highways Authority to identify solutions to mitigate the cumulative impact of development on the District's highway network. The Council supports the seeking of financial contributions towards highway improvements where appropriate.</p>
10.06	HCC comment that the proposed level of development will produce a requirement for an additional 1FE of school places across the villages. Specific information relating to the	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. The proposed development strategy for the villages has had regard to the ability of village schools to accommodate the pupil yield from new developments. Where village schools</p>

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	requirements for each village has been provided.	need to expand to accommodate additional pupils, financial contributions will be sought through a S106 legal agreement.
10.07	HCC broadly support the stance taken in relation to categorisation.	No amendment to Plan in response to this issue Support noted and welcomed.
10.08	English Heritage supports a vision that reflects the differing character and often sensitive settings of villages.	No amendment to Plan in response to this issue Support noted and welcomed.
10.09	There needs to be some reference to provision of new places of Public Worship.	No amendment to Plan in response to this issue It is unlikely that the level of development in villages would, in itself, require the provision of new places of worship. However, the District Plan does encourage the provision of new community facilities subject to certain criteria.
10.10	There needs to be a clearer stated intent that villages remain villages and that development not only within but adjacent to them must be proportionate to the current number of dwellings.	No amendment to Plan in response to this issue Comments noted. The level of development proposed in villages seeks to ensure that the identity of each village is retained. The policies relating to village development are criteria based; one of the criteria states that development should be of a scale appropriate to the size of the village.
10.11	The maps accompanying the District Plan have not amended the conservation areas following the Conservation Area Assessment.	Proposed amendment to Plan in response to this issue Comments noted. The Policies Map will be updated to reflect amendments made to Conservation Areas in the District.
10.12	Braughing Parish Council considers that the lack of employment in villages should be a reason to suppress growth at these locations. Development should be focused where employment opportunities are.	No amendment to Plan in response to this issue The vast majority of development will be delivered in locations that have access to employment opportunities. Villages are required to deliver 500 dwellings over the course of the Plan period to 2033.
10.13	Any village within 4/5 miles of a town boundary or centre of employment should be considered suitable for some development beyond that prescribed for Group 2 Villages.	Proposed amendment to Plan in response to this issue A Village Hierarchy Study has been prepared which assesses the overall level of sustainability of the District's villages. Accessibility to local service/employment centres is one of the criteria used in the assessment, both in terms of actual distance and accessibility by public transport. It is proposed that Group 3 villages will be identified as suitable locations for limited infill development that is identified through the Neighbourhood Planning process.

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10.14	How does the Council intend to liaise with local Parish Councils regarding the 10% increase?	<p>No amendment to Plan in response to this issue</p> <p>Where villages are expected to accommodate a 10% increase in housing stock, the Council will encourage and provide advice to Parish Councils in preparing Neighbourhood Plans to deliver this level of growth.</p>
10.15	Some villages have prepared Neighbourhood Plans, others have not. It must be ensured that thoughtful contributions in existing Village Design Statements are given consideration in planning.	<p>No amendment to Plan in response to this issue</p> <p>Where adopted, Neighbourhood Plans will form part of the development plan for the District and would therefore be afforded significant weight within the planning application process. Village Design Statements do not form part of the development plan but would still represent a material consideration.</p>
10.16	Village identities must be protected by the District Plan.	<p>No amendment to Plan in response to this issue</p> <p>The level of development proposed in villages seeks to ensure that the identity of each village is retained. A policy decision has been made to restrict development in the villages, given their important role in the overall rural character of the District. The Plan contains a protective policy framework for village development which will ensure the villages retain their identities and that the wider countryside is protected from inappropriate development.</p>
10.17	The Council should look to gain contributions for village parking schemes.	<p>No amendment to Plan in response to this issue</p> <p>It is not clear exactly what is meant by village parking schemes. Policy TRA3 (Chapter 18: Transport) concerns vehicle parking provision in new developments whilst the impact of development on existing parking provision is considered through the planning application process.</p> <p>Planning obligations are used as part of the planning application process to address specific planning issues and impacts arising from a development proposal and are intended to make acceptable a development that would otherwise be unacceptable in planning terms. They cannot be sought to finance solutions to existing issues.</p>
10.18	Parish Councils should have more influence in planning approval process.	<p>No amendment to Plan in response to this issue</p> <p>Parish Councils are a statutory consultee in planning applications and their comments are considered through the decision-making process. If a Parish Council produces a Neighbourhood Plan, it would become part of the statutory development plan and the policies within it would be used when determining planning applications.</p>

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10.19	Consideration should be given to the construction of a new “village of today”.	<p>No amendment to Plan in response to this issue</p> <p>Consideration was given to the potential to deliver new settlements in the earliest stages of plan making. However, it was considered that it would not be sustainable or deliverable to pursue such an approach. Limited development in existing villages can help sustain them by providing new opportunities for young people to access the housing market.</p>
10.20	The Council should look to prioritise those from the local village in allocation of affordable housing.	<p>No amendment to Plan in response to this issue</p> <p>In most circumstances, affordable housing is provided to meet a district wide need and therefore, affordable housing is allocated taking account of the Council’s Housing Register and Allocations Policy. Where affordable housing is delivered on a rural exceptions site, a local lettings policy can prioritise allocation to people with a tie to the parish.</p>
10.21	The Council must exhaust all other options before releasing green belt land, this includes directing more development to villages outside of the green belt.	<p>No amendment to Plan in response to this issue</p> <p>Directing more development to villages located outside of the Green Belt is not considered to be a sustainable approach to development in the District. Most of the villages in the District have a limited range of services and facilities and significant investment in supporting infrastructure would be required to support higher growth. This cannot be proven to be deliverable within the Plan-period.</p>
10.22	The Preferred Options summary document contains statements which are not present in the main document. For example: “unmet housing need from Group 1 villages will be directed to the Gilston development”.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. The Preferred Options Summary Document contained information from both the District Plan and the Supporting Document, to ensure that key information was provided in an easily understood format. Notwithstanding this, evidence regarding unmet housing need contained within the Preferred Options District Plan has been superseded by an updated four-authority Strategic Housing Market Assessment (SHMA), which presents updated evidence regarding housing need.</p>
10.23	The plan needs to take account of all dwellings added since 2011 as this is the date from which growth is being determined.	<p>No amendment to Plan in response to this issue</p> <p>Agreed. The Plan sets out the housing requirement for the District from 2011-2033 and all dwellings completed since 2011 will contribute to this total requirement.</p>
10.24	Aston Parish Council suggests that there should be a policy with regards to parking in residential areas. Where there is a new development, it should be assessed whether parking for the new development is adequate and also look at the	<p>No amendment to Plan in response to this issue</p> <p>Policy TRA3 (Chapter 18: Transport) concerns vehicle parking provision in new developments. The impact of development on existing parking provision is considered through the planning application process.</p>

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	impact on existing parking.	
10.25	Site promoter considers that the village hierarchy study is not accurate or consistent.	<p>No amendment to Plan in response to this issue</p> <p>An up to date assessment of village sustainability has been carried out and the Final Village Hierarchy Study was presented to the District Planning Executive Panel on 25th August 2016.</p>
Development in Villages		
10.26	Bishop's Stortford Civic Federation considers that the total number of dwellings to be provided by Group 1 and 2 Villages should be increased to 1,500 homes. In addition, in those villages not earmarked for development limited infill should be allowed.	<p>Proposed amendment to Plan in response to this issue</p> <p>It is proposed that Group 3 villages will be identified as suitable locations for limited infill development that is identified through the Neighbourhood Planning process. However, it is considered that the provision of 500 dwellings over the Plan period represents an appropriate balance between the need to provide new housing while protecting the existing character of villages.</p>
10.27	Thorley Parish Council suggests that there should be more development in Group 1 and 2 villages, this would enhance/maintain the vitality of rural communities.	<p>No amendment to Plan in response to this issue</p> <p>It is considered that the provision of at least 500 dwellings in the villages over the Plan period represents an appropriate balance between the need to maintain the vitality of rural communities, and ensuring the protection of the existing character of the District's villages.</p>
10.28	Site promoter suggests table 10.1 should be amended by combining Little Hadham and Hadham Ford, as well as Standon and Puckeridge.	<p>Proposed amendment to Plan in response to this issue</p> <p>As the villages of Standon and Puckeridge are contiguous with each other, they have been assessed together in the Final Village Hierarchy Study. As the villages of Little Hadham and Hadham Ford are not contiguous with each other, they have been assessed separately.</p>
10.29	Site promoter and others object to table 10.1 as it should use the most recent census data.	<p>Proposed amendment to Plan in response to this issue</p> <p>Agreed. As stated below the table, the information will be updated using data from the 2011 Census. This data was not available when the Preferred options District Plan was published.</p>
10.30	Bishop's Stortford Liberal Democrats support section 10.2.1. and 10.2.4.	<p>No amendment to Plan in response to this issue</p> <p>Support noted and welcomed.</p>
10.31	The introductory text to table 10.1 identifies that "the final number of homes will depend on site availability and suitability", it should also depend upon the capacity of infrastructure to meet the	<p>Proposed amendment to Plan in response to this issue</p> <p>Noted. It is considered that the provision of 10% housing growth in non-Green Belt villages is sustainable and deliverable. It is agreed that delivery in excess of this number will be dependent</p>

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	demand that arises.	upon the capacity of infrastructure to meet the additional demand that arises. The wording of the supporting text has been amended to reflect this.
10.32	10.2.9 should be reworded to read “have no primary school or no scope to expand an existing school”.	<p>No amendment to Plan in response to this issue</p> <p>Only a few Group 3 Villages have a primary school but it is not necessarily accurate to state that there is no scope to expand them. There may be land available to enable expansion but the expansion of schools in Group 3 Villages would not be considered appropriate given the relative sustainability of Group 3 Villages.</p>
10.33	The 500 dwellings figure fails to take account of the opportunities for infill and brownfield development in Group 2 and 3 Villages.	<p>No amendment to Plan in response to this issue</p> <p>The revised village strategy allows for limited infilling in Group 2 villages. Limited infilling can also take place in Group 3 villages where such sites are identified within a Neighbourhood Plan.</p>
VILL1- Group 1 Villages		
10.34	Part II- Site promoter considers that the use of the term “limited small scale development” is not consistent with the objective for Group 1 Villages. A reference to development being proportionate to the relative part of the settlement may be more useful.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. The phrase ‘limited small-scale development and infill development’ will be deleted and replaced by the word ‘development’. Part VI (b) of the policy sets out that development should be of a scale appropriate to the size of the village. It is considered that this amendment provides greater flexibility to Parish Councils with regard to how they choose to deliver development in their villages through the formulation of a Neighbourhood Plan.</p>
10.35	Part II- Site promoter comments that “limited small-scale development and infill development” is not consistent with 10.2.3 which refers to “Housing growth in these villages will be achieved through the identification of sites within and, where necessary in locations in the Rural Area Beyond the Green Belt, on the periphery of the built-up area”.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. The phrase ‘limited small-scale development and infill development’ will be deleted and replaced by the word ‘development’. It is considered that this amendment provides greater flexibility to Parish Councils with regard to how they choose to deliver development in their villages through the formulation of a Neighbourhood Plan.</p>
10.36	Part V- Site promoter states that this is too vague, if the Neighbourhood Planning process is to be followed then the Local Plan policy must state a clear cut-off date for adoption.	<p>No amendment to Plan in response to this issue</p> <p>Not agreed. As is stated in VILL4, the Council will expect at least 250 homes to be delivered in the first 5 years of the Plan, and the Council will monitor the figures for committed and completed development on an annual basis as part of the Authority Monitoring Report.</p>
10.37	Part VI- Site promoter and others comment that it is anticipated the District Plan will be adopted in	<p>No amendment to Plan in response to this issue</p>

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	2016 meaning that any Neighbourhood Plans are unlikely to be adopted until late 2016/early 2017. This approach would deprive large villages of any development until late 2017.	<p>Until such time that sites are allocated for development through a Neighbourhood Plan, development will be limited to the main built up area of the village as defined on the Policies Map. Therefore, it is not accurate to state that villages would be deprived of any development.</p> <p>In addition, many of the Group 1 Villages are in the process of formulating Neighbourhood Plans and it is envisaged that many of them will be made at a similar time to the adoption of the District Plan.</p>
10.38	Part VI- This should be amended to allow edge of settlement sustainable sites to come forward prior to a Neighbourhood Plan being in place. This will allow more flexibility to allow development to come forward in the short term.	<p>No amendment to Plan in response to this issue</p> <p>Until such time that sites are allocated for development through a Neighbourhood Plan, development will be limited to the main built up area of the village as defined on the Policies Map. Permitting development in advance of the adoption of a Neighbourhood Plan could undermine the Neighbourhood Planning process , and result in local communities failing to take a proactive role in shaping the future of their areas.</p> <p>Many of the Group 1 Villages are in the process of formulating Neighbourhood Plans and it is envisaged that many of them will be made at a similar time to the adoption of the District Plan.</p>
10.39	Part VI (c)- This is a meaningless comment. The word “contribute” should be replaced by “enhance” or “be in keeping”.	<p>Proposed amendment to Plan in response to this issue</p> <p>Agreed. The policy wording should be amended.</p>
10.40	Part VI (d) and (f)- These are too restrictive. Most villages will require development on the edge of their settlements in order to meet their needs, there must be acceptance that development will impact on openness and views. Amendment should be made to require applicant to consider open space and views.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. There is an acceptance that development will have some impact on openness and views but it is not agreed that the policy wording is too restrictive. Criterion (d) and (f) seek to ensure that development does not take place on a significant open space or gap important to the form and/or setting of the village, and that development does not unacceptably block important views and/or detract from the openness of the countryside. These issues will be considered through the planning application process.</p>
10.41	Landowner suggests the Local Authority should be looking to upgrade as many villages as possible to Group 1 status.	<p>No amendment to Plan in response to this issue</p> <p>A Village Hierarchy Study has been prepared which assesses the overall level of sustainability of the District’s villages, with development directed to the most sustainable (Group 1) villages. The study has identified 8 Group 1 Villages in the District.</p>
10.42	The District Plan continually refers to “minimum” amount of housing required; there is no mention of maximum. This means there is nothing to stop	<p>No amendment to Plan in response to this issue</p> <p>The District Plan is positively prepared in conformity with the requirements of national planning</p>

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	developers building thousands of houses.	policy. It is unlikely that the Plan would be found 'sound' at Examination if it sought to impose an arbitrary cap on development in certain locations. However, development proposals that are not considered to be sustainable will be refused through the planning application process.
10.43	Watton-at-Stone Parish Council and others comment that the policy approach for group 1 villages and other villages does not appear to take account of brownfield sites.	No amendment to Plan in response to this issue Not agreed. One of the guiding principles of the District Plan is to 'prioritise the development of brownfield land'. Brownfield sites can be allocated for development through the Neighbourhood Planning process. However, the Strategic Land Availability Assessment (SLAA) has not identified many brownfield sites that are available and suitable for development in the villages.
10.44	It seems strange that villages such as: Tonwell, Westmill, Cottered, Wadesmill, Colliers End and Datchworth are not included in the proposed expansion given their proximity to major road networks and public transport.	No amendment to Plan in response to this issue A Village Hierarchy Study has been prepared which assesses the overall level of sustainability of the District's villages. Accessibility to local service/employment centres is one of the criteria used in the assessment, both in terms of actual distance and accessibility by public transport. However, of equal importance in the assessment of sustainability is the presence of services and facilities within the actual village. The villages listed have all been identified as Group 2 villages where limited infill development will be permitted.
10.45	Clarification of how the 10% figure was reached is required.	No amendment to Plan in response to this issue The 10% figure was initially identified through the Community Right to Build guidance. The figure has been tested through the plan making process, and as a result, is considered to represent a sustainable level of development for the larger villages.
10.46	The 10% figure is too restrictive and rigid as there is no guarantee that 10% can be achieved without detriment to the village. Each village should be considered on its own merits. EHC should use the Call for sites/SLAA study to determine where development can occur.	No amendment to Plan in response to this issue It is considered that 10% can be achieved without harming the existing character of the larger villages. The SLAA process does identify that this level of growth is achievable.
10.47	Objection to this policy as it is difficult to see how 10% growth can be met as the current village boundaries are too tightly drawn. If development is allowed to sprawl outside the village it's difficult to see how the requirements of Part VI can be met.	No amendment to Plan in response to this issue The village development boundaries simply denote the existing built up area of the village and a 10% growth in the housing stock in the villages will be achieved through the identification of sites within and, where necessary, in locations on the periphery of the built-up area of the village. It is considered that appropriate sites for development can be allocated that accord with the criteria set out in Part VI.
10.48	Site promoter suggests the 10% minimum increase in housing stock is arbitrary and will	No amendment to Plan in response to this issue

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	constrain development. The Community Right to Build has no bearing on assessing the level of growth through Local Plans. Instead the appropriate growth level should be derived from an assessment of each individual village's capacity.	The 10% figure has been tested through the plan making process, and as a result, is considered to represent an appropriate balance between the need to provide new housing while protecting the existing character of villages.
10.49	Site promoter considers that setting an individual figure for each village will encourage the Parish Councils to adopt this as their target in the Neighbourhood Plan and not deliver appropriate scale of development.	<p>No amendment to Plan in response to this issue</p> <p>The 10% figure has been tested through the plan making process, and as a result, is considered to represent an appropriate balance between the need to provide new housing while protecting the existing character of villages. Policy VILL1 states that this is the minimum level of housing growth required in identified Group 1 Villages located in the Rural Area Beyond the Green Belt.</p>
10.50	Braughing Parish Council suggests that adding 500 houses to group 1 villages would be less sustainable than adding a few more to the towns.	<p>No amendment to Plan in response to this issue</p> <p>The vast majority of planned development has been directed to the larger settlements. It is considered that the provision of 500 homes in rural locations represents an appropriate balance between the need to provide new housing while protecting the existing character of villages.</p>
10.51	Bishop's Stortford Liberal Democrats and others suggest that Stanstead Abbots and Bayford should be added to this group of villages and the figure increased to 700. Both these villages are sustainable as they have train stations.	<p>Proposed amendment to Plan in response to this issue</p> <p>A Village Hierarchy Study has been prepared which assesses the overall level of sustainability of the District's villages. Accessibility to local service/employment centres is one of the criteria used in the assessment, both in terms of actual distance and accessibility by public transport, including by train services. However, of equal importance in the assessment of sustainability is the presence of services and facilities within the actual village. Therefore, Bayford has been identified as a Group 2 village where limited infill development will be permitted.</p> <p>Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Stanstead Abbots and St Margarets has been identified as a Group 1 Village, although the village will not be expected to accommodate an increase in housing stock of at least 10%. The village will be encouraged to consider whether it is appropriate to amend the Green Belt boundary around the village through the formulation of a Neighbourhood Plan to accommodate additional development.</p>
10.52	Site promoter considers that the SLAA shows that Group 1 Villages cannot meet the requirement of 500 over the plan period, therefore Group 2 Villages should not be restricted to infill as these settlements can help the District reach the figure.	<p>Proposed amendment to Plan in response to this issue</p> <p>It is agreed that the SLAA has not identified sufficient capacity within the Group 1 Villages identified in the Final Village Hierarchy Study 2016, to meet the requirement for 500 new homes to be delivered over the Plan period. Therefore, the housing requirement of 500 new homes will be met through the counting of completions in all villages, rather than just from Group 1 Villages. In addition, development proposals which are in excess of infill development will be permitted in</p>

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		Group 2 Villages where the development has been identified in an adopted Neighbourhood Plan.
10.53	The 10% housing increase required should be reduced to 5%.	<p>No amendment to Plan in response to this issue</p> <p>The 10% figure has been tested through the plan making process, and as a result, is considered to represent an appropriate balance between the need to provide new housing while protecting the existing character of villages.</p>
VILL2- Group 2 Villages		
10.54	Watton-at-Stone Parish Council state that some of the Group 2 Villages are close enough to the towns to be considered suitable for more development.	<p>No amendment to Plan in response to this issue</p> <p>A Village Hierarchy Study has been prepared which assesses the overall level of sustainability of the District's villages. Accessibility to local service/employment centres is one of the criteria used in the assessment, both in terms of actual distance and accessibility by public transport.</p>
10.55	For Group 2 Villages it is stated development should "Be of scale appropriate to the size of the village" but there is no figure given which leaves the door open to interpretation. Group 2 Villages should have a figure defined.	<p>No amendment to Plan in response to this issue</p> <p>A large number of Group 2 Villages, of varying sizes and of varying levels of sustainability, have been identified in the District Plan. Within these villages, limited infill development will be permitted, which should be of a scale appropriate to the size of the village. The amount of development that comes forward in this way will depend on site availability and site size so it is not possible to identify a blanket figure for Group 2 Villages.</p> <p>In addition, Group 2 Villages are permitted to bring forward small scale development as identified in a Neighbourhood Plan. If a blanket figure for delivery were to be introduced across all Group 2 Villages, it would effectively make it mandatory for all Group 2 Villages to produce a Neighbourhood Plan. Given that this is an optional tier of planning, and that some Group 2 Villages are very small, it is considered that this would be an onerous requirement on smaller Parish Councils who may not have the funds or expertise available locally, to assist in the formulation of a Neighbourhood Plan.</p>
10.56	Site promoters consider that limited infilling of no more than 5 dwellings is too restrictive it should be deleted from the policy. If maintained this may prevent best use of land. Development in excess of 5 dwellings could be appropriate as long as it would not have a harmful impact on the character of the villages.	<p>Proposed amendment to Plan in response to this issue</p> <p>Agreed. The reference to 'up to 5 dwellings on each site' should be removed from the policy wording. Development proposals will be considered on a site by site basis in accordance with the criteria set out in the policy.</p>
10.57	Stevenage Borough Council comments that Aston, Benington and Datchworth are Group 2 Villages	No amendment to Plan in response to this issue

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	within the Stevenage and A1 HMA, it is not presently clear how this classification relates to the needs arising from either that part of Stevenage or HMA as a whole.	Stevenage Borough Council has progressed a Local Plan which seeks to meet identified housing needs with its own administrative boundaries. The village development strategy allows for limited infilling within Group 2 villages, however any housing delivered in these locations would help meet East Herts housing needs.
10.58	Site promoter considers that this policy is too restrictive, as drafted it will deny smaller settlements in the District the benefits that development can bring in terms of better services and renewed vitality. The policy must be revised to allow development outside of existing limits to development, where it will lead to enhancement or maintenance of services.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. It is the view of Officers that the policy in relation to development in Group 2 Villages should be amended to permit small scale development identified in an adopted Neighbourhood Plan, in addition to infill development.</p>
10.59	Hertingfordbury Parish Council questions why there is no definition of Group 2 Villages, yet there is a description of Category 3 Villages.	<p>No amendment to Plan in response to this issue</p> <p>A description of Group 3 Villages is included as they are not named individually in the policy. It is not considered necessary to include a description of Group 1 and Group 2 Villages as the villages that fall under this categorisation are individually listed in VILL1 and VILL2.</p>
10.60	The group 2 classification for villages inset from the green belt is meaningless as Neighbourhood Plans cannot amend green belt boundaries.	<p>No amendment to Plan in response to this issue</p> <p>As identified in the Final Village Hierarchy Study 2016, the only Group 2 village that is inset from the Green Belt is Tewin. Development will be limited to infill development within the existing built up area of the village.</p>
10.61	HCC state that Colliers End, Cottered and Westmill are identified as Group 2 Villages, these settlements do not have a primary school.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. A Village Hierarchy Study has been prepared which assesses the overall level of sustainability of the District's villages. The study assessed the level of services and facilities in each village, as well as accessibility to local service centres both in terms of actual distance and accessibility by public transport. Whilst these villages do not have primary schools within the village, they are located in relatively close proximity to other villages/towns where education facilities can be accessed.</p>
10.62	Site promoter states that the Local Plan Inspector was assured by the Council that delivery of housing from Category 2 Villages would be carefully monitored, yet this has not happened. This does not instil confidence in the Council's ability to monitor development in villages, in accordance with the housing trajectory.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. Dwelling completion figures are collated by HCC on behalf of the Council. HCC has recently established a new monitoring system and the addition of village development boundaries to Group 2 Villages will assist in the accurate reporting of data.</p>

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VILL3- Group 3 Villages		
10.63	GBR1 and GBR2 make reference to “limited affordable housing for local community needs in accordance with policy VILL3”. VILL3 makes no reference to affordable housing, this requires amending to be consistent with GBR1 and GBR2.	<p>No amendment to Plan in response to this issue</p> <p>Policies GBR1 and GBR2 have been amended and no longer contain a cross reference to Policy VILL3.</p>
10.64	Site promoter considers that this approach is not in conformity with national policy (NPPG, 2014) which states that “All settlements can play a role in delivering sustainable development in rural areas – and so blanket policies restricting housing development in some settlements and preventing other settlements from expanding should be avoided unless their use can be supported by robust evidence”.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. A Village Hierarchy Study has been prepared which assesses the overall level of sustainability of the District’s villages, with the majority of development being directed to the most sustainable (Group 1) villages. However, in recognition of the fact that all settlements can play a role in delivering sustainable development it is proposed that Group 3 villages will be identified as suitable locations for limited infill development that is identified through the Neighbourhood Planning process.</p>
10.65	Site promoter states that there is no justification as to why market priced housing would not be permitted within Group 3 Villages (GBR2 Part (f)). To be financially viable, some market housing is needed to subsidise the affordable housing requirement of rural exception sites in Group 3 Villages.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. A Village Hierarchy Study has been prepared which assesses the overall level of sustainability of the District’s villages, with the majority of development being directed to the most sustainable (Group 1) villages. However, in recognition of the fact that all settlements can play a role in delivering sustainable development it is proposed that Group 3 villages will be identified as suitable locations for limited infill development that is identified through the Neighbourhood Planning process. In addition, Policy HOU4 has been amended to state that ‘a small number of market homes may be permitted, at the Council’s discretion, where a viability assessment demonstrates that a cross subsidy is necessary to make the scheme viable’ within rural exception affordable housing schemes.</p>
10.66	Infill development should be allowed in Group 3 Villages. This would be in line with national policy and support communities in nearby Group 1 and 2 settlements.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. A Village Hierarchy Study has been prepared which assesses the overall level of sustainability of the District’s villages, with the majority of development being directed to the most sustainable (Group 1) villages. However, in recognition of the fact that all settlements can play a role in delivering sustainable development it is proposed that Group 3 villages will be identified as suitable locations for limited infill development that is identified through the Neighbourhood Planning process.</p>
10.67	Bishop’s Stortford Liberal Democrats disagree with this policy as the outcome would be Parish Councils would be dictating to the District Council as to what the policies should be.	<p>No amendment in response to this issue</p> <p>The village development strategy allows limited infilling in Group 3 villages where such sites are identified through a Neighbourhood Plan. Where Neighbourhood Plans are prepared, they must be</p>

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		in conformity with the policy provisions contained within the District Plan.
10.68	Site promoter considers that where there are groups of smaller settlements, development in one village may support services in a nearby village. This is not reflected in VILL3.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. A Village Hierarchy Study has been prepared which assesses the overall level of sustainability of the District's villages, with the majority of development being directed to the most sustainable (Group 1) villages. However, in recognition of the fact that all settlements can play a role in delivering sustainable development it is proposed that Group 3 villages will be identified as suitable locations for limited infill development that is identified through the Neighbourhood Planning process.</p>
Village Boundaries		
10.69	The village boundaries have been drawn too tightly for Group 1 and 2 Villages, historic buildings and churches have been excluded. There is a high risk of villages developing into densely housed settlements, which are cut off from places such as: Villages halls, shops, public services, schools and religious buildings.	<p>Potential amendment to Plan in response to this issue</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development.</p> <p>The criteria based approach to assessing development proposals will ensure that villages are not subject to inappropriate development of a high density, and that development is well connected to the services and facilities located in the village.</p> <p>The village development boundaries are currently under review and the final boundary will be available to view on the Policies Map in due course.</p>
10.70	The Council should re-draw settlement boundaries that positively help prepare sustainable opportunities for development, instead of excluding useful land.	<p>No amendment in response to this issue</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development.</p> <p>However, the village development boundaries may be amended through the Neighbourhood Planning process to accommodate development on the periphery of the main built up area of the village.</p>
10.71	Tewin Parish Council supports the retention of village boundaries.	<p>No amendment in response to this issue</p> <p>Support noted and welcomed.</p>

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10.72	There is currently a complete lack of justification for village boundaries, not to mention a complete lack of evidence to support the proposed boundaries. This is particularly true for Group 2 Villages.	<p>No amendment in response to this issue</p> <p>The village development boundaries seek to identify the main built areas of these rural settlements where development proposals will be supported in principle. With regard to Group 2 Villages, a development proposal may be considered to be acceptable even if it falls outside of the village development boundary, if it were judged to be limited infilling.</p>
10.73	The villages of Bramfield, Brickendon, Great Amwell, Little Berkhamsted, and Waterford which are currently proposed to be “washed over” ought to have a boundary drawn around their built up area.	<p>Proposed amendment in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Bramfield, Brickendon Great Amwell and Little Berkhamsted have been identified as Group 2 Villages and it is proposed that a village development boundary will be drawn around the main built up area of these villages. Waterford remains identified as a Group 3 Village and it is not proposed to introduce a village development boundary here.</p>
VILL4- Neighbourhood Plans		
10.74	Part III- This repeats Part II without adding anything new.	<p>Proposed amendment in response to this issue</p> <p>Noted. Wording of Part III of policy should be amended for clarity by explaining that the Council will continue to monitor the delivery of new homes in the villages in the period 2023-2028 and if a shortfall in delivery is identified, this will trigger a requirement for the Council to identify specific sites for housing through a review of the District Plan.</p>
10.75	Bishop’s Stortford Civic Federation and others consider that the Neighbourhood Plan led approach to development will fail to deliver sufficient dwellings.	<p>No amendment in response to this issue</p> <p>Noted. Policy VILL4 outlines how the village development strategy will be monitored and the review mechanism that is in place. Where monitoring shows a shortfall in the number of homes coming forward through Neighbourhood Planning in a specific time period, a requirement for the District Council to identify specific sites for development will be triggered.</p>
10.76	Site promoter considers that allocations should be made for the villages as it is not certain that Neighbourhood Plans will come forward. The current approach is the antithesis of forward planning and is not consistent with NPPF. Housing and employment development could be restricted by this policy.	<p>No amendment in response to this issue</p> <p>Noted. Policy VILL4 outlines how the village development strategy will be monitored and the review mechanism that is in place. Where monitoring shows a shortfall in the number of homes coming forward through Neighbourhood Planning in a specific time period, a requirement for the District Council to identify specific sites for development will be triggered.</p>
10.77	MP Mark Prisk suggests that the Draft Plan	<p>Proposed amendment in response to this issue</p>

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	requires amending to indicate that where a village votes to support a Neighbourhood Plan which would result in more homes than previously identified, this will be allowed, regardless of which group the village is.	<p>Agreed. Small scale development proposals which have been identified in an adopted Neighbourhood Plan will be permitted in addition to limited infill development in Group 2 Villages.</p> <p>In Group 3 Villages, limited infill development which has been identified in an adopted Neighbourhood Plan will be permitted.</p>
10.78	Objection to encouraging Parish Councils to prepare Neighbourhood Plans to allocate land for development. It is natural for Parish Councils to protect their villages from development, therefore it is not realistic to expect Parish Councils to allocate land.	<p>No amendment in response to this issue</p> <p>Comments noted. However, the District Council wants to give Parish Councils the opportunity to empower local people to take a proactive role in shaping the future of the areas in which they live. A number of Neighbourhood Plans are in the process of being formulated, and a number of these are seeking to allocate land for development.</p> <p>However, acknowledging that Neighbourhood Planning is an optional tier of planning, Policy VILL4 outlines how the village development strategy will be monitored and the review mechanism that is in place. Where monitoring shows a shortfall in the number of homes coming forward through Neighbourhood Planning in a specific time period, a requirement for the District Council to identify specific sites for development will be triggered.</p>
10.79	Site promoter considers it is not clear how the villages will deliver development if Neighbourhood Plans fail. A situation could arise where there is a moratorium on house building in the villages until such time as a "Group 1 Village site allocation DPD" is adopted. It could be better to work with local communities now to identify appropriate sites.	<p>No amendment in response to this issue</p> <p>Comments noted. Policy VILL4 outlines how the village development strategy will be monitored and the review mechanism that is in place. Where monitoring shows a shortfall in the number of homes coming forward through Neighbourhood Planning in a specific time period, a requirement for the District Council to identify specific sites for development will be triggered.</p> <p>It is acknowledged that it will take some time for the District Council to allocate specific sites for development in the villages. During this time, development will be permitted within the village development boundaries as defined on the Policies Map, so there will not be a moratorium on housebuilding in villages.</p>
10.80	Site promoter highlights that it is suggested redrawing of village boundaries will only take place via Neighbourhood Plans and prior to this development will only be allowed within the boundary. This could lead to cramming of housing.	<p>No amendment in response to this issue</p> <p>Development in villages will be considered against a range of criteria which will prevent the 'cramming' of housing within a village.</p>
10.81	Concern raised with regards to the practicality of allowing Neighbourhood Plans to shape development. Parish Councils may not have the necessary skills within their communities and it is not clear what financial resource will be available.	<p>No amendment in response to this issue</p> <p>Noted. It is acknowledged that producing a Neighbourhood Plan is an intensive task and that some Parish Councils may choose not to do this. However, the Council will provide advice to Parish Councils in preparing Neighbourhood Plans to deliver housing growth. In addition, many Parish</p>

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		Councils in the District are engaging planning professionals to assist them in formulating Neighbourhood Plans.
10.82	Site promoter questions whether Parish Councils will be offered professional assistance to help prepare Neighbourhood Plans.	<p>No amendment in response to this issue</p> <p>The Council will provide advice to Parish Councils in preparing Neighbourhood Plans to deliver housing growth. In addition, many Parish Councils in the District are engaging planning professionals to assist them in formulating Neighbourhood Plans.</p>
10.83	No parameters are set as to when the monitoring of the housing yield from Neighbourhood Plans will occur. If this policy were to be adopted it would require more prompt reporting of housing delivery than has been the case in recent years with the AMR generally not being published until almost 12 months after the end of the monitoring period.	<p>No amendment in response to this issue</p> <p>Dwelling completion figures are collated by HCC on behalf of the Council. HCC has recently established a new monitoring system and the Council usually receives draft completion data 2 months after the end of the monitoring period. This is then usually reported publically through the Authority Monitoring Report in December of each year. Therefore, the Council would be able to identify a shortfall in delivery within 2 months of the end of the monitoring period.</p>
10.84	There is no indication of how the yield from Neighbourhood Plans will be measured. Will it be measured against the 10% per village growth figure or 250 dwelling figure across the District?	<p>No amendment in response to this issue</p> <p>It would be measured against the overall housing requirement for the Villages.</p>
10.85	The policy makes no mention of employment development which policy VILL1 states will also be delivered via Neighbourhood Plans.	<p>No amendment in response to this issue</p> <p>Policy VILL4 outlines how housing delivery in the villages through Neighbourhood Planning will be monitored and the review mechanism that is in place. There is not a specific target in the Plan relating to land for employment development in the villages. Therefore, it is not necessary to make reference to it in a policy outlining review and trigger mechanisms.</p>
VILL5- Village Employment Areas		
10.86	Site promoter is concerned that the industrial premises off Netherfield Lane at Stanstead Abbots are not part of the list. The site does lay in the Metropolitan Green Belt, however so do employment sites at Stapleford and Thundridge.	<p>No amendment in response to this issue</p> <p>It is not considered appropriate to designate the site as an Employment Area as it lies within the Lee Valley Regional Park and the Green Belt and it is not proposed to amend the Green Belt boundary in this location.</p>
VILL6- New Employment Development		
10.87	Buckland and Chipping Parish Council suggest that Group 3 Villages should be added to VILL6. It is essential improved High Speed Broadband is	<p>No amendment to Plan in response to this issue</p> <p>This policy has been deleted and proposals for new employment in village locations will be</p>

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	provided in rural villages.	considered in accordance with Policies GBR1, GBR2, ED2, VILL1 and VILL2 of the District Plan.
10.88	Part II- Datchworth Parish Council and others suggests that the final word should be premises rather than dwelling.	<p>No amendment to Plan in response to this issue</p> <p>This policy has been deleted and proposals for new employment in village locations will be considered in accordance with Policies GBR1, GBR2, ED2, VILL1 and VILL2 of the District Plan.</p>
10.89	Part II- Site promoter sees no reason why the ability to expand premises should be limited to those in B1 or B2 uses. Many employment uses undertaken in the green belt are “sui generis”, this policy wording restricts their expansion.	<p>No amendment to Plan in response to this issue</p> <p>This policy has been deleted and proposals for new employment in village locations will be considered in accordance with Policies GBR1, GBR2, ED2, VILL1 and VILL2 of the District Plan.</p>
Anstey		
10.90	Anstey Parish Council support the categorisation of the village as Group 3.	<p>No amendment to Plan in response to this issue</p> <p>Support noted. However, the Final Village Hierarchy Study August 2016 identifies that Anstey should be included in the Group 2 Village categorisation.</p>
Aston		
10.91	The designation of Aston as a Group 2 Village is supported.	<p>No amendment to Plan in response to this issue</p> <p>Support noted and welcomed. The Final Village Hierarchy Study August 2016 confirms the identification of Aston as a Group 2 Village.</p>
10.92	Site promoter objects to the boundary drawn around the village. The village boundary is drawn too tightly, therefore continued Group 2 status with this boundary will not bring forward any development. A suggested village boundary is attached.	<p>No amendment to Plan in response to this issue</p> <p>The village development boundary is drawn around the main built up area of the village. Aston is washed over by the Green Belt and in accordance with the NPPF, limited infilling within the built up area of the village is permitted.</p>
10.93	Alteration/development of existing pubs in Aston could benefit the village.	<p>No amendment to Plan in response to this issue</p> <p>Public houses can provide essential community uses in villages and, if they diversify, can provide other useful services. It is essential that any alteration/development is in the interest of the community.</p>
10.94	Aston Parish Council support the village boundary, consequently they will not be creating a	<p>No amendment to Plan in response to this issue</p>

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	Neighbourhood Plan.	Support noted and welcomed.
10.95	Objection to the village boundary as Palletts Orchard (Stringers Lane) is the only parcel of land offered for development to be split by the line.	<p>No amendment to Plan in response to this issue</p> <p>The village development boundary is drawn around the main built up area of the village. Aston is washed over by the Green Belt and in accordance with the NPPF, limited infilling within the built up area of the village is permitted. The boundary has not been drawn to encompass particular sites.</p>
10.96	Aston Parish Council seems to be advocating no development in the village for the plan period. The village needs more affordable housing to allow the younger generations to live in Aston.	<p>No amendment to Plan in response to this issue</p> <p>Aston is categorised as a Group 2 village and therefore limited infilling within the built up area of the village is permitted. In addition, to meet affordable housing need, rural exception affordable housing schemes may be permitted subject to the criteria set out in Policy HOU4.</p>
10.97	If more affordable housing was available more families could live in the village, this would improve the school run as children would be able to walk to school.	<p>No amendment to Plan in response to this issue</p> <p>The affordability of housing is a key issue in East Herts. Policies regarding the delivery of affordable housing are set out in Chapter 14 (Housing) of the Plan. Aston is categorised as a Group 2 village and therefore limited infilling within the built up area of the village is permitted. In addition, to meet affordable housing need, rural exception affordable housing schemes may be permitted subject to the criteria set out in Policy HOU4.</p> <p>The benefit of the school being attended by pupils from the village is recognised. It is considered that the policy approach to development in Aston may result in the delivery of additional family sized dwellings, whose occupants may help to sustain the village school.</p>
10.98	Suggestion that there is brownfield sites in Aston End that could enhance the green belt and make a modest contribution to housing figures.	<p>No amendment to Plan in response to this issue</p> <p>Aston End is categorised as a Group 3 village and therefore limited infilling which has been identified in an adopted Neighbourhood Plan will be permitted.</p> <p>Notwithstanding this, the NPPF permits limited infilling or the partial or complete redevelopment of brownfield land which would not have a greater impact on the openness of the Green Belt and the purpose of including land within it than the existing development. Therefore, it may be possible for the brownfield sites to come forward for development outside of the Neighbourhood Planning process.</p>
Bayford		
10.99	It is questioned why Bayford has not been	No amendment to Plan in response to this issue

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	highlighted for more development seeing as it is on the main train line.	The Final Village Hierarchy Study August 2016 confirms the identification of Bayford as a Group 2 Village. Whilst the village does have a railway station located within walkable distance, it is situated just outside of the village and it is not considered to be safe or practical to access by foot all throughout the year. In addition, the village has a limited range of other services and facilities which supports its categorisation as a Group 2 Village.
Benington		
10.100	The proposed village boundary for Benington appears to exclude large built-up areas.	<p>Potential amendment to Plan in response to this issue</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development.</p> <p>Nevertheless, the village development boundaries are currently under review and the final boundary for Benington will available to view on the Policies Map in due course.</p>
10.101	Site promoter objects to the omission of Hebing End from Group 2 Villages. Hebing End is served by a regular bus service, contains a public house and a church. There are also employment opportunities at agricultural machinery shop and service yard.	<p>No amendment to Plan in response to this issue</p> <p>The sustainability of Hebing End has been assessed using the criteria used in the Final Village Hierarchy Study. This indicates that Hebing End has been correctly identified as a Group 3 Village. It is proposed that limited infill development identified in an adopted Neighbourhood Plan will be permitted in Group 3 Villages.</p>
10.102	Site promoter considers that Hebing End's close proximity to Benington makes it a more sustainable location. It is considered that Hebing End functions as part of Benington.	<p>No amendment to Plan in response to this issue</p> <p>It is acknowledged that Hebing End is located in close proximity to Benington and that residents have access to a range of services and facilities in this nearby village. However, this sort of relationship is true of many of the Group 3 Villages across the District, and whilst Hebing End may function as part of Benington, it is not considered that this justifies a change in policy approach to development in the village.</p> <p>The sustainability of Hebing End has been assessed using the criteria used in the Final Village Hierarchy Study and this has indicated that Hebing End has been correctly identified as a Group 3 Village. It is proposed that limited infill development identified in an adopted Neighbourhood Plan will be permitted in Group 3 Villages.</p>
10.103	Site promoter highlights that some Group 2 Villages have few facilities within the settlement itself. In these cases the Council considers that the	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. Where the Council has considered that the presence of facilities within nearby</p>

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	presence of facilities within nearby settlements improves their sustainability. Comparison is made between Wadesmill and its relation to Thundridge, and the relationship between Benington and Hebing End.	<p>settlements improved the sustainability of a village, this is generally in the context of a village located in close proximity to a town or large village, which provide a wide range of services and facilities. Benington is only identified as a Group 2 Village given its limited offer in regard to services and facilities. Therefore, whilst it is acknowledged that some development in Hebing End would help to sustain the facilities in Benington, residents of Hebing End would need to travel far beyond Benington to access most services to meet their day to day needs. This is not considered to be sustainable development.</p> <p>The sustainability of Hebing End has been assessed using the criteria used in the Final Village Hierarchy Study and this has indicated that Hebing End has been correctly identified as a Group 3 Village. It is proposed that limited infill development identified in an adopted Neighbourhood Plan will be permitted in Group 3 Villages.</p> <p>Thundridge and Wadesmill are villages that are contiguous with each other and are not considered to be an appropriate comparison.</p>
10.104	Site promoter considers that Hebing End performs well in terms of sustainability when compared with Group 2 Villages such as: Birch Green, Cole Green, Letty Green Furneux Pelham, Hertingfordbury, Westmill.	<p>No amendment to Plan in response to this issue</p> <p>The sustainability of Hebing End has been assessed using the criteria used in the Final Village Hierarchy Study. This indicates that Hebing End has been correctly identified as a Group 3 Village.</p> <p>Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Birch Green, Furneux Pelham, Hertingfordbury, and Westmill have had their categorisation as Group 2 Villages confirmed. However, Cole Green and Letty Green have now been identified as Group 3 Villages.</p>
Birch Green, Cole Green & Letty Green		
10.105	Support for the classification of Birch Green, Cole Green and Letty Green as Group 2.	<p>No amendment to Plan in response to this issue</p> <p>Support noted. The Final Village Hierarchy Study August 2016 confirms the identification of Birch Green as a Group 2 Village. However, it also identifies that Cole Green and Letty Green should be included in the Group 3 Village categorisation due to the lower level of services and facilities contained within them.</p>
10.106	Hertingfordbury Parish Council considers that Birch Green, Cole Green and Letty Green should all be Category 3 Villages. These villages fit the description given for Category 3.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. However, the Final Village Hierarchy Study August 2016 confirms the identification of Birch Green as a Group 2 Village. It does, however, identify that Cole Green and Letty Green should be placed in the Group 3 Village categorisation due to the lower level of services and facilities contained within them.</p>

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10.107	Hertingfordbury Parish Council and Friends of Panshanger Park do not support the village boundary for Birch Green. The proposed envelope does not include any of the village north of the Old Coach Road. The impact of this is that development is only encouraged towards the already congested south of the village. Development to the north of Birch Green is nearer to the sustainable facilities (school, bus stops).	<p>Potential amendment to Plan in response to this issue</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development.</p> <p>Nevertheless, the village development boundaries are currently under review and the final boundary for Birch Green will be available to view on the Policies Map in due course.</p>
10.108	The village boundary for Birch Green excludes a small area of car parking on the western boundary that is associated with adjacent housing.	<p>Potential amendment to Plan in response to this issue</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development.</p> <p>Nevertheless, the village development boundaries are currently under review and the final boundary for Birch Green will be available to view on the Policies Map in due course.</p>
10.109	The village boundary for Birch Green excludes the two largest homes on the eastern edge and the lower halves of four residential gardens this suggests that there are some thresholds relating to residential plot size that have been applied in the drawing of the proposed boundary.	<p>Potential amendment to Plan in response to this issue</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development.</p> <p>Nevertheless, the village development boundaries are currently under review and the final boundary for Birch Green will be available to view on the Policies Map in due course.</p>
10.110	The Cole Green village boundary excludes: Cole Green Works, Munns Farm and employment premises to the western side of the village.	<p>No amendment to Plan in response to this issue</p> <p>Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Cole Green has now been identified as a Group 3 Village. Therefore, it is no longer proposed to have a village development boundary for Cole Green.</p>
10.111	Site promoter considers that Cole Green should not have a defined boundary and rather should be washed over by the green belt.	<p>No amendment to Plan in response to this issue</p> <p>Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Cole Green has now been identified as a Group 3 Village. Therefore, it is no longer proposed to have a village development boundary for Cole Green, and</p>

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		the village will remain washed over by the Green Belt.
10.112	The Letty Green village boundary stops short of the western end of the existing village. There is also one home excluded on the western side of Woolmers Lane.	<p>No amendment to Plan in response to this issue</p> <p>Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Letty Green has now been identified as a Group 3 Village. Therefore, it is no longer proposed to have a village development boundary for Letty Green.</p>
Braughing		
10.113	The 10% allocation requires clarification. Braughing has more than likely had a 10% increase since 2011, does this mean Braughing has already met its quota for the plan period?	<p>No amendment to Plan in response to this issue</p> <p>No. Braughing, as a Group 1 Village, will be expected to accommodate a minimum 10% growth in housing stock (based on the 2011 census) between the 1st April 2017 and 31st March 2033.</p>
10.114	Braughing should be downgraded to a Group 2 Village due to traffic and flooding concerns	<p>No amendment to Plan in response to this issue</p> <p>The Final Village Hierarchy Study August 2016 sets out the District's most sustainable villages in terms of an assessment of their services and facilities and level of accessibility.</p> <p>As development comes forward in Braughing, planning applications will require traffic impact assessments and will have to abide by the Council's updated Strategic Flood Risk Assessment (SFRA). However, it is not considered that these issues would prevent the delivery of 10% growth in Braughing.</p>
10.115	Braughing should not be designated Group 1 status, public transport is inadequate and schools are at capacity.	<p>No amendment to Plan in response to this issue</p> <p>It is recognised that there is restricted public transport within the majority of villages, however, Braughing scores reasonably well in the Final Village Hierarchy Study in terms of accessibility and public transport provision.</p> <p>The District Plan provides a 15 year strategy from the date of adoption. The capacity of schools in the local area is likely to change over this period. HCC have not identified an issue with a 10% growth in housing stock in the village with regard to school capacity.</p>
10.116	Using the Parish Council boundary (rather than village boundary) would give a consistent designation to Braughing allowing more flexible and appropriate development.	<p>No amendment to Plan in response to this issue</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle. Therefore the village development boundary for Braughing will continue to follow the main built-up area of the village. The Parish Boundary covers a large amount of rural area and a number of different settlements and therefore</p>

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		would be an inappropriate development boundary for Braughing.
10.117	It is questioned why Braughing is a Group 1 Village. Watton-at-Stone has a station and is on a major A-road, Braughing is much more rural, it seems strange to classify these two settlements together.	<p>No amendment to Plan in response to this issue</p> <p>The Village Hierarchy Study assessed the sustainability of villages based on access to services and facilities. The fact that Watton has a train station is reflected in the scoring. However, Braughing does score relatively highly due to the number of services and facilities in the village and as such it is considered appropriate to identify it as a Group 1 settlement.</p>
10.118	The cumulative impact of adjacent developments needs to be considered. The merging of Braughing, Buntingford and Puckeridge must be resisted.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Reference to development needing to have regard to the cumulative impact of development within a locality will be added to the criteria used to assess development in Policies VILL1, VILL2 and VILL3.</p> <p>The development strategy for the District seeks to prevent the merging of settlements. With regard to speculative planning applications, it is highly unlikely that any proposals for large scale development that would threaten the individual identifies of these settlements would be considered sustainable.</p>
10.119	Site promoter supports the designation of Braughing as a Category 1 Village. Land East of Green End is available.	<p>No amendment to Plan in response to this issue</p> <p>Support noted.</p>
Brickendon		
10.120	There has been no change in the village since 2007, hence there is no planning justification for the downgrading of the village to Group 3 status.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Brickendon has been identified as a Group 2 Village.</p>
Buckland & Chipping		
10.121	Buckland and Chipping Parish Council considers that with large housing developments coming to Buntingford, attention should be given to the impact of these on neighbouring villages. Traffic, sewage, water supply and schooling may all become issues.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted.</p>
10.122	Site promoter suggests that Buckland and Chipping should be categorised as a Group 2 Village. This is because the settlement is of	<p>No amendment to Plan in response to this issue</p> <p>The sustainability of Buckland & Chipping has been assessed using the criteria used in the Final</p>

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	reasonable size and development would support local services and amenities.	Village Hierarchy Study. This indicates that Buckland & Chipping has been correctly identified as a Group 3 Village. It is proposed that limited infill development identified in an adopted Neighbourhood Plan will be permitted in Group 3 Villages.
Colliers End		
10.123	The village boundary for Colliers End is incorrect, it omits two of the oldest houses in the village as well as the church. If infilling is going to occur it will be difficult to squeeze them into such a tight boundary.	<p>Potential amendment to Plan in response to this issue</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development.</p> <p>Nevertheless, the village development boundaries are currently under review and the final boundary for Colliers End will be available to view on the Policies Map in due course.</p>
Cottered		
10.124	Site promoter suggests that land at Stocking Hill should be included within the settlement boundary.	<p>Potential amendment to Plan in response to this issue</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development.</p> <p>Nevertheless, the village development boundaries are currently under review and the final boundary for Cottered will be available to view on the Policies Map in due course.</p>
Datchworth		
10.125	Datchworth Parish Council supports the categorisation of Datchworth as a Group 2 Village.	<p>No amendment to Plan in response to this issue</p> <p>Support noted and welcomed. The Final Village Hierarchy Study August 2016 confirms the identification of Datchworth as a Group 2 Village.</p>
10.126	Datchworth Parish Council suggests the addition of "(h) Not generate traffic that by its quantity or size will be inappropriate for the existing highways within and serving the village. Highway improvements to serve new development in the village will not be permitted other than as a result	<p>No amendment to Plan in response to this issue</p> <p>Datchworth has been identified as a Group 2 Village where limited infill development will be permitted. It is not considered that this level of development will have an unacceptable impact on the highway network. Nevertheless, this issue will be considered through the planning application process.</p>

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	of and associated with a Neighbourhood Plan process” to VILL 1,2 and 6.	It is not considered appropriate to require highways improvements to serve new development to be associated with the Neighbourhood Planning process, given that Neighbourhood Planning is an optional tier of planning. Whilst a Neighbourhood Plan could set out potential mitigation measures in relation to the highway impact of new development, such matters would be primarily dealt with through the planning application process.
10.127	Parking is an issue in Datchworth, there needs to be more off-street parking.	<p>No amendment to Plan in response to this issue</p> <p>Policy TRA3 (Chapter 18: Transport) concerns vehicle parking provision in new developments. The impact of development on existing parking provision is considered through the planning application process.</p>
10.128	The Datchworth village boundary is incorrect. The boundary should be amended to include properties to the south and west of Datchworth Green.	<p>Potential amendment to Plan in response to this issue</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development.</p> <p>Nevertheless, the village development boundaries are currently under review and the final boundary for Datchworth will be available to view on the Policies Map in due course.</p>
Eastwick & Gilston		
10.129	Eastwick & Gilston Parish Council are concerned that Gilston has been designated as a Group 3 Village with no mention of the 230 dwellings underway at Terlings Park.	<p>No amendment to Plan in response to this issue</p> <p>The sustainability of Gilston has been assessed using the criteria used in the Final Village Hierarchy Study. This indicates that Gilston has been correctly identified as a Group 3 Village.</p> <p>The development at Terlings Park consists of the redevelopment of a vacant brownfield site within the Green Belt and the planning application was considered principally in relation to Green Belt policies rather than policies guiding village development. It is not considered that the redevelopment of Terlings Park will change the identification of Gilston as a Group 3 Village.</p>
Great Amwell		
10.130	Great Amwell Parish Council and others support the identification of Great Amwell as a Category 3 Village.	<p>No amendment to Plan in response to this issue</p> <p>Support noted. However, the Final Village Hierarchy Study August 2016 identifies that Great Amwell should be included in the Group 2 Village categorisation.</p>

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10.131	The transport infrastructure (public transport, roads, trains) is at capacity.	<p>No amendment to Plan in response to this issue</p> <p>Great Amwell has been identified as a Group 2 Village where limited infill development will be permitted. This is in accordance with the NPPF.</p> <p>The cumulative impact of development on the highway network is being considered by ongoing transport modelling work. Where required, mitigation schemes have been identified that will help support identified levels of growth. The District Plan also seeks to encourage the provision and use of sustainable transport.</p>
10.132	Site promoter objects to the downgrading of Great Amwell to a Group 3 Village. Local Plan inspector in 2007 said “I consider this village to be large enough, and of a form, to accept infilling. It has a school, a public house, a village hall and is close to the variety of facilities in Ware to warrant Category 2 status”. Nothing has changed since to warrant the downgrading.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Great Amwell has been identified as a Group 2 Village.</p>
10.133	Site promoter considers that lack of employment opportunities is not a reason to deny Great Amwell Group 2 status. The village benefits from significant employment based around the garden centre and industrial premises off Furlong Way. In addition, good public transport offers opportunities to work in other areas (Hertford, Hoddesdon, London).	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Great Amwell has been identified as a Group 2 Village.</p>
10.134	Site promoter considers that limited school capacity is not a reason to deny Great Amwell Group 2 status. The proposed boundary is unlikely to produce more than a modest amount of infilling which would not challenge the capacity of the primary school.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Great Amwell has been identified as a Group 2 Village.</p>
10.135	Site promoter considers that the preservation of historic character is not a reason to deny Great Amwell Group 2 status. Conservation area status does not preclude infill development subject to existing character being preserved.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Great Amwell has been identified as a Group 2 Village.</p>
10.136	Site promoter considers that flood risk is not a reason to deny Great Amwell Group 2 status. The	<p>Proposed amendment to Plan in response to this issue</p>

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	land within the village boundary lies outside the flood plain.	Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Great Amwell has been identified as a Group 2 Village.
10.137	Site promoter considers that concern over wildlife sites is not a reason to deny Great Amwell Group 2 status. The land within the boundary is already developed and hence infilling would not impact on wildlife sites.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Great Amwell has been identified as a Group 2 Village.</p>
10.138	Site promoter considers that coalescence with adjacent settlements is not a reason to deny Great Amwell group 2 status. Subject to defining the boundary tightly around the built up areas, there is no risk of coalescence with Ware, Stanstead Abbots or Hoddesdon.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Great Amwell has been identified as a Group 2 Village.</p>
10.139	Many object to the proposal for a new Waitrose at the current Van Hages Garden Centre, on grounds of highways impact and further development fears.	<p>No amendment to Plan in response to this issue</p> <p>This proposal was previously considered through the planning application process. The District Plan does not seek to facilitate a proposal of this nature.</p>
10.140	Site promoter suggests that if the scoring in the village hierarchy was accurate Great Amwell would sit amongst the group 1 villages. Community facilities and employment were ranked as red when they should have been scored as green.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Great Amwell has been identified as a Group 2 Village.</p>
Hertford Heath		
10.141	Site promoter objects to the downgrading of Hertford Heath to a Group 2 Village. Local Plan inspector in 2007 said "This large village has had a defined boundary for some years. Even without an allocated site for development with its wide range of facilities, it is properly designated Category 1".	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Hertford Heath has been identified as a Group 1 Village.</p>
10.142	Site promoter considers poor and irregular bus service is not a reason to deny Hertford Heath Group 1 status. There is a regular bus service between Hertford and Hoddesdon (641).	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Hertford Heath has been identified as a Group 1 Village.</p>

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10.143	Site promoter considers poor access to the A10 is not a reason to deny Hertford Heath Group 1 status. The B1197 runs through the heart of the village with good connections to the A414 and the A10.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Hertford Heath has been identified as a Group 1 Village.</p>
10.144	Site promoter considers lack of employment opportunities is not a reason to deny Hertford Heath Group 1 status. There are reasonable employment opportunities nearby including: public houses, village shop, garages, industrial area North East of Hoddesdon, Foxholes Business Park, Foxholes Farm and Haileybury College.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Hertford Heath has been identified as a Group 1 Village.</p>
10.145	Site promoter considers limited primary school capacity should not restrict Hertford Heath from being a Group 1 Village. The new all through school at Simon Balle will relieve pressure on the village primary school.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Hertford Heath has been identified as a Group 1 Village.</p>
10.146	Hertford Heath village boundary is drawn too tightly and they are very few infilling opportunities remaining.	<p>No amendment to Plan in response to this issue</p> <p>The village development boundary for Hertford Heath is identical to the Green Belt boundary as the village is inset from the Green Belt. The Council is not proposing to amend the Green Belt boundary around Hertford Heath in the District Plan. However, the Council will encourage Hertford Heath Parish Council to consider whether it is appropriate to amend their Green Belt boundary through the formulation of a Neighbourhood Plan to accommodate additional development.</p>
High Cross		
10.147	Objection to the classification of High Cross as a Group 1 Village, the village has very few facilities.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, High Cross has been identified as a Group 2 Village.</p>
10.148	Site promoter considers that the High Cross village boundary is drawn too tightly to accommodate any additional development. Land behind the Coachworks to the east should be included within the boundary. Also the access and car park to the Coach Works Industrial Estate needs to be	<p>Potential amendment to Plan in response to this issue</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development.</p>

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	included.	Nevertheless, the village development boundaries are currently under review and the final boundary for High Cross will be available to view on the Policies Map in due course.
10.149	Site promoter supports the classification of High Cross as a group 1 village.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. However, following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, High Cross has been identified as a Group 2 Village.</p>
10.150	Site promoter suggests land owned by St Albans Diocesan Board of Finance is available to contribute to the housing need of this district.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted.</p>
Hunsdon		
10.151	Support for the designation of Hunsdon as a category 1 village. 0.33ha of land South of Tanners Way should be allocated for development.	<p>No amendment to Plan in response to this issue</p> <p>Support noted. The Final Village Hierarchy Study August 2016 confirms the identification of Hunsdon as a Group 1 Village. Land will be allocated for development in Hunsdon through the Neighbourhood Planning process.</p>
10.152	Site promoter suggests 2.02ha of land owned by St Albans Diocesan Board of Finance (near to Acorn Street) is available to contribute to the housing needs of the district.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted.</p>
Little Hadham & Hadham Ford		
10.153	Little Hadham Parish Council and others believe that the village should not be allocated as a Category 1 Village.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Little Hadham and Hadham Ford have been identified as Group 2 Villages.</p>
10.154	The sieving process should have identified Historic Assets as red not amber as the majority of the village is within a conservation area and Little Hadham has many grade 2 buildings.	<p>No amendment to Plan in response to this issue</p> <p>Little Hadham, much like a number of the other villages in East Herts, has a wealth of Historic Assets and is covered by a Conservation Area. Any development in the village would need to ensure that such assets are retained and their setting protected.</p>

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10.155	Little Hadham Parish Council and others consider that the sewage is an issue that needs resolving before further development. The sieving process should have identified waste water impact as red not amber. When storm conditions occur, surface water is discharged into the waste water infrastructure.	<p>No amendment to Plan in response to this issue</p> <p>The proposed development strategy for the villages has had regard to the ability of the existing wastewater infrastructure to accommodate increased demand from new development. Thames Water has not indicated that the level of growth proposed could not be accommodated in the village with regard to wastewater infrastructure.</p>
10.156	The sieving process should have identified Designated Wildlife Sites (DWS) as red not green as there is a DWS within the village boundary which is the Old Chalk Pit, west of Albury Road.	<p>No amendment to Plan in response to this issue</p> <p>Little Hadham, much like a number of the other villages in East Herts, has areas of environmental importance. Any development in the village would need to ensure that such assets are retained and their setting protected.</p>
10.157	The sieving process should have identified land availability as red not green as the village boundary is extremely tight.	<p>No amendment to Plan in response to this issue</p> <p>Little Hadham has been identified as a Group 2 Village where limited infilling will be permitted. A number of sites adjacent to the village development boundary have been submitted for assessment through the SLAA, and the conclusion reached in the SLAA is that there are suitable sites available for development. The village development boundary could be amended through the formulation of a Neighbourhood Plan to allocate sites for development.</p>
10.158	Little Hadham Parish Council considers that high flood risk in the village means that the village should not be Category 1.	<p>No amendment to Plan in response to this issue</p> <p>A Flood Risk Assessment would need to be submitted as part of a planning application for development in areas at risk of flooding. In addition, any development proposals would need to have the support of the Environment Agency.</p> <p>Nevertheless, following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Little Hadham and Hadham Ford have been identified as Group 2 Villages.</p>
10.159	Little Hadham Parish Council considers infrequency of bus services and the doubt around upgrades to the 351 service means that Little Hadham should not be a Category 1 village.	<p>No amendment to Plan in response to this issue</p> <p>Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Little Hadham and Hadham Ford have been identified as Group 2 Villages.</p>
10.160	Little Hadham Parish Council considers that the school is unlikely to be able to absorb the 10% growth, this will mean children will have to travel out of the village for schooling.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. The proposed development strategy for the villages has had regard to the ability of village schools to accommodate the pupil yield from new developments. HCC have not indicated that the level of growth proposed could not be accommodated in the village with regard to</p>

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		<p>education capacity. Where village schools need to expand to accommodate additional pupils, financial contributions will be sought through a S106 legal agreement.</p> <p>Nevertheless, following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016; Little Hadham and Hadham Ford have been identified as Group 2 Villages.</p>
10.161	Little Hadham Parish Council and others consider that there is a lack of community facilities in the area, there are no shops, the post office is likely to close in the future and medical facilities are lacking.	<p>No amendment to Plan in response to this issue</p> <p>An up to date assessment of village sustainability has been carried out and the Final Village Hierarchy Study identifies Little Hadham and Hadham Ford as Group 2 Villages.</p>
10.162	The designation of Little Hadham as a Category 1 Village is supported.	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. However, following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, High Cross has been identified as a Group 2 Village.</p>
10.163	There is doubt as to whether Little Hadham will produce a Neighbourhood Plan. The only site in Little Hadham that is suitable is 0.66ha of land east of Ashcroft Farm, this should be included within the village boundary.	<p>No amendment to Plan in response to this issue</p> <p>Little Hadham Parish Council have submitted a request to designate the parish as a neighbourhood area for the purpose of preparing a Neighbourhood Plan.</p> <p>Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016; Little Hadham has now been identified as a Group 2 Village and the village development boundary can be amended through the formulation of a Neighbourhood Plan to identify sites to accommodate small-scale development proposals.</p>
Little Berkhamsted		
10.164	Little Berkhamsted Parish Council support the designation of Little Berkhamsted, Howe Green and Epping Green as group 3 villages.	<p>Proposed amendment to Plan in response to this issue</p> <p>Following the Final Village Hierarchy Study August 2016; Little Berkhamsted is to be classified as a Group 2 village. Little Berkhamsted is considered to have a level of services and accessibility that is similar to other Group 2 villages. Howe Green and Epping Green will remain as Group 3 villages.</p> <p>Support noted. The Final Village Hierarchy Study August 2016 confirms the identification of Howe Green and Epping Green as Group 3 Villages. However, it also identifies that Little Berkhamsted should be identified as a Group 2 Village.</p>

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Much Hadham		
10.165	Much Hadham Parish Council raise concerns that large areas outside of the village curtilage are unprotected e.g. Kettle Green Road and West of Widford Road.	<p>No amendment to Plan in response to this issue</p> <p>Areas outside of the village development boundary are covered by Rural Area Beyond the Green Belt policy which seeks to limit development in such locations.</p>
10.166	Much Hadham Parish Council comments that obvious areas of infill have been explicity protected by being designated as Areas of Archaeological Significance (AAS). The AAS combined with the proposed village boundary appear to be placed such that housing is driven to one area, constituting a major development, which the Parish Council are opposed to.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. Development is not precluded in areas designated as being of archaeological significance. However, planning applications will be expected to be supported by the submission of an archaeological assessment.</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development. The village development boundary for Much Hadham is based on the boundary contained in the Local Plan 2007.</p>
10.167	Much Hadham Parish Council considers that the school is oversubscribed.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. The proposed development strategy for the villages has had regard to the ability of village schools to accommodate the pupil yield from new developments. HCC have not indicated that the level of growth proposed could not be accommodated in the village with regard to education capacity. Where village schools need to expand to accommodate additional pupils, financial contributions will be sought through a S106 legal agreement.</p>
10.168	Much Hadham Parish Council considers flooding to be an issue in the village which will only worsen with additional development.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. A Flood Risk Assessment would need to be submitted as part of a planning application for development in areas at risk of flooding. In addition, any development proposals would need to have the support of the Environment Agency.</p>
10.169	Much Hadham Parish Council considers that drainage and sewage systems cannot cope with additional development.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. The proposed development strategy for the villages has had regard to the ability of the existing wastewater infrastructure to accommodate increased demand from new development. Thames Water has not indicated that the level of growth proposed could not be accommodated in the village with regard to wastewater infrastructure.</p>
10.170	Much Hadham Parish Council considers that the	<p>No amendment to Plan in response to this issue</p>

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	village has no facility to cater for residents of other religions.	It is not considered that the provision of 10% growth in Much Hadham would require the delivery of new places of worship.
10.171	Site promoter supports the village boundary of Much Hadham and the classification of the settlement as a Category 1 Village.	No amendment to Plan in response to this issue Support noted. The Final Village Hierarchy Study August 2016 confirms the identification of Hunsdon as a Group 1 Village.
10.172	Site promoter suggests 0.23ha of land at Walnut Close is in line with all of the requirements of VILL1 Part VI.	No amendment to Plan in response to this issue Comments noted.
Spellbrook		
10.173	Sawbridgeworth Town Council questions why the village is not included within Sawbridgeworth. The two settlements share the same community facilities and economic environment.	No amendment to Plan in response to this issue Whilst it is acknowledged that Spellbrook and Sawbridgeworth share the same community facilities and economic environment, the village is not included within Sawbridgeworth as it is a distinct settlement, separated from the town by an expanse of Green Belt land, where a different approach to development is justified.
10.174	Sawbridgeworth Town Council state that Spellbrook lies within the Parish of Sawbridgeworth and has no individual identity, hence it would be unable to create a Neighbourhood Plan.	No amendment to Plan in response to this issue It is acknowledged that Spellbrook lies within the parish of Sawbridgeworth but it is considered that it does have an individual identity, and is a distinct settlement to Sawbridgeworth. The village has been included in the neighbourhood area designation agreed for the purposes of Neighbourhood Planning, submitted by Sawbridgeworth Town Council. It is envisaged that that the Sawbridgeworth Neighbourhood Plan will include policies specific to Spellbrook, acknowledging its village character and the way the village functions.
Standon & Puckeridge		
10.175	The schools in and around Puckeridge are at full capacity, before additional development.	No amendment to Plan in response to this issue Comments noted. The proposed development strategy for the villages has had regard to the ability of village schools to accommodate the pupil yield from new developments. HCC have not indicated that the level of growth proposed could not be accommodated in the village with regard to education capacity. Where village schools need to expand to accommodate additional pupils, financial contributions will be sought through a S106 legal agreement.

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10.176	Traffic is a constant issue which will worsen if further development goes ahead. There seems to be no consideration of traffic created in Standon due to development in Bishop's Stortford.	<p>No amendment to Plan in response to this issue</p> <p>The Council has worked closely with Hertfordshire County Council throughout the plan making process on transport matters. The County Council does not consider that the level of growth envisaged will lead to an unacceptable impact on the local highway network. An initial consultation on a potential bypass for Standon and Puckeridge was undertaken earlier in 2016.</p>
10.177	The Little Hadham Bypass will just push traffic further west through Standon.	<p>No amendment to Plan in response to this issue</p> <p>The Council has worked closely with Hertfordshire County Council throughout the plan making process on transport matters. The County Council does not consider that the level of growth envisaged will lead to an unacceptable impact on the local highway network. An initial consultation on a potential bypass for Standon and Puckeridge was undertaken earlier in 2016.</p>
10.178	The doctors are struggling to meet the demands of their current patients.	<p>No amendment to Plan in response to this issue</p> <p>New development in the village will be required to make suitable financial contributions towards health services to mitigate the impact of development, as deemed appropriate.</p>
10.179	Various parts of Puckeridge have been subject to flooding. There is concern that developers are not making a contribution to help alleviate flooding.	<p>No amendment to Plan in response to this issue</p> <p>Development should be delivered in accordance with the guidance contained in the Strategic Flood Risk Assessment. In terms of surface water flooding, new development should help to alleviate these issues through careful design and the use of sustainable drainage techniques.</p>
10.180	HCC would object to the inclusion of any part of Scheduled Monument 75 within any development proposal.	<p>No amendment to Plan in response to this issue</p> <p>Noted. It is the role of the Parish Council to prepare a Neighbourhood Plan in order to deliver 10% growth in the village. Such proposals would need to be in general conformity with the policies contained within the District Plan. As such, proposals that would harm a Scheduled Monument are highly unlikely to be considered sustainable.</p>
10.181	Further development could have an impact on the chalk aquifer rivers such as the River Rib.	<p>No amendment to Plan in response to this issue</p> <p>It is not considered that 10% growth in Standon and Puckeridge would impact negatively on the quality of the river environment.</p>
10.182	Site promoters support the identification of Standon and Puckeridge as a group 1 village.	<p>No amendment to Plan in response to this issue</p> <p>Noted.</p>
10.183	Standon Parish Council suggests that land both	<p>No amendment to Plan in response to this issue</p>

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	sides of Cambridge Road/land south of the former Congregational Chapel to Vintage Corner (Puckeridge) should be included within the development boundary.	It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development. However, the village development boundary can be amended through the formulation of a Neighbourhood Plan to accommodate development.
10.184	Standon Parish Council considers that development anywhere outside of the recommended areas at Cambridge Road should be avoided due to highways constraints.	No amendment to Plan in response to this issue It is the role of the Parish Council to prepare a Neighbourhood Plan that allocates sites and delivers 10% housing growth in Standon & Puckeridge.
10.185	Standon Parish Council suggests that all development north of the village boundaries should be refused until Neighbourhood Plan is in place.	No amendment to Plan in response to this issue Prior to adoption of the District Plan and the Neighbourhood Plan for Standon & Puckeridge, development proposals will be considered against the policies contained in the adopted Local Plan 2007 and national policy.
10.186	Standon Parish Council considers that a new roundabout is required at the brow of the hill in the centre of Cambridge Road to enable traffic to access recommended sites. Mitigation is also required at the junction of Cambridge road with the A120.	No amendment to Plan in response to this issue Such schemes would be addressed through the planning application process, in consultation with Hertfordshire County Council.
10.187	Standon Parish Council believes that a Standon bypass should be planned now to alleviate A120 traffic.	No amendment to Plan in response to this issue The County Council held an initial consultation on a potential bypass in early 2016.
10.188	Standon Parish Council suggests that the sewers need enlarging to deal with the extra 150 dwellings.	No amendment to Plan in response to this issue Such schemes would be addressed through the planning application process, in consultation with Thames Water.
10.189	Standon Parish Council considers that flood risk needs resolving, flood storage areas should be provided.	No amendment to Plan in response to this issue New development should help alleviate surface water flooding issues through careful design and the use of sustainable drainage techniques.
10.190	Standon Parish Council supports the full 40% affordable dwellings quota for developments in the Parish. No reduction upon developer's application	No amendment to Plan in response to this issue The policy provides the starting point for negotiations through the planning application process.

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	should be allowed.	Viability issues can mean that 40% is not achievable on certain sites.
10.191	Standon Parish Council recommends application of Section 106 for developments in the Parish.	<p>No amendment to Plan in response to this issue</p> <p>New development would need to make financial contributions in accordance with the Councils Planning Obligations SPD and HCC's Toolkit.</p>
10.192	Site promoter considers that land at Café Field should be allocated through the District Plan.	<p>No amendment to Plan in response to this issue</p> <p>Comments noted. Land will be allocated for development in Standon & Puckeridge through the Neighbourhood Planning process</p>
Stanstead Abbots & St Margarets		
10.193	Stanstead Abbots lies on a flood plain, has an assessment been carried out to analyse whether development in the village will increase flood risk in other settlements downstream?	<p>No amendment to Plan in response to this issue</p> <p>New development should help alleviate existing flooding issues through careful design and the use of sustainable drainage techniques and this would ensure that there is no increased flood risk to settlements downstream from Stanstead Abbots.</p> <p>In addition, residential development within Flood Zone 3b is not considered appropriate in accordance with national policy.</p>
10.194	<p>Site promoter suggests Stanstead Abbots and St Margarets should be re-assessed and placed in the Group 1 classification. Local Plan Inspector (2007) confirmed Category 1 status to be appropriate. For the following reasons:</p> <ul style="list-style-type: none"> • Access to a railway station. • Good connections to road network. • Wide range of local shops. • Good local services (GP, dentist, school). • Source of employment. 	<p>Proposed amendment to Plan in response to this issue</p> <p>Comments noted. Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Stanstead Abbots & St. Margarets has been identified as a Group 1 Village.</p>
10.195	Site promoter considers 1.32ha of land North of Marsh Lane is suitable and should be allocated.	<p>No amendment to Plan in response to this issue</p> <p>It is the role of the Parish Council to determine whether it is appropriate to amend the Green Belt boundary through the formulation of a Neighbourhood Plan to accommodate development.</p>

Issue Number	Issue	Officer Response
10.196	Site promoter states that the village should have its own chapter with settlement specific policies.	<p>No amendment to Plan in response to this issue</p> <p>The village is no longer considered a 'main settlement' and has therefore been identified as a Group 1 village. As such, it is covered by Policy VILL1 in the District Plan.</p>
10.197	Site promoter considers that education constraints should not restrict growth in Stanstead Abbots. HCC have a statutory duty to ensure sufficient school places are provided to meet local needs. There is currently no evidence which suggests it is not feasible to create additional school capacity.	<p>No amendment to Plan in response to this issue</p> <p>Based on an assessment of services and facilities, Stanstead Abbots and St Margaret's has been identified as a Group 1 Village. It is recognised that education capacity can vary over the course of the Plan period and, as such, has not been considered when identifying village categorisation.</p>
10.198	Site promoter highlights that the Council's strategy supporting document suggests that Stanstead Abbots is at risk of flooding from the River Lea and the New River. The New River is a canal and not a recognised source of flood risk.	<p>No amendment to Plan in response to this issue</p> <p>Noted. However in terms of fluvial flooding, Environment Agency flood zones are used. These are reflected in the Council's updated Strategic Flood Risk Assessment.</p>
10.199	Site promoter considers the fact that the village is located within flood zones 2 and 3 should not automatically preclude residential development. There is no reference in the Draft Plan to the flood risk sequential test.	<p>No amendment to Plan in response to this issue</p> <p>Based on an assessment of services and facilities, Stanstead Abbots and St Margaret's has been identified as a Group 1 village. As it is inset from the Green Belt, the village is not required to deliver 10% growth. Flooding issues should be considered through the planning application process.</p>
10.200	Site promoter considers suitable development would not be likely to have an impact on Amwell Quarry SSSI, Hertford Heath SSSI or Rye Meadows Ramsar Site.	<p>No amendment to Plan in response to this issue</p> <p>Noted. This would be considered through the planning application process.</p>
10.201	Site promoter considers that the Edge of Settlement Assessment tested large scale major developments which would have led to coalescence of settlements. It is far more likely that suitable development around Stanstead Abbots would compromise minor urban extensions.	<p>No amendment to Plan in response to this issue</p> <p>Noted. Based on an assessment of services and facilities, Stanstead Abbots and St Margaret's has been identified as a Group 1 village. As it is inset from the Green Belt, the village is not required to deliver 10% growth. However, a local Green Belt review which allows development on the periphery of the village could be undertaken through a Neighbourhood Plan where appropriate.</p>
10.202	Development will be required in the village to ensure existing facilities and services continue to thrive in the future.	<p>No amendment to Plan in response to this issue</p> <p>Noted. Based on an assessment of services and facilities, Stanstead Abbots and St Margaret's has been identified as a Group 1 village. As it is inset from the Green Belt, the village is not required to deliver 10% growth. However, a local Green Belt review which would facilitate development on the periphery of the village could be undertaken through a Neighbourhood Plan where appropriate. Development within the settlement boundary is also acceptable subject to the</p>

Issue Number	Issue	Officer Response
		criteria identified within Policy VILL1.
10.203	Stanstead Abbots Parish Council supports the stance to not allocate land North of St Margarets Road and West of pumping station on Hoddesdon Road.	<p>No amendment to Plan in response to this issue</p> <p>Support noted and welcomed.</p>
10.204	Site promoter considers that a settlement should not be relegated to a lower category, with the greater restrictions which would apply, merely because of the current lack of an identifiable site. Sites suitable for development may appear over the plan period in larger villages (Stanstead Abbots).	<p>No amendment to Plan in response to this issue</p> <p>Noted. Based on an assessment of services and facilities, Stanstead Abbots and St Margaret's has been identified as a Group 1 village. As it is inset from the Green Belt, the village is not required to deliver 10% growth</p>
10.205	Site promoter considers that land at Netherfield Lane should be included within the boundary. This site could provide housing for elderly persons, meaning no extra pressure would be put on the schools.	<p>No amendment to Plan in response to this issue</p> <p>The village development boundary for Stanstead Abbots & St. Margarets is identical to the Green Belt boundary as the village is inset from the Green Belt. The Council is not proposing to amend the Green Belt boundary around Stanstead Abbots & St. Margarets in the District Plan. However, the Council will encourage the Parish Councils to consider whether it is appropriate to amend their Green Belt boundary through the formulation of a Neighbourhood Plan to accommodate additional development.</p>
10.206	Stanstead Abbots Parish Council oppose any infilling of green belt land in the village.	<p>No amendment to Plan in response to this issue</p> <p>The village is inset from the Green Belt with the village development boundary being identical to the Green Belt boundary. Development outside of the village development boundary, within the Green Belt, would be considered to be inappropriate unless 'very special circumstances' were proven.</p>
10.207	Stanstead Abbots Parish Council supports the Group 2 designation.	<p>No amendment to Plan in response to this issue</p> <p>Support noted. However, the Final Village Hierarchy Study August 2016 identifies that Stanstead Abbots & St. Margarets should be included in the Group 1 Village categorisation.</p>
10.208	Site promoter suggests land North of the A414 at Stanstead St Abbots and St Margarets (Parcel 1) and South of the A414 bordering Hoddesdon (Parcel 2) are suitable for development and should be included within village boundary.	<p>No amendment to Plan in response to this issue</p> <p>The village development boundary for Stanstead Abbots & St. Margarets is identical to the Green Belt boundary as the village is inset from the Green Belt. The Council is not proposing to amend the Green Belt boundary around Stanstead Abbots & St. Margarets in the District Plan. However, the Council will encourage the Parish Councils to consider whether it is appropriate to amend their</p>

Issue Number	Issue	Officer Response
		Green Belt boundary through the formulation of a Neighbourhood Plan to accommodate additional development.
10.209	Site promoter acknowledges that the settlement is constrained to the north and south by environmental designations. The west of the settlement is covered by archaeological designation, which would be examined during a planning application. This should not be a reason for restricting development at this stage.	<p>No amendment to Plan in response to this issue</p> <p>Noted. Based on an assessment of services and facilities, Stanstead Abbots and St Margaret's has been identified as a Group 1 village. As it is inset from the Green Belt, the village is not required to deliver 10% growth</p>
10.210	Site promoter suggests that allowing development in the village will bring forward section 106 funds which can go towards a new school site.	<p>No amendment to Plan in response to this issue</p> <p>It is acknowledged that new development within the village could generate financial contributions towards the provision of a new school. However, there would need to be a significant level of development in the village to provide the funds to acquire a new site and fund construction. It is not considered that such a level of development would be sustainable in this location.</p>
Tewin		
10.211	Tewin Parish Council and others support the identification of Tewin as a Group 2 Village.	<p>No amendment to Plan in response to this issue</p> <p>Support noted and welcomed. The Final Village Hierarchy Study August 2016 confirms the identification of Tewin as a Group 2 Village.</p>
10.212	Tewin Parish Council comments that the school has limited potential to expand because of land ownership issues and highway constraints. This could have led to Tewin being downgraded from a marginal fail at sieve 2, to a fail at sieve 2a.	<p>No amendment to Plan in response to this issue</p> <p>Noted. An up to date assessment of village sustainability has been carried out and the Final Village Hierarchy Study was presented to the District Planning Executive Panel on 25th August 2016. This identifies Tewin as a Group 2 Village. Tewin is the only Group 2 Village inset from the Green Belt and limited infill development within the village development boundary will be permitted. This level of development is not envisaged to require an expansion to the school.</p>
10.213	Tewin Parish Council queries the assessment of highways and vehicular access as green. Taking long term construction traffic into account Tewin could have warranted a red assessment.	<p>No amendment to Plan in response to this issue</p> <p>Noted. An up to date assessment of village sustainability has been carried out and the Final Village Hierarchy Study was presented to the District Planning Executive Panel on 25th August 2016. This identifies Tewin as a Group 2 Village. Tewin is the only Group 2 Village inset from the Green Belt and limited infill development within the village development boundary will be permitted. Highways and vehicular access is considered to be adequate to accommodate this level of development.</p>

Issue Number	Issue	Officer Response
10.214	Tewin Parish Council raises concerns that Tewin may lose some of its existing community facilities through the plan period.	<p>No amendment to Plan in response to this issue</p> <p>Noted. Limited infilling within the village development boundary would help to sustain existing services and facilities in the village.</p>
10.215	Tewin Parish Council raises concerns that Tewin may lose its bus service through the plan period.	<p>No amendment to Plan in response to this issue</p> <p>Noted. Limited infilling within the village development boundary would help to sustain existing services and facilities in the village.</p>
10.216	Tewin Parish Council queries the assessment of Waste Water impact as green. This fails to take account of incidents on two branch sewers in Tewin, including the contamination of newly built housing.	<p>No amendment to Plan in response to this issue</p> <p>Noted. An up to date assessment of village sustainability has been carried out and the Final Village Hierarchy Study was presented to the District Planning Executive Panel on 25th August 2016. This identifies Tewin as a Group 2 Village. Tewin is the only Group 2 Village inset from the Green Belt and limited infill development within the village development boundary will be permitted. This level of development is not envisaged to have an unacceptable impact on the wastewater infrastructure in the village.</p>
10.217	Site promoter and others object to Tewin not being a Group 1 Village. The situation does not seem to have changed since the 2007 Local Plan, where Tewin was identified as Category 1 Village.	<p>No amendment to Plan in response to this issue</p> <p>An up to date assessment of village sustainability has been carried out and the Final Village Hierarchy Study was presented to the District Planning Executive Panel on 25th August 2016. This identifies Tewin as a Group 2 Village.</p>
10.218	Objection to Tewin receiving a 'red' ranking in the traffic light assessment for bus services, access to rail service, and employment potential.	<p>No amendment to Plan in response to this issue</p> <p>Noted. An up to date assessment of village sustainability has been carried out and the Final Village Hierarchy Study was presented to the District Planning Executive Panel on 25th August 2016. This identifies Tewin as a Group 2 Village.</p>
10.219	Site promoter highlights that in 2007 the school was undersubscribed, therefore if there are any capacity issues now, it is believed that this has been created by taking admissions from outside of Tewin.	<p>No amendment to Plan in response to this issue</p> <p>It is recognised that education capacity can vary over the course of the Plan period and, as such, has not been considered when identifying village categorisation.</p>
10.220	There is ample room to expand the school, within the school site without encroaching on to other land.	<p>No amendment to Plan in response to this issue</p> <p>Noted. However, Tewin is the only Group 2 Village inset from the Green Belt and only limited infill development within the village development boundary will be permitted. This level of development is not envisaged to require an expansion to the school.</p>

Issue Number	Issue	Officer Response
10.221	Tewin should be a Group 1 Village in order to allow the correct type and mix of housing to be provided. Currently there are too many 4/5/6 bedroom houses and not enough affordable 2/3 bedroom houses.	<p>No amendment to Plan in response to this issue</p> <p>Noted. An up to date assessment of village sustainability has been carried out and the Final Village Hierarchy Study was presented to the District Planning Executive Panel on 25th August 2016. This confirms the identification of Tewin as a Group 2 Village.</p> <p>Tewin is the only Group 2 Village inset from the Green Belt and only limited infill development within the village development boundary will be permitted. A Neighbourhood Plan could include a policy on housing type and mix, as long as it is based on robust evidence.</p>
10.222	Site promoter considers that 1ha of land east of Upper Green Road should be included within the village boundary. It can deliver between 15 and 33 dwellings.	<p>No amendment to Plan in response to this issue</p> <p>The village is inset from the Green Belt with the village development boundary being identical to the Green Belt boundary. The Council is not proposing to amend the Green Belt boundary around Tewin in the District Plan. Development outside of the village development boundary, within the Green Belt, would be considered to be inappropriate unless 'very special circumstances' were proven.</p>
10.223	The Tewin village boundary has been drawn so tightly that it will not allow for any development to come forward over the plan period. The boundary needs adjusting to allow for some affordable and marketable housing.	<p>No amendment to Plan in response to this issue</p> <p>The village is inset from the Green Belt with the village development boundary being identical to the Green Belt boundary. The Council is not proposing to amend the Green Belt boundary around Tewin in the District Plan. Development outside of the village development boundary, within the Green Belt, would be considered to be inappropriate unless 'very special circumstances' were proven. Rural exception affordable housing schemes are considered to be appropriate development in the Green Belt.</p>
10.224	Site promoter considers that 1.49ha of land adjacent to Cowper C of E School should be included within the village boundary, the land could be used to help the school expand.	<p>No amendment to Plan in response to this issue</p> <p>The village is inset from the Green Belt with the village development boundary being identical to the Green Belt boundary. The Council is not proposing to amend the Green Belt boundary around Tewin in the District Plan. Development outside of the village development boundary, within the Green Belt, would be considered to be inappropriate unless 'very special circumstances' were proven. There is currently no identified need to expand the village school.</p>
10.225	The village primary school is not serving merely local children. If there was development, school places could be taken up by local children, meaning less travel and congestion.	<p>No amendment to Plan in response to this issue</p> <p>It is acknowledged that many village schools serve pupils that live beyond the village, and the benefit of the school being attended by pupils from the village is recognised with regard to congestion issues. However, this does not constitute the 'very special circumstances' that are</p>

Issue Number	Issue	Officer Response
		required to justify development in the Green Belt.
10.226	Site promoter considers that Tewin Wood should have a development boundary drawn around it rather than being “washed over” by the green belt.	<p>No amendment to Plan in response to this issue</p> <p>Tewin Wood has been identified as a Group 3 settlement and it is therefore appropriate for it to be washed over by the Green Belt.</p>
Thundridge		
10.227	The Thundridge village boundary has been drawn to exclude houses in Poles Lane. There are 50 houses on Poles Lane, a pub and a hotel.	<p>Potential amendment to Plan in response to this issue</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development.</p> <p>Nevertheless, the village development boundaries are currently under review and the final boundary for Thundridge will be available to view on the Policies Map in due course.</p>
10.228	Site promoter objects to the failure to upgrade Thundridge/Wadesmill to a Category 1 Village. Local Plan Inspector 2007 concluded that the Category 2 classification is flawed because the villages have: a school, village shop, hotel, employment opportunities, bus services and close proximity to Ware.	<p>No amendment to Plan in response to this issue</p> <p>An up to date assessment of village sustainability has been carried out and the Final Village Hierarchy Study was presented to the District Planning Executive Panel on 25th August 2016. This confirms the identification of Thundridge & Wadesmill as a Group 2 Village.</p>
10.229	Site promoter comments that the inability of the school to expand was identified as a constraint leading to the village not warranting Group 1 status. This is surprising given that HCC in 2013 said that school capacity would not be an issue with 10% growth. In addition, Puller Memorial School in High Cross is undersubscribed.	<p>No amendment to Plan in response to this issue</p> <p>An up to date assessment of village sustainability has been carried out and the Final Village Hierarchy Study was presented to the District Planning Executive Panel on 25th August 2016. This confirms the identification of Thundridge & Wadesmill as a Group 2 Village. It is recognised that education capacity can vary over the course of the Plan period and, as such, has not been considered when identifying village categorisation.</p>
10.230	Site promoter considers that the village boundary should include the factory site on the east of C183 (Thundridge Business Park- VILL5). Land behind the factories (north of Woodlands Road) would appear to offer potential for development.	<p>Potential amendment to Plan in response to this issue</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development.</p>

Issue Number	Issue	Officer Response
		Nevertheless, the village development boundaries are currently under review and the final boundary for Thundridge will be available to view on the Policies Map in due course.
Tonwell		
10.231	Tonwell will benefit from new homes. Small pockets of new housing will bring new families, who will give an injection of life to the village.	<p>No amendment to Plan in response to this issue</p> <p>Tonwell has been identified as a Group 2 Village where limited infill development is permitted. In addition, small-scale development identified within a Neighbourhood Plan will be permitted.</p>
Wadesmill		
10.232	Site promoter considers that land to the rear of Rennesley Farm should be included within the village boundary.	<p>Potential amendment to Plan in response to this issue</p> <p>It is the intention that village development boundaries delineate the main built up area of the village where development proposals will be supported in principle, in accordance with Policies VILL1 and VILL2. They do not seek to make a judgment as to the overall extent of the village or seek to allocate sites for development.</p> <p>Nevertheless, the village development boundaries are currently under review and the final boundary for Wadesmill will be available to view on the Policies Map in due course.</p>
Walkern		
10.233	Many object to the classification of Walkern as a Group 1 Village.	<p>No amendment to Plan in response to this issue</p> <p>An up to date assessment of village sustainability has been carried out and the Final Village Hierarchy Study was presented to the District Planning Executive Panel on 25th August 2016. This confirms the identification of Walkern as a Group 1 Village.</p>
10.234	The roads in and around Walkern (High Street, B1037) cannot take any increase in traffic. Expansion of the village and other areas such as Buntingford will increase congestion.	<p>No amendment to Plan in response to this issue</p> <p>Congestion on Walkern High Street at peak times is caused by parked cars rather than weight of traffic. It is not considered that this issue should result in a change in categorisation for the village. The impact of development on the highway network will be considered through the planning application process.</p>
10.235	Additional development in Walkern will have a detrimental impact on the green belt.	<p>No amendment to Plan in response to this issue</p> <p>Walkern is not located within the Green Belt.</p>

Issue Number	Issue	Officer Response
10.236	Walkern is directly under the flight path to Luton, noise pollution is a major issue.	<p>No amendment to Plan in response to this issue</p> <p>Walkern lies outside the area of concern as defined by noise contour maps. The area is also outside flight safety zones.</p>
10.237	Infrastructure in Walkern has reached its limits (Medical facilities, shops, community facilities), this restricts additional development.	<p>No amendment to Plan in response to this issue</p> <p>An up to date assessment of village sustainability has been carried out and the Final Village Hierarchy Study was presented to the District Planning Executive Panel on 25th August 2016. This confirms the identification of Walkern as a Group 1 Village.</p> <p>New development in the village will be required to make suitable financial contributions towards health services to mitigate the impact of development, as deemed appropriate. It is considered that new development will help to sustain existing shops and community facilities in the village.</p>
10.238	Public transport is very poor. Commuters are unable to use public transport, therefore residents are dependent on travelling by car.	<p>No amendment to Plan in response to this issue</p> <p>Walkern is served by a bus service which enables access to Stevenage and other locations. It is recognised that rural areas are largely dependent on cars for travel. As such, the amount of development proposed to be delivered in the villages is 500 dwellings.</p>
10.239	Walkern is located at the bottom of a valley which leads to the roads flooding severely, this restricts further development.	<p>No amendment to Plan in response to this issue</p> <p>New development should help alleviate existing flooding issues through careful design and the use of sustainable drainage techniques. However, residential development within Flood Zone 3b is not considered appropriate in accordance with national policy.</p>
10.240	There are limited employment opportunities in Walkern meaning people have to travel to Stevenage, this restricts further development.	<p>No amendment to Plan in response to this issue</p> <p>Walkern is served by a bus service which enables access to Stevenage and other locations. It is recognised that rural areas are largely dependent on cars for travel. As such, the amount of development proposed to be delivered in the villages is 500 dwellings.</p>
10.241	Development to the North East of Stevenage (planned by North Herts District Council and Stevenage Borough Council) combined with East Herts plans will lead to Walkern merging with Stevenage.	<p>No amendment to Plan in response to this issue</p> <p>The District Plan does allocate land to the east of Stevenage for 600 homes. However, the strategic gap between the settlements will be maintained.</p>
10.242	Parking is very limited in Walkern, vehicles from the school have to park in nearby roads leading to	<p>No amendment to Plan in response to this issue</p>

Issue Number	Issue	Officer Response
	residents losing spaces. Further development will exacerbate this issue.	It is unlikely that new residents of Walkern should need to drive to the primary school. At present a number of pupils reside in Stevenage. Limited development in the village may help redress this issue thereby reducing the number of cars parked outside the school at peak times.
10.243	Internet connections and communications in the village require updating before additional development.	<p>No amendment to Plan in response to this issue</p> <p>The Council is supportive of providing improved communications infrastructure, particularly in the villages.</p> <p>The Connected Counties programme is an established programme which works with BT to improve broadband connectivity across rural areas in Hertfordshire. Walkern is included in the programmes second rollout phase, the Superfast Extension Programme (SEP). The indicative timetable for rollout can be viewed at http://www.connectedcounties.org/news/2015/may/superfast-extension-programme-confirmed-in-herts.</p>
10.244	Electricity and gas supplies will be put under extra stress due to this development.	<p>No amendment to Plan in response to this issue</p> <p>The utilities providers have been engaged in the plan making process and have not objected to the proposed level of growth.</p>
10.245	Air pollution is already a major issue in Walkern.	<p>No amendment to Plan in response to this issue</p> <p>Mitigation of this issue should be considered through the planning application process.</p>
10.246	The footpaths in Walkern are too narrow, any increase in the traffic will have an impact on this dangerous situation.	<p>No amendment to Plan in response to this issue</p> <p>It is not considered that this is an issue which should prevent development in the village.</p>
10.247	The school in Walkern is already at capacity before additional development. Any increase in population would also put further pressure on the middle and secondary schools in Buntingford.	<p>No amendment to Plan in response to this issue</p> <p>Education capacity can vary over the course of the Plan period and, as such, has not been considered when identifying village categorisation. However, it is understood that, at present, a number of pupils attend the village school that reside in Stevenage, so additional development in the village may help redress this issue.</p> <p>Walkern falls within the Stevenage school planning area and therefore any increase in the population will be considered in the context of education planning in Stevenage rather than Buntingford.</p>
10.248	Stevenage Borough Council comments that Walkern and Watton-at-Stone are Group 1 Villages	<p>No amendment to Plan in response to this issue</p>

Issue Number	Issue	Officer Response
	that fall within the Stevenage and A1 HMA. It is not presently clear how targets for these villages relate to the needs arising from either that part of Stevenage or HMA as a whole.	Stevenage Borough Council has progressed a Local Plan which seeks to meet identified housing needs with its own administrative boundaries. Any housing delivered in Walkern would contribute to meeting East Herts housing needs.
10.249	Development to the rear of Moors Ley and Stevenage Road should not be allowed due to sewage, flooding and highways constraints.	<p>No amendment to Plan in response to this issue</p> <p>It is the role of the Parish Council to prepare a Neighbourhood Plan that delivers 10% housing growth in Walkern.</p>
10.250	Development in the village will be to the detriment of wildlife habitats and woodland.	<p>No amendment to Plan in response to this issue</p> <p>It is the role of the Parish Council to prepare a Neighbourhood Plan that delivers 10% housing growth in Walkern. In doing so, the Neighbourhood Plan needs to demonstrate how the impact on sites of environmental importance has been avoided or mitigated.</p>
10.251	Site promoter supports classification of Walkern as group 1 village. Land off Aubries is available.	<p>No amendment to Plan in response to this issue</p> <p>Noted. This site has now received planning permission for development.</p>
10.252	Site promoter suggests land at Winters Lane should be brought forward.	<p>No amendment to Plan in response to this issue</p> <p>It is the role of the Parish Council to prepare a Neighbourhood Plan that delivers 10% housing growth in Walkern.</p>
Watton-at-Stone		
10.253	HCC suggests that the inclusion of Watton-at-Stone school within the village boundary would assist in achieving planning permission for any development that would be required to enable the provision of additional school places to meet the demand from proposed development. Others comment on the difficulties of expanding the school due to its green belt location.	<p>No amendment to Plan in response to this issue</p> <p>The Green Belt chapter now states that expansion of schools will form the 'very special circumstances' required to allow development in the Green Belt.</p>
10.254	Watton-at-Stone Parish Council and others believe development is not possible in the village because of green belt constraints.	<p>No amendment to Plan in response to this issue</p> <p>Based on an assessment of services and facilities, Watton-at-Stone has been identified as a Group 1 village. As it is inset from the Green Belt, the village is not required to deliver 10% growth. However, a local Green Belt review which would facilitate development on the periphery of the village could be undertaken through a Neighbourhood Plan where appropriate.</p>

Issue Number	Issue	Officer Response
10.255	Watton-at-Stone Parish Council states that Land to the rear of Motts Close should not be developed due to green belt constraints.	<p>No amendment to Plan in response to this issue</p> <p>It is the role of the Parish Council to prepare a Neighbourhood Plan for Watton-at-Stone. As it is inset from the Green Belt, the village is not required to deliver 10% growth. However, a local Green Belt review which would facilitate development on the periphery of the village could be undertaken through a Neighbourhood Plan where appropriate.</p>
10.256	Watton-at-Stone Parish Council and others have doubts whether Land to the west of Walkern Road could be developed, due to: highways and access issues, pedestrian access constraints, green belt impact, wildlife damage and land ownership difficulties.	<p>No amendment to Plan in response to this issue</p> <p>It is the role of the Parish Council to prepare a Neighbourhood Plan for Watton-at-Stone. As it is inset from the Green Belt, the village is not required to deliver 10% growth. However, a local Green Belt review which would facilitate development on the periphery of the village could be undertaken through a Neighbourhood Plan where appropriate.</p>
10.257	Watton-at-Stone Parish Council considers that education is a considerable concern in the village, given past and proposed development.	<p>No amendment to Plan in response to this issue</p> <p>Education capacity can vary over the course of the Plan period and, as such, has not been considered when identifying village categorisation.</p>
10.258	Watton-at-Stone Parish Council and others raised concerns about the level of traffic and congestion in the village.	<p>No amendment to Plan in response to this issue</p> <p>Much of the congestion in the village at peak times is caused by parked cars rather than weight of traffic. It is not considered that this issue should result in a change in categorisation for the village. The impact of development on the highway network will be considered through the planning application process.</p>
10.259	Watton-at-Stone Parish Council considers that the GP surgery is at full capacity and cannot handle an increase in population.	<p>No amendment to Plan in response to this issue</p> <p>New development in the village will be required to make suitable financial contributions towards health services to mitigate the impact of development, as deemed appropriate.</p>
10.260	Watton-at-Stone Parish Council and others object to site adjacent to Great Innings North.	<p>No amendment to Plan in response to this issue</p> <p>It is the role of the Parish Council to prepare a Neighbourhood Plan for Watton-at-Stone. As it is inset from the Green Belt, the village is not required to deliver 10% growth. However, a local Green Belt review which would facilitate development on the periphery of the village could be undertaken through a Neighbourhood Plan where appropriate.</p>
10.261	Watton-at-Stone Parish Council has no confidence in being able to devise a Neighbourhood Plan. The	<p>No amendment to Plan in response to this issue</p>

Issue Number	Issue	Officer Response
	need for the Neighbourhood Plan to be in line with the District Plan means that no way forward can be seen.	The Parish Council is now progressing a Neighbourhood Plan which will be in conformity with the District Plan.
10.262	Watton-at-Stone Parish Council and others are concerned that extra development will have a detrimental impact on the parking situation in the village.	<p>No amendment to Plan in response to this issue</p> <p>The Parish Council is now progressing a Neighbourhood Plan which will be in conformity with the District Plan. This may provide an opportunity to address the parking situation in the village.</p>
10.263	Landowners are committed to working with the Council should development of 3ha of land located between the High Street and railway to the North West of the existing Village Boundary be necessary through the District Plan process.	<p>No amendment to Plan in response to this issue</p> <p>Noted. It is the role of the Parish Council to prepare a Neighbourhood Plan for Watton-at-Stone. As it is inset from the Green Belt, the village is not required to deliver 10% growth. However, a local Green Belt review which would facilitate development on the periphery of the village could be undertaken through a Neighbourhood Plan where appropriate.</p>
10.264	The A602 is a major problem, traffic regularly backs up the Watton bypass in both ways. A bypass is required around Hooks Cross and the section towards Ware is too narrow.	<p>No amendment to Plan in response to this issue</p> <p>The County Council are proposing significant online improvements to the A602 which should enhance traffic flow at peak times.</p>
10.265	Development will increase the amount of crime in the village. It is requested to see the crime figures.	<p>No amendment to Plan in response to this issue</p> <p>It is not considered that this is a sufficient reason to prevent development in Watton-at-Stone. Any new development should be designed in order to reduce the potential for crime as well as the fear of crime.</p>
10.266	Watton-at-Stone Parish Council feel injustice that the Gatekeeper Meadow development will not count towards the targets in the plan, as it was delivered during this current plan timeframe. Others suggest that at least the 26 extra houses built at the site should count towards Watton-at-Stone's target.	<p>No amendment to Plan in response to this issue</p> <p>The Gatekeeper Meadow development will count towards the overall housing requirement for the District. As it is inset from the Green Belt, the village is not required to deliver 10% growth. However, a local Green Belt review which would facilitate development on the periphery of the village could be undertaken through a Neighbourhood Plan where appropriate.</p>
10.267	Watton-at-Stone Parish Council and others comment that the Gatekeeper Meadow development is a visible eyesore, has poor parking, narrow roads and is generally unpleasant and cramped. If there is additional development in the village, how are the residents supposed to have any confidence in the quality of design?	<p>No amendment to Plan in response to this issue</p> <p>The Neighbourhood Plan can address issues of design. The District Plan also includes policies that requires development to be of a high quality design.</p>
10.268	Watton-at-Stone should only be subject to infill	<p>No amendment to Plan in response to this issue</p>

Issue Number	Issue	Officer Response
	development of 25-30 homes over the plan period.	As it is inset from the Green Belt, the village is not required to deliver 10% growth. However, a local Green Belt review which would facilitate development on the periphery of the village could be undertaken through a Neighbourhood Plan where appropriate.
10.269	The plan says group 1 villages may be permitted limited, small scale and infill development, the suggested 85 dwellings at Watton-at-Stone in not limited or small-scale.	<p>Proposed amendment to Plan in response to this issue</p> <p>The phrase 'limited small-scale development and infill development' will be deleted and replaced by the word 'development'. Part VI (b) of the policy sets out that development should be of a scale appropriate to the size of the village. It is considered that this amendment provides greater flexibility to Parish Councils with regard to how they choose to deliver development in their villages through the formulation of a Neighbourhood Plan.</p> <p>Nevertheless, as Watton-at-Stone is inset from the Green Belt, the village is no longer required to deliver 10% growth. However, a local Green Belt review which would facilitate development on the periphery of the village could be undertaken through a Neighbourhood Plan where appropriate.</p>
10.270	Any further development in Watton should avoid making a visual impact on the landscape.	<p>No amendment to Plan in response to this issue</p> <p>It is the role of the Parish Council to prepare a Neighbourhood Plan for Watton-at-Stone. However, proposals for any development should consider potential impacts on the landscape.</p>
10.271	The electrical supply in the village cannot handle any more development.	<p>No amendment to Plan in response to this issue</p> <p>The utilities providers have been engaged in the plan making process and have not objected to the proposed level of growth.</p>
Westmill		
10.272	Westmill Parish Council objects to the classification of the village as Group 2. The village was Category 3 in the last District Plan and should remain so. Since the plan was adopted there has been no increase in facilities in the village.	<p>No amendment to Plan in response to this issue</p> <p>An up to date assessment of village sustainability has been carried out and the Final Village Hierarchy Study was presented to the District Planning Executive Panel on 25th August 2016. This confirms the identification of Westmill as a Group 2 Village.</p>
10.273	Westmill Parish Council highlights the sieving process that noted "development could potentially contribute to an improved bus service". This is unlikely to occur as Westmill's bus stop is underused. The stop is directly on the A10 and is a	<p>No amendment to Plan in response to this issue</p> <p>It is acknowledged that the bus stop is located on the A10, some distance away from the built up area of the village. It is considered unlikely that development in Westmill would result in an improved bus service to the village.</p>

Issue Number	Issue	Officer Response
	long walk from the village.	
Widford		
10.274	Widford Parish Council and others consider that the classification of the village as a Group 1 will lead to developers building large 4/5 bedroom houses suitable for commuters. Widford should remain Group 2 where it can support its residents.	<p>No amendment to Plan in response to this issue</p> <p>Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Widford has now been identified as a Group 2 Village. A Neighbourhood Plan could include a policy on housing type and mix, as long as it is based on robust evidence.</p>
10.275	Widford Parish Council comments that the village, has such limited facilities (no shops, post office or GP surgery) this means the village should be classified as Group 2.	<p>No amendment to Plan in response to this issue</p> <p>Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Widford has now been identified as a Group 2 Village.</p>
10.276	Widford Parish Council has limited parking and bus services, meaning the village should be classified as Group 2.	<p>No amendment to Plan in response to this issue</p> <p>Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Widford has now been identified as a Group 2 Village.</p>
10.277	Widford Parish Council considers that there is very little industry/employment in the village, meaning it should be classified as Group 2.	<p>No amendment to Plan in response to this issue</p> <p>Following further consideration of the village development strategy and publication of the Final Village Hierarchy Study August 2016, Widford has now been identified as a Group 2 Village.</p>
10.278	Widford Parish Council and others suggest that smaller, more affordable housing is required in the village.	<p>No amendment to Plan in response to this issue</p> <p>Widford is categorised as a Group 2 village and therefore limited infilling within the built up area of the village is permitted, as well as small-scale development identified in an adopted Neighbourhood Plan. A Neighbourhood Plan could include a policy on housing type and mix, as long as it is based on robust evidence. In addition, to meet affordable housing need, rural exception affordable housing schemes may be permitted subject to the criteria set out in Policy HOU4.</p>

EAST HERTS COUNCIL

DISTRICT PLANNING EXECUTIVE PANEL – 15 SEPTEMBER 2016

REPORT BY LEADER OF THE COUNCIL

EAST HERTS DISTRICT PLAN – APPENDICES – RESPONSE TO ISSUES RAISED DURING PREFERRED OPTIONS CONSULTATION AND UPDATED APPENDIX C: MONITORING FRAMEWORK AND APPENDIX D: GLOSSARY

WARD(S) AFFECTED: ALL

Purpose/Summary of Report

The purpose of this report is:

- To bring to Members' attention the issues raised through the Preferred Options consultation in connection with the Appendices to the Draft District Plan Preferred Options version, together with Officer responses to those issues; to present to Members a revised Appendix C: Monitoring Framework and Appendix D: Glossary; and, to seek agreement to include these appendices within the East Herts District Plan Pre-Submission Version, 2016.

RECOMMENDATIONS FOR DISTRICT PLANNING EXECUTIVE PANEL: That Council, via the Executive, be advised that:

(A)	the issues raised in respect of Appendices to the Draft District Plan Preferred Options, as detailed at Essential Reference Paper 'B' to this report, be received and considered;
(B)	the Officer response to the issues referred to in (A) above, as detailed in Essential Reference Paper 'B' to this report, be agreed;
(C)	the revised version of 'Appendix C: Monitoring Framework' to the East Herts District Plan Pre-Submission Version, 2016, as detailed at Essential Reference Paper 'C' to this report, be agreed for inclusion in the Pre-Submission East Herts District Plan, 2016; and

(D)	the revised version of 'Appendix D: Glossary' to the East Herts District Plan Pre-Submission Version, 2016, as detailed at Essential Reference Paper 'D' to this report, be agreed for inclusion in the Pre-Submission East Herts District Plan, 2016.
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1.0 Background

- 1.1 The Council published its Draft District Plan Preferred Options for consultation for a period of twelve weeks between 27th February and 22nd May 2014. Several thousand comments were received through the consultation exercise from over a thousand stakeholders including statutory consultees and members of the public.
- 1.2 In order to manage these comments, the Council's agreed approach, as set out in its Statement of Community Involvement (October 2013), is to summarise the issues raised through the consultation and record how these issues have been used to inform the next draft of the District Plan.
- 1.3 This report presents the Issue Report for the Appendices at **Essential Reference Paper 'B'**. The report further details the proposed revised appendices relating to the Monitoring Framework and Glossary at **Essential Reference Paper 'C'** **Essential Reference Paper 'D'** and seeks agreement of these for incorporation into the version for consultation under Regulation 19 of the Town and Country (Local Planning) (England) Regulations 2012 as amended.

2.0 Report

- 2.1 The Issue Report summarises the five issues raised through the Preferred Options Consultation and these are grouped according to the appendix of the Draft Plan which they each relate to. The table presents an officer response to each issue and sets out whether or not it is proposed that any subsequent proposed amendments to the text or policies of the draft Plan be made as a result.
- 2.2 The consequential proposed amendments are included in a table, which is detailed at **Essential Reference 'B'** to this report. The

table sets out, in appendix order, the issues which have arisen and the changes which are proposed to address these.

- 2.3 As a result of the consideration of the issues raised, it should be noted that 'Appendix C: Open Space Standards' is proposed for deletion. Consequentially, the Monitoring Framework, which was formerly labelled as Appendix D, is now proposed to be renamed as 'Appendix C: Monitoring Framework'. This updated position in respect of the appendices reflects both the Officer proposed responses to representations made to the Preferred Options Consultation in 2014 and also to ensure alignment with the Pre-Submission Plan. A revised version of the Monitoring Framework is included at **Essential Reference Paper 'C'** to this report.
- 2.4 While no representations were made in respect of 'Appendix E: Glossary' through the Draft District Plan Preferred Options Consultation in 2014, there have been numerous changes in local and wider circumstance since that time. It is therefore considered appropriate that the Glossary should be rewritten to take these factors into account. Due to the consequential numbering effects of the deletion of the former 'Appendix C: Open Space Standards', a revised version of proposed 'Appendix D: Glossary' is included at **Essential Reference Paper 'C'** to this report.
- 2.5 Members are invited to agree the Issue Report, as detailed in **Essential Reference Paper 'B'** and draft revised 'Appendix C: Monitoring Framework' and 'Appendix D: Glossary', as detailed at **Essential Reference Papers 'C' and 'D'** to this report, respectively, as a basis for inclusion in the final draft District Plan.
- 3.0 Implications/Consultations
- 3.1 Information on any corporate issues and consultation associated with this report can be found within **Essential Reference Paper 'A'**.

Background Papers

Previous District Planning Executive Panel reports are all available at:
<http://democracy.eastherts.gov.uk/mgCommitteeDetails.aspx?ID=151>

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ESSENTIAL REFERENCE PAPER 'A'

IMPLICATIONS/CONSULTATIONS

Contribution to the Council's Corporate Priorities/ Objectives:	Priority 1 – Improve the health and wellbeing of our communities Priority 2 – Enhance the quality of people's lives Priority 3 – Enable a flourishing local economy
Consultation:	The Report refers to the Draft District Plan consultation carried out between 27 th February and 22 nd May 2014.
Legal:	None
Financial:	None
Human Resource:	None
Risk Management:	None
Health and wellbeing – issues and impacts:	The Submission District Plan in general will have positive impacts on health and wellbeing through a range of policy approaches that seek to create sustainable communities.

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Issue Number	Issues raised through consultation	Officer response
Appendix C: Open Space Standards		
C1	HCC Ecology comments that a strategic approach to green corridors through the District has not been identified, from which more local networks can be identified, protected and managed as per the Open Space Standards in Appendix C.	<p>No amendment to Plan in response to this issue</p> <p>The Council is in the process of updating the Open Space Standards through a new Open Spaces, Sports and Recreation Assessment. The Council has a Strategic Green Infrastructure Plan and is working with neighbouring authorities and other partners to deliver wider strategic green infrastructure objectives. In addition, each site allocation requires the delivery of on-site green infrastructure and contributions towards off-site programmes where appropriate. The Plan as a whole seeks to create net gains to biodiversity.</p>
C2	Sport England objects to Table C.1 as the proposed quantity standard for outdoor sports facilities (3.79 ha per 1000 pop) is derived from an assessment that is significantly out of date. The Council's Playing Pitch Strategy recommended standards (table 7.5 of strategy document) is based on the most recent needs assessment and Sport England considers this to be the appropriate standards to be used until the playing pitch strategy is reviewed. Although, the 2010 strategy was not incorporated into an adopted SPD it should take precedence over the 2005 study.	<p>Proposed amendment to Plan</p> <p>As above, the Council is updating the assessment of open spaces which includes indoor and outdoor sports facilities. New text could be added to clarify the position on standards. However, it is unlikely that new standards will be ready for the pre-submission consultation (Regulation 19). Instead, it is proposed that Appendix C will be deleted and the open space standards assessment, when complete, will form the basis of a Supplementary Planning Document. The Community Facilities, Leisure and Recreation chapter will require applicants to use the Council's most up to date evidence, in collaboration with Sport England and other key stakeholders.</p>
C3	Sport England suggests that Appendix C should include the standard for indoor sports provision as CLFR2 does not	<p>Proposed amendment to Plan</p> <p>Agreed. As above, the Council is updating the assessment of</p>

	<p>appear to apply just to outdoor facilities. The NPPF does not distinguish between indoor and outdoor sports, so Appendix C should also include quantitative standards for indoor sport.</p>	<p>open spaces which includes indoor and outdoor sports facilities. New text could be added to clarify the position on standards. However, it is unlikely that new standards will be ready for the pre-submission consultation (Regulation 19). Instead, it is proposed that Appendix C should be deleted and the open space standards assessment, when complete, will form the basis of a Supplementary Planning Document. The Community Facilities, Leisure and Recreation chapter will require applicants to use the Council's most up to date evidence, in collaboration with Sport England and other key stakeholders.</p>
<p>C4</p>	<p>Section 18.3 should clarify what standards should be used on both indoor and outdoor sports. Appendix C should be replaced initially by the recommended standards in table 7.5 of the Playing Pitch Strategy and then updated in due course when new evidence is prepared</p>	<p>Proposed amendment to Plan</p> <p>Chapter 18 will be amended to set out the latest position with regard to open spaces, sport and recreation facilities.</p>
<p>Appendix D: Monitoring Framework</p>		
<p>D1</p>	<p>HCC Ecology states that the indicator for Natural Environment requires altering. Whilst annual monitoring of species is undertaken, this is limited to two groups (butterflies and birds). This is also entirely undertaken by volunteers, therefore is not analysed or organised by the LPA. Consequently any consideration of species should be left out.</p> <p>HCC Ecology advise that the following two indicators are proposed:</p> <ol style="list-style-type: none"> 1. Change in number and area of statutorily protected sites. This will monitor the legally protected site network of SSSIs and LNRs which are also a statutory designation. 2. Change in number and area of non-statutory sites. 	<p>Proposed amendment to Plan</p> <p>The Council's Monitoring Framework should be amended accordingly.</p>

	<p>These will be anything else that is considered to have some form of informal biodiversity or geodiversity recognition namely, Wildlife sites, important geological/geomorphological sites, Wildlife Trust or other reserves.</p>	
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Appendix C: Monitoring Framework

- C.1 The District Plan will require continuous monitoring and review to ensure that it remains relevant and responds to changing needs and circumstances. The Council will monitor the effectiveness of the policies contained in the District Plan by regularly assessing their performance against a series of indicators, which are set out in Table C.1 below.
- C.2 The Authority Monitoring Report (AMR) will be the principal tool that will monitor the District Plan. The primary purpose of the AMR will be to:
- Set out the Council’s housing trajectory and 5 year housing land supply assessment.
 - Report on the effectiveness of the policies contained in the District Plan and identify the need to reassess or review any policies.
 - Update the Infrastructure Delivery Plan and report on the application of the Community Infrastructure Levy (if adopted by the Council in due course).
 - Monitor the preparation and implementation of Neighbourhood Plans.
 - Summarise actions the Council has taken under the duty to co-operate.
- C.3 In addition to the indicators set out in the Monitoring Framework in Table C.1, the AMR will contain contextual indicators which provide further background information with regard to the various topic areas.

Table C.1 Monitoring Framework

Indicator Type	Indicator	Target/Basis for Evaluation	Monitoring Policies
Housing	Net additional dwellings completed between 2011-2033, by settlement and broad location for growth	16,390 dwellings between 2011-2033 (average of 745 per annum)	DPS1, DPS2, DPS3
Housing	Net additional dwellings in future years and phasing (trajectory)	Maintenance of a 5 year housing land supply	DPS2, DPS3
Housing	% of new and converted dwellings on Previously Developed Land (PDL)	No target	DPS2
Housing	Net additional dwellings completed on Allocated sites	11,592 dwellings by 2033	DPS3
Housing	Net additional dwellings completed on SLAA sites	88 dwellings by 2022	DPS3
Housing	Net additional dwellings completed on Windfall sites	800 dwellings by 2033	DPS3
Housing	Number of Neighbourhood Plans in preparation/adopted	Increasing trend	DPS6, VILL1, VILL4

Indicator Type	Indicator	Target/Basis for Evaluation	Monitoring Policies
Housing	Net additional dwellings completed in the villages in the period 2017-2022	At least 250 dwellings	DPS2, DPS3, VILL1, VILL2, VILL3, VILL4
Housing	Net additional dwellings completed in the villages in the period 2017-2027	At least 500 dwellings	DPS2, DPS3, VILL1, VILL2, VILL3, VILL4
Housing	Net additional dwellings completed between 2017-2033 in Group 1 villages	At least 327 dwellings	DPS2, DPS3, VILL1, VILL4
Housing	Net additional dwellings completed between 2017-2033 in Group 2 villages	No target	DPS2, DPS3, VILL2, VILL4
Housing	Net additional dwellings completed in the monitoring year, by size, type and tenure and by settlement and broad location for growth	745 dwellings per annum	HOU1

Indicator Type	Indicator	Target/Basis for Evaluation	Monitoring Policies
Housing	Density of new residential development	Development completed at a range of densities taking account of the character of the area	HOU2, DES3, CFLR2
Housing	Net additional affordable dwellings completed in the monitoring year by settlement and broad location for growth	Increasing trend	HOU1, HOU3, HOU4
Housing	% of affordable housing permissions completed in accordance with Policy HOU3 in terms of site capacity/size thresholds	<p>Up to 35% on sites proposing 10 or fewer gross additional dwellings, and where the dwellings would have a combined gross floor space greater than 1,000 square metres;</p> <p>Up to 35% on sites proposing 11 to 14 gross additional dwellings;</p> <p>Up to 40% on sites proposing 15 or more gross additional dwellings.</p>	HOU1, HOU3
Housing	% of affordable housing permissions completed by tenure type	No target	HOU1, HOU3

Indicator Type	Indicator	Target/Basis for Evaluation	Monitoring Policies
Housing	Number of starter homes granted planning permission	No target	HOU1, HOU3
Housing	Number of starter homes completed	No target	HOU1, HOU3
Housing	Amount of new specialist accommodation to meet the specific needs of older and vulnerable people, falling within Use Classes C2, C3, or sui-generis	Increase in housing choices for older and vulnerable people	HOU1, HOU6
Housing	% of new dwellings constructed to meet the Building Regulations Requirement M4(2)	100%	HOU1, HOU7
Housing	% of new dwellings constructed to meet the Building Regulations Requirement M4(3)	No target	HOU1, HOU7
Housing	Number of serviced plots granted planning permission for self-builders in accordance with Policy HOU8	To match the demand evidenced by the Council's Self-Build Register	HOU1, HOU8

Indicator Type	Indicator	Target/Basis for Evaluation	Monitoring Policies
Housing	Number of new Gypsy and Traveller pitches and Travelling Showpeople plots completed	5 pitches for Gypsies and Travellers (2 between 2016-2022; and 3 between 2022-2027) 9 plots for Travelling Showpeople (7 between 2016-2022; 1 between 2022-27; and 1 between 2027-2033)	HOU1, HOU9
Housing	Number of planning permissions granted for Park Homes	No target	HOU10
Green Belt	Number of planning permissions granted on land in the Green Belt contrary to Policy GBR1	No permissions granted contrary to policy	GBR1
Green Belt	Number of dwellings permitted in the Green Belt contrary to Policy GBR1	No dwellings permitted in the Green Belt contrary to policy	GBR1
Employment	Number of additional jobs provided in the District between 2011-2033	A minimum of 435-505 additional jobs provided in East Herts each year between 2011-2033	DPS1
Employment	Amount of additional employment land allocated for Use Classes B1/B2/B8	Delivery of new employment land allocated in District Plan between	DPS1, ED1, ED2

Indicator Type	Indicator	Target/Basis for Evaluation	Monitoring Policies
	between 2011-2033	2011-2033	
Employment	Net additional employment floorspace completed by type, settlement, Employment Areas, non-Employment Areas and rural areas	Increasing trend	DPS1, ED1, ED2, VILL6
Employment	% of new employment floorspace completed by type on Previously Developed Land (PDL)	No target	DPS2
Employment	Employment land available by type	Increasing trend	DPS1, ED1
Employment	Loss of Use Class B1 to Use Class C3 through prior approval and full planning applications	No target for prior approval applications Decreasing trend for full planning applications	ED1
Retail and Town Centres	Net additional retail floorspace completed between 2011-2033, by settlement and primary shopping area	7,600m ² of convenience retail floorspace 6,100m ² of comparison retail	DPS1, RTC1, RTC2

Indicator Type	Indicator	Target/Basis for Evaluation	Monitoring Policies
		floorspace	
Retail and Town Centres	Total amount of floorspace for 'town centre uses' within designated town centre boundaries	Increasing trend	RTC1
Retail and Town Centres	% of primary shopping frontages in Bishop's Stortford, Hertford and Ware town centres in Use Classes A1(Shops) and A2 (Professional and Financial Services)	At least 50% A1 and A2 uses in a continuous frontage in a primary shopping frontage	RTC3
Retail and Town Centres	% of units recorded as vacant in primary and secondary frontages	Decreasing trend	RTC2, RTC3, RTC4
Transport	Amount of new residential development completed within 30 minutes public transport time of 6 key services	Increasing trend	INT1, TRA1
Transport	Amount of completed development complying with car parking standards	100% of development complying with car parking standards	TRA3

Indicator Type	Indicator	Target/Basis for Evaluation	Monitoring Policies
Community Facilities, Leisure and Recreation	Number of planning permissions granted on land designated for open space, sport and recreation under policy CFLR1 contrary to policy	No permissions granted contrary to Policy CFLR1	CFLR1
Community Facilities, Leisure and Recreation	Amount of new open space, sport and recreation facilities completed by typology and settlement	Increasing trend	CFLR1
Community Facilities, Leisure and Recreation	Number of planning permissions for residential development granted that result in meeting Accessible Natural Greenspace Standards	Increasing trend	CFLR1
Community Facilities, Leisure and Recreation	Number of planning permissions granted on land designated as Local Green Space under policy CFLR2 which are contrary to policy	No permissions granted contrary to Policy CFLR2	CFLR2

Indicator Type	Indicator	Target/Basis for Evaluation	Monitoring Policies
Community Facilities, Leisure and Recreation	Number of planning permissions granted that result in the loss of uses, buildings or land for public or community contrary to Policy CFLR8	No permissions granted contrary to Policy CFLR8	CFLR8
Community Facilities, Leisure and Recreation	Amount of new uses, buildings or land for public or community use completed by settlement	Increasing amount	CFLR7, CFLR8, CFLR9, CFLR10
Natural Environment	Change in number and area of statutorily protected sites. This will monitor the legally protected site network of SSSIs and LNRs which are also a statutory designation.	No loss in number and/or area of statutorily protected sites.	NE1

Indicator Type	Indicator	Target/Basis for Evaluation	Monitoring Policies
Natural Environment	Change in number and area of non-statutory sites. These will be anything else that is considered to have some form of informal biodiversity or geodiversity recognition namely, Wildlife sites, important geological/geomorphological sites, Wildlife Trust or other reserves.	No net loss in number and/or area of non-statutory sites.	NE2
Natural Environment	Change in number and area of ancient woodlands.	No loss of ancient woodlands	NE3
Heritage Assets	Change in number of designated historical assets	No loss of designated historical assets	HA1, HA4, HA7, HA8
Heritage Assets	Number of Conservation Area appraisals completed	Increasing amount	HA4
Heritage Assets	Number of listed buildings on the national 'Buildings at Risk Register'	Decreasing amount	HA7
Climate Change	Number of new developments producing at least 10% of total predicted energy requirements in	All development of more than 10 dwellings or 1,000m ² of non-residential floorspace complying with	CC3

Indicator Type	Indicator	Target/Basis for Evaluation	Monitoring Policies
	accordance with Policy CC3	Policy CC3	
Climate Change	Amount of new sources of renewable energy generation permitted	Increasing trend	CC3
Water	Number of permissions granted contrary to the advice of the Environment Agency and/or Hertfordshire County Council, as Lead Local Flood Authority, on either flood defence or water quality grounds	No permissions granted contrary to Environment Agency and/or Hertfordshire County Council, as Lead Local Flood Authority, advice	WAT1, WAT3
Water	% of new residential development achieving mains water consumption of 110 litres or less per head per day	100%	WAT4
Infrastructure	Delivery of strategic and local infrastructure to support new development	Delivery of infrastructure in accordance with Infrastructure Delivery Plan	DPS4, ED3, WAT6, DEL1

ESSENTIAL REFERENCE PAPER D

Appendix D Glossary

<p>Accessible Natural Greenspace (ANG)</p>	<p>Natural England's 'Nature Nearby: Accessible Natural Greenspace, March 2010' includes the following definitions:</p> <p>Accessible greenspace – places that are available for the general public to use free of charge and without time restrictions (although some sites may be closed to the public overnight and there may be fees for parking a vehicle). The places are available to all, meaning that every reasonable effort is made to comply with the requirements under the Disability Discrimination Act (DDA 1995). An accessible place will also be known to the target users, including potential users who live within the site catchment area.</p> <p>Natural greenspace – Places where human control and activities are not intensive so that a feeling of naturalness is allowed to predominate. Natural and semi-natural greenspace exists as a distinct typology but also as discrete areas within the majority of other greenspace typologies.</p>
<p>Accessible Natural Greenspace Standard (ANGSt)</p>	<p>ANGSt recommends that everyone, wherever they live, should have an accessible natural greenspace:</p> <ul style="list-style-type: none">• of at least 2 hectares in size, no more than 300 metres (5 minutes walk) from home;• at least one accessible 20 hectare site within two kilometres of home;• one accessible 100 hectare site within five kilometres of home; and• one accessible 500 hectare site within ten kilometres of home; plus• a minimum of one hectare of statutory Local Nature Reserves per thousand population.
<p>Affordable Housing</p>	<p>Social rented, affordable rented and intermediate housing, provided to eligible households whose needs are not met by the market. Eligibility is determined with regard to local incomes and local house prices.</p>

	<p>Affordable housing should include provisions to remain at an affordable price for future eligible households or for the subsidy to be recycled for alternative affordable housing provision.</p> <p>Social rented: housing is owned by local authorities and private registered providers (as defined in section 80 of the Housing and Regeneration Act 2008), for which guideline target rents are determined through the national rent regime. It may also be owned by other persons and provided under equivalent rental arrangements to the above, as agreed with the local authority or with the Homes and Communities Agency.</p> <p>Affordable rented: housing is let by local authorities or private registered providers of social housing to households who are eligible for social rented housing. Affordable Rent is subject to rent controls that require a rent of no more than 80% of the local market rent (including service charges, where applicable).</p> <p>Intermediate housing: homes for sale and rent provided at a cost above social rent, but below market levels subject to the criteria in the Affordable Housing definition above. These can include shared equity (shared ownership and equity loans), other low cost homes for sale and intermediate rent, but not affordable rented housing.</p> <p>Starter Homes: new homes only available for purchase by qualifying first-time buyers. Such homes will be made available for sale at a price which is at least 20% less than its market value, subject to a maximum price cap of £250,000.</p> <p>Homes that do not meet the above definition of affordable housing, such as “low cost market” housing, may not be considered as affordable housing for planning purposes.</p>
Aged or Veteran	A tree which, because of its great age, size or condition

Tree	is of exceptional value for wildlife, in the landscape, or culturally.
Air Quality Management Areas (AQMAs)	Areas designated by local authorities because they are not likely to achieve national air quality objectives by the relevant deadlines.
Allocated Sites	To deliver the development strategy and meet its housing requirement, for example, the Council allocates land for particular types of land use, such as housing, as part of its planned approach to managing development and shaping the future of the district's towns and villages. Infrastructure providers can then take the planned growth of a settlement into account when delivering their services to ensure that the necessary infrastructure is in place to support growth.
Ancient Woodland	An area that has been wooded continuously since at least 1600 AD.
Authority Monitoring Report (AMR)	The annual monitoring report assesses the implementation of the Local Development Scheme (LDS) and the extent to which policies in the Development Plan are being successfully implemented.
Appropriate Assessment (AA)	An assessment which identifies any aspect/s of an emerging Plan that would have the potential to have a significant effect on designated wildlife sites (i.e. SACs, SPAs, Ramsar Sites) in light of the Habitats Regulations. (See also Habitats Regulations Assessment (HRA))
Archaeological Interest	There will be archaeological interest in a heritage asset if it holds, or potentially may hold, evidence of past human activity worthy of expert investigation at some point. Heritage assets with archaeological interest are the primary source of evidence about the substance and evolution of places, and of the people and cultures that

	made them.
Article 4 Direction	A direction which withdraws automatic planning permission granted by the General Permitted Development Order (see also Permitted Development Rights).
Best and Most Versatile Agricultural Land	Land in grades 1, 2 and 3a of the Agricultural Land Classification.
Biodiversity	The whole variety of life encompassing all genetics, species and ecosystem variations, including plants and animals.
Biodiversity Action Plan (BAP)	A strategy prepared for a local area aimed at conserving and enhancing biological diversity. East Herts is included within the Hertfordshire Biodiversity Action Plan.
Brownfield Land or Site	Previously developed land which is or was occupied by a permanent structure, including the curtilage of the developed land and any associated fixed surface infrastructure. See also 'Previously Developed Land'.
Call for Sites	Technical work which seeks suggestions from landowners, developers, and other interested parties for all types of potential future development and land-use, including housing, employment, retail, leisure, community and other uses.
Carbon Emissions	See Greenhouse Gases.
Character	A term relating to Conservation Areas or Listed Buildings, but also to the appearance of any rural or urban location in terms of its landscape or the layout of streets and open spaces, often giving places their own

	distinct identity.
Climate Change	Long-term changes in temperature, precipitation, wind and all other aspects of the Earth's climate. Often regarded as a result of human activity and fossil fuel consumption.
Climate Change Adaptation	Adjustments to natural or human systems in response to actual or expected climatic factors or their effects, including from changes in rainfall and rising temperatures, which moderate harm or exploit beneficial opportunities.
Climate Change Mitigation	This involves taking action to reduce the impact of human activity on the climate system, primarily through reducing greenhouse gas emissions.
Clusters (a term used in economic regeneration)	A group of businesses or organisations which, due to the goods they produce and/or services they provide, have common customers, technology or use similar specialist skills. They group together in order to enhance the overall competitive advantage of individual companies. For East Herts and Hertfordshire, life science industries and film and television industries comprise two such economic clusters.
Coalescence	The merging or coming together of separate towns or villages to form a single entity.
Co-operation for Sustainable Development Board (Co-op Board)	The Co-op Board was established in 2014 to provide a forum for the discussion of cross boundary issues and the commissioning and management of joint studies.
Community Infrastructure	A levy allowing local authorities to raise funds from owners or developers of land undertaking new building

Levy	projects in their area.
Community Right to Build Order	An Order made by the local planning authority (under the Town and Country Planning Act 1990) that grants planning permission for a site-specific development proposal or classes of development.
Competent Person (in terms of site investigation information preparation)	A person with a recognised relevant qualification; sufficient experience in dealing with the type(s) of pollution or land instability; and membership of a relevant professional organisation.
Conformity	Requirement of Local Plans to be in general conformity/agreement with the policies of the National Planning Policy Framework.
Conservation (for heritage policy)	The process of maintaining and managing change to a heritage asset in a way that sustains and, where appropriate, enhances its significance.
Conservation Area	Areas of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance.
County Council	The local authority that is responsible for waste and minerals planning functions in non-unitary, and non-national park, local authority areas. The County Council is also responsible for determining some other types of application and advising on strategic planning issues that are likely to have an impact across the whole county or its sub-regions e.g. transport and education.
Demography	Demography is the study of the size, growth, and age and geographical distribution of human populations, and births, deaths, marriages, and migrations.

Density	<p>Density is a calculation of the number of houses that may be built on a particular piece of land. It is usually expressed as the number of dwellings per hectare (dph).</p> <p>Net density includes those sites which will be developed including directly associated uses, such as access roads within the site, private garden space, car parking areas, incidental open space, landscaping and children's play areas, where they are provided.</p> <p>Gross density includes large-scale open space, roads, schools, hospitals, and other major supporting infrastructure.</p>
Designated Heritage Asset	<p>A World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area designated under the relevant legislation.</p>
Development	<p>Development is defined under the 1990 Town and Country Planning Act as "the carrying out of building, engineering, mining or other operation in, on, over or under land, or the making of any material change in the use of any building or other land." Most forms of development require planning permission (see also 'Permitted Development').</p>
Development Plan	<p>This includes adopted Local Plans, Neighbourhood Plans and the London Plan, and is defined in section 38 of the Planning and Compulsory Purchase Act 2004.</p>
Duty to Co-Operate	<p>The duty to cooperate was created in the Localism Act 2011. It places a legal duty on local planning authorities, county councils in England and public bodies to engage constructively, actively and on an ongoing basis to maximise the effectiveness of Local Plan preparation relating to strategic cross boundary matters. Local planning authorities must demonstrate how they have</p>

	<p>complied with the duty at the independent examination of their Local Plans.</p>
Ecological Networks	<p>These link sites of biodiversity importance.</p>
Economic Development	<p>Development, including those within the B Use Classes, public and community uses and main town centre uses (but excluding housing development).</p>
Edge of Centre	<p>For retail purposes, a location that is well connected and up to 300 metres of the primary shopping area. For all other main town centre uses, a location within 300 metres of a town centre boundary. For office development, this includes locations outside the town centre but within 500 metres of a public transport interchange. In determining whether a site falls within the definition of edge of centre, account should be taken of local circumstances.</p>
Employment Land	<p>Land reserved for industry, comprising Use Classes B1 (Business), B2 (General Industrial) and B8 (Storage and Distribution). Such land tends to be located in urban areas or close to transport networks, often containing a cluster of similar business activities.</p>
Engineering Operations	<p>The statutory definition of development within Section 55 of the Town and Country Planning Act 1990, includes engineering and other operations (e.g. Groundworks), and the making of any material change in the use of land. The carrying out of such operations and the making of material changes in the use of land are inappropriate development unless they maintain openness and do not conflict with the purposes of including land in the Green Belt.</p>
Evidence Base	<p>The evidence that any Development Plan Document is based on consisting of technical data and studies; the</p>

	views of relevant stakeholders; and other background facts about the area, as appropriate.
Environmental Impact Assessment	A procedure to be followed for certain types of project to ensure that decisions are made in full knowledge of any likely significant effects on the environment.
European Site	This includes candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas, and is defined in regulation 8 of the Conservation of Habitats and Species Regulations 2010.
Flood Plain	Generally low-lying areas adjacent to a watercourse, tidal lengths of a river or the sea, where water flows in times of flood or would flow but for the presence of flood defences.
Functional Economic Market Area (FEMA)	A FEMA is an area over which a local economy and its key markets operate.
Green Belt	<p>The fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their openness and their permanence. Green Belt serves five purposes:</p> <ul style="list-style-type: none"> • to check the unrestricted sprawl of large built-up areas; • to prevent neighbouring towns merging into one another; • to assist in safeguarding the countryside from encroachment; • to preserve the setting and special character of historic towns; and • to assist in urban regeneration, by encouraging the

	recycling of derelict and other urban land.
Green Infrastructure	Green Infrastructure is a strategic network of multi-functional green space, both new and existing, rural and urban, which supports natural and ecological processes and is integral to the health and quality of life in sustainable communities. It provides habitats for and aids migration of wildlife, flood water storage, urban cooling and local access to shady outdoor space as well as creating attractive spaces for recreation.
Green Wedges	Green wedges comprise the open areas around and between parts of settlements, which maintain the distinction between the countryside and built up areas, prevent the coalescence (merging) of adjacent places and can also provide recreational opportunities.
Greenfield Land or Site	Land (or a defined site) usually farmland, that has not previously been developed.
Greenhouse Gases	Naturally occurring examples include water vapour, carbon dioxide, methane, nitrous oxide and ozone. Some human activities increase these gases, including fossil fuel combustion within motor vehicles and some power stations.
Group 1, 2 or 3 Village	<p>The District Plan identifies three types of village:</p> <p>Group 1 Villages: villages where development for housing, employment, leisure, recreation and community facilities will be permitted, in order to help sustain vital and viable rural communities.</p> <p>Group 2 Villages: villages where limited infill development, together with small-scale employment, leisure, recreation and community facilities will be permitted. In addition, small-scale development identified in an adopted Neighbourhood Plan will be permitted.</p>

	Group 3 Villages: villages where limited infill development identified in an adopted Neighbourhood Plan will be permitted.
Gypsies and Travellers (Planning Definition included in 'Planning policy for traveller sites')	Persons of nomadic habit of life whatever their race or origin, including such persons who on grounds only of their own or their family's or dependants' educational or health needs or old age have ceased to travel temporarily, but excluding members of an organised group of travelling show people or circus people travelling together as such.
Habitats Regulations Assessment (HRA)	An assessment which identifies any aspects of an emerging Plan that would have the potential to have a significant effect on designated wildlife sites (i.e. SACs, SPAs, Ramsar Sites) in light of the Habitats Regulations. (See also Appropriate Assessment)
Hertfordshire Infrastructure and Planning Partnership (HIPP)	A partnership established to work together with Hertfordshire Forward, Hertfordshire Local Enterprise Partnership, the Local Transport Body for Hertfordshire, the Local Nature Partnership, other local authorities within the wider south east and other appropriate organisations, groups and partnerships in areas of shared interest to develop and where possible and necessary agree joint approaches to common issues.
Heritage Asset	A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Heritage asset includes designated heritage assets and assets identified by the local planning authority (including local listing).
Historic Parks and Gardens	A park or garden of special historic interest. Graded I (highest quality), II* or II. Designated by Historic

	England.
Housing Market Area	This is a geographical area which is relatively self-contained in terms of reflecting people's choice of location for a new home.
Housing Mix	The mix of different types and tenures of housing, for example, affordable and market housing, owner-occupied and private-rented.
Infrastructure	Providing the necessary supporting 'infrastructure' of utility services, transport, schools, open space, community, health and leisure services. See also Green Infrastructure.
Infrastructure Delivery Plan (IDP)	The Infrastructure Delivery Plan establishes a framework for private and public investment. It identifies as far as possible the infrastructure needs of new development, and the associated costs, phasing, funding sources and responsibilities for delivery.
International, national and locally designated sites of importance for biodiversity	All international sites (Special Areas of Conservation, Special Protection Areas, and Ramsar sites), national sites (Sites of Special Scientific Interest) and locally designated sites including Local Wildlife Sites.
Landfill	The permanent disposal of waste into the ground, by the filling of man-made voids or similar features, or the construction of landforms above ground level (land-raising).
Listed Building	A building of special architectural or historic interest. Listed buildings are graded I, II* or II with grade I being the highest. Listing includes the interior as well as the exterior of the building, and any buildings or permanent structures (e.g. walls) within its curtilage. Listing

	highlights what is significant about a building or site, and helps to ensure that any future changes to it do not result in the loss of its significance. Historic England is responsible for designating buildings for listing in England.
Local Development Order	An order made by a local planning authority (under the Town and Country Planning Act 1990) that grants planning permission for a specific development proposal or classes of development.
Local Development Scheme (LDS)	The Local Planning Authority's timetable for the preparation of Development Plan Documents.
Local Enterprise Partnership (LEP)	A body, designated by the Secretary of State for Communities and Local Government, established for the purpose of creating or improving the conditions for economic growth in an area.
Local Green Space Designation	The Local Green Space designation is a way to provide special protection against development for green areas of particular importance to local communities.
Local Nature Partnership	A body, designated by the Secretary of State for Environment, Food and Rural Affairs, established for the purpose of protecting and improving the natural environment in an area and the benefits derived from it.
Local Nature Reserve	Non-statutory habitats of local significance designated by local authorities where protection and public understanding of nature conservation is encouraged. (See also Site of Nature Conservation Importance or Site of Biological Interest).
Local Planning Authority	The public authority whose duty it is to carry out specific planning functions for a particular area.

Local Transport Plan (LTP)	A statutory document which sets out the strategy for the management, maintenance and development of the area's transport system. This five-year integrated transport strategy is prepared by local authorities in partnership with the community, seeking funding to help provide local transport projects. The Plan also sets out the resources predicted for delivery of the targets identified in the strategy.
Locally Important Biodiversity Sites	Normally smaller, isolated sites, including trees, hedgerows or ponds that may not be designated but make a contribution to local or wider ecological networks.
Main town centre uses	Retail development (including warehouse clubs and factory outlet centres); leisure, entertainment facilities the more intensive sport and recreation uses (including cinemas, restaurants, drive-through restaurants, bars and pubs, night-clubs, casinos, health and fitness centres, indoor bowling centres, and bingo halls); offices; and arts, culture and tourism development (including theatres, museums, galleries and concert halls, hotels and conference facilities).
Master Plan	A plan that shows an overall development concept that includes urban design, landscaping, infrastructure, service provision, circulation, present and future land use and built form.
Memorandum of Understanding (MoU)	A Memorandum of Understanding describes a bilateral or multilateral agreement between two or more parties.
Minerals Plan	Planning Policy Guidance advises that mineral planning authorities should plan for the steady and adequate supply of minerals in one or more of the following ways (in order of priority):

	<p>1. designating Specific Sites – where viable resources are known to exist, landowners are supportive of minerals development and the proposal is likely to be acceptable in planning terms. Such sites may also include essential operations associated with mineral extraction;</p> <p>2. designating Preferred Areas, which are areas of known resources where planning permission might reasonably be anticipated. Such areas may also include essential operations associated with mineral extraction; and/or</p> <p>3. designating Areas of Search – areas where knowledge of mineral resources may be less certain but within which planning permission may be granted, particularly if there is a potential shortfall in supply.</p>
Mitigation	See Climate Change Mitigation.
Mixed Use Development	A development which contains a variety of uses such as businesses, housing, leisure and recreation. Such developments contribute towards building sustainable communities by increasing accessibility to a range of activities and promoting non-car modes of travel.
Modal shift	A change of transport mode (for example, car, bus, train, bicycle, walking). In planning terms this usually implies a shift away from the private car to more sustainable transport modes, whether passenger transport or walking and cycling.
Monitoring	See Authority Monitoring Report.
National Planning Policy Framework (NPPF)	The National Planning Policy Framework was published on 27 March 2012 which sets out the Government's planning policies for England and how these are expected to be applied.

Nature Improvement Areas	Inter-connected networks of wildlife habitats intended to re-establish thriving wildlife populations and help species respond to the challenges of climate change.
Neighbourhood Development Order	An Order made by a local planning authority (under the Town and Country Planning Act 1990) through which Parish Councils and neighbourhood forums can grant planning permission for a specific development proposal or classes of development.
Neighbourhood Plan	A plan prepared by a Parish Council or Neighbourhood Forum for a particular neighbourhood area (made under the Planning and Compulsory Purchase Act 2004).
Open Space	All space of public value, including public landscaped areas, playing fields, parks and play areas, and also including not just land, but also areas of water such as rivers, canals, lakes and reservoirs, which can offer opportunities for sport and recreation or can also act as a visual amenity and a haven for wildlife.
Original Building	A building and any outbuildings provided at the same time as it existed on 1 July 1948 or, if constructed after 1 July 1948, as it was built originally.
Out of Centre	A location which is not in or on the edge of a centre but not necessarily outside the urban area.
Out of Town	A location out of centre that is outside the existing urban area.
Permeability	The extent to which an environment allows for a choice of routes both through and within it, and allows opportunities for movement.
Permitted Development Rights	A national grant of planning permission which allows certain building works and changes of use to be carried out without having to make a planning application.

	Permitted development rights are subject to conditions and limitations to control impact and to protect local amenity.
Planning Condition	A condition imposed on a grant of planning permission (in accordance with the Town and Country Planning Act 1990) or a condition included in a Local Development Order or Neighbourhood Development Order.
Planning Obligation	A legally enforceable obligation entered into under section 106 of the Town and Country Planning Act 1990 to mitigate the impacts of a development proposal.
Planning Practice Guidance (PPG)	A web-based resource which brings together planning practice guidance for England in an accessible and usable way – http://planningguidance.communities.gov.uk/
Plateau	A landscape of fairly level high ground, which in rural areas tends to be a prominent landscape feature, often supporting a unique biodiversity.
Playing Field	The whole of a site which encompasses at least one playing pitch as defined in the Town and Country Planning (Development Management Procedure) (England) Order 2010.
Policies Map (previously Proposals Map)	The Policies Map illustrates on a map, reproduced from or based upon a map base to a registered scale, appropriate policies contained in the District Plan.
Pollution	Anything that affects the quality of land, air, water or soils, which might lead to an adverse impact on human health, the natural environment or general amenity. Pollution can arise from a range of emissions, including smoke, fumes, gases, dust, steam, odour, noise and light.

<p>Previously Developed Land (PDL) or 'Brownfield' Land</p>	<p>Land which is or was occupied by a permanent structure, including the curtilage of the developed land (although it should not be assumed that the whole of the curtilage should be developed) and any associated fixed surface infrastructure. This excludes: land that is or has been occupied by agricultural or forestry buildings; land that has been developed for minerals extraction or waste disposal by landfill purposes where provision for restoration has been made through development management procedures; land in built-up areas such as private residential gardens, parks, recreation grounds and allotments; and land that was previously-developed but where the remains of the permanent structure or fixed surface structure have blended into the landscape in the process of time.</p>
<p>Primary Shopping Area</p>	<p>Defined area where retail development is concentrated (generally comprising the primary and those secondary frontages which are adjoining and closely related to the primary shopping frontage).</p>
<p>Primary and Secondary Shopping Frontages</p>	<p>Primary frontages are likely to include a high proportion of retail uses which may include food, drinks, clothing and household goods. Secondary frontages provide greater opportunities for a diversity of uses such as restaurants, cinemas and businesses.</p>
<p>Priority Habitats and Species</p>	<p>Species and Habitats of Principal Importance included in the England Biodiversity List published by the Secretary of State under section 41 of the Natural Environment and Rural Communities Act 2006.</p>
<p>Public Open Space</p>	<p>Open space, including not just land, but also inland bodies of water such as rivers, canals, lakes and reservoirs which offer important opportunities for sport and outdoor recreation and can also act as a visual amenity. In some instances, Public Open Space can be</p>

	designated by a council, where public access may or may not be formally established, but which fulfils or has the potential to fulfil a recreational or non-recreational role (for example, amenity, ecological, educational, social or cultural usages).
Public Realm	Those parts of a village or town (whether publicly or privately owned) available, for everyone to use. This includes streets, squares, parks, etc.
Ramsar Sites	Wetlands of international importance, designated under the 1971 Ramsar Convention.
Renewable and Low Carbon Energy	Includes energy for heating and cooling as well as generating electricity. Renewable energy covers those energy flows that occur naturally and repeatedly in the environment – from the wind, the fall of water, the movement of the oceans, from the sun and also from biomass and deep geothermal heat. Low carbon technologies are those that can help reduce emissions (compared to conventional use of fossil fuels).
Rural Area Beyond the Green Belt	This East Herts specific policy operates a similar level of restraint to Green Belt. The Rural Area Beyond the Green Belt covers two-thirds of the District not covered by Green Belt, outside designated settlement boundaries.
Rural Diversification	The expansion, enlargement or variation of the range of products or fields of operation of a rural business (branching out from traditional farming activities, for example new income generating enterprises, such as renewable energy, tourism and food processing).
Rural Exception Sites	Small sites used to provide affordable housing in perpetuity where sites would not normally be developed for housing. Rural exception sites seek to address the needs of the local community by accommodating

	households who are either current residents or have an existing family or employment connection. Small numbers of market homes may be allowed at the local authority's discretion, for example where essential to enable the delivery of affordable units without grant funding.
Scheduled Monument	Nationally important monuments, usually archaeological remains, which enjoy greater protection against inappropriate development through the Ancient Monuments and Archaeological Areas Act 1979.
Section 106 Agreement	A legal agreement under section 106 of the 1990 Town & Country Planning Act. Section 106 agreements are legal agreements between a planning authority and a developer, or undertakings offered unilaterally by a developer, that ensure that certain extra works related to a development are undertaken.
Setting of a Heritage Asset	The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.
Significance (for heritage policy)	The value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting.
SME (Small to Medium Enterprise)	An independent business managed by its owner or part owners and having a small market share either by number of employees or turnover.
Special Areas of	Areas given special protection under the European Union's Habitats Directive, which is transposed into UK

Conservation	law by the Habitats and Conservation of Species Regulations 2010.
Special Protection Areas	Areas which have been identified as being of international importance for the breeding, feeding, wintering or the migration of rare and vulnerable species of birds found within European Union countries. They are European designated sites, classified under the Birds Directive.
Site Investigation Information	Includes a risk assessment of land potentially affected by contamination, or ground stability and slope stability reports, as appropriate. All investigations of land potentially affected by contamination should be carried out in accordance with established procedures (such as BS 10175 (2011 + A1:2013) Code of Practice for the Investigation of Potentially Contaminated Sites). The minimum information that should be provided by an applicant is the report of a desk study and site reconnaissance.
Site of Special Scientific Interest (SSSI)	Sites designated by Natural England under the Wildlife and Countryside Act 1981.
Starter Homes	Starter Homes are new homes only available for purchase by qualifying first-time buyers. Such homes will be made available for sale at a price which is at least 20% less than its market value, subject to a maximum price cap of £250,000. (See also Affordable Housing)
Statutory	Required by law (statute), usually through an Act of Parliament.
Statement of Community	The statement of community involvement sets out the processes which authorities must follow in involving local

Involvement (SCI)	communities in the preparation of local development documents and development management decisions.
Stepping Stones	Pockets of habitat that, while not necessarily connected, facilitate the movement of species across otherwise inhospitable landscapes.
Strategic Environment Assessment (SEA)	A procedure (set out in the Environmental Assessment of Plans and Programmes Regulations 2004) which requires the formal environmental assessment of certain plans and programmes which are likely to have significant effects on the environment.
Strategic Flood Risk Assessment	An assessment of the likelihood of flooding in a particular area so that development needs and mitigation measures can be carefully considered.
Strategic Land Availability Assessment (SLAA)	An assessment of land availability which identifies a future supply of land which is suitable, available and achievable for housing and economic development uses over the plan period. The SLAA assesses whether land could come forward for development, not whether it should .
Supplementary Planning Document (SPD)	Documents which add further detail to the policies in the Local Plan. They can be used to provide further guidance for development on specific sites, or on particular issues, such as design. Supplementary planning documents are capable of being a material consideration in planning decisions but are not part of the development plan.
Sustainability Appraisal (SA)	A mechanism for considering and communicating the likely effects of a Plan, and alternatives, in terms of sustainability issues with a view to avoiding and mitigating adverse effects and maximising positives. SA of local plans is legally required.

Sustainable Development	A widely used definition drawn up by the World Commission on Environment and Development in 1987: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."
Sustainable Transport Modes	Any efficient, safe and accessible means of transport with overall low impact on the environment, including walking and cycling, low and ultra-low emission vehicles, car sharing and public transport.
Sustainable Urban Drainage System (SuDs)	An alternative solution to the direct channelling of water. SuDs are designed to control the run-off from a development; to improve the quality of the run-off; and to enhance the nature conservation, landscape and amenity value of the site and its surroundings.
Town Centre	Area defined on the Policies Map, including the primary shopping area and areas predominantly occupied by main town centre uses within or adjacent to the primary shopping area. References to town centres or centres apply to city centres, town centres, district centres and local centres but exclude small parades of shops of purely neighbourhood significance. Unless they are identified as centres in local plans, existing out-of-centre developments, comprising or including main town centre uses, do not constitute town centres.
Transport Assessment	A comprehensive and systematic process that sets out transport issues relating to a proposed development. It identifies what measures will be required to improve accessibility and safety for all modes of travel, particularly for alternatives to the car such as walking, cycling and public transport and what measures will need to be taken to deal with the anticipated transport impacts of the development.
Transport	A simplified version of a transport assessment where it is

Statement	agreed the transport issues arising out of development proposals are limited and a full transport assessment is not required.
Travelling Showpeople (Planning Definition included in 'Planning policy for traveller sites')	Members of a group organised for the purposes of holding fairs, circuses or shows (whether or not travelling together as such). This includes such persons who on the grounds of their own or their family's or dependants' more localised pattern of trading, educational or health needs or old age have ceased to travel temporarily, but excludes Gypsies and Travellers.
Tree Preservation Order (TPO)	A mechanism for securing the preservation of a single or groups of trees of acknowledged amenity value. A tree subject to a TPO may not normally be topped, lopped or felled without consent of the local planning authority.
Urban Extension	Involves the planned expansion of a town and can contribute to creating more sustainable patterns of development when located in the right place, with well-planned infrastructure including access to a range of facilities, and when developed at appropriate densities.
Urban Sprawl	The uncontrolled or unplanned extension of urban areas into the countryside.
Use Class	The Town and Country Planning (Use Classes) Order 2007 puts uses of land and buildings into various categories. Planning permission is not needed for changes of use within the same use class. Classes are as follows: A1: Shops A2: Professional and Financial Services A3: Restaurants and Cafés

	<p>A4: Drinking establishments</p> <p>A5: Hot Food Take-Aways</p> <p>B1: Business</p> <p>B2: General Industrial</p> <p>B3-B7: Special Industrial Groups</p> <p>B8: Storage and Distribution</p> <p>C1: Hotels</p> <p>C2: Residential</p> <p>C3: Dwelling houses</p> <p>D1: Non-residential institutions</p> <p>D2: Assembly and Leisure</p>
Vernacular	The way in which ordinary buildings were built in a particular place, making use of local styles, techniques and materials.
Viability Assessment	Where the deliverability of a development may be compromised by the scale of planning obligations and other costs, a viability assessment may be necessary. A site is viable if the value generated by its development exceeds the costs of developing it and also provides sufficient incentive for the land to come forward and the development to be undertaken.
Vitality	In terms of retailing, the capacity of a centre to grow or develop its liveliness and level of activity.
Village Development Boundary	A boundary drawn, usually quite tightly, around the main built up area of a village, within which development may be allowed in principle.
Waste Local	A statutory Development Plan prepared (or saved) by

Plan	the waste planning authority under transitional arrangements, setting out polices in relation to waste management and related developments.
Wildlife Sites	Designated land of local and regional importance defined as discrete areas of land considered to be of significance for their wildlife features. They are the most important places for wildlife outside legally protected land such as SSSIs.
Wildlife Corridor	Areas of habitat connecting wildlife populations.
Windfall Site	Sites which have not been specifically identified as available through the Local Plan process. They normally comprise previously-developed sites that have unexpectedly become available.

EAST HERTS COUNCIL

DISTRICT PLANNING EXECUTIVE PANEL – 15 SEPTEMBER 2016

REPORT BY LEADER OF THE COUNCIL

EAST HERTS DISTRICT PLAN – PROPOSED AMENDMENTS TO FINAL TEXT OF THE EAST HERTS DISTRICT PLAN PRE-SUBMISSION VERSION, 2016

WARD(S) AFFECTED: ALL

Purpose/Summary of Report

The purpose of this report is:

- To present to Members a schedule of proposed amendments to address issues which have arisen since previous District Planning Executive Panel consideration of related chapters and to seek agreement to include these within the East Herts District Plan Pre-Submission Version, 2016.

<u>RECOMMENDATIONS FOR DISTRICT PLANNING EXECUTIVE PANEL:</u> That Council, via the Executive, be advised that:	
(A)	the amendments to the East Herts District Plan Pre-Submission Version, 2016, as detailed at Essential Reference 'B' to this report, be agreed.

1.0 Background

1.1 The District Plan sets out the Council's planning framework for the district. Once adopted, the policies in the District Plan will replace the policies in the Local Plan 2007. It covers the period 2011–2033.

1.2 Over foregoing months, draft revised District Plan chapters have been considered by Members at District Plan Executive Panel meetings on the 24 May, 21 July, 25 August and 8 September 2016. Subsequent to these meetings, various matters have been identified, which necessitate amendments being made to previously considered text.

1.3 This report details the proposed amendments to the East Herts District Plan and seeks agreement of these for incorporation into the version for consultation under Regulation 19 of the Town and Country (Local Planning) (England) Regulations 2012 as amended.

2.0 Report

2.1 As detailed above, since the initial consideration by Members of individual chapters through various meetings of the District Planning Executive Panel, the need for various amendments to the previously agreed text has been identified.

2.2 The majority of the issues raised relate to updated web links, cross-referencing to other parts of the Plan where these have subsequently been altered and typographical errors. However, there are also included some additional proposed revisions of text of a more material nature.

2.3 The consequential proposed amendments are included in a table, which is detailed at **Essential Reference 'B'** to this report. The table sets out, in chapter order, the issues which have arisen and the changes which are proposed to address these.

2.4 It should be noted that this report was written prior to the District Planning Executive Panel meeting of 8th September and, therefore, any matters which have arisen since that date will be reported either as an addendum to **Essential Reference 'B'**, or verbally at the meeting, as appropriate. Furthermore, the process of checking that internet links are current is ongoing. While this is likely to necessitate further amendments to the Plan, as these are of a minor nature, it is not intended that these will be reported to Members.

2.5 Members are invited to agree the proposed amendments.

3.0 Implications/Consultations

3.1 Information on any corporate issues and consultation associated with this report can be found within **Essential Reference Paper 'A'**.

Background Papers

Previous District Planning Executive Panel reports are all available at:
<http://democracy.eastherts.gov.uk/mgCommitteeDetails.aspx?ID=151>

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ESSENTIAL REFERENCE PAPER 'A'

IMPLICATIONS/CONSULTATIONS

Contribution to the Council's Corporate Priorities/ Objectives:	Priority 1 – Improve the health and wellbeing of our communities Priority 2 – Enhance the quality of people's lives Priority 3 – Enable a flourishing local economy
Consultation:	The Report refers to the Draft District Plan consultation carried out between 27 th February and 22 nd May 2014.
Legal:	None
Financial:	None
Human Resource:	None
Risk Management:	None
Health and wellbeing – issues and impacts:	The Submission District Plan in general will have positive impacts on health and wellbeing through a range of policy approaches that seek to create sustainable communities.

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Policy/ Paragraph	Issue	Proposed Amendment
Chapter 1: Introduction		
	No amendments currently proposed.	
Chapter 2: Vision and Strategic Objectives		
2.2.1 	Typographical error - 184 m ² to be amended to 184 square miles to correct.	<p>Amendment to Text:</p> <p>The District of East Herts covers an area of 477 km² (184 m² <u>square miles</u>) and comprises around one third of the county of Hertfordshire.</p>
2.6.4 	Omission of reference to the GSK base in Ware in text.	<p>Amendment to Text:</p> <p>This success is built on research institutes and notable firms and organisations, including Amgen and AstraZeneca in Cambridge, GlaxoSmithKline in Stevenage <u>and Ware</u>, and Public Health England in Harlow.</p>
Chapter 3: The Development Strategy		
3.2.4 	Amendment to text proposed to reflect that the Memorandum of Understanding has not yet been signed.	<p>Amendment to Text:</p> <p>The SHMA concludes that the combined level of housing need across the four local authority areas is 46,058 homes for the period 2011 - 2033. This figure has been disaggregated amongst the four authorities. A Memorandum of Understanding (MoU) <u>is under preparation</u> has been signed which <u>will</u> commits all four Councils to meeting their individual housing needs within their own administrative boundaries. For East Herts, the level of need is 745 new homes per year, or 16,390 by 2033.</p>
3.2.10 	Typographical error – final bullet point amendment required to reflect correct settlement.	<p>In order to recognise the valuable role existing businesses have, the following locations have also been designated as Employment Areas:</p> <ul style="list-style-type: none"> • 0.23 hectares at Millside Industrial Estate, Bishop's Stortford; • 0.36 hectares at Southmill Trading Estate, Bishop's Stortford; • 7.71 hectares at Pegs Lane/Hale Road, Hertford; • 0.43 hectares at Leaside Works, Stanstead Abbots; and • 0.59 hectares at Riverside Works, Amwell End, Stanstead Abbots <u>St Margarets</u>.

Policy/ Paragraph	Issue	Proposed Amendment
3.3.2	Amendment to Guiding Principle 9 in box following paragraph to reflect changes to the Village Development Policy.	Amendment to Text: 9. To encourage <u>appropriate limited small-scale</u> development in and around the identified villages, with an opportunity for neighbourhood planning to influence the type and location of development sites.
New paragraph following paragraph 3.3.13	New paragraph to be inserted to explain the Council's position in respect of compulsory purchase powers.	New Text: <u>The Council's positive approach may also require it to use its compulsory purchase powers under section 226 of the Town and Country Planning Act 1990. That power gives the Council a positive tool to help to assemble land where this is necessary to implement proposals in the District Plan or where strong planning justifications for the use of the power exist. For the circumstances in which those powers may be exercised, see the Department for Communities and Local Government's "Compulsory purchase process and the Criche Down Rules: guidance" at https://www.gov.uk/government/publications/compulsory-purchase-process-and-the-criche-down-rules-guidance.</u>
Former paragraph 3.3.14 through 3.3.21	The insertion of new paragraph 3.3.13 above, results in consequential numbering changes.	Amendment to Text: Renumber paragraphs, formerly 3.3.14 through 3.3.21, as 3.3.15 through 3.3.22.
Chapter 4: Green Belt and Rural Area Beyond the Green Belt		
Policy GBR2, Part I	To add an exception to the Rural Area Beyond the Green Belt constrained approach to allow for new employment generating uses in line with Policy ED2 (Rural Economy).	Amendment to Policy: <u>(c) new employment generating uses where they are appropriately and sustainably located, in accordance with Policy ED2 (Rural Economy);</u>
Policy GBR2, Part I	The insertion of new criterion (c) above results in consequential numbering changes.	Amendment to Policy: Renumber Part I criteria, formerly (c) through (h), as (d) through (i)
Policy GBR2, Part I	To add an exception to the Rural Area Beyond the Green Belt constrained approach to allow for extensions and alterations to buildings, in addition to other structures listed, to ensure consistency with Policy ED2 and the NPPF.	Amendment to Policy: (d) extensions and alterations to <u>buildings</u> , dwellings, residential outbuildings or extensions to existing outbuildings, and works within residential curtilages provided that development does not result in an unacceptable impact on the rural character and appearance of the site and its surroundings;

Policy/ Paragraph	Issue	Proposed Amendment
Chapter 6: Buntingford		
	No amendments currently proposed.	
Chapter 7: Hertford		
Policy HERT2, Part II	Typographical error – currently there are two criteria (m). The second should be replaced with (n)	Amendment to Policy: (m) <u>(n)</u> other policy provisions of the District Plan and relevant matters, as appropriate.
Figure 7.3	Cartographical error – figure should show the green space area as remaining in the Green Belt.	Amendment to Figure: Plan to amended to show green space area as remaining in the Green Belt.
Chapter 8: Sawbridgeworth		
8.1.3	Typographical error – currently there are two paragraphs numbered 8.1.3. The second should be replaced with 8.1.4 and consequential number changes will therefore be required to paragraphs currently numbered 8.1.4 through 8.1.9.	Amendment to Text: Renummer paragraphs, formerly second 8.1.3 through 8.1.9, as 8.1.4 through 8.1.10
8.1.7 (now 8.1.8)	Addition to text required to include reference to the AQMA in Sawbridgeworth.	Amendment to Text: Transport: new development will encourage the use of sustainable travel, particularly through the enhancement of walking and cycling links. The impact of development on the local road network will be mitigated through upgrades to existing junctions and the provision of a new Junction 7a on the M11 which will reduce pressure on the A1184. <u>Consideration will need to be given to the Air Quality Management Area (AQMA) which is located in the London Road area. The AQMA is supported by an action plan which seeks to improve air quality in this location.</u>
Chapter 9: Ware		
Figure 9.1 Key Diagram for Ware	Current draft Figure 9.1 Key Diagram erroneously illustrates the proposed removal of Wodson Park and Ware Football Club from the Green Belt. As this area is not part of the proposed allocation, the leisure facilities will remain within Green Belt	Amendment to Key Diagram: Revision of Figure 9.1 Key Diagram to correctly show Wodson Park and Ware Football Club remaining within the Green Belt.

Policy/ Paragraph	Issue	Proposed Amendment
	boundaries.	
Policy WARE2, Part III	Hertfordshire County Council is currently omitted from the list of authorities/organisations involved in the masterplanning process.	<p>Amendment to Policy:</p> <p>Prior to the submission of any planning application/s a Masterplan setting out the quantum and distribution of land uses; access; sustainable high quality design and layout principles; necessary infrastructure; the relationship between the site and other nearby settlements; landscape and heritage assets; and other relevant matters, will be collaboratively prepared involving site promoters, landowners, East Herts Council, Hertfordshire County Council, town and parish councils and key stakeholders...</p>
Policy WARE2, Part V (d)	Consequential amendment relating to the reference to Policy HOU6 including the previous policy title: Homes for Older and Vulnerable People.	<p>Amendment to Policy:</p> <p>(d) a care home/flexi-care or sheltered properties in accordance with the provisions of Policy HOU6 (Homes forSpecialist Housing for Older and Vulnerable People);</p>
Policy WARE2, Part V (k)	Impacts to mitigate town centre impacts currently omitted from the highway issues raised in this criterion	<p>Amendment to Policy:</p> <p>(k) access arrangements and local highways and wider strategic mitigation measures which, inter alia, should include a link road between the Widbury Hill area and the A10/A1170 to both serve the development and mitigate congestion elsewhere in the town, and further should contribute to addressing impacts in the town centre and on the A10 between Ware and Hertford and the A414 in Hertford;</p>
Chapter 11: The Gilston Area		
11.2.4	Typographical error to be corrected in respect of referring to Junction '7a' instead of 'a'; and new reference reflecting the need for an upgrade to the Amwell Roundabout within the list of infrastructure schemes required.	<p>Amendment to Text:</p> <p>These interventions include a new Junction 7a on the M11, upgrades to Junctions 7 & 8, a second River Stort crossing, and-widening of the existing crossing, and upgrades to the Amwell Roundabout.</p>
11.2.7	Correction of typographical error required.	<p>Amendment to Text:</p> <p>This should take place early in thean overall development programme.</p>
GA1	For clarity, the first paragraph of the policy should be amended in order to ensure that it only makes reference to the level of development that is expected to be delivered within the Plan period.	<p>Amendment to Policy:</p> <p>In accordance with Policy DPS3 (Housing Supply 2011-2033), land at the Gilston Area is allocated for development to accommodate 10,000 homes, to be delivered within this Plan period and beyond. It is</p>

Policy/ Paragraph	Issue	Proposed Amendment
		anticipated that approximately 3,000 homes could be delivered <u>by 2033</u> .
Chapter 12: East of Stevenage		
	No amendments currently proposed.	
Chapter 13: East of Welwyn Garden City		
Figure 13.1	Insertion of site location plan required to ensure consistency with other chapters.	New Text: Insert new site location plan.
13.2.14	Consequential to the insertion of new figure 13.1, text requires amendment.	Amendment to Text: Figure 13.42 is an illustrative strategy diagram which will be used as a basis for masterplanning and will also help inform decisions on planning applications.
Figure 13.2	Strategy Diagram - Land East of Welwyn Garden City. The current iteration was an initial version, which was jointly prepared, and which is included in the Welwyn Hatfield Local Plan Pre-Submission version, 2016. To ensure consistency with the approach for other settlements, an East Herts stylised version has been produced for use in the District Plan.	Amendment to Figure: Replace Figure 13.1 with revised version.
Chapter 14: Housing		
Table 14.3	Typographical error – Table labelled as 13.3 instead of 14.3	Amendment to Table Heading: Replace Table 13.3 with 14.3.
Chapter 15: Economic Development		

Policy/ Paragraph	Issue	Proposed Amendment
Chapter 15	At the District Planning Executive Panel meeting of 21 st July, the Economic Development Chapter was reported as being numbered 14. Due to consequential effects of previous chapter numbering, all references to Chapter and paragraphs should now replace 14 with 15.	<p>Amendment to Chapter and Paragraph Numbers</p> <p>For Economic Development Chapter, replace all numbering references to 14 with 15.</p>
ED1, Part II	Amendment to (II) required to update chapter references	<p>Amendment to Policy:</p> <p>(II) ...New employment floorspace should be of a flexible design, able to respond to the changing needs of small and growing enterprises, be energy efficient in construction and operation (in accordance with the Council's Design and Landscape, and Climate Change policies in Chapter 16<u>17</u> and 21<u>22</u>) ...</p>
ED1, Part III	Amendment to (III) required to ensure that non-designated employment sites in current employment use would need to meet the same criteria as existing designated sites or those which were last in employment use.	<p>Amendment to Policy:</p> <p>Development which would cause the loss of an existing designated Employment Area, or a site/-premises that which is currently, or was last, in employment use (Classes B1, B2, B8 or related Sui Generis), will only be permitted where all the following criteria are met:...</p>
ED1, Part IV	Amendment to Part IV required to ensure reference to the Mill Site reflects correct Policy number.	<p>Amendment to Policy:</p> <p>The Mill Site in Bishop's Stortford will remain as a designated Employment Area until such time that the land is presented as being available for redevelopment. The site will then be subject to the provisions of Policy BISH2<u>10</u> and should be brought forward for redevelopment as part of a comprehensive masterplan.</p>
ED2, (d)	Amendment to criterion (d) required to ensure consistency with the NPPF and Policy GBR2.	<p>Amendment to Policy:</p> <p>(d) the building is <u>of</u> permanent and soundly constructed substantial construction, not requiring complete or substantial reconstruction before adaptation to a new use; and</p>
ED5, Part II	Policy references incorrect for Species and Habitats (Policy number NE2 should read NE3) and Green Infrastructure (Policy number NE3 should read NE4).	<p>Amendment to Policy:</p> <p>Water-based facilities and developments within environmentally sensitive locations will be required to provide evidence that no harm will occur to the quality of the environment and the health of the wildlife in line with the provisions of Policy CFLR4 (Water Based Recreation), Policy NE1 (International, National and Locally Designated Nature Conservation Sites) Policy NE2<u>3</u> (Species and Habitats) and NE3<u>4</u> (Green Infrastructure).Amendment to replace policy number NE2 with correct NE3.</p>

Policy/ Paragraph	Issue	Proposed Amendment
ED6	Policy reference incorrect for Education policy (Policy number CFLR9 should read CFLR10).	<p>Amendment to Policy:</p> <p>The provision of new educational establishments which support a range of learning and community needs such as further education and opportunities for lifelong learning will be supported in principle in line with Policy CFLR<u>910</u> (Education).</p>
Chapter 16: Retail and Town Centres		
Chapter 16	At the District Planning Executive Panel meeting of 24 th May, the Retail and Town Centres Chapter was reported as being numbered 15. Due to consequential effects of previous chapter numbering, all references to Chapter and paragraphs should now replace 15 with 16.	<p>Amendment to Chapter and Paragraph Numbers:</p> <p>For Retail and Town Centres Chapter, replace all Chapter and Paragraph numbering references to 15 with 16.</p>
Policy RTC1, Part III	To accord with the NPPF, Retail Development, the policy should indicate that impact assessments will only be required for retail development located outside the primary shopping area (PSA) and for leisure and other main town centre uses outside the town centre boundary, which are not in accordance with other policies in the Plan.	<p>Amendment to Policy:</p> <p>Proposals for retail <u>outside the Primary Shopping Area, and for leisure, and office and other developments outside of town centres, which are not in accordance with policies of the District Plan, will be</u> required to provide an impact assessment indicating the impact of the proposal on existing, committed and planned public and private investment in the town centre or in the catchment area of the proposal....</p>
Chapter 17: Design and Landscape		
Chapter 17	At the District Planning Executive Panel meeting of 24 th May, the Design and Landscape Chapter was reported as being numbered 16. Due to consequential effects of previous chapter numbering, all references to Chapter and paragraphs should now replace 16 with 17.	<p>Amendment to Chapter and Paragraph Numbers:</p> <p>For Design and Landscape Chapter, replace all Chapter and Paragraph numbering references to 15 with 16.</p>
17.7.7	Factual inaccuracy regarding ancient woodlands and hedgerows.	<p>Amendment to Text:</p> <p>The rural landscape is of great significance to the character of East Herts. The district has a rich landscape of open fields and parklands shaped by river valleys and arable plateaux. Woodland accounts for 9.8% of total land cover, <u>half of which is classified as being ancient, 11% of which is recorded by the Woodland Trust as being Ancient Woodland under threat.</u> Hedgerows are also an important feature</p>

Policy/ Paragraph	Issue	Proposed Amendment
		throughout Hertfordshire, reflecting the historic enclosure of agricultural fields and defining land ownership boundaries. Many hedgerows throughout the district are classified as ancient hedgerows considered as being 'important' (Hedgerows Legislation, 1997) and are key elements of green corridors, contributing towards wider ecological networks.
New text box following 17.7.7	Text box to be inserted to provide link to the Woodland Trust's latest research report on woodland.	New Textbox: The Woodland Trust's 'Woodland Indicators by Local Authority (Non-unitary district councils), July 2016' can be found at: http://www.woodlandtrust.org.uk/publications/
17.7.22	Paragraph 16.7.20 (now 17.7.20) is followed by 16.7.22 with 16.7.21 being omitted. To rectify this, paragraphs following 17.7.20 should be renumbered consecutively.	Amendment to Paragraph Numbers: Paragraph numbers 16.7.22; 16.7.23; and 16.7.24 should be renumbered 17.7.21; 17.7.22; and 17.7.23, respectively.
Chapter 18: Transport		
Chapter 18	At the District Planning Executive Panel meeting of 24 th May, the Transport Chapter was reported as being numbered 17. Due to consequential effects of previous chapter numbering, all references to Chapter and paragraphs should now replace 17 with 18.	Amendment to Chapter and Paragraph Numbers: For Transport Chapter, replace all Chapter and Paragraph numbering references to 17 with 18.
18.1.2	Internet link for Hertfordshire Local Transport Plan 2011 is out of date in textbox following paragraph and should be updated.	Amendment to Textbox: The Hertfordshire Local Transport Plan 2011 can be viewed and downloaded at: www.hertsdirect.org/services/transtreets/tranpan/ltpl/ http://www.hertfordshire.gov.uk/services/transtreets/tranpan/ltpl/
18.1.3	Internet link for Hertford and Ware Urban Transport Plan is out of date in textbox following paragraph and should be updated.	Amendment to Textbox: The Hertford and Ware Urban Transport Plan can be viewed and downloaded at: www.hertsdirect.org/services/transtreets/tranpan/tcatp/handwutp.pdf http://www.hertfordshire.gov.uk/services/transtreets/tranpan/tcatp/handwutp.pdf
18.4.3	To update text in respect of revised parking standards agreed by Council in 2015 and to inform readers that a replacement Vehicle Parking SPD will	Amendment to Text: The Council's Supplementary Planning Document 'Vehicle Parking Provision at New Development, 2008 '

Policy/ Paragraph	Issue	Proposed Amendment
	supersede both the 2008 SPD and the 2015 standards in due course.	sets out the amount of parking spaces that should be provided in association with development and also offers guidance concerning the design and layout of such provision. <u>This approach is supplemented by revised vehicle parking standards, which were agreed by the Council in July 2015. Amended parking standards, to replace those contained within the 2008 'Vehicle Parking Provision at New Development', are included at Appendix X to the District Plan and a</u> Additionally, a revised Vehicle Parking Supplementary Planning Document is to be prepared, <u>to replace the 2008 version and the revised standards of 2015,</u> which will <u>also</u> include updated guidance on design <u>and layout</u> issues.
Chapter 19: Community Facilities, Leisure and Recreation		
Chapter 19	At the District Planning Executive Panel meeting of 21 st July, the Community Facilities, Leisure and Recreation Chapter was reported as being numbered 18. Due to consequential effects of previous chapter numbering, all references to Chapter and paragraphs should now replace 18 with 19.	Amendment to Chapter and Paragraph Numbers: For Community Facilities, Leisure and Recreation Chapter, replace all Chapter and Paragraph numbering references to 18 with 19.
CFLR1 I.	Amendment to policy required to include to ensure that residential development meet Natural England's Accessible Natural Greenspace Standards	Amendment to Policy: Residential developments will be expected to provide open spaces, indoor and outdoor sport and recreation facilities to provide for the needs arising from the development. <u>Provision of Accessible Natural Greenspace (ANG) will be expected to meet Natural England's ANG Standards.</u> Local areas for play, informal and formal open spaces should be provided for on-site, while contributions towards off-site provision or the enhancement of existing facilities may be more appropriate for other types of provision. Facilities should be provided in accordance with the Council's latest evidence and in consultation with Sport England and the Council's Leisure and Environment Team. Where provision is made on-site as part of a development, applicants should detail how it will be maintained in the long term.
19.4.1	Internet link for the Hertfordshire County Council's Rights of Way service is out of date in textbox following paragraph and should be updated.	Amendment to Textbox: Further information on the County Council's Rights of Way Service can be viewed here: www.hertsdirect.org/services/envplan/countrysideaccess/row/ http://www.hertfordshire.gov.uk/services/envplan/countrysideaccess/row/

Policy/ Paragraph	Issue	Proposed Amendment
19.9.8	Hertfordshire County Council's Hertfordshire Health and Wellbeing internet link is out of date and replacement link should be provided.	<p>Amendment to Text:</p> <p>The County Council's Public Health Department is preparing a Health and Wellbeing Planning Guidance document defining its expectations to developers in the delivery of healthy development and communities, with signposts to further advice. This will be available at http://www.hertsdirect.org/services/healthsoc/healthherts/healthyplaces/ and http://www.hertfordshire.gov.uk/services/healthsoc/healthherts/.</p>
Chapter 20: Natural Environment		
Chapter 20	At the District Planning Executive Panel meeting of 24 th May, the Natural Environment Chapter was reported as being numbered 19. Due to consequential effects of previous chapter numbering, all references to Chapter and paragraphs should now replace 19 with 20.	<p>Amendment to Chapter and Paragraph Numbers:</p> <p>For Natural Environment Chapter, replace all Chapter and Paragraph numbering references to 19 with 20.</p>
20.2.6	Additional text required to describe how the Council intends working with partners in respect of the Wormley-Hoddesdonpark Woods SAC.	<p>Amendment to Text:</p> <p><u>In respect of the Wormley-Hoddesdonpark Woods SAC, the Council will work with partners to identify strategic initiatives to manage the impacts of recreational use.</u></p>
Chapter 21: Heritage Assets		
Chapter 21	At the District Planning Executive Panel meeting of 24 th May, the Heritage Assets Chapter was reported as being renumbered from Chapter 21 to 20. Due to consequential effects of previous chapter numbering, all references to Chapter and paragraphs should now revert back from 20 to 21.	<p>Amendment to Chapter and Paragraph Numbers:</p> <p>For Heritage Assets Chapter, replace all Chapter and Paragraph numbering references to 20 with 21.</p>
21.2.5	A direct internet link for the Hertfordshire Historic Environment Record has now become available so textbox following paragraph and should be updated.	<p>Amendment to Textbox:</p> <p>Further information and good practice on the identification of non-designated heritage assets is available on the Historic England website at: www.historicengland.org.uk/</p> <p>Further information on local heritage assets is available on the Hertfordshire Historic Environment Record website: www.hertsdirect.org http://www.hertfordshire.gov.uk/services/envplan/archaeology/sites/</p>

Policy/ Paragraph	Issue	Proposed Amendment
21.3.2	A direct internet link for the Hertfordshire Historic Environment Record has now become available so textbox following paragraph and should be updated.	<p>Amendment to Textbox:</p> <p>The Hertfordshire Historic Environment Record (HER) is a computerised record of Hertfordshire's historic environment. It contains information on historic buildings, archaeological remains, historic sites and military remains. The HER can be used to identify significant historic remains and finds. It also contains information on surveys and archaeological excavations undertaken in Hertfordshire.</p> <p>Further information can be found from their website: www.hertsdirect.orghttp://www.hertfordshire.gov.uk/services/envplan/archaeology/sites/</p>
Chapter 22: Climate Change		
Chapter 22	At the District Planning Executive Panel meeting of 24 th May, the Climate Change Chapter was reported as being renumbered from Chapter 22 to 21. Due to consequential effects of previous chapter numbering, all references to Chapter and paragraphs should now revert back from 21 to 22.	<p>Amendment to Chapter and Paragraph Numbers</p> <p>For Climate Change Chapter, replace all Chapter and Paragraph numbering references to 21 with 22.</p>
22.2.1	Due to consequential effects of chapter numbering, the chapter number for Water needs correcting.	<p>Amendment to Text:</p> <p>...Measures related directly to water and climate change adaptation, including flood risk, water efficiency, and sustainable urban drainage, are contained within Chapter 22<u>23</u>: Water.</p>
22.4.1	Internet link for Hertfordshire Renewable and Low Carbon Energy Technical Study (July 2010) in the textbox following paragraph is out of date and replacement link should be provided.	<p>Amendment to Textbox:</p> <p>The Hertfordshire Renewable and Low Carbon Energy Technical Study (July 2010) can be viewed and downloaded from the Hertfordshire County Council Website at: www.hertsdirect.org/services/envplan/plan/renewableenergy/ http://www.hertfordshire.gov.uk/services/envplan/plan/renewableenergy/</p>
Chapter 23: Water		
Chapter 23	At the District Planning Executive Panel meeting of 24 th May, the Water Chapter was reported as being renumbered from Chapter 23 to 22. Due to consequential effects of previous chapter numbering, all references to Chapter and paragraphs should	<p>Amendment to Chapter and Paragraph Numbers:</p> <p>For Water Chapter, replace all Chapter and Paragraph numbering references to 22 with 23.</p>

Policy/ Paragraph	Issue	Proposed Amendment
	now revert back from 22 to 23.	
23.2.3	Internet link to the Environment Agency's Standing Advice in the textbox following paragraph is out of date and replacement link should be provided.	Amendment to Textbox: For more information on the Environment Agency's Standing Advice go to: https://www.gov.uk/flood-risk-standing-advice-frsa-for-local-planning-authorities https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications
23.3.2	Internet link to the Environment Agency's main website in the textbox following paragraph is out of date and replacement link should be provided.	Amendment to Textbox: For more information and for the latest updates on the status of rivers in East Herts, see the Environment Agency's website at: www.environment-agency.gov.uk https://www.gov.uk/government/organisations/environment-agency
WAT2	Internet link to the Source Protection Zone mapping in the textbox following policy is out of date and replacement link should be provided.	Amendment to Textbox: A map of Source Protection Zones is available on East Herts Council's website the Environment Agency's website at: www.eastherts.gov.uk/sourceprotectionzoneshttp://maps.environment-agency.gov.uk/wiyby/wiybyController?x=357683.0&y=355134.0&scale=1&layerGroups=default&ep=map&textonly=off&lang=e&topic=groundwater
23.4.4	Internet link to the Water Efficiency Calculator for New Dwellings in the textbox following paragraph is out of date and replacement link should be provided.	Amendment to Textbox: For more information on the Water Efficiency Calculator for New Dwellings go to https://www.gov.uk/government/publications/the-water-efficiency-calculator-for-new-dwellings https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/504207/BR_PDF_AD_G_2015_with_2016_amendments.pdf
23.5.5	Internet link to Hertfordshire County Council's approach as the SUDs Approval Body in the textbox following paragraph is out of date and replacement link should be provided.	Amendment to Textbox: For more information on Hertfordshire County Council's approach as SUDs Approval Body go to: www.hertsdirect.org http://www.hertfordshire.gov.uk/services/envplan/water/floods/surfacewaterdrainage/
Chapter 24: Environmental Quality		
Chapter 24	At the District Planning Executive Panel meeting of 24 th May, the Environmental Quality Chapter was reported as being renumbered from Chapter 24 to	Amendment to Chapter and Paragraph Numbers: For Environmental Quality Chapter, replace all Chapter and Paragraph numbering references to 23 with

Policy/ Paragraph	Issue	Proposed Amendment
	23. Due to consequential effects of previous chapter numbering, all references to Chapter and paragraphs should now revert back from 23 to 24.	24.
24.1.2	Due to consequential effects of chapter numbering, the chapter number for Water needs correcting.	Amendment to Text: ...Policies relating to water quality and water pollution are contained within Chapter 23 : Water.
24.5.7	To correct referencing, text referring to Policy DES1 should be replaced with DES3.	Amendment to Text: In line with Policy DES1 DES3 , the Council will expect proposals to embrace renewable, zero and low-carbon technology to fulfil some, if not all, of the expected energy use of the proposed development...
Chapter 25: Delivery and Monitoring		
25.4.1	To reflect the fact that, in certain circumstances, site specific monitoring may be undertaken, additional text has been added.	Amendment to Text: Regular monitoring of actual development outcomes against the plan is an essential part of ensuring that the plan is effective. Monitoring can indicate areas where interventions may be needed to achieve the objectives of the plan, and may also demonstrate the need for a review of the plan. <u>Where necessary site specific monitoring may be undertaken.</u>
25.4.2	Due to consequential effects of the renumbering of appendices, the reference to the Monitoring Framework requires revision.	Amendment to Text: A Monitoring Framework has been prepared as part of the District Plan. Monitoring will be proportionate to the needs of an effective plan, and will be targeted at those areas where it can add value to the development process. The proposed Framework is located at Appendix DC . Progress made against each of the indicators contained in the Monitoring Framework will be reported on an annual basis as part of the Authority Monitoring Report.

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EAST HERTS COUNCIL

DISTRICT PLANNING EXECUTIVE PANEL – 15 SEPTEMBER 2016

REPORT BY LEADER OF THE COUNCIL

STRATEGIC FLOOD RISK ASSESSMENT, AUGUST 2016

WARD(S) AFFECTED: ALL

Purpose/Summary of Report

The purpose of this report is:

- To present to Members the Strategic Flood Risk Assessment, August 2016.

<u>RECOMMENDATIONS FOR DISTRICT PLANNING EXECUTIVE PANEL:</u> That Council, via the Executive, be advised that:	
(A)	the Strategic Flood Risk Assessment, August 2016, be supported as part of the evidence base to inform and support the East Herts District Plan; and
(B)	the Head of Planning and Building Control, in consultation with the Leader of the Council, be authorised to agree an updated version of the document following completion of the climate change mapping.

1.0 Background

1.1 A Strategic Flood Risk Assessment (SFRA) was prepared in 2008 in order to inform the early stages of the plan making process. Since that time, a number of significant changes have taken place which has resulted in the SFRA becoming out of date. These changes include:

- The introduction of the National Planning Policy Framework (NPPF);
- Updated Environment Agency river modelling; and

- Updated Environment Agency data on surface water flooding.
- 1.2 This report presents an updated SFRA that reflects updated data and guidance.
- 2.0 Report
- 2.1 The SFRA, August 2016, which can be found within **Essential Reference Paper B**, performs a number of functions. Most importantly, it identifies the areas across the District that are at risk of flooding from different sources, including river, surface water, groundwater, sewer and reservoir flooding. Of particular importance for Plan making, and the planning application process, is the identification of the functional floodplain (Flood Zone 3b).
- 2.2 In addition, the SFRA assesses the flood risk associated with the proposed allocations identified within the District Plan. The 2008 SFRA, along with more up to date information from the Environment Agency, have been utilised throughout the plan making process in order to ensure that proposed allocations are acceptable in flooding terms. However, the updated SFRA assesses these sites in more detail, and will therefore help inform the planning application process in due course.
- 2.3 National planning guidance also requires that local planning authorities consider the potential impact of climate change on flood risk. The Government has recently updated the methodology for undertaking this assessment. It should be noted that work on this element of the SFRA, which will form Appendix C to the main document, is currently ongoing and is expected to be completed by the end of September 2016. As such, it is recommended that the Head of Planning and Building Control, in consultation with the Leader of the Council, be authorised to agree an updated version of the document in due course.
- 3.0 Implications/Consultations
- 3.1 Information on any corporate issues and consultation associated with this report can be found within **Essential Reference Paper 'A'**.

Background Papers

None

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ESSENTIAL REFERENCE PAPER 'A'


IMPLICATIONS/CONSULTATIONS

Contribution to the Council's Corporate Priorities/ Objectives:	Priority 1 – Improve the health and wellbeing of our communities Priority 2 – Enhance the quality of people's lives Priority 3 – Enable a flourishing local economy
Consultation:	None
Legal:	None
Financial:	None
Human Resource:	None
Risk Management:	None
Health and wellbeing – issues and impacts:	The Pre-Submission District Plan in general will have positive impacts on health and wellbeing through a range of policy approaches that seek to create sustainable communities.

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JBA
consulting



East Hertfordshire District
Council

Level 1 and 2 Strategic Flood
Risk Assessment

Final Report

August 2016

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Revision History

Revision Ref / Date Issued	Amendments	Issued to
Draft v1.0 / August 2016		Chris Butcher, East Hertfordshire District Council
Final v1.0 / August 2016		Chris Butcher, East Hertfordshire District Council

Contract

This report describes work commissioned by East Hertfordshire District Council. The Council's representative for the contract was Chris Butcher.

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Purpose

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JBA Consulting has no liability regarding the use of this report except to East Hertfordshire District Council.



Acknowledgements

We would like to acknowledge the assistance of:

- East Hertfordshire District Council;
- Hertfordshire County Council including Highways;
- Environment Agency;
- Thames Water;
- Lea Valley Regional Park Authority;
- Canal and River Trust; and
- Planners at the neighbouring authorities

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Executive Summary

Introduction

This Level 1 and 2 Strategic Flood Risk Assessment (SFRA) replaces the Level 1 SFRA originally published by East Hertfordshire District Council in November 2008 and provides appropriate supporting evidence for the emerging District Plan. This report also includes a Level 2 SFRA of sites identified for potential allocation within the emerging District Plan.

SFRA objectives

The Planning Practice Guidance advocates a tiered approach to risk assessment and identifies the following two levels of SFRA:

- **Level One:** where flooding is not a major issue in relation to potential development sites and where development pressures are low. The assessment should be sufficiently detailed to allow application of the Sequential Test.
- **Level Two:** where land outside Flood Zones 2 and 3 cannot appropriately accommodate all the necessary development creating the need to apply the NPPF's Exception Test. In these circumstances the assessment should consider the detailed nature of the flood characteristics within a Flood Zone and assessment of other sources of flooding.

The objectives of this SFRA update are to:

1. To take into account most recent policy and legislation in the National Planning Policy Framework.
2. To take into account the latest available flood risk information and data.
3. To investigate and identify the extent and severity of flood risk from all sources presently and in the future within the local planning authority area of East Hertfordshire District Council.
4. To provide a comprehensive set of maps presenting flood risk from all sources that can be used as evidence base for use in the emerging District Plan.
5. To provide individual flood risk analysis, for potential development sites identified by the Council, through a Level Two SFRA.

The following outputs have been prepared to meet the objectives:

Level 1 SFRA outputs

- District-wide appraisal of all potential sources of flooding, including fluvial, surface water, groundwater, sewer and reservoir inundation
- Review of historical flooding incidents.
- Mapping of location and extent of functional floodplain.
- Reporting on the standard of protection provided by existing flood risk management infrastructure.
- An assessment of the potential increase in flood risk due to climate change.
- An assessment of the surface water management issues, how these can be addressed through site allocation and development management policies and the application of Sustainable Drainage Systems (SuDS).
- Areas at risk from other sources of flooding, for example groundwater or reservoirs.
- An assessment of existing flood warning and emergency planning procedures.
- Recommendations of the criteria that should be used to assess future development proposals and the development of a Sequential Test and sequential approach to flood risk.
- High-level screening of proposed development sites against flood risk information.

Level 2 SFRA outputs

The Level Two assessment includes detailed assessments of Proposed Site Allocations. These include:

- An assessment of all sources of flooding including fluvial flooding, surface water flooding, groundwater flooding, mapping of the functional floodplain and the potential increase in fluvial flood risk due to climate change.

- Reporting on current conditions of flood defence infrastructure, including the protection provided by the feature
- An assessment of existing flood warning and emergency planning procedures, including an assessment of safe access and egress during an extreme event
- Advice and recommendations on the likely applicability of sustainable drainage systems for managing surface water runoff
- Advice on appropriate policies for sites which could satisfy the first part of the Exception Test and on the requirements that would be necessary for a site-specific Flood Risk Assessment supporting a planning application to pass the second part of the Exception Test

Summary of Level 1 SFRA

The SFRA has considered all sources of flooding including fluvial, surface water, groundwater, sewers, reservoirs and canals within the study area. With regards to assessment methods, fluvial flood risk has been analysed using the results from various hydraulic modelling studies provided by the Environment Agency, as well as Flood Zone 2 and 3 datasets also provided by the Environment Agency. Surface water flood risk has been analysed using the updated Flood Map for Surface Water published online by the Environment Agency and recorded flood incident data supplied by Hertfordshire County Council Highways unit. A number of other data sources have been drawn upon as an evidence base, such as sewer data from Thames Water, canal overtopping data from the Canal and River Trust, National Inundation Reservoir Mapping from the Environment Agency, various geology / groundwater products and datasets from the Environment Agency and historical flood incidents from East Hertfordshire District Council.

The assessment has concluded the following:

- Flood history shows that East Hertfordshire has been subject to flooding from several sources of flood risk.
- The primary fluvial flood risk is located along the River Lea and River Stort corridors. The main urban areas at risk include Hertford, Ware Stanstead Abbots and Bishop's Stortford. The main tributaries of the River Lea also present fluvial flood risk to rural communities within the district. The floodplain associated with the tributaries of the River Lea network are generally narrow until reaching the urban areas and / or towards the confluences with the River Lea network.
- East Hertfordshire has experienced a number of historic surface water flooding incidents. Bishop's Stortford, Hertford, Much Hadham, Walkern and Buntingford are shown to have five or more records of surface water flooding. The uFMfSW further shows a number of prominent overland flow routes in the district; these predominantly follow topographical flow paths of existing watercourses or road networks, with some isolated ponding located in low lying areas.
- The Thames Water DG5 register indicates a total of 179 recorded incidents of sewer flooding in East Hertfordshire administrative area. The more frequently flooded postcodes are SG14 3, with 21 records, followed by SG12 8 with 18 records.
- There have been incidents of historic groundwater flooding in East Hertfordshire which is thought to primarily be caused by the underlying geology. Although the incidents are largely isolated, the settlement with the greatest recorded number of incidents is Ware and Tewin/Wood.
- In relation to artificial sources of flooding, there are no records of flooding from reservoirs impacting properties inside the study area. The level and standard of inspection and maintenance required under the Reservoirs Act means that the risk of flooding from reservoirs is relatively low.
- There are no records of a canal overtopping along the Lea Navigation Channel. There are however, seven records of overtopping of the River Stort navigation channel; the majority of these being caused by heavy rainfall causing the River Stort to overtop its banks. For development applications located in the vicinity of a canal or navigation channel, it is recommended that overtopping and/ or breach of the structure is considered as part of a site-specific FRA to establish the residual risk to the development.

- A high level review has been undertaken of flood defences, using the Environment Agency AIMS database. The condition of existing flood defences and whether they will continue to be maintained and/or improved in the future is a factor that needs to be considered as part of the risk-based sequential approach and, in light of this, whether proposed land allocations are appropriate and sustainable.
- Emergency planning considerations have been included and the flood warning service coverage assessed; currently there are 25 Flood Alert Areas and 22 Flood Warning Areas (FWAs) covering significant parts of East Hertfordshire.

In February 2016 the Environment Agency published new climate change guidance which must now be considered for all new developments and planning applications. Climate change modelling and mapping has been undertaken as part of the SFRA for the three scenarios reflecting three climate change allowances for the '2080s' timeframe in the Thames River Basin District, i.e. 25%, 35% and 70% allowances. The modelling has been undertaken to assist the Council with the preparation of their emerging District Plan. Developers will need to undertake a detailed assessment of climate change as part of the planning application process when preparing FRAs.

The Sequential approach to development and flood risk has been defined with guidance provided for the application of the Sequential and Exception Tests for both the District Plan and for detailed, site-specific Flood Risk Assessments. This SFRA provides details of the FRA requirements and guidance for developers. These recommendations include those of the NPPF, Environment Agency standing advice, as well as reference to regional and local policy. In addition, specific recommendations following the findings of this level 1 SFRA have been put forward for development in Flood Zones 1, 2 and 3. Site-specific FRAs should include assessment of mitigation measures required to safely manage flood risk along with the along with promotion of SuDS to create a conceptual drainage strategy and safe access/ egress at the development in the event of a flood.

Summary of the Level 2 Assessment of Proposed Site Allocations

- Jflow modelling of drains was undertaken for the following sites: Bishops Stortford South and Employment Land, North West Road Sawbridgeworth, Hertford South, East of Welwyn, North and East of Ware (Left and Right) and Gilston Area. However, detailed hydraulic modelling would be required to confirm the flood risk to these sites.
- Four of the sites have detailed modelling available; Mead Lane North, The Goods Yard, South of West Road and the Causeway/Old River Lane.
- For all sites, with the exception of the Causeway/Old River Lane, the majority of the sites are located within Flood Zone 1.
- The site at the Causeway/Old River Lane falls 83% within Flood Zone 2 and 13% within Flood Zone 3
- Several sites have been identified as having surface water flood risk issues including:
 - Bishops Stortford South and Employment Land
 - Mead Lane North
 - The Goods Yard
 - East of Welwyn
 - North and East of Ware (Left and Right)
 - Gilston Area
 - Causeway/Old River Lane
- Climate change mapping indicates that the depths, velocities and hazard of flooding may increase as a result of climate change. The significance of the increase tends to depend on the climate change allowance used and the site topography.
- Many sites are located in groundwater SPZs. This means that special consideration needs to be taken with SuDS. A suitable level of treatment should be ensured prior to discharging, along with establishing an understanding of constraints to sites and how SuDS can be designed to overcome these from relevant bodies (e.g. LLFA)
- The site East of Welwyn is the only site which has areas within it designated by the Environment Agency as being landfill. For this, site ground investigation will be required to determine the extent of the contamination and the impact this may have on SuDS.

- A strategic assessment was conducted of SuDS options using regional data sets. Therefore, a detailed site-specific assessment of suitable SuDS techniques would need to be undertaken to understand which SuDS option would be best.
- None of the proposed allocation sites apart from the Causeway/Old River would benefit from the formal flood defences which are currently present within East Hertfordshire. Flood mitigation measures should only be considered if, after a sequential approach, development sites cannot be located further away from high risk areas. The Causeway/Old River is currently protected by two privately-owned embankments.
- For a number of sites, there is the potential for safe access and egress to be impacted by fluvial or surface water flooding. Consideration should be made to these sites to how safe access and egress can be provided during high rainfall events.

Recommendations

Assessing Flood Risk and Developments

- The NPPF supports a risk-based and sequential approach to development and flood risk in England, so that development is located in the lowest flood risk areas where possible; it is recommended that this approach is adopted for all future developments within the district.
- A site-specific FRA is required for all developments over 1ha in Flood Zone 1; for developments less than 1 ha in Flood Zone 1 where there is a change to vulnerability classification or where the development could be affected by sources of flooding; and for all developments located in an area which has been highlighted as having critical drainage problems. The FRA should be proportionate to the degree of flood risk, as well as the scale, nature and location of the development.
- It is recommended that the impact of climate change to a proposed site is considered in a FRA and that the percentage increases which relate to the proposed lifetime of the development and the vulnerability classification of the development is accounted for.
- At site-specific level, for any developments shown to be at residual flood risk, for example from a breach or overtopping (e.g. reservoir, canal, perched watercourse), it is recommended that a detailed hydraulic modelling study is carried out using Environment Agency guidance to assess the residual risk.
- Opportunities to reduce flood risk to wider communities could be sought through the regeneration of Brownfield sites, through reductions in the amount of surface water runoff generated on a site. The functional floodplain should be protected from development and returned to greenfield status (where possible).
- The Local Planning Authority (LPA), Environment Agency and Lead Local Flood Authority (LLFA) should be consulted to confirm the level of assessment required and to provide any information on any known local issues.
- When assessing sites not identified in the District plan (windfall sites), developers should use evidence provided in this SFRA to apply the Sequential Test as well as provide evidence to show that they have adequately considered other reasonably available sites.
- The FRA should demonstrate that developments do not increase the likelihood or intensity of flood risk to third party development.
- To demonstrate the Exception Test has been passed, flood resilience design and emergency planning must be accounted for including:

Future Developments

Development must seek opportunities to reduce the overall level of flood risk at the site, for example by:

- Reducing volume and rate of surface water runoff based on local planning policy and LLFA Guidance
- Locating development to areas with lower flood risk
- Creating space for flooding
- Integrating green infrastructure into mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.

The Local Planning Authority should consult the National Planning Practice Guidance and Environment Agency's 'Flood Risk Standing Advice (FRSA) for Local Planning Authorities', published in March 2014, when reviewing planning applications for proposed developments at risk of flooding.

At the planning application stage, developers may need to undertake more detailed hydrological and hydraulic assessments of the watercourses to verify flood extent (including latest climate change allowances, published by the Environment Agency in February 2016), inform development zoning within the site and prove, if required, whether the Exception Test can be passed.

Promotion of SuDS

- A detailed site-specific assessment of SuDS would be needed to incorporate SuDS successfully into the development proposals. New or re-development should adopt source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. Where possible developments must utilise the most sustainable form of drainage systems, in accordance with the SuDS hierarchy.
- Development should aim to achieve Greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible.
- For proposed developments, it is imperative that a site-specific infiltration test is conducted early on as part of the design of the development, to confirm whether the water table is low enough to allow for SuDS techniques that are designed to encourage infiltration.
- Where sites lie within or close to Groundwater SPZs or aquifers, there may be a requirement for a form of pre-treatment prior to infiltration. Further guidance can be found in the CIRIA SuDS manual on the level of water quality treatment required for drainage via infiltration. Further restrictions may still be applicable and guidance should be sought from the LLFA.
- Developers need to ensure that new development does not increase the surface water runoff rate from the site and should therefore contact the LLFA and other key stakeholders at an early stage to ensure surface water management is undertaken and that SuDS are promoted and implemented, designed to overcome site-specific constraints.
- Where SuDS are provided as part of a development, applicants should detail how it will be maintained in the long term.

Infrastructure and Access

- Any developments located within an area protected by flood defences, where the condition of those defences is 'fair' or 'poor', and where the standard of protection is not of the required standard should be identified and the use of developer contributions considered to fund improvements.
- Safe access and egress for residents and emergency and service vehicles will need to be demonstrated at all development sites.

Green Infrastructure and Water Framework Directive

Opportunities to enhance green infrastructure and reduce flood risk by making space for water should be sought. In addition, opportunities where it may be possible to improve the Water Framework Directive (WFD) status of watercourses, for example by opening up culverts, weir removal, and river restoration, should be considered. Green infrastructure should be considered within the mitigation measures for surface water runoff from development.

Future flood management in Hertfordshire

Hertfordshire County Council's Local Flood Risk Management Strategy identifies policies and procedures to assist them with achieving and delivering the LFRMS. Hertfordshire County Council will set out to achieve these by adopting a leadership role in FRM in Hertfordshire, working in collaboration with key stakeholders and partners, including East Hertfordshire District Council, to enable capacity building and transparent knowledge-sharing across the County, and to ensure SuDS are effectively accounted for in new developments. Cross-authority working should also include community engagement, to manage expectations about what can be achieved from a funding perspective and to help communities to become more self-resilient.

Use of SFRA data



It is important to recognise that the SFRA has been developed using the best available information at the time of preparation. This relates both to the current risk of flooding from rivers, and the potential impacts of future climate change.

The SFRA should be periodically updated when new information on flood risk, flood warning or new planning guidance or legislation becomes available. New information on flood risk may be provided by East Hertfordshire District Council, Hertfordshire County Council (in its role as LLFA), the Highways Authority, Thames Water and the Environment Agency. It is recommended that the SFRA is reviewed internally on an annual basis, allowing a cycle of review, followed by checking with the above bodies for any new information to allow a periodic update.

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Abbreviations and Glossary of Terms

Term	Definition
1D model	One-dimensional hydraulic model
2D model	Two-dimensional hydraulic model
AEP	Annual Exceedance Probability
Brownfield	Previously developed parcel of land
CC	Climate change - Long term variations in global temperature and weather patterns caused by natural and human actions.
CDA	Critical Drainage Area - A discrete geographic area (usually a hydrological catchment) where multiple and interlinked sources of flood risk (surface water, groundwater, sewer, main river and/or tidal) cause flooding in one or more Local Flood Risk Zones during severe weather thereby affecting people, property or local infrastructure.
CFMP	Catchment Flood Management Plan- A high-level planning strategy through which the Environment Agency works with their key decision makers within a river catchment to identify and agree policies to secure the long-term sustainable management of flood risk.
CIRIA	Construction Industry Research and Information Association
Cumecs	The cumec is a measure of flow rate. One cumec is shorthand for cubic metre per second; also m ³ /s.
Defra	Department for Environment, Food and Rural Affairs
Designated Feature	A form of legal protection or status reserved for certain key structures or features that are privately owned and maintained, but which make a contribution to the flood or coastal erosion risk management of people and property at a particular location.
DG5 Register	A water-company held register of properties which have experienced sewer flooding due to hydraulic overload, or properties which are 'at risk' of sewer flooding more frequently than once in 20 years.
DTM	Digital Terrain Model
EA	Environment Agency
EU	European Union
FEH	Flood Estimation Handbook
Flood defence	Infrastructure used to protect an area against floods as floodwalls and embankments; they are designed to a specific standard of protection (design standard).
Flood Risk Area	An area determined as having a significant risk of flooding in accordance with guidance published by Defra and WAG (Welsh Assembly Government).
Flood Risk Regulations	Transposition of the EU Floods Directive into UK law. The EU Floods Directive is a piece of European Community (EC) legislation to specifically address flood risk by prescribing a common framework for its measurement and management.
Floods and Water Management Act	Part of the UK Government's response to Sir Michael Pitt's Report on the Summer 2007 floods, the aim of which is to clarify the legislative framework for managing surface water flood risk in England.
Fluvial Flooding	Flooding resulting from water levels exceeding the bank level of a main river
FRA	Flood Risk Assessment - A site specific assessment of all forms of flood risk to the site and the impact of development of the site to flood risk in the area.
FRM	Flood Risk Management
FWMA	Flood and Water Management Act
FZ	Flood Zones
GI	Green Infrastructure – a network of natural environmental components and green spaces that intersperse and connect the urban centres, suburbs and urban fringe
Greenfield	Undeveloped parcel of land

Term	Definition
Ha	Hectare
Indicative Flood Risk Area	Nationally identified flood risk areas, based on the definition of 'significant' flood risk described by Defra and WAG.
JBA	Jeremy Benn Associates
LFRMS	Local Food Risk Management Strategy
LIDAR	Light Detection and Ranging
LLFA	Lead Local Flood Authority - Local Authority responsible for taking the lead on local flood risk management
LPA	Local Planning Authority
m AOD	metres Above Ordnance Datum
Main River	A watercourse shown as such on the Main River Map, and for which the Environment Agency has responsibilities and powers
NPPF	National Planning Policy Framework
NRD	National Receptor Database
Ordinary Watercourse	All watercourses that are not designated Main River. Local Authorities or, where they exist, IDBs have similar permissive powers as the Environment Agency in relation to flood defence work. However, the riparian owner has the responsibility of maintenance.
OS NGR	Ordnance Survey National Grid Reference
PFRA	Preliminary Flood Risk Assessment
Pitt Review	Comprehensive independent review of the 2007 summer floods by Sir Michael Pitt, which provided recommendations to improve flood risk management in England.
Pluvial flooding	Flooding as a result of high intensity rainfall when water is ponding or flowing over the ground surface (surface runoff) before it enters the underground drainage network or watercourse, or cannot enter it because the network is full to capacity.
Pound length	Distance of level water impounded between two canal locks.
Qbar	The mean annual flow from a catchment. This is approximately the 2.3-year return period event.
PPG	National Planning Policy Guidance
PPS25	Planning and Policy Statement 25: Development and Flood Risk – superseded by the NPPF and PPG
Resilience Measures	Measures designed to reduce the impact of water that enters property and businesses; could include measures such as raising electrical appliances.
Resistance Measures	Measures designed to keep flood water out of properties and businesses; could include flood guards for example.
Risk	In flood risk management, risk is defined as a product of the probability or likelihood of a flood occurring, and the consequence of the flood.
Return Period	Is an estimate of the interval of time between events of a certain intensity or size, in this instance it refers to flood events. It is a statistical measurement denoting the average recurrence interval over an extended period of time.
Sewer flooding	Flooding caused by a blockage or overflowing in a sewer or urban drainage system.
SFRA	Strategic Flood Risk Assessment
SoP	Standard of Protection - Defences are provided to reduce the risk of flooding from a river and within the flood and defence field standards are usually described in terms of a flood event return period. For example, a flood embankment could be described as providing a 1 in 100 year standard of protection.
Stakeholder	A person or organisation affected by the problem or solution, or interested in the problem or solution. They can be individuals or organisations, includes the public and communities.
SuDS	Sustainable Drainage Systems - Methods of management practices and control structures that are designed to drain surface water in a more sustainable manner than some conventional techniques

Term	Definition
Surface water flooding	Flooding as a result of surface water runoff as a result of high intensity rainfall when water is ponding or flowing over the ground surface before it enters the underground drainage network or watercourse, or cannot enter it because the network is full to capacity, thus causing what is known as pluvial flooding.
SWMP	Surface Water Management Plan - The SWMP plan should outline the preferred surface water management strategy and identify the actions, timescales and responsibilities of each partner. It is the principal output from the SWMP study.
uFMfSW	Updated Flood Map for Surface Water
WFD	Water Framework Directive



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1 Introduction

1.1 Purpose of the Strategic Flood Risk Assessment

This Level 1 and 2 Strategic Flood Risk Assessment (SFRA) replaces the Level 1 SFRA originally published by East Hertfordshire District Council in November 2008 and provides appropriate supporting evidence for the emerging District Plan. This report also includes a Level 2 SFRA of sites identified for potential allocation within the emerging District Plan.

The 2016 SFRA update will be used in decision-making and to inform decisions on the location of future development and the preparation of sustainable policies for the long-term management of flood risk.

The key objectives of the review performed during the preparation of the SFRA are:

1. **To update and replace the Council's existing Level 1 SFRA, taking into account most recent policy and legislation in the National Planning Policy Framework.**

Since the publication of the last SFRA by East Hertfordshire District Council there have been a number of changes to policy and guidance. The following are the key changes to policy and guidance which will be updated within this document:

- Changes to legislation, both relating to flood risk and planning policy, including the Flood Risk Regulations (2009), Flood and Water Management Act (2010), the National Planning Policy Framework (NPPF) (2012), the Localism Act (2011) and the Climate Change Act (2008); and new powers and responsibilities bestowed on Hertfordshire County Council as the Lead Local Flood Authority (LLFA) under the Flood and Water Management Act (2010) and their dependencies therefore with the Council's local development and forward planning roles.
- Guidance published in April 2015 regarding the role of LLFAs, Local Planning Authorities and the Environment Agency with regards to SuDS approval.
- Changes to technical guidance, for example the 2016 climate change allowances, consultation on SuDS Regulations and Standards (2011), Defra's Non-statutory technical standards for sustainable drainage systems (March 2015), and NPPF Planning Practice Guidance replacing PPS25 and PPG25.

2. **To take into account the latest available flood risk information and data.**

Since the previous SFRA there are a number of new datasets available to more accurately assess flood risk in the study area. These datasets will be used within this document to give a more accurate interpretation of flood risk for the study area and include the following:

- Hertfordshire Preliminary Flood Risk Assessment (2011)
- Hertfordshire County Council's SuDS Policy Statement (March 2015), Guidance for developers, and SuDS Design Guidance
- Hertfordshire Local Flood Risk Management Strategy (Local Strategy) 2011
- East Hertfordshire & Broxbourne SWMP (ongoing)
- Availability of the updated Flood Map for Surface Water (uFMfSW)
- River Thames Catchment Flood Management Plan (2010)
- Thames River Basin Management Plan (2015)
- Thames Flood Risk Management Plan (2016)
- Hydraulic modelling studies across East Hertfordshire
- Lower Lee Flood Risk Management Strategy (Revised 2013)
- Rye Meads Water Cycle Strategy (2009)
- Scoping Study of Hertfordshire LPA Planning Performance in relation to Climate Change (2009)
- Strategic Land Availability Assessment (SLAA, 2012)
- East Hertfordshire Sustainability Appraisal and Appropriate Assessment (2007)

3. **To investigate and identify the extent and severity of flood risk from all sources presently and in the future within the local planning authority area of East Hertfordshire District Council.**

The SFRA will identify areas at risk of fluvial flooding and in particular, identify Flood Zones 2, 3a and 3b in order to allow the council to apply the Sequential Test. The impact of climate change on flood risk will be considered following Environment Agency climate change guidance published February 2016. An assessment will be made on flood defences and areas which these benefit. Flood risk from all other sources will be identified.

4. **To provide a comprehensive set of maps presenting flood risk from all sources that can be used in the evidence base of the emerging District plan.**

Maps are a good way to present the most recent and available technical data in a clear and user friendly manner. This form of presentation also will help engage with stakeholders. The maps listed below are either shown as a figure within the main report or are contained within the appendices.

- o Main Rivers and ordinary watercourses
- o Drainage area information (geology, soils, topography)
- o Fluvial flood risk, including functional floodplain and climate change
- o Surface water risk
- o Groundwater risk
- o Reservoir Inundation
- o Flood warning coverage
- o Flood defences

5. **To provide individual flood risk analysis, for potential development sites identified by the Council, through a Level Two SFRA.**

The SFRA will form part of the evidence base supporting the District Plan to inform site allocations so they are in accordance with the NPPF. The SFRA will support current policy development within the District Plan. Proposed site allocations have been provided by the Council to be assessed in the SFRA.

1.2 SFRA objectives

The Planning Practice Guidance advocates a tiered approach to risk assessment and identifies the following two levels of SFRA:

1. **Level One:** 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.
2. **Level Two:** where land outside Flood Zones 2 and 3 cannot appropriately accommodate all the necessary development creating the need to apply the NPPF's Exception Test. In these circumstances the assessment should consider the detailed nature of the flood characteristics within a Flood Zone and assessment of other sources of flooding.

Level 1 SFRA outputs

To meet the objectives, the following outputs have been prepared:

- Identification of policy and technical updates, in particular the introduction of the National Planning Policy Framework and accompanying Planning Practice Guidance (any strategic flooding issues which may have cross boundary implications with neighbouring authorities must be considered as part of this review and appropriate consultation with neighbouring Local Authorities undertaken.)
- Review and update of new and amended data sources (e.g. Catchment Flood Management Plans, Preliminary Flood Risk Assessment, Updated Flood Maps and modelling, etc.).
- Appraisal of all potential sources of flooding, including fluvial, surface water, groundwater, sewer and reservoir inundation.

- Mapping of location and extent of functional floodplain.
- Reporting on the standard of protection provided by existing flood risk management infrastructure.
- An assessment of the potential increase in flood risk due to climate change.
- An assessment of the surface water management issues, how these can be addressed through site allocation and development management policies and the application of Sustainable Drainage Systems (SuDS).
- Areas at risk from other sources of flooding, for example groundwater or reservoirs.
- An assessment of existing flood warning and emergency planning procedures.
- Recommendations of the criteria that should be used to assess future development proposals and the development of a Sequential Test and sequential approach to flood risk.
- High-level screening of proposed development sites against flood risk information.

Level 2 SFRA outputs

The Level Two assessment includes detailed assessments of proposed site allocations. These include:

- An assessment of all sources of flooding including
 - Fluvial flooding, including depth velocity and hazard mapping
 - Definition and mapping of the functional floodplain
 - Potential increase in fluvial flood risk due to climate change
 - Surface water flooding
 - Groundwater flooding
- Reporting on current conditions of flood defence infrastructure, including the protection provided by the feature
- An appraisal of the probability and consequences of overtopping or failure of flood risk management infrastructure
- An assessment of existing flood warning and emergency planning procedures, including an assessment of safe access and egress during an extreme event
- Advice and recommendations on the likely applicability of sustainable drainage systems for managing surface water runoff
- Advice on appropriate policies for sites which could satisfy the first part of the Exception Test and on the requirements that would be necessary for a site-specific Flood Risk Assessment supporting a planning application to pass the second part of the Exception Test

1.3 Approach

1.3.1 General assessment of flood risk

The flood risk management hierarchy underpins the risk-based approach and is the basis for making all decisions involving development and flood risk. When using the hierarchy, account should be taken of

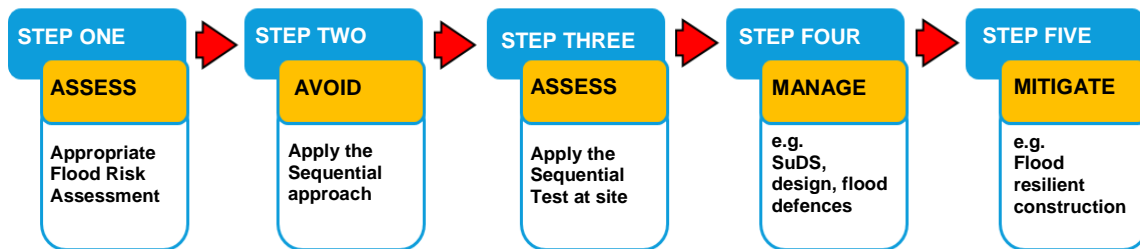
- the nature of the flood risk (the **source** of the flooding);
- the spatial distribution of the flood risk (the **pathways** and areas affected by flooding);
- climate change impacts; and
- the degree of vulnerability of different types of development (the **receptors**).

Developments should reflect the application of the Sequential Test using the maps produced for this SFRA. The information in this SFRA should be used as evidence and, where necessary, reference should also be made to relevant evidence in other documents referenced in this report. The Flood Zone maps and flood risk information on other sources of flooding contained in this SFRA should be used where appropriate to apply the Sequential Test.

Where other sustainability criteria outweigh flood risk issues, the decision making process should be transparent. Information from this SFRA should be used to justify decisions to allocate land in areas at high risk of flooding.

The flood risk management hierarchy is summarised in Figure 1-1.

Figure 1-1: Flood Risk Management Hierarchy



1.4 Consultation

The following parties (external to East Hertfordshire District Council) have been consulted during the preparation of this version of the SFRA:

- Environment Agency (Hertfordshire and North London area)
- Hertfordshire County Council
- Thames Water
- Canal & River Trust
- Highways
- Fire and Rescue
- Lea Valley Regional Park Authority
- Neighbouring authorities including:
 - Epping Forest District Council
 - Broxbourne Council
 - Welwyn Hatfield Council
 - North Hertfordshire District Council
 - Stevenage District Council
 - Uttlesford District Council
 - Harlow District Council

1.5 SFRA user guide

Table 1-1: SFRA report contents

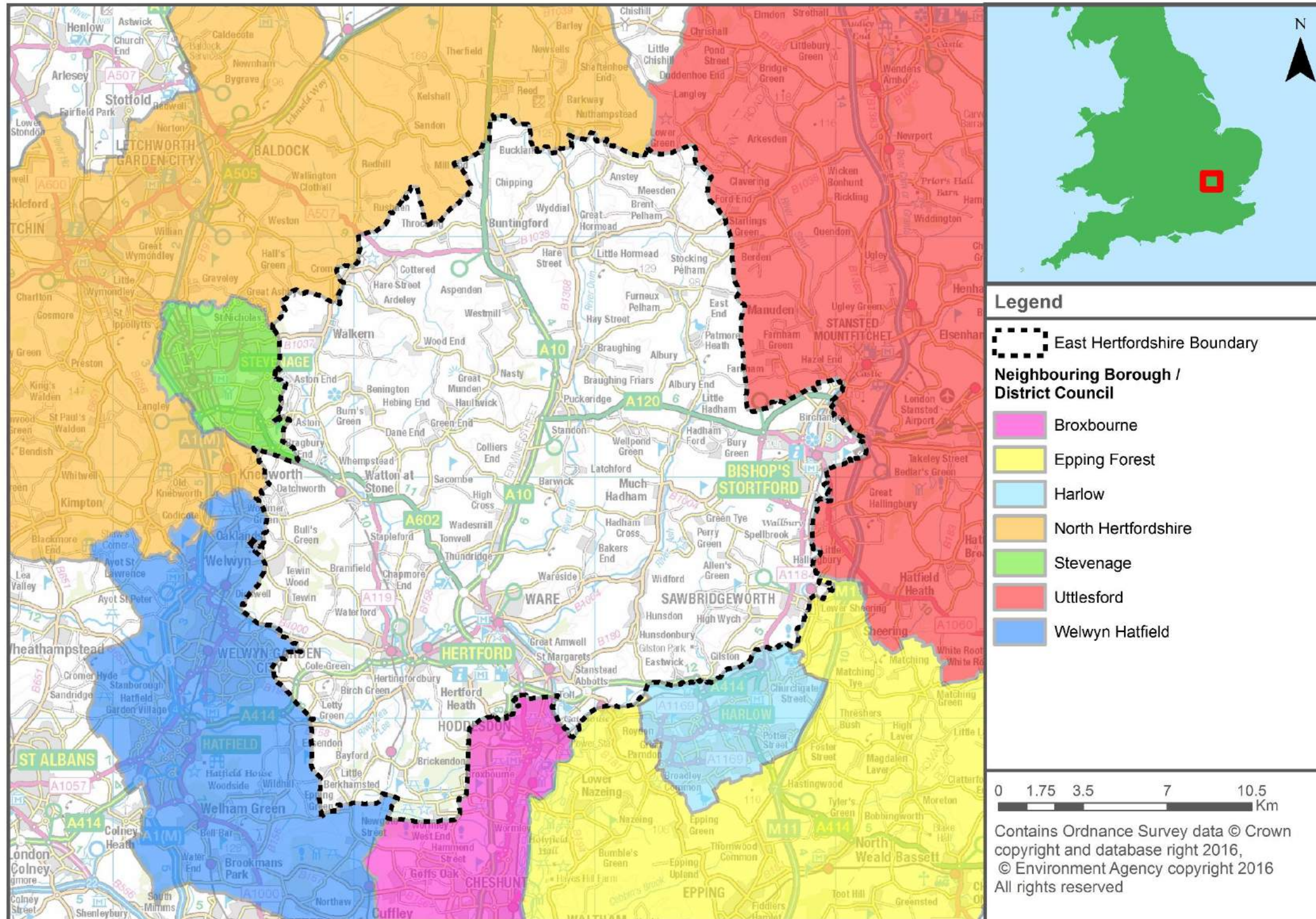
Section	Contents
1. Introduction	Provides a background to the study, defines objectives, outlines the approach adopted and the consultation performed.
2 The Planning Framework and Flood Risk Policy	Covers local, national and European policy. Includes information on the implications of recent changes to planning and flood risk policies and legislation.
Level One Strategic Flood Risk Assessment	

Section	Contents
3. The sequential, risk based approach	Detailed how flood risk should be assessed. Summary of the modelling used for the assessment. Description of mapping that should be used for Sequential and Exception testing. Application of the Sequential Approach and Sequential/Exception Test process.
4. The Impact of Climate Change	Outlines climate change guidance published by the Environment Agency in February 2016
5. Understanding flood risk in East Hertfordshire	Gives an introduction to the assessment of flood risk and provides an overview of the characteristics of flooding affecting the district. Provides a summary of responses that can be made to flood risk, together with policy and institutional issues that should be considered.
6. Flood defences	Assessment of residual risk from flood defences, including future protection from climate change.
7. Flood risk from artificial waterbodies	Summarises flood risk from artificial water bodies including canals and reservoirs
8. Surface water management and SuDS	Advice on managing surface water run-off, and how SuDS play an important role.
9. Flood Warning and Emergency planning	Outlines the flood warning service available. Provides information on emergency planning considerations for developers and planners and associated recommendations.
10. FRA requirements and guidance for developers	Outlines requirements for FRAs as well as providing guidance for developers and information on how to reduce flood risk.
11. Screening of Proposed Site Allocations	Results of the screening exercise to assist application of the Sequential Test and determine what sites will require further assessment under the Level 2 SFRA.
12. Level 2 Assessment of Proposed Site Allocations	Outlines the methodology used in the assessment and the format of the summary tables. <i>Note: due to size of summary tables they are an Appendix to the main report.</i>
Summary and recommendations	
13. Summary	Summary of Level 1 and Level 2 assessments and key findings
14. Recommendations	Outlines key recommendations from the Level 1 and Level 2 assessments
Appendices	
Appendix A: Watercourses in East Hertfordshire	
Appendix B: Flood Zone mapping, including functional floodplain	
Appendix C: Climate change mapping	
Appendix D: Surface water flood risk mapping	
Appendix E: Groundwater flood risk mapping	
Appendix F: Reservoir Inundation Mapping	
Appendix G: Flood warning coverage	
Appendix H: Technical summary	
Appendix I: Level 2 SFRA detailed summary tables	



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Figure 1-2: Study Area



2 The Planning Framework and Flood Risk Policy

2.1 Introduction

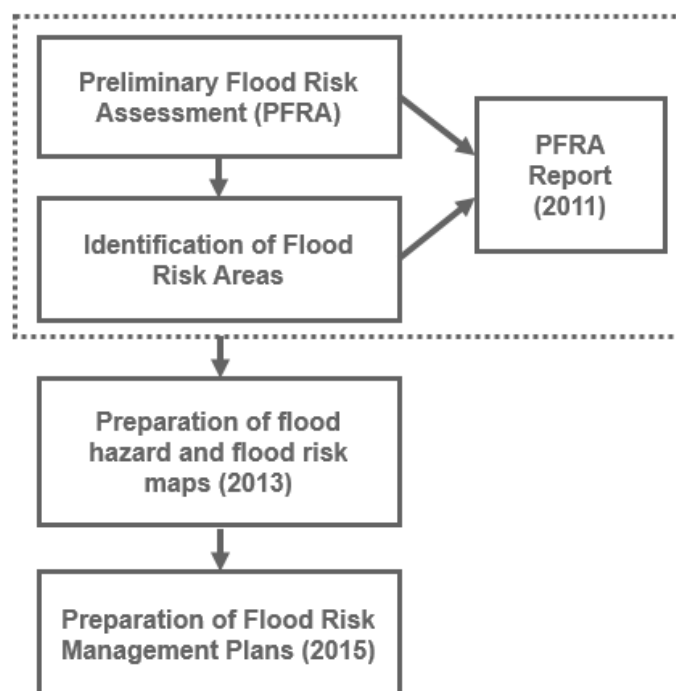
The overarching aim of development and flood risk planning policy in the UK is to ensure that the potential risk of flooding is taken into account at every stage of the planning process. This section of the SFRA provides an overview of the planning framework, flood risk policy and flood risk responsibilities. In preparing the subsequent sections of this SFRA, appropriate planning and policy amendments have been acknowledged and taken into account.

2.2 Flood Risk Regulations (2009)

The Flood Risk Regulations (2009) are intended to translate the current EU Floods Directive into UK law and place responsibility upon all Lead Local Flood Authorities (LLFAs) to manage localised flood risk. Under the Regulations, the responsibility for flooding from rivers, the sea and reservoirs lies with the Environment Agency; however, responsibility for local and all other sources of flooding rests with LLFAs. The LLFA is Hertfordshire County Council.

Figure 2-1 illustrates the steps that have / are being taken to implement the requirements of the EU Directive in the UK via the Flood Risk Regulations.

Figure 2-1: Flood Risk Regulation Requirements



Under this action plan and in accordance with the Regulations, LLFAs have the task of assessing flood risk from local sources over a six-year cycle, beginning with the preparation of a Preliminary Flood Risk Assessment (PFRA) report.

2.2.1 Hertfordshire Preliminary Flood Risk Assessment (PFRA), 2011

The PFRA document that covers East Hertfordshire was published by the LLFA in 2011¹, and gives an overview of local flood risk in Hertfordshire based on a review of records of flooding and data derived from modelling of potential future flooding. It reports on significant past and future flooding from all sources except from Main Rivers and Reservoirs, which are covered by the

Environment Agency, and sub-standard performance of the adopted sewer network (covered under the remit of Thames Water).

The PFRA is a high-level screening exercise and considers floods which have significant harmful consequences for human health, economic activity, the environment and cultural heritage. The Regulations require the LLFA to identify significant Flood Risk Areas, and therefore the PFRA identifies such areas and if they are considered to be nationally significant, as defined by Defra.

Based on this analysis no areas were identified in Hertfordshire that meet the national criteria to be designated as Flood Risk Areas (clusters with a total of more than 30,000 people affected by local sources of flooding). The three largest clusters within Hertfordshire are around Watford (11,946 people affected), Hemel Hempstead (5655 people affected) and Stevenage (5110 people affected).

No historical evidence was found of extensive surface water flooding (at an equivalent scale to the national thresholds for Flood Risk Areas based on modelled flood risk) that would support the identification of a Flood Risk Area in Hertfordshire.

2.2.2 River Basin Flood Risk Management Plans, 2016

Under the Flood Risk Regulations (2009), the Environment Agency exercised an 'Exception' and did not prepare a PFRA for risk from rivers, reservoirs and the sea. This then made it a requirement for the Environment Agency to prepare and publish a Flood Risk Management Plan (FRMP). The FRMP process adopts the same catchments as used in the preparation of River Basin Management Plans, in accordance with the Water Framework Directive (Section 2.11 contains further information on the Water Framework Directive and the River Basin Management Plans).

East Hertfordshire District Council falls within the Thames River Basin District FRMP (March 2016). The FRMP explains the risk from flooding from all sources alongside how risk management authorities will work with communities to manage flood risk from 2015 to 2021. The FRMP draws on previous policies and actions identified in Catchment Flood Management Plans and also incorporates information from Local Flood Risk Management Strategies (it should be noted that FRMPs do not supersede Catchment Flood Risk Management Plans). Each River Basin District is composed of a group of sub-areas or catchments and there are 17 catchments covered by the river Thames Basin. The majority of East Hertfordshire lies within the Upper Lee management catchment, with a small part of the south of the district being covered by the London management catchment area. The FRMP summarises the flooding affecting the area and describes the measures to be taken to address the risk in accordance with the Flood Risk Regulations. The Thames Basin FRMP recommends management actions along the Lower Lee catchment as identified in the 2011 Lower Lee Flood Risk Management Strategy (see Section 2.8).

2.3 Flood and Water Management Act, 2010

The Flood and Water Management Act (2010) (FWMA) aims to create a simpler and more effective means of managing both flood risk and coastal erosion and implements Sir Michael Pitt's recommendations following his review of the 2007 floods. The FWMA received Royal Assent in April 2010, and designated upper tier local authorities as LLFAs. Duties for Hertfordshire County Council as LLFA include:

- Develop a Local Flood Risk Management Strategy for Hertfordshire under the Act, in consultation with local partners. This is discussed further in Section 2.3.2. This Strategy acts as the basis and discharge of duty for Flood Risk Management co-ordinated by Hertfordshire County Council
- Develop, maintain, apply and monitor a Local Flood Risk Management Strategy (LFRMS) to outline how they will manage flood risk, identify areas vulnerable to flooding and target resources where they are needed most
- When appropriate and necessary, investigate and report on flooding incidents
- Establish and maintain a register of structures or features which, in their opinion, are likely to have a significant effect on flood risk in the LLFA area
- When appropriate, exercise powers to designate structures and features that affect flood risk, requiring the owner to seek consent from the authority to alter, remove or replace it
- When appropriate, perform consenting of works on ordinary watercourses

The FWMA also makes it clear that the LLFA has powers to manage flood risk from surface water and groundwater and has the lead responsibility for managing/ regulating flood risk from 'ordinary watercourses' (i.e. smaller ditches, brooks), unless there is an IDB. The LLFA are the regulatory body for changes within ordinary watercourses, with responsibility for managing flood risk and actual maintenance for ordinary watercourses (including development of bylaws) sitting with riparian owners, e.g. the district/ borough councils, landowner, farmers etc. If a riparian owner wishes to alter a watercourse then consent from the LLFA is required, otherwise the LLFA has the power to take enforcement action. The Environment Agency are responsible for 'Main Rivers'.

The FWMA will also update the Reservoirs Act 1975 by reducing the capacity of reservoir regulation from 25,000m³ to 10,000m³. Phase 1 has been implemented in 2013 requiring large raised reservoirs to be registered to allow the Environment Agency to categorise whether they are 'high risk' or 'not high risk'.

2.3.1 LLFAs, surface water and SuDS

On 18 December 2014 a Written Ministerial Statement laid by the Secretary of State for Communities and Local Government set out changes to the planning process that would apply for major development from 6 April 2015. When considering planning applications, Local Planning Authorities should consult the LLFA on the management of surface water, in order to satisfy that the proposed minimum standards of operation are appropriate and ensure, through use of planning conditions or obligations, that there are clear arrangements in place for ongoing maintenance over the lifetime of the development.

In March 2015 the LLFA was made a statutory consultee which came into effect on 15 April 2015. As a result, Hertfordshire County Council are required to provide technical advice on surface water drainage strategies and designs put forward for new 'major' developments.

Major developments are defined as:

- Residential development: 10 dwellings or more, or residential development with a site area of 0.5 hectares or more where the number of dwellings is not yet known
- Non-residential development: provision of a building or buildings where the total floor space to be created is 1,000 square metres or more or, where the floor area is not yet known, a site area of 1 hectare or more

2.3.2 Hertfordshire Local Flood Risk Management Strategy (LFRMS)

Hertfordshire County Council as a LLFA is responsible for developing, maintaining, applying and monitoring a Local Flood Risk Management Strategy for Hertfordshire². The Strategy is used as a means by which the LLFA co-ordinates Flood Risk Management on a day to day basis. The Strategy also sets measures to manage local flood risk. The high-level objectives proposed in the Strategy for managing flood risk include:

- To reduce the potential impact and costs of flooding in the county
- To better understand local flood risk and make best use of available information
- To develop greater personal involvement in flood risk management amongst residents of Hertfordshire
- To secure improvements to the water environment of Hertfordshire through the undertaking of actions associated with flood risk management

A 'Vision for Hertfordshire' has also been created under this Strategy to set the strategic direction for the County in terms of making sound decisions about flood risk.

It is also important that the Local Strategy is consistent with the National Strategy which outlines six guiding principles for Flood Risk Management in England. From these six principles, Hertfordshire have set out an overall position which it is striving to achieve, as follows:

- There is a strategic overview of flood risk from all sources
- The potential impacts of climate change are understood
- No new significant flood risk is created due to development

- Flood risk is managed (and reduced)
- Areas where flood risk is significant have been analysed in more detail
- Potential for measures to reduce flood risk have been assessed
- Where possible proportionate opportunities to reduce flood risk are taken
- Multiple benefits are achieved through the management of flood risk
- Effective partnership arrangements are in place
- Hertfordshire works with other flood risk management partnerships
- Information is made available so flood risk is understood by the community and businesses
- Communities are supported to be resilient and participate in reducing flood risk
- Opportunities to develop funding for risk reduction measures are actively being sought
- Flood risk management work informs the planning of emergency responses

Moving forward, Hertfordshire County Council have put forward and are currently undertaking a work programme for the first three years leading up to the first review of the Strategy (which has already commenced), outlining policies and procedures for actions to be taken to deliver the LFRMS, summarised in the following proposals:

- To adopt a leadership role in the management of flood risk in Hertfordshire
- To work in partnership and collaborate with key partners and stakeholders in managing and reducing flood risk in the county
- To build a robust knowledge base that is available to all in order to support flood risk management in Hertfordshire
- To continue to build capacity amongst partners for dealing with and managing flood risk
- To implement fully emerging responsibilities in relation to the management of flood risk structures and features including ordinary watercourses
- To work with partners to secure the effective implementation of Sustainable Drainage Systems (SuDS) in new development
- To support the provision of clear guidance to the development industry about its responsibilities in relation to the management of flooding and flood risk associated with new development

In March 2015, Hertfordshire County Council published an addendum to the LFRMS, regarding SuDS. The SuDS Policy Statement sets out the LLFA recommended approach for the development and delivery of SuDS in the county. The statement contains 18 policies on the context of and requirements for compliance with national policy, guidance or industry practice, pre-application discussions, outline and detailed drainage proposals, other design matters, source control, surface runoff managed on the surface, integrating public space with SuDS, cost-effective operation and maintenance over the development design life, climate change, affordability and design criteria as well as policies on non-statutory SuDS Standards and guidance.

2.4 National Planning Policy Framework

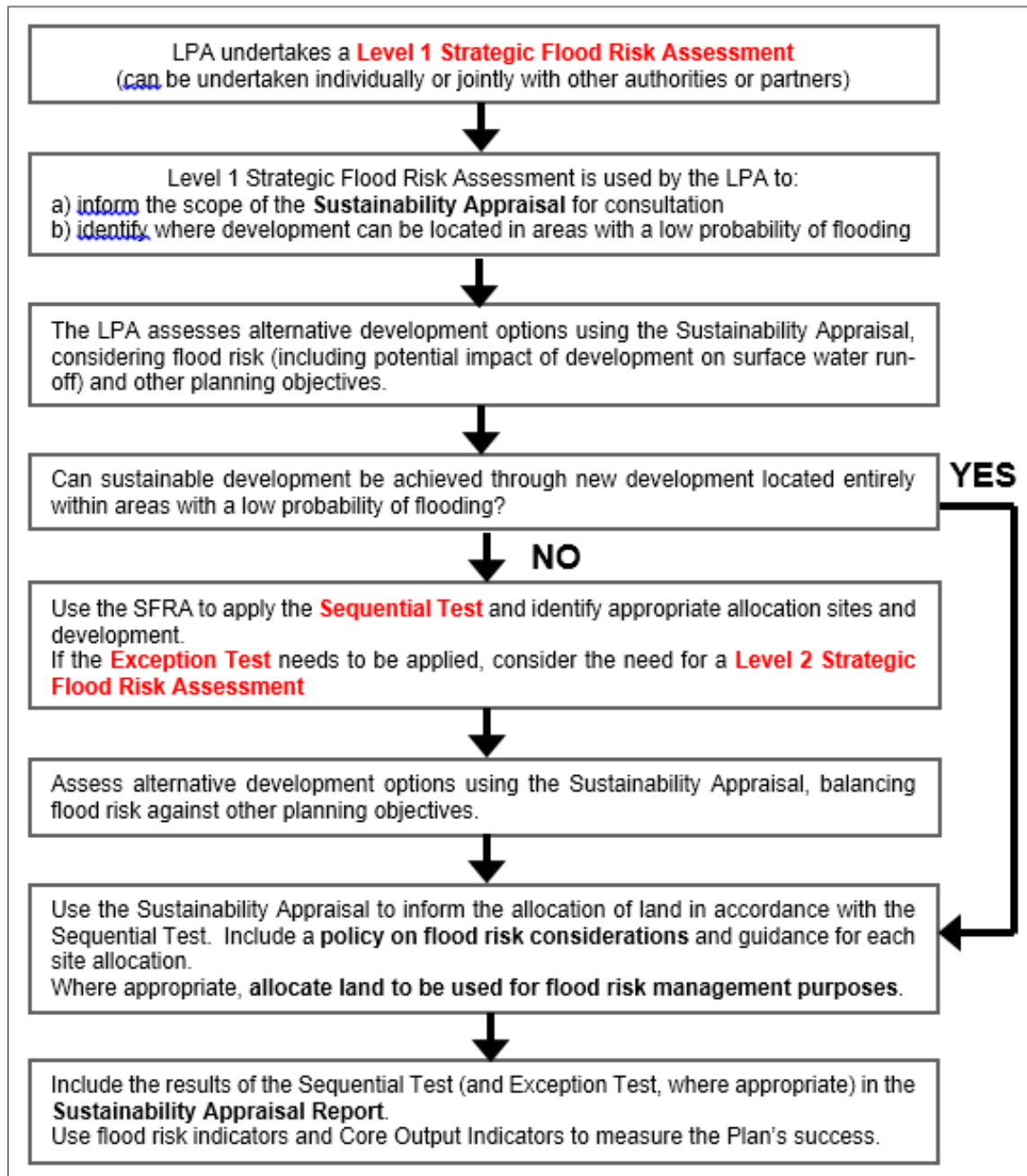
The [National Planning Policy Framework \(NPPF\)](#)³ was issued on 27 March 2012 to replace the previous documentation as part of reforms to the planning system. It replaces most of the Planning Policy Guidance Notes (PPGs) and Planning Policy Statements (PPSs), in particular PPS25, which were referred to in the previous version of the SFRA. The NPPF is a source of guidance for local planning authorities to help them prepare Local Plans and in the decision making process. With regards to plan-making and flood risk, the principal provisions of the NPPF are set out in paragraph 100.

Paragraph 100 of the NPPF:

“Local Plans should be supported by a strategic flood risk assessment and develop policies to manage flood risk from all sources, taking account of advice from the Environment Agency and other relevant flood risk management bodies, such as Lead Local Flood Authorities and Internal Drainage Boards. Local Plans should apply a sequential, risk-based approach to the location of development to avoid, where possible, flood risk to people and property and manage any residual risk, taking account of the impacts of climate change”.

Planning Practice Guidance⁴ on flood risk was published alongside the NPPF in March 2014 and sets out how national policy should be implemented. This was subsequently updated on April 6 2015 to take into account the new statutory role of the LLFA and the requirement for surface water drainage assessments for all ‘major’ developments. A description of how flood risk should be taken into account in the preparation of Local Plans is outlined in Diagram 1 contained within the Planning Practice Guidance (Figure 2-2).

Figure 2-2: Flood risk and the preparation of Local Plans†



† Based on Diagram 1 of NPPF Planning Practice Guidance: Flood Risk and Coastal Change (paragraph 004, Reference ID: 7-005-20140306) March 2014

2.5 Water Cycle Studies

Water Cycle Studies assist local authorities to select and develop growth proposals that minimise impacts on the environment, water quality, water resources, infrastructure and flood risk and help to identify ways of mitigating such impacts. This can be achieved in areas where there may be conflict between any proposed development and the requirements of the environment through the recommendation of potential sustainable solutions.

The Rye Meads Water Cycle Strategy covering East Hertfordshire was completed in October 2009. The study sets out recommendations in relation to housing growth and water infrastructure to 2021 and beyond.

2.6 Surface Water Management Plans

Surface Water Management Plans (SWMPs) outline the preferred surface water management strategy in a given location. SWMPs are undertaken, when required, by LLFAs in consultation with key local partners who are responsible for surface water management and drainage in their area. SWMPs establish a long-term action plan to manage surface water in a particular area and are intended to influence future capital investment, drainage maintenance, public engagement and understanding, land-use planning, emergency planning and future developments.

The SWMP for East Hertfordshire is currently under development. The Local Flood Risk Management Strategy⁵ set out by the LLFA states that preparation of a SWMP for Broxbourne / East Hertfordshire started in the financial year of April 2014/2015 and is proposed to take approximately 18 months to complete.

Since the production of the 2008 SFRA, there have been numerous documents published relating to surface water management and SUDS including:

- SuDS Design Guidance for Hertfordshire, March 2015
- Hertfordshire Guidance for Developers
- The SuDS Manual (C753), published in 2007, updated in 2015
- DEFRA Non-statutory technical standards for sustainable drainage systems, 2015
- DEFRA National Standards for sustainable drainage systems Designing, constructing (including LASOO best practice guidance), operating and maintaining drainage for surface runoff, 2011
- BS8582 Code of practice for surface water management for development sites
- The House of Commons: Written Statement HCWS161 on Sustainable Drainage Systems, 2014
- Lead Local Flood Authority SuDS Policy Statement; Meeting Sustainable Drainage System standards in Hertfordshire, March 2015.
- The Building Regulations, 2010 (Part H: drainage and waste disposal)

The previous 2008 SFRAs gives recommendations on how SuDS can be used to reduce flood risk and reviews local geology. However, this area of flood risk management has significantly progressed since 2008; there is now a national standard for sustainable drainage systems with supporting non-statutory technical standards, a code of practice for surface water management and local supplementary planning guidance / advice published by the Council on surface water drainage systems.

2.7 Catchment Flood Management Plans

Catchment Flood Management Plans (CFMPs) are a high-level strategic plan providing an overview of flood risk across each river catchment. The Environment Agency use CFMPs to work with other key-decision makers to identify and agree long-term policies for sustainable flood risk management.

There are six pre-defined national policies provided in the CFMP guidance and these are applied to specific locations through the identification of 'Sub-areas'. These policies are intended to cover the full range of long-term flood risk management options that can be applied to different locations in the catchment.

The study area is covered by the River Thames CFMP⁶. East Hertfordshire falls within the sub-areas 1 and 4; Towns and villages in open floodplain (north and west) and Chalk and downland catchments.

In Sub-area 1, Towns and villages in open floodplain (north and west), the preferred policy option is option 6; Areas of low to moderate flood risk where we will take action with others to store water

⁵ Hertfordshire County Council – Local Flood Risk Management Strategy for Hertfordshire 2013-2016 (2011)

⁶ Environment Agency (2010):

http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/293903/Thames_Catchment_Flood_Management_PI.pdf

or manage run-off in locations that provide overall flood risk reduction or environmental benefits. Across the sub-area there are over 100 separate communities where there are 10 properties or more at risk of flooding. Many of these are typically small clusters of properties where rivers meet or are crossed by bridges. Generally, these communities will not be a priority for funding for large scale flood defences, but activities will continue to maintain the flow of water in the rivers which pass through developed areas. The following actions are proposed in this sub-area to implement the preferred policy:

- Maintain the existing capacity of the river systems in developed areas that reduces the risk of flooding from more frequent events.
- Identify locations where the storage of water could benefit communities by reducing flood risk and providing environmental benefits (by increasing the frequency of flooding) and encourage flood compatible land uses and management
- Work with Local Planning Authorities to retain the remaining floodplain for uses that are compatible with flood risk management and put in place policies that lead to long-term adaptation of urban environments in flood risk areas.
- Continue to increase public awareness, including encouraging people to sign-up for the free Floodline Warnings Direct service.
- Help communities and local authorities manage local flood risk, for example by flood resilience community flood plans that identify vulnerable people and infrastructure and community based projects.

For Sub-area 4, Chalk and downland catchments, the preferred policy option is option 3; Areas of low to moderate flood risk where we generally manage existing flood risk effectively. The CFMP also notes that there are over 50 separate communities in this sub-area where there are over 10 properties at risk of flooding. These communities will not be a priority for large scale flood defences and therefore activities to maintain the existing capacity of the rivers that pass through developed areas will be maintained. The following actions are proposed in this sub-area to implement the preferred policy:

- Maintain the existing capacity of the river systems in developed areas to reduce the risk of flooding from more frequent events.
- Work with partners to identify opportunities to make the existing systems more efficient (for example, where there are significant restrictions to flow from undersized culverts or bridges).
- Work with Local Planning Authorities to retain the remaining floodplain for uses that are compatible with flood risk management and put in place policies that lead to long-term adaptation of urban environments in flood risk areas.
- Continue to increase public awareness, including encouraging people to sign-up for the free Floodline Warnings Direct service.

2.8 Lower Lee Flood Risk Management Strategy (2013)

The Environment Agency's Lower Lee Flood Risk Management Strategy is used to review how fluvial flood risk associated with rivers in the Lower Lee catchment is managed now and long term (100 years).

The Lower Lee Flood Risk Management Strategy covers the area downstream of Hertford to the mouth of the Lee at Bow Creek. East Hertfordshire is covered by the Upper Lee sub-catchment within the strategy, from Ware to the River Stort Confluence. Within the Upper Lee sub-catchment there are an estimated 31 properties in Ware, Great Amwell and St Margarets at risk of fluvial flooding during the 1% AEP event. Measures relating to this sub-catchment as part of the management strategy include:

- Continuing operation and maintenance of the channel to ensure the current standard of protection is maintained. This will include maintaining the function of Hardmead and Stanstead sluices between Hertford and Ware.

- Continue to work in partnership with local communities and organisations to find opportunities to reduce flood risk, although no specific structural measures have been identified in this area. Individual property-level protection measures could be retro-fitted to existing properties which flood to a depth of less than 0.75m.
- Ensure that development proposals comply with current planning policy on development and flood risk to make sure that flood risk is not increased, and where possible, reduces flood risk overall.
- Continue to operate and maintain our flood warning service.
- Periodically review the strategy in future years to determine if additional intervention measures are required as a result of climate change.

2.9 Localism Act

The Localism Act outlines plans to shift and re-distribute the balance of decision making from central government back to councils, communities and individuals. The Localism Act was given Royal Assent on 15 November 2011.

In relation to the planning of sustainable development, provision 110 of the Act places a duty to cooperate on Local Authorities. This duty requires Local Authorities to “engage constructively, actively and on an ongoing basis in any process by means of which development plan documents are prepared so far as relating to a strategic matter”.

The Localism Act also provides new rights to allow local communities to come together and shape new developments by preparing Neighbourhood Plans. This means that local people can decide not only where new homes and businesses should go and but also what they should look like. As neighbourhoods draw up their proposals, Local Planning Authorities will be required to provide technical advice and support.

2.10 East Herts District Plan

The current planning policies for East Hertfordshire are set out in the 2007 Local Plan. This is used by East Hertfordshire Council to determine planning applications and shape development across the district.

At the time of preparing this SFRA, the council were in the process of compiling a new local plan. The East Herts District Plan will replace the 2007 Local Plan and will set out the Council’s vision on how the area will develop in the future to 2033. **Throughout this SFRA, the new local plan will be referred to as the emerging District Plan.** The plan is currently being developed in accordance with National Planning Policy Framework and will outline the principles that will guide future development. This SFRA will be used as an evidence base for the Council to inform policies in relation to development and flood risk.

2.11 Water Framework Directive

The EU Water Framework Directive (WFD) seeks to integrate and enhance the way in which water bodies are managed throughout Europe by the preservation, restoration and improvement of the water environment. On 23 October 2000 the European Commission established the WFD requiring each Member State of the European Union to satisfy the environmental objectives set by the Directive and implement the legislation. This was transposed into law in England and Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003. In England, the Environment Agency is responsible for the delivery of the WFD objectives.

The WFD aims to achieve at least 'good' status for all water bodies; the default deadline for achieving this objective is by 2021 although, in some cases, where it is deemed more appropriate, less stringent objectives have been set with extended deadline of 2027 or beyond. The WFD requires the production of Management Plans for each River Basin District. These plans assess the pressures facing the water environment in each district. Each District is composed of a group of catchments termed river basins to which all water bodies are assigned.

Any adverse impacts can cause a waterbody's ecology to deteriorate and prevent environmental improvements from being undertaken. Nevertheless, in-channel works can also be beneficial if they can be designed to help achieve environmental improvements included in the RBMP, thus

enhancing the water environment for plants and animals. Any activity which has the potential to have an impact on the ecology of a waterbody will need consideration in terms of whether it could cause deterioration in its Ecological Status or Potential.

2.11.1 Thames River Basin Management Plan (RBMP), 2015

The Thames River Basin Management Plan (2015)⁷ is prepared under the WFD and assesses the pressures facing the water environment in the Thames River Basin District. The 2009 version has been updated in December 2015.

As the Thames River Basin District is one of the most populated parts of Britain, there are several challenges which can impact progress towards cleaning and protecting natural asset including:

- Physical modifications
- Pollution from waste water
- Pollution from towns, cities, transport and rural areas
- Changes to the natural flow and level of water; and,
- Negative effectives of invasive non-native species.

As of 2015, 11% of all water bodies (surface water and ground water) in the Thames River Basin District are at good or better overall status; this is predicted to increase to 13% by 2021. Over 99% of the measures summarised in the 2009 plans have now been completed. The RBMP summarises ongoing measures which seek to prevent the deterioration in status and improve the quality of the water environment. At a local level, the report has also identified partnership measures in the Lower Lea North catchment, covering the study area which include the promotion of sustainable drainage systems in new developments and retrofitting existing sites within the catchment to reduce the impacts of urban diffuse pollution on flood risk and water quality.

2.11.2 Green Infrastructure

Although not in itself a policy, Green Infrastructure (GI) is a recurring theme in planning policy. GI can be defined as a strategically planned and managed network of greenspaces and environmental components, which connect and surround the urban built environment and rural settings and consist of:

- open spaces – lakes, nature reserves, woodland, parks, wetlands, and formal gardens;
- connections/ linkages – greenways, canals and river corridors, pathways and cycle routes; and/or
- “urban green” networks – green roofs, private gardens, street trees and verges.

The identification and planning of GI is critical to sustainable growth. It merits forward planning and investment as much as other socio-economic priorities such as health, transport, education and economic development. It is central to climate change action and is referred to frequently in the planning policy. Identifying and planning for GI is intrinsic to sustainable growth and therefore, merits investment and consideration as much as other socio-economic priorities.

2.11.2.1 GI Strategies and Policies

The 2009 Water Cycle Study states that there is an opportunity to link the design of SuDS with Green Infrastructure Strategies, to provide an integrated network that relieves flood risk whilst enhancing biodiversity e.g. attenuation basins and wetlands.

The Hertfordshire Strategic Green Infrastructure Plan (HCC, 2011) details strategic planning and site design and management practices to inform spatial land planning and development management decisions. The Plan provides an overview of opportunities for GI, proposed GI projects and linking GI to local spatial planning.

The 2015 Hertfordshire County Council SuDS Design Guidance for Hertfordshire contains further advice and demonstrations of Green and Blue Infrastructure.

2.12 Insurance

2.12.1 Association of British Insurers Guidance on Insurance and Planning in Flood Risk Areas for Local Planning Authorities in England

The Association of British Insurers (ABI) and the National Flood Forum have published guidance for Local Authorities with regards to planning in flood risk areas⁸. The guidance aims to assist Local Authorities in England in producing local plans and dealing with planning applications in flood risk areas. The guidance complements the NPPF. The key recommendations from the guidance are:

- Ensure strong relationships with technical experts on flood risk
- Consider flooding from all sources, taking account of climate change
- Take potential impacts on drainage infrastructure seriously
- Ensure that flood risk is mitigated to acceptable levels for proposed developments
- Make sure Local Plans take account of all relevant costs and are regularly reviewed

2.12.2 FloodRe

FloodRe went live in April 2016 and will extend insurance cover to high-risk private (non-commercial) properties built after 2009. The scope of FloodRe is to operate for 25 years, by which time the strategy is that the Government, local authorities and the insurance industry will have become better prepared to deal with severe flood events within the UK and provide sufficient time to gain a wider understanding of the influence climate change is having on the UK's weather. More information on the FloodRe scheme can be found here: <http://www.floodre.co.uk/>.

2.13 Implications for East Hertfordshire District Council and other Risk Management Authorities

The responsibilities under the Flood and Water Management Act 2010 and the Flood Risk Regulations 2009 are summarised in Sections 2.2 and 2.3.

Table 2-1: Roles and responsibilities in Hertfordshire under FWMA 2010

Risk Management Authority (RMA)	Strategic Level	Operational Level
Environment Agency	<p>National Statutory Strategy</p> <p>Reporting and supervision (overview role)</p>	<ul style="list-style-type: none"> • Preliminary Flood Risk Assessment (per River Basin District)* • Managing flooding from Main Rivers and reservoirs and communication flood risk warnings to the public, media and partner organisations. • Identifying Significant Flood Risk Area* • Enforcement authority for Reservoirs Act 1975 • Managing RFCCs and supporting funding decisions, working with LLFAs and local communities. • Emergency planning and multi-agency flood plans, developed by local resilience forums • Acting consistently with LFRMS in realising FRM activity and have due regard in the discharge of function of the strategy. • Designating authority of infrastructure with a

⁸ Guidance on Insurance and Planning in Flood Risk Areas for Local Planning Authorities in England (Association of British Insurers and National Flood Forum, April 2012)

Risk Management Authority (RMA)	Strategic Level	Operational Level
<p>Lead Local Flood Authority (Hertfordshire County Council)</p>	<p>Input to National Strategy</p> <p>Formulate and implement the Hertfordshire Local Flood Risk Management Strategy</p>	<p>significant impact on flood risk from surface water and groundwater.</p> <ul style="list-style-type: none"> • Power for enforcing and consenting works for ordinary watercourses. • Managing local sources of flooding from surface runoff and groundwater and carrying out practical works to manage flood risk from these sources where necessary. • Preparing and publishing a PFRA • Identifying Flood Risk Areas • Investigating certain incidents of flooding in the County in Section 19 Flood Investigations • Keeping asset registers of structures and features which have a significant effect on local flood risk. • Acting consistently with LFRMS in realising FRM activity and have due regard in the discharge of other functions of the strategy • Designating authority for Infrastructure with a significant impact on flood risk from surface runoff and groundwater
<p>Lower Tier Authorities (East Hertfordshire District Council)</p>	<p>Input to National and Local Authority Plans and Strategy (e.g. East Herts District Plan – to develop a spatial strategy for growth within the district which accounts for flood risk)</p>	<ul style="list-style-type: none"> • District Councils have the powers to carry out works on ordinary watercourses to reduce flood risk • Preparation of a Local Plan to guide development. • Acting consistently with LFRMS in realising FRM activity and have due regard in discharge of other functions. • The competent determining authority for planning applications and have the ultimate decision on the suitability of a site in relation to flood risk and management of surface water run-off. • Responsibilities for emergency planning as a responder to a flood event. • Own and manage public spaces which can potentially be used for flood risk management.

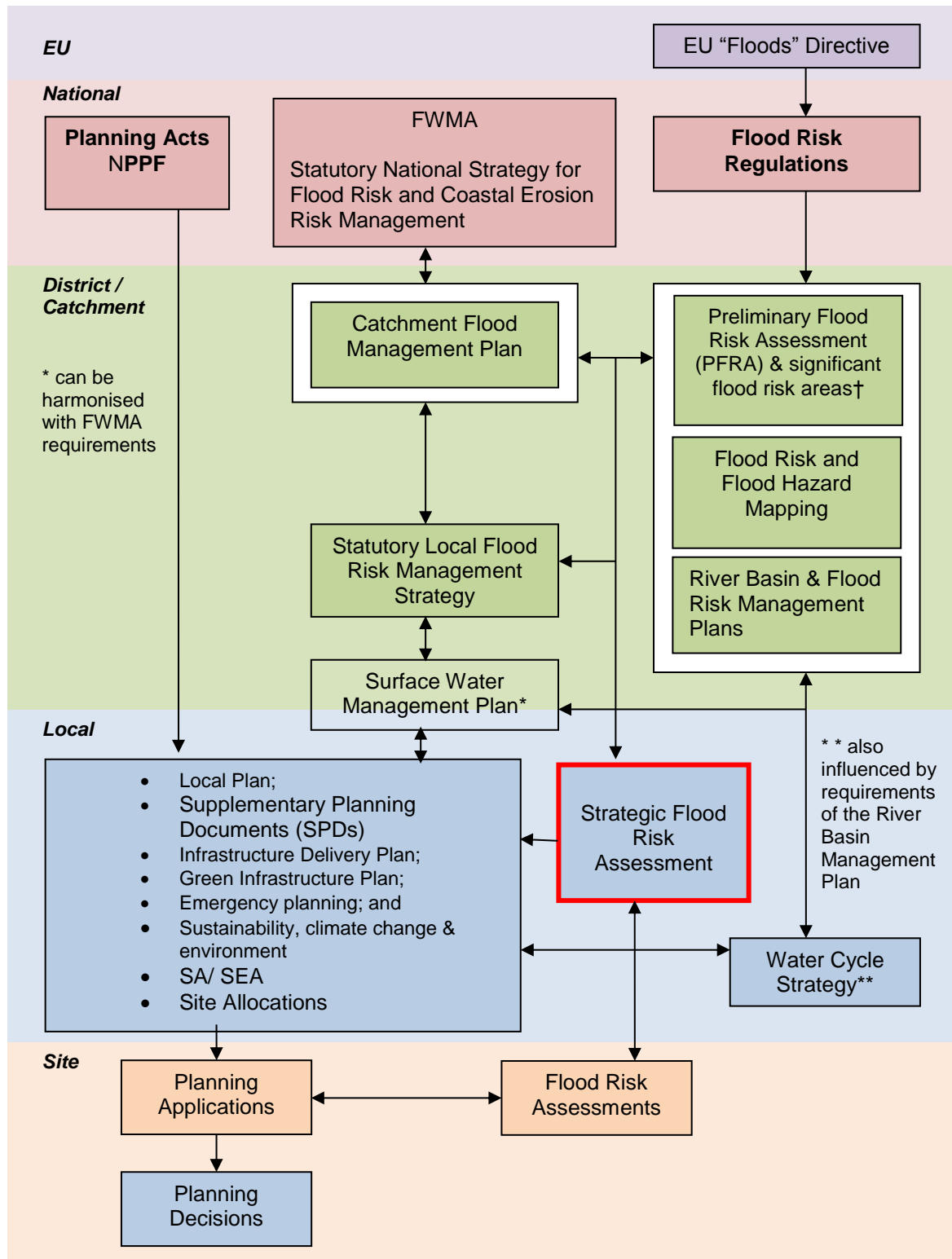
* Environment Agency did not prepare a PFRA; instead they exercised an exception permitted under the Regulations

2.13.1 Strategic Planning Links

Chapter 2 outlines the key strategic planning links for flood risk management and associated documents. It shows how the Flood Risk Regulations and Flood and Water Management Act, in conjunction with the Localism Act's "duty to cooperate", introduce a wider requirement for the mutual exchange of information and the preparation of strategies and management plans.

SFRAs contain information that should be referred to in responding to the Flood Risk Regulations and the formulation of local flood risk management strategies and plans. SFRAs are also linked to the preparation of Catchment Flood Management Plans (CFMPs), Shoreline Management Plans (SMPs), Surface Water Management Plans (SWMPs) and Water Cycle Strategies (WCSs).

Figure 2-3: Strategic planning links and key documents for flood risk



Legend: Responsibilities are indicated using colour coding as follows

European Union	National Government	Local Planning Authority	EA/LLFA/Local Authorities	Developer
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† See Table 2-1 for roles and responsibilities for preparation of information

2.13.2 United Kingdom exit from the European Union

On 23rd June 2016, the advisory referendum on whether the United Kingdom should remain a member of the European Union (EU) resulted in a majority vote in favour of leaving the EU. At the time of writing, HM Government had not published a timetable for invoking Article 50 of the Lisbon Treaty, which sets out the procedures for a member state leaving the EU. The intention of the UK to leave the EU, however, raises several areas of uncertainty which may impact upon the future applicability of this study, including:

- National and regional economic performance
- Migration and population change
- The future status of EU directives relating to water, for example the Water Framework Directive and the Habitats Directive.

Given these increased uncertainties, it becomes even more important that water companies, planners and regulators co-operate and share information, and to attempt to account for uncertainty in their planning.



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3 The sequential, risk based approach

3.1.1 Flood Risk definition

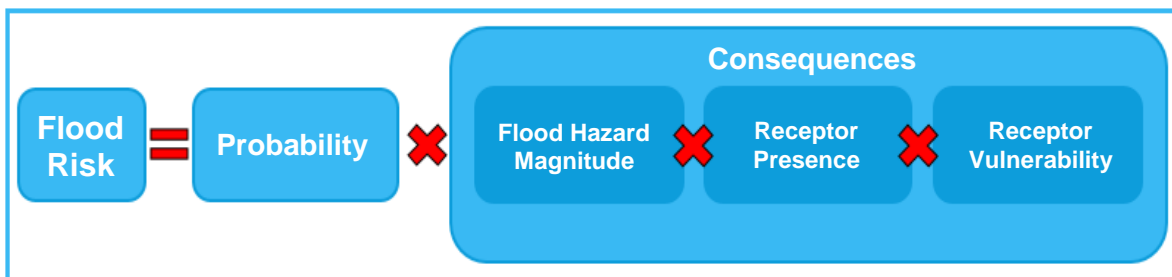
Section 3 (subsection 1) of the FWMA defines the risk of a potentially harmful event (such as flooding) as:

'a risk in respect of an occurrence is assessed and expressed (as for insurance and scientific purposes) as a combination of the probability of the occurrence with its potential consequences.'

Thus it is possible to summarise flood risk as:

Flood Risk = (Probability of a flood) x (Scale of the Consequences)

On that basis it is useful to express the definition as follows:



Using this definition it can be seen that:

- **Increasing the probability or chance of a flood being experienced increases the flood risk.** In situations where the probability of a flood being experienced increases gradually over time, for example due to the effects of climate change, then the severity of the flood risk will increase (flooding becomes more frequent or has increased effect).
- **The potential scale of the consequences in a given location can increase the flood risk.**
 - **Flood Hazard Magnitude:** If the direct hazard posed by the depth of flooding, velocity of flow, the speed of onset, rate of risk in flood water or duration of inundation is increased, then the consequences of flooding, and therefore risk, is increased.
 - **Receptor Presence:** The consequences of a flood will be increased if there are more receptors affected; for example, with an increase in extent or frequency of flooding. Additionally, if there is new development that increases the probability of flooding (for example, increase in volume of runoff due to increased impermeable surfaces) or increased density of infrastructure, then consequences will also be increased.
 - **Receptor Vulnerability:** If the vulnerability of the people, property or infrastructure is increased then the consequences are increased. For example, old or young people are more vulnerable in the event of a flood.

3.1.2 Flood Zones

The SFRA includes maps that show the fluvial Flood Zones. These zones describe the land that would flood if there were no defences present. The NPPF Guidance identifies the following Flood Zones (see Table 3-1):

Table 3-1: Flood Zone descriptions

Zone	Probability	Description
Zone 1	Low	This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%).
		All land uses are appropriate in this zone.
		For development proposals on sites comprising one hectare or above the vulnerability to flooding from other sources as well as from river and sea flooding, and the potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new development on surface water run-off, should be incorporated in a flood risk assessment.
		Developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of the development, and the appropriate application of sustainable drainage systems.
Zone 2	Medium	This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (0.1% - 1%) or between 1 in 200 and 1 in 1000 annual probability of sea flooding (0.1% – 0.5%) in any year.
		Essential infrastructure, water compatible infrastructure, less vulnerable and more vulnerable land uses (as set out by NPPF) as appropriate in this zone. Highly vulnerable land uses are allowed as long as they pass the Exception Test.
		All developments in this zone require an FRA.
		Developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of the development, and the appropriate application of sustainable drainage systems.
Zone 3a	High	This zone comprises land assessed as having a greater than 1 in 100 annual probability of river flooding (>1.0%) or a greater than 1 in 200 annual probability of flooding from the sea (>0.5%) in any year. Developers and the local authorities should seek to reduce the overall level flood risk, relocating development sequentially to areas of lower flood risk and attempting to restore the floodplain and make open space available for flood storage.
		Water compatible and less vulnerable land uses are permitted in this zone. Highly vulnerable land uses are not permitted. More vulnerable and essential infrastructure are only permitted if they pass the Exception Test.
		All developments in this zone require an FRA.
		Developers and local authorities should seek opportunities to: reduce the overall level of flood risk in the area and beyond through the layout and form of the development. relocate existing development to land in lower risk zones create space for flooding by restoring functional floodplain and flood flow pathways and by identifying, allocating and safeguarding open spaces for flood storage.
Zone 3b	Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. SFRA's should identify this Flood Zone in discussion with the LPA and the Environment Agency. The identification of functional floodplain should take account of local circumstances.
		Only water compatible and essential infrastructure are permitted in this zone and should be designed to remain operational in times of flood, resulting in no loss of floodplain or blocking of water flow routes. Infrastructure must also not increase flood risk elsewhere.
		All developments in this zone require an FRA.
		Developers and local authorities should seek opportunities to: reduce the overall level of flood risk in the area and beyond through the layout and form of the development relocate existing development to land in lower risk zones

The preference when allocating land is, whenever possible, to place all new development on land in Zone 1. Since the Flood Zones identify locations that are not reliant on flood defences, placing

development on Zone 1 land means there is no future commitment to spending money on flood banks or flood alleviation measures. It also does not commit future generations to costly long term expenditure that would become increasingly unsustainable as the effects of climate change increase.

Important note on Flood Zone information in this SFRA

Appendix B:

The Flood Zones presented in Appendix B are the same as those shown on the Environment Agency's 'Flood Map for Planning'.

The Environment Agency Flood Zones do not cover all catchments or ordinary watercourses. As a result, whilst the Environment Agency Flood Zones may show an area is in Flood Zone 1, it may be that there is actually a degree of flood risk from smaller watercourses not shown in the Flood Zones.

Flood Zone 3b - The SFRA identifies this Flood Zone as land which would flood with an annual probability of 1 in 20 years; where detailed modelling exists, the 1 in 20-year flood extent has been used to represent Flood Zone 3b (provided by the Environment Agency). In the absence of detailed hydraulic model information, a precautionary approach has been adopted with the assumption that the extent of Flood Zone 3b would be equal to Flood Zone 3a (i.e. indicative extent of Flood Zone 3b). If development is shown to be in Flood Zone 3a, further work should be undertaken as part of a detailed site-specific flood risk assessment to define the extent of Flood Zone 3b.

3.1.3 The sequential, risk-based approach

This approach is designed to ensure areas with little or no risk of flooding (from any source) are developed in preference to areas at higher risk, with the aim of keeping development outside of medium and high flood risk areas (Flood Zones 2 and 3) and other sources of flooding, where possible.

The sequential approach can be applied both between and within Flood Zones.

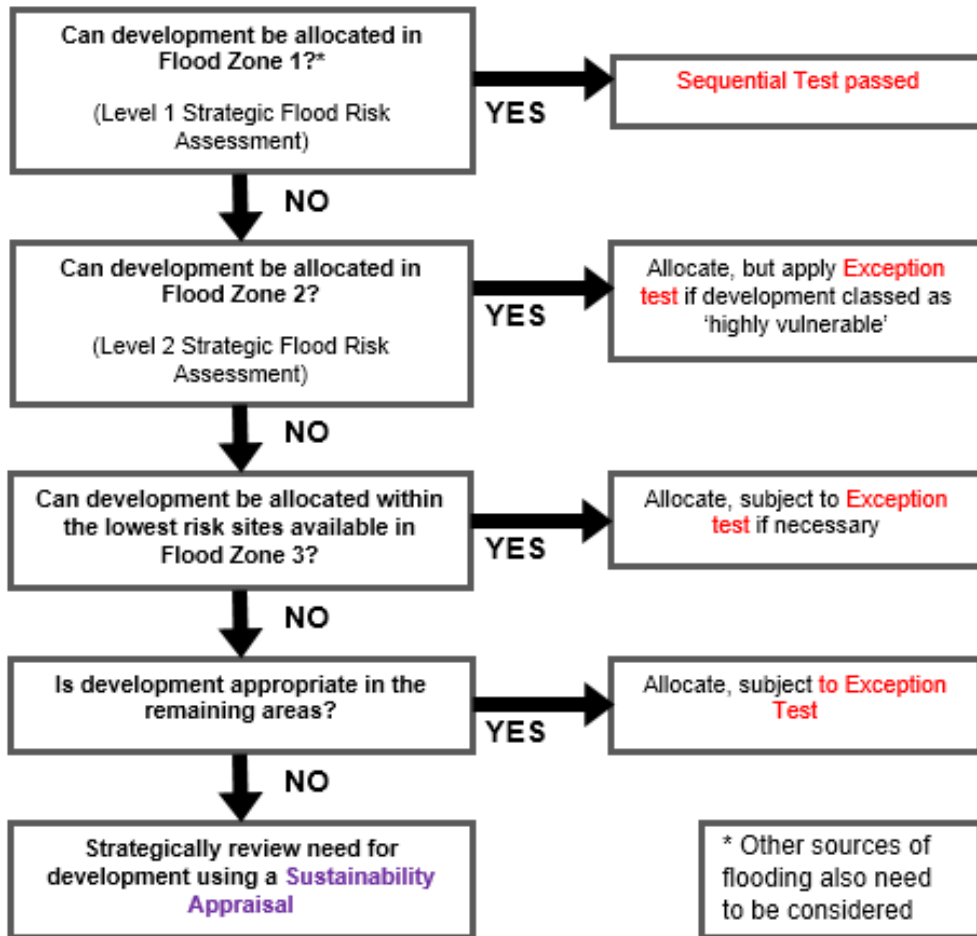
It is often the case that it is not possible for all new development to be allocated on land that is not at risk from flooding. In these circumstances the Flood Zone maps (that show the extent of inundation assuming that there are no defences) are too simplistic and a greater understanding of the scale and nature of the flood risks is required.

3.2 Applying the Sequential Test and Exception Test in the preparation of a Local Plan

When preparing a Local Plan, the Local Planning Authority should demonstrate it has considered a range of site allocations, using SFRA's to apply the Sequential and Exception Tests where necessary.

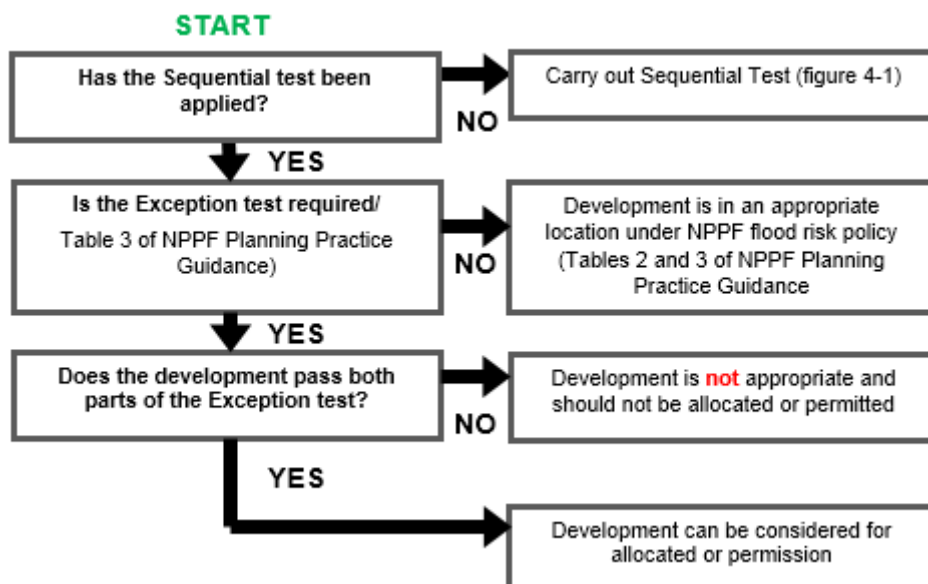
The Sequential Test should be applied to the whole Local Planning Authority area to increase the likelihood of allocating development in areas not at risk of flooding. The Sequential Test can be undertaken as part of a Local Plan Sustainability Appraisal. Alternatively, it can be demonstrated through a free-standing document, or as part of strategic housing land or employment land availability assessments. NPPF Planning Practice Guidance for Flood Risk and Coastal Change describes how the Sequential Test should be applied in the preparation of a Local Plan.

Figure 3-1: Applying the Sequential Test in the preparation of a Local Plan



The Exception Test should only be applied following the application of the Sequential Test and as set out in Table 3 of the NPPF Planning Practice Guidance: Flood Risk and Coastal Change. The NPPF PPG describes how the Exception Test should be applied in the preparation of a Local Plan (Figure 3-2).

Figure 3-2: Applying the Exception Test in the preparation of a Local Plan



3.3 Applying the Sequential Test and Exception Test to individual planning applications

3.3.1 Sequential Test

Local circumstances must be used to define the area of application of the Sequential Test (within which it is appropriate to identify reasonably available alternatives). The criteria used to determine the appropriate search area relate to the catchment area for the type of development being proposed. For some sites this may be clear, in other cases it may be identified by other Local Plan policies. A pragmatic approach should be taken when applying the Sequential Test.

East Hertfordshire District Council, with advice from the Environment Agency, are responsible for considering the extent to which Sequential Test considerations have been satisfied, and will need to be satisfied that the proposed development would be safe and not lead to increased flood risk elsewhere.

The Sequential Test does not need to be applied for individual developments under the following circumstances:

- The site has been identified in development plans through the Sequential Test.
- Applications for minor development or change of use (except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site).

It is normally reasonable to presume and state that individual sites that lie in Zone 1 satisfy the requirements of the Sequential Test; however, consideration should be given to risks from all sources, areas with critical drainage problems and critical drainage areas.

3.3.2 Exception Test

If, following application of the Sequential Test it is not possible for the development to be located in areas with a lower probability of flooding the Exception Test must then be applied if deemed appropriate. The aim of the Exception Test is to ensure that more vulnerable property types, such as residential development can be implemented safely and are not located in areas where the hazards and consequences of flooding are inappropriate. For the Test to be satisfied, both of the following elements have to be accepted for development to be allocated or permitted:

1. **It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a SFRA where one has been prepared.**

Local Planning Authorities will need to consider what criteria they will use to assess whether this part of the Exception Test has been satisfied, and give advice to enable applicants to provide evidence to demonstrate that it has been passed. If the application fails to prove this, the Local Planning Authority should consider whether the use of planning conditions and / or planning obligations could allow it to pass. If this is not possible, this part of the Exception Test has not been passed and planning permission should be refused⁹.

2. **A site-specific Flood Risk Assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.**

The site-specific Flood Risk Assessment should demonstrate that the site will be safe and the people will not be exposed to hazardous flooding from any source. The following should be considered¹⁰:

- The design of any flood defence infrastructure.
- Access and egress.
- Operation and maintenance.
- Design of the development to manage and reduce flood risk wherever possible

- Resident awareness.
- Flood warning and evacuation procedures.
- Any funding arrangements required for implementing measures.
-

The NPPF and Technical Guidance provide detailed information on how the Test can be applied.

3.4 Actual and residual flood risk

3.4.1 Actual flood risk

If it has not been possible for all future development to be situated in Zone 1 then a more detailed assessment is needed to understand the implications of locating proposed development in Zones 2 or 3. This is accomplished by considering information on the “actual risk” of flooding. The assessment of actual risk takes account of the presence of flood defences and provides a picture of the safety of existing and proposed development. It should be understood that the standard of protection afforded by flood defences is not constant and it is presumed that the required minimum standards for new development are:

- residential development should be protected against flooding with an annual probability of river flooding of 1% (1 in 100-year chance of flooding) in any year; and
- residential development should be protected against flooding with an annual probability of tidal (sea) flooding of 0.5% (1 in 200-year chance of flooding) in any year.

The assessment of the actual risk should take the following issues into account:

- The level of protection afforded by existing defences might be less than the appropriate standards and hence may need to be improved if further growth is contemplated.
- The flood risk management policy for the defences will provide information on the level of future commitment to maintain existing standards of protection. If there is a conflict between the proposed level of commitment and the future needs to support growth, then it will be a priority for the Flood Risk Management Strategy to be reviewed.
- The standard of safety must be maintained for the intended lifetime of the development. Over time the effects of climate change will erode the present day standard of protection afforded by defences and so commitment is needed to invest in the maintenance and upgrade of defences if the present day levels of protection are to be maintained and where necessary land secured that is required for affordable future flood risk management measures.
- The assessment of actual risk can include consideration of the magnitude of the hazard posed by flooding. By understanding the depth, velocity, speed of onset and rate of rise of floodwater it is possible to assess the level of hazard posed by flood events from the respective sources. This assessment will be needed in circumstances where consideration is given to the mitigation of the consequences of flooding or where it is proposed to place lower vulnerability development in areas that are at risk from inundation.

3.4.2 Residual flood risk

Residual risk refers to the risks that remain in circumstances after measures have been taken to alleviate flooding (such as flood defences). It is important that these risks are quantified to confirm that the consequences can be safely managed.

Chapter 6 considers this risk in more detail.

4 The impact of climate change

The Climate Change Act 2008 creates a legal requirement for the UK to put in place measures to adapt to climate change and to reduce carbon emissions by at least 80% below 1990 levels by 2050 and to put in place measures to adapt to climate change. In 2009, Stage 1 of the Scoping study of Hertfordshire LPA planning performance in relation to climate change was published. This study gives an assessment of the state of Hertfordshire's planning regime in relation to CO2 and climate change matters. It also provides a list of recommendations to take forward to Stage 2.

On a national level, the Government published a UK Climate Change Risk Assessment in 2012, which was based on evidence studies including the UK Climate Projections published in 2009 (UKCP09).

4.1 Revised Climate Change Guidance

The Environment Agency published [updated climate change guidance](#) on 19 February 2016, which must now be considered in all new developments and planning applications. The Environment Agency can give a free preliminary opinion to applicants on their proposals at pre-application stage. There is a charge for more detailed pre-application planning advice. The LLFA should be contacted for advice on flood risk from local watercourses, surface, or groundwater.

4.2 Peak River Flows

The peak river flow allowances show the anticipated changes to peak flow by river basin district. East Hertfordshire's watercourses are located within the Thames river basin district. Guidance on uplift in peak flows are assigned for three allowance categories; Central, Higher Central and Upper End which are based on the 50th, 70th and 90th percentiles respectively. The allowance category to be used is based on the vulnerability classification of the development and the flood zones within which it resides.

These allowances (increases) are provided for three climate change 'epochs':

- Total potential change anticipated for '2020s' (2015 to 2039)
- Total potential change anticipated for '2050s' (2040 to 2069)
- Total potential change anticipated for '2080s' (2070 to 2115)

The peak river flow allowances show the anticipated changes for the three future epochs and percentiles, as shown in Table 4-1 for the Thames river basin district.

Table 4-1: Peak river flow allowances by river basin district

River basin district	Allowance category	Total potential change anticipated for '2020s' (2015 to 39)	Total potential change anticipated for '2050s' (2040 to 2069)	Total potential change anticipated for '2080s' (2070 to 2115)
Thames	Upper end	25%	35%	70%
	Higher central	15%	25%	35%
	Central	10%	15%	25%

4.2.1 High++ allowances

High++ allowances only apply in assessments for developments that are very sensitive to flood risk and that have lifetimes beyond the end of the century. Further information is provided in the Environment Agency publication, [Adapting to Climate Change: Advice for Flood and Coastal Erosion Risk Management Authorities](#).

4.2.2 Which peak river flow allowance to use?

The flood zone and flood risk vulnerability classification should be considered when deciding which allowances apply to the development or the plan. The guidance states the following

Flood Zone 2

Vulnerability classification	Central	Higher Central	Upper end
Essential infrastructure		✓	✓
Highly vulnerable		✓	✓
More vulnerable	✓	✓	
Less vulnerable	✓		
Water compatible	None		

Flood Zone 3a

Vulnerability classification	Central	Higher Central	Upper end
Essential infrastructure			✓
Highly vulnerable	Development not permitted		
More vulnerable		✓	✓
Less vulnerable	✓	✓	
Water compatible	✓		

Flood Zone 3b

Vulnerability classification	Central	Higher Central	Upper end
Essential infrastructure			✓
Highly vulnerable	Development not permitted		
More vulnerable			
Less vulnerable			
Water compatible	✓		

4.3 Peak rainfall intensity allowance

Increased rainfall affects river levels and land and urban drainage systems. The table below shows anticipated changes in extreme rainfall intensity in small and urban catchments.

For Flood Risk Assessments, both the central and upper end allowances should be assessed to understand the range of impact.

Table 4-2: Peak rainfall intensity allowance in small and urban catchments

Applies across all of England	Total potential change anticipated for 2010 to 2039	Total potential change anticipated for 2040 to 2059	Total potential change anticipated for 2060 to 2115
Upper end	10%	20%	40%
Central	5%	10%	20%

4.4 Using climate change allowances

To help decide which allowances to use to inform the flood levels that the flood risk management strategy will be based on for a development or development plan allocation, the following should be considered:

- likely depth, speed and extent of flooding for each allowance of climate change over time considering the allowances for the relevant epoch (2020s, 2050s and 2080s)
- vulnerability of the proposed development types or land use allocations to flooding
- 'built in' resilience measures used, for example, raised floor levels



- capacity or space in the development to include additional resilience measures in the future, using a 'managed adaptive' approach

The impact of climate change in East Hertfordshire, and how climate change has been assessed as part of this SFRA, is addressed in Section 5.9.



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5 Understanding flood risk in East Hertfordshire

5.1 Summary of SFRA mapping for all sources of flood risk and methodology

Table 5-1 provides an overview of the supplied data, used to inform the assessment of flood risk for East Hertfordshire.

Table 5-1: Overview of supplied data for East Hertfordshire SFRA

Source of flood risk	Data used to inform the assessment	Data Supplied By
Historic (all sources)	Historic Flood Map and Recorded Flood Outlines Hydraulic Modelling Reports	Environment Agency
	2008 SFRA	East Hertfordshire District Council
	2011 PFRA Section 19. Flood Investigation Reports	Hertfordshire County Council
	Historic flood incidents / records	East Hertfordshire District Council; Canal and River Trust
	DG5 Register	Thames Water
Fluvial (including climate change)	River Lee 2D Modelling Study (CH2MHill, 2014) Puckeridge Tributaries Mapping and Modelling Study (JBA, 2015) Stort Tributaries Mapping and Modelling Study (JBA, 2015) A120 Bypass Little Hadham Hydraulic Modelling (JBA, 2014) River Lee Model Maintenance Stage 2 (Halcrow, 2010) Stort Modelling and Mapping Flood Risk (Halcrow, 2010) River Rib Flood Mapping Study (Mott MacDonald, 2009) River Beane Flood Mapping Study (Halcrow, 2008) River Ash Flood Risk Management Strategy (Atkins, 2006) Flood Zone mapping	Environment Agency
Surface water	Updated Flood Map for Surface Water	Environment Agency
	Reported flood incident data	Hertfordshire County Council - Highways
Groundwater	Areas Susceptible to Groundwater flooding Bedrock geology / superficial deposits maps	Environment Agency
Sewer	DG5 Register	Thames Water
Reservoir	National Inundation Reservoir Mapping	Environment Agency
Canal	GIS Data showing incidents of overtopping	Canal and River Trust

5.1.1 Hydraulic modelling used in the SFRA

Environment Agency detailed modelling

Fluvial flood risk within East Hertfordshire District Council has been assessed using results from hydraulic models supplied by the Environment Agency (to determine Flood Zone 3b) and existing Environment Agency Flood Zone mapping.

The Environment Agency's Flood Zone maps include the undefended outputs of the models outlined below. The following models were supplied:

- River Lee 2D Modelling Study (CH2MHill, 2014) – *comprising 14 models and 2 sub models. Only the M01, M02, M14, Hertford cut model and Ware cut model were supplied for this study.*
- Puckeridge Tributaries Mapping and Modelling Study (JBA, 2015)
- Stort Tributaries Mapping and Modelling Study (JBA, 2015) – *comprising 6 models including the Harlowbury brook, Lawrence Avenue Drain, Sawbridgeworth Brook, Spellbrook, Stickling Green Brook, Stortford Hall Park Personage Lane Ditch.*
- A120 Bypass Little Hadham Hydraulic Modelling (JBA, 2014)
- River Lee Model Maintenance Stage 2 (Halcrow, 2010)
- Stort Modelling and Mapping Flood Risk (Halcrow, 2010)
- River Rib Flood Mapping Study (Mott MacDonald, 2009)
- River Beane Flood Mapping Study (Halcrow, 2008)
- River Ash Flood Risk Management Strategy (Atkins, 2006)

Figure 5-1 shows the extent of these detailed hydraulic models. In some areas, model domains overlap each other, such as along the River Lea. Confirmation of which models should be run for which areas has been provided by the Environment Agency.

The Ash Strategy, River Rib and Lee Maintenance models are 1D-only. However, the majority of the Lee Maintenance model has now been updated to 1D-2D in the River Lee 2D Modelling Study. The remainder of the supplied hydraulic models are 1D-2D, providing a more accurate representation of flood risk. These models are available from the Environment Agency if developers are required to simulate different scenarios as part of a detailed Flood Risk Assessment (FRA).

To understand the impact of climate change, these detailed hydraulic models have been re-run following the updated Environment Agency climate change guidance. The modelling approach to climate change is discussed further in Section 5.9.1.

5.1.2 Surface Water

Mapping of surface water flood risk in East Hertfordshire has been taken from the updated Flood Map for Surface Water (uFMfSW) published online by the Environment Agency. This information is based on a national scale map identifying those areas where surface water flooding poses a risk. Surface water flood risk is subdivided into the following four categories:

- High: An area has a chance of flooding greater than 1 in 30 (3.3%) each year.
- Medium: An area has a chance of flooding between 1 in 100 (0.1%) and 1 in 30 (3.3%) each year.
- Low: An area has a chance of flooding between 1 in 1,000 (0.1%) and 1 in 100 (1%) each year.
- Very Low: An area has a chance of flooding of less than 1 in 1,000 (0.1%) each year.

5.1.3 Groundwater

Mapping of surface water flood risk has been based on the Areas Susceptible to Groundwater Flooding (AStGWF) dataset. The AStGWF dataset is strategic-scale map showing groundwater flood areas on a 1km square grid. It shows the proportion of each 1km grid square, where geological and hydrogeological conditions indicate that groundwater might emerge. It does not show the likelihood of groundwater flooding occurring and does not take account of the chance of flooding from groundwater rebound. This dataset covers a large area of land, and only isolated

locations within the overall susceptible area are actually likely to suffer the consequences of groundwater flooding.

The AStGWF data should be used only in combination with other information, for example local data or historical data. It should not be used as sole evidence for any specific flood risk management, land use planning or other decisions at any scale. However, the data can help to identify areas for assessment at a local scale where finer resolution datasets exist.

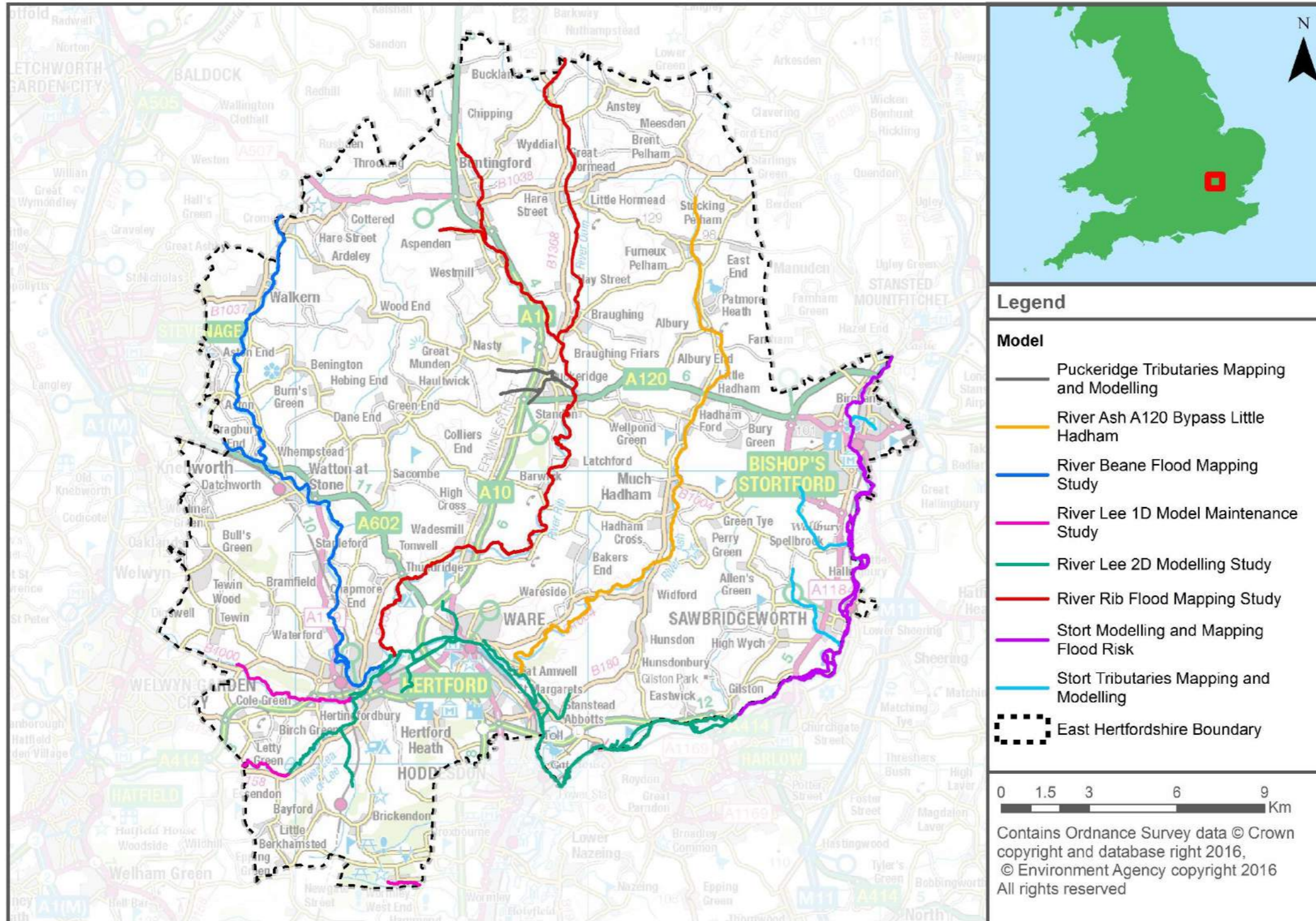
5.1.4 Sewers

Historical incidents of flooding are detailed by Thames Water through their DG5 register. The DG5 database records incidents of flooding relating to public foul, combined or surface water sewers and displays which properties suffered flooding. For confidentiality reasons this data has been supplied on a postcode basis.

5.1.5 Reservoirs

Mapping of the risk of reservoir inundation has been based on the National Inundation Reservoir Mapping supplied by the Environment Agency. These maps show the extent which may be affected in the unlikely event that a reservoir dam fails.

Figure 5-1: Source of data for fluvial flood risk analysis



5.1.6 Suite of Maps

All of the mapping can be found in the appendices to this SFRA and is presented in the following structure:

- Appendix A: Watercourses in the East Hertfordshire District
- Appendix B: Environment Agency Flood Zone Mapping, including functional floodplain
- Appendix C: Climate Change Mapping
- Appendix D: Surface Water Mapping
- Appendix E: Groundwater flood risk mapping
- Appendix F: Reservoir Inundation Mapping
- Appendix G: Flood warning coverage
- Appendix H: Technical Summary
- Appendix I: Level 2 site assessments detailed summary tables

Users of this SFRA should also refer to other relevant information on flood risk where available and appropriate. This information includes:

- River Thames Catchment Flood Management Plan (2009) – Environment Agency¹¹.
- Hertfordshire Local Flood Risk Management Strategy – Hertfordshire County Council¹²
- Lower Lee Flood Risk Management Strategy – Environment Agency¹³
- Hertfordshire Preliminary Flood Risk Assessment (2011) – Hertfordshire County Council¹⁴
- Flood Risk Management Plan in accordance with the Flood Risk Regulations (available in 2015) – Environment Agency and Lead Local Flood Authority
- Environment Agency's Asset Information Management System (AIMS) – users should note that recently completed schemes may not yet be included in this dataset.

5.2 Data Gaps

A review of the supplied data has indicated flood modelling and data gaps which may impact on proposed site allocations in the emerging Local Plan, as discussed below.

- Most of the settlements deemed to be at fluvial flood risk are covered by hydraulic models. However, there are some locations identified which lie outside of detailed model extents, but which the Flood Zones show properties at flood risk. Locations of note are: Properties along Dane End Tributary (a tributary of the River Beane), properties in Barwick along the Barwick Tributary (a tributary of the River Rib) and properties north of Brent Pelham along the River Ash. It may be beneficial to investigate flood risk in these areas in the future.
- The Environment Agency's Flood Zone maps do not cover every watercourse (for example if <3km² catchment area), or Ordinary Watercourses. Hydraulic modelling may be required for more detailed Flood Risk Assessment studies, or following on from Section 19 reports, or as part of the Level 2 SFRA, to provide the required detail to support a site's development. If a watercourse or drain is shown on OS mapping but is not covered by a Flood Zone, this does not mean there is no potential flood risk. A hydraulic model would be required at detailed site-specific level to confirm the flood risk to the site.
- Any existing hydraulic models which are 1D-only could be upgraded in future to 1D-2D hydraulic models, if it is deemed necessary (for example if properties are at flood risk or a flood event has occurred and more detailed information is required). This would provide

11 River Thames CFMP (2009):

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/293903/Thames_Catchment_Flood_Management_Plan.pdf

12 Hertfordshire County Council LFRMS - <http://www.hertsdirect.org/docs/pdf/f/hertsfrmsall.pdf>

13 Lower Lee FRMS -

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/288611/Managing_flood_risk_in_the_Lower_Lee_catchment_318609.pdf

14 Hertfordshire PFRA (2011): <http://www.hertsdirect.org/docs/pdf/f/hccpfa.pdf>

a greater level of floodplain flood risk information, for example depths, velocity and hazard in the floodplain.

- Locations where surface water flooding is the predominant flood risk, this could be investigated further by use of surface water hydraulic modelling, or in combination with fluvial modelling, to assess the interactions between the two in more detail. Similarly, for any locations which suffer from sewer flooding or sewer capacity issues; this data can be incorporated into hydraulic models to more accurately represent the surface water system.
- At site-specific level, for any developments shown to be at residual flood risk, for example from a breach or overtopping (e.g. reservoir, canal, perched watercourse), it is recommended that a detailed hydraulic modelling study is carried out using Environment Agency guidance to assess the residual risk. There are a number of reservoirs within and outside of the East Hertfordshire boundary which may pose a residual flood risk to development. In addition, the New River water supply aqueduct, the River Lee Navigation Channel and the River Stort Navigation Channel are also located within East Hertfordshire.

5.3 Historical flooding

Historical records of flooding in the study area have been informed from Environment Agency Historic Flood Map and Recorded Flood Outline datasets, previous studies including the 2011 PFRA, the previous East Hertfordshire 2008 SFRA, hydraulic modelling studies and information supplied through consultation with stakeholders. It is noted that at the time of preparing this SFRA, none of the Hertfordshire Council Council's Section 19 Flood Investigation Reports covered communities within the study area.

5.3.1 Fluvial flooding

Table 5-2 displays the recorded / observed historic fluvial flood events known to have affected the district of East Hertfordshire. The most notable incident of widespread flooding is the 1947 event which caused significant flooding throughout Hertfordshire and the River Lea catchment. The River Lea is noted to have a long history of flooding and following the 1947 event a Flood Relief Channel was constructed along the River Lea just outside of the East Hertfordshire District¹⁵.

Other notable events affecting large parts of East Hertfordshire include those during September 1968, May 1978, July 1987, October 1993 and October 2001. In addition, in 1974 widespread flooding occurred along the River Stort, and in May 2008 large parts along the River Beane were affected by flooding.

Table 5-2: Historic fluvial flood events in the district of East Hertfordshire

Watercourse	Event Date
Aston End Brook	May 1947, May 2008, Dec 2013
Black Ditch	May 1947, Aug 1987
Brickendon Brook	May 1947, July 1987, Dec 2000
Canons Brook	May 1947, Dec 2000
Dane End Tributary	May 1947, Sep 1968, Oct 2001, Feb 2014
Hunsdon Brook	May 1947, Dec 2000
Puckeridge Tributary	Feb 2014
River Ash	May 1947, Sep 1968, Nov 1974, May 1978, Feb 1979, Oct 1982, Aug, Sep and Oct 1987, Jan 1988, Oct 1993, Oct 2000, Oct 2001, Feb 2009, Feb 2010, Feb 2014
River Beane	May 1947, Sep 1968, July 1987, Oct 1993, Dec 1995, May 2008, Feb 2009, Feb 2014
River Lea	May 1947, Sep 1968, May 1978, June 1983, July 1987, Feb 1990, Dec 2000, March 2007, May 2007, Feb 2009, Feb 2014
River Mimram	May 1947, July 1987, July 1996, Dec 2000
River Quin	May 1947, Sep 1968, Aug 1987, Oct 1993
River Rib	May 1947, Sep 1968, Nov 1974, May 1978, Feb 1979, June 1983, July 1987, Jan 1988, Feb 1990, Oct 1993, Oct 2000, Oct 2001, Feb 2014
River Stort	May 1947, Sep 1968, Nov 1974, May 1978, Dec 1982, July 1987, Oct 1987, Sep 1992, Oct 1992, Oct 1993, Jan 1994, Jan 1995, Oct, Nov and Dec 2000, Feb 2001, Oct 2001, Jan 2003, Feb 2009, Feb 2010, Jan 2011, Feb 2014
Stevenage Brook	May 1947, May 1992, Oct 1993, May 2008, Dec 2013

In addition, the following tributaries experienced flooding during the May 1947 event: Ardeley Brook, Barwick Tributary, Bourne Brook, Braughing Bourne, Fanhams Tributaries, Great Hornead Brook, Haley Hill Ditch, Manifold Ditch, New River, Spital Brook, Stanstead Mill Stream, Stapleford Marsh Ditch, The Bourne, The Cuts, The Old Bourne, Thistley Vale Brook, Toll House Stream, Woollens Brook and the Wormleybury Brook.

The East Hertfordshire District Council Flood Incident Database brings together records of flood incidents from a variety of sources. In addition to fluvial flooding incidents, the database also has records of groundwater and surface water flooding in the district.

5.3.2 Groundwater

The East Hertfordshire District Council Flood Incident Database has recorded 13 incidents of groundwater flooding (see Table 5-3). Although the incidents are largely isolated, the settlement with the greatest recorded number of incidents is Ware and Tewin/ Tewin Wood. The location of the recorded groundwater incidents was compared with the geology of the study area; groundwater incidents tend to have been recorded where the underlying bedrock geology is classified as principal (layers of rock or drift deposits with high permeability and, therefore, provide a high level of water storage) – see Section 5.4.2.

Table 5-3: Historic groundwater flood events in the district of East Hertfordshire

Year	Number of incidents	Location
1993	1	Kettle Green
1995	1	Meesden
1999	1	Ware
2001	1	Tewin Wood
2006	1	Sawbridgeworth
2007	1	Bishop's Stortford
2010	1	Wareside
2013	1	Ardeley
2013	1	Buckland
Unknown	4	Little Berkhamsted, Ware, Tewin

5.3.3 Surface water

The East Hertfordshire District Council Flood Incident Database has recorded 76 incidents of where the source of flooding was reported to be purely surface water (see Table 5-4). Incidents of surface water flooding tend to be isolated. Settlements with five or more records of surface water flooding include Bishop's Stortford, Buntingford, Hertford, Much Hadham and Walkern.

Table 5-4: Historic surface water flood events in the district of East Hertfordshire

Year	Number of incidents	Location
1992	3	Buntingford, Bishop's Stortford, Hertford
1993	18	Buntingford, Puckeridge, Much Hadham, Allens Green, Bishop's Stortford, Hertford, Stansted Abbots, Ware, Bragbury End, Cottered, Dane End, Datchworth, Cole Green
1994	1	Bishop's Stortford
1995	1	Bishop's Stortford
1997	1	Bishop's Stortford
1998	1	Sawbridgeworth,
1999	2	Buntingford
2000	3	Bishop's Stortford, Much Hadham
2002	3	Hertford, Furneux Pelham
2003	3	Ware, Sawbrideworth, Walkern
2004	1	Buntingford
2006	3	Bishop's Stortford, Cottered
2007	2	Buntingford, Bishop's Stortford
2010	1	High Cross
2011	2	Meesden, Bishop's Stortford
2012	1	Bishop's Stortford
2013	1	Buntingford

2014	26	Tewin, Bayford, Little Hadham, High Cross, Bishop's Stortford, Much Hadham, Hunsdon, Albury, Wadesmill, Walkern, Datchworth, Cold Christmas, Hare Street, Colliers End, Luffenhall, Great Amwell, Tonwell, Ware
2015	3	Little Hornead, Ware, Hertford

5.3.4 Historic flood mechanisms

There are a number of historical flood mechanisms in East Hertfordshire including:

- Heavy storm events which cause high runoff and result in flashier flooding from small streams
- Poor antecedent conditions combined with heavy, prolonged rainfall.
- Culverting of watercourses causing localised flooding problems through the limited capacity of the culverts, surcharging and damage or blocked culverts.
- Historic urban extensions that rely on outlets into watercourses for surface water drainage and poor surface water management e.g. not considering the use of SUDS.
- Insufficient storm and combined drainage capacity.
- Insufficient road ditches / gully capacity and lack of maintenance.
- Lack of maintenance of the surface water system i.e. gullies, gully leads and adopted surface water sewers and other drains.
- Reliance on soakaways where there is a lack of available positive drainage outfalls
- Land drainage surface water runoff from fields.
- Groundwater flooding; in certain areas, this is thought to have been caused by the underlying geology and high water table.

5.4 Topography, geology, soils and hydrology

The topography, geology and soil are all important in influencing the way the catchment responds to a rainfall event. The degree to which a material allows water to percolate through it, the permeability, affects the extent of overland flow and therefore the amount of run-off reaching the watercourse. Steep slopes or clay rich (low permeability) soils will promote rapid surface runoff, whereas more permeable rock such as limestone and sandstone may result in a more subdued response.

5.4.1 Characteristics of the District

East Hertfordshire is the largest district of the ten within Hertfordshire, covering an area of approximately 475km² and with a population of approximately 141,07616. The largest urban area in the district is Bishop's Stortford, followed by Hertford, Ware, Sawbridgeworth and Buntingford. In addition, there are also a number of villages and hamlets scattered across the district, although the district is predominately rural.

The 2008 Landscape Character Assessment for East Hertfordshire¹⁷ identified some 67 distinct character areas within the district by describing their key characteristics and natural, historical and cultural features. On a broader scale, three landscape character regions were identified in East Hertfordshire; The East Herts Plateau, The Central River Valleys Region and a small part of The South Hertfordshire Plateau.

The topography of East Hertfordshire is diverse, with upland areas divided by river valleys and lowland areas. The highest ground is located to the north of the district with elevations reaching approximately 153m AOD. The southern part of the district is characterised by shallower elevations, especially along the River Lea Valley. The River Lea flows into the district from the west and flows in a north-easterly direction before turning southwards and flowing towards the southern boundary of the district. The main tributaries of the River Lea, namely the River Mimram,

¹⁶ East Hertfordshire Annual Report 2014-2015

http://www.eastherts.gov.uk/media/28080/Annual-Report-2014-15/PDF/5429_-_Annual_Report_2014-15_LORES.pdf

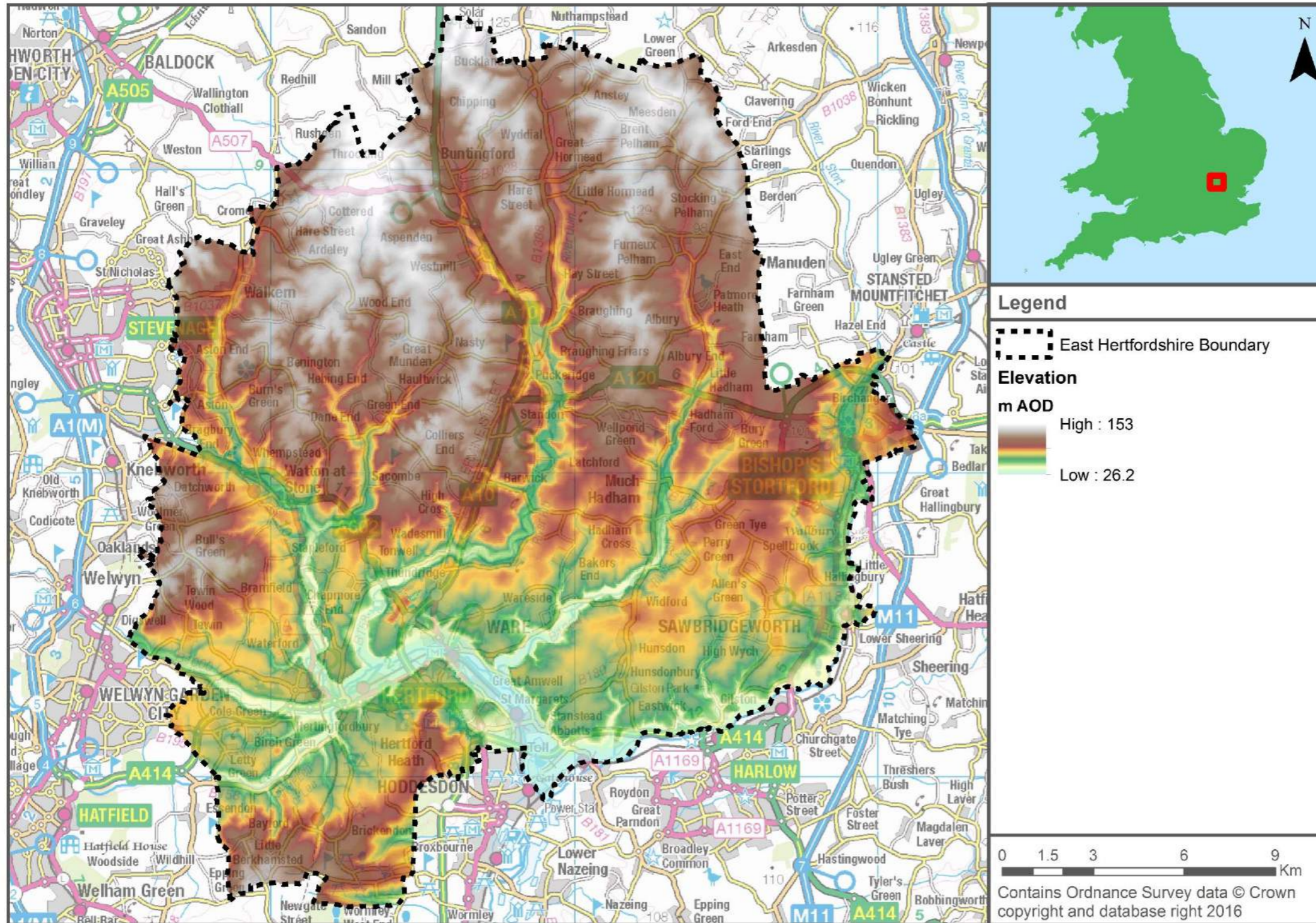
¹⁷ Landscape Character Assessment http://www.eastherts.gov.uk/media/6672/Adopted-LCA-SPD/PDF/LCA_SPD_PDF.pdf



River Beane, River Rib, River Ash and the River Stort originate from areas of higher ground in the northern part of the district and flow in a southerly direction towards their confluence with the River Lea in the southern part of the district. The topography of the study area can be seen in Figure 5-2.



Figure 5-2: The topography of the East Hertfordshire District



5.4.2 Geology and soils

The geology of the catchment can be an important influencing factor on the way that water runs off the ground surface. This is primarily due to variations in the permeability of the surface material and bedrock stratigraphy.

Figure 5-3 shows the bedrock (solid permeable) formations in the District and Figure 5-4 shows the superficial (permeable, unconsolidated, loose) deposits. These are classified as the following:

- Principal: layers of rock or drift deposits with high permeability and, therefore, provide a high level of water storage
- Secondary A: rock layers or drift deposits capable of supporting water supplies at a local level and, in some cases, forming an important source of base flow to rivers
- Secondary B: lower permeability layers of rock or drift deposits which may store and yield limited amounts of groundwater
- Secondary undifferentiated: rock types where it is not possible to attribute either category A or B.
- Unproductive Strata: rock layers and drift deposits with low permeability and therefore have negligible significant for water supply or river base flow.

The bedrock in East Hertfordshire consists predominantly of Principal formations, with areas to the south of East Hertfordshire made up to Secondary A and unproductive strata. The British Geological Survey indicates the principal aquifers comprises chalk formations, the Secondary A of Woolwich and Reading Beds, and the unproductive of London Clay group formations. Chalk formations allow water to pass to and from groundwater aquifers and can be at risk of groundwater flooding.

Superficial deposits are predominately classed as Secondary A and Secondary (undifferentiated). There are a few outcrops of unproductive superficial deposits in the west and north of East Hertfordshire. Secondary A deposits are predominately located along river corridors in East Hertfordshire. The river corridor along the River Lea is typically comprised of Alluvium (Clay, Silt and Sand) whilst the rest of the district mainly comprises River Terrace deposits, Till and Diamicton and Sand and Gravel deposits.

The geology of the study area indicates that the district may be vulnerable to groundwater flooding. The British Geological Survey states that two of the most vulnerable settings for groundwater flooding are areas of outcrop of Chalk and river valleys underlain by permeable superficial deposits. Chalk and the majority of superficial deposits in the study area are permeable. Permeability is a measure of if water can flow through a rock and how this is achieved. A high permeability means that water infiltrates the rock, at a high rate of infiltration. As a result, this causes more water to soak into the ground contributing to the baseflow rather than contributing to surface water runoff.



Figure 5-3: Bedrock deposits in East Hertfordshire

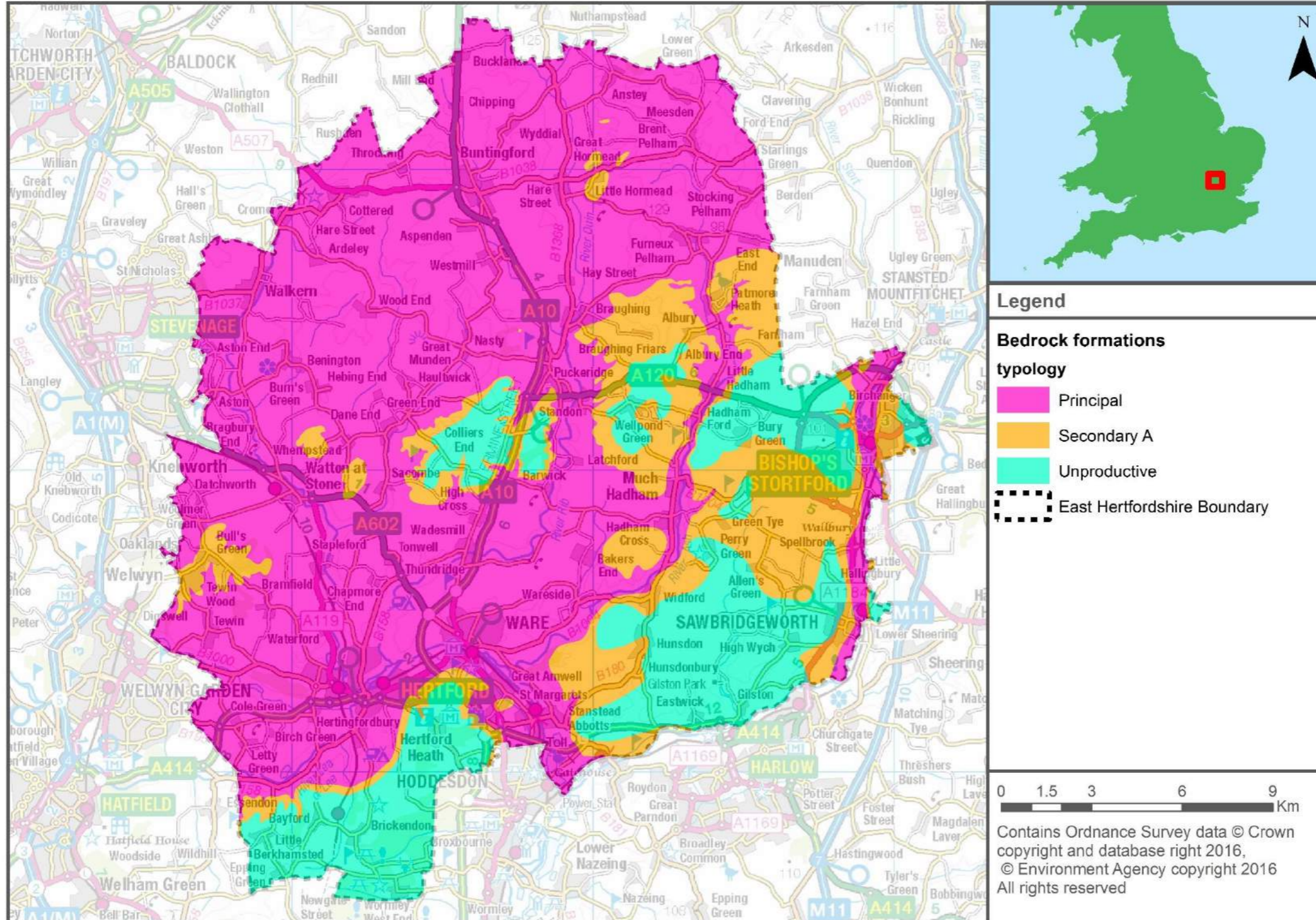
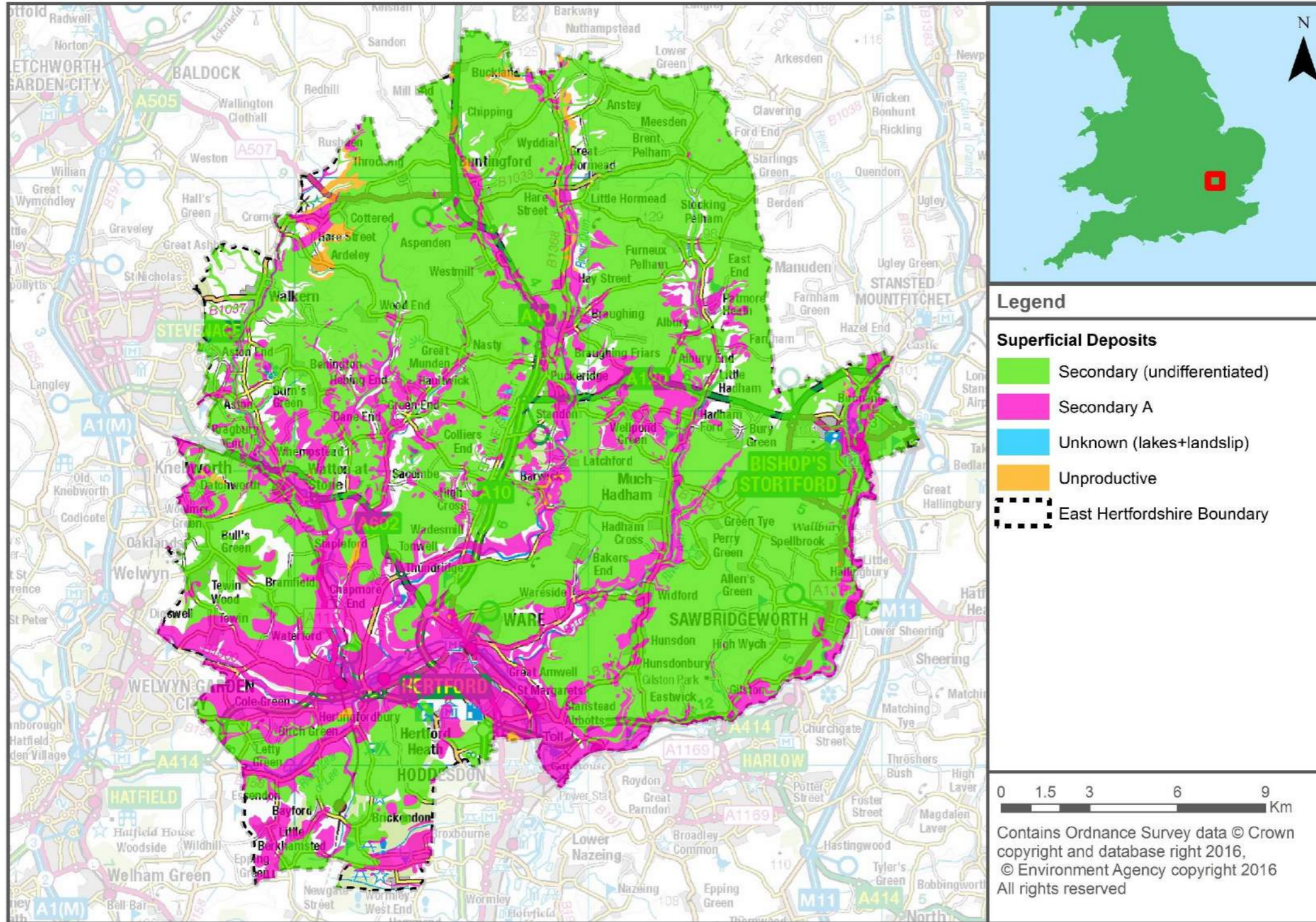


Figure 5-4: Superficial deposits in East Hertfordshire



5.4.3 Hydrology

East Hertfordshire lies within the River Lea and River Stort catchments (the River Stort, itself, a tributary of the River Lea); the entire study area falls within the Upper Lea catchment. The network of both the River Lea and the River Stort is complex, with a number of smaller Main Rivers, Ordinary Watercourses (which are named) and unnamed drains. Some of the most significant tributaries of the River Lea include the River Beane, the River Ash, the River Rib, and the River Mimram which converge with the River Lea towards the southern end of East Hertfordshire. A summary of the principal watercourses in the SFRA area is provided in Table 5-5. Appendix A shows the location of the main watercourses within the study area.



Table 5-5: Key watercourses in the study area

Watercourse name	Classification	Description
Ardeley Brook	Main River	A tributary of the River Beane, the Ardeley Brook rises south east of Cottered, flowing in a predominantly westerly direction, before joining the River Beane south of Cromer at TL 29519 27756.
Barwick Tributary	Main River	A small tributary of the River Rib, Barwick Tributary is shown to start near Colliers End in the centre of the district, flowing in a southerly direction, before joining a secondary branch of the Barwick Tributary and flowing east until its confluence with the River Rib in Barwick at TL 38637 19396. A second branch / watercourse called the Broxbourne Ditch is shown to rise north of High Cross, flowing predominantly north easterly for approximately a kilometre, before joining the Barwick Tributary at Barwick Lane TL 37435 19697.
Bayford Brook	Main River/ Ordinary watercourse	The Bayford Brook is shown to start as a series of unnamed drains in Ashendene in the south west of the district, flowing in a predominantly northerly direction, before joining the River Lea at Burrowfield. The most upstream reach of this watercourse is an Ordinary Watercourse, changing to Main River around Brickendon Lane, at TL 31590 08254.
Bourne Brook	Main River	The Bourne Brook enters the district north of the A120 at the Old Lime Works (TL 48600 23523) where it changes classification to a Main River and flows in a predominantly south easterly direction before joining the River Stort.
Braughing Warren Bourne	Main River / Ordinary watercourse	Fed by a spring in Cockhamsted, the Braughing Warren Bourne flows south till Braughing Friars where, south of Friars Road, it becomes a Main River. The river then continues south west until it joins the River Rib north of Standon TL 39345 23294.
Brickendon Brook	Main River / Ordinary watercourse	The Brickendon Brook starts west Mangrove Lane, flowing in a north westerly direction towards south Hertford. The watercourse is fed by a number of un-named drains. The Brook flows along Brickendon Lane, before joining the River Lea north of Hornsmill Road in Hertford.
Chelsings Tributary	Main River	A tributary of the River Rib, with their confluence south of Anchor Lane, west of Thundridge (TL 34467 16711), the Chelsings Tributary flows in a southerly direction from south of Sacombe Green's Marshall's Lane.
Dane End Tributary	Main River/ Ordinary watercourse	The Dane End Tributary rises as a series of un-named drains within the Cherry Green area. The watercourse flows in a south westerly direction, through Great Munden and Dane End, where it turns south to its confluence with The Cuts (TL 32632 18384)
Fanhams Tributaries	Main River/ Ordinary watercourse	Fanhams Tributaries begins on Ashridge common as two tributaries which join at TL 37987 15250 and flow south east to join the River Ash.
Fiddlers' Brook	Main River/ Ordinary watercourse	Fed by Gatney Spring, Fiddlers' Brook gently meanders south till it meets the Golden Brook north of Golden Grove. After approximately 2.3km of being the Golden Brook the watercourse returns to the being named the Fiddlers' Brook.
Golden Brook	Main River	Approximately 2.3km of Main River between two sections of the Fiddlers' Brook, between north of Golden Grove (TL 44743 14784) and west of Home Wood (TL 44745 14781)
Great Hormead Brook	Main River	The Great Hormead Brook is a Main River which is fed by the ordinary watercourse the Black Ditch in the centre of Great Hormead. It flows predominately West for approximately 1.3km before joining the river Quin
Haley Hill Ditch	Main River/ Ordinary watercourse	Haley Hill Ditch begins as an unnamed ditch in Wyddial and flows approximately south past Buntingford where at TL 37327 29896 it changes designation to a main river, before continuing south to its confluence with the Main River Rib
Hunsdon Brook	Main River/ Ordinary Watercourse	The Hunsdon Brook rises as a series of unnamed drains in the high ground above Hunsdon, where below the Hudson Road in Hunsdonbury, after a lake, the Hunsdon Brook becomes a Main River. It then flows predominately south, merging with a series of unnamed drains and flowing through several pools before its confluence with the River Stort north of Roydon (TL 40733 10504).
Little Hormead Brook	Main River	A short stretch of Main river, starting west of little Hormead around Great Hormead Park and fed by unnamed drains in the area, Little Hormead Brook flows predominately west until it meets the River Quin.
Nimney Bourne	Main River	South west of Latchford and north of Bartram's Wood are Bartram's and Newbarns Springs which feed Nimney Bourne. The Nimney Bourne flows predominately south past Nobland Green and Baker's End until Wareside which it changes course west to meet with the River Ash.
Puckeridge Tributary	Main River	Beginning as two parallel tributaries north and south of Kings Wood the Puckeridge Tributaries flow west to their confluence with each other in Puckeridge (TL 38372 23101). They continue as a single watercourse south west to a confluence with the River Rib south of Kents Lane in Standon.



Watercourse name	Classification	Description
River Ash	Main River	The River Ash is a large tributary of the River Lea, which flows predominately south to its confluence with the River Lea north east of Great Amwell at (TL 37742 13044). The River Ash is fed by numerous unnamed drains as well as the ordinary watercourses Fanhams Tributaries and the Nimney Bourne and flows past Brent Pelham, Furneux Pelham, Claggate, Little Hadham, Much Hadham, Widford.
River Beane	Main River	The River Beane starts out of the district around Roe Green and initially enters the East Hertfordshire District in the north at TL 31068 30335 for approximately 1.2km before leaving west of Luffenhall at TI 30250 29503. The watercourse re-enters the district south of Luffenhall where it meanders south past Cromer, Walkern, Aston, Watton at Stone, and Stapleford before flowing north east to its confluence with the River Lea, east of Bengoe, Hertford.
River Lea	Main River	With its source north of Luton outside of the district, the River Lea flows south east and enters the East Hertfordshire District to the south west north of the B158 at TL28187 09939. It flows in an arc in the south of the district through Hertsford and Ware and is joined by several main tributaries including the River Beane, River Rib and River Ash before leaving west of Hoddesdon (TL 39063 09228).
River Mimram	Main River	The River Mimram enters the district north east of Haldens in Welwyn Garden City at TL 25334 14602, flowing south of Tewin to Hertford where it joins the River Lea south of the A119 and Hertingfordbury Road roundabout.
River Quin	Main River	A tributary of the River Rib, which enters the district from the north and flows in a southerly direction to its confluence with the Rib north of Standon.
River Rib	Main River	The River Rib enters north of the district after rising as an unnamed drain in Hay Green and Kelshall outside of the district. It flows predominately south past Buntingford and Standon until east of Thundridge where it changes course west. At Tonwell it meanders south to its confluence with the River Lea.
River Stort	Main River	The River Stort starts north east of Nuthampstead outside of the district boundary. North east of Meesden is where it first enters the district and follows the boundary for approximately 1.2 km before leaving north west of Ford End. It re-enters the district south of Stansted Mountfitchet (TL50057 24125), flowing between New Town, Bishop's Stortford and Hockerill before following the district boundary until its confluence with the River Lea west of Roydon Park.
Stevenage Brook	Main River	The Stevenage Brook enters the district, west of Bragbury End, Broadwater and flows in an approximately westerly direction till the River Beane north west of Watton at Stone.
The Old Bourne	Main River/ Ordinary Watercourse	The Old Bourne flows south from its source on Haymead Hill being fed by several unnamed drains until its confluence with the Dane End Tributary south of Dane End.

NOTE: This table is based on information found within the Environment Agency's Detailed River Network (DRN) database and focuses on key watercourses, therefore not every watercourse is described above, and there may be a number of Ordinary Watercourses within the study area which are not included within this table.

5.5 Fluvial flood risk

Flood Zones show the areas potentially at risk of flooding from rivers, ignoring the presence of defences (although areas benefiting from formal defences are identified). This information has been used, in conjunction with historical flooding records, to give an account of flood risk in the study area. Appendix B presents the Flood Zone maps for the district.

The primary fluvial flood risk in East Hertfordshire is along the River Lea and River Stort corridors. The principal urban centres at risk are Hertford, Ware, Stanstead Abbots and Bishop's Stortford. The main tributaries of the River Lea including the River Rib, River Beane, River Ash and River Mimram also present fluvial flood risk to rural communities within the district.

The main locations with associated flood risk in East Hertfordshire are detailed below:

- **Hertford:** The River Mimram, River Rib and River Beane all converge with the River Lea in Hertford. Flood risk in this area may originate from the River Lea or any of the aforementioned tributaries or a combination of both. Flood risk in Hertford is generally confined to north of the A119, although there are exceptions to this, particularly near the roundabout to the A414/ A119. There are numerous residential and commercial properties within Flood Zone 2 and 3 in Hertford. This includes: properties on Brickendon Lane and Tanners Crescent; properties in the vicinity of the River Mimram-River Lea confluence between Hertingfordbury Road and the river; properties along the River Beane, including those along Molewood Road and Port Vale and the surrounding area; properties in the vicinity of Mill Bridge and St Andrew Street; properties around the A414/A119 roundabout including Villiers Street, Fore Street and Market Street; properties between the Ware Road (A119) and the River Lea, including Mead Lane Industrial Estate.
- **Ware:** Flood risk in Ware is mainly driven by the River Lea, although flooding also occurs to properties along Pastures Ditch which converges with the River Lea just south of Priory Street. The River Lea's Flood Zones affect numerous properties in Ware, including properties to the north of Priory Street and west of Baldock Street; in the Broadmeads area and along Amwell End and Station Road; properties between the High Street and the River Lea; along Star Street, Cross Street, Plaxton Street and Clements Street and buildings in Crane Mead Business Park. To the south of Ware in Great Amwell, properties along Yearlings Close, Furlong Way and Bridle Way are within Flood Zone 2.
- **Stanstead Abbots:** Large areas of Stanstead Abbots are within Flood Zones 2 and 3 from the River Lea, where there is a broad floodplain. Properties to the west of Amwell Lane including those on Durham Close and Meridian Way and the industrial estate to the north are at risk of fluvial flooding. Properties along the B181, in particular in the High Street area and along Millers Street, South Street and Orchard Close are also within Flood Zones. Properties along Station Road, Hoddesdon Road and Lawrence Avenue and their adjoining cul-de-sacs are also at flood risk.
- **Bishop's Stortford:** The River Stort/ Stort Navigation flows through the centre of Bishop's Stortford. Properties in the north of Bishop's Stortford, at Stane Close, Bryan Road and Yew Tree Place are within the Flood Zones. Offices at Link Road, properties in the vicinity of the A1250/ Hockerill Street and properties to the west of South Street and South road are in Flood Zone 2. Stortford Hall Park Drain flows through Bishop's Stortford in a westerly direction towards the River Stort. Properties along the Stortford Hall Park Road, Dolphin Way and Cherry Garden are shown within Flood Zone 3.
- **Sawbridgeworth:** The River Stort/ Stort Navigation and the Sawbridgeworth Brook run through parts of Sawbridgeworth. In the north of Sawbridgeworth, properties along Lawrence Avenue, Northfield Road, Reedwings Way and Saffron Crescent are within Flood Zones. Some properties which lie along the banks of the Sawbridgeworth Brook are also within the Flood Zones.
- **Spellbrook:** In Spellbrook, properties in the vicinity of the confluence of the Spellbrook tributary and the River Stort are at risk of fluvial flooding.
- **Watton at Stone:** The River Beane flows along the north-eastern boundary of Watton at Stone. Properties between the High Street and the River Beane are at fluvial flood risk.

- **Walkern:** The River Beane flows along the eastern boundary of Walkern. Properties along Greenway, Finches End, Winters Lane and Church End are within the Flood Zones.
- **Stapleford:** Through Stapleford Flood Zone 3 is confined between the River Beane and Stapleford Marsh Drain. However, properties along the High Road and Clusterbolts are within Flood Zone 2.
- **Dane End and Sacombe:** Properties in Dane End and Sacombe are at fluvial flood risk from the Dane End Tributary which flows through both of these villages.
- **Wadesmill:** The River Rib and The Bourne, a tributary of the Rib flow through Wadesmill. Properties between The Bourne and the River Rib are within Flood Zone 3 whilst some along Ermine Street are at within Flood Zone 2.
- **Barwick:** The Barwick Tributary flows through Barwick to join the River Rib to the east of Barwick. Properties in the vicinity of the confluence are at risk of fluvial flooding.
- **Puckeridge and Standon:** The Puckeridge Tributary flows through Puckeridge to join the River Rib in Standon. Properties in Puckeridge including those in the vicinity of the High Street, Station Road Park Lane and Fishers Mead are with the Flood Zones. Properties in the vicinity of the confluence between the Puckeridge Tributary and the River Rib in Standon are also at risk of fluvial flooding.
- **Buntingford:** The River Rib flows through the centre of Buntingford. The Flood Zones indicate that although Flood Zone 3 is generally confined, Flood Zone 2 is broader and affects properties through Buntingford which are in the vicinity of the River Rib.
- **Chipping:** Chipping in the north of East Hertfordshire has a large proportion at flood risk from the River Rib. A large majority of the properties in Chipping are within Flood Zone 3.
- **Great Hornead:** The Black Ditch flows through Great Hornead and joins the River Quin to the west of the village. Although the Flood Zones are quite confined through Great Hornead there are some properties along the B1038 at fluvial flood risk.
- **Little Hadham, Hadham Ford and Much Hadham:** The River Ash flows through Little Hadham, Hadham Ford and Much Hadham. Properties are at risk of flooding including those between Oundle Lane and the River Ash in Much Hadham, properties along The Ford in Hadham Ford and properties in the centre of Little Hadham in the vicinity of the A120.
- **Clapgate:** The River Ash flows past Clapgate, to the north of Little Hadham. There are properties in Clapgate which are within Flood Zone 3.
- **Furneux Pelham:** The River Ash flows through Furneux Pelham. Properties along Violets Lane are at risk of fluvial flooding.
- **Brent Pelham:** The River Ash flows through the northern part of Brent Pelham. Properties in the vicinity of the River Ash in Brent Pelham are within Flood Zone 3.

5.6 Surface water flooding

Flooding from surface water runoff (or 'pluvial' flooding) is usually caused by intense rainfall that may only last a few hours and usually occurs in lower lying areas, often where the natural (or artificial) drainage system is unable to cope with the volume of water. Surface water flooding problems are inextricably linked to issues of poor drainage, or drainage blockage by debris, and sewer flooding.

5.6.1 Highways Data

Hertfordshire County Council Highways, Operations and Strategy Unit supplied historic flood records since 2011; this data records the frequency, the nature, location and the date of the reported flood incident. A summary of the record of flood incidents supplied by Highways for East Hertfordshire can be found in Table 5-6.

The data shows that 2014 and 2015 have the greatest incidents of reported property and road flooding across the district. In particular, 2014 was warmer and wetter than average for the south-east of England¹⁸ which may account for the notable rise in reported property damage by flooding.

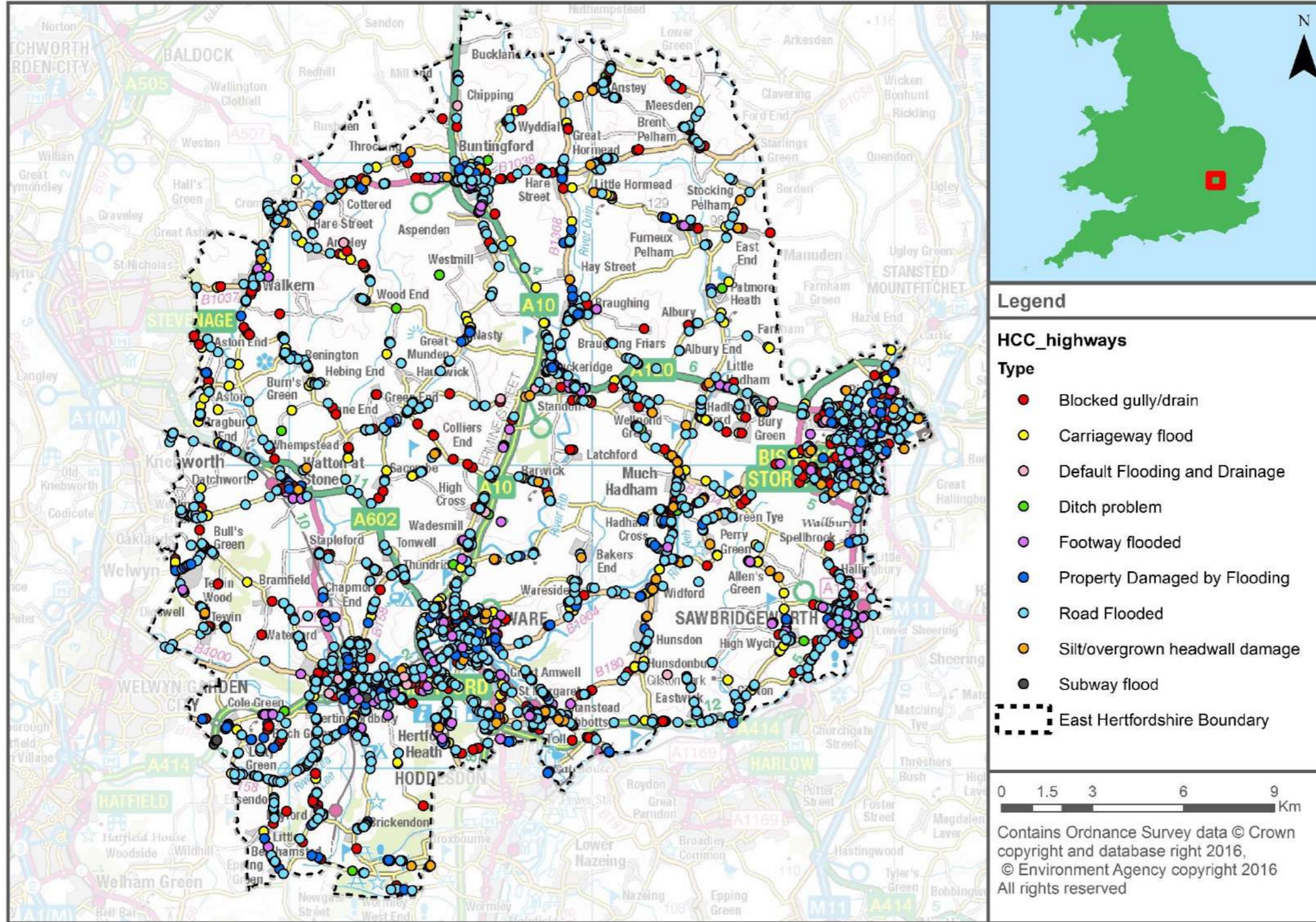
Table 5-6: Hertfordshire County Council Highways - summary of reported flood incidents

Count of Flooding Faults							
Count of Flooding Faults	2011	2012	2013	2014	2015	2016	Grand Total
Default Flooding and Drainage	0	0	0	24	16	6	46
Silt/overgrown Headwall damage	0	0	1	82	42	24	149
Footway flooded	6	31	41	97	87	45	307
Blocked gully/drain	196	153	125	0	0	0	474
Carriageway flood	115	309	264	0	0	0	688
Ditch problem	23	26	32	0	0	0	81
Subway flood	1	8	11	10	0	2	32
Property Damaged by Flooding	3	30	15	192	86	38	364
Road Flooded	0	0	57	986	603	362	2008
Grand Total	344	938	955	1391	834	477	4939

The location of the reported flood incidents between 2011 and 2016 are shown in Figure 5-5. In general, the majority of recorded incidents of property damage due to flooding occur in the urban areas of Hertford, Ware and Bishop's Stortford. The remaining incidents of property damage occur across the rest of East Hertfordshire, generally to properties along road networks.



Figure 5-5: Hertfordshire County Council Highways - location of reported flood incidents



5.6.2 Updated Flood Map for Surface Water

Mapping of surface water flood risk in East Hertfordshire has been taken from the updated Flood Map for Surface Water (uFMfSW) provided by the Environment Agency (and also found online on the Environment Agency's website). Surface water flood risk is subdivided into the four categories shown in Table 5-7.

Table 5-7: uFMfSW risk categories

Category	Definition
High	Flooding occurring as a result of rainfall with a greater than 1 in 30 chance in any given year (annual probability of flooding 3.3%)
Medium	Flooding occurring as a result of rainfall of between 1 in 100 (1%) and 1 in 30 (3.3%) chance in any given year.
Low	Flooding occurring as a result of rainfall of between 1 in 1,000 (0.1%) and 1 in 100 (1%) chance in any given year.
Very Low	Flooding occurring as a result of rainfall with less than 1 in 1,000 (0.1%) chance in any given year.

The updated uFMfSW shows that surface water predominantly follows topographical flow paths of existing watercourses or dry valleys with some isolated ponding located in low lying areas. Those areas at risk of surface water tend to correlate with the topography through East Hertfordshire; the land classified as flat land is vulnerable to surface water flooding whereas the land with moderate to steep slopes are less vulnerable. The uFMfSW maps can be used to determine surface water hotspots. Detailed uFMfSW maps are shown in Appendix D.

Locations to note with associated surface flood risk, using the uFMfSW 30-year and 100-year extents, are detailed below:

- There are many watercourses in East Hertfordshire which begin within or just outside of the district. Due to the topography of the land, a large majority of the surface water flow paths follow watercourses, for instance through many of the urban areas in the north of East Hertfordshire such as Brent Pelham and Great Horstead.
- There are numerous overland flow routes through the main urban areas of Hertford and Ware. These tend to follow either watercourse networks or road networks. In particular, there are flow routes along the main roads of the A414, A119 and the roads adjoining these. In Ware, surface water flow paths along the road network tend to flow in a southerly direction towards the River Lea. In Hertford, there are areas of ponding on low-lying land, particularly to the south of the railway line between Hertford and Ware and in the vicinity of the River Mimram-River Lea confluence.
- In Bishop's Stortford there are also numerous overland flow routes, which follow major and minor roads, including the A1250, Elm Road, Stanstead Road, Southmill Road and Stortford Hall Park. The majority of areas of surface water ponding in Bishop's Stortford occurs within the River Lea floodplain.
- In Buntingford, the majority of the surface water flow paths are along roads such as Baldock Road, Vicarage Road and Station Road. Here surface water flow paths are generally confined to roads and watercourses, although there are areas of ponding of surface water to the north of the town affecting isolated farm buildings.
- In some urban areas, surface water flow paths occur between two watercourses. For example in Puckeridge, surface water flow paths flow between the two branches of the Puckeridge tributary, affecting roads and properties in between. Also in Wadesmill, there are surface water flow paths flow between The Bourne and the River Rib.
- In some areas such as Walkern, surface water flow paths do not appear to follow defined watercourses but small field drains and ditches.
- Little Hadham and Puckeridge are vulnerable to surface water flooding due to areas of ponding on low lying ground.

Locations with associated surface flood risk, using the uFMfSW 1,000-year extent, are detailed below:

- The overland flows routes noted during the 30-year and 100-year extents are more significant and cause more extensive flooding during the 1,000-year event.
- The majority of the urban areas in the vicinity of the River Lea or its tributaries are shown to be at risk during the 1,000-year event.
- In some urban areas such as Hertford, Sawbridgeworth and Stanstead Abbots, many more new areas are shown to be affected by surface water flooding during the 1,000-year event which were not affected in the 30-year or 100-year events.
- In Hertford, the surface water flood extent during the 1,000-year event around the River Mimram-Lea confluence, north of the A119 and in the vicinity of the railway line between Hertford and Ware is significant.

It is clear that areas of East Hertfordshire are sensitive to surface water flooding and this should be taken into consideration as part of future development. Chapter 7.2.1 discusses surface water management and sustainable drainage systems (SuDS).

5.7 Groundwater flooding

In comparison to fluvial flooding, current understanding of the risks posed by groundwater flooding is limited and mapping of flood risk from groundwater sources is in its infancy. Under the Flood and Water Management Act (2010), LLFAs have powers to undertake risk management functions in relation to groundwater flood risk. Groundwater level monitoring records are available for areas on Major Aquifers. However, for lower lying valley areas, which can be susceptible to groundwater flooding caused by a high water table in mudstones, clays and superficial alluvial deposits, very few records are available. Additionally, there is increased risk of groundwater flooding where long reaches of watercourse are culverted as a result of elevated groundwater levels not being able to naturally pass into watercourses and be conveyed to less susceptible areas.

As part of the SFRA deliverables, mapping of the whole district has been provided showing the Areas Susceptible to Groundwater Flooding (AStGWF). The AStGWF is a strategic-scale map showing groundwater flood areas on a 1km square grid. The data was produced to annotate indicative Flood Risk Areas for PFRA studies and allow the LLFAs to determine whether there may be a risk of flooding from groundwater. This data shows the proportion of each 1km grid square, where geological and hydrogeological conditions indicate that groundwater might emerge. It does not show the likelihood of groundwater flooding occurring. It does not take account of the chance of flooding from groundwater rebound. This dataset covers a large area of land, and only isolated locations within the overall susceptible area are actually likely to suffer the consequences of groundwater flooding.

The AStGWF data should be used only in combination with other information, for example local data or historical data. It should not be used as sole evidence for any specific flood risk management, land use planning or other decisions at any scale. However, the data can help to identify areas for assessment at a local scale where finer resolution datasets exist.

The AStGWF mapping for East Hertfordshire can be found in Appendix E. The AStGWF shows that the areas with the highest susceptibility to groundwater flooding occur in the vicinity of the River Lea and the confluence of its tributaries and along the River Stort corridor. The only areas to have a greater than 75% susceptibility to groundwater flooding in the district are in Hertford and Ware. Generally, areas along the main tributaries of the River Lea have a groundwater susceptibility of between 25% and 50%. Generally, areas of higher ground have a susceptibility of less than 25%.

There have been incidents of historic groundwater flooding in East Hertfordshire which is thought to primarily be caused by the underlying geology. Recorded incidents of groundwater flooding are presented in Section 5.3.2. There may be an implication on the suitability of certain types of SuDS due to the groundwater vulnerability in East Hertfordshire; this is discussed in further detail in Chapter 8.

5.8 Sewer flooding

Sewer flooding occurs when intense rainfall overloads the sewer system capacity (surface water, foul or combined), and/or when sewers cannot discharge properly to watercourses due to high water levels. Sewer flooding can also be caused when problems such as blockages, collapses or equipment failure occur in the sewerage system. Infiltration or entry of soil or groundwater into the sewer system via faults within the fabric of the sewerage system, is another cause of sewer flooding. Infiltration is often related to shallow groundwater, and may cause high flows for prolonged periods of time.

Since 1980, the Sewers for Adoption guidelines have meant that most new surface water sewers have been designed to have capacity for a rainfall event with a 1 in 30 chance of occurring in any given year, although until recently this did not apply to smaller private systems. This means that, even where sewers are built to current specification, they are likely to be overwhelmed by larger events of the magnitude often considered when looking at river or surface water flooding (e.g. a 1 in 100 chance of occurring in a given year). Existing sewers can also become overloaded as new development adds to the discharge to their catchment, or due to incremental increases in roofed and paved surfaces at the individual property scale (urban creep). Sewer flooding is therefore a problem that could occur in many locations across the study area.

Historical incidents of flooding are detailed by Thames Water through their DG5 register. This database records incidents of flooding relating to public foul, combined or surface water sewers and displays which properties suffered flooding. For confidentiality reasons this data has been supplied on a postcode basis. Data covers all reported incidences as of 12th July 2016. The DG5 register is shown in Table 5-8.

Table 5-8: DG5 Register recorded flood incidents

Post Code	Recorded Flood Incidents	Post Code	Recorded Flood Incidents
AL6 0	4	SG120	4
CM210	6	SG127	8
CM219	16	SG128	18
CM226	1	SG129	6
CM231	1	SG137	4
CM232	14	SG138	1
CM233	16	SG141	2
CM234	2	SG142	10
CM235	8	SG143	21
RH4 3	0	SG2 7	8
SG106	2	SG2 9	1
SG111	3	SG3 6	6
SG112	4	SG9 9	13
Total: 179			
Note: Based on information provided on 12/07/16			

The DG5 register indicates a total of 179 recorded flood incidents in the East Hertfordshire District. The more frequently flooded postcodes are SG14 3, with 21 records, followed by SG12 8 with 18 records. These two postcodes are located within the areas of Hertford and Ware.

It is important to recognise the DG5 register does not contain information about properties and areas at risk of sewer flooding caused by operational issues such as blockages. Also the register represents a snap shot in time and will get outdated with properties being added to the register following rainfall events, whilst risk will be reduced in some locations by capital investment in

increase the capacity of the network. As such the sewer flooding flood risk register is not a comprehensive 'at risk register'.

5.9 The impact of climate change in East Hertfordshire

Climate change mapping has been provided in Appendix C. The effect tends to be an increase in the mapped flood extent. Smaller watercourses in the study area tend to be in areas of steeper topography with quite confined floodplains, and in these cases increases in flow do not result in a significant increase in flood extent.

It is recommended that the impact of climate change on a proposed site is considered as part of a detailed Flood Risk Assessment, using the percentage increases which relate to the proposed lifetime and the vulnerability classification of the development. The Environment Agency should be consulted to provide further advice for developers on how best to apply the new climate change guidance.

Chapter 10 provides further details on climate change for developers, as part of the FRA Guidance.

5.9.1 Climate change mapping methodology

For this SFRA update, the Environment Agency provided hydraulic models for watercourses within East Hertfordshire where detailed studies had been undertaken. Three scenarios were modelled to reflect the three climate change allowances for the '2080s' timeframe in the Thames River Basin District and i.e. 25%, 35% and 70% allowances.

For the Level 2 assessment, JFlow® modelling was used at sites which showed drains going through them on the OS mapping, but where they were not represented in the Environment Agency's Flood Zones, applying the relevant climate change factor to the 100-year event. JFlow® is JBA's proprietary 2D modelling software. A technical summary of how JFlow® works and how it has been used for this SFRA is provided in Appendix I.

The climate change modelling has been undertaken for the 100-year defended scenario, scaled up to the appropriate climate change percentage and therefore takes account for defences within the district. The modelling has been undertaken to assist the council with the preparation of their Local Plan. Developers will need to undertake a detailed assessment of climate change as part of the planning application process when preparing FRAs.

5.9.2 General impacts

The 2009 Hertfordshire Climate Change Scoping Study¹⁹ details some of the general risks relevant to the Hertfordshire as a result of climate change. Those risks relating to flood risk and drainage are as follows:

- Increased levels of fluvial flooding which may affect the location and scale of new development and the associated drainage and sewerage schemes.
- A need to increase the capacity of wastewater treatment plants and sewers;
- Reduced rainfall may increase the burden of water resources
- Increased risk of subsidence on clay soils due to greater shrink and swell activity from prolonged dry periods and localised flooding.

5.9.3 Fluvial and pluvial flooding

It is important to remember that even where flood extent may not significantly increase, flooding is likely to become more frequent under a climate change scenario. For example, what is currently an event with a 2% probability of occurring in any one year, may increase to say a 5% probability under climate change.

The impact of an event with a given probability is also likely to become more severe. For example, as water depths, velocities and flood hazard increase, so will the risk to people and property. Although qualitative statements can be made as to whether extreme events are likely to increase

or decrease over the UK in the future, there is still considerable uncertainty regarding the magnitude of the localised impact of these changes.

5.9.4 Groundwater

The effect of climate change on groundwater flooding problems, and those watercourses where groundwater has a large influence on winter flood flows, is more uncertain. Milder wetter winters may increase the frequency of groundwater flooding incidents in areas that are already susceptible, but warmer drier summers may counteract this effect by drawing down groundwater levels to a greater extent during the summer months.

5.10 Cumulative impact of development and cross-boundary issues

5.10.1 Cumulative impact

When allocating land for development, consideration must be given to the potential cumulative impact of the loss of floodplain storage volume. The effect of the loss of volume should be assessed, at both the development and elsewhere within the catchment and, if required, the scale and scope of appropriate mitigation should be identified. Whilst the loss of storage for individual developments may only have a minimal impact on flood risk, the cumulative effect of multiple developments may be more severe.

Depending on the location, size and nature of development within the possible sites, there is the potential for loss of storage and floodplain connectivity in the upper reaches of watercourses within the study area which could potentially increase flood risk downstream. However, conditions imposed by East Hertfordshire District Council should allow for mitigation measures so any increase in runoff as a result of development is properly managed and should not exacerbate flood risk issues either within, or outside of, the Council's administrative area.

The cumulative impact should be considered at the planning application and development design stages and the appropriate mitigation measures undertaken to ensure flood risk is not exacerbated, and in many cases the development should be used to improve the flood risk.

5.10.2 Cross-boundary issues

Flood Risk

Future large-scale development, both within and outside East Hertfordshire can have the potential to affect flood risk to existing development and surrounding areas. East Hertfordshire has boundaries with the following Local Authorities:

- Broxbourne Borough Council
- Epping Forest District Council
- North Hertfordshire District Council
- Stevenage Borough Council
- Welwyn Hatfield Borough Council
- Uttlesford District Council
- Harlow District Council

The Lea Valley Regional Park Authority (LVRPA) also partially falls within the study area. Although the LVRPA is not a planning authority, it has a range of powers and duties in relation to the statutory planning process which include preparing a plan detailing proposals for future management and the development of the Regional Park.

The topography of the study area means that a large number of the watercourses rise either within East Hertfordshire or within the neighbouring authority administrative areas including Welwyn Hatfield, Stevenage, North Hertfordshire, Uttlesford, and Harlow. Such neighbouring authorities have the potential to affect flood risk within East Hertfordshire.

The watercourses within the study area generally flow into the River Lea network and south, out of the study area. Therefore, the neighbouring authorities to the south of East Hertfordshire i.e. Broxbourne and the LVRPA may potentially be affected by flood risk within East Hertfordshire.

Depending on the location, size and nature of development within East Hertfordshire, neighbouring authority administrative areas and the LVRPA, there is the potential to increase the impermeable area at the development site and to increase runoff entering nearby watercourses. However; conditions imposed by East Hertfordshire District Council, neighbouring authorities and the LVRPA should allow for mitigation measures so any increase in runoff as a result of development is properly managed and should not exacerbate flood risk issues either within, or outside of, the Council's administrative area. It would be a requirement on neighbouring authorities and the LVRPA that consideration is given to the wider catchment implications of drainage mitigation measures, rather than just assessing immediate local effects.

Water Quality

In addition to cross-boundary issues regarding flood risk, there are also cross-boundary issues relating to water quality.

In England, the Environment Agency is responsible for the delivery of the WFD objectives, and has therefore produced River Basin Management Plans describing how the WFD will be achieved. All waterbodies have to achieve Good Ecological Status (GES) or Good Ecological Potential (GEP) by a set deadline.

Development or agriculture in the upper catchments of watercourses that flow across boundaries into East Hertfordshire can potentially impact on the quality of water of watercourses within the study area. Development should consider the quality of the water that is released from sites and the impact it may have on the water quality on any receiving waterbodies. Future development should ensure there is no adverse impact on the quality of watercourses within the Council administrative area. Any impacts identified should then be considered in relation to the WFD Ecological, Hydromorphological and Chemical Status of the waterbody and the status objectives. Opportunities to improve the status of watercourses should also be considered.

6 Flood Defences and Assets

6.1 Flood defences

A number of flood alleviation schemes (FAS) have been investigated and commissioned within East Hertfordshire.

Flood alleviation schemes identified within the SFRA area may involve formal defences, initiatives to improve drainage, and/or land management to reduce the risk of high velocity overland surface runoff.

The condition of existing flood defences and whether they will continue to be maintained and/or improved in the future is a factor that needs to be considered as part of the risk based sequential approach and, in light of this, whether possible site allocations for developments are appropriate and sustainable. In addition, detailed Flood Risk Assessments (FRAs) will need to thoroughly explore the condition of defences, especially where these defences are informal and demonstrate a wide variation of condition grades. It is important that all of these assets are maintained to a good condition and their function remains unimpaired.

6.1.1 Defence standard of protection and residual risk

One of the principal aims of this SFRA is to outline the present risk of fluvial flooding from watercourses across East Hertfordshire that includes consideration of the effect of flood risk management measures (including flood banks and defences). The fluvial flood risk presented in the SFRA is of a strategic nature for the purpose of preparing evidence on possible site options for development. In the cases where a specific site risk assessment is required, detailed studies should seek to refine the current, broad, understanding of flood risk from all sources.

Consideration of the residual risk behind flood defences should be considered as part of detailed site specific flood risk assessments. The residual risk of flooding in an extreme flood event or from failure of defences should also be carefully considered.

It is important that all of these assets are maintained to a good condition and their function remains unimpaired. Developers should also consider the Standard of Protection (SoP) provided by defences and residual risk as part of a site-specific FRA.

Standard of Protection

Flood defences are designed to give a specific standard of protection, reducing the risk of flooding to people and property in flood prone areas. For example, a flood defence with a 1% AEP standard of protection means that the flood risk in the defended area is reduced to a 1% chance of flooding in any given year.

Although flood defences are designed to a standard or protection it should be noted that, over time, the actual standard of protection provided by the defence may decrease, for example due to deterioration in condition or increases in flood risk due to climate change.

6.2 Overview of existing flood defences

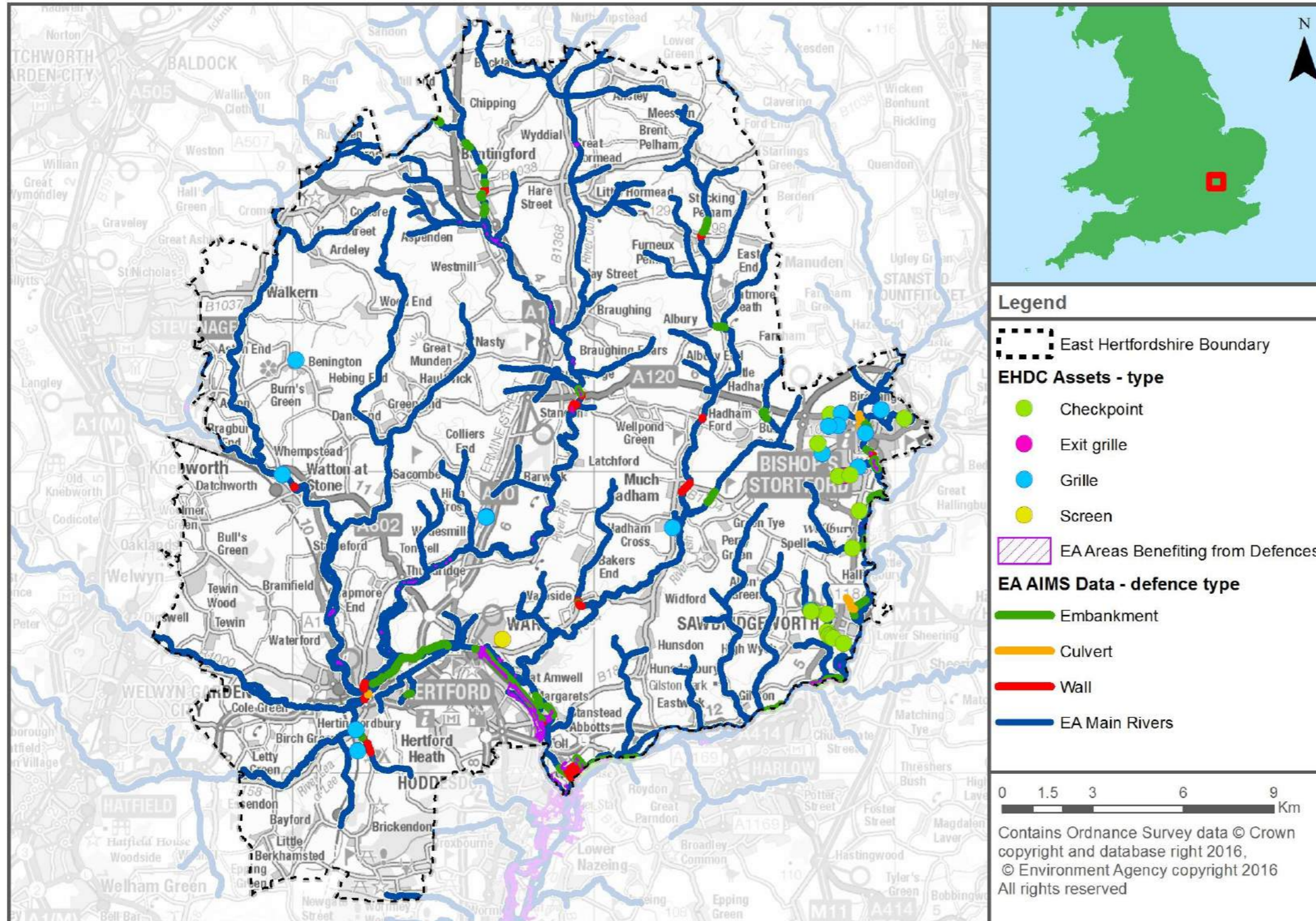
An overview of existing flood defences has been undertaken using the Environment Agency's Asset Infrastructure Management System (AIMS) data, the Environment Agency Areas Benefiting from Defences dataset and East Hertfordshire District Council's 'grilles, checkpoints and screens' dataset.

Figure 6-1 provides an overview of existing flood defences in East Hertfordshire. The majority of the flood defences are primarily located in Hertford, Ware and Bishops Stortford; an overview of the flood defences at these locations is summarised below.

It should be noted that the standard of protection listed refers to the design standard; the actual standard of protection provided by the defence may have decreased, for example due to deterioration in condition or increases in flood risk due to climate change.



Figure 6-1: Flood defences in East Hertfordshire District

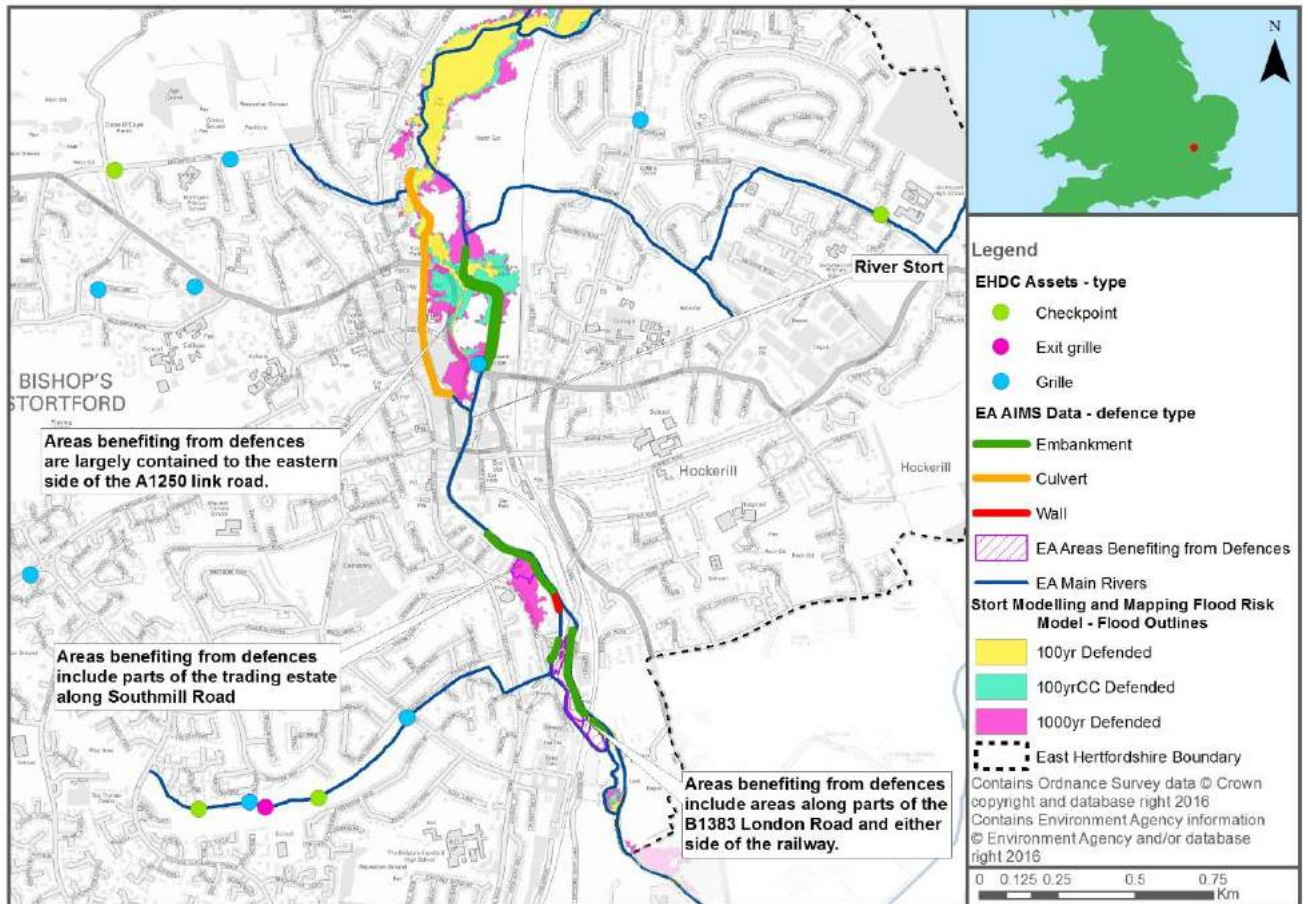


6.2.1 Bishop's Stortford

Parts of Bishop's Stortford, located in the east of East Hertfordshire District, benefit from flood defences (see Figure 6-2). There are a series of embankments, with a combined length of ~2.1km, providing between a 5-year and 1,000-year design standard of protection against fluvial flooding from the River Stort. All embankments are privately maintained. There is also a ~42m flood wall, maintained by the Environment Agency, providing a 1,000-year design standard of protection. The Environment Agency AIMS dataset also shows that there is a ~785m long culvert, maintained by the local authority, which provides a 1,000-year design standard of protection.

The defended model flood outlines shown in Figure 6-2 are taken from the River Stort Modelling and Mapping Flood Risk Study (2010). Note, the climate change results did not use the new climate change allowances.

Figure 6-2: Bishop's Stortford Flood Defences



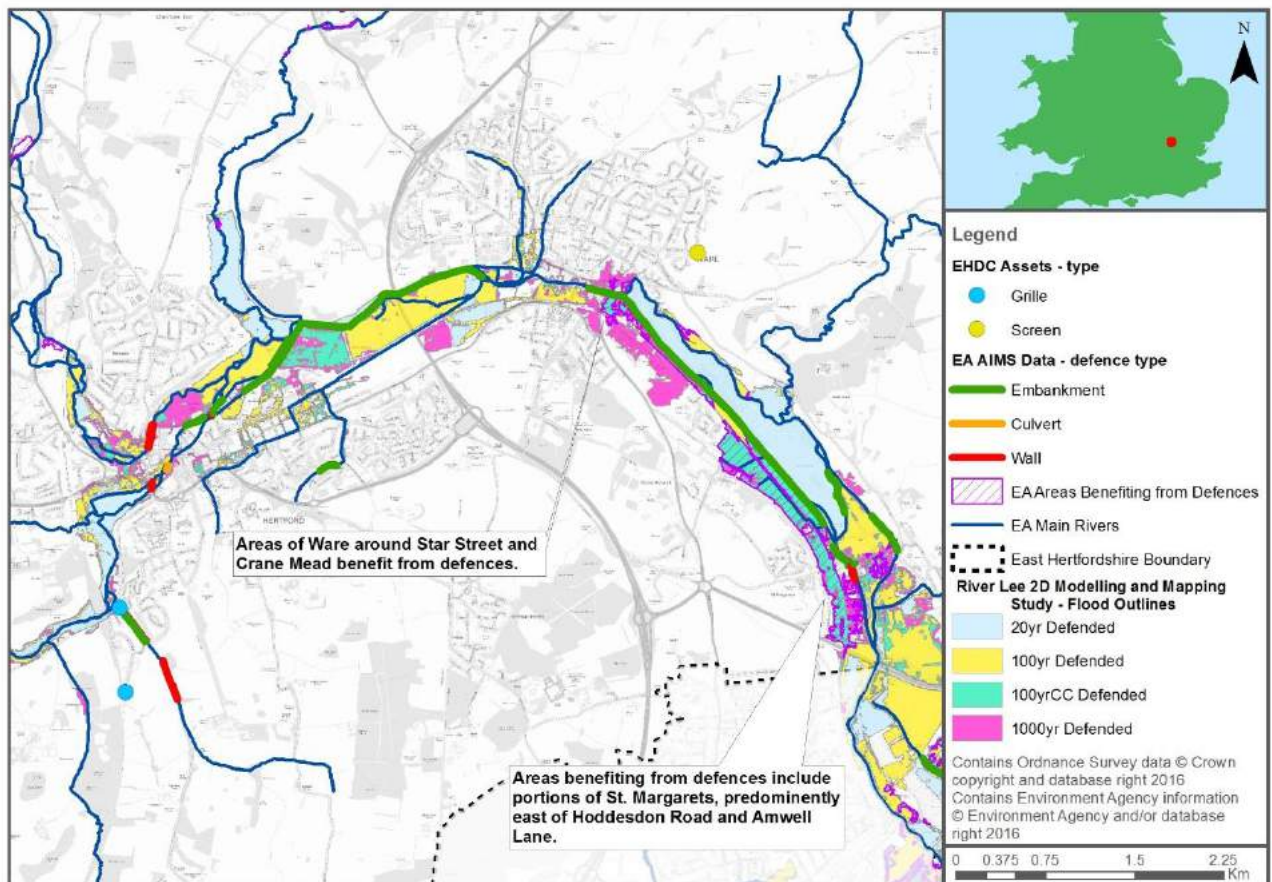
6.2.2 Hertford and Ware

The settlements of Hertford and Ware, located in the south of East Hertfordshire District, benefit from flood defences (see Figure 6-3). In Hertford, there are a series of embankments with a combined length of ~3.2km, providing between a 2-year and 20-year design standard of protection against fluvial flooding from the Brickendon Brook and the River Lea. Furthermore, there is a series of flood walls, with a combined length of ~0.5km, providing between a 2-year and 100-year design standard of protection against fluvial flooding from the Brickendon Brook, the River Beane and the River Lea. There is one ~37m long culvert, providing a 100-year design standard of protection against fluvial flooding from the River Lea. The assets are maintained by a combination of the Environment Agency, local authority and private owners.

In Ware, there are a series of embankments with a combined length of ~3.9km, providing between a 2-year and 200-year design standard of protection against fluvial flooding from the River Lea and Stanstead Mill Stream. A ~127m long flood wall, provides a 2-year design standard of protection against flooding from the River Lea. All assets are privately maintained. Ongoing investigations seeking to reduce flood risk to Stanstead Abbots are proposed; these are discussed further in Section 6.2.3.

The defended modelled flood outlines shown in Figure 6-3 are taken from the River Lee 2D Modelling and Mapping Study (2014). Note, the climate change results did not use the new climate change allowances.

Figure 6-3: Hertford and Ware Flood Defences



6.2.3 On-going Flood Alleviation Schemes

The Environment Agency has provided information on on-going Flood Alleviation Schemes in East Hertfordshire including:

1. **A120 (Little Hadham) Bypass and FAS:** Proposals have been put forward for a A120 bypass route around Little Hadham, East Hertfordshire. With the proposed bypass, there is the potential to build in measures to help reduce the risk of flooding from the River Ash and its tributaries, the Albury and the Lloyd Taylor Drain. Such features include using highway embankments to temporarily hold back flood water (i.e. a flood storage area but without any excavation) where the road is above existing ground levels and diverting the Lloyd Taylor Drain around the edge of the housing in Lloyd Taylor Close. The Environment Agency and Hertfordshire County Council are progressing with plans for these flood alleviation measures, with Arup involved in the highways engineering.
2. **Stanstead Abbots:** Stanstead Abbots Drain, a tributary of the River Lea, is the main source of fluvial flooding to Stanstead Abbots. During the winter of 2013/14, significant flooding impacted the area on four separate occasions. A number of measures have been proposed to provide protection following an initial assessment of flood risk to the area. The various options have been shortlisted based on their technical viability, practicality and economic potential. These options will be appraised in detail during the next stage including a full assessment of residential and non-residential damages and detailed options economic assessment.
3. **Furneux Pelham:** Following an initial assessment on flood risk in Furneux Pelham from the River Ash, a number of measures have been proposed to provide protection to properties adjacent to the River Ash which have experienced flooding in recent years. These options have been shortlisted based on their technical viability, practicality and economic potential. Options will be appraised in detail during the next stage including a full assessment of residential and non-residential damages and detailed option economic assessment.

6.2.4 Future flood defences

The future of flood defences in East Hertfordshire is discussed in the following documents:

- Thames River Basin Flood Risk Management Plan, 2015 (see Section 2.11.1)
- Lower Lee Flood Risk Management Strategy, 2013 (see Section 2.8)
- Hertfordshire County Council Local Flood Risk Management Strategy, 2011 (see Section 2.3.2)
- River Thames Catchment Flood Management Plan, 2009 (see Section 2.7)

All of the above documents refer to the recommendations made in the 2013 Lower Lee Flood Risk Management Strategy regarding the future of flood risk management activities in the Lower Lee catchment (the recommendations are detailed in Section 2.8). The vast majority of the recommended measures for watercourses in East Hertfordshire revolve around a commitment to maintain, refurbish and replace existing flood defences and other flood risk management assets such as the Hardmead and Stanstead sluices.

6.3 Residual flood risk from defences

6.3.1 Flood defences

The residual risk of flooding in an extreme flood event or from failure of defences should be carefully considered. The definition of residual risk is discussed in Section 3.4.2. The residual risk can comprise:

- The effects of a flood with a magnitude greater than that for which the defences or management measures have been designed to alleviate (the 'design flood'). This can result in overtopping of flood banks, failure of flood gates to cope with the level of flow or failure of pumping systems to cope with the incoming discharges.
- Failure of the defences or flood risk management measures to perform their intended duty. This could be breach failure of flood embankments, failure of flood gates to operate in the intended manner or failure of pumping stations.

Parts of East Hertfordshire rely on formal flood defences for protection against fluvial flooding; these are predominantly located along the River Lea in Hertford and Ware. Planned defence works will further increase the existing standard of protection offered to certain communities and will protect new parts of East Hertfordshire from fluvial flooding. Consequently, there are areas vulnerable to rapid inundation in the event of a breach / failure.

Any inundation resulting from a failure in raised embankments (which are not formal flood defences and no areas of development are currently indicated as benefiting from, or being reliant upon, these structures), it would be unlikely that flooding would extend beyond the Flood Zones or impact upon any existing development, or any future built development.

The impact of a breach or impoundment failure is dependent on the location, the magnitude of the event, and the type of breach. Siting of any built development downstream within close proximity should be avoided unless it can be demonstrated that flood risks due to rapid inundation may be eliminated or adequately mitigated. The Environment Agency should be consulted at site-specific development level for advice on breach/ overtopping parameters, if it is a requirement to model such an event.

6.3.2 Flood infrastructure maintenance

There is potential for the risk of flooding to increase in areas where flood alleviation measures are not maintained regularly and/or adequately. Breaches in raised flood defences are most likely to occur where the defence has been degraded or not maintained to its design standard. Drainage infrastructure in urban areas can also frequently become blocked with debris which can lead to blockages in culverts and backing up of a watercourse. It is therefore essential that all flood alleviation schemes and hydraulic structures are regularly maintained to their specified design standard. It is the responsibility of the riparian owner to maintain the watercourses or defences to a suitable standard. The Local Authority or Environment Agency has permissive powers to act should the riparian owner not satisfy their maintenance requirements.

6.4 LLFA Asset Register

Hertfordshire County Council has compiled a Flood Risk Asset Register for the County under Section 21 of the FWMA (2010). This list is compiled from flood investigations and local FRAs enabling data to be collected on structures and features which are likely to have a significant effect on flood risk within Hertfordshire. Examples of structures include culverts, drainage ditches and embankments and can be both natural and man-made.

Before structures are added to the Asset Register, the relevant information about each asset such as ownership and condition are recorded. The list is updated periodically as Hertfordshire County Council becomes aware of significant assets.

Table 6-1: LLFA Asset Register within East Hertfordshire

Asset No.	Location	X	Y	Asset Type	Asset Description	Water source
01EHDC	Acorn Street, Hunsdon (outside Spellers House)	541680	213330	Culvert	Highways culvert	Unnamed watercourse
02EHDC	Robins Nest Hill junction with Lower Hatfield Road (B158)	529508	209585	Culvert	Highways culvert	Unnamed watercourse

The data shown above was extracted from the LLFA asset register. This list of structures which have a significant impact on local flood risk was last updated in 24 March 2015.

7 Flood risk from artificial waterbodies

7.1 Flood risk from canals

Canals do not generally pose a direct flood risk as they are a regulated waterbody. The residual risk from canals tends to be associated with lower probability events such as overtopping and embankment failure (breach and sudden escape of the water retained in the canal channel).

The residual risk associated with canals is more difficult to determine as it depends on a number of factors including, for example, the source and magnitude of surface water runoff into the canal, the size of the canal, construction materials and level of maintenance. The probability of the risk of a breach is managed by continued maintenance.

For development applications located in the vicinity of a canal, it is recommended that overtopping and / or breach of the structure is considered as part of a site-specific FRA to establish the residual risk to the development.

7.1.1 Overtopping

The level of water in canals is normally controlled by the level and size of weirs. When surface water enters a canal, the level of water rises. The water level may then reach a point in which it discharges from the canal through control structures such as weirs. If the capacity of these control structures be exceeded, or should they become blocked, overtopping may occur.

7.1.2 Breach

Breaches or embankment failure may be caused by a number of factors including:

- Culvert collapse.
- Overtopping.
- Animal burrowing.

Flooding from a breach of a canal embankment is largely dictated by canal and ground levels, canal embankment construction, breach characteristics and the volume of water within the canal that can discharge into the lower lying areas behind the embankment. The volume of water released during a breach is dependent on the upstream pound length (i.e. the distance between locks) and how quickly the operating authorities can react to prevent further water loss, for example by the fitting of stop boards to restrict the length of the canal that can empty through the breach, or repair of the breach.

7.1.3 Canals in East Hertfordshire

There is one canal within East Hertfordshire; the River Lee Navigation Channel which starts in Hertford, flowing parallel to the main River Lea channel, and through Ware and Stanstead Abbots before leaving the study area to the borough of Broxbourne. Within the study area, the River Lee Navigation Channels is shown to be connected to the River Lea and as such would interact and has a potential to become a flow path, if the canal were overtopped or breached.

There are no recorded incidents of overtopping or breaches associated with this canal. However, any development proposed adjacent to a canal, should include a detailed assessment of how a canal breach would impact the site, as part of a site-specific Flood Risk Assessment.

7.1.4 Navigational channels / other modified watercourses

River Stort (navigational)

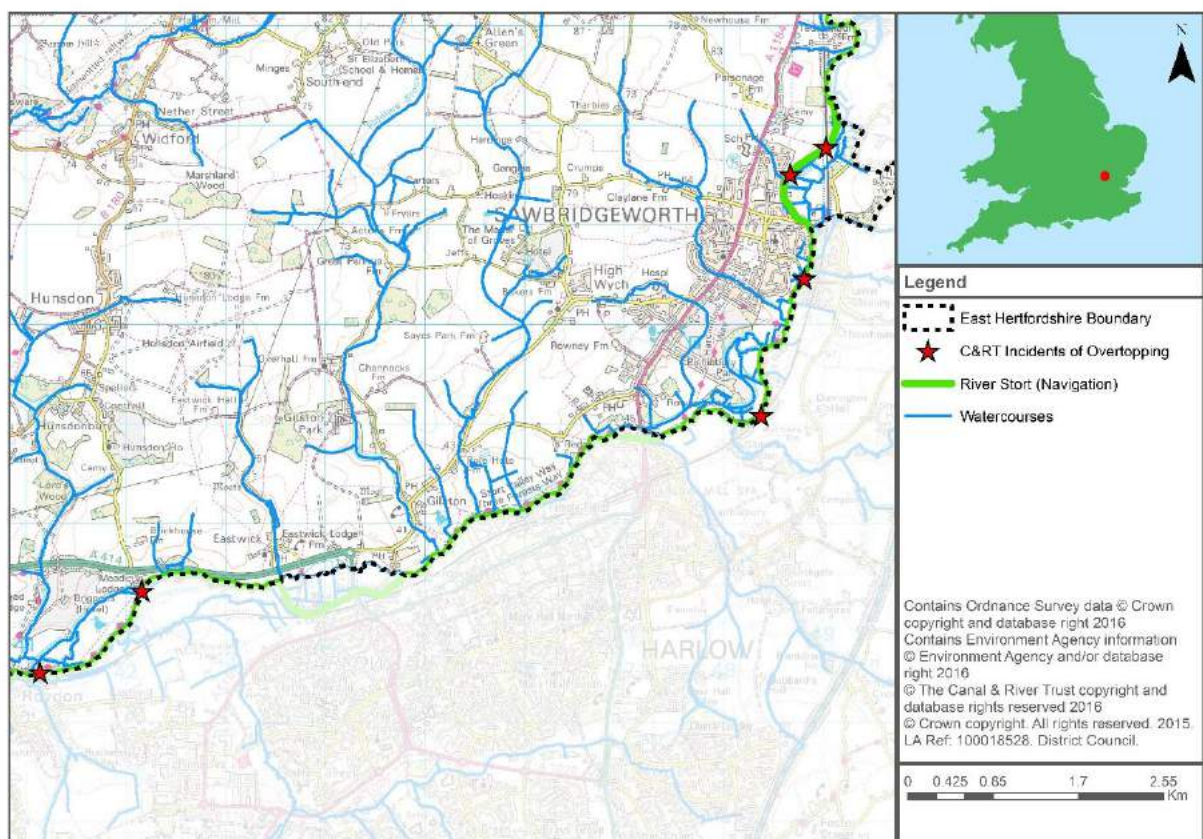
The River Stort is navigable throughout much of its course in East Hertfordshire. The level of water in the River Stort navigational channel is normally controlled by the level and size of weirs. When surface water enters the navigational channel, the level of water rises. The water level may then reach a point in which it discharges from the navigational channel through control structures, such as weirs. Should the capacity of these control structures be exceeded, or should they become blocked, overtopping may occur.

The Canal and River Trust, the navigation authority for the River Stort, have supplied records of overtopping incidents along this watercourse in East Hertfordshire which are displayed in Figure

7-1. It should be noted that this information does not mean that the assets listed will necessarily have a significant (or any other) effect on flood risk. There have been seven incidents of overtopping; three of the incidents were recorded in April 2012 and a further three incidents were recorded in November 2012. The majority of the incidents were reported to have been caused by heavy rainfall which caused the River Stort to overtop its banks, flooding the adjacent tow paths.

For proposed site allocations in the emerging District plan and / or development applications located around the vicinity of the River Stort navigation, overtopping of this watercourse may need to be considered as part of a site-specific FRA to establish the residual risk to the development.

Figure 7-1: River Stort Navigation – incidents of overtopping



The New River

The New River is not a river but a water supply aqueduct, bringing drinking water from Hertfordshire to North London²⁰. The New River is operated by Thames Water and regulated by sluice gates and boreholes which enable surplus treated water to be stored in chalk aquifers and pumped into the New River when extra water is required. As the New River is regulated, the flood risk posed by it is considered to be low. However, through St. Margaret's, the New River is perched above land from its right bank.

For proposed site allocations in the emerging District plan and / or development applications located around the vicinity of the New River, it is recommended that overtopping analysis, and where perched, a breach analysis is considered as part of a site-specific FRA to establish the residual risk to the development.

7.2 Flood risk from reservoirs

Reservoirs with an impounded volume greater than 25,000 cubic metres are governed by the Reservoir Act 1975 and are listed on a register held by the Environment Agency. The level and standard of inspection and maintenance required under the Act means that the risk of flooding from reservoirs is relatively low. Recent changes to legislation under the Flood and Water Management Act require the Environment agency to designate the risk of flooding from reservoirs over 25,000 cubic metres and at some time in the future to consider the risk from reservoirs with a volume greater than 10,000 cubic metres. The Environment agency is currently progressing a 'Risk Designation' process so that the risk is formally determined.

Flooding from reservoirs occurs following partial or complete failure of the control structure designed to retain water in the artificial storage area.

Reservoir flooding is very different from other forms of flooding. It may happen with little or no warning and evacuation will need to happen immediately. The likelihood of such flooding is difficult to estimate, but it is less likely than flooding from rivers of surface water. It may not be possible to seek refuge upstairs from floodwater as buildings could be unsafe or unstable due to the force of water from the reservoir breach or failure.

The risk of inundation to East Hertfordshire as a result of reservoir breach or failure of a number of reservoirs within the area was assessed as part of the National Inundation Reservoir Mapping (NIRIM) study.

The Environment Agency maps represent a credible worst case scenario. In these circumstances it is the time to inundation, the depth of inundation, the duration of flooding and the velocity of flood flows that will be most influential.

The risk to development from reservoirs is residual but developers should consider reservoir flooding during the planning stage.

- Developers should seek to contact the reservoir owner to obtain information which may include:
 - reservoir characteristics: type, dam height at outlet, area/volume, overflow location;
 - operation: discharge rates / maximum discharge;
 - discharge during emergency drawdown; and
 - inspection / maintenance regime.
- Developers should apply the sequential approach to locating development within the site. The following questions should be considered:
 - can risk be avoided through substituting less vulnerable uses or by amending the site lay-out?
 - can it be demonstrated that less vulnerable uses for the site have been considered and reasonably discounted? and
 - can layout be varied to reduce the number of people or flood risk vulnerability or building units located in higher risk parts of the site?
- Developers should consult with relevant authorities regarding emergency plans in case of reservoir breach
- In addition to the risk of inundation, those considering development in areas affected by breach events should also assess the potential hydraulic forces imposed by the rapid flood event and check that that the proposed infrastructure fabric can withstand the loads imposed on the structures by a breach event.

There are four reservoirs located within East Hertfordshire, including Lancaster Lake, Bomb Pond, Rye Meads Lagoons 10, 12, 14 & 16 and Bonnington's Lake.

There are also a number of reservoirs outside of the area whose inundation mapping is shown to affect East Hertfordshire, as detailed in Table 7-1 and shown in Appendix F.

The risk to development from reservoirs is residual but developers should consider reservoir flooding during the planning stage.

Table 7-1: Reservoirs that may potentially affect East Hertfordshire in the event of a breach

Reservoir	Location (grid reference)	Reservoir owner	Environment Agency area	Local Authority	Reservoir located in East Hertfordshire?
Lancaster Lake	546691, 218404	Collins	Environment Agency - Hertfordshire and North London	Hertfordshire County Council	Yes
Bomb Pond	547382, 218191	Collins	Environment Agency - Hertfordshire and North London	Hertfordshire County Council	Yes
Shrubbs Farm Reservoir (ID395)	551864, 213504	Liddell	Environment Agency - Hertfordshire and North London	Essex County Council	No
Rye Meads Lagoons 11, 13, 15 & 17	538634, 209944	Thames Water Ltd	Environment Agency - Hertfordshire and North London	Hertfordshire County Council	No
Rye Meads Lagoons 10, 12, 14 & 16	539232, 209756	Thames Water Ltd	Environment Agency - Hertfordshire and North London	Hertfordshire County Council	Yes
Hatfield Forest Lake	554187, 219751	The National Trust	Environment Agency - Hertfordshire and North London	Essex County Council	No
Bonnington's Lake	541115, 212982	Dixon	Environment Agency - Hertfordshire and North London	Hertfordshire County Council	Yes
Balancing Pond C	554966, 221427	Stansted Airport Ltd	Environment Agency - Hertfordshire and North London	Essex County Council	No
Aston Valley FSA	526581, 221696	Environment Agency	Environment Agency - Hertfordshire and North London	Hertfordshire County Council	No
Ridlins Wood FSA	526493, 222277	Environment Agency	Environment Agency - Hertfordshire and North London	Hertfordshire County Council	No
Wychdell FSA	526557, 221605	Environment Agency	Environment Agency - Hertfordshire and North London	Hertfordshire County Council	No
Brocket Hall Lake	521471, 212579	Brocket Hall Estate	Environment Agency - Hertfordshire and North London	Hertfordshire County Council	No
Luton Hoo Lake Lower	511645, 218603	Luton Hoo Park Ltd	Environment Agency - Hertfordshire and North London	Central Bedfordshire Council	No
Fairlands Lake	525211, 223760	Stevenage Leisure Ltd	Environment Agency - Hertfordshire and North London	Hertfordshire County Council	No
The Broadwater	525098, 209795	The Gasgoine Cecil Estates	Environment Agency - Hertfordshire and North London	Hertfordshire County Council	No

7.2.1 Residual Risk from Reservoirs

In terms of impounding structures, considered in Section 7.2, although the probability of occurrence is low, there is the potential for the structures to fail suddenly, releasing significant volumes of floodwater within a short duration towards downstream areas. Consequences downstream are relatively high if there is residential and commercial development, and critical infrastructure. The terrain is also quite flat and low lying along the River Lea corridor, so this increases the potential for the floodwaters to spread wider.

Impoundments which fall under the Reservoirs Act are inspected and regularly maintained, and therefore the likelihood of failure is considered to be very low.

If the site is shown to be at risk of a reservoir failure (i.e. the site is located in the reservoir flood maps) it is recommended that at a site-specific development level that:

- The reservoir owners are contacted to confirm the Reservoir Risk Designation (if determined) and the inspection and maintenance regime of the reservoir.
- Consideration is given to the impact of a breach to persons and property on site.
- Where deemed necessary, consideration of a reservoir breach is included within a Flood Warning and Evacuation Plan (e.g. on site containment).
- If necessary, the Environment Agency are consulted for advice.



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8 Surface water management and SuDS

8.1 What is meant by Surface Water Flooding?

For the purpose of this SFRA, the definition of surface water flooding is that set out in the Defra SWMP guidance. Surface water flooding describes flooding from sewers, drains, and ditches that occurs during heavy rainfall in urban areas, in addition to surface water runoff in rural areas, for example from steep slopes along the edge of the district.

Surface water flooding includes:

- **Pluvial flooding:** flooding as a result of high intensity rainfall when water is ponding or flowing over the ground surface (overland surface runoff) before it either enters the underground drainage network or watercourse or cannot enter it because the network is full to capacity.
- **Sewer flooding:** flooding that occurs when the capacity of underground water conveyance systems is exceeded, resulting in flooding inside and outside of buildings. Normal discharge of sewers and drains through outfalls may be impeded by high water levels in receiving waters which may cause water to back up and flood on the urban surface. Sewer flooding can also arise from operational issues such as blockages or collapses of parts of the sewer network.
- **Overland flows entering the built up area from the rural / urban fringe:** includes overland flows originating from groundwater springs.

8.2 Role of the LLFA and Local Planning Authority in surface water management

From April 2015 local planning policies and decisions on planning applications relating to major development or major commercial development should ensure that sustainable drainage systems for management of run-off are put in place. The approval of sustainable drainage solution lies with the Local Planning Authority.

In April 2015 Hertfordshire County Council was made a statutory consultee on the management of surface water from major developments. They also provide pre-application advice on surface water drainage.

Major developments, as defined in the Town and Country Planning (Development Management Procedure) (England) Order 2015, are considered to be where:

- The number of dwelling houses to be provided is 10 or more; or
- The development is to be carried out on a site having an area of 0.5 hectares or more and the number of dwelling houses to be constructed is not known;
- The provision of a building or buildings where the floor space to be created by the development is 1,000 square metres or more; or
- Development carried out on a site having an area of 1 hectare or more.

Minor applications are defined to be:

- Up to a maximum of 9 dwelling houses; or
- Under 0.5ha; or
- 999m² of non-residential property.

When considering planning applications, local planning authorities should seek advice from the relevant flood risk management bodies, principally the LLFA on the management of surface water (including what sort of SuDS they would consider to be reasonably practicable), satisfy themselves that the proposed minimum standards of operation are appropriate and ensure, through the use of planning conditions or planning obligations, that there are clear arrangements for on-going maintenance over the development's lifetime. Judgement on what SuDS system would be

reasonably practicable should be through reference to Defra’s Non-Statutory Technical Standards²¹ and should take into account design and construction costs.

8.3 Sustainable Drainage Systems (SuDS)

SuDS provide a means of dealing with the quantity and quality of surface water whilst offering additional benefits over traditional systems of improving amenity and biodiversity. It is often found that SuDS are cheaper to construct and maintain than traditional piped drainage solutions, and a well-designed SuDS system can increase property values.

SuDS can take many forms, and can therefore be designed to fit into the majority of spaces within a development, either as a new-build or retrofit solution.

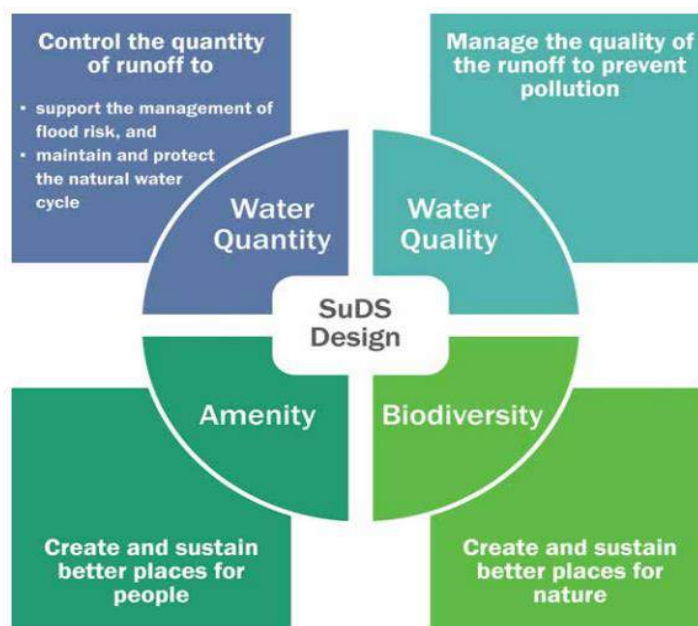
The correct use of SuDS also allows developments to counteract the negative impact that urbanisation has on the water cycle by promoting infiltration and replenishing ground water supplies. SuDS when properly designed can improve the quality of life within a development offering additional benefits such as:

- Improving air quality
- Regulating building temperatures
- Reducing noise
- Providing education opportunities

All new major development proposals should ensure that sustainable drainage systems for management of run-off are put in place. The developer is responsible for ensuring the design, construction and future/ongoing maintenance of such a scheme is carefully and clearly defined, and a clear and comprehensive understanding of the existing catchment hydrological processes and existing drainage arrangements is essential.

It is essential that the consideration of sustainable drainage takes place at an early stage of the development process – ideally at the master-planning stage. This will assist with the delivery of well designed, appropriate and effective SuDS. Proposals should also comply with the key SuDS principles regarding solutions that deliver multiple long-term benefits. These four principles are shown in Figure 8-1.

Figure 8-1: Four pillars of SuDS design



Source: The SuDS Manual (C753)

8.4 Types of SuDS Systems

There are many different SuDS techniques that can be implemented in attempts to mimic pre-development drainage (

Table 8-1). The suitability of the techniques will be dictated in part by the development proposal and site conditions. Advice on best practice is available from the Environment Agency and the Construction Industry Research and Information Association (CIRIA) e.g. the CIRIA SuDS Manual C753 (2015).

Table 8-1: Examples of SuDS techniques and potential benefits

SuDS Technique	Flood Reduction	Water Quality Treatment & Enhancement	Landscape and Wildlife Benefit
Living roofs	✓	✓	✓
Basins and ponds	✓	✓	✓
Constructed wetlands	✓	✓	✓
Balancing ponds	✓	✓	✓
Detention basins	✓	✓	✓
Retention ponds	✓	✓	✓
Filter strips and swales	✓	✓	✓
Infiltration devices	✓	✓	✓
Soakaways	✓	✓	✓
Infiltration trenches and basins	✓	✓	✓
Permeable surfaces and filter drains	✓	✓	
Gravelled areas	✓	✓	
Solid paving blocks	✓	✓	
Porous pavements	✓	✓	
Tanked systems	✓		
Over-sized pipes/tanks	✓		
Storm cells	✓		

When installing SuDS consideration should be given to water recycling technologies which can be incorporated into the design. The use of such technologies offers a means to not only reduce the amount of water which is dealt with by the drainage system but also help ease water available issues for the region as a whole. Example of water recycling could be the collection of water from roofs which could be stored and used for internal infrastructure (e.g. flushing toilets) or for watering local planting.

The SuDS hierarchy establishes a preference for certain types of SuDS systems. The aim should be to discharge surface water run off as high up the hierarchy of drainage options as reasonably practical. The hierarchy of drainage which should be considered is:

1. Into the ground (infiltration)
2. To a surface water body
3. To a surface water sewer, highway drain, or another drainage system
4. To a combined sewer.

8.4.1 Treatment

A key part of the four pillars of SuDS is to provide the maximum improvement to water quality through the use of the SuDS management train. To maximise the treatment within SuDS, CIRIA recommends²² the following good practice is implemented in the treatment process:

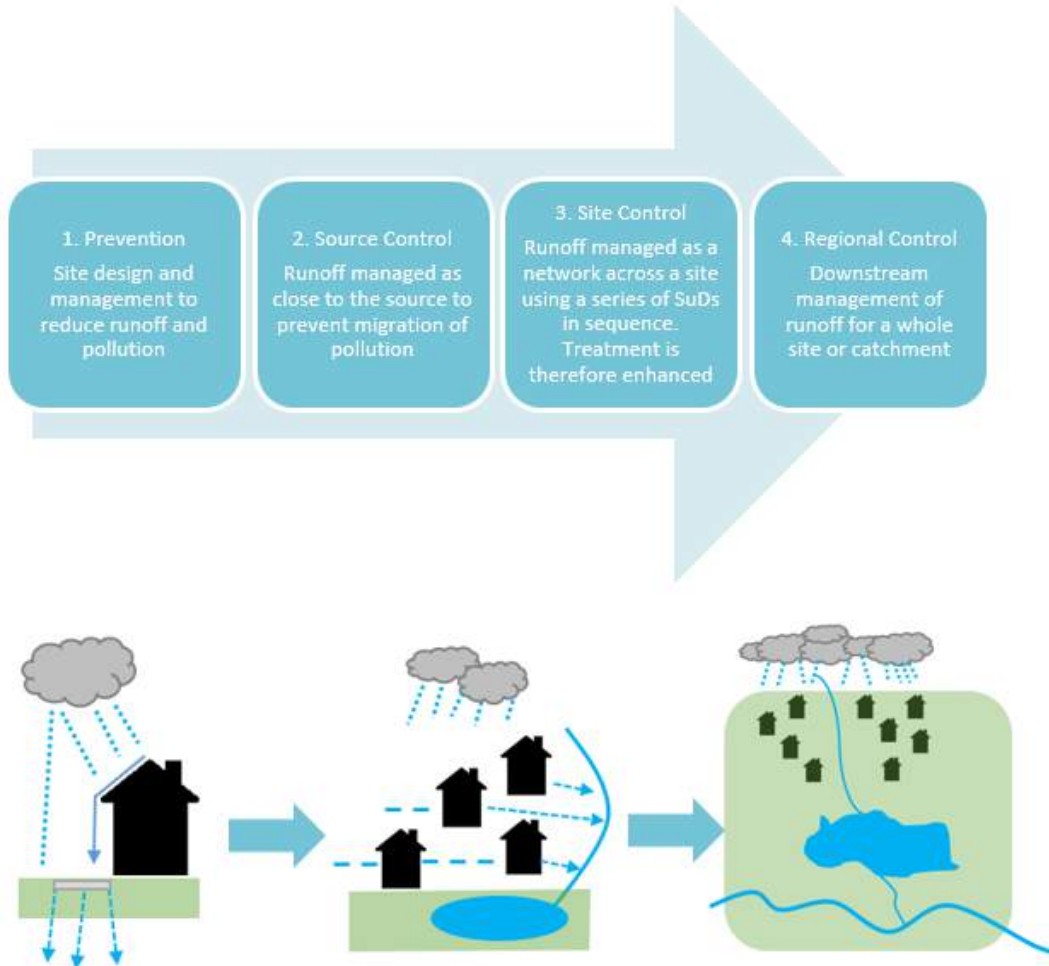
1. **Manage surface water runoff close to source:** This makes treatment easier due to the slower velocities and also helps isolate incidents rather than transport pollutants over a large area.
2. **Treat surface water runoff on the surface:** This allows treatment to be delivered by vegetated and sources of pollution to be more easily identified. It also helps with future maintenance work and identifying damaged or failed components of the management train.
3. **Treat a range of contaminants:** SuDS should be chosen and designed to deal with the likely contaminants to a development and be able to reduce them to acceptably low levels.
4. **Minimise the risk of sediment remobilisation:** SuDS should be designed to prevent sediments being washed into receiving water bodies or systems during events greater than what the component may have been designed.
5. **Minimise the impact of spill:** Designing SuDS to be able to trap spills close to the source or provide robust treatment along several components in series.

The number of treatment stages required depends primarily on the source of the runoff. A drainage strategy will need to demonstrate that an appropriate number of treatment stages are delivered.

8.4.2 SuDS Management Train

SuDS should not be used individually but as a series of features in an interconnected system designed to capture water at the source and convey it to discharge location. Collectively this concept is described as a SuDS Management Train (see Figure 8-2). The number of treatment stages required within the Management Train depends primarily on the source of the runoff and the sensitivity of the receiving waterbody or groundwater. A drainage strategy will need to demonstrate that an appropriate number of treatment stages are delivered.

Figure 8-2: SuDS management train



SuDS components should be selected based on design criteria and how surface water management is to be integrated within the development and landscaping setting. By using a number of SuDS features in series it is possible to reduce the flow and volume of runoff as it passes through the system as well as minimising pollutants which may be generated by a development, helping conform to the water quality objectives of the Water Framework Directive.

8.4.3 SuDS design considerations

The design of a SuDS system will be influenced by a number of physical and policy constraints. These should be taken into account and reflected upon during the conceptual, outline and detailed stages of SuDS design. Such physical and policy factors may include:

- Topography, e.g. steep or shallow slopes
- Local Geology and soil permeability
- Development Density and available land area
- Former site use, e.g. ground instability, contaminated soils
- Location of existing and proposed services and utilities
- Groundwater conditions
- Proposed site use
- Landscape Character of the development and its surroundings
- Future adoption and maintenance arrangements

Table 8-2 details some considerations for the design of SuDS.

Table 8-2: SuDS Design Considerations

Consideration	Solution
Land availability	SuDS can be designed to fit into small areas by utilising different systems. For example, features such as permeable paving and green roofs can be used in urban areas where space may be limited.
Contaminated soil or groundwater below site	SuDS can be placed and designed to overcome issues with contaminated groundwater or soil. Shallow surface SuDS can be used to minimise disturbance to the underlying soil. The use of infiltration should also be investigated as it may be possible in some locations within the site. If infiltration is not possible linings can be used with features to prevent infiltration.
High groundwater levels	Non-infiltrating features can be used. Features can be lined with an impermeable line or clay to prevent the egress of water into the feature. Additional, shallow features can be utilised which are above the groundwater table.
Steep slopes	Check dams can be used to slow flows. Additionally, features can form a terraced system with additional SuDS components such as ponds used to slow flows.
Shallow slopes	Use of shallow surface features to allow a sufficient gradient. If the gradient is still too shallow pumped systems can be considered as a last resort.
Ground instability	Geotechnical site investigation should be done to determine the extent of unstable soil and dictate whether infiltration would be suitable or not.
Sites with deep backfill	Infiltration should be avoided unless the soil can be demonstrated to be sufficiently compacted. Some features such as swales are more adaptable to potential surface settlement.
Open space in floodplain zones	Design decisions should be done to take into consideration the likely high groundwater table and possible high flows and water levels. Features should also seek to not reduce the capacity of the floodplain and take into consideration the influence that a watercourse may have on a system. Facts such as siltation after a flood event should also be taken into account during the design phase.
Future adoption and maintenance	Local Planning Authority should ensure development proposals, through the use of planning conditions or planning obligations, have clear arrangements for on-going maintenance over the development's lifetime.

8.5 Hertfordshire SuDS Guidance

8.5.1 Hertfordshire County Council's SuDS Policy Statement

Hertfordshire County Council produced a SuDS policy statement in March 2015²³. This is a guidance document which outlines the anticipated requirements of Hertfordshire County Council for developers needing to gain approval for drainage schemes. It involves three stages:

- Conceptual Drainage Design
- Outline Drainage Proposal
- Detailed Drainage Proposal

These stages are outlined below:

Conceptual Drainage Design

This stage ties in with the pre-application stage of the planning and policy. To gain approval the developer must do the following:

- Demonstrate and understand the drainage characteristics within and outside of the site
- Provide an outline assessment of existing geology, ground conditions, contaminant status and permeability. Soakage tests should ideally be conducted at this point
- Provide a flow route analysis for the existing and post development scenario
- Prepare a drainage plan outlining, the proposed management train, location of source controls and other SuDS, the destination of runoff and suggested betterment
- Provide a Preliminary SuDS Design Statement describing the SuDS proposals in general terms together with the SuDS Design Criteria agreed for the site and initial thoughts on how the site will be maintained

Outline Drainage Proposal

The Outline Drainage Proposal is developed in conjunction with the LLFA prior to a full application and should be submitted alongside the detailed design of the application. It should include the following:

- The SuDS management train in detail
- Source control measures including how they are to be adopted
- Treatment stages of each sub catchment
- Conveyance techniques
- The storage hierarchy both spatial and for different return periods
- Details of how flows and volumes are controlled
- Final site runoff arrangements
- Soakaway test results
- Details of how contaminants will be dealt with onsite
- An initial Health and Safety assessment which assesses risks and proposes how these will be managed to an acceptable level

Additionally, they should be accompanied by the following:

- SuDS Design Statement describing the SuDS proposals in detail terms together with how they meet the SuDS Design Criteria agreed for the site at Concept Stage
- Climate Change Statement
- Key operation and maintenance principles.

Detailed Drainage Proposal

At this final design stage, those seeking approval must provide all details necessary to demonstrate that the SuDS will function effectively now and in the future, such as:

- Levels data and/or drawings to show that runoff will flow in predictable pathways through the site
- Construction details and location plans that demonstrate practical, robust and simple structures for the collection, conveyance, cleaning and storage of runoff
- Details for inlets and outlets and flow control chambers to demonstrate how flows and volumes are managed. Details should include cover levels, inverts, soffit, base and crest; shown on plan, cross and long-section with relevant calculation or hydraulic model references as appropriate
- Cross and longitudinal profiles and planting details of all swales, basins, wetland and pond features together with SuDS sympathetic landscape proposals for the whole development
- All level data provided as metres above ordnance datum (m AOD)
- Specification notes for all SuDS installation
- An Operation and Maintenance Plan for the site

- A final SuDS Design Statement modified where necessary to include additional information or minor amendments
- A final Health and Safety Assessment which assesses risks and proposes how these will be managed to an acceptable level

Additional Design Criteria

- Proposals for SuDS must result in discharge into the ground, to a surface water body or, where these can be demonstrated to be impractical, to the storm sewer or combined sewer where no storm sewer is available.
- Proposals for SuDS must demonstrate how the frequency, rate and volume of run-off from the development will be managed to achieve a Greenfield rate. On previously developed land, a Greenfield rate must be achieved, except in exceptional cases which are agreed with the LLFA. Where Greenfield rates cannot be achieved, a betterment rate will be agreed with the LLFA.
- Proposals for SuDS must demonstrate the sufficient treatment stages are provided in line with the intended site use and sensitivity of receptor. Where the required number of treatment stages cannot be provided acceptable justification for derogations sought on the basis of the 'sensitivity' of receptors or not being 'reasonably practicable'.
- Flooding must not occur on any part of the site for a 1 in 30-year rainfall event.
- Flooding must not occur during a 1 in 100-year rainfall event in any part of: a building (including a basement, utility plant susceptible to water (e.g. pumping station or electrical sub-station) or on neighbouring. Flows that exceed design criteria must be managed in flood conveyance routes (exceedance routes) that minimise risks to people and property both on and off the site.

As well as the SuDS Policy Statement, Hertfordshire County Council has also provided a number of other SuDS-related documents to promote SuDS and to assist developers with their implementation. These documents provide guidance and policies which provide comprehensive information and advice and includes information on what information is expected as part of a surface water Drainage Assessment/FRA. The following documents are available on the Hertfordshire County Council website and are summarised in the following sections:

- LLFA Summary Guidance for developers²⁴
- SuDS Design Guidance for Hertfordshire²⁵

8.5.2 Hertfordshire County Council SuDS Design Guidance (2015)²⁶

This document provides guidance for developers on the design and delivery of SuDS features throughout the SuDS design process. It gives details on considerations which would need to be made in the design of SuDS features, with reference to environmental considerations in Hertfordshire, quantity and quality criteria of SuDS features and local design principles.

8.5.3 Hertfordshire County Council Summary Guidance for developers

As the LLFA, Hertfordshire County Council have produced a factsheet to assist with the production of a satisfactory surface water drainage assessment and/ or FRA in accordance with national planning policy. There are six technical requirements that a drainage assessment / FRA must meet as detailed in the guidance for developers.

These technical requirements are summarised below: this document also includes a checklist of technical information to be provided in a drainage assessment-.

This is now an adopted policy within the LFRMS, therefore the LPA, other stakeholders and developers must have due regard to these policies. The policies are not just for guidance. Hertfordshire County Council have produced a separate technical guidance document and also a 'developer's checklist' which can all be found online, as shown below.

²⁴ LLFA Summary Guidance for developers: <http://www.hertsdirect.org/docs/pdf/g/developerguide.pdf>

²⁵ Hertfordshire County Council SuDS Design Guidance for Hertfordshire (2015): <http://www.hertsdirect.org/docs/pdf/s/hertssudsguide.pdf>

²⁶ LFC SuDS Design Guidance (2015): <http://www.hertsdirect.org/docs/pdf/s/hertssudsguide.pdf>

Relevant web links:

- SuDS Guidance for Hertfordshire
<http://www.hertsdirect.org/services/envplan/water/floods/surfacewaterdrainage/sudsguidance/>
- SuDS Policies (addendum to the LFRMS)
<http://www.hertsdirect.org/services/envplan/water/floods/surfacewaterdrainage/sudspolicies/>
- Developers Guide and Checklist
<http://www.hertsdirect.org/services/envplan/water/floods/surfacewaterdrainage/developer/guide/>
- Pre-application service
<http://www.hertsdirect.org/services/envplan/water/floods/surfacewaterdrainage/preappguide/>

8.6 Additional SuDS Guidance

8.6.1 C753 CIRIA SuDS Manual (2015)

The **C753 CIRIA SuDS Manual (2015)**²⁷ replaces and updates the previous version (C697) providing up to date guidance on planning, design, construction and maintenance of SuDS. The document is designed to help the implementation of these features into new and existing developments, whilst maximising the key benefits regarding flood risk and water quality. The manual is divided into five sections ranging from a high level overview of SuDS, progressing to more detailed guidance with progression through the document. It is recommended that developers and the LPA utilise the information within the manual to help design SuDS which are appropriate for a development. Guidance within the document complements information found within East Hertfordshire's SuDS Guidance.

8.6.2 Non-Statutory Technical Guidance, Defra (March 2015)

Non-Statutory Technical guidance has been developed by Defra to sit alongside PPG to provide non-statutory standards as to the expected design and performance for SuDS.

In March 2015, the latest guidance was released providing amendments as to what is expected by the LPA to meet the National standards. The guidance provides a valuable resource for developers and designers outlining peak flow control, volume control, structural integrity of the SuDS, and flood considerations both within and outside the development as well as maintenance and construction considerations. It considers the following: flood risk inside and outside the development, peak flow, volume control, structural integrity, designing for maintenance considerations and construction. The LPA will make reference to these standards when determining whether proposed SuDS are considered reasonably practicable.

8.7 Other surface water considerations

8.7.1 Groundwater Vulnerability Zones

The Environment Agency have published new groundwater vulnerability maps in 2015. These maps provide a separate assessment of the vulnerability of groundwater in overlying superficial rocks and those that comprise the underlying bedrock. The maps show the vulnerability of groundwater at a location based on the hydrological, hydrogeological and soil properties within a one-kilometre grid square.

Two maps are available:

- **Basic groundwater vulnerability map:** this shows the likelihood of a pollutant discharged at ground level (above the soil zone) reaching groundwater for superficial and bedrock aquifers and is expressed as high, medium and low vulnerability

²⁷ C753 CIRIA SuDS Manual (2015):
http://www.ciria.org/Memberships/The_SuDs_Manual_C753_Chapters.aspx
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- **Combined groundwater vulnerability map:** this map displays both the vulnerability and aquifer designation status (principal or secondary). The aquifer designation status is an indication of the importance of the aquifer for drinking water supply.

The groundwater vulnerability maps should be considered when designing SuDS. Depending on the height of the water table at the location of the proposed development site, restrictions may be placed on the types of SuDS appropriate to certain areas.

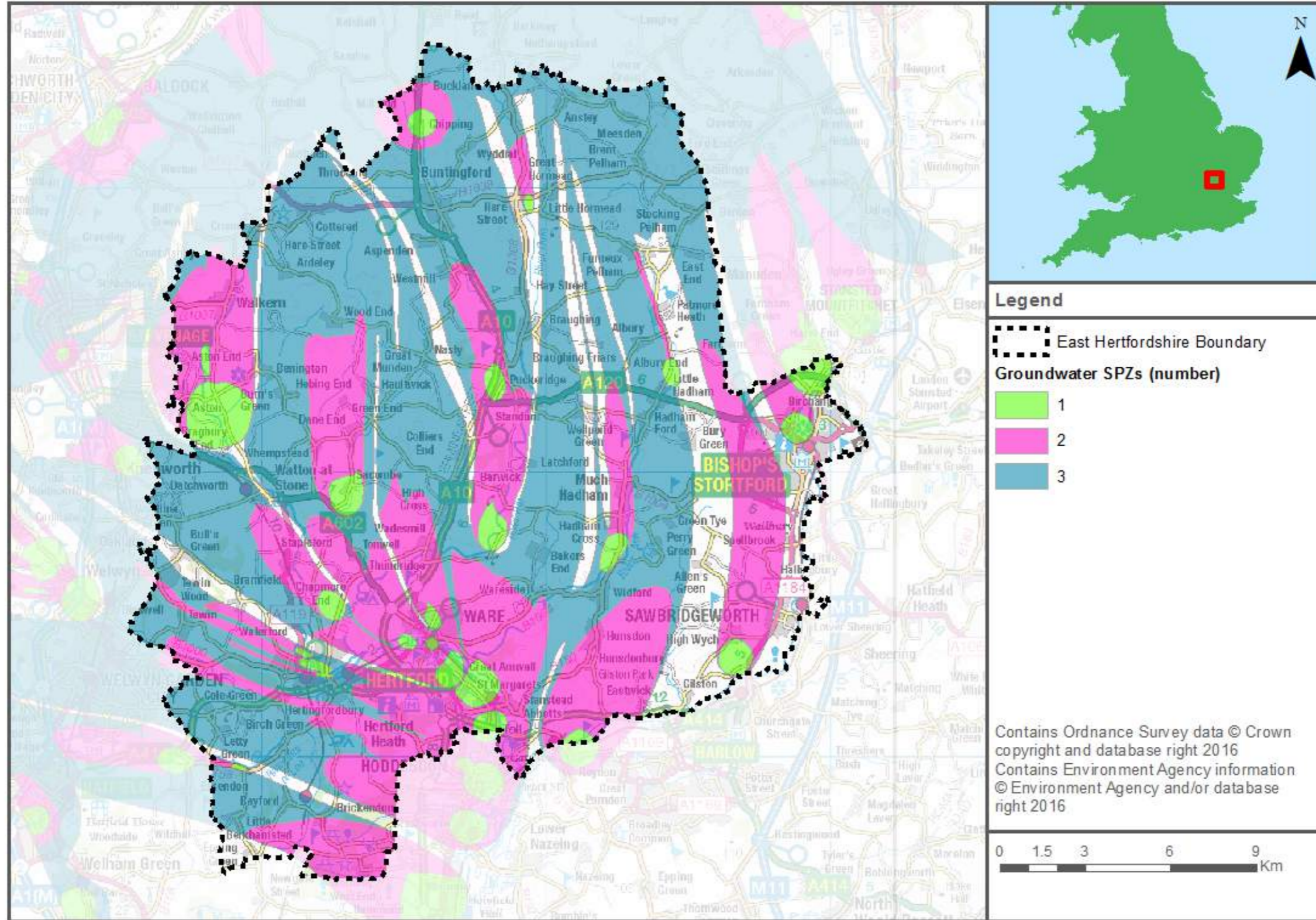
8.7.2 Groundwater Source Protection Zones (GSPZ)

In addition to the ASGW data the Environment Agency also defines Groundwater Source Protection Zones in the vicinity of groundwater abstraction points. These areas are defined to protect areas of groundwater that are used for potable supply, including public/private potable supply, (including mineral and bottled water) or for use in the production of commercial food and drinks. The Groundwater SPZ requires attenuated storage of runoff to prevent infiltration and contamination. The definition of each zone is shown below:

- **Zone 1 (Inner Protection Zone)** – Most sensitive zone: defined as the 50-day travel time from any point below the water table to the source. This zone has a minimum radius of 50 metres
- **Zone 2 (Outer Protection Zone)** – Also sensitive to contamination: defined by a 400-day travel time from a point below the water table. This zone has a minimum radius around the source, depending on the size of the abstraction
- **Zone 3 (Total Catchment)** - Defined as the area around a source within which all groundwater recharge is presumed to be discharged at the source. In confined aquifers, the source catchment may be displaced some distance from the source. For heavily exploited aquifers, the final Source Catchment Protection Zone can be defined as the whole aquifer recharge area where the ratio of groundwater abstraction to aquifer recharge (average recharge multiplied by outcrop area) is >0.75 . Individual source protection areas will still be assigned to assist operators in catchment management
- **Zone 4 (Zone of special interest)** – A fourth zone SPZ4 or 'Zone of Special Interest' usually represents a surface water catchment which drains into the aquifer feeding the groundwater supply (i.e. catchment draining to a disappearing stream). In the future this zone will be incorporated into one of the other zones, SPZ 1, 2 or 3, whichever is appropriate in the particular case, or become a safeguard zone

The location of the Groundwater SPZs in relation to the East Hertfordshire district are shown in Figure 8-3. The majority of the district is located within a Groundwater Source Protection Zone. This is primarily Zone 3 however; the southern part of the district, particularly around Hertford, is located within Zone 2. Isolated areas are in Zone 1. Depending on the nature of the proposed development and the location of the development site with regards to the SPZs, restrictions may be placed on the types of SuDS appropriate to certain areas. Any restrictions imposed on the discharge of site generated runoff by the Environment Agency will be determined on a site by site basis using a risk-based approach.

Figure 8-3: Groundwater Source Protection Zones



8.7.3 Nitrate Vulnerable Zones

Nitrate Vulnerable Zones (NVZs) are areas designated as being at risk from agricultural nitrate pollution. Nitrate levels in waterbodies are affected by surface water runoff from surrounding agricultural land entering receiving waterbodies.

The level of nitrate contamination will potential influence the choice of SuDS and should be assessed as part of the design process.

The whole of the East Hertfordshire District is classed as a surface water NVZ. Northern parts of the study area including the Buntingford and land east of Stevenage are located within the groundwater NVZ.



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9 Flood Warning and Emergency Planning

9.1 Flood emergencies

Flooding can develop into an emergency situation; emergency planning is one option to help manage flood related incidents. Emergency planning is a core component of civil protection and public safety practices and seeks primarily to prevent, or secondly mitigate the risk to life, property, businesses, infrastructure and the environment. In the UK, emergency planning is performed under the direction of the 2004 Civil Contingencies Act (CCA).

From a flood risk perspective, emergency planning can be broadly split into three phases: before, during and after a flood. The measures involve developing and maintaining arrangements to reduce, control or mitigate the impact and consequences of flooding and to improve the ability of people and property to absorb, respond to and recover from flooding. In development planning, a number of these activities are already integrated in national building control and planning policies e.g. the NPPF.

Safety is a key consideration for any new development and includes the likely impacts of climate change and, where there is a residual risk of flooding, the availability of adequate flood warning systems for the development, safe access and egress routes and evacuation procedures.

Emergency planning and flood risk management links

- [2004 Civil Contingencies Act](#)
- [DEFRA \(2014\) National Flood Emergency Framework for England](#)
- [Government guidance for public safety and emergencies](#)

9.2 Existing Flood Warning Systems

The Environment Agency is the lead organisation for providing warnings of fluvial flooding (for watercourses classed as Main Rivers) and coastal flooding in England. The Environment Agency supplies Flood Warnings via the Floodline Warnings Direct (FWD) service, to homes and business within Flood Zones 2 and 3. Using the latest available technology, Environment Agency staff monitor rainfall, river levels and sea conditions 24 hours a day and use this information to forecast the possibility of flooding. If flooding is forecast, warnings are issued using a set of four easily recognisable codes, shown below in Table 9-1. Generic advice and examples on actions to be taken on receipt of the warning are shown in the column called “What to do”.

Flood warnings are disseminated to people registered to receive flood warnings via the FWD service using the following communication methods; phone, text and / or e-mail. Warnings may also be reported in news and weather bulletins. The Environment Agency have a Floodline number (0345 988 1188) and a quick-dial number specific to the Flood Warning Area, which the public can call to receive more detailed information regarding the flood warning.

It is the responsibility of individuals to sign-up this service, in order to receive the flood warnings via FWD. Registration and the service is free and publicly available. It is recommended that any household considered at risk of flooding signs-up. Developers should also encourage those owning or occupying developments, where flood warnings can be provided, to sign up to receive them. This applies even if the development is defended to a high standard.

9.2.1 East Hertfordshire Flood Alert and Warning Areas

There are currently 25 Flood Alert Areas covering significant parts of the district. There are 22 Flood Warning Areas (FWAs); these tend to cover the River Lea and its principal tributaries including the Dane End Tributary, River Rib, River Mimram, River Beane, River Ash and River Stort.

Appendix G shows the FWA coverage for the district. If a home or business falls within the FWA coverage, this means that the Environment Agency can provide flood warnings.

Table 9-1: Environment Agency Flood Warnings Explained

Flood Warning Symbol	What it means	What to do
	Flood Alerts are used to warn people of the possibility of flooding and encourage them to be alert, stay vigilant and make early preparations. It is issued earlier than a flood warning, to give customers advice notice of the possibility of flooding, but before we are fully confident that flooding in Flood Warning Areas is expected.	<ul style="list-style-type: none"> ✓ Be prepared to act on your flood plan ✓ Prepare a flood kit of essential items ✓ Monitor local water levels and the flood forecast on the Environment Agency website ✓ Stay tuned to local radio or TV ✓ Alert your neighbours ✓ Check pets and livestock ✓ Reconsider travel plans
	Flood Warnings warn people of expected flooding and encourage them to take action to protect themselves and their property.	<ul style="list-style-type: none"> ✓ Move family, pets and valuables to a safe place ✓ Turn off gas, electricity and water supplies if safe to do so ✓ Seal up ventilation system if safe to do so ✓ Put flood protection equipment in place ✓ Be ready should you need to evacuate from your home ✓ 'Go In, Stay In, Tune In'
	Severe Flood Warnings warn people of expected severe flooding where there is a significant threat to life.	<ul style="list-style-type: none"> ✓ Stay in a safe place with a means of escape ✓ Co-operate with the emergency services and local authorities ✓ Call 999 if you are in immediate danger
Warnings no longer in force	Informs people that river or sea conditions begin to return to normal and no further flooding is expected in the area. People should remain careful as flood water may still be around for several days.	<ul style="list-style-type: none"> ✓ Be careful. Flood water may still be around for several days ✓ If you've been flooded, ring your insurance company as soon as possible

+ Table adapted from Environment Agency “Flood Warnings – what they are and what they do” leaflet: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/311020/flood_warnings_LIT_5215.pdf

9.3 Lead times and onset of flooding

Flood Alerts and Warnings provide advanced notification that flooding is possible or expected. The time from when the alert or warning is issued to the onset of property flooding (termed the lead time) can provide time for people to prepare for flooding (see the “What to do” column in Table 9-1). The Environment Agency endeavour to give a two-hour lead time for issuing Flood Warnings; however, for fast responding catchments and areas at risk of flash flooding, this may not be possible.

A failure or breach of flood defences can cause immediate and rapid inundation to areas located near the vicinity of the breach or failure. Such incidents can pose a significant risk to life given the near lack of warning and lead time to prepare or respond.

For developers it is therefore important to consider how to manage the consequences of events that are un-foreseen or for which no warnings can be provided. A typical example would be managing the residual risk of a flood defence breach or failure.

9.4 Managing flood emergencies - local arrangements

9.4.1 Emergency Planning

In the East Hertfordshire district, emergency planning is managed by the District Resilience Team, a sub-branch of Hertfordshire County Council's Resilience Team. The Resilience Team is a member of the Community Protection Directorate (CPD), alongside Hertfordshire Fire and Rescue Service, Hertfordshire Trading Standards and the County Community Safety Unit. These organisations work together under the CPD, to make Hertfordshire a safe place to live, work and visit. The CPD publishes information on Hertfordshire County Council's website, under the Community Safety service. Hertfordshire County Council also works in partnership with numerous other local responders in the Hertfordshire Resilience (LRF), which aims to ensure co-ordination and co-operation in the event of an emergency, as well as establishing and promoting a resilience across the county.

9.4.2 East Hertfordshire District Council's role

East Hertfordshire District Council is subject to the full set of duties, as a Category 1 responder under the CCA. The duties include preparing emergency plans and the assessment of local risks to inform emergency planning; the Council has procedures and plans, internally and as part of the wider partnership with the LRF, to manage flood emergencies.

East Hertfordshire District Council are not obliged to supply sandbags; properties at risk of being flooded are advised to consider keeping empty sandbags and sand / earth. Such materials can be obtained from a local builder's merchants or a DIY store. The Environment Agency have produced guidance on how use sandbags for property flood protection which can be viewed on their website.

East Hertfordshire District Council's website contains guidance advice on what to do if your property is flooded, reporting a flood, updates on severe weather and flooding and provides emergency contacts details²⁸.

The Council is also the decision maker and will decide whether or not to grant planning permission for development applications in its administrative area. It should be noted that proposed new development that places additional burden on the existing response capacity of the Council will not normally be considered to be appropriate.

9.5 Emergency planning and development

9.5.1 NPPF

The NPPF Flood Risk Vulnerability and Flood Zone 'Compatibility' table seeks to avoid inappropriate development in areas at risk from all sources of flooding. It is essential that any development which will be required to remain operational during a flood event is located in the lowest flood risk zones to ensure that in an emergency, operations are not impacted on by flood water. For example, the NPPF classifies police, ambulance and fire stations and command centres that are required to be operational during flooding as Highly Vulnerable development, which is not permitted in Flood Zones 3a and 3b and only permitted in Flood Zone 2 providing the Exception Test is passed. Essential infrastructure located in Flood Zone 3a or 3b must be operational during a flood event to assist in the emergency evacuation process. All flood sources such as fluvial, surface, groundwater, sewers and artificial sources (such as canals and reservoirs) should be considered. In particular sites should be considered in relation to the areas of drainage critical problems highlighted in the East Hertfordshire and Broxbourne SWMP, when this is published in late 2016.

The outputs of this SFRA should be compared and reviewed against any emergency plans and continuity arrangements within the borough. This includes the nominated rest and reception

²⁸ EHDC Guidance advice:

<http://www.eastherts.gov.uk/article/2621/What-to-do-if-your-property-is-flooded>

<http://www.eastherts.gov.uk/article/29376/Useful-Information-in-an-Emergency>

<http://www.eastherts.gov.uk/article/30490/Report-a-flood>

<http://www.eastherts.gov.uk/severeweather>

centres (and perspective ones), to ensure evacuees are outside of the high risk flood zones and will be safe during a flood event.

9.5.2 Safe access and egress

The NPPF Planning Practice Guidance outlines how developers can ensure safe access and egress to and from development in order to demonstrate that development satisfies the second part of the Exception Test²⁹. Access considerations should include the voluntary and free movement of people during a 'design flood' as well as for the potential of evacuation before a more extreme flood. The access and egress must be functional for changing circumstances over the lifetime of the development. The NPPF Planning Practice Guidance sets out that:

- Access routes should allow occupants to safely access and exit their dwellings in design flood conditions. In addition, vehicular access for emergency services to safely reach development in design flood conditions is normally required; and
- Where possible, safe access routes should be located above design flood levels and avoid flow paths including those caused by exceedance and blockage. Where this is unavoidable, limited depths of flooding may be acceptable providing the proposed access is designed with appropriate signage etc. to make it safe. The acceptable flood depth for safe access will vary as this will be dependent on flood velocities and risk of debris in the flood water. Even low levels of flooding can pose a risk to people in situ (because of, for example, the presence of unseen hazards and contaminants in floodwater, or the risk that people remaining may require medical attention).

As part of a FRA, the developer should review the acceptability of the proposed access in consultation with East Hertfordshire District Council, the LLFA (where relevant) and the Environment Agency.

9.5.3 Potential evacuations

During flood incidents, evacuation may be considered necessary. The NPPF Planning Guidance states practicality of safe evacuation from an area will depend on³⁰:

1. the type of flood risk present, and the extent to which advance warning can be given in a flood event;
2. the number of people that would require evacuation from the area potentially at risk;
3. the adequacy of both evacuation routes and identified places that people could be evacuated to (and taking into account the length of time that the evacuation may need to last); and
4. sufficiently detailed and up to date evacuation plans being in place for the locality that address these and related issues.

The vulnerability of the occupants is also a key consideration.

The Environment Agency and DEFRA provide standing advice for undertaking Flood Risk Assessments for planning applications. Please refer to the government website for the criteria on when to following the standing advice. Under these criteria, you will need to provide details of emergency escape plans for any parts of the building that are below the estimated flood level. The plans should show

- single storey buildings or ground floors that don't have access to higher floors can access a space above the estimated flood level, e.g. higher ground nearby;
- basement rooms have clear internal access to an upper level, e.g. a staircase; and
- occupants can leave the building if there's a flood and there's enough time for them to leave after flood warnings³¹.

Situations may arise where occupants cannot be evacuated (e.g. prisons) or where it is safer to remain "in-situ" and / or move to a higher floor or safe refuge area (e.g. developments located immediately behind a defence and at risk of a breach). These allocations should be assessed

29 NPPF Planning Practice Guidance: Flood Risk and Coastal Change (paragraph 039, Reference ID: 7-056-20140306) March 2014

30 NPPF Planning Practice Guidance: Flood Risk and Coastal Change (paragraph 057, Reference ID: 7-057-20140306) March 2014

31 EA and DEFRA (2012) Flood Risk Assessment: Standing Advice: <https://www.gov.uk/flood-risk-assessment-standing-advice>

against the outputs of the SFRA and where applicable, a site-specific Flood Risk Assessment to help develop emergency plans.

9.5.4 Flood warning and evacuation plans

Flood warning and evacuation plans are a potential mitigation measure to manage the residual risk, as listed in the NPPF Planning Practice Guidance. Flood warning and evacuation plans may also be referred to as an emergency flood plan or flood response plan.

It is a requirement under the NPPF that a flood warning and evacuation plan is prepared for

- sites at risk of flooding used for holiday or short-let caravans and camping and are important at any site that has transient occupants (e.g. hostels and hotels); and
- essential ancillary sleeping or residential accommodation for staff required by uses in this category [water-compatible development], subject to a specific warning and evacuation plan.

The Environment Agency provides practical advice and templates on how to prepare a flood plans for individuals, communities and businesses.

It is recommended that Emergency Planners at East Hertfordshire District Council are consulted prior to the production of any emergency flood plan.

Guidance documents for preparation of flood response plans

- [Environment Agency \(2012\) Flooding – minimising the risk, flood plan guidance for communities and groups](#)
- [Environment Agency \(2014\) Community Flood Plan template](#)
- [Environment Agency Personal flood plans](#)
- [Flood Plan UK 'Dry Run' - A Community Flood Planning Guide](#)



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10 FRA requirements and guidance for developers

10.1 Over-arching principles

This SFRA focuses on delivering a strategic assessment of flood risk within East Hertfordshire. Prior to any construction or development, site-specific assessments will need to be undertaken so all forms of flood risk at a site are fully addressed. Some sites may additionally be put forward for the Exception Test following the Sequential Test if the Sequential Test indicates the proposed development inappropriate or unsuitable. These will require further work in a detailed Flood Risk Assessment (FRA). Any site that does not pass the Exception Test should not be allocated for development.

It should be acknowledged that a detailed FRA may show that a site is not appropriate for development of a particular vulnerability or even at all. Where the FRA shows that a site is not appropriate for a particular usage, a lower vulnerability classification may be appropriate.

10.2 Planning consultees

There are a number of statutory consultees for planning matters; key stakeholders are listed below (note, this list is not exhaustive):

- [East Hertfordshire District Council](#) decides all planning matters, including those related to flood risk, in their decision whether or not to grant planning permission.
- [The Environment Agency](#) is a statutory consultee for applications in areas of flood risk.
- [Hertfordshire County Council](#), provides technical advice on surface water drainage strategies and designs put forward for new 'major' developments.

The Lee Valley Regional Park Authority is not a planning authority; however, it has a range of powers and duties in relation to the statutory planning process. Sections 14 (subsections 4-7) of the Park Act requires local planning authorities to consult with the Authority on applications for planning permission which they consider could affect the Park.

10.3 Requirements for site-specific Flood Risk Assessments

10.3.1 What are site-specific Flood Risk Assessments?

Site specific FRAs are carried out by (or on behalf of) developers to assess flood risk to and from a site. They are submitted with planning applications and should demonstrate how flood risk will be managed over the development's lifetime, taking into account climate change and vulnerability of users.

10.3.2 When is an FRA required?

A FRA is required in the following circumstances:

- All developments located within Flood Zone 2 or 3. This includes minor developments such as non-residential extensions, alterations which do not increase the size of the building or householder developments. It also includes changes of use of an existing development
- All developments greater than 1 ha located in Flood Zone 1
- All developments less than 1 ha in Flood Zone 1 where a change of use in development type leads to a more vulnerable classification or where the development could be affected by sources of flooding other than rivers and the sea. This would include surface water, drains and reservoirs
- All developments located in an area which has been highlighted as having critical drainage problems by the Environment Agency

Advice should be sought from the LPA and the Environment Agency at the pre-planning application stage to determine the need for a site-specific FRA. DEFRA's Guidance notes *FD2320/TR2 'Flood*

*Risk Assessment Guidance for New Development*³² and *FD2321/TR2 'Flood Risks to People'*³³ should also be consulted.

10.3.3 Objectives of site specific FRAs

Site specific FRAs should be proportionate to the degree of flood risk, as well as appropriate to the scale, nature and location of the development. Site specific FRAs should establish:

- Whether a proposed development is likely to be affected by current or future flooding from any source
- Whether a proposed development will increase flood risk elsewhere
- Whether the measures proposed to deal with the effects and risks are appropriate
- The evidence, if necessary, for the local planning authority to apply the Sequential Test
- Whether, if applicable, the development will be safe and pass the Exception Test

FRAs for sites located in East Hertfordshire should follow the approach recommended by the NPPF (and associated guidance) and guidance provided by the Environment Agency and East Hertfordshire District Council. Guidance and advice for developers on the preparation of site specific FRAs include:

- [Standing Advice on Flood Risk](#) (Environment Agency)
- [Flood Risk Assessment for Planning Applications](#) (Environment Agency)
- [Site-specific Flood Risk Assessment: CHECKLIST](#) (NPPF PPG, Defra)

Guidance for local planning authorities for reviewing flood risk assessments submitted as part of planning applications has been published by Defra in [2015 – Flood Risk Assessment: Local Planning Authorities](#).

In circumstances where FRAs are prepared for windfall sites then they should include evidence that demonstrates the proposals are in accordance with the policies described in the Local Plan.

10.3.3.1 Climate Change Guidance

The Environment Agency published new climate change guidance on 19 February 2016, which must now be considered in all new developments and planning applications. Site-specific FRAs must consider the impact which climate change may have on the development in the future. The Environment Agency Climate Change Guidance in relation to watercourses within East Hertfordshire is discussed in more detail in Chapter 4.

10.4 Flood risk management guidance - mitigation measures

Mitigation measures should be seen as a last resort to address flood risk issues. Consideration should first be given to minimising risk by planning sequentially across a site. Once risk has been minimised as far as possible, only then should mitigation measures be considered.

10.4.1 Site layout and design

Flood risk should be considered at an early stage in deciding the layout and design of a site to provide an opportunity to reduce flood risk within the development.

The NPPF states that a sequential, risk-based approach should be applied to try to locate more vulnerable land use away from flood zones, to higher ground, while more flood-compatible development (e.g. vehicular parking, recreational space) can be located in higher risk areas. However, vehicular parking in floodplains should be based on the nature of parking, flood depths and hazard including evacuation procedures and flood warning.

Waterside areas, or areas along known flow routes, can act as Green Infrastructure, being used for recreation, amenity and environmental purposes, allowing the preservation of flow routes and flood storage, and at the same time providing valuable social and environmental benefits

³² http://sciencesearch.defra.gov.uk/Document.aspx?Document=FD2320_3364_TRP.pdf

³³ http://randd.defra.gov.uk/Document.aspx?Document=FD2321_3437_TRP.pdf
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contributing to other sustainability objectives. Landscaping should ensure safe access to higher ground from these areas, and avoid the creation of isolated islands as water levels rise.

Making space for water

The NPPF sets out a clear policy aim in Flood Zone 3 to create space for flooding by restoring functional floodplain.

All new development close to rivers should consider the opportunity presented to improve and enhance the river environment. Developments should look at opportunities for river restoration and enhancement as part of the development. Options include backwater creation, de-silting, in-channel habitat enhancement and removal of structures. When designed properly, such measures can have benefits such as reducing the costs of maintaining hard engineering structures, reducing flood risk, improving water quality and increasing biodiversity. Social benefits are also gained by increasing green space and access to the river.

The provision of a buffer strip can 'make space for water', allow additional capacity to accommodate climate change and ensure access to the watercourse, structures and defences is maintained for future maintenance purposes.

It also enables the avoidance of disturbing riverbanks, adversely impacting ecology and having to construct engineered riverbank protection. Building adjacent to riverbanks can also cause problems to the structural integrity of the riverbanks and the building itself, making future maintenance of the river much more difficult.

10.4.2 Raised floor levels

The raising of internal floor levels within a development avoids damage occurring to the interior, furnishings and electrics in times of flood.

If it has been agreed with the Environment Agency that, in a particular instance, the raising of floor levels is acceptable finished flood levels should be set a minimum of 300mm above the 1% AEP plus climate change peak flood level. The additional height that the floor level is raised above the maximum water level is referred to as the "freeboard". Additional freeboard may be required because of risks relating to blockages to the channel, culvert or bridge and should be considered as part of an FRA.

Allocating the ground floor of a building for less vulnerable, non-residential, use is an effective way of raising living space above flood levels.

Single storey buildings such as ground floor flats or bungalows are especially vulnerable to rapid rise of water (such as that experienced during a breach). This risk can be reduced by use of multiple storey construction and raised areas that provide an escape route. However, access and egress would still be an issue, particularly when flood duration covers many days.

Similarly, the use of basements should be avoided. Habitable uses of basements within Flood Zone 3 should not be permitted, whilst basement dwellings in Flood Zone 2 will be required to pass the Exception Test. Access should be situated 300mm above the design flood level and waterproof construction techniques used.

10.4.3 Development and raised defences

Construction of localised raised floodwalls or embankments to protect new development is not a preferred option, as a residual risk of flooding will remain. Compensatory storage must be provided where raised defences remove storage from the floodplain. It would be preferable for schemes to involve an integrated flood risk management solution.

Temporary or demountable defences are not acceptable forms of flood protection for a new development but might be appropriate to address circumstances where the consequences of residual risk are severe. In addition to the technical measures the proposals must include details of how the temporary measures will be erected and decommissioned, responsibility for maintenance and the cost of replacement when they deteriorate.

10.4.4 Modification of ground levels

Modifying ground levels to raise the land above the required flood level is an effective way of reducing flood risk to a particular site in circumstances where the land does not act as conveyance for flood waters. However, care must be taken at locations where raising ground levels could adversely affect existing communities and property; in most areas of fluvial flood risk, raising land above the floodplain would reduce conveyance or flood storage in the floodplain and could adversely impact flood risk downstream or on neighbouring land.

Compensatory flood storage should be provided, and would normally be on a level for level, volume for volume basis on land that does not currently flood but is adjacent to the floodplain (in order for it to fill and drain). It should be in the vicinity of the site and within the red line of the planning application boundary (unless the site is strategically allocated).

Raising ground levels can also deflect flood flows, so analyses should be performed to demonstrate that there are no adverse effects on third party land or property.

Raising levels can also create areas where surface water might pond during significant rainfall events. Any proposals to raise ground levels should be tested to ensure that it would not cause increased ponding or build-up of surface runoff on third party land.

Any proposal for modification of ground levels will need to be assessed as part of a detailed flood risk assessment.

10.4.5 Developer contributions

In some cases, and following the application of the sequential test, it may be necessary for the developer to make a contribution to the improvement of flood defence provision that would benefit both proposed new development and the existing local community. Developer contributions can also be made to maintenance and provision of flood risk management assets, flood warning and the reduction of surface water flooding (i.e. SuDS).

Defra's Flood and Coastal Risk Management Grant in Aid (FCRMGiA)³⁴ funding arrangements (introduced in 2011) do not make government funds available for any new development implemented after 2012. Accordingly, it is essential that appropriate funding arrangements are established for new development proposed in locations where a long term investment commitment is required to sustain Flood Risk Management (FRM) measures. The strategic investment commitment is required so that in future the FRM measures can be maintained and afforded for the lifetime of the development, since the available funds from FCRMGiA will potentially not reflect the scale of development that is benefitting. When appropriate the necessary land to enable affordable future flood risk management measures should also be secured.

FCRMGiA can be obtained by [operating authorities](#) (for example the Environment Agency, Local Authority and IDB) to contribute towards the cost of a range of activities including flood risk management schemes that help reduce the risk of flooding and coastal erosion. Some schemes are only partly funded by FCRMGiA and therefore any shortfall in funds will need to be found from elsewhere when using Resilience Partnership Funding, for example local levy funding (for example raised by the Regional Flood and Coastal Committee), special levy (raised by IDBs for drainage and water level management), local businesses, developers or other parties benefitting from the scheme.

For new development in locations without existing defences, or where the development is the only beneficiary, the full costs of appropriate risk management measures for the life of the assets proposed must be funded by the developer.

However, the provision of funding by a developer for the cost of the necessary standard of protection from flooding or coastal erosion does not mean the development is appropriate as other policy aims must also be met. Funding from developers should be explored prior to the granting of planning permission and in partnership with the local planning authority and the Environment Agency.

The appropriate route for the consideration of strategic measures to address flood risk issues is the LFRMS. The LFRMS should describe the priorities with respect to local flood risk

management, the measures to be taken, the timing and how they will be funded. It will be preferable to be able to demonstrate that strategic provisions are in accordance with the LFRMS, can be afforded and have an appropriate priority.

The Environment Agency is also committed to working in partnership with developers to reduce flood risk. Where assets are in need of improvement or a scheme can be implemented to reduce flood risk, the Environment Agency request that developers contact them to discuss potential solutions.

The National Flood and Coastal Erosion Management Strategy¹⁶ summarises the new system:

“In essence, instead of meeting the full cost of a limited number of schemes, a new partnership approach to funding could make government money available to pay a share of any worthwhile scheme. The amount in each case will depend on the level of benefits the scheme provides. For example, the number of households protected, or the amount of damage that can be prevented. The level of government funding potentially available towards each scheme can be easily calculated. Local authorities and communities can then decide on priorities and what to do if full funding isn’t available. Projects can still go ahead if costs can be reduced or other funding can be found locally.”

There are a number of potential impacts of this change in funding. The Government stated that its proposals will help to:

- Encourage total investment in Flood and Coastal Erosion Risk Management by operating authorities to increase beyond what is affordable to national budgets alone.
- Enable more local choice within the system and encourage innovative, cost-effective options to come forward in which civil society may play a greater role; and
- Maintain widespread uptake of flood insurance.

10.5 Flood risk management guidance – resistance measures

There may be instances where flood risk to a development remains despite implementation of such planning measures as those outlined above; for example, where the use is water compatible, where an existing building is being changed, where residual risk remains behind defences, or where floor levels have been raised but there is still a risk at the 1 in 100-year event (0.1% AEP). In these cases, and for existing development in the floodplain, additional measures can be put in place to reduce damage in a flood and increase the speed of recovery. These measures should not be relied on as the only mitigation method.

Permanent barriers

Permanent barriers can include built-up doorsteps, rendered brick walls and toughened glass barriers.

Temporary barriers

Temporary barriers consist of moveable flood defences which can be fitted into doorways and/or windows. The permanent fixings required to install these temporary defences should be discrete and keep architectural impact to a minimum. On a smaller scale, temporary snap on covers for airbricks and air vents can also be fitted to prevent the entrance of flood water.

Community Resilience Measures

These include demountable defences that can be deployed by local communities to reduce the risk of water ingress to a number of properties. The methods require the deployment of inflatable (usually with water) or temporary quick assembly barriers in conjunction with pumps to collect water that seeps through the systems during a flood.

10.6 Flood risk management guidance – resilience measures

Flood-resilient buildings are designed and constructed to reduce the impact of flood water entering the building. These measures aim to ensure no permanent damage is caused, the structural integrity of the building is not compromised and the clean up after the flood is easier. Interior design measures to reduce damage caused by flooding include:

Wet-proofing

Flood-resilient buildings are designed and constructed to reduce the impact of flood water entering the building. These measures aim to ensure no permanent damage is caused, the structural integrity of the building is not compromised and the clean up after the flood is easier. Interior design measures to reduce damage caused by flooding include:

- Electrical circuitry installed at a higher level with power cables being carried down from the ceiling rather than up from the floor level
- Water-resistant materials for floors, walls and fixtures
- Non-return valves to prevent waste water from being forced up bathrooms, kitchens or lavatories
- If redeveloping existing basements for non-residential purposes, new electrical circuitry installed at a higher level with power cables being carried down from the ceiling rather than up from the floor level to minimise damage if the development floods

Resilience measures will be specific to the nature of flood risk, and as such will be informed and determined by the FRA.

10.7 Reducing flood risk from other sources

10.7.1 Groundwater

Groundwater flooding has a very different flood mechanism to any other and for this reason many conventional flood defence and mitigation methods are not suitable. The only way to fully reduce flood risk would be through building design (development form), ensuring floor levels are raised above the water levels caused by a 1 in 100-year plus climate change event. Site design would also need to preserve any flow routes followed by the groundwater overland to ensure flood risk is not increased downstream.

Infiltration SuDS can cause increased groundwater levels and subsequently may increase flood risk on or off of the site. Developers should provide evidence and ensure that this will not be a significant risk.

When redeveloping existing buildings, it may be acceptable to install pumps in basements as a resilience measure. However, for new development this is not considered an acceptable solution.

10.7.2 Surface water and sewer flooding

Developers should discuss public sewerage capacity with the water utility company at the earliest possible stage. The development must improve the drainage infrastructure to reduce flood risk on site and regionally. It is important that a drainage impact assessment shows that this will not increase flood risk elsewhere, and that the drainage requirements regarding runoff rates and SuDS for new development are met.

If residual surface water flood risk remains, the likely flow routes and depths across the site should be modelled. The site should be designed so that these flow routes are preserved and building design should provide resilience against this residual risk.

When redeveloping existing buildings, the installation of some permanent or temporary flood-proofing and resilience measures could protect against both surface water and sewer flooding. Non-return valves prevent water entering the property from drains and sewers. Non-return valves can be installed within gravity sewers or drains within a property's private sewer upstream of the public sewerage system. These need to be carefully installed and must be regularly maintained. Consideration must also be given to attenuation and flow ensuring that flows during the 100-year plus climate change storm event are retained within the site if any flap valves shut. This must be demonstrated with suitable modelling techniques.

10.7.3 Sustainable Drainage Systems (SuDS)

Sustainable Drainage Systems (SuDS) aim to mimic the natural processes of Greenfield surface water drainage by encouraging water to flow along natural flow routes and thereby reduce runoff rates and volumes during storm events while providing some water treatment benefits. SuDS also have the advantage of providing effective Blue and Green infrastructure and ecological and public amenity benefits when designed and maintained properly.



The inclusion of SuDS within developments should be seen as an opportunity to enhance ecological and amenity value, and promote Green Infrastructure, incorporating above ground facilities into the development landscape strategy. SuDS must be considered at the outset, during preparation of the initial site conceptual layout to ensure that enough land is given to design spaces that will be an asset to the development rather than an after-thought. Advice on best practice is available from the Environment Agency and the Construction Industry Research and Information Association (CIRIA).

Developers and planning applications must adhere to development conditions imposed by the East Hertfordshire and Broxbourne Surface Water Management Plan, when this is published in late 2016.



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11 Screening of Proposed Site Allocations

11.1 Introduction

Proposed site allocations have been provided by East Hertfordshire District Council as part of the preparation of their emerging District plan. As part of this SFRA these sites have been screened to identify sites where additional modelling would be required as part of the Level 2 SFRA assessment, i.e. where there is a watercourse that is not included in the Environment Agency's Flood Zone coverage, or where Flood Zones exist but further modelling was required to identify Flood Zone 3b, climate change as well as depth, velocity and hazard information. JFlow modelling was then undertaken for these sites.

On completion of the modelling, the sites have been screened again to provide a summary of risk to each site (see Table 11-1) including:

- The proportion of the site in each Flood Zone
- Whether the site is shown to be at risk in the uFMfSW and, if so, the lowest return period from which the site is at risk
- Whether the site is within, or partially within, the Environment Agency's Historic Flood Map.

Sites were shortlisted for a Level 2 assessment where a site is shown to be in either Flood Zone 2 and/or 3, and/or has an ordinary watercourse running through or adjacent to it. Where there are drains shown on the OS mapping, but no detailed hydraulic models available, 2D modelling was undertaken using JFlow to determine Flood Zone 3a, Flood Zone 3b and Flood Zone 2, as well as the effects of climate change, for a number of ordinary watercourses flowing through or adjacent to sites. In some locations due to the nature of the watercourse, JFlow modelling was not possible due to the size of the catchments or their representation in the DTM. At these locations further investigation is needed by developers.

Flood risk to the shortlisted sites has been assessed and summarised in more detail in a series of summary tables as part of the Level 2 SFRA, provided in Appendix I. These sites are highlighted in green in Table 11-1.

11.2 Sequential Testing

Table 11-1 summarises the flood risk to the proposed site allocations. The majority of the sites are predominantly located within Flood Zone 1.

Inclusion of these sites in the SFRA does not mean that development can be permitted without further consideration of the Sequential Test. The required evidence should be prepared as part of a Local Plan Sustainability Appraisal or alternatively, it can be demonstrated through a free-standing document, or as part of strategic housing land or employment land availability assessments. NPPF Planning Practice Guidance for Flood Risk and Coastal Change describes how the Sequential Test should be applied in the preparation of a Local Plan. The assessments undertaken for this SFRA will assist the council when they undertake the Sequential Test.



Table 11-1: Summary of flood risk to all proposed site allocations

Site name	Settlement	Site area (ha)	Proportion of site in Flood Zone 3b (%)	Proportion of site in Flood Zone 3a (%)	Proportion of site in Flood Zone Two (%)	Proportion of site in Flood Zone One (%)	Proportion of site in uFMfSW 30yr (%)	Proportion of site in uFMfSW 100yr (%)	Proportion of site in uFMfSW 1000yr (%)	OWC within 100m (Y/N)	Does drain go through site?	Is drain catchment shown on FEH CD-ROM?	Site within, or partially within, the EA's Historic Flood Map? (Y/N)
North of Buntingford: Ermine Street	Buntingford	12.40	0%	0%	0%	100%	1%	1%	6%	Yes	Yes	Yes	No
South of Buntingford: Depot Site	Buntingford	10.24	0%	0%	0%	100%	2%	4%	9%	Yes	No	Yes	No
Bishops Stortford North: ASR5	Bishops Stortford	19.16	0%	0%	0%	100%	0%	0%	1%	Yes	Yes	Yes	No
Bishops Stortford: ASR1-4	Bishops Stortford	108.57	2%	2%	6%	94%	2%	4%	9%	Yes	Yes	Yes	Yes
Mead Lane South***	Hertford	1.01	0%	0%	0%	100%	0%	0%	3%	Yes	No	Yes	No
East of Manor Links	Bishops Stortford	6.29	0%	0%	0%	100%	0%	0%	1%	Yes	Yes	No	No
North and East Ware (Centre)	Ware	4.98	0%	0%	0%	100%	0%	0%	0%	Yes	No	No	No
North	Hertford	1.69	0%	0%	0%	100%	0%	0%	0%	No	No	No	No
West B: South of Welwyn Road	Hertford	8.85	0%	0%	0%	100%	0%	1%	4%	No	No	No	No
West A: North of Welwyn Road	Hertford	11.92	0%	0%	0%	100%	0%	0%	3%	No	No	No	No
EMPLOYMENT LAND - Buntingford Business Park	Buntingford	6.91	0%	0%	0%	100%	6%	7%	13%	No	No	No	No
North Sawbridgeworth***	Sawbridgeworth	7.67	0%	0%	0%	100%	0%	0%	0%	Yes	No	No	No
East of Stevenage	Stevenage	37.46	0%	0%	0%	100%	1%	2%	5%	No	No	No	No
Hadham Road Reserve Secondary School Site	Bishop's Stortford	8.3	0%	0%	0%	100%	0%	0%	3%	No	No	No	No
Bishop's Stortford High School Site	Bishop's Stortford	6.7	0%	0%	0%	100%	0%	0%	2%	Yes	No	No	No
Bishops Stortford South (+ Employment Land)	Bishops Stortford	54.30	0%	0%	0%	100%	1%	2%	9%	Yes	Yes	Yes	No
Sawbridgeworth West: North West Road	Sawbridgeworth	5.91	0%	0%	0.2%	99.8%	0%	0%	2%	Yes	Along edge	Yes	No
Mead Lane North	Hertford	4.19	0.5%	8%	27%	73%	11%	22%	39%	Yes	Yes	Yes	No
Hertford, South	Hertford	4.89	0%	0%	0%	100%	2%	3%	6%	Yes	No	Yes	No
The Goods Yard	Bishop's Stortford	6.66	0.3%	0.3%	38%	62%	6%	16%	34%	Yes	n/a	n/a	Yes
East of Welwyn	WGC	75.34	0%	0%	0%	100%	1%	2%	8%	Yes	Yes	Yes	No
North and East of Ware (Left)	Ware	79.80	0%	0%	0%	100%	2%	4%	9%	Yes	Yes	Yes	No
North and East Ware (Right)	Ware	46.34	0%	0%	0%	100%	1%	3%	7%	Yes	Yes	Yes	No
The Causeway/ Old River Lane	Bishop's Stortford	1.37	0%	13.25%	83.24%	3.51%	7%	7%	69%	Yes	No	Yes	Yes
Lane to the South of West Road	Sawbridgeworth	9.79	0.36%	0.09%	1.76%	97.97%	2%	3%	8%	Yes	Yes	Yes	No
Gilston Area	Gilston	697.7	0%	2%	3%	95%	2%	2%	8%	Yes	Yes	Yes	Yes

Sites highlighted in Grey are locations which have already been granted planning permission. At these locations, a detailed summary report is not necessary and has therefore not been taken forward to a Level 2 assessment. * Bishops Stortford: ASR1-4 is located in Flood Zone 2 and 3 but as this has already been granted planning permission, this particular location will not be taken forward to a Level 2 assessment.

Sites highlighted in Red cannot be modelled using JFlow as the drainage catchment is not shown on the FEH CD-ROM and have therefore not been taken forward to a Level 2 summary table. Further investigation will be required by developers at the FRA stage to confirm flood risk at these sites.

Sites highlighted in Green are being taken forward to a Level 2 summary table, as they are either located in the Flood Zone maps, or have a drain shown to run through the site on OS mapping, and the catchment area is present on the FEH CD-ROM, therefore allowing Jflow modelling to be undertaken at these locations.

Sites highlighted in blue do not have a drain the vicinity of the site and therefore have not been taken through to a Level 2 assessment.

***These sites do not have a drain running through the site but are close to flood zones. Although no Level 2 assessment was deemed necessary for these sites, developers should carefully consider the impact that climate change may have on the site.

To note: The Flood Zone 2 % includes the FZ3 extent.

12 Level 2 Assessment of Proposed Site Allocations

12.1 Introduction

The SFRA assesses the level of flood risk associated with proposed site allocations which have been identified within the emerging District Plan. A site was shortlisted for Level 2 assessment if it met the following criteria:

- The site is within Flood Zone 2 and/or 3; and/or
- An ordinary watercourse runs through or adjacent to the site.

This Level 2 SFRA assessment of sites helps to determine variations in flood risk across the proposed site allocations, identifying site-specific FRA requirements and helping guide local policies to provide sustainable developments as well as reducing flood risk to existing communities.

12.2 Detailed Site Summary Tables

As part of the Level 2 SFRA, detailed site summary tables have been produced for the proposed site allocations below:

Table 12-1: List of Detailed Summary Tables

Site Ref	Settlement	Flood Zone Coverage (%)		OWC within 100m (Y / N)
		FZ3	FZ2	
Bishops Stortford South (+ Employment Land)	Bishops Stortford	0%	0%	Yes
Sawbridgeworth West: North West Road	Sawbridgeworth	0%	0.2%	Yes
Mead Lane North	Hertford	8%	27%	Yes
Hertford South	Hertford	0%	0%	Yes
The Goods Yard	Bishop's Stortford	0.3%	38%	Yes
East of Welwyn	WGC	0%	0%	Yes
North and East of Ware (Left)	Ware	0%	0%	Yes
North and East Ware (Right)	Ware	0%	0%	Yes
The Causeway/ Old River Lane	Bishop's Stortford	13%	83%	Yes
Lane to the South of West Road	Sawbridgeworth	0%	2%	Yes
Gilston Area	Gilston	2%	3%	Yes

Using this information combined with the uFMfSW, detailed site summary tables have been produced for the proposed site allocations. Each table sets out the following information:

- Site area
- Proportion of the site in each Flood Zone
- NPPF and Exception Test guidance
- Mapping including Flood Zones, climate change, surface water, depth, velocity and hazard mapping
- A broadscale assessment of suitable SuDS techniques and considerations
- The presence of any flood defences
- Whether the site is covered by a flood warning service
- Whether there are any access and egress issues for the site
- The potential impacts of climate change in the future
- Advice on the preparation of site-specific FRAs and considerations for developers.

12.2.1 Important note on Flood Zone within the summary tables

It is important to recognise that for the SFRA a number of different sets of data have been used to clarify the Flood Zones. Mapping shown in the detailed site summary tables shown in Appendix I as part of the Level 2 assessment may differ to the Environment Agency Flood Zones and 'Flood

Map for Planning’ (Appendix B of this report) as the flood risk from ordinary watercourses flowing through proposed site allocations has been included in the summary table mapping. The Flood Zones presented in Appendix B are the same as those shown on the Environment Agency’s ‘Flood Map for Planning’ Flood Zones, derived from additional generalised modelling.

12.3 Note on SuDS Suitability

The hydraulic and geological characteristics of each proposed site allocations were assessed to determine the constraining factors for surface water management. This assessment is designed to inform the early-stage site planning process and is not intended to replace site-specific detailed drainage assessments.

The assessment is based on catchment characteristics and additional datasets such as the AStGWF map and Soil maps of England and Wales which allow for a basic assessment of the soil characteristics on a site by site basis. LiDAR data was used as a basis for determining the topography and average slope across each development site. Other datasets were used to determine other influencing factors on potential SuDS. These datasets include the following:

- Historic landfill sites
- Source Protection Zones
- Groundwater Vulnerability Zones
- Detailed River Network
- Environment Agency Flood Zones
- OS open data on Sites of Special Scientific Interest (SSSI)

This data was then collated to provide an indication of particular groups of SuDS systems which might be suitable at a site. SuDS techniques were categorised into five main groups, as shown in Table 12-2, and are included in each site summary table as part of the Level 2 assessment. This assessment should not be used as a definitive guide as to which SuDS would be suitable but used as an indicative guide of general suitability. Further site-specific investigation should be conducted to determine what SuDS techniques could be utilised on a particular development.

Table 12-2: Summary of SuDS Categories

SuDS Type	Technique
Source Controls	Green Roof, Rainwater Harvesting, Pervious Pavements, Rain Gardens
Infiltration	Infiltration Trench, Infiltration Basin, Soakaway
Detention	Pond, Wetland, Subsurface Storage, Shallow Wetland, Extended Detention Wetland, Pocket Wetland, Submerged Gravel Wetland, Wetland Channel, Detention Basin
Filtration	Surface Sand filter, Sub-Surface Sand Filter, Perimeter Sand Filter, Bioretention, Filter Strip, Filter Trench
Conveyance	Dry Swale, Underdrained Swale, Wet Swale

The suitability of each SuDS type for the proposed site allocations has been displayed using a traffic light colour system in the summary tables. The assessment of suitability is broadscale and indicative only; more detailed assessments should be carried out during the site planning stage to confirm the feasibility of different types of SuDS. The LLFA should be consulted at an early stage to ensure SuDS are implemented and designed in response to site characteristics and policy factors.

Suitability	Description
Red	The SuDS Group and its associated techniques may be unsuitable
Yellow	The SuDS Group and its associated techniques may be suitable at the development but is likely to require additional considerations or engineering works
Green	The SuDS Group and its associated techniques are likely to be suitable



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13 Summary

13.1 Level 1 SFRA

13.1.1 Sources of flood risk

- Flood history shows that East Hertfordshire has been subject to flooding from several sources of flood risk, with the principal risk being fluvial flood risk from watercourses within the district. Additionally, there are recorded incidents of surface water flooding, particularly in the main urban areas of the district. Though limited, there have also been historic cases of groundwater flooding.
- East Hertfordshire lies within the River Lea and River Stort catchments (the River Stort, itself a tributary of the River Lea). The main tributaries of the River Lea include the River Beane, the River Ash, the River Rib and the River Mimram.
- The primary fluvial flood risk is located along the River Lea and River Stort corridors. The main urban areas at risk include Hertford, Ware Stanstead Abbots and Bishop's Stortford. The main tributaries of the River Lea also present fluvial flood risk to rural communities within the district. The floodplain associated with the tributaries of the River Lea network are generally narrow until reaching the urban areas and / or towards the confluences with the River Lea network.
- East Hertfordshire has experienced a number of historic surface water flooding incidents. Bishop's Stortford, Hertford, Much Hadham, Walkern and Buntingford are shown to have five or more records of surface water flooding. The uFMfSW further shows a number of prominent overland flow routes in the district; these predominantly follow topographical flow paths of existing watercourses or road networks, with some isolated ponding located in low lying areas.
- The Thames Water DG5 register indicates a total of 179 recorded incidents of sewer flooding in East Hertfordshire administrative area. The more frequently flooded postcodes are SG14 3, with 21 records, followed by SG12 8 with 18 records.
- There have been incidents of historic groundwater flooding in East Hertfordshire which is thought to primarily be caused by the underlying geology. Although the incidents are largely isolated, the settlement with the greatest recorded number of incidents is Ware and Tewin / Tewin Wood.
- There are four reservoirs located within East Hertfordshire and a number located outside of the area whose inundation mapping is shown to affect East Hertfordshire. There are no records of flooding from reservoirs impacting properties inside the study area. The level and standard of inspection and maintenance required under the Act means that the risk of flooding from reservoirs is relatively low.
- There are no records of a canal overtopping along the Lee Navigation Channel. There are however seven records of overtopping of the River Stort navigation channel; the majority of these being caused by heavy rainfall causing the River Stort to overtop its banks.
- Proposed site allocations were screened to provide a summary of flood risk to each site, informing which sites are taken forward to the Level 2 assessment.

13.1.2 The impact of climate change

In February 2016 the Environment Agency published new climate change guidance which must now be considered for all new developments and planning applications. Climate change modelling and mapping has been undertaken as part of the SFRA, to assist the Council with the preparation of their District Plan. Three scenarios have been modelled to reflect the three climate change allowances for the '2080s' timeframe in the Thames River Basin District and i.e. 25%, 35% and 70% allowances on top of the 100-year flow.

Developers will need to undertake a detailed assessment of climate change as part of the planning application process when preparing FRAs.

13.1.3 Key policies

There are a number of regional and local key policies which have been considered within the SFRA. The regional policies include the River Thames CFMP (2009), the Thames River Basin

Management Plan (2016), the Thames Flood Risk Management Plan (2015) and the Lower Lee Flood Risk Management Strategy (2013). Key local policy documents include the following:

- East Hertfordshire's policies include saved policies from the 2007 Local Plan and new local policies from the emerging District plan.
- Hertfordshire Local Flood Risk Management Strategy (2013 - 2016): The Strategy is used as a means by which the LLFA co-ordinates Flood Risk Management on a day to day basis and sets measures to manage local flood risk i.e. flood risk from surface water, groundwater and Ordinary Watercourses. The action plan shows how the LLFA intends to achieve high level objectives relating to flood risk.
- East Hertfordshire and Broxbourne SWMP (on-going): The SWMP is currently under development and will outline the main areas at risk, the preferred surface water management strategy in a given location and will set out further actions the Council will implement in the management of surface water.

13.1.4 Development and flood risk

A site-specific FRA is required for all developments which are located within the Environment Agency's Flood Zones, or for developments greater than 1ha in size (regardless of Flood Zone). They are also required for developments less than 1 ha in Flood Zone 1 where there is a change to vulnerability classification, where the development could be affected by other sources of flooding or all developments located in an area which has been highlighted as having critical drainage problems.

13.1.5 Surface water management and SuDS

All new major development proposals should ensure that sustainable drainage systems for management of run-off are put in place. The developer is responsible for ensuring the design, construction and future/ongoing maintenance of such a scheme is carefully and clearly defined, and a clear and comprehensive understanding of the existing catchment hydrological processes and existing drainage arrangements is essential.

There are a number of local guidance documents which can be considered in relation to SuDS in East Hertfordshire including; Hertfordshire County Council's SuDS Policy Statement, Hertfordshire County Council SuDS Design Guidance and Hertfordshire County Council Summary Guidance for Developers.

13.1.6 Defences and residual risk

A high-level review of existing flood defences was undertaken, including a more detailed assessment of the defences through Hertford, Ware and Bishop's Stortford. In addition, flood alleviation schemes are currently being proposed for Little Hadham, Stanstead Abbots and Furneux Pelham.

The condition of existing flood defences and whether they will continue to be maintained and/or improved in the future is a factor that needs to be considered as part of the risk-based sequential approach and, in light of this and potential residual risk, whether proposed land allocations are appropriate and sustainable.

13.1.7 Flood warning and emergency planning

The Environment Agency is the lead organisation for providing warnings of fluvial flooding (for watercourses classed as Main Rivers). Currently there are 25 Flood Alert Areas and 22 Flood Warning Areas (FWAs) covering significant parts of East Hertfordshire.

13.2 Level 2 SFRA

13.2.1 Assessment methods

As part of the Level 2 SFRA, detailed site summary tables have been produced for each the 11 Proposed Site Allocations taken forward from the Level 1 assessment. These sites are shown to be at risk of fluvial flood risk from watercourses running either through or adjacent to the site.

The summary tables set out the flood risk to each site, including maps of extent, depth and velocity of flooding as well as hazard mapping. Climate change mapping has also been produced for each site to indicate the impact which different climate change allowances may have on the site. Each table also sets out the NPPF requirements for the site as well as guidance for site-specific FRAs.

A broadscale assessment of suitable SuDS options has been provided giving an indication where there may be constraints to certain sets of SuDS techniques. This assessment is indicative and more detailed assessments should be carried out during the site planning stage to confirm the feasibility of different types of SuDS. It may be possible that those SuDS techniques highlighted as possibly not being suitable can be designed to overcome identified constraints.

For sites not covered by the EA Flood Zones but OS Mapping indicated a drain running across or adjacent to the site, Jflow modelling was conducted. However, this could only be carried out where the catchment area of the drain was present on the FEH CD-ROM, and therefore some of the sites which were not carried forward to the Level 2 assessment may still need detailed modelling to confirm the flood risk to the site from drains, which could not be modelled using strategic techniques.

It is important to recognise that a number of different sets of data have been used to clarify the Flood Zones. Mapping shown in the detailed site summary tables shown in Appendix I as part of the Level 2 assessment may differ to the Environment Agency Flood Zones and 'Flood Map for Planning' (Appendix B of this report), as the flood risk from ordinary watercourses flowing through proposed site allocations has been included in the summary table mapping. The Flood Zones presented in Appendix B are the same as those shown on the Environment Agency's 'Flood Map for Planning' Flood Zones, derived from generalised modelling.

13.2.2 Key Site Issues

- Jflow modelling of drains was undertaken for the following sites: Bishops Stortford South and Employment Land, North West Road Sawbridgeworth, Hertford South, East of Welwyn, North and East of Ware (Left and Right) and Gilston Area. However, detailed hydraulic modelling would be required to confirm the flood risk to these sites.
- Four of the sites have detailed modelling available; Mead Lane North, The Goods Yard, South of West Road and the Causeway/Old River Lane.
- For all sites, with the exception of the Causeway/Old River Lane, the majority of the sites are located within Flood Zone 1.
- The site at the Causeway/Old River Lane falls 83% within Flood Zone 2 and 13% within Flood Zone 3.
- Several sites have been identified as having surface water flood risk issues including:
 - Bishops Stortford South and Employment Land
 - Mead Lane North
 - The Goods Yard
 - East of Welwyn
 - North and East of Ware (Left and Right)
 - Gilston Area
 - Causeway/Old River Lane
- Climate change mapping indicates that the depths, velocities and hazard of flooding may increase as a result of climate change. The significance of the increase tends to depend on the topography of site and the percentage allowance used.
- Many sites are located in groundwater SPZs. This means that special consideration needs to be taken with SuDS. A suitable level of treatment should be ensured prior to discharging, along with establishing an understanding of constraints to sites and how SuDS can be designed to overcome these from relevant bodies (e.g. LLFA).
- The site East of Welwyn is the only site which has areas within it designated by the Environment Agency as being landfill. For this, site ground investigation will be required to determine the extent of the contamination and the impact this may have on SuDS.
- A strategic assessment was conducted of SuDS options using regional datasets. Therefore, a detailed site-specific assessment of suitable SuDS techniques would need to be undertaken at site-specific level to understand which SuDS option would be best.
- None of the proposed allocation sites apart from the Causeway/Old River would benefit from the formal flood defences which are currently present within East Hertfordshire. Flood mitigation measures should only be considered if, after a sequential approach, development sites cannot be located further away from high risk areas. The Causeway/Old River is currently protected by two privately-owned embankments.

- For a number of sites, there is the potential for safe access and egress to be impacted by fluvial or surface water flooding. Consideration should be made to these sites to how safe access and egress can be provided during high rainfall events.

14 Recommendations

A review of national and local policies has been conducted against the information collated on flood risk in this SFRA. Following this, several recommendations have been made for the Council to consider as part of their planning policy and flood risk management. These have been summarised below.

14.1 Site allocations

It is recommended that the outputs from this study are used as an evidence base for the allocation of potential development areas, directing new development to areas of lowest risk.

The Council should use the information provided within this SFRA to apply the Sequential Test to their potential site allocations. The required evidence should be prepared as part of a Local Plan Sustainability Appraisal or alternatively, it can be demonstrated through a free-standing document, or as part of strategic housing land or employment land availability assessments.

Following the application of the Sequential Test, if land outside Flood Zones 2 and 3 cannot appropriately accommodate all the necessary development, the Exception Test will need to be applied. In these circumstances it is recommended that a Level 2 SFRA assessment is undertaken, considering the detailed nature of the flood characteristics within a Flood Zone and assessment of other sources of flooding. Where a site allocation is shown to be in either Flood Zone 2 and/or 3, and/or has an ordinary watercourse running through or adjacent to it, the flood risk to the sites is to be taken forward to the Level 2 assessment. These sites are highlighted in the site screening table.

The Level 2 assessment seeks to identify the probable extent, depth and velocity of flooding as well as the hazard posed to people and inform more detailed guidance for site-specific FRAs. The Level 2 SFRA also includes a broadscale assessment of suitable SuDS options, providing an indication where there may be constraints to certain sets of SuDS techniques.

14.2 Assessing Flood Risk and Developments

- The NPPF supports a risk-based and sequential approach to development and flood risk in England, so that development is located in the lowest flood risk areas where possible; it is recommended that this approach is adopted for all future developments within the district
- A site-specific FRA is required for all developments over 1ha in Flood Zone 1; for developments less than 1 ha in Flood Zone 1 where there is a change to vulnerability classification or where the development could be affected by sources of flooding; and for all developments located in an area which has been highlighted as having critical drainage problems. The FRA should be proportionate to the degree of flood risk, as well as the scale, nature and location of the development
- It is recommended that the impact of climate change to a proposed site is considered in a FRA and that the percentage increases which relate to the proposed lifetime of the development and the vulnerability classification of the development is accounted for. The Environment Agency and LLFA should be consulted to confirm a suitable approach to climate change in light of the latest guidance
- At site-specific level, for any developments shown to be at residual flood risk, for example from a breach or overtopping (e.g. reservoir, canal, perched watercourse), it is recommended that a detailed hydraulic modelling study is carried out using Environment Agency guidance to assess the residual risk. For development applications located in the vicinity of a canal or navigation channel or reservoir, it is recommended that overtopping and / or breach of the structure is considered as part of a site-specific FRA to establish the residual risk to the development.
- Opportunities to reduce flood risk to wider communities could be sought through the regeneration of Brownfield sites, through reductions in the amount of surface water runoff generated on a site. The functional floodplain should be protected from development and returned to greenfield status (where possible).
- The Local Planning Authority (LPA), Environment Agency and Lead Local Flood Authority (LLFA) should be consulted to confirm the level of assessment required and to provide any information on any known local issues

- When assessing sites not identified in the District plan (windfall sites), developers should use evidence provided in this SFRA to apply the Sequential Test as well as provide evidence to show that they have adequately considered other reasonably available sites.
- The FRA should demonstrate that developments do not increase the likelihood or intensity of flood risk to third party development.
- To demonstrate the Exception Test has been passed, flood resilience design and emergency planning must be accounted for including:
 - The development will remain safe and operational under flood conditions;
 - A strategy for safe evacuation and / or safely remaining in the building under flood conditions;
 - Key services will continue to be provided under flood conditions; and
 - Buildings are designed for a quick recovery following a flood.

14.2.1 Future Developments

Development must seek opportunities to reduce the overall level of flood risk at the site, for example by:

- Reducing volume and rate of surface water runoff based on local planning policy and LLFA Guidance
- Locating development to areas with lower flood risk
- Creating space for flooding
- Integrating green infrastructure into mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.

The Local Planning Authority should consult the National Planning Practice Guidance and Environment Agency's 'Flood Risk Standing Advice (FRSA) for Local Planning Authorities', published in March 2014, when reviewing planning applications for proposed developments at risk of flooding.

At the planning application stage, developers may need to undertake more detailed hydrological and hydraulic assessments of the watercourses to verify flood extent (including latest climate change allowances, published by the Environment Agency in February 2016), inform development zoning within the site and prove, if required, whether the Exception Test can be passed.

14.2.2 Promotion of SuDS

Planners should be aware of the conditions set by the LLFA for surface water management and ensure development proposals and applications are compliant with the Council's policy. It is recommended that these policies should also be incorporated into the emerging District Plan.

Wherever possible, SuDS should be promoted:

- A detailed site-specific assessment of SuDS would be needed to incorporate SuDS successfully into the development proposals. New or re-development should adopt source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.
- Development should aim to achieve Greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible.
- Where possible developments must utilise the most sustainable form of drainage systems, in accordance with the SuDS hierarchy.
- For proposed developments, it is imperative that a site-specific infiltration test is conducted early on as part of the design of the development, to confirm whether the water table is low enough to allow for SuDS techniques that are designed to encourage infiltration.
- Where sites lie within or close to Groundwater SPZs or aquifers, there may be a requirement for a form of pre-treatment prior to infiltration. Further guidance can be found in the CIRIA SuDS manual on the level of water quality treatment required for drainage via infiltration. Further restrictions may still be applicable and guidance should be sought from the LLFA.
- Developers need to ensure that new development does not increase the surface water runoff rate from the site and should therefore contact the LLFA and other key stakeholders

at an early stage to ensure surface water management is undertaken and that SuDS are promoted and implemented, designed to overcome site-specific constraints.

- The LPA will need to consider drainage schemes for major applications, but it is advised developers utilise the LLFA's Policies and Guidance to develop their drainage scheme for minor applications.
- Where SUDs are provided as part of a development, applicants should detail how it will be maintained in the long term.

14.2.3 Infrastructure and Access

- Any developments located within an area protected by flood defences, where the condition of those defences is 'fair' or 'poor', and where the standard of protection is not of the required standard should be identified and the use of developer contributions considered to fund improvements.
- Safe access and egress for residents and emergency and service vehicles will need to be demonstrated at all development sites

14.2.4 Green Infrastructure and WFD

Opportunities to enhance green infrastructure (GI) and reduce flood risk by making space for water should be sought. With regards to flood risk, green spaces can be used to manage storm flows and free-up water storage capacity in existing infrastructure to reduce risk of damage to urban property. GI can also improve accessibility to waterways and improve water quality, supporting regeneration and improving opportunity for leisure, economic activity and biodiversity. It should be considered as critical infrastructure embedded at the start of projects, and considered within the mitigation measures for surface water runoff from development.

River corridors identified as functional floodplain can provide flood storage during a flood event. The Council's GI strategies should also incorporate any areas identified within the urban environment or upstream of a critical surface water flood area. Creating flood storage areas or flow paths areas and improving accessibility to this land can help protect current and future property.

Potential development site locations which have watercourses flowing through them, provide an opportunity to use the land as green infrastructure by adopting the Sequential design to locate development away from watercourses and Flood Zones, and by the use of SuDS. This can provide multiple benefits across a number of disciplines and may provide opportunities to use the land for an amenity and recreational purposes.

In addition, opportunities where it may be possible to improve the WFD status of watercourses, for example by opening up culverts, weir removal, and river restoration, should be considered.

14.2.5 Strategic flood risk solutions

The information provided in the SFRA should be used as a base for investigating potential strategic flood risk solutions within the district. Opportunities could consist of the following:

- Floodplain restoration represents the most sustainable form of strategic flood risk solution, by allowing watercourses to return to a more naturalised state, for example by bank stabilisation, re-naturalisation, structure removal/ modification and enhancing outfalls in the riparian environment.
- The construction of new upstream storage schemes as part of upstream catchment-based approaches could be considered on a number of watercourses within East Hertfordshire. Watercourses which are rural in their upper reaches but have high levels of flood risk to urban areas in the downstream reaches are potential candidates, as the open land in the upper reaches can potentially provide the space for an attenuation area, providing benefit to the urban area downstream. It should be noted that often such schemes are driven by requirements outlined by the LLFA and the Environment Agency. The Little Hadham Flood Storage Scheme is one such scheme currently proposed for the River Ash.
- If flood defences are to be constructed to protect a development site, it should be demonstrated that defences will not have a resulting negative impact on flood risk elsewhere, and that there is no net loss in floodplain storage.

14.3 Use of SFRA data and future updates

It is important to recognise that the SFRA has been developed using the best available information at the time of preparation. This relates both to the current risk of flooding from rivers, and the potential impacts of future climate change.

The SFRA should be a 'living document', and as a result should be updated when new information on flood risk, flood warning or new planning guidance or legislation becomes available. New information on flood risk may be provided by East Hertfordshire District Council, Hertfordshire County Council, the Highways Authority, Canal and River Trust, Thames Water and the Environment Agency. Such information may be in the form of:

- New hydraulic modelling results
- Flood event information following a future flood event
- Policy/ legislation updates
- Environment Agency flood map updates
- New flood defence schemes etc.

The Environment Agency regularly reviews their flood risk mapping, and it is important that they are approached to determine whether updated (more accurate) information is available prior to commencing a detailed Flood Risk Assessment. It is recommended that the SFRA is reviewed internally on a quarterly basis, in line with the Environment Agency's Flood Zone map updates to ensure latest data is still represented in the SFRA, allowing a cycle of review and a review of any updated data by checking with the above bodies for any new information

Note on the Environment Agency Flood Map for Planning

Where outlines are not informed by detailed hydraulic modelling, the Flood Map for Planning is based on generalised modelling to provide an indication of flood risk. Whilst the generalised modelling is generally accurate on a large scale, they are not provided for specific sites or for land where the catchment of the watercourse falls below 3km². For this reason, the Flood Map for Planning is not of a resolution to be used as application evidence to provide the details of possible flooding for individual properties or sites and for any sites with watercourses on, or adjacent to the site. Accordingly, for site-specific assessments it will be necessary to perform more detailed studies in circumstances where flood risk is an issue. Where the Flood Map for Planning is based on generalised modelling, developers should undertake a more detailed analysis and assessment of the flood risk at the planning application stage.

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EAST HERTS COUNCIL

DISTRICT PLANNING EXECUTIVE PANEL – 15 SEPTEMBER 2016

REPORT BY LEADER OF THE COUNCIL

SUSTAINABILITY APPRAISAL (SA) OF THE EAST HERTS DISTRICT PLAN – PRE-SUBMISSION VERSION 2016

WARD(S) AFFECTED: ALL

Purpose/Summary of Report

The purpose of this report is:

- To present to Members the Sustainability Appraisal (SA) of the East Herts District Plan Pre-Submission Version 2016 and to seek agreement to publish the SA for consultation under Regulation 19 of the Town and Country (Local Planning) (England) Regulations 2012 as amended.

<u>RECOMMENDATIONS FOR DISTRICT PLANNING EXECUTIVE PANEL:</u> That Council, via the Executive, be advised that:	
(A)	the Sustainability Appraisal of the East Herts District Plan Pre-Submission Version 2016, as detailed at Essential Reference 'B' to this report, be agreed and published for consultation for a period of six-weeks in accordance with Regulation 19 of the Town and Country Planning (Local Planning) (England) Regulations 2012 as amended.

1.0 Background

1.1 Sustainability Appraisal (SA) is a mechanism for considering and communicating the likely effects of a draft plan and any alternatives, in terms of sustainability issues, with a view to avoiding and mitigating adverse effects and maximising positives. In simple terms, the process of SA is one of assessing and recording how possible implications of development have been considered through the plan-making process.

1.2 The process of SA is legally required and should be undertaken

in line with the procedures prescribed by the Environmental Assessment of Plans and Programmes Regulations 2004, which were prepared in order to transpose into UK national law the EU Strategic Environmental Assessment (SEA) Directive, 2001.

- 1.3 The Council has commissioned Aecom consultants to undertake a final Sustainability Appraisal to support the District Plan. This final SA expands and updates on previous SA work presented alongside the Issues and Options Consultation Document, 2010 and the Preferred Options Consultation Document, 2014 (see Background Papers). The SA encompasses the requirements of the Equality Impact Assessment, Health Impact Assessment and Rural Proofing.
- 1.4 This report presents the final Sustainability Appraisal of the Pre-Submission District Plan in **Essential Reference Paper 'B'**. The SA complements Habitats Regulations process, which is presented in Agenda Item 13.

2.0 Report

- 2.1 The Sustainability Appraisal has informed the preparation of the emerging District Plan. Reasonable alternatives to the policies and sites have been assessed at various stages in the preparation of the District Plan and this has informed the development of the spatial strategy and the selection of sites. As well as an appraisal of each policy and site, the SA includes an assessment of the cumulative effects of the Plan against sustainability objectives.
- 2.2 The SA Report consists of four parts which includes an introduction plus seven appendices. The introduction explains the background to the report, an overview of the regulatory requirements, an outline of the District Plan and the scope of the SA.
- 2.3 Part 1 of the Report sets out what has happened in SA and Plan-making terms up to this point. It sets out how the Council has considered reasonable alternatives, including the previous work between 2008 and 2014 to inform the Preferred Options Plan as well as more recent work to inform the Pre-Submission District Plan. Part 1 also appraises the reasonable alternatives and sets out the reasons for selecting the preferred approach in the light of alternatives.

- 2.4 Part 2 appraises the proposed Pre-Submission District Plan development strategy. It sets out the appraisal narrative of the proposed policies and site allocations and the Plan as a whole against the SA Framework which comprises the following issues:
- Biodiversity
 - Community and Wellbeing
 - Economy and Employment
 - Historic Environment
 - Housing
 - Land
 - Landscape
 - Low Carbon Development
 - Transport
 - Water
- 2.5 Part 3 sets out what the next steps of the Plan-making and SA process include.
- 2.6 The SA also includes seven appendices:
- Appendix I: Regulatory Requirements
 - Appendix II: Updated Baseline and Policy Context
 - Appendix III: Development Options Appraisal
 - Appendix IV: SA of Spatial Strategy Alternatives in 2014
 - Appendix V: Site Options Appraisal in 2016
 - Appendix VI: SA of Settlements
 - Appendix VII: SA of Spatial Strategy Alternatives 2016
- 2.7 Subject to agreement it is proposed that consultation on the Pre-Submission District Plan will commence on the 3rd November 2016 for a six-week period closing on the 15th December 2016. The SA forms part of the Consultation Documents as required by Regulation 19 of the Town and Country Planning (Local Planning) (England) Regulations 2012 as amended. As stated in the District Plan Report at Agenda Item 15, one of the key legal tests is whether an adequate Sustainability Appraisal has been carried out. This SA report therefore fulfils this test.
- 3.0 Implications/Consultations
- 3.1 Information on any corporate issues and consultation associated with this report can be found within **Essential Reference Paper 'A'**.

Background Papers

Previous versions of the SA are available on the Council's website:
<http://www.eastherts.gov.uk/sa>

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ESSENTIAL REFERENCE PAPER 'A'

IMPLICATIONS/CONSULTATIONS

Contribution to the Council's Corporate Priorities/ Objectives:	Priority 1 – Improve the health and wellbeing of our communities Priority 2 – Enhance the quality of people's lives Priority 3 – Enable a flourishing local economy
Consultation:	None
Legal:	The Sustainability Appraisal is a legally required stage of Plan-making. It explains how the District Plan complies with the Environmental Assessment of Plans and Programmes Regulations 2004, which were prepared in order to transpose into UK national law the EU Strategic Environmental Assessment (SEA) Directive, 2001.
Financial:	None
Human Resource:	None
Risk Management:	None
Health and wellbeing – issues and impacts:	The Sustainability Appraisal is a legal document required to support the Submission District Plan, which in general will have positive impacts on health and wellbeing through a range of policy approaches that seek to create sustainable communities.

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EAST HERTS COUNCIL

DISTRICT PLANNING EXECUTIVE PANEL – 15 SEPTEMBER 2016

REPORT BY LEADER OF THE COUNCIL

HABITAT REGULATIONS ASSESSMENT (HRA) OF THE EAST HERTS DISTRICT PLAN – PRE-SUBMISSION VERSION 2016

WARD(S) AFFECTED: ALL

Purpose/Summary of Report

The purpose of this report is:

- To present to Members the Habitat Regulations Assessment (HRA) of the East Herts District Plan Pre-Submission Version 2016.

<u>RECOMMENDATIONS FOR DISTRICT PLANNING EXECUTIVE PANEL:</u> That Council, via the Executive, be advised that:	
(A)	the Habitats Regulations Assessment, as detailed at Essential Reference 'B' and Essential Reference Paper 'C' to this report, be supported as part of the evidence base to inform and support the East Herts District Plan.

1.0 Background

1.1 The Habitat Regulations Assessment incorporating an Appropriate Assessment is a mechanism for identifying if any aspects of the emerging District Plan would have the potential to cause a likely significant effect on Natura 2000 or European sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites).

1.2 In 2010 the Council undertook a Habitats Regulations Assessment (HRA) on the Issues and Options Consultation Document. In line with the 'stepped approach' taken towards preparation of the District Plan, a more detailed HRA Screening Report was then undertaken based on a number of possible development scenarios in order to inform the development

strategy set out in the Preferred Options Consultation Document (see Background Papers).

- 1.3 The Council has commissioned AECOM consultants to undertake a final HRA to support the District Plan. A copy of the final HRA is contained in **Essential Reference Paper 'B'**. **Essential Reference Paper 'C'** contains Appendix A of the HRA report. The HRA report complements and forms a part of the Sustainability Appraisal process, which is presented in Agenda Item 12.

2.0 Report

- 2.1 The process of HRA is legally required and is set out within Article 6 of the European Commission Habitats Directive 1992 and interpreted into British Law by the Conservation of Habitats and Species Regulations 2010. The ultimate aim of the directive is to "*maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest*" (Habitats Directive, Article 2(2)). This aim relates to habitats and species, not the European sites themselves, although the sites have a significant role in delivering favourable conservation status. It is also Government policy for sites designated under the Convention on Wetlands of International Importance (Ramsar sites) to be treated as having equivalent status to Natura 2000 sites.
- 2.2 HRA differs from SA and SEA in that the Habitats Directive applies the precautionary principle to protected areas; plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the site(s) in question. In contrast, the SEA Directive simply says that the assessment findings should be taken into account.
- 2.3 Chapter 2 of the HRA report explains the process by which the HRA has been carried out. Chapter 3 explores the relevant pathways of impact. Chapter 4 contains an initial sift of Local Plan policies to determine which present potential scope for impacts on European sites. Chapters 5 to 8 then provide more detailed screening (likely significant effects assessment) of each impact pathway. Each chapter begins with a consideration of the interest features and ecological condition of the site(s) and of the environmental processes essential to maintain their integrity. An assessment of the Plan in respect of each European site is then carried out and mitigation strategies are proposed where

necessary. The key findings are summarised in Chapter 9: Overall Conclusions.

- 2.4 There are three European sites that lie partly within East Herts:
- Lee Valley Special Protection Area (SPA);
 - Lee Valley Ramsar site; and
 - Wormley-Hoddesdonpark Woods Special Area of Conservation (SAC).
- 2.5 In addition, the District Plan has the potential to have an effect on the Epping Forest Special Area of Conservation even though it lies outside the authority boundary.
- 2.6 The HRA concludes that the District Plan will not result in a likely significant effect, either alone or in combination, upon any European Sites. This conclusion is contingent upon the signature, adoption and implementation of the Epping Forest SAC Memorandum of Understanding between the Housing Market Area Authorities (East Herts, Epping Forest, Harlow and Uttlesford Councils), Hertfordshire County Council, Essex County Council, Natural England and the Corporation of London. This will ensure that any issues that may arise regarding air quality or recreational pressure on Epping Forest SAC can be identified and addressed before they result in a likely significant effect.
- 2.7 In relation to Wormley-Hoddesdonpark Woods SAC, it is recommended that reference to a commitment by the Council to identified strategic initiatives to manage recreation at Wormley-Hoddesdonpark Woods (as identified in the Site Improvement Plan for that SAC) is incorporated within the Plan. As such, an amendment to paragraph 20.2.6 in the Natural Environment Chapter has been made to this effect.
- 2.8 It is further recommended that major developments deliver green space in line with the Natural England Accessible Natural Green Space Standard. This has been addressed through an amendment to Policy CFLR1 (Open Space, Sport and Recreation).
- 2.9 Subject to agreement it is proposed that consultation on the Pre-Submission District Plan will commence on the 3rd November 2016 for a six-week period closing on the 15th December 2016.

2.10 As stated in the District Plan Report at Agenda Item 15, one of the key legal tests is whether an Appropriate Assessment under the Habitat Regulations been carried out. The HRA Report therefore fulfils this test.

3.0 Implications/Consultations

3.1 Information on any corporate issues and consultation associated with this report can be found within **Essential Reference Paper 'A'**.

Background Papers

Previous versions of the HRA are available on the Council's website:
<http://www.eastherts.gov.uk/hra>

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ESSENTIAL REFERENCE PAPER 'A'

IMPLICATIONS/CONSULTATIONS

Contribution to the Council's Corporate Priorities/ Objectives:	Priority 1 – Improve the health and wellbeing of our communities Priority 2 – Enhance the quality of people's lives Priority 3 – Enable a flourishing local economy
Consultation:	None
Legal:	The HRA is a legally required stage of Plan-making. It explains how the District Plan complies with the Habitat Regulations Directive.
Financial:	None
Human Resource:	None
Risk Management:	None
Health and wellbeing – issues and impacts:	The HRA is a legal document required to support the Submission District Plan, which in general will have positive impacts on health and wellbeing through a range of policy approaches that seek to create sustainable communities.

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Submitted to
East Herts
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East Herts District Plan Habitats Regulations Assessment

September 2016

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The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by AECOM has not been independently verified by AECOM, unless otherwise stated in the Report.

The methodology adopted and the sources of information used by AECOM in providing its services are outlined in this Report. The work described in this Report was undertaken in September 2016 and is based on the conditions encountered and the information available during the said period of time. The scope of this Report and the services are accordingly factually limited by these circumstances.

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1 Introduction

1.1 Background to the Project

- 1.1.1 AECOM was appointed by East Herts District Council to assist the Council in undertaking a Habitat Regulations Assessment of its District Plan (hereafter referred to as the 'Plan' or 'District Plan'). The objective of this assessment was to identify any aspects of the Plan that would cause an adverse effect on the integrity of Natura 2000 sites, otherwise known as European sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and, as a matter of Government policy, Ramsar sites), either in isolation or in combination with other plans and projects, and to advise on appropriate policy mechanisms for delivering mitigation where such effects were identified.
- 1.1.2 An assessment of housing need across the East Herts and West Essex Housing Market Area (HMA) has been conducted, which was then used as the basis for developing the District Plan. The HMA covers Epping Forest District Council, Harlow Council, East Herts District Council and Uttlesford District Council. The HMA developed a series of different Options for quantity and distribution of housing in each of the Authority boundaries, focussed on growth within the broad Harlow area. To underpin this, traffic modelling and an air quality impact assessment regarding impacts on Lee Valley SPA/Ramsar site and Epping Forest SAC was undertaken of each of the Options. Data from that analysis is used to inform this HRA.

1.2 Legislation

- 1.2.1 The need for Appropriate Assessment is set out within Article 6 of the EC Habitats Directive 1992, and interpreted into British law by the Conservation of Habitats and Species Regulations 2010. The ultimate aim of the Directive is to "*maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest*" (Habitats Directive, Article 2(2)). This aim relates to habitats and species, not the European sites themselves, although the sites have a significant role in delivering favourable conservation status.
- 1.2.2 The Habitats Directive applies the precautionary principle to European sites. Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the site(s) in question. Plans and projects with predicted adverse impacts on European sites may still be permitted if there are no alternatives to them and there are Imperative Reasons of Overriding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network.
- 1.2.3 In order to ascertain whether or not site integrity will be affected, an Appropriate Assessment should be undertaken of the plan or project in question:

Box 1: The legislative basis for Appropriate Assessment**Habitats Directive 1992**

Article 6 (3) states that:

“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.”

Conservation of Habitats and Species Regulations 2010

The Regulations state that:

“A competent authority, before deciding to ... give any consent for a plan or project which is likely to have a significant effect on a European site ... shall make an appropriate assessment of the implications for the site in view of that sites conservation objectives... The authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site”.

- 1.2.4 Over time the phrase ‘Habitats Regulations Assessment’ (HRA) has come into wide currency to describe the overall process set out in the Habitats Directive from screening through to Imperative Reasons of Overriding Public Interest (IROPI). This has arisen in order to distinguish the process from the individual stage described in the law as an ‘appropriate assessment’. Throughout this report we use the term Habitat Regulations Assessment for the overall process and restrict the use of Appropriate Assessment to the specific stage of that name.

1.3 Scope of the Project

- 1.3.1 There is no pre-defined guidance that dictates the physical scope of a HRA of a Plan document. Therefore, in considering the physical scope of the assessment, we were guided primarily by the identified impact pathways (called the source-pathway-receptor model) rather than by arbitrary ‘zones’. Current guidance suggests that the following European sites be included in the scope of assessment:
- All sites within the East Herts District boundary; and
 - Other sites shown to be linked to development within the District boundary through a known ‘pathway’ (discussed below).
- 1.3.2 Briefly defined, pathways are routes by which a change in activity provided within a District Plan document can lead to an effect upon an internationally designated site. Guidance from the former Department of Communities and Local Government states that the HRA should be ‘*proportionate to the geographical scope of the [plan policy]*’ and that ‘*an AA need not be done in any more detail, or using more resources, than is useful for its purpose*’ (CLG, 2006, p.6). More recently, the Court of Appeal¹ ruled that providing the Council (competent authority) was duly satisfied that proposed mitigation could be ‘*achieved in practice*’ to satisfied that the proposed development would have no adverse effect, then this would suffice. This ruling has since been applied to a planning permission (rather than a Core Strategy document)². In this case the High Court ruled that for ‘a multistage process, so long as there is sufficient information at any particular stage to enable the authority to be satisfied that the proposed mitigation can be achieved in practice it is not necessary for all matters concerning mitigation to be fully resolved before a decision maker is able to conclude that a development will satisfy the requirements of reg 61 of the Habitats Regulations’.
- 1.3.3 There are three European sites that lie partly within East Herts:
- Lee Valley SPA;

¹ No Adastral New Town Ltd (NANT) v Suffolk Coastal District Council Court of Appeal, 17th February 2015

² High Court case of R (Devon Wildlife Trust) v Teignbridge District Council, 28 July 2015

- Lee Valley Ramsar site; and
 - Wormley-Hoddesdonpark Woods SAC
- 1.3.4 Outside the District, the following site also requires consideration because there is potential for impacts stemming from the District Plan to create significant effects even though the site lies outside the authority boundary:
- Epping Forest SAC
- 1.3.5 Eversden & Wimpole Woods SAC (located 16km to the north of East Herts) was given preliminary consideration since the barbastelle bat population at that site is known to forage well outside the site boundary. However, work undertaken for the South Cambridgeshire Biodiversity Strategy identifies the area of key importance for the barbastelle bats for which the SAC was designated. The southern-most part of this area of importance is situated approximately on a line with Whaddon and Meldreth and thus approximately 10km north of East Herts. Since the District Plan does not propose any development outside the district boundary this SAC is therefore not considered further.
- 1.3.6 The reasons for designation of these sites, together with current trends in habitat quality and pressures on the sites, are indicated in Chapters 4 to 8. All the European sites are illustrated in Appendix A, Figure A1.
- 1.3.7 In order to fully inform the screening process, a number of recent studies have been consulted to determine likely significant effects that could arise from the East Herts District Plan. These include:
- Final Water Resources Management Plan, 2015-2020. Affinity Water) June 2014
 - Rye Meads Water Cycle Study (Hyder Consultancy, October 2009);
 - Core Strategies (and HRAs) for Harlow, Epping Forest District, Broxbourne District, Hertsmere Borough, London Borough of Waltham Forest, St Albans District, Uttlesford District, Stevenage Borough and Welwyn Hatfield District;
 - Recreational activity, tourism and European site recreational catchment data – where available have used data that exists for individual European sites but in many cases these do not exist. In such circumstances have used appropriate proxy from other European sites designated for similar features and in similar settings;
 - Hertfordshire County Council. Local Transport Plan. Volume 2. Transport Policy Document (April 2011)
 - Lee Valley Regional Park Development Framework
 - The UK Air Pollution Information System (www.apis.ac.uk); and
 - Multi Agency Geographic Information for the Countryside (MAGIC) and its links to SSSI citations and the JNCC website (www.magic.gov.uk)

1.4 This Report

- 1.4.1 Chapter 2 of this report explains the process by which the HRA has been carried out. Chapter 3 explores the relevant pathways of impact. Chapter 4 contains an initial sift of District Plan policies to determine which present potential scope for impacts on European sites. Chapters 5 to 8 then provide more detailed screening (likely significant effects assessment) of each impact pathway. Each chapter begins with a consideration of the interest features and ecological condition of the site(s) and of the environmental processes essential to maintain their integrity. An assessment of the Plan in respect of each European site is then carried out mitigation strategies are proposed where necessary³. The key findings are summarised in Chapter 9: Overall Conclusions.

³ Legal precedent confirms that it is perfectly acceptable to reference mitigation measures at the screening stage of HRA, if that is the stage at which they can be identified.

2 Methodology

2.1 Introduction

- 2.1.1 The HRA has been carried out in the continuing absence of formal central Government guidance, although general EC guidance on HRA does exist⁴. The former Department of Communities and Local Government (DCLG) released a consultation paper on the Appropriate Assessment of Plans in 2006⁵. As yet, no further formal guidance has emerged. However, Natural England has produced its own internal guidance⁶ as has the RSPB⁷. Both of these have been referred to alongside the guidance outlined in paragraph 1.2.3 in undertaking this HRA.
- 2.1.2 Figure 1 below outlines the stages of HRA according to current draft DCLG guidance. The stages are essentially iterative, being revisited as necessary in response to more detailed information, recommendations and any relevant changes to the plan until no significant adverse effects remain.

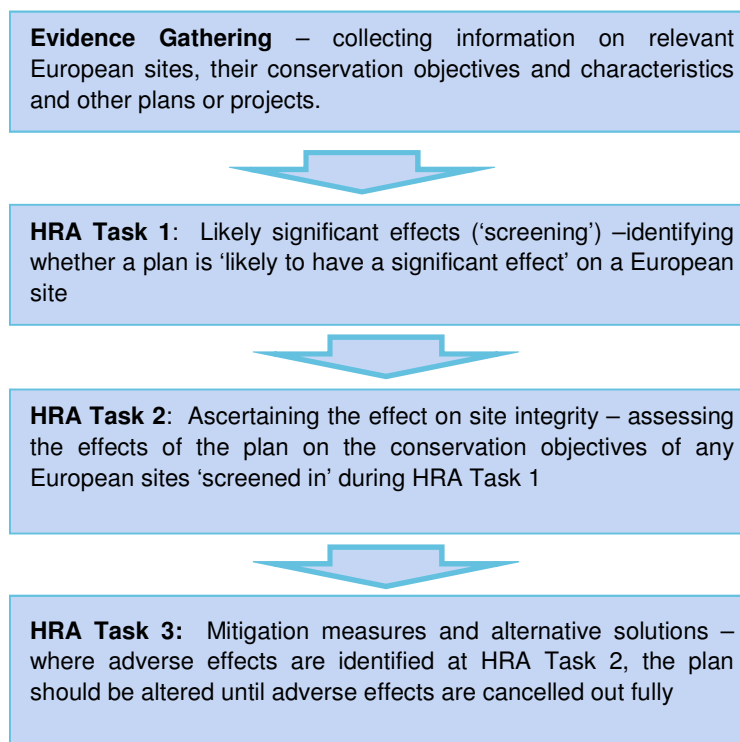


Figure 1: Four Stage Approach to Habitats Regulations Assessment. Source CLG, 2006.

⁴ European Commission (2001): Assessment of plans and projects significantly affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and 6(4) of the Habitats Directive.

⁵ CLG (2006) Planning for the Protection of European Sites, Consultation Paper

⁶ http://www.ukmpas.org/pdf/practical_guidance/HRGN1.pdf

⁷ Dodd A.M., Cleary B.E., Dawkins J.S., Byron H.J., Palframan L.J. and Williams G.M. (2007) *The Appropriate Assessment of Spatial Plans in England: a guide to why, when and how to do it*. The RSPB, Sandy.

2.2 HRA Task 1 - Likely Significant Effects (LSE)

2.2.1 Following evidence gathering, the first stage of any Habitat Regulations Assessment is a Likely Significant Effect (LSE) test - essentially a risk assessment to decide whether the full subsequent stage known as Appropriate Assessment is required. The essential question is:

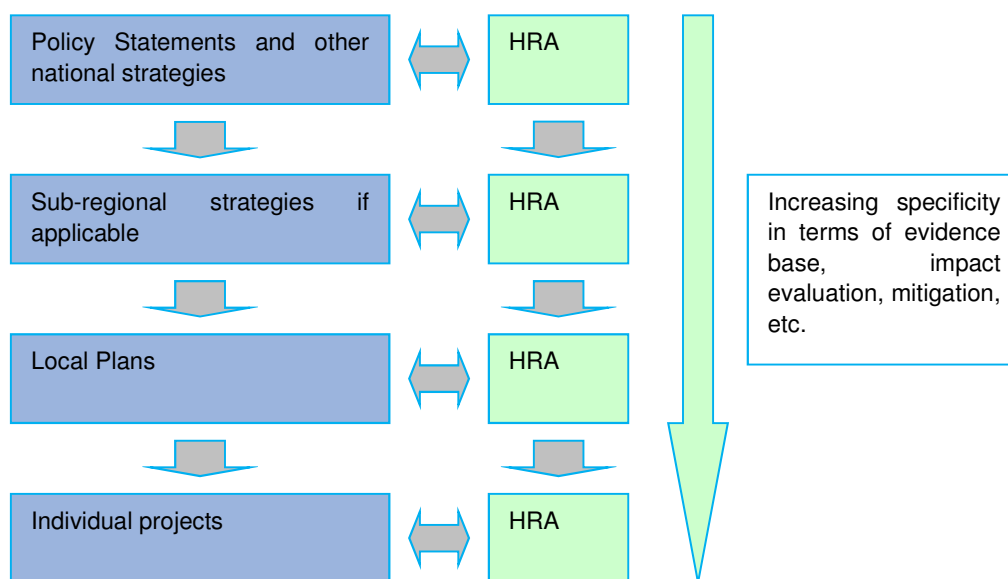
“Is the Plan, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon European sites?”

2.2.2 The objective is to ‘screen out’ those plans and projects that can, without any detailed appraisal, be said to be unlikely to result in significant adverse effects upon European sites, usually because there is no mechanism for an adverse interaction with European sites.

2.2.3 In evaluating significance, AECOM have relied on our professional judgement as well as the results of previous stakeholder consultation regarding development impacts on the European sites considered within this assessment.

2.2.4 The level of detail in land use plans concerning developments that will be permitted under the plans will never be sufficient to make a detailed quantification of adverse effects. Therefore, we have again taken a precautionary approach (in the absence of more precise data) assuming as the default position that if an adverse effect cannot be confidently ruled out, avoidance or mitigation measures must be provided. This is in line with the former Department of Communities and Local Government guidance and Court rulings that the level of detail of the assessment, whilst meeting the relevant requirements of the Conservation Regulations, should be ‘appropriate’ to the level of plan or project that it addresses. This ‘tiering’ of assessment is summarised in Box 2.

Box 2: Tiering in HRA of Land Use Plans



2.2.5 When discussing ‘mitigation’ for a District Plan document, one is concerned primarily with the policy framework to enable the delivery of such mitigation rather than the details of the mitigation measures themselves since the District Plan document is a high-level policy document.

2.3 Principal Other Plans and Projects That May Act ‘In Combination’

2.3.1 It is neither practical nor necessary to assess the ‘in combination’ effects of the Plan within the context of all other plans and projects within Hertfordshire and the neighbouring local authorities in south Cambridgeshire and west Essex. In practice therefore, in combination assessment is of greatest relevance when the plan would otherwise be screened out because its individual contribution is inconsequential. For the purposes of this assessment, we have determined that, due to the nature of the identified impacts, the key other plans and projects relate to the additional

housing and commercial/industrial allocations proposed for other relevant Cambridgeshire, Essex and Hertfordshire authorities over the lifetime of the District Plan, particularly Epping Forest, Harlow and Uttlesford.

Table 1: Housing levels to be delivered across Hertfordshire and surrounding authorities, provided for context.

Local Authority	Total housing provided
North Hertfordshire	16,925 ⁸ (2011-2031)
Uttlesford	These three authorities with East Herts are working together as part of a Strategic Market Area (SMA). Where impacts in combination such as air quality impacts are considered, these assessments will be based in the level of development provided within the SMA.
Epping Forest	
Harlow	
Broxbourne	7,123 ⁹ (2014-2031)
Welwyn Hatfield	12,500 ¹⁰ (2011-2031)
Stevenage	7,600 ¹¹ (2011-2031)

- 2.3.2 There are other plans and projects that are relevant to the 'in combination' assessment, most notably Thames Water's Final Water Resources Management Plan (WRMP) 2015-2040 (2014), Essex and Suffolk Water's Final WRMP (2014), Cambridge Water Company's WRMP (2014) and the Environment Agency's Upper Lee Abstraction Licensing Strategy (2013) and Review of Consents report for the Lee Valley SPA/Ramsar site. These are all taken into account in this assessment.
- 2.3.3 The Minerals and Waste Development Frameworks for Hertfordshire, Essex, London and Cambridgeshire are also of some relevance, since these may well contribute to increased vehicle movements on the road network within East Herts (and thereby contribute to air quality impacts). The Hertfordshire, Essex and Cambridgeshire Local Transport Plans to 2031 will also be important in determining vehicle movements on the highways network in the short term. However, the major impact is likely to be that of housing and commercial development within the surrounding districts as set out in Local Development Frameworks and these have therefore been the main focus of cumulative 'in combination' effects with regard to this HRA. In this context, we have also consulted the London Plan (Consolidated with Alterations 2016).
- 2.3.4 In relation to recreational activity, the following documents have been consulted for their plans and projects that may affect European sites in combination with development in East Herts: East Herts Parks and Open Spaces Strategy (2013); Lee Valley Regional Park Authority Site management Plan; Epping Forest Management Plan and visitor surveys¹²; Hoddesdonpark Wood Management Plan; Wormley Wood and Nut Wood Management Plan.

2.4 Air Quality Impact Assessment

- 2.4.1 To support the HMA Options, traffic modelling and air quality impact assessment in line with the standard Design Manual for Roads and Bridges (DMRB) methodology¹³ was undertaken comparing

⁸ Proposed Submission Local Plan (2016)

⁹ Regulation 18 full draft Local Plan for Broxbourne(2016)

¹⁰ Welwyn Hatfield Borough Council emerging Local Plan (January 2015)

¹¹ Stevenage Borough Local Plan 2011-2031. Publication draft – January 2016

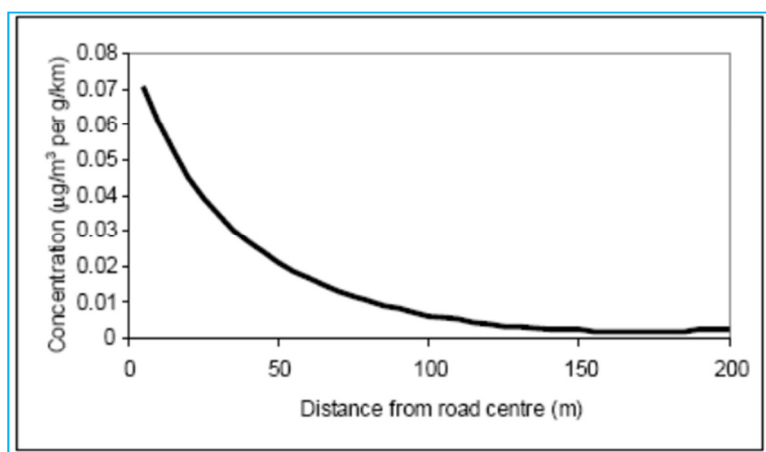
¹² At time of writing the Corporation of London have commissioned an analysis of their existing visitor survey data which is likely to identify a requirement for further surveys to refine the recreational catchment of Epping Forest SAC

¹³ Design Manual for Roads and Bridges, Volume 11, Section 3 Part 1 (HA207/07) and subsequent Interim Advice Notes, coupled with reference to Air Quality Technical Advisory Group (AQTAG) and Institute of Air Quality Management guidance

the predicted change in vehicle flows on roads within 200m of Epping Forest SAC and Lee Valley SPA/ Ramsar site as a result of the development Options identified within the HMA, with that which would be expected to occur anyway over time due to background population growth and delivery of existing consents.

- 2.4.2 Since vehicle exhausts are situated very close to the ground the emissions only have a local effect within a narrow band along the roadside, well within 200m of the centreline of the road. Beyond 200m emissions will have dispersed sufficiently that atmospheric concentrations are essentially background levels. The rate of decline is steeply curved rather than linear. In other words concentrations will decline rapidly as one begins to move away from the roadside, slackening to a more gradual decline over the rest of the distance up to 200m

Figure 2: Traffic contribution to concentrations of pollutants at different distances from a road (Source: DfT)



- 2.4.3 There are two measures of relevance regarding air quality impacts from vehicle exhausts. The first is the concentration of oxides of nitrogen (known as NO_x) in the atmosphere. The main importance is as a source of nitrogen, which is then deposited on adjacent habitats (including directly to the plants themselves) either directly from turbulence (known as dry deposition) or washed out in rainfall (known as wet deposition). The deposited nitrogen can then have a range of effects, primarily growth stimulation or inhibition¹⁴, but also biochemical and physiological effects such as changes to chlorophyll content. NO_x may also have some effects which are un-related to its role in total nitrogen intake (such as the acidity of the gas potentially affecting lipid biosynthesis) but the evidence for these effects is limited and they do not appear to occur until high annual concentrations of NO_x are reached. The guideline atmospheric concentration of NO_x advocated by Government for the protection of vegetation is 30 micrograms per cubic metre (µg m⁻³), known as the Critical Level. This is driven by the role of NO_x in nitrogen deposition and in particular in growth stimulation and inhibition. If the total NO_x concentration in a given area is below the critical level, it is unlikely that nitrogen deposition will be an issue unless there are other sources of nitrogen unrelated to the road (e.g. ammonia). If it is above the critical level then local nitrogen deposition from road traffic could be an issue and should be investigated.
- 2.4.4 The second important metric is a direct determination of the rate of the resulting nitrogen deposition. Unlike NO_x in atmosphere, the nitrogen deposition rate below which we are confident effects would not arise is different for each habitat. The rate (known as the Critical Load) is provided on the UK Air Pollution Information System website (www.apis.ac.uk) and is expressed as a quantity (kilograms) of nitrogen over a given area (hectare) per year (kgNha⁻¹yr⁻¹).
- 2.4.5 For completeness, rates of acid deposition have also been calculated. Acid deposition derives from both sulphur and nitrogen. It is expressed in terms of kiloequivalents (keq) per hectare per year. The thresholds against which acid deposition is assessed are referred to as the Critical Load Function. The principle is similar to that for a nitrogen deposition Critical Load but it is calculated very differently.

¹⁴ The addition of nitrogen is a form of fertilization, which can have a negative effect on habitats over time by encouraging more competitive plant species that can force out the less competitive species that are more characteristic of such habitats.

- 2.4.6 Design Manual for Roads and Bridges and the Air Quality Technical Advisory Group guidance advises that where the concentration within the emission footprint [i.e. the Process Contribution (PC), the contribution of the scheme in question] in any part of the European site(s) is 1% of the relevant long-term benchmark (Critical Level or Critical Load) or less, the emission is 'inconsequential' (in the words of AQTAG) and 'imperceptible' (in the words of DMRB) and not likely to have a significant effect alone or in combination with other projects and plans irrespective of the background levels¹⁵.
- 2.4.7 A series of road links within 200m of Epping Forest SAC and the Lee Valley SPA/ Ramsar site were identified for further investigation. Road links in proximity to European designated sites are identified in Table 2.

Table 2: Location of Road Links analysed within 200m of Epping Forest SAC and Lee Valley SPA/Ramsar site

Road Link	Ecological Site	Distance of Link from Designated Site
A121 (two sections)	Epping Forest SAC	Adjacent
A104	Epping Forest SAC	Adjacent
B1393	Epping Forest SAC	Adjacent
B172	Epping Forest SAC	Adjacent
Theydon Road	Epping Forest SAC	Adjacent
A414	Lee Valley SPA/ Ramsar site	25 metres

- 2.4.8 For each of these roads and each of the HMA Options, transport modellers calculated the following scenarios:
- Do Minimum (i.e. traffic flows expected by 2033, without new (i.e. currently unpermitted) development identified within the HMA)
 - Do Something (i.e. traffic flows expected by 2033 with the level of new development identified within the HMA)
- 2.4.9 Annual Average Daily Traffic (AADT) for each of these link locations was modelled based AADT information gathered in 2014. This is referred to as the Base Case.
- 2.4.10 Using these Scenarios, and information on average vehicle speeds and percentage heavy duty vehicles (both of which influence the emissions profile), Air quality specialists calculated expected NO_x concentrations, nitrogen deposition rates and acid deposition rates for those road links where traffic flows were forecast to increase as a result of the HMA options. For some road sections (particularly around Wake Arms Roundabout) multiple transects were modelled to account for the influence of the predominant wind direction and emissions from the other nearby road links. All Links pass immediately adjacent to the Epping Forest SAC, except for the A414 which at its closest is located 25m from Lee Valley SPA/ Ramsar site.
- 2.4.11 The difference between the Do Minimum and Do Something scenarios is the contribution of the HMA (and thus the four Local/District Plans taken collectively: East Herts, Epping Forest, Harlow and Uttlesford) since the difference between Do Minimum and Do Something reflects the effect the adoption of the Local/District Plans would have compared to the situation that would arise anyway due to background population growth across the region and delivery of existing planning permissions. This difference is essentially the Process Contribution (PC).
- 2.4.12 The predictions of nitrogen deposition and annual mean NO_x concentrations for the PC are based on the assessment methodology presented in Annex F of the Design Manual for Roads and Bridges (DMRB), Volume 11, Section 3, Part 1 (HA207/07)¹⁶ for the assessment of impacts on sensitive designated ecosystems due to highways works. Background data for the predictions for 2033 were sourced from the Department of Environment, Food and Rural Affairs (Defra) background maps for

¹⁵ Design Manual for Roads and Bridges Interim Advice Note (IAN) 174/13 (2013) Updated advice for evaluating significant local air quality effects for users of DMRB Volume 11, Section 3, Part 1 Air Quality (HA207/07) states that 'Where the difference in concentrations [between the Do Minimum and Do Something Scenarios] are less than 1% of the air quality threshold then the change at these receptors is considered to be imperceptible and they can be scoped out of the judgement on significance'.

AQTAG position regarding In-combination guidance and assessment. Correspondence between AQTAG and PINS. March 2015 states that: 'AQTAG is confident that a process contribution [the difference between Do Minimum and Do Something Scenarios] < 1% of the relevant critical level or load (CL) can be considered inconsequential and does not need to be included in an in-combination assessment'

¹⁶ Design Manual for Roads and Bridges, HA207/07, Highways Agency

2013 projected forward to 2033¹⁷. Background nitrogen deposition rates were sourced from the Air Pollution Information System (APIS) website¹⁸.

- 2.4.13 Guidance note HA207/07 advises that background rates are reduced by 2% per year to allow for an improvement in background air quality over the Local/District Plan period (2033) as a result of ongoing national initiatives to improve emissions and the expected improvement in vehicle emissions over that period. However, due to the uncertainty in the rate with which projected future vehicle emission rates and background pollution concentrations are improving, the assumption has been made that conditions in 2023 (the midpoint between the base year and the year of assessment) are representative of conditions in 2033 (the year of assessment). This approach is accepted within the professional air quality community and accounts for known recent improvements in vehicle technologies (new standard Euro 6/VI vehicles), whilst excluding the more distant and therefore more uncertain projections on the future evolution of the vehicle fleet.
- 2.4.14 Annual mean concentrations of NO_x were calculated at two 200m transects modelled at 1m, 10m, 20m, 50m, 100m, 150m, and 200m back from all Links except the A414 which was measured at 25m, 50m, 100m, 150m, 200m from the Link. Predictions were made using the latest version of ADMS-Roads using emission rates derived from the Defra Emission Factor Toolkit (version 6.0.2) which utilises traffic data in the form of 24-hour Annual Average Daily Traffic (AADT)¹⁹, detailed vehicle fleet composition and average speed. The end of the Local/District Plan (2033) period has been selected for the future scenario as this is the point at which the total emissions due to Plan traffic will be at their greatest.
- 2.4.15 The tables in Appendix C and Appendix D present the calculated changes in NO_x concentration, nitrogen deposition and acid deposition due to the modelled Options on each of the Links resulting from development from the HMA compared to that which would occur in any case over the Plan period (2033). In these tables 'Baseline' refers to the current (2014) baseline flows. The key column/row is that which shows the difference between the DM and DS Scenarios (Change) – this identifies the contribution of development provided in the HMA, i.e. the Process Contribution.
- 2.4.16 For NO_x, if the numbers in the Change column fall on or below 0.3 µg m⁻³ (i.e. 1% of the generic Critical Level for vegetation of 30 µg m⁻³) then impacts can be screened out without further discussion. For nitrogen deposition, if the numbers in this column fall on or below 0.1 kgNha⁻¹yr⁻¹ (1% of the lowest point in the Critical Load range) then it can also be screened out.

¹⁷ Air Quality Archive Background Maps. Defra, 2013. Available from: <http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html>

¹⁸ Air Pollution Information System (APIS) www.apis.ac.uk

¹⁹ Derived from Peak Flow data

3 Pathways of Impact

3.1 Introduction

3.1.1 In carrying out an HRA it is important to determine the various ways in which land use plans can impact on internationally designated sites by following the pathways along which development can be connected with internationally designated sites, in some cases many kilometres distant. Briefly defined, pathways are routes by which a change in activity associated with a development can lead to an effect upon an internationally designated site. Following screening of the Plan, the following impact pathways are considered within this document.

3.1.2 Impact pathways for consideration are:

- Disturbance from recreational activities
- Atmospheric pollution
- Water abstraction
- Water quality

3.2 Disturbance from Recreational Activities and Urbanisation

3.2.1 Recreational use of an internationally designated site has potential to:

- Cause damage through mechanical/ abrasive damage and nutrient enrichment;
- Cause disturbance to sensitive species, particularly ground-nesting birds and wintering wildfowl; and
- Prevent appropriate management or exacerbate existing management difficulties.

Recreational pressure

3.2.2 Different types of internationally designated sites are subject to different types of recreational pressures and have different vulnerabilities. Studies across a range of species have shown that the effects from recreation can be complex.

Mechanical/abrasive damage and nutrient enrichment

3.2.3 Most types of terrestrial internationally designated site can be affected by trampling, which in turn causes soil compaction and erosion. Walkers with dogs contribute to pressure on sites through nutrient enrichment via dog fouling and also have potential to cause greater disturbance to fauna as dogs are less likely to keep to marked footpaths and move more erratically. Motorcycle scrambling and off-road vehicle use can cause serious erosion, as well as disturbance to sensitive species.

3.2.4 There have been several papers published that empirically demonstrate that damage to vegetation in woodlands and other habitats can be caused by vehicles, walkers, horses and cyclists:

- Wilson & Seney (1994)²⁰ examined the degree of track erosion caused by hikers, motorcycles, horses and cyclists from 108 plots along tracks in the Gallatin National Forest, Montana. Although the results proved difficult to interpret, it was concluded that horses and hikers disturbed more sediment on wet tracks, and therefore caused more erosion, than motorcycles and bicycles.
- Cole et al (1995a, b)²¹ conducted experimental off-track trampling in 18 closed forest, dwarf scrub and meadow and grassland communities (each tramped between 0 – 500 times) over five

²⁰ Wilson, J.P. & J.P. Seney. 1994. Erosional impact of hikers, horses, motorcycles and off road bicycles on mountain trails in Montana. *Mountain Research and Development* 14:77-88

²¹ Cole, D.N. 1995a. Experimental trampling of vegetation. I. Relationship between trampling intensity and vegetation response. *Journal of Applied Ecology* 32: 203-214

mountain regions in the US. Vegetation cover was assessed two weeks and one year after trampling, and an inverse relationship with trampling intensity was discovered, although this relationship was weaker after one year than two weeks indicating some recovery of the vegetation. Differences in plant morphological characteristics were found to explain more variation in response between different vegetation types than soil and topographic factors. Low-growing, mat-forming grasses regained their cover best after two weeks and were considered most resistant to trampling, while tall forbs (non-woody vascular plants other than grasses, sedges, rushes and ferns) were considered least resistant. Cover of hemicryptophytes and geophytes (plants with buds below the soil surface) was heavily reduced after two weeks, but had recovered well after one year and as such these were considered most resilient to trampling. Chamaephytes (plants with buds above the soil surface) were least resilient to trampling. It was concluded that these would be the least tolerant of a regular cycle of disturbance.

- Cole (1995c)²² conducted a follow-up study (in 4 vegetation types) in which shoe type (trainers or walking boots) and trampler weight were varied. Although immediate damage was greater with walking boots, there was no significant difference after one year. Heavier trampers caused a greater reduction in vegetation height than lighter trampers, but there was no difference in effect on cover.
- Cole & Spildie (1998)²³ experimentally compared the effects of off-track trampling by hiker and horse (at two intensities – 25 and 150 passes) in two woodland vegetation types (one with an erect forb understorey and one with a low shrub understorey). Horse traffic was found to cause the largest reduction in vegetation cover. The forb-dominated vegetation suffered greatest disturbance, but recovered rapidly. Higher trampling intensities caused more disturbance.

3.2.5 The total volume of dog faeces deposited on sites can be surprisingly large. For example, at Burnham Beeches National Nature Reserve over one year, Barnard²⁴ estimated the total amounts of urine and faeces from dogs as 30,000 litres and 60 tonnes respectively. The specific impact on Epping Forest has not been quantified from local studies; however, the fact that habitats for which the SAC is designated appear to be subject already to excessive nitrogen deposition, suggests that any additional source of nutrient enrichment (including uncollected dog faeces) will make a cumulative contribution to overall enrichment. Any such contribution must then be considered within the context of other recreational sources of impact on sites.

Disturbance

- 3.2.6 Concern regarding the effects of disturbance on birds stems from the fact that they are expending energy unnecessarily and the time they spend responding to disturbance is time that is not spent feeding²⁵. Disturbance therefore risks increasing energetic output while reducing energetic input, which can adversely affect the 'condition' and ultimately the survival of the birds. In addition, displacement of birds from one feeding site to others can increase the pressure on the resources available within the remaining sites, as they have to sustain a greater number of birds²⁶.
- 3.2.7 The potential for disturbance may be less in winter than in summer, in that there are often a smaller number of recreational users. In addition, the consequences of disturbance at a population level may be reduced because birds are not breeding. However, winter activity can still cause important disturbance, especially as birds are particularly vulnerable at this time of year due to food shortages, such that disturbance which results in abandonment of suitable feeding areas through disturbance can have severe consequences. Several empirical studies have, through correlative analysis,

Cole, D.N. 1995b. Experimental trampling of vegetation. II. Predictors of resistance and resilience. *Journal of Applied Ecology* 32: 215-224

²² Cole, D.N. (1995c) Recreational trampling experiments: effects of trampler weight and shoe type. Research Note INT-RN-425. U.S. Forest Service, Intermountain Research Station, Utah

²³ Cole, D.N., Spildie, D.R. (1998) Hiker, horse and llama trampling effects on native vegetation in Montana, USA. *Journal of Environmental Management* 53: 61-71

²⁴ Barnard, A. (2003) Getting the Facts - Dog Walking and Visitor Number Surveys at Burnham Beeches and their Implications for the Management Process. *Countryside Recreation*, 11, 16 - 19

²⁵ Riddington, R. *et al.* 1996. The impact of disturbance on the behaviour and energy budgets of Brent geese. *Bird Study* 43:269-279

²⁶ Gill, J.A., Sutherland, W.J. & Norris, K. 1998. The consequences of human disturbance for estuarine birds. *RSPB Conservation Review* 12: 67-72

demonstrated that out-of-season (October-March) recreational activity can result in quantifiable disturbance:

- Underhill et al²⁷ counted waterfowl and all disturbance events on 54 water bodies within the South West London Water bodies Special Protection Area and clearly correlated disturbance with a decrease in bird numbers at weekends in smaller sites and with the movement of birds within larger sites from disturbed to less disturbed areas.
- Evans & Warrington²⁸ found that on Sundays total water bird numbers (including shoveler and gadwall) were 19% higher on Stocker's Lake LNR in Hertfordshire, and attributed this to displacement of birds resulting from greater recreational activity on surrounding water bodies at weekends relative to week days.
- Tuite et al²⁹ used a large (379 site), long-term (10-year) dataset (September – March species counts) to correlate seasonal changes in wildfowl abundance with the presence of various recreational activities. They found that on inland water bodies shoveler was one of the most sensitive species to disturbance. The greatest impact on winter wildfowl numbers was associated with sailing/windsurfing and rowing.
- Pease et al³⁰ investigated the responses of seven species of dabbling ducks to a range of potential causes of disturbance, ranging from pedestrians to vehicle movements. They determined that walking and biking created greater disturbance than vehicles and that gadwall were among the most sensitive of the species studied.
- In a three-year study of wetland birds at the Stour and Orwell SPA, Ravenscroft³¹ found that walkers, boats and dogs were the most regular source of disturbance. Despite this, the greatest responses came from relatively infrequent events, such as gun shots and aircraft noise. Birds seemed to habituate to frequent 'benign' events such as vehicles, sailing and horses, but there was evidence that apparent habituation to more disruptive events related to reduced bird numbers – i.e. birds were avoiding the most frequently disturbed areas. Disturbance was greatest at high tide and on the Orwell, but birds on the Stour showed greatest sensitivity.

3.2.8 A number of studies have shown that birds are affected more by dogs and people with dogs than by people alone, with birds flushing more readily, more frequently, at greater distances and for longer. In addition, dogs, rather than people, tend to be the cause of many management difficulties, notably by worrying grazing animals, and can cause eutrophication near paths. Nutrient-poor habitats such as heathland are particularly sensitive to the fertilising effect of inputs of phosphates, nitrogen and potassium from dog faeces³².

3.2.9 Underhill-Day³³ summarises the results of visitor studies that have collected data on the use of semi-natural habitat by dogs. In surveys where 100 observations or more were reported, the mean percentage of visitors who were accompanied by dogs was 54.0%.

3.2.10 However the outcomes of many of these studies need to be treated with care. For instance, the effect of disturbance is not necessarily correlated with the impact of disturbance, i.e. the most easily disturbed species are not necessarily those that will suffer the greatest impacts. It has been shown that, in some cases, the most easily disturbed birds simply move to other feeding sites, whilst others may remain (possibly due to an absence of alternative sites) and thus suffer greater impacts on their

²⁷ Underhill, M.C. *et al.* 1993. Use of Waterbodies in South West London by Waterfowl. An Investigation of the Factors Affecting Distribution, Abundance and Community Structure. Report to Thames Water Utilities Ltd. and English Nature. Wetlands Advisory Service, Slimbridge

²⁸ Evans, D.M. & Warrington, S. 1997. The effects of recreational disturbance on wintering waterbirds on a mature gravel pit lake near London. *International Journal of Environmental Studies* 53: 167-182

²⁹ Tuite, C.H., Hanson, P.R. & Owen, M. 1984. Some ecological factors affecting winter wildfowl distribution on inland waters in England and Wales and the influence of water-based recreation. *Journal of Applied Ecology* 21: 41-62

³⁰ Pease, M.L., Rose, R.K. & Butler, M.J. 2005. Effects of human disturbances on the behavior of wintering ducks. *Wildlife Society Bulletin* 33 (1): 103-112.

³¹ Ravenscroft, N. (2005) Pilot study into disturbance of waders and wildfowl on the Stour-Orwell SPA: analysis of 2004/05 data. Era report 44, Report to Suffolk Coast & Heaths Unit.

³² Shaw, P.J.A., K. Lankey and S.A. Hollingham (1995) – Impacts of trampling and dog fouling on vegetation and soil conditions on Headley Heath. *The London Naturalist*, 74, 77-82.

³³ Underhill-Day, J.C. (2005). A literature review of urban effects on lowland heaths and their wildlife. Natural England Research Report 623.

population³⁴. A literature review undertaken for the RSPB³⁵ also urges caution when extrapolating the results of one disturbance study because responses differ between species and the response of one species may differ according to local environmental conditions. These facts have to be taken into account when attempting to predict the impacts of future recreational pressure on internationally designated sites.

- 3.2.11 Disturbing activities are on a continuum. The most disturbing activities are likely to be those that involve irregular, infrequent, unpredictable loud noise events, movement or vibration of long duration (such as those often associated with construction activities). Birds are least likely to be disturbed by activities that involve regular, frequent, predictable, quiet patterns of sound or movement or minimal vibration. The further any activity is from the birds, the less likely it is to result in disturbance.
- 3.2.12 The factors that influence a species response to a disturbance are numerous, but the three key factors are species sensitivity, proximity of disturbance sources and timing/duration of the potentially disturbing activity.
- 3.2.13 It should be emphasised that recreational use is not inevitably a problem. Many internationally designated sites are also nature reserves managed for conservation and public appreciation of nature. The Lee Valley Regional Park that encompasses the SPA and Ramsar sites is such an example. At these sites, access is encouraged and resources are available to ensure that recreational use is managed appropriately.
- 3.2.14 The Lee Valley SPA and Ramsar site and Wormley-Hoddesdonpark Woods SAC lie within the District boundary, whilst Epping Forest SAC is located 10km from the District boundary. As such they are theoretically vulnerable, to the effects of recreational pressure and/ or disturbances from construction activities resulting from development within East Herts.
- 3.2.15 It is therefore necessary to perform an initial screening exercise to determine whether the District Plan contains policy measures that could lead to a likely significant effects, either alone or 'in combination' with other plans and projects, through recreational pressure, on these internationally designated sites.

³⁴ Gill et al. (2001) - Why behavioural responses may not reflect the population consequences of human disturbance. *Biological Conservation*, **97**, 265-268

³⁵ Woodfield & Langston (2004) - Literature review on the impact on bird population of disturbance due to human access on foot. *RSPB research report* No. 9.

Urbanisation

- 3.2.16 This impact is closely related to recreational pressure, in that they both result from increased populations within close proximity to sensitive sites. Urbanisation is considered separately as the detail of the impacts is distinct from the trampling, disturbance and dog-fouling that results specifically from recreational activity. The list of urbanisation impacts can be extensive, but core impacts can be singled out:
- Increased fly-tipping - Rubbish tipping is unsightly but the principle adverse ecological effect of tipping is the introduction of invasive non-native species with garden waste. Non-native species can in some situations, lead to negative interactions with habitats or species for which internationally designated sites may be designated. Garden waste results in the introduction of invasive non-native species precisely because it is the 'troublesome and over-exuberant' garden plants that are typically thrown out³⁶. Non-native species may also be introduced deliberately or may be bird-sown from local gardens.
 - Cat predation - A survey performed in 1997 indicated that nine million British cats brought home 92 million prey items over a five-month period³⁷. A large proportion of domestic cats are found in urban situations, and increasing urbanisation is likely to lead to increased cat predation
- 3.2.17 The most detailed consideration of the link between relative proximity of development to internationally designated sites and damage to interest features has been carried out with regard to the Thames Basin Heaths SPA.
- 3.2.18 After extensive research, Natural England and its partners produced a 'Delivery Plan' which made recommendations for accommodating development while also protecting the interest features of the internationally designated site. This included the recommendation of implementing a series of zones within which varying constraints would be placed upon development. While the zones relating to recreational pressure expanded to 5km (as this was determined from visitor surveys to be the principal recreational catchment for this internationally designated site), that concerning other aspects of urbanisation (particularly predation of the chicks of ground-nesting birds by domestic cats) was determined at 400m from the SPA boundary. The delivery plan concluded that the adverse effects of any development located within 400m of the SPA boundary could not be mitigated since this was the range over which cats could be expected to roam as a matter of routine and there was no realistic way of restricting their movements, and as such, no new housing should be located within this zone.
- 3.2.19 As such, screening is undertaken to determine whether the Plan could lead to likely significant effects upon Lee Valley internationally designated site, either alone or 'in combination' with other plans and projects, through impacts of urbanisation. This uses the 400m precedent as an indicator that urbanisation may be a consideration.

3.3 Atmospheric Pollution

- 3.3.1 This impact pathway has already been discussed in some detail in order to explain the assessment methodology. The main pollutants of concern for European sites are oxides of nitrogen (NO_x), ammonia (NH₃) and sulphur dioxide (SO₂). NO_x can have a directly toxic effect upon vegetation. In addition, greater NO_x or ammonia concentrations within the atmosphere will lead to greater rates of nitrogen deposition to soils. An increase in the deposition of nitrogen from the atmosphere to soils is generally regarded to lead to an increase in soil fertility, which can have a serious deleterious effect on the quality of semi-natural, nitrogen-limited terrestrial habitats.

Table 3: Main sources and effects of air pollutants on habitats and species

Pollutant	Source	Effects on habitats and species
Acid deposition	SO ₂ , NO _x and ammonia all contribute to acid deposition. Although future trends in S emissions and subsequent deposition to terrestrial and aquatic ecosystems will continue to decline, it is likely that increased N emissions may cancel out any gains produced	Can affect habitats and species through both wet (acid rain) and dry deposition. Some sites will be more at risk than others depending on soil type, bed rock geology, weathering rate and buffering capacity.

³⁶ Gilbert, O. & Bevan, D. 1997. The effect of urbanisation on ancient woodlands. *British Wildlife* 8: 213-218.

³⁷ Woods, M. et al. 2003. Predation of wildlife by domestic cats *Felis catus* in Great Britain. *Mammal Review* 33, 2 174-188

Pollutant	Source	Effects on habitats and species
	by reduced S levels.	
Ammonia (NH ₃)	Ammonia is released following decomposition and volatilisation of animal wastes. It is a naturally occurring trace gas, but levels have increased considerably with expansion in numbers of agricultural livestock. Ammonia reacts with acid pollutants such as the products of SO ₂ and NO _x emissions to produce fine ammonium (NH ₄ ⁺) - containing aerosol which may be transferred much longer distances (can therefore be a significant trans-boundary issue.)	Adverse effects are as a result of nitrogen deposition leading to eutrophication. As emissions mostly occur at ground level in the rural environment and NH ₃ is rapidly deposited, some of the most acute problems of NH ₃ deposition are for small relict nature reserves located in intensive agricultural landscapes.
Nitrogen oxides NO _x	Nitrogen oxides are mostly produced in combustion processes. About one quarter of the UK's emissions are from power stations, one-half from motor vehicles, and the rest from other industrial and domestic combustion processes.	Deposition of nitrogen compounds (nitrates (NO ₃), nitrogen dioxide (NO ₂) and nitric acid (HNO ₃)) can lead to both soil and freshwater acidification. In addition, NO _x can cause eutrophication of soils and water. This alters the species composition of plant communities and can eliminate sensitive species.
Nitrogen (N) deposition	The pollutants that contribute to nitrogen deposition derive mainly from NO _x and NH ₃ emissions. These pollutants cause acidification (see also acid deposition) as well as eutrophication.	Species-rich plant communities with relatively high proportions of slow-growing perennial species and bryophytes are most at risk from N eutrophication, due to its promotion of competitive and invasive species which can respond readily to elevated levels of N. N deposition can also increase the risk of damage from abiotic factors, e.g. drought and frost.
Ozone (O ₃)	A secondary pollutant generated by photochemical reactions from NO _x and volatile organic compounds (VOCs). These are mainly released by the combustion of fossil fuels. The increase in combustion of fossil fuels in the UK has led to a large increase in background ozone concentration, leading to an increased number of days when levels across the region are above 40ppb. Reducing ozone pollution is believed to require action at international level to reduce levels of the precursors that form ozone.	Concentrations of O ₃ above 40 ppb can be toxic to humans and wildlife, and can affect buildings. Increased ozone concentrations may lead to a reduction in growth of agricultural crops, decreased forest production and altered species composition in semi-natural plant communities.
Sulphur Dioxide SO ₂	Main sources of SO ₂ emissions are electricity generation, industry and domestic fuel combustion. May also arise from shipping and increased atmospheric concentrations in busy ports. Total SO ₂ emissions have decreased substantially in the UK since the 1980s.	Wet and dry deposition of SO ₂ acidifies soils and freshwater, and alters the species composition of plant and associated animal communities. The significance of impacts depends on levels of deposition and the buffering capacity of soils.

3.3.2 Sulphur dioxide emissions are overwhelmingly influenced by the output of power stations and industrial processes that require the combustion of coal and oil. Ammonia emissions are dominated by agriculture, with some chemical processes also making notable contributions. NO_x emissions, however, are dominated by the output of vehicle exhausts (more than half of all emissions). Within a 'typical' housing development, by far the largest contribution to NO_x (92%) will be made by the associated road traffic. Other sources, although relevant, are of minor importance (8%) in comparison³⁸. Emissions of NO_x could therefore be reasonably expected to increase as a result of greater vehicle use as an indirect effect of the plan.

³⁸ Proportions calculated based upon data presented in Dore CJ et al. 2005. UK Emissions of Air Pollutants 1970 – 2003. UK National Atmospheric Emissions Inventory. <http://www.airquality.co.uk/archive/index.php>

3.4 Water abstraction

- 3.4.1 The East of England is generally an area of high water stress.
- 3.4.2 The East of England is particularly vulnerable to climate change now and in the future. It is already the driest region in the country and the predicted changes will affect the amount and distribution of rainfall, and the demand for water from all sectors. The average natural summer flows of rivers could drastically reduce; the period where groundwater resources are replenished could be shorter; and resources could become much more vulnerable. By 2050, climate change could reduce water resources by 10 -15% on an annual average basis, and reduce summer river flows by 50 -80%. Drought and floods may become more frequent in the future. The reliability of existing reservoirs, groundwater extractions and river intakes will change. Some infrastructure that is critical for providing water supplies may be more vulnerable to flooding. The delivery of housing and economic development throughout the region could therefore result in adverse effects on many internationally designated sites in the region including those listed in preceding sections.
- 3.4.3 The most recent full CAMS assessment for the Upper Lee found that the Management Unit for Rivers Lee, Mimram, Beane, Ash, Rib and Upper Stort was over-abstracted. Rye Meads SSSI component of the Lee Valley SPA/Ramsar site is situated within East Herts and is particularly sensitive to high levels of freshwater abstraction (resulting in a reduction in water levels within the SPA).
- 3.4.4 East Herts lies within the Affinity Water supply area, specifically their Central region, within WRZ 3 and 5. Approximately 60% of the Central region's water supply comes from groundwater sources (chalk and gravel aquifers) and 40% comes from surface water sources and imports from neighbouring water

3.5 Water quality

- 3.5.1 The quality of the water that feeds European sites is an important determinant of the nature of their habitats and the species they support. Poor water quality can have a range of environmental impacts:
- 3.5.2 At high levels, toxic chemicals and metals can result in immediate death of aquatic life, and can have detrimental effects even at lower levels, including increased vulnerability to disease and changes in wildlife behaviour.
- Eutrophication, the enrichment of plant nutrients in water, increases plant growth and consequently results in oxygen depletion. Algal blooms, which commonly result from eutrophication, increase turbidity and decrease light penetration. The decomposition of organic wastes that often accompanies eutrophication deoxygenates water further, augmenting the oxygen depleting effects of eutrophication. In the marine environment, nitrogen is the limiting plant nutrient and so eutrophication is associated with discharges containing available nitrogen.
 - Some pesticides, industrial chemicals, and components of sewage effluent are suspected to interfere with the functioning of the endocrine system, possibly having negative effects on the reproduction and development of aquatic life.
- 3.5.3 Sewage and some industrial effluent discharges contribute to increased nutrients in the European sites and in particular to phosphate levels in watercourses.

4 Initial Policy Sift

- 4.1.1 The tables below present an initial sift of policies and allocations within the District Plan, from the point of view of HRA.

Table 4: Screening assessment of Policies, other than those which make new site allocations (these are covered in Table 5)

Policy	Policy summary	HRA implications
Policy INT1 Presumption in Favour of Sustainable Development	This is a development management policy relating to sustainable development including reference to securing development that improves the economic, social and environmental conditions in the area, the requirement for development to accord with this Plan	No HRA implications. This is a development management policy providing for sustainable development. By definition sustainable development will not result in likely significant effects.
Policy DPS1 Housing, Employment and Retail Growth	Between 2011 and 2033 the council will provide a minimum of 16,390 new homes. Aims to achieve a minimum of 438-505 additional jobs each year (up to 11,110 over the plan period). Provide 10-11 hectares of new employment land for B1 (business)/B2 (general industry)/B8 (storage and distribution) uses. Encourage an additional 7,600m ² of convenience and 6,100m ² of comparison retail floorspace.	This policy provides for both residential and employment focused development. Potential HRA implications depending on the specific sites allocated.
Policy DPS2 The Development Strategy 2011- 2033	Provides for the requirement of 16,390 new homes to 2033. Outlines the phasing requirement for new housing with 6,041 new houses required between 2017-2022. Prioritising brownfield sites in towns for mixed-use development, with the remaining housing need provided on greenfield sites. Development in the villages shall be delivered in accordance with local initiatives led by Parish Councils	This policy provides for residential development. Potential HRA implications depending on the specific sites allocated.
Policy DPS3 Housing Supply 2011-2033	The overall housing supply will meet projected housing need over the plan period 2011 to 2033.	This policy provides for both residential and employment focused development. Potential HRA implications depending on the specific sites allocated.
Policy DPS4 Infrastructure Requirements	Provides for appropriate phasing of development to ensure that infrastructure capacity is provided and 'impacts are satisfactorily mitigated in a timely manner'. Provides for the requirement of the following strategic infrastructure development: (a) a new Junction 7a on the M11; (b) upgrades to Junction 7 and 8 of the M11; (c) widening of the existing River Stort crossing, and provision of a second crossing; (d) improvements to the A414 through Hertford; (e) the Little Hadham bypass; (f) upgrades to the A602; (g) upgrades to the rail network;	No HRA implications. This policy does provide for new infrastructure schemes that could provide impact pathways that link to internationally designated sites. The levels of detail required to undertake HRA of these schemes is not available at this stage, although transport improvement schemes have been factored into air quality modelling mentioned later in this report. Until these schemes are devised it is not possible to undertake screening of impact pathways relating to these schemes. However, where required HRA, of these schemes will be undertaken to ensure at the project level that no likely significant effect result. This provision is included in Policy NE1 (International, National and Locally Designated Nature Conservation Sites).

	(h) new schools and the expansion of existing schools; (i) healthcare facilities; (j) broadband telecoms; and (k) upgrades to waste water and water supply networks. Identifies how financial contributions will be secured.	
Policy DPS5 Review of the District Plan	This provides for the review of the District Plan under a variety of circumstances.	No HRA implications. This is a Plan management policy relating to its review.
Policy DPS6 Neighbourhood Planning	This policy supports development brought forward through Neighbourhood Development Plans in principal. It ensures that this development is in line with other policies within the Plan	No HRA implications. This policy supports development in accordance with other strategic documents, provided it is in-line with this Plan. It does not identify any quantum, location or type of development.
Policy GBR1 Green Belt	Provides for planning in the Green Belt to be in-line with the NPPF. Provides for the potential to amend the Green Belt boundary around Hertford Heath, Stanstead Abbots & St Margarets, and Watton-at-Stone.	No HRA implications This is a development management policy relating to the Green belt.
Policy GBR2 Rural Area Beyond the Green Belt	Within the Rural Area Beyond the Green-Belt the Council will consider new buildings inappropriate with exceptions listed. Exceptions include: agricultural and forestry buildings; appropriate facilities for outdoor sport, outdoor recreation, including equine development, and for cemeteries; extensions and alterations to buildings; replacement of existing buildings; limited infilling; rural exception housing in line with Policy HOU\$ (Rural Exception Affordable Housing Sites); accommodation for Gypsies and Travellers and Travelling Showpeople in accordance with Policy HOU9 (Gypsies and Travellers and Travelling Showpeople); development identified in the adopted Neighbourhood Plan; mining extraction; engineering operations; local transport infrastructure; re-use of buildings, and development brought forward under a Community Right to Build Order in accordance with Policy DPS6 (Neighbourhood Planning).	No HRA implications This is a development management policy relating to the Rural Area Beyond the Green-Belt. Whilst it does provide for development types that have potential to result in impact pathways linking to internationally designated sites, no location, or extent of development is identified and there is not sufficient detail of any type of development to undertake screening at this stage. Where required, HRA of these projects would be undertaken to ensure that no likely significant effect result. This provision is included in Policy NE1 (International, National and Locally Designated Nature Conservation Sites).
Policy BISH2 Bishop's Stortford Town Centre Planning Framework	Development proposals in Bishop's Stortford Town Centre will be expected to conform with, and positively contribute to, proposals contained within the Bishop's Stortford Town Centre Planning Framework, as appropriate.	No HRA implications. This is simply a development management policy referring to the Town Centre Planning Framework
Policy BISH11: Employment in Bishop's Stortford	I. In accordance with Policy ED1 (Employment), the following locations are designated as Employment Areas: (a) Raynham Road/Dunmow Road Industrial Estate (incorporating Stortford Hall Industrial Estate, The Links Business Centre, Raynham Road/Myson Way, Raynham Road West, and Raynham Road East between The Links Business Centre and Raynham Close); (b) Haslemere Estate; (c) Twyford Road; (d) Stansted Road (incorporating Goodliffe Park, Stort Valley Industrial Estate,	HRA implications Employment development can potentially lead to likely significant effects on European sites, mainly through air quality, water quality or water resource impacts. Much of this policy does not allocate any new employment sites but rather formally designates several existing areas as formal Employment Areas. However, the policy also proposes to create new employment sites or

	<p>and Birchanger Industrial Estate); (e) Woodside; (f) Millside Industrial Estate; (g) Southmill Trading Estate. II. New Employment Areas will be identified in the following locations: (a) Bishop’s Stortford North, as set out in Policy BISH3; (b) Bishop’s Stortford South, as set out in Policy BISH5. III. New employment opportunities will come forward through mixed-use development at the following locations: (a) The Goods Yard, as set out in Policy BISH7; and (b) Old River Lane, as set out in Policy BISH8. IV. The Mill Site in Bishop’s Stortford will remain as a designated Employment Area until such time that the land is presented as being available for redevelopment. The site will then be subject to the provisions of Policy BISH10 and should be brought forward for redevelopment as part of a comprehensive masterplan.</p>	<p>areas at Bishops Stortford North, Bishops Stortford South, The Goods Yard and Old River Lane. Each of these sites is considered in Table 5. The Mill Site is an existing employment area but is discussed as a potential long-term housing site in Table 5.</p>
<p>Policy BISH12: Retail, Leisure and Recreation in Bishop’s Stortford</p>	<p>I. New retail and leisure facilities will be focused within the town centre and within the following locations: (a) the Old River Lane site, in accordance with Policy BISH7; (b) the Mill Site, in accordance with BISH9; and (c) the Goods Yard, in accordance with Policy BISH4. II. Development proposals in Bishop’s Stortford should seek to enhance the public realm and create connections between existing and new retail and leisure facilities, including the Rhodes Centre. III. Opportunities to link into and extend the pedestrian circuit will be supported in principle and proposals that jeopardise such connections will be resisted. IV. To provide for day-to-day convenience retail and service needs, new Neighbourhood Centres will be designated in the following locations: (a) Bishop’s Stortford North, west of Hoggate’s Wood, in accordance with Policy BISH2 (I); (b) Bishop’s Stortford North, between Hoggate’s Wood and Farnham Road, in accordance with Policy BISH2 (II). (c) Bishop’s Stortford South, in accordance with Policy BISH3; V. Opportunities to provide new indoor and outdoor sports facilities will be supported in principle in accordance with Policy CFLR1 V. The Green Wedges in Bishop’s Stortford are designated as Local Green Spaces, within which Policy CFLR2 (Local Green Space) applies.</p>	<p>HRA implications This policy identifies new retail and leisure facilities or Neighbourhood Centres to be located on the Old River Lane Site, the Mill Site, the Goods Yard, Bishops Stortford North and Bishops Stortford South. Each of these sites is considered in Table 5.</p>
<p>Policy BUNT1 Development in Buntingford</p>	<p>In accordance with Policy DPS3 (Housing Supply 2011-2033), development proposals will be permitted within the town boundary as defined on the Policies Map, which will include: (a) a proportion of the overall windfall allowance for the District.</p>	<p>HRA implications, in as much as it identifies housing delivery in Buntingford</p>
<p>Policy BUNT3 Employment in</p>	<p>I. In accordance with Policy ED1 (Employment), the following locations are designated as Employment Areas:</p>	<p>HRA implications</p>

Buntingford	<p>(a) Park Farm; (b) Buntingford Business Park; (c) Watermill Industrial Estate (reserved for B1, B2 and small-scale B8 uses); (d) London Road Employment Area (reserved for B1(a), B1(c) and/or D1 uses).</p> <p>II. In addition, 3 hectares of land located to the north of Buntingford Business Park has been allocated as an extension to the existing Employment Area.</p>	<p>Employment development can potentially lead to likely significant effects on European sites, mainly through air quality, water quality or water resource impacts. Much of this policy does not allocate any new employment sites but rather formally designates several existing areas as formal Employment Areas. However, the policy also proposes to create a new employment site to the north of Buntingford. This site is considered in Table 5.</p>
Policy HERT6 Employment in Hertford	<p>I. In accordance with Policy ED1 (Employment), the following locations are designated as Employment Areas:</p> <p>(a) Caxton Hill; (b) Foxholes Business Park; (c) Hartham Lane; (d) Mead Lane - East of Marshgate Drive (including the provisions of the Mead Lane Urban Development Framework); (e) Mimram Road; (f) Warehams Lane; (g) Windsor Industrial Estate, Ware Road.</p> <p>II. In addition, in accordance with Policy ED1 (Employment), the following location is designated as an Employment Area reserved primarily for B1 use:</p> <p>(a) Pegs Lane.</p>	<p>No HRA implications</p> <p>Employment development can potentially lead to likely significant effects on European sites, mainly through air quality, water quality or water resource impacts. However, this policy does not allocate any new employment sites but rather formally designates several existing areas as formal Employment Areas.</p>
Policy HERT7 Hertford Town Centre Urban Design Strategy	<p>Development proposals in Hertford Town Centre will be expected to conform with, and positively contribute to, proposals contained within the Hertford Town Centre Urban Design Strategy, as appropriate.</p>	<p>No HRA implications.</p> <p>This is simply a development management policy referring to the Town Centre Urban Design Strategy</p>
Policy SAWB5 Sports Pitch Provision	<p>Allocation for sports pitches</p>	<p>No HRA implications.</p> <p>This allocates 14 hectares to the north of Leventhorpe School for sports pitches.</p>
Policy WARE3 Employment in Ware	<p>In accordance with Policy ED1 (Employment), the following locations are designated as Employment Areas:</p> <p>(a) Broadmeads; (b) Crane Mead; (c) Ermine Point/Gentlemen's Field*;</p>	<p>No HRA implications</p> <p>Employment development can potentially lead to likely significant effects on European sites, mainly through air quality, water quality or water resource impacts. However, this policy does not allocate any</p>

	(d) Marsh Lane; (e) Park Road/Harris's Lane; (f) Star Street; and As per policy WARE2	new employment sites but rather formally designates several existing areas as formal Employment Areas.
Policy GA2 The River Start Crossings	The Council will work with key stakeholders including Hertfordshire County Council, Essex County Council, Harlow Council, Hertfordshire LEP, and others as appropriate, to facilitate the delivery of the following transport improvements to crossings of the River Start: A widening of the existing A414 crossing to enable a dualling of the northbound and southbound carriageways and provision of a new footway/cycleway, which will form part of a north-south sustainable transport corridor through Harlow; and A new vehicular, cycle and pedestrian crossing either to the east of the existing crossing (connecting the A414 to the River Way), or to the west of the existing crossing (connecting the A414 to Elizabeth Way).	No HRA implications. The River Start is not connected to any European sites.
Policy HOU1 Type and Mix of Housing	Development management policy providing guidance relating to type and mix of new housing provision. Includes affordable housing, specialist housing, accessible and adaptable dwellings, self-build housing, accommodation for Gypsies and Travellers and Travelling Showpeople,	No HRA implications. A development management policy relating to type and mix of housing. It does not provide any location or quantum of housing.
Policy HOU2 Housing Density	A development management policy relating to housing density. Includes reference to effective use of land, design objectives, and adequate levels of public open space.	No HRA implications. A development management policy relating to housing density. It does not provide any location or quantum of housing.
Policy HOU3 Affordable Housing	A development management policy relating to affordable housing.	No HRA implications. A development management policy relating to affordable housing. It does not provide any location or quantum of housing
Policy HOU4 Rural Exception Affordable Housing Sites	A development management policy providing for rural exception affordable housing sites.	No HRA implications. A development management policy providing for rural exception affordable housing sites. It does not identify any location for development. It is assumed that rural exceptions would provide for a small number of new dwellings.
Policy HOU5 Dwellings for Rural Workers	A development management policy providing for dwellings for rural workers.	No HRA implications. A development management policy providing for dwellings for rural workers. It does not identify any location for development. It is assumed that this policy would provide for a small number of new dwellings.
Policy HOU6 Specialist Housing for Older	A development management policy providing for specialist housing for older and vulnerable people. It also provides for 530bed-spaces to help meet accommodation needs.	No HRA implications. This policy provides for 530 new bed-spaces for vulnerable and older

and Vulnerable People		people. It is assumed that occupants will have restricted mobility and as such would not contribute to recreational pressure or reduced air quality.
Policy HOU7 Accessible and Adaptable Homes	A development management policy providing for accessible and adaptable homes.	No HRA implications. A development management policy providing for accessible and adaptable homes. It does not identify any quantum, or location for development. There are no impact pathways present.
Policy HOU8 Self-Build Housing	A development management policy relating to the provision of self-build homes.	No HRA implications. This is a development management policy relating to the provision of self-build homes. It does not identify any quantum, or location for development There are no impact pathways present.
Policy HOU10 New Park Home Sites for Non-Nomadic Gypsies and Travellers and Travelling Showpeople	This is a development management policy relating to the provision of New Park Home Sites for Non-Nomadic Gypsies and Travellers and Travelling Showpeople.	No HRA implications. This is a development management policy relating to the provision of New Park Home Sites for Non-Nomadic Gypsies and Travellers and Travelling Showpeople. It does not provide any location or quantum of development.
Policy HOU11 Extensions and Alterations to Dwellings, Residential Outbuildings and Works Within Residential Curtilages	This is a development management policy relating to proposals for extensions and alterations to dwellings; residential outbuildings or extensions to existing outbuildings; and works within residential curtilages.	No HRA implications. This is a development management policy relating to proposals for extensions and alterations to dwellings; residential outbuildings or extensions to existing outbuildings; and works within residential curtilages. It does not provide any location for development. It is assumed that this policy is likely to result in a small increase in residential provision.
Policy HOU12 Change of Use of Land to Residential Garden and Enclosure of Amenity Land	This is a development management policy relating to change of land use to residential garden and enclosure of amenity land. It states that the Council will seek to ensure the retention of amenity land/ open space. Landscaped areas around housing development and planning permission for the enclosure of such land into gardens will not usually be given.	No HRA implications. This is a positive development management policy that aims to retain public access to public land, which could potentially divert recreational pressure away from an internationally designated site.
Policy HOU13 Residential Annexes	This is a development management policy relating to residential annexes.	No HRA implications. This is a development management policy relating to residential annexes. It does not provide any location or quantum of development. It is assumed that this could result in a small increase in bed-spaces. Due to the anticipated very small scale of development, there are no impact pathways present.
Policy ED1	Reservation of land for industry comprising Use Classes B1 (Business), B2	This policy provides for employment focused development. Potential

<p>Employment</p>	<p>(General Industrial) and where well related to the primary road network, B8 (Storage and Distribution). Within Employment Areas.</p> <p>Support of new employment uses in principle providing they are in a suitable location where access can be achieved by a choice of sustainable transport and do not conflict with other policies within this Plan.</p> <p>New employment floorspace should be energy efficient in construction and operation and have a fully integrated communications technology.</p> <p>Loss of an existing designated Employment Area will only be permitted under certain criteria</p> <p>The Mill Site in Bishop's Stortford will remain as a designated Employment Area until such time that the land is presented as being available for redevelopment. The site will then be subject to the provisions of Policy BISH2</p>	<p>HRA implications depending on the specific sites allocated.</p>
<p>Policy ED2 Rural Economy</p>	<p>Support sustainable economic growth in rural areas and proposals that create new employment generating uses or support the sustainable growth and expansion of existing businesses in the rural area will be supported in principle where they are appropriately and sustainably located and do not conflict with other policies within this Plan.</p>	<p>No HRA implications.</p> <p>This policy supports in principle sustainable economic growth and expansion in rural areas where they are appropriately and sustainably located and do not conflict with other policies within this Plan. This has potential to result in impact pathways linking to internationally designated sites. However, by definition sustainable development will not impact upon designated sites. Further, this policy does not provide any quantum or location of employment lead development.</p> <p>Whilst potential impact pathways are present such as linkages to atmospheric pollution, and recreational pressure, as this policy will be in-line with other policies of the Plan such as Policy NE1 (International, National and Locally Designated Nature Conservation Sites), it can be considered that this policy can be screened out.</p>
<p>Policy ED3 Communications Infrastructure</p>	<p>Provision or expansion of electronic communications networks, including high-speed broadband is supported in principle. This includes the provision of masts and visible structures.</p>	<p>No HRA implications.</p> <p>This is effectively a development management policy relating to the provision of communications infrastructure. Increased/ improved communications infrastructure has potential to result in the need for less journeys to be taken, resulting in an improvement in air quality, thus having a positive impact.</p> <p>This policy does however provide for communications masts which could impact upon Lee Valley SPA/ Ramsar site through collision risks depending on location of the masts. However, this policy does not provide any project details specific to this type of development so it is not possible to screen this impact at this stage, further Policy NE1 (International, National and Locally Designated Nature Conservation Sites).provides protection designated sites.</p>

Policy ED4 Flexible Working Practices	Supports small-scale business purposes in dwellings in principle with development management criteria.	No HRA implications. This is a development management policy relating to small-scale development and flexible working practices. It does not provide any location, type or quantum of development. Due to the 'small-scale' of any development relating to this policy, it is likely that any development in-line with this policy would result in a perceptible impact. There are no realistic impact pathways present.
Policy ED5 Tourism	New tourism enterprises and extensions to existing tourism enterprises will be supported in principle where the facility meets identified needs which are not met by existing facilities, are appropriately located and do not conflict with other policies within this Plan. With regards to water-based facilities and development within environmentally sensitive area, no harm will occur to the quality of the environment and the health of the wildlife in line with the provisions of Policy CFLR4 (Water Based Recreation), Policy NE1 (International, National and Locally Designated Nature Conservation Sites) Policy NE2 (Species and Habitats)	Potential HRA implications. However, this policy ensures that no harm will occur to sensitive areas via the direct reference Policy NE1 (International, National and Locally Designated Nature Conservation Sites) which provides explicate protection for internationally designated sites.
Policy ED6 Lifelong Learning	This policy supports the provision of new educational establishments which support a range of learning and community needs such as further education and opportunities for lifelong learning will be supported in principle	No HRA implications. This is a development management policy relating to lifelong learning. No quantum, location or type of development is provided.
Policy RTC1 Retail Development	Main town centre uses will be supported in principle, where they contribute to maintaining the role and function, viability and vitality of the market town. The requirement for proposals for retail, leisure and office developments to provide an impact assessment. This policy provides further details relating to this requirement. The policy provides thresholds identifying the classification of major schemes within different settlements.	No HRA implications This is a development management policy relating to retail development. This policy does not provide any quantum or location of retail development. As such there are no impact pathways present.
Policy RTC2 Primary Shopping Area	This is a development management policy relating to Primary Shopping areas in Bishop's Stortford, Hertford and Ware.	No HRA implications. This is a development management policy relating to Primary Shopping areas in Bishop's Stortford, Hertford and Ware.
Policy RTC3 Primary Shopping Frontages	To protect the vitality and viability of the Primary Shopping Areas, within the Primary Shopping Frontages in Bishop's Stortford, Hertford and Ware, as defined on the Policies Map, proposals for Use Class A1 (shops) will be supported in principle as the preferred use, while Use Classes A1, A2 (financial and professional services), A3 (restaurants and cafes), A4 (drinking establishments) and A5 (hot food takeaways) will be supported in principle provided they have an active frontage and there remains an adequate provision of A1 and A2 uses which support its role as a Primary Shopping Frontage.	No HRA implications. This is a development management policy providing for the protection of Primary Shopping Areas. It does not provide any location or quantum of development.
Policy RTC4 Secondary Shopping Frontages	Within the Secondary Shopping Frontages in Bishop's Stortford, Buntingford, Hertford, Sawbridgeworth and Ware, proposals for development or changes of use to main town centre uses or those that will support the vitality and viability of the frontage or town centre as a whole (such as employment generating or	No HRA implications. This is a development management policy relating to Secondary Shop Frontages in Bishop's Stortford, Buntingford, Hertford, Sawbridgeworth

	activity generating uses) will be supported in principle.	and Ware. It does not provide any location or quantum of development.
Policy RTC5 District Centres, Neighbourhood Centres, Local Parades and Individual Shops	A development management policy supporting development or change of use to main town centre uses to District Centres, Neighbourhood Centres and Local Parades.	No HRA implications. This is a development management policy relating to District Centres, Neighbourhood Centres and Local Parades and individual shops. It does not identify any location, quantum or type of development.
Policy DES1 Landscape Character	Development proposals must demonstrate how they conserve, enhance or strengthen the character and distinctive features of the district's landscape. For major applications, or applications where there is a potential adverse impact on landscape character, a Landscape and Visual Impact Assessment and/or Landscape Sensitivity and Capacity Assessment should be provided to ensure that impacts, mitigation and enhancement opportunities are appropriately addressed. This policy provides the requirement for mitigation if damage to landscape character is unavoidable. Reference to the use of the Council's latest Landscape Character Assessment SPD.	No HRA implications. This is a development management policy relating to landscape character.
Policy DES2 Landscaping	Development proposals must demonstrate how they will retain, protect and enhance existing landscape features which are of amenity and/or biodiversity value. This policy provides the requirement for mitigation if damage to landscape character is unavoidable.	No HRA implications. This is a development management policy relating to landscaping.
Policy DES3 Design of Development	All development proposals, including extensions to existing buildings, must be of a high standard of design and layout to reflect and promote local distinctiveness. This policy provides further guidance relating to many aspects of design considerations.	No HRA implications. This is a development management policy relating to design.
Policy DES4 Crime and Security	This policy provides for reducing the opportunity for crime and the design of security features.	No HRA implications. This is a development management policy relating to crime and security. This is a positive policy as it has potential to reduce fly-tipping and vandalism within internationally sensitive habitats.
Policy DES5 Advertisements and Signs	This is a development management policy relating to advertisements and signs.	No HRA implications. This is a development management policy relating to advertisements and signs.
Policy TRA1 Sustainable Transport	To achieve accessibility improvements and promotion of sustainable transport in the district, development proposals should: be located in places which enable sustainable journeys to be made to key services and facilities to help aid carbon emission reduction; Ensure that a	No HRA implications. This is a development management policy relating to the provision of sustainable transport, which can improve air quality. This policy does

	range of sustainable transport options are available to occupants or users, which may involve the improvements; site layouts prioritise the provision of modes of transport other than the car; in the construction of major schemes, allow for the early implementation of sustainable travel infrastructure or initiatives; protect existing rights of way, cycling and equestrian routes; ensure that provision for the long-term maintenance of any of the above measures. This may require financial contributions; and comply with the provisions of the Local Transport Plan and/or Hertfordshire 2050 Transport Vision.	not identify any specific scheme, location, type or quantum of development. By definition sustainable development should not result in likely significant effect. This is a positive policy as it promotes and encourages the use of sustainable transport methods that have potential to result in a reduction in emissions of air pollutants.
Policy TRA2 Safe and Suitable Highway Access Arrangements and Mitigation	Development proposals should ensure that safe and suitable access can be achieved for all users. Site layouts, access proposals and any measures designed to mitigate trip generation produced by the development should: be acceptable in highway safety terms; not result in any severe residual cumulative impact; and not have a significant detrimental effect on the character of the local environment.	There are no HRA implications. This is a development management policy relating to safe and suitable highway access arrangements and mitigation.
Policy TRA3 Vehicle Parking Provision	This is a development management policy relating to parking provision.	No HRA implications. This is a development management policy relating to parking provision.
Policy CFLR1 Open Space, Sport and Recreation	Residential developments will be expected to provide on-site open spaces, indoor and outdoor sport and recreation facilities to provide for the needs arising from the development. Contributions towards off-site provision or the enhancement of existing facilities may be more appropriate for other types of provision. Facilities should be provided in accordance with the Council's latest evidence and in consultation with Sport England and the Council's Leisure and Environment Team. Where provision is made on-site as part of a development, applicants should detail how it will be maintained in the long term. Proposals for new open space, indoor and outdoor sport and recreation facilities which meet identified needs will be encouraged in suitable locations, served by a choice of sustainable travel options. Measures should be taken to integrate facilities into the landscape providing net benefits to biodiversity. This policy supports the retention and enhancement of existing open space, or indoor or outdoor sport and recreation facilities in principle, where they do not conflict with other policies within this Plan. Proposals that result in the loss or reduction of open space, indoor or outdoor sport and recreation facilities, including playing fields, will be refused unless certain criteria are met.	No HRA implications. This is a positive policy as it provides for the retention and enhancement of recreational facilities, (including open space), that's existence can resulting recreational activities being diverted away from internationally designated sites.
Policy CFLR2 Local Green Space	Provides protection from development within Local Green Spaces, other than in very special circumstances	No HRA implications. This policy provides for the retention of local green spaces except for in very special circumstances. This is a positive policy as it provides for the retention Local Green Space that's existence can resulting recreational activities being diverted away from internationally designated sites.
Policy CFLR3 Public Rights of	Proposals for development must not adversely affect any Public Right of Way and, where possible, should incorporate measures to maintain and enhance	No HRA implications.

Way	the Rights of Way network.	This is a development management policy relating to the retention, maintenance and enhancement of PRWs.
Policy CFLR4 Water Based Recreation	Proposals for water-based recreation will be supported in principle, where: the proposal does not have a significant adverse impact on the nature conservation interest, the proposal does not conflict with the relevant River Catchment Management Plan; and the proposal does not have an adverse impact on any flood alleviation works and does not impede the Environment Agency's access requirements to waterworks.	<p>Potential HRA implications.</p> <p>This is a development management policy relating to water based recreation. Potential impact pathways relating to the Lee Valley SPA/ Ramsar site are:</p> <ul style="list-style-type: none"> • Recreational pressure. <p>It is noted that this policy does not encourage water-based recreation, but supports it in 'principle'. No location, type or scale of development is identified.</p> <p>This policy does provide for some level of protection to internationally designated sites ensuring that 'proposal does not have a significant adverse impact on the nature conservation interest'. Individual proposals will need to be assessed as per Policy NE1 to ensure no adverse effects on the SPA would result.</p>
Policy CFLR5 The Lee Valley Regional Park	The District Council supports the Lee Valley Regional Park Development Framework, which will be treated as a material consideration in the determination of planning applications in this area. Proposals for leisure related developments within the Lee Valley Regional Park will be supported in principle provided that intensive land-use leisure activities and associated buildings are located as unobtrusively as possible near existing settlements and do not conflict with other policies within this Plan.	<p>Potential HRA implications</p> <p>This is a development management policy relating to the Lee Valley Regional Park. The area of the Regional park includes that of the Lee Valley SPA and Ramsar site; as such any development within the Regional Park (or in close proximity) does have potential to result in likely significant effects upon the designated site.</p> <p>However, this policy does state that leisure development within the Park will be supported in principle provided it does not conflict with other policies within the Plan. Policy NE1 (International, National and Locally Designated Nature Conservation Sites) of this plan provides protection to the SPA and Ramsar site, ensuring that no likely significant effects will result from this policy relating to the Lee Valley Regional Park.</p>
Policy CFLR6 Equine Development	Provides for small scale equine development (up to 10 stables) in accordance with criteria such as minimising visual intrusion, must demonstrate that existing structures cannot be reused, must be in-keeping with character of the area, do not harm the natural environment, and do not conflict with other policies within the Plan.	<p>No HRA implications.</p> <p>This is a development management policy relating to small-scale equine development.</p>
Policy CFLR7 Community Facilities	Provides for adequate and appropriately located community facilities in association with new development. This allows for either on-site facilities or financial contributions for off-site provision	<p>No HRA implications.</p> <p>This is a development management policy relating to community facilities.</p>
Policy CFLR8	Provides for the retention of community facilities except in certain	No HRA implications.

Loss of Community Facilities		circumstances.	This is a development management policy relating to retention of community facilities.
Policy Health and Wellbeing	CFLR9 and	All development shall be designed to maximise the impact it can make to promoting healthy communities and reducing health inequalities. This includes provision of infrastructure and encouraging physical exercise and health including promoted walking and cycling routes. Where new health facilities are planned, these should be located where there is a choice of sustainable travel options	No HRA implications. This is a development management policy relating to walking and cycling routes.
Policy Education	CFLR 10	Development that creates a potential increase in demand for education will be required to make appropriate provision for new facilities either on-site or by making a suitable contribution towards the improvement or expansion of nearby existing facilities. Facilities should be in an accessible location, served by a choice of sustainable travel options. Provide or retain a suitable provision of outdoor recreation space and playing fields, in accordance with Policy CFLR1.	No HRA implications. This is a development management policy relating to the provision of education.
Policy International, National and Locally Designated Nature Conservation Sites	NE1 and	Provides for protection of international, national, and local designated conservation sites. Where a site of International or National designation for nature conservation importance is adversely affected by the proposals, permission will be refused unless the District Council is satisfied that: there are imperative reasons of overriding public interest, which could be of a social or economic nature, sufficient to override the harm to the site; there are imperative reasons of overriding public interest relating to human health, public safety or benefits of primary importance to the environment Proposals should avoid impacts on sites of nature conservation value and wherever possible, alternative options which reduce or eliminate such impacts should be pursued. Where adverse impacts are unavoidable, measures to mitigate the impact should be considered. Where adequate mitigation measures are not possible, compensatory measures may be appropriate.	No HRA implications. This is a key policy within the Plan that provides protection for internationally designated.
NE2 Sites of Nature Conservation Interest (Non-Designated)		Provides for a net gain in biodiversity using the BIAC, and avoid harm to, or the loss of features that contribute to the local and wider ecological network. Mitigation hierarchy will be applied as required.	No HRA implications. This provides policy relating to sites of nature conservation (non-designated).
Policy Species and Habitats	NE3 and	Seek to enhance biodiversity and to create opportunities for wildlife. Identifies the requirement for up to date evidence to support proposals. Identifies the need to demonstrate how physical features will be maintained in the long term. Provides against the loss or significant damage to trees, hedgerows and ancient woodland. Proposals will be expected to protect and enhance locally important biodiversity sites and other notable ecological features of conservation value.	No HRA implications. This is a positive development management policy as it provides protection for species and habitats.

	Provides protection for species and habitats of Principal Importance. Development adjoining rivers or streams must provide a minimum of a 10m buffer of complimentary habitat between the built environment and the watercourse.	
Policy NE4 Green Infrastructure	Provides for the protection and enhancement of the network of accessible, multi-functional green infrastructure for its biodiversity, recreational, accessibility, health and landscape value. Proposals should avoid loss, fragmentation of green infrastructure network. Maximise opportunities for improvement of green infrastructure in accordance with the Council's Green Infrastructure Plan, its Parks and Open Spaces Strategy, the Hertfordshire Biodiversity Action Plan, Living Landscape Schemes, locally identified Nature Improvement Areas and any future relevant plans and programmes as appropriate. Maximise opportunities for urban greening. Consider the integration of green infrastructure into proposals. Contributions towards local green infrastructure projects will be sought where appropriate.	No HRA implications. This is a positive development management policy relating to green infrastructure. Green infrastructure can divert recreational pressure away from internationally designated sites.
Policy HA1 Designated Heritage Assets	This is a development management policy relating to designated heritage assets. It provides for their preservation and enhancement.	No HRA implications. This is a development management policy relating to designated heritage assets.
Policy HA2 Non-Designated Heritage Assets	This is a development management policy relating to non- designated heritage assets.	No HRA implications. This is a development management policy relating to non- designated heritage assets.
Policy HA3 Archaeology	This is a development management policy relating to archaeological assets.	No HRA implications. This is a development management policy relating to archaeological assets.
Policy HA4 Conservation Areas	This is a development management policy relating to Conservation Areas.	No HRA implications. This is a development management policy relating to Conservation Areas.
Policy HA5 Shopfronts in Conservation Areas	This is a development management policy relating to shop fronts in Conservation Areas.	No HRA implications. This is a development management policy relating to shop fronts in Conservation Areas.
Policy HA6 Advertisements in Conservation Areas	This is a development management policy relating to advertisement in Conservation Areas.	No HRA implications. This is a development management policy relating to advertisement in Conservation Areas.
Policy HA7 Listed Buildings	This is a development management policy relating to listed buildings.	No HRA implications.

		This is a development management policy relating to listed buildings.
Policy HA8 Historic Parks and Gardens	This is a development management policy relating to historic parks and gardens.	No HRA implications. This is a development management policy relating to historic parks and gardens. The use of parks and gardens by the public has potential to divert recreational pressure away from internationally designated sites.
Policy HA9 Enabling Development	'Enabling development which would secure the future of a significant place, but would be contrary to other planning policy objectives, should be unacceptable unless:... The proposal does not materially detract from the archaeological, architectural, historic, artistic, landscape or nature conservation of the site or its setting'	No HRA implications. This is a development management policy to enable development. No type, location, or quantum of development is identified. Whilst this policy does allow for deviation from policies within the Plan, it ensures that any proposal must not materially detract from the nature conservation of the site or setting.
Policy CC1 Climate Change Adaptation	All new development should; demonstrate how its design, materials, construction and operation minimise over heating in summer and reduce the need for heating in winter. Integrate green infrastructure from the beginning of the design process to contribute to urban greening, including the public realm.	No HRA implications. This is a positive development management policy relating to climate change. It provides for reduced energy use from heating/ cooling and the provision of green infrastructure which can act to divert recreational pressure away from internationally designated sites.
Policy CC2 Climate Change Mitigation	All new developments should demonstrate how carbon dioxide emissions will be minimised across the development site. Carbon reduction should be met on site. Re-use and recycling of existing materials and the use of sustainable and local sourcing should be undertaken.	No HRA implications. This is a development management policy relating to climate change mitigation. It is positive as it encourages a reduction in carbon dioxide emissions and a reduction in use of carbon products, and the re-use, recycling, and use of sustainable and locally resourced materials. All these interventions have potential to reduce emissions contributing to atmospheric pollution, reduce water use, and improve water quality.
Policy CC3 Renewable and Low Carbon Energy	A development management policy relating to renewable and low carbon energy. It details that development will be permitted subject to environmental assets, and, local transport networks air quality and human health.	No HRA implications. This is a development management policy relating to renewable and low carbon energy. This policy acknowledges that development will be permitted subject to an assessment of environmental assets. The policy does not identify any type, location or quantum of development.
Policy WAT1 Flood Risk Management	The functional floodplain will be protected from inappropriate development. Development proposals should neither increase the likelihood or intensity of any form of flooding, nor increase the risk to people, property, crops or livestock from such events, both on site and to neighbouring land or further downstream. Development should take into account the impacts of climate change and should build in long term resilience against increased water levels.	No HRA implications. This is a development management policy relating to flood risk management. It does not identify and location, quantum or type of flood risk management. Point 2 of this policy ensures that proposals do not increase the likelihood or intensity of flood nor 'increase the risk to people, property, crops, or livestock'.
Policy WAT2	This is a development management policy relating to Source Protection Zones	No HRA implications.

Source Protection Zones	(SPZ) and provides the requirement for the need for the submission of an assessment of potential impacts and any mitigation measures required for: incinerators, waste transfer stations, vehicle dismantlers, metal recycling, waste treatment facilities and all other non landfill waste management activities, cemeteries, discharge of foul sewage to ground, cess pools, waste sites and underground storage of hazardous substances (i.e. petrol stations), new trade effluent discharges or stores, and storage of manure, slurry, sewage sludge and other farm waste.	This is a development management relating to SPZ's and the requirement for impact assessment for the identified scheme types within the SPZ.
Policy WAT3 Water Quality and the Water Environment	Development proposals will be required to preserve and enhance the water environment, ensuring improvements in surface water quality and the ecological value of watercourses and their margins and the protection of groundwater. Developers are required to retain an 8m buffer strip alongside all main rivers, and an appropriate buffer strip should be maintained at ordinary watercourses, along with an appropriate management plan. Opportunities for removal of culverts, river restoration and naturalisation are supported and additional culverting and development of river corridors will be resisted.	No HRA implications. This is a positive development management policy which has potential to improve water quality and reduce flooding.
Policy WAT4 Efficient Use of Water Resources	Aims to minimise the use of mains water by: incorporating water saving measures and equipment; incorporating the recycling of grey water and utilising natural filtration measures where possible; and designing residential development so that mains water consumption will meet a target of 110 litres or less per head per day.	No HRA implications. This is a positive development management policy relating to reducing water use. This has potential to reduce the amount of abstraction required.
Policy WAT5 Sustainable Drainage	Sustainable forms of drainage systems must be used in accordance with the SUDS hierarchy and provide long term management plans. Development should aim to achieve Greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. Drainage should be implemented in accordance with other policies within the Plan such as ensuring water efficiency and quality, biodiversity, amenity and recreation.	No HRA implications. This is a positive development management policy relating to sustainable drainage. It has potential to improve water quality.
Policy WAT6 Wastewater Infrastructure	Development proposals must ensure that adequate wastewater infrastructure capacity is available in tandem with development. This policy also provides for guidance for upgrading and expanding existing waste water treatment infrastructure. This includes text to ensure that it will have no adverse effect on the integrity of Special Protection Areas, Ramsar Sites and Special Areas of Conservation either alone or in combination with other projects and plans.	No HRA implications. Whilst the emission of water into watercourse from waste water treatment works has potential to impact upon internationally designated sites through a reduction in water quality, this policy provides explicit protection for internationally designated sites.
Policy EQ1 Contaminated Land and Land Instability	This is a development management policy relating to contaminated land.	No HRA implications. This is a development management policy relating to contaminated land.
Policy EQ2 Noise Pollution	This is a development management policy relating to noise pollution.	No HRA implications. This is a development management policy relating to noise pollution.

		This is a positive policy that could potentially help reduce the impact of disturbance to sensitive receptors from development in close proximity to an internationally designated site.
Policy EQ3 Light Pollution	This is a development management policy relating to light pollution	No HRA implications. This is a development management policy relating to light pollution. This is a positive policy that could potentially help reduce the impact of disturbance to sensitive receptors from development in close proximity to an internationally designated site.
Policy EQ4 Air Quality	Development and land uses should minimise potential impacts on local air quality both during construction and operation including the operation of heating, cooling and extraction units. It requires that applications should be supported by Air Pollution Assessment in line with the Council's Air Quality Planning Guidance Document. It provides for electrical vehicle charging points within new development. In order to minimise the impact of travel on local air quality, where major developments involve the introduction of new bus routes or significant changes to existing routes, service providers will be required, in agreement with Hertfordshire County Council's Transport, Access and Safety Unit, to ensure that the vehicles serving these locations will either be of 'hybrid' type or meet the latest 'Euro' emissions regulations	No HRA implications. This is a development management policy relating to air quality. This has potential to improve air quality.
Policy DEL1 Infrastructure and Service Delivery	The District Council will work in partnership with providers of infrastructure and services to facilitate the timely provision of infrastructure necessary to support sustainable development.	No HRA implications. This is a development management policy relating to the delivery of infrastructure and services. This policy provides for infrastructure improvements including to Sewage Treatment Works.
Policy DEL2 Planning Obligations	A development management policy relating to planning obligations	No HRA implications. This is a development management policy relating to planning obligations.

4.1.2 Table 5 below considers whether individual site allocations within the District Plan would have a likely significant effect. It does not consider likely significant effects in combination with all development across East Herts or further afield; that is incorporated into the following chapters.

Table 5: Screening assessment of Site Allocations

Policy	Site	Potential for likely significant effects alone?
Policy BISH1 Policy BISH7	Bishop's Stortford Goods Yard	None Sites are all located over 12km from Lee Valley SPA/Ramsar site, over 16km from Wormley-Hoddesdonpark Woods SAC and 17km from Epping Forest SAC
Policy BISH1 Policy BISH3	North of Bishop's Stortford	
Policy BISH1 Policy BISH4	Hadham Road Reserve Secondary School Site, Bishop's Stortford	
Policy BISH1 Policy BISH5	South of Bishop's Stortford	
Policy BISH1 Policy BISH6	Bishop's Stortford High School Site, London Road	
Policy BISH1 Policy BISH8	Land at Old River Lane, Bishop's Stortford	
Policy BISH1 Policy BISH9	Bishop's Stortford – East of Manor Links	
Policy BISH1 Policy BISH10	The Mill Site	
Policy HERT1 Policy HERT2	Hertford - Mead Lane Area	
Policy HERT1 Policy HERT3	West of Hertford	None Site is 6km from Lee Valley SPA/Ramsar site, 3km from Wormley-Hoddesdonpark Woods SAC and 12km from Epping Forest SAC
Policy HERT1 Policy HERT4	North of Hertford	None Site is over 5km from Lee Valley SPA/Ramsar site, 6km from Wormley-Hoddesdonpark Woods SAC and 14km from Epping Forest SAC
Policy HERT1 Policy HERT5	South of Hertford	None Site is 4km from Lee Valley SPA/Ramsar site, 5km from Wormley-Hoddesdonpark Woods SAC and 13km from Epping Forest SAC
Policy SAWB1 Policy SAWB2	Sawbridgeworth – North of West Road	None Site is located over 9km from Lee Valley SPA/Ramsar site, over

Policy	Site	Potential for likely significant effects alone?
		13km from Wormley-Hoddesdonpark Woods SAC and 14km from Epping Forest SAC
Policy SAWB1 Policy SAWB3	Sawbridgeworth – South of West Road	None Site is located over 9km from Lee Valley SPA/Ramsar site, over 13km from Wormley-Hoddesdonpark Woods SAC and 14km from Epping Forest SAC
Policy SAWB1 Policy SAWB4	North of Sawbridgeworth	None Site is located over 10km from Lee Valley SPA/Ramsar site, over 14km from Wormley-Hoddesdonpark Woods SAC and 15km from Epping Forest SAC
Policy WARE1 Policy WARE2	North and East of Ware	None Site is located 740m from Amwell Quarry (Lee Valley SPA/Ramsar site) and 5.4km from Wormley-Hoddesdonpark Woods SAC
Policy EOS1	East of Stevenage	None Site is 15km from Lee Valley SPA/Ramsar site, 17km from Wormley-Hoddesdonpark Woods SAC and 27km from Epping Forest SAC
Policy GA1	Gilston Area	None Site is located 2.4km from Rye Meads (Lee Valley SPA/Ramsar site), 6.3km from Wormley-Hoddesdonpark Woods SAC and 11km from Epping Forest SAC
Policy EWEL1	East of Welwyn Garden City	None Site is 10km from Lee Valley SPA/Ramsar site, 6km from Wormley-Hoddesdonpark Woods SAC and 17km from Epping Forest SAC
Policy BUNT2	First School Site Allocation (educational site allocation)	None
Policy BUNT3	Buntingford Business Park (employment allocation)	Sites are 15km from Lee Valley SPA/Ramsar site, 20km from Wormley-Hoddesdonpark Woods SAC and 29km from Epping Forest SAC
Policy HOU9 Gypsies and Travellers and Travelling Showpeople	In addition to development management detail, this policy provides the following areas to provide accommodation for Gypsies and Travellers and Travelling Showpeople: Gypsies and Travellers	None, due to distance from European sites.

Policy	Site	Potential for likely significant effects alone?
	The Stables, Bayford	3 pitches
	Birchall Garden Suburb, East of Welwyn Garden City	15 pitches
	The Gilston Area	15 pitches
	Travelling Showpeople	
	Gresley Park, East of Stevenage	5 plots
	North and East of Ware	4 plots
	The Gilston Area	8 plots

- 4.1.3 It has been possible to dismiss urbanisation as an impact on the basis that the closest distance between a proposed District Plan housing or employment allocation and a European site is 730m.³⁹ All other proposed new housing, employment or school sites are at least 2.4km from the nearest European site. However, none of the other potential impact pathways can be dismissed without further analysis, due to the potential for in combination effects. Having completed the initial sift of policies and allocations, impact pathways are now discussed in more detail in the following chapters.

³⁹ Although Riverside Works, Amwell End at Stanstead Abbots is located within 200m of Amwell Quarry (Lee Valley SPA/Ramsar site) this is an existing employment site rather than a new allocation

5 Recreational Pressure

5.1.1 The following policies and site allocations could not be dismissed in the initial sift from potentially posing likely significant effects upon the Lee Valley SPA/ Ramsar site, and Wormley-Hoddesdonpark Wood SAC, and Epping Forest SAC internationally designated sites as a result of increased recreational pressure. These are therefore discussed further in this chapter:

Policies

- Policy DPS1 Housing, Employment and Retail Growth
- Policy DPS2 The Development Strategy 2011-2033
- Policy DPS3 Housing Supply 2011-2033
- Policy BISH11: Employment in Bishop's Stortford
- Policy BISH12: Retail, Leisure and Recreation in Bishop's Stortford
- Policy BUNT1 Development in Buntingford
- Policy BUNT3 Employment in Buntingford
- Policy ED1 Employment

Site Allocations

5.1.2 Distances from internationally designated sites and the quantum of development to be delivered are identified in Table 5.

- All housing sites

5.1.3 Some policies within the Plan do provide a positive contribution that could result in a reduction in recreational pressure are as follows:

- Policy CFLR1 Open Space, Sport and Recreation: it provides for the retention and enhancement of recreational facilities, (including open space), that's existence can result in recreational activities being diverted away from internationally designated sites.
- Policy CFLR2 Local Green Space: it provides for the retention Local Green Space that's existence can result in recreational activities being diverted away from internationally designated sites.
- Policy NE4 Green Infrastructure: The provision of green infrastructure can divert recreational pressure away from internationally designated sites.
- Policy HOU12 Change of Use of Land to Residential Garden and Enclosure of Amenity Land: the retention of public access to public land, which could potentially divert recreational pressure away from an internationally designated site.

5.2 Lee Valley SPA and Ramsar site

5.2.1 The two parts of the SPA/Ramsar site within East Herts are Amwell Quarry (Amwell Nature Reserve) and Rye Meads Nature Reserve. These are managed by Hertfordshire and Middlesex Wildlife Trust and the RSPB. Both reserves are laid out in considerable detail with a network of hides (ten at Rye Meads, three at Amwell) and clearly marked footpaths/boardwalks with screening

vegetation that are specifically laid out and designed to route people away from the sensitive areas and minimise disturbance while at the same time accommodating high numbers of visitors. Moreover, no dogs are allowed (except registered assistance dogs) and the wet and marshy/open water nature of the habitats on site inherently limits off-track recreational activity, rendering it difficult to accomplish and unappealing. For these reasons it is considered that the vulnerability of Amwell Nature Reserve and Rye Meads Nature Reserve to the potential adverse effects of recreational activity that can affect other less well-managed sites is very low. Within Turnford and Cheshunt Pits, which lie outside East Herts but within the Lee Valley Country Park, recreational activity is similarly regulated through zoning of water bodies. The majority of the site is already managed in accordance with agreed management plans in which nature conservation is a high or sole priority.

- 5.2.2 It is also noted that the HRA of the Lee Valley Park Development Framework (UE Associates, 2009) was able to conclude that there would be no likely significant effect of the numerous measures and policies intended to increase public accessibility to the Regional Park (including those areas of international importance) due to the Regional Park Authority's overriding commitment to managing the Regional Park, their past experience of delivering increased access while avoiding disturbance and their ongoing commitment to visitor access management in the more sensitive parts of the Park. If proposals to improve accessibility in the Park can be concluded as being unlikely to lead to a significant effect, then logically, changes in the number of residents within the visitor catchment of the Park can be scoped out.
- 5.2.3 Recreational activity is therefore not considered further as an impact pathway with regard to this site. Currently, the SPA/Ramsar remains in favourable condition. **However, to maximise confidence that the SPA/Ramsar site is adequately protected, it is recommended that all new development deliver greenspace in-line with the Natural England ANG standard to ensure that it is self-sufficient.**

5.3 Wormley-Hoddesdonpark Woods SAC

- 5.3.1 The site is a large, attractive area of ancient woodland with extensive public access and close to large urban centres. The majority of the woods in the complex are in sympathetic ownership, with no direct threat (Hoddesdonpark Wood for example, is managed by The Woodland Trust). No visitor survey data that identifies the recreational catchment could be sourced for Wormley-Hoddesdonpark Woods. However, data does exist for other large woodland European sites, such as Ashdown Forest⁴⁰ and Epping Forest. These indicate that core visitor catchments (i.e. the zone within which the majority of regular visitors are concentrated) tend to lie between 2km-3km (Epping Forest) and 7km (Ashdown Forest) from the site. If the more precautionary figure of 7km is used, this zone would include Hertford and Ware within the recreational catchment of Wormley-Hoddesdonpark Woods SAC.
- 5.3.2 Natural England's Site Improvement Plan (SIP)⁴¹ indicates that the site is heavily used by the public for recreational purposes. However, it also indicates that recreational activity is generally well-managed. Sensitive management of access points and routes by the site's main owners has been largely successful in mitigating the potential adverse effects of this high level of use. As such, general recreational pressure is not indicated in the Site Improvement Plan as a current or future obstacle to achieving or maintaining favourable conservation status and preserving the integrity of the SAC.
- 5.3.3 Recreation is actively promoted on this site and most recreation is concentrated on well-established paths. Most of the complex is covered by a High Forest Zone Plan (Hertfordshire County Council 1996) which sets out a framework for woodland management across the whole area. It aims to restore a varied age structure and natural stand types through sustainable forestry.
- 5.3.4 An increase in the population of Ware and Hertford associated with the delivery of currently unpermitted new housing may increase recreational activity within the SAC. However, the District Plan does not propose to allocate any new housing sites at all within 3km of the SAC and the nearest large housing site is 5km distant, to the east of Ware. Moreover, based on the issues

⁴⁰ Clarke RT, Sharp J & Liley D. 2010. Ashdown Forest Visitor Survey Data Analysis (Natural England Commissioned Reports, Number 048)
UE Associates and University of Brighton. 2009. Visitor Access Patterns on the Ashdown Forest: Recreational Use and Nature Conservation

⁴¹ <http://publications.naturalengland.org.uk/file/6541134543192064> [accessed 12/08/16]

identified in the Site Improvement Plan and the fact that concerns about recreational pressure on this site have not been flagged by Natural England during the preparation of the District Plan and its HRA, which commenced in 2012, there is no basis to conclude that such an increase would result in a likely significant effect on the SAC. However, the Site Improvement Plan does identify some visitor-related objectives and initiatives, to which it would be appropriate that East Herts District Council contributes.

In combination

- 5.3.5 The District Plan includes both new allocations (i.e. sites that do not currently have planning permission) and sites that have already received planning permission but which have not yet been delivered. The total amount of housing planned for East Herts over the District Plan period (considering new allocations and already permitted development) is 16,390 (2011-2033). However, this does not alter the conclusion of the HRA, since that conclusion is not based on the scale of growth in East Herts but on the fact that recreation does not appear to be a current or future concern as identified in the Site Improvement Plan, and that a mechanism that effectively manages recreational activity already exists for this site.
- 5.3.6 The HRA of the Broxbourne Local Plan is not yet publically available. However, the Sustainability Appraisal does discuss impacts on Wormley-Hoddesdonpark Woods SAC from development in Broxbourne and concludes that effects will not be significant, Some parts of Epping Forest District are likely to lie within the recreational catchment of the SAC, but these are all rural and are likely to receive relatively little new housing in the emerging Epping Forest Local Plan.

Recommendation

- 5.3.7 **It is recommended that reference to a commitment by the Council to identified strategic initiatives (as identified in the SIP) is incorporated within the Plan. This includes:**
- ***‘Establish a ‘light-weight’ monitoring system for species or other site features likely to be sensitive to effects of public access (eg. vulnerable ground flora or veteran pollards close to main access points/routes);***
 - ***Regularly review monitoring results and where feasible, modify access arrangements, signage etc to remedy adverse effects;’***
 - ***‘Identify areas still being damaged and the access points/routes used by illicit vehicle and for fly tipping; and,***
 - ***‘Where necessary, construct or repair barriers to prevent illicit access by vehicles, install more signage and CCTV cameras, and pursue prosecutions.’***
- 5.3.8 **Further to this, it is also recommended that all new development deliver greenspace in-line with the Natural England ANG standard to ensure it is self-sufficient.**

5.4 Epping Forest SAC

- 5.4.1 Epping Forest SAC receives a great many visits per year and discussions with the Corporation of London have identified long-standing concerns about increasing recreational use of the forest resulting in damage to its interest features. A programme of detailed formal visitor surveys has been undertaken in recent years. The most recent available visitor survey report⁴² identifies that those living within 2km of the edge of the Forest comprise at least 95% of all visitors. However, although suitable for their original intended purpose, the Corporation of London have identified that these surveys may not be suitable to confirm a definitive core recreational catchment for the SAC and may underestimate the size of the core catchment. An analysis is currently being undertaken on behalf of the Corporation of London to confirm if any useful information can be extracted from these surveys, but otherwise it is possible that more detailed visitor survey work will be required. Any such survey, and any more refined assessment of impacts and mitigation solutions, would be undertaken within the scope of a strategic commitment that all the HMA authorities have made in a Memorandum of Understanding between the HMA authorities, Essex County Council, Hertfordshire County Council, Natural England and the Corporation of London.

⁴² Alison Millward Associates. 2011. Epping Forest Visitor Survey 2011: Results Summary

- 5.4.2 That study is not available to inform this HRA of the East Herts District Plan. As such, a provisional assessment of likely recreational pressure is made. Since the recreational catchment of the SAC is likely to cross local authority boundaries, the analysis is inherently 'in combination'. Although the core recreational catchment of Epping Forest SAC cannot at this point be definitively confirmed, the settlement patterns around the SAC suggest that it would be reasonable to expect that most regular (i.e. weekly or daily) visitors to the SAC are likely to derive from the settlements of Loughton, Epping, Waltham Abbey, Theydon Bois, Chigwell and parts of the London Boroughs of Waltham Forest, Enfield and Redbridge, which all lie within 3km of the SAC. The nearest proposed housing site in East Herts is a large development at Gilston, north of Harlow and approximately 11km north of Epping Forest SAC. It is therefore reasonable to expect that development in East Herts district is unlikely to make a significant contribution to regular recreational visitors in the SAC.
- 5.4.3 However, that cannot be stated definitively at this point. Therefore, it is appropriate that East Herts shares in delivering the HMA-wide commitment set out in the Epping Forest SAC Memorandum of Understanding to undertake additional visitor survey of Epping Forest SAC if required to further refine the catchment. Once that survey work has been completed it may be possible to confirm that East Herts lies outside the core catchment, in which case no further participation in strategic mitigation solutions that may follow from any visitor survey (such as access management contributions) would be required. Since the commitment regarding recreational pressure is already provided in the Epping Forest SAC Memorandum of Understanding, which is a formal agreement, it does not need to be specifically referenced in the East Herts District Plan.
- 5.4.4 It is considered that the Epping Forest SAC Memorandum of Understanding, once signed by all parties, will provide an appropriate framework to ensure that Epping Forest SAC is protected from the adverse effects of new development and thus ensure no likely significant effect on the SAC would materialise in practice, either alone or in combination with other plans and projects.
- 5.4.5 **To maximise confidence that the SPA/Ramsar site is adequately protected, it is however also recommended that all new development deliver greenspace in-line with the Natural England ANG standard to ensure it is self-sufficient.**

6 Air quality

6.1.1 The following policies and site allocations could not be dismissed in the initial sift from potentially posing likely significant effects upon the Lee Valley SPA/ Ramsar site, and Wormley-Hoddesdonpark Wood SAC internationally designated sites as a result increased air pollution. Therefore further discussion is contained in this Chapter:

Policies

- Policy DPS1 Housing, Employment and Retail Growth
- Policy DPS2 The Development Strategy 2011-2033
- Policy DPS3 Housing Supply 2011-2033
- Policy BISH11: Employment in Bishop's Stortford
- Policy BISH12: Retail, Leisure and Recreation in Bishop's Stortford
- Policy BUNT1 Development in Buntingford
- Policy BUNT3 Employment in Buntingford
- Policy ED1 Employment

Site Allocations

6.1.2 Distances from internationally designated sites and the quantum of development to be delivered are identified in Table 5.

- All sites

6.1.3 There are also policies within the Plan do provide a positive contribution atmospheric improvements are as follows:

- Policy ED1 Employment: This policy does support employment which has potential to result in deterioration in air quality, however, this policy does provide for energy efficiency, ensuring sustainable transport can be used for access, and the use of fully integrated communications technology. These provisions have potential to result in improved air quality;
- Policy ED3 Communications Infrastructure: Increased/ improved communications infrastructure has potential to result in the need for less journeys to be taken, resulting in an improvement in air quality;
- Policy TRA1 Sustainable Transport: By definition sustainable development should not result in likely significant effect. This is a positive policy as it promotes and encourages the use of sustainable transport methods that have potential to result in a reduction in emissions of air pollutants; and,
- Policy CC2 Climate Change Mitigation: it encourages a reduction in carbon dioxide emissions and a reduction in use of carbon products, and the re-use, recycling, and use of sustainable and locally resourced materials. All these interventions have potential to reduce emissions contributing to atmospheric pollution.

6.2 Lee Valley SPA/Ramsar site

- 6.2.1 Parts of the Lee Valley SPA and Ramsar site are sensitive to deterioration in air quality, as the supporting habitat consists of terrestrial features that can be degraded by excessive deposition of pollutants. The Ramsar site is partly designated for its aquatic plant life, specifically the whorled water milfoil, which is dependent on calcareous water (and thus susceptible to acidification of the aquatic environment).
- 6.2.2 All forms of development within the Plan that would be likely to lead to increases in vehicle emissions within 200m of Lee Valley SPA and Ramsar could have potential to reduce air quality. The delivery of 16,390 new dwellings, including in specified areas in close proximity to the SPA/Ramsar, coupled with other employment and infrastructure development, is likely to lead to increased road traffic on routes within 200m of the designated site.
- 6.2.3 The only portion of the SPA/Ramsar site that that is located within 200m of a major road is Rye Meads SSSI located within 200m of the A414.
- 6.2.4 Traffic modelling and air quality impact assessment was undertaken to support the assessment of the different HMA Options. Option C resulted in the worst case change of traffic flows on the A414, with a total increase in AADT of 1750.

Table 6: HMA Transport Flow Data Summary

Link	Baseline (2014) AADT	2033 Do Minimum AADT	Option A AADT	Option B AADT	Option C AADT	Option D AADT	Option E AADT
A414 two way	20001	22798	23325	24520	24547	22299	21994

Table 7: Changes to traffic flows as a result of the five SMA Options

Link	2033 Minimum Do two way flows	Change in two-way AADT compared to DM. Positive numerals mean an increase, negative numerals mean a decrease				
		Option A	Option B	Option C	Option D	Option E
A414	22798	527	1723	1750	-499	-803

- 6.2.5 **Error! Reference source not found.** summarises the transport data for the HMA. **Error! Reference source not found.** identifies the changes in traffic flows on the A414 as a result of the HMA Options. The Design Manual for Roads and Bridges⁴³ states that if the change in flows between the Do Minimum and Do Something Scenarios is less than 1,000 AADT the air quality effect can be considered neutral and no further assessment is necessary. As can be seen in **Error! Reference source not found.**, the different SMA Options result in a variety of changes in AADT at each of the links, although in no case is there predicted to be an increase of more than 1,750 AADT for any HMA option. For the purpose of this assessment, the worst case change in traffic flows (Option E), even though this may not represent the final chosen option. This was subject to detailed air quality modelling, the results of which are provided in Appendix C.
- 6.2.6 At its closest, the SPA/Ramsar site is located 25m from the A414 behind a thick belt of trees, which will play some part in intercepting pollution from the road. The modelled annual mean NOx concentrations at this road link indicate that the change in NOx concentrations due to HMA traffic is not more than 1% of the Critical Load (i.e. $0.3\mu\text{g}\text{m}^{-3}$). It is determined that at this level or below, the contribution of nitrogen deposition to a sensitive feature/ supporting habitat would not be significant and this is demonstrated by the nitrogen deposition calculations that have been undertaken. The most sensitive feature to changes in air quality is breeding bittern since it relies upon the fen, marsh and swamp habitats. The Critical Load for nitrogen deposition is 15kg/N/ha/yr (so 1% of this Critical Load is 0.15Kg/N/ha/yr). At its highest, Option E would contribute an increase in nitrogen deposition of 0.02Kg/N/ha/yr, which is much less than 1% of the Critical Load. As such it can be concluded that the level of development provided within the worst case Option (Option E) of the SMA would result in an imperceptible change in atmospheric pollution that would not lead to a likely significant effect

⁴³ Volume 11, Section 3, Part 1 (HA207/07)

upon Rye Meads SSSI (and thus the SPA/Ramsar site) either alone or in combination with other projects or plans.

6.3 Wormley-Hoddesdonpark Wood SAC

- 6.3.1 Wormley-Hoddesdonpark Woods SAC lies within 200m of the A10 at grid reference 535600,208750. However, this applies to a very small part of the site (approximately 500m²) much of which is a track/path/arable field boundary and which constitutes approximately 0.01% of the SAC. Moreover it is situated on the edge of the 200m zone, being no closer to the A10 than 190m at any point.
- 6.3.2 As such, it is considered that increases in traffic movements on the A10 could not lead to a likely significant effect on the interest features of this SAC through changes in local air quality, due to the very small area of the SAC potentially affected and the very small extent to which it is likely to be affected given it is 190m from the road. Air quality on this site is not considered further. This conclusion was drawn in the initial HRA screening of emerging District Plan options in 2012 and was accepted by Natural England.



Figure 3: The area of Wormley-Hoddesdonpark Woods SAC within 200m of the A10.

6.4 Epping Forest SAC

- 6.4.1 As discussed in the methodology section, air quality in Epping Forest SAC was, like air quality along the A414 past the Lee Valley SPA/Ramsar site, subject to detailed analysis at the HMA level as part of the process of selecting an HMA-wide growth option. That analysis is provided in detail in Appendix D. However, it is summarised below.
- 6.4.2 There is relatively little difference between any of the Options. This is probably because all the Options have the same broad distribution for new housing i.e. clustered around Harlow, even though they vary in quantum and detailed distribution.
- 6.4.3 For all Options and all roads other than Theydon Road, there would be an increase in NO_x concentration up to 10-20m from the roadside (depending on link modelled) that would be greater than 1% of the Critical Level. This varies from 0.4 µg_m⁻³ (1.3% of the Critical Level) at the furthest distance, up to a maximum of 1.5 µg_m⁻³ (5% of the Critical Level) immediately adjacent to the A104

under Option C. DMRB Interim Advice Note 174/12⁴⁴ classifies this as a 'small' change (which it defines in line with Institute of Air Quality Management practice as a change equivalent to 5% of the critical level or less). However, since it is over 1% of the Critical Level the contribution of the Options cannot be dismissed as imperceptible. It is therefore necessary to consider the implications of the elevated NO_x. This is done by examining the resultant nitrogen and acid deposition, since these are the two primary pathways for NO_x to affect vegetation (whether ground-based or epiphytic).

- 6.4.4 The calculations indicate that no modelled Option results in a change in nitrogen or acid deposition rate equivalent to (or even close to) 1% of the Critical Load on any road link. Therefore, it is possible to conclude in line with DMRB and AQTAG guidelines that all Options would make an imperceptible or inconsequential contribution to local nitrogen and acid deposition within Epping Forest SAC. Due to the ability to reach this conclusion it is not necessary to undertake an assessment of nitrogen deposition or acid deposition 'in combination' with other projects and plans because, as per DMRB and AQTAG, a contribution of less than 1% is so small that it is considered never to have a likely significant effect even in combination with other projects and plans. Not all NO_x is deposited near the roadside; much is converted to other chemicals and/or dispersed more widely before being deposited. Therefore, the degree of change in nitrogen and acid deposition at a given distance from the roadside is always much smaller than the accompanying change in NO_x concentrations.
- 6.4.5 The change in NO_x concentrations at the roadside on several road links is predicted to be greater than 1% of the critical level (in the worst case, up to 5% of the critical level). Therefore, these cannot be described as imperceptible and require consideration 'in combination'. This is essentially achieved by examining the total Do Something NO_x concentrations, as the Do Something scenario incorporates all expected future development including currently unimplemented planning permissions, plus background traffic growth. As per footnote 68, the Critical Level for NO_x is set at 30 µgm⁻³ to capture the role of NO_x in nitrogen deposition and particularly in growth effects. If nitrogen deposition due to a scheme can be dismissed as imperceptible even in combination, then whether the expected total NO_x concentration is over 30 µgm⁻³ or not ceases to be particularly important and attention should be paid to other effects of NO_x that may arise other than through its role as a source of nitrogen. These may include biochemical effects e.g. enzyme activity, chlorophyll content and physiological effects e.g. CO₂ assimilation or stomatal conductivity, although many of these changes may still be due to increased nitrogen rather than other effects of the gas such as acidity. Based on those studies, the physiological and biochemical effects of NO_x do not appear to occur until much higher annual concentrations are reached. Even in epiphytic plants, no research has been sourced that indicates effects, other than via nitrogen, at lower concentrations. This is reflected in WHO (2000) which states that the '*general effect threshold ... would be substantially higher if biomass production [i.e. growth stimulation] of crops is not assumed to be an adverse effect*'.⁴⁵ Reference to the data provided within the WHO report suggests that exposure to annual average concentrations below 100 µgm⁻³ are unlikely to cause direct biochemical or physiological effects based on the available studies and it may be that concentrations considerably above 100 µgm⁻³ would be required in the field before an effect was observed. From the tables above, the highest 'in combination' (Do Something) 2033 NO_x concentration predicted on the modelled links from these Options is 56.5 µgm⁻³ immediately adjacent to the A121 between the Wake Arms Roundabout and the M25. This is certainly high enough for nitrogen deposition to be well above the minimum critical load but is well below the likely minimum NO_x concentration at which other effects, unrelated to growth stimulation and nitrogen deposition, are likely to occur.
- 6.4.6 In summary therefore, based on the traffic flow data for the modelled links and using the criteria set by AQTAG, it can be concluded that there will be no adverse effect on the integrity of Epping Forest SAC from either option, either alone or in combination with other plans and projects.
- 6.4.7 However, even allowing for some improvement in background air quality to 2033 from improved emissions technology, the total nitrogen deposition rates adjacent to all modelled links will reach, or exceed, the lowest point of the currently used critical load range for Epping Forest SAC. As such, while the modelling indicates that none of the HMA Options can be 'blamed' for making a significant contribution to the future elevated nitrogen deposition rates, when all traffic is taken together there clearly will remain potential for a continued negative effect on the SAC by 2033. Therefore, while it may not be required as 'mitigation' it is considered appropriate that the HMA authorities pursue the

⁴⁴ The Design Manual for Roads and Bridges (Interim Advice Note 174/12 Updated advice for evaluating significant local air quality effects for users of DMRB Volume 11, Section 3, Part 1 'Air Quality (HA207/07))

⁴⁵ WHO Regional Office for Europe, Copenhagen, Denmark, 2000. Air Quality Guidelines – Second Edition. Chapter 11

Memorandum of Understanding and use it as a basis to work cooperatively with The Corporation of London, Natural England and other partners to achieve material improvements in air quality and nitrogen inputs to Epping Forest SAC by 2033, such as through delivery of the Forest Transport Plan and Forest Nitrogen Action Plan. This would also be appropriate since it is recognised that transport modelling is predictive and it is impossible to know how accurate it will be until 2033, and it is recognised that some pollutants that have been identified of being of concern for the SAC (such as ammonia) cannot be accurately modelled and that there are currently difficulties modelling queuing traffic at Wake Arms Roundabout. Since the commitment to this work is set out in the Epping Forest SAC Memorandum of Understanding and this MoU is a formal document, the commitment does not need reproducing in the District Plan.

7 Water Abstraction

7.1.1 The following site allocations and policies could not be dismissed in the initial sift from potentially posing likely significant effects upon the Lee Valley SPA/ Ramsar site internationally designated sites as a result of changes to water levels due to abstraction for public water supply. They are therefore discussed further in this Chapter:

Policies

- Policy DPS1 Housing, Employment and Retail Growth
- Policy DPS2 The Development Strategy 2011-2033
- Policy DPS3 Housing Supply 2011-2033
- Policy BISH11: Employment in Bishop's Stortford
- Policy BISH12: Retail, Leisure and Recreation in Bishop's Stortford
- Policy BUNT1 Development in Buntingford
- Policy BUNT3 Employment in Buntingford
- Policy ED1 Employment

Site Allocations

- All sites

7.1.2 Policies within the Plan do provide a positive contribution towards reducing the need for water supply as follows:

- Policy ED1 Employment: This policy does support employment which has potential to result in deterioration in air quality, however, this policy does provide for energy efficiency, providing potential to result in reduce water use and the need for water supply;
- Policy CC2 Climate Change Mitigation: it encourages a reduction in carbon dioxide emissions and a reduction in use of carbon products, and the re-use, recycling, and use of sustainable and locally resourced materials. All these interventions have potential to reduce water use and the need for water supply;
- Policy WAT4 Efficient Use of Water Resources: measures provided within this policy have potential to reduce water use and the amount of water abstracted; and,
- Policy ED1 Employment: includes positive provisions including for energy efficiency, which has potential to result in lower water usage and the amount of water abstracted.

7.2 Lee Valley SPA/Ramsar site

7.2.1 The Lee Valley SPA/Ramsar site consists of four Sites of Special Scientific Interest, of which Turnford and Cheshunt Pits SSSI, Rye Meads SSSI and Amwell Quarry SSSI all lie on the Hertfordshire/Essex border. Walthamstow Reservoirs SSSI lies within London Borough of Waltham Forest. Walthamstow Reservoirs is a sealed storage reservoir and part of the public water supply

infrastructure for London. Rye Meads is unlikely to ever suffer from a shortage in water quantity due to its close relationship with Rye Meads Wastewater Treatment Works. The nearest proposed housing allocation to a relevant part of the SPA (Amwell Quarry) is 760m away, so direct water resource effects from specific development sites will not arise. However, the quarries could theoretically be adversely affected if groundwater abstraction for public water supply was sufficiently great to cause drawdown of water levels.

- 7.2.2 Public water supply for East Herts is handled by Affinity Water. It lies within the Central region, crossing the Lee and Stort Water Resource Zones. The Affinity Water Central region abstracts 60% of its water supply from groundwater sources with boreholes abstracting from chalk and gravel aquifers. The current Affinity Water Water Resource Management Plan covers the period up to 2040 and states that an HRA of the WRMP has been undertaken and that they have been able to demonstrate sufficient alternative supply options to ensure that adverse effects on European sites can be avoided. As such, it can be concluded that delivery of the East Herts District Plan will not result in adverse effects on Lee Valley SPA/Ramsar site through excessive water drawdown, either alone or in combination with other plans and projects.

8 Water Quality

8.1.1 The following site allocations and policies could not be dismissed in the initial sift from potentially posing likely significant effects upon the Lee Valley SPA/ Ramsar site internationally designated sites as a result of changes to water quality from treated wastewater discharge. They are therefore considered further in this Chapter:

Policies

- Policy DPS1 Housing, Employment and Retail Growth
- Policy DPS2 The Development Strategy 2011-2033
- Policy DPS3 Housing Supply 2011-2033
- Policy BISH11: Employment in Bishop's Stortford
- Policy BISH12: Retail, Leisure and Recreation in Bishop's Stortford
- Policy BUNT1 Development in Buntingford
- Policy BUNT3 Employment in Buntingford
- Policy ED1 Employment

Site Allocations

- All sites

8.1.2 Policies within the Plan do provide a positive contribution towards good water quality as follows:

- Policy CC2 Climate Change Mitigation: it encourages a reduction in carbon dioxide emissions and a reduction in use of carbon products, and the re-use, recycling, and use of sustainable and locally resourced materials. All these interventions have potential to improve water quality;
- Policy WAT3 Water Quality and the Water Environment: has potential to improve water quality and reduce flooding; and,
- Policy WAT5 Sustainable Drainage: has potential to improve water quality.

8.2 Lee Valley SPA/Ramsar site

8.2.1 Change in water quality is the main pathway through which the Lee Valley SPA/Ramsar site could be adversely affected. Two parts of the Lee Valley SPA/Ramsar site lie within East Herts: Amwell Quarry and Rye Meads. The nearest proposed development site to a part of Lee Valley SPA/Ramsar site is 760m distant, so direct surface water runoff effects on water quality will not arise. However, Rye Meads consists of non-operational land at and around the Rye Meads Wastewater Treatment Works (WwTW). Parts of the SPA consist of open water but other parts consist of fen or marsh vegetation that would theoretically be susceptible to nutrient enrichment from treated wastewater.

8.2.2 'Poor fens' (i.e. acidic fens) are strongly nitrogen limited. In other words, nitrogen availability is the factor which ultimately controls vegetation response to other nutrients and a small change in

nitrogen inputs can result in a major change in the vegetation composition. In contrast, other types of fen with a relatively alkaline pH (called 'rich' fens) such as those at Rye Meads are phosphorus-limited, meaning that phosphorus availability is the factor which ultimately controls vegetation response to other nutrients. This also applies to fluvial flood-plain grasslands like those at Rye Meads SSSI. In a phosphorus limited system, high nitrogen availability will not result in a deleterious effect on vegetation provided that phosphorus availability is controlled⁴⁶. That is not to say that nitrogen inputs would therefore be irrelevant, but it does mean that when nitrogen is already in excess (and phosphorus inputs can be controlled) a proportionate response must be made to the risk posed by small additional nitrogen inputs. Effluent discharges from Rye Meads Sewage Treatment Works (STW) into Tollhouse Stream. The stream flows through the SSSI and has been known to back up into the marsh grassland parts of the SSSI during periods of high flow.

- 8.2.3 The current discharge consent for Rye Meads WwTW has been subjected to a review by the Environment Agency and Thames Water (Review of Consents) specifically for the purpose of determining whether the current consented phosphorus limits on the discharge are leading to an adverse effect on the Lee Valley SPA/Ramsar site, and if so, to amend the consent in order to avoid such an effect. As such, provided effluent from new development within the Rye Meads catchment can be accommodated within the existing volumetric discharge consent for the WwTW it can be concluded with confidence that an adverse effect on the SPA/Ramsar site is unlikely to occur from this pathway.
- 8.2.4 However, once the WwTW ceases to have capacity within its existing discharge consent for effluent from additional dwellings, it will be necessary for Thames Water to apply to the Environment Agency to increase the consented discharge volume, or direct flows to an alternative treatment facility. The Environment Agency is very unlikely to consent to an increase in discharge volume from the WwTW unless the phosphate concentration within the effluent can be further tightened to ensure no deterioration in water quality in Tollhouse Stream. There is a technical limit (known as the limit of Best Available Technology) to how much phosphorus removal a WwTW can incorporate. If this situation arises, there is a risk that future dwellings within the catchment could not be accommodated at Rye Meads WwTW, requiring an alternative treatment solution that does not as yet exist. Investigating these issues was one of the purposes of the Rye Meads Water Cycle Study (2009). Water quality is therefore an important pathway to investigate with regard to future development within the Rye Meads WwTW catchment.
- 8.2.5 With regard to East Herts, the key settlements of Hertford, Ware and Sawbridgeworth are all located within the catchment of Rye Meads WwTW, while development north of Harlow and east of Welwyn Garden City is also likely to be served by Rye Meads WwTW. The key settlements of Bishops Stortford and Buntingford are outside the catchment of Rye Meads WwTW. The bulk of wastewater volumes treated by the WwTW come from Stevenage, Welwyn Garden City and Harlow but settlements in East Herts also make a significant contribution.
- 8.2.6 Using less water per person will reduce the impact the new development on the hydraulic capacity at Rye Meads WwTW, allowing more development to be catered for within the existing capacity and delay the need for a larger volumetric discharge consent. However, East Herts District Council have confirmed that discussions with Thames Water has led the Company to confirm that following modelling in late 2015/early 2016 they are happy that Rye Meads STW can accommodate the growth proposed at the Gilston Area as well as growth in the wider Harlow area. The current predictions show that Rye Meads STW can relatively comfortably deal with known growth up to 2036. In the period from 2036 to 2041 the site becomes more stressed but not necessarily to an extent that would trigger an upgrade to the site.
- 8.2.7 Since 2036 to 2041 is beyond the District Plan period, it is therefore possible to conclude that the District Plan will not result in a water quality effect on Lee Valley SPA/Ramsar site either alone or in combination with other projects and plans.

⁴⁶ 'In a nutrient limited system, excess of the non-limiting nutrient may not result in any signs of enrichment in the vegetation as the plants are unable to make use of one nutrient without sufficient amounts of the other'. Source: Understanding Fen Nutrients <http://www.snh.gov.uk/docs/A416930.pdf>

9 Conclusion

- 9.1.1 Provided that the recommendations made in this document are incorporated into the District Plan, it would be possible to conclude that the East Herts District Plan will not result in a likely significant effect, either alone or in combination, upon any European sites. This conclusion is contingent upon the signature, adoption and implementation of the Epping Forest SAC Memorandum of Understanding between the HMA authorities, Hertfordshire County Council, Essex County Council, Natural England and the Corporation of London. This will ensure that any issues that may arise regarding air quality or recreational pressure on Epping Forest SAC can be identified and addressed before they result in a likely significant effect.
- 9.1.2 The recommendations are as follows:
- 9.1.3 **It is recommended that reference to a commitment by the Council to identified strategic initiatives to manage recreation at Wormley-Hoddesdonpark Woods (as identified in the SIP for that SAC) is incorporated within the Plan. This includes:**
- *‘Establish a ‘light-weight’ monitoring system for species or other site features likely to be sensitive to effects of public access (eg. vulnerable ground flora or veteran pollards close to main access points/routes);*
 - *‘Regularly review monitoring results and where feasible, modify access arrangements, signage etc to remedy adverse effects;’*
 - *‘Identify areas still being damaged and the access points/routes used by illicit vehicle and for fly tipping; and,*
 - *‘Where necessary, construct or repair barriers to prevent illicit access by vehicles, install more signage and CCTV cameras, and pursue prosecutions.’*
- 9.1.4 Further to this, it is also recommended that all new development deliver greenspace in-line with the Natural England ANG standard to ensure it is self-sufficient.

Appendix A. Figures

Appendix B. Background to Internationally Designated Sites

B.1 Epping Forest SAC

B.1.1 Introduction

Epping Forest SAC is located approximately 10km south of East Herts district. 70% of the 1,600 hectare site consists of broadleaved deciduous woodland, and it is one of only a few remaining large-scale examples of ancient wood-pasture in lowland Britain. Epping Forest supports a nationally outstanding assemblage of invertebrates, a major amphibian interest and an exceptional breeding bird community.

B.1.2 Reasons for Designation⁴⁷

Epping Forest qualifies as a SAC for both habitats and species. Firstly, the site contains the Habitats Directive Annex I habitats of:

- Beech forests on acid soils with *Ilex* and sometime *Taxus* in the shrublayer.
- Wet heathland with cross-leaved heath; and
- Dry heath

Secondly, the site contains the Habitats Directive Annex II species Stag beetle *Lucanus cervus*, with widespread and frequent records.

B.1.3 Current Pressures and Threats⁴⁸

- Air pollution
- Under grazing
- Public disturbance
- Changes in species distribution
- Inappropriate water levels
- Water pollution
- Invasive species
- Disease

B.1.4 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site

⁴⁷ JNCC (2015) Natura 200 Standard Data Form: Epping Forest SAC

⁴⁸ Natural England (2015). Site Improvement Plan: Epping Forest SAC

B.2 Lee Valley SPA and Ramsar Site

B.2.1 Introduction

The Lee Valley comprises a series of embanked water supply reservoirs, sewage treatment lagoons and former gravel pits along approximately 24 km of the valley. These waterbodies support internationally important numbers of wintering gadwall and shoveler, while the reedbeds support a small but internationally important population of bittern. In addition to the ornithological interest, the site also qualifies as a Ramsar site on account on rare and scarce plants and invertebrates present.

The Lee Valley SPA/Ramsar consists of four Sites of Special Scientific Interest, of which Turnford and Cheshunt Pits SSSI, Rye Meads SSSI and Amwell Quarry SSSI all lie on the Hertfordshire/Essex border. Walthamstow Reservoirs SSSI lies within London Borough of Waltham Forest. The Special Protection Area is managed by the Lee Valley Regional Park Authority and by Thames Water.

B.2.2 Reasons for Designation

The Lee Valley site is designated as an SPA⁴⁹: for its Birds Directive Annex I and Ramsar site under criterion 6⁵⁰ for species that over-winter, and these are:

- Bittern *Botaurus stellaris*;
- Gadwall *Anas strepera*;
- Shoveler *Anas clypeata*.

In addition, the site qualifies as a Ramsar under criterion 2⁵¹, by supporting the nationally scarce plant species whorled water-milfoil *Myriophyllum verticillatum* and the rare or vulnerable invertebrate *Micronecta minutissima* (a water-boatman).

B.2.3 Current Pressures and Threats⁵²

- Water pollution
- Hydrological changes
- Public disturbance
- Inappropriate scrub control
- Fishing
- Air pollution
- Inappropriate cutting and mowing
- Invasive species

B.2.4 Conservation Objectives⁵³

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features'), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,

⁴⁹ <http://jncc.defra.gov.uk/page-2047-theme=default> [accessed 12/08/2016]

⁵⁰ <http://jncc.defra.gov.uk/pdf/RIS/UK11034.pdf> [accessed 12/08/2016]

⁵¹ Ibid

⁵² <http://publications.naturalengland.org.uk/file/5788502547496960> [accessed 12/08/2016]

⁵³ <http://publications.naturalengland.org.uk/file/5168095937167360> [accessed 12/08/2016]

- The distribution of the qualifying features within the site.

B.3 Wormley-Hoddesdonpark Woods SAC

B.3.1 Introduction

This SAC consists of two SSSIs – Wormley-Hoddesdonpark Woods North and Wormley-Hoddesdonpark Woods South and is situated on the southern border of East Herts, with part of the SAC in Broxbourne. The semi-natural woodland is of national importance as an example of lowland south-east sessile oak/hornbeam type with the pedunculate oak/hornbeam variant also present. Additionally, small ponds and streams are important habitats for bryophytes.

B.3.2 Reasons for Designation⁵⁴

Wormley-Hoddesdonpark Woods qualifies as a SAC through its habitats, containing the Habitats Directive Annex I habitat:

- Oak-hornbeam forests – this is one of only two outstanding locations for such habitat in the UK.

B.3.3 Current Pressures and Threats⁵⁵

- Disease
- Invasive species
- Air pollution
- Deer
- Illicit vehicle
- Woodland/ forestry management
- Recreation

B.3.4 Conservation Objectives⁵⁶

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features'), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats
- The structure and function (including typical species) of qualifying natural habitats, and
- The supporting processes on which qualifying natural habitats rely

⁵⁴ <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0013696> [accessed 12/08/2016]

⁵⁵ <http://publications.naturalengland.org.uk/file/6541134543192064> [accessed 12/08/2016]

⁵⁶ <http://publications.naturalengland.org.uk/file/6475250191564800> [accessed 12/08/2016]

Appendix C. Air Quality Impact Assessment: Lee Valley SPA/Ramsar site

Option A

A414												
Distance (m)	Annual Mean NOx Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
25	31.7	21.7	21.8	0.1	15.30	11.64	11.65	0.01	1.24	1.21	1.21	0.00
50	28.2	19.9	20.0	0.1	15.12	11.55	11.56	0.00	1.22	1.20	1.20	0.00
100	25.8	18.7	18.8	0.0	15.00	11.49	11.49	0.00	1.21	1.20	1.20	0.00
150	24.9	18.2	18.3	0.0	14.95	11.47	11.47	0.00	1.20	1.20	1.20	0.00
200	24.4	18.0	18.0	0.0	14.92	11.45	11.46	0.00	1.20	1.19	1.19	0.00

Option B

A414												
Distance (m)	Annual Mean NOx Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
25	31.7	21.7	22.0	0.3	15.30	11.64	11.66	0.02	1.24	1.21	1.22	0.00
50	28.2	19.9	20.1	0.2	15.12	11.55	11.56	0.01	1.22	1.20	1.21	0.00
100	25.8	18.7	18.8	0.1	15.00	11.49	11.50	0.01	1.21	1.20	1.20	0.00
150	24.9	18.2	18.3	0.1	14.95	11.47	11.47	0.01	1.20	1.20	1.20	0.00
200	24.4	18.0	18.1	0.1	14.92	11.45	11.46	0.00	1.20	1.19	1.19	0.00

Option C

A414												
Distance (m)	Annual Mean NOx Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
25	31.7	21.7	22.0	0.3	15.30	11.64	11.66	0.02	1.24	1.21	1.22	0.00
50	28.2	19.9	20.1	0.2	15.12	11.55	11.56	0.01	1.22	1.20	1.21	0.00
100	25.8	18.7	18.8	0.1	15.00	11.49	11.50	0.01	1.21	1.20	1.20	0.00
150	24.9	18.2	18.3	0.1	14.95	11.47	11.47	0.01	1.20	1.20	1.20	0.00
200	24.4	18.0	18.1	0.1	14.92	11.45	11.46	0.00	1.20	1.19	1.19	0.00

Option D

A414												
Distance (m)	Annual Mean NOx Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
25	31.7	21.7	21.6	-0.1	15.30	11.64	11.64	0.00	1.24	1.21	1.21	0.00
50	28.2	19.9	19.9	-0.1	15.12	11.55	11.55	0.00	1.22	1.20	1.20	0.00
100	25.8	18.7	18.7	0.0	15.00	11.49	11.49	0.00	1.21	1.20	1.20	0.00
150	24.9	18.2	18.2	0.0	14.95	11.47	11.47	0.00	1.20	1.20	1.20	0.00
200	24.4	18.0	18.0	0.0	14.92	11.45	11.45	0.00	1.20	1.19	1.19	0.00

Option E

A414												
Distance (m)	Annual Mean NOx Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
25	31.7	21.7	21.6	-0.1	15.30	11.64	11.64	-0.01	1.24	1.21	1.21	0.00
50	28.2	19.9	19.8	-0.1	15.12	11.55	11.55	0.00	1.22	1.20	1.20	0.00
100	25.8	18.7	18.7	-0.1	15.00	11.49	11.49	0.00	1.21	1.20	1.20	0.00
150	24.9	18.2	18.2	0.0	14.95	11.47	11.47	0.00	1.20	1.20	1.20	0.00
200	24.4	18.0	18.0	0.0	14.92	11.45	11.45	0.00	1.20	1.19	1.19	0.00

Appendix D. Air Quality Impact Assessment: Epping Forest SAC

Traffic flow data

The transport consultancy Jacobs used a spreadsheet model to generate flow data for the following roads within 200m of Epping Forest SAC:

- A121 (two sections);
- A104;
- B1393;
- B172; and
- Theydon Road

The flow data for each road are presented below as Annual Average Daily Traffic (AADT). Percentage heavy duty vehicles and average vehicle speeds are also provided. For the purposes of these analyses it was assumed that percentage HDV and average vehicle speeds would remain essentially similar to 2033; this is the standard assumption. Baseline is the AADT flow on each link as of 2014. Do Minimum is the change in flows due to delivery of existing planning permissions in the HMA and general background traffic growth as a result of population growth expected to 2033 without any of the HMA Options. The flows due to each HMA option are then shown in Columns 4 to 8. All Options A to E involve the same assumptions about employment traffic.

1	2			3	4	5	6	7	8
	Baseline (2014)			2033 Do Minimum	Option A	Option B	Option C	Option D	Option E
Link (NB = northbound lane etc.)	AADT	% HDV	Speed (kph)	AADT	AADT	AADT	AADT	AADT	AADT
B1393 NB	10593	2.9	62	12861	13719	13699	13713	13422	13827
B1393 SB	9477	1.3	45	12074	12853	12697	12858	12462	12646
B172 EB	3907	2.5	53	4472	4223	4222	4225	4190	4232
B172 WB	4241	4.9	40	4926	4992	4953	4957	4950	5035
A121 between Wake Arms Roundabout and Loughton NB	9980	1.2	19	11859	12075	12063	12051	11843	12181
A121 between Wake Arms Roundabout and Loughton SB	10430	2.1	56	12134	11607	11550	11589	11504	11593
A104 NB	8031	4.0	53	9680	9954	10000	10001	9669	10017
A104 SB	8165	2.7	48	10356	11684	11431	11599	11449	11660
A121 between Wake Arms Roundabout and the M25 EB	12228	2.8	34	13982	14029	13927	14001	14027	14074
A121 between Wake Arms Roundabout and the M25 WB	13008	3.5	40	15798	17075	16974	17023	16632	17130
Theydon Rd NB	4225	1.2	54	5174	5233	5251	5257	5092	5262
Theydon Rd SB	3677	1.5	53	4681	4976	4901	4973	4858	4903

The total change in two-way flows between Options A to E on the one hand and the Do Minimum Scenario on the other tells us the change specifically due to each Option (as distinct from the total change to 2033). These are the data that are used to determine the specific impact of each option in line with the Design Manual for Roads and Bridges. These data are summarised below. According to the Design Manual for Roads and Bridges guidance for assessing air quality impact of traffic, a two-way increase in flows of less than 1,000 AADT (assuming the percentage HDV and average vehicle speeds remain the same) means that *'the impact of the scheme can be considered to be neutral in terms of local air quality and no further work is needed'*. Nonetheless, in this exercise all changes in flows were subject to air quality calculation.

Link	2033 Minimum way flows	Do two	Change in two-way AADT compared to DM. Positive numerals mean an increase, negative numerals mean a decrease				
			Option A	Option B	Option C	Option D	Option E
B1393	24,935		1,637	1,461	1,636	949	1,538
B172	9,398		- 183	- 223	- 216	- 258	- 131
A121 (between Wake Arms Roundabout and Loughton)	23,993		- 311	- 380	- 353	- 646	- 219
A104	20,036		1,602	1,395	1,564	1,082	1,641
A121 (between Wake Arms Roundabout and M25)	29,780		1,324	1,121	1,244	879	1,424
Theydon Rd	9,855		354	297	375	95	310

From examining the changes in flows due to each Option, it can be seen that the change in flows is fairly small in all cases. This is probably because:

1. Although the total amount of housing being planned under each option is large, a significant proportion of that housing already has planning permission (and is thus counted as part of the Do Minimum Scenario, since it would occur whether or not any of the Scenarios were chosen);
2. Of the housing that does not have planning permission, a large amount in each case is situated between 5km and 10km north of Epping Forest SAC around Harlow, such that there are plenty of opportunities for traffic generated by that housing to disperse across the network before it reaches Epping Forest; and
3. All of these scenarios involve some transport improvements and the model may have predicted that vehicle flows on some links will change due to those. Alternatively, the model may be assuming traffic is redeploying onto other roads for other reasons. For example, scrutiny of the data suggests that under each Option the traffic model expects slightly less traffic to head south from Wake Arms Roundabout to Loughton than would otherwise occur by 2033, but expects slightly more to move between Wake Arms Roundabout and the M25 in both directions.

It is important to remember that the numbers above are the changes in flows due to that option compared to the 2033 flows without that option. So, for example, Option D for Theydon Road is not saying that by 2033 flows will only have increased by 95 vehicles per day compared to 2014, but that a further 95 vehicles per day (average) is the difference which Option D would make compared to background traffic growth and delivery of existing planning permissions.

The two links (B172 and A121 from Wake Arms Roundabout to Loughton) that are predicted to experience an overall reduction in flows by 2033 due to every Option are not presented as air quality calculations below, since clearly the impact of the Options A to E will not be adverse compared to the situation without any Option.

Air quality calculations

For each of the roads air quality transects were calculated up to 200m back from the roadside as below. For some road sections (particularly around Wake Arms Roundabout) multiple transects were modelled to account for the influence of the predominant wind direction and emissions from the other nearby road links. In the summary tables below the worst case results are presented for each road link and option.





When calculating Do Minimum NO_x concentrations, air quality impact assessment guidance from Department for Transport (HA207/07, Annex F) advises that baseline concentrations should be reduced by 2% per annum in order to reflect expected improvements in background air quality in the future. However, we are aware that some regard this as overambitious. Therefore, in the tables below we have made the assumption that that conditions in 2023 (the midpoint between the base year and the year of assessment) are representative of conditions in 2033 (the year of assessment). This approach is accepted within the professional air quality community and accounts for known recent improvements in vehicle technologies (new standard Euro 6/VI vehicles), whilst excluding the more distant and tenuous projections regarding the evolution of the vehicle fleet.

Any process that involves the release of combustion products into atmosphere will contribute to atmospheric pollution, such that a plan or project that resulted in (for example) a single additional car journey on a given road through Epping Forest SAC will be contributing to pollution to some degree. With this principle in mind, the Air Quality Technical Advisory Group (AQTAG; consisting of Environment Agency, Natural England and Natural Resources Wales) has drawn a clear distinction between *'plans and projects considered to be inconsequential and never likely to have an in-combination effect (and so not included in any assessment of likely significant effect in-combination with a new plan or project) and those concluded to have 'no likely significant effect' (insignificant alone but which may need to be considered in the assessment of any other new plans or projects)*⁵⁷. The threshold they use for deciding whether a plan or project (or in this case each HMA growth option) is inconsequential is '1% of the Critical Level' (for NO_x)⁵⁸ or '1% of the Critical Load'⁵⁹ for nitrogen and acid deposition. Design Manual for Roads and Bridges advises that where the concentration within the emission footprint [i.e. the Process Contribution (PC), the contribution of the scheme in question] in any part of the European site(s) is 1% of the relevant long-term benchmark (Critical Level or Critical Load) or less, the emission is 'imperceptible' and not likely to have a significant effect alone or in combination with other projects and plans irrespective of the background levels⁶⁰.

In the tables that follow, each option is analysed for each road link. The air quality impact of each option is reflected in the 'Change' column, this being the difference between the 2033 Do Minimum Scenario and each HMA Option. Where this is less than 1% of the Critical Level or Load it is shown as a green cell. Where it is above 1% of the Critical Level or Load it is shown as an orange cell. Note that where the number given in a cell is 0.00 it does not literally mean that there will be no deposition but rather that it will be less than 0.01 kgN/ha/yr or keq/ha/yr and thus below the rate that can be modelled.

⁵⁷ AQTAG position regarding In-combination guidance and assessment. Correspondence between AQTAG and PINS. March 2015 states that: *'AQTAG is confident that a process contribution [the difference between Do Minimum and Do Something Scenarios] < 1% of the relevant critical level or load (CL) can be considered inconsequential and does not need to be included in an in-combination assessment'*

⁵⁸ The Critical Level for NO_x is set for all vegetation at 30 µg m⁻³. Experiments have shown that the different effects of NO_x occur at different annual concentrations and some will not arise until concentrations of several hundred (or even thousand) micrograms per cubic metre are reached. However, the growth stimulation or inhibition nitrogen deposition effects arise at the lowest annual concentrations and 30 µg m⁻³ was chosen as the Critical Level on the basis that concentrations below this level are very unlikely to be accompanied by significant nitrogen deposition unless there are other sources of atmospheric nitrogen.

⁵⁹ The Air Pollution Information System (www.apis.ac.uk) gives 10 kgN/ha/yr as the lowest point in the Critical Load range for Epping Forest SAC.

⁶⁰ Design Manual for Roads and Bridges Interim Advice Note (IAN) 174/13 (2013) Updated advice for evaluating significant local air quality effects for users of DMRB Volume 11, Section 3, Part 1 Air Quality (HA207/07) states that *'Where the difference in concentrations [between the Do Minimum and Do Something Scenarios] are less than 1% of the air quality threshold then the change at these receptors is considered to be imperceptible and they can be scoped out of the judgement on significance'*.

Option A

A121 between Wake Arms Roundabout and M25												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	92.1	55.0	56.5	1.5	17.77	13.13	13.20	0.06	1.36	1.24	1.24	0.01
10	60.0	36.9	37.7	0.8	16.47	12.34	12.38	0.04	1.23	1.16	1.16	0.00
20	48.6	30.4	30.9	0.5	15.95	12.03	12.06	0.03	1.17	1.12	1.13	0.00
50	37.8	24.4	24.7	0.3	15.43	11.74	11.75	0.01	1.12	1.09	1.09	0.00
100	32.8	21.7	21.8	0.2	15.19	11.60	11.61	0.01	1.10	1.08	1.08	0.00
150	30.9	20.6	20.7	0.1	15.09	11.55	11.56	0.01	1.09	1.07	1.07	0.00
200	29.9	20.1	20.2	0.1	15.04	11.52	11.53	0.00	1.08	1.07	1.07	0.00
B1393												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	59.6	38.5	39.8	1.4	16.60	12.51	12.57	0.06	1.24	1.17	1.18	0.01
10	43.0	28.2	28.9	0.7	15.84	12.02	12.06	0.04	1.16	1.12	1.13	0.00
20	36.7	24.3	24.8	0.5	15.54	11.83	11.86	0.03	1.13	1.10	1.11	0.00
50	30.7	20.6	20.8	0.3	15.24	11.64	11.66	0.01	1.10	1.08	1.09	0.00
100	28.0	18.9	19.1	0.1	15.10	11.56	11.57	0.01	1.09	1.08	1.08	0.00
150	27.0	18.3	18.4	0.1	15.05	11.53	11.53	0.01	1.08	1.07	1.07	0.00
200	26.5	18.0	18.1	0.1	15.02	11.51	11.52	0.00	1.08	1.07	1.07	0.00
A104												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	59.1	37.2	38.8	1.6	16.57	12.42	12.50	0.07	1.24	1.16	1.17	0.01
10	42.2	27.4	28.2	0.8	15.80	11.96	11.99	0.04	1.16	1.12	1.12	0.00
20	36.2	24.0	24.5	0.5	15.50	11.79	11.81	0.03	1.13	1.10	1.10	0.00

50	30.5	20.7	21.0	0.3	15.21	11.62	11.64	0.01	1.10	1.08	1.08	0.00
100	28.0	19.3	19.4	0.2	15.08	11.55	11.56	0.01	1.09	1.07	1.07	0.00
150	27.0	18.7	18.9	0.1	15.04	11.52	11.53	0.01	1.08	1.07	1.07	0.00
200	26.6	18.5	18.6	0.1	15.01	11.51	11.51	0.01	1.08	1.07	1.07	0.00
Theydon Road												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	41.3	26.5	26.8	0.3	15.48	11.81	11.83	0.01	1.22	1.19	1.19	0.00
10	34.9	22.4	22.6	0.1	15.16	11.61	11.62	0.01	1.18	1.17	1.17	0.00
20	32.8	21.1	21.2	0.1	15.06	11.55	11.55	0.01	1.17	1.16	1.16	0.00
50	31.0	20.0	20.0	0.1	14.96	11.49	11.49	0.00	1.16	1.16	1.16	0.00
100	30.2	19.5	19.6	0.0	14.92	11.46	11.46	0.00	1.16	1.16	1.16	0.00
150	30.0	19.4	19.4	0.0	14.91	11.45	11.46	0.00	1.16	1.15	1.15	0.00
200	29.9	19.3	19.3	0.0	14.91	11.45	11.45	0.00	1.16	1.15	1.15	0.00

Option B

Theydon Road												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	41.3	26.5	26.8	0.2	15.48	11.81	11.83	0.01	1.22	1.19	1.19	0.00
10	34.9	22.4	22.6	0.1	15.16	11.61	11.62	0.01	1.18	1.17	1.17	0.00
20	32.8	21.1	21.2	0.1	15.06	11.55	11.55	0.00	1.17	1.16	1.16	0.00
50	31.0	20.0	20.0	0.0	14.96	11.49	11.49	0.00	1.16	1.16	1.16	0.00
100	30.2	19.5	19.6	0.0	14.92	11.46	11.46	0.00	1.16	1.16	1.16	0.00
150	30.0	19.4	19.4	0.0	14.91	11.45	11.46	0.00	1.16	1.15	1.15	0.00
200	29.9	19.3	19.3	0.0	14.91	11.45	11.45	0.00	1.16	1.15	1.15	0.00

A121 between Wake Arms Roundabout and M25												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	92.1	55.0	56.2	1.3	17.77	13.13	13.19	0.05	1.36	1.24	1.24	0.01
10	60.0	36.9	37.5	0.7	16.47	12.34	12.37	0.03	1.23	1.16	1.16	0.00
20	48.6	30.4	30.9	0.4	15.95	12.03	12.06	0.02	1.17	1.12	1.13	0.00
50	37.8	24.4	24.6	0.2	15.43	11.74	11.75	0.01	1.12	1.09	1.09	0.00
100	32.8	21.7	21.8	0.1	15.19	11.60	11.61	0.01	1.10	1.08	1.08	0.00
150	30.9	20.6	20.7	0.1	15.09	11.55	11.55	0.00	1.09	1.07	1.07	0.00
200	29.9	20.1	20.1	0.1	15.04	11.52	11.52	0.00	1.08	1.07	1.07	0.00
B1393												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	65.8	41.3	42.6	1.3	16.60	12.52	12.57	0.06	1.33	1.26	1.27	0.01
10	47.5	30.1	30.8	0.6	15.78	11.99	12.02	0.03	1.25	1.21	1.21	0.00
20	41.1	26.2	26.6	0.4	15.47	11.80	11.82	0.02	1.21	1.19	1.19	0.00
50	35.0	22.4	22.6	0.2	15.17	11.61	11.62	0.01	1.18	1.17	1.17	0.00
100	32.3	20.7	20.8	0.1	15.03	11.52	11.53	0.01	1.17	1.16	1.16	0.00
150	31.2	20.1	20.2	0.1	14.98	11.49	11.50	0.00	1.16	1.16	1.16	0.00
200	30.7	19.8	19.8	0.1	14.95	11.48	11.48	0.00	1.16	1.16	1.16	0.00
A104												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	59.1	37.2	38.6	1.4	16.57	12.42	12.49	0.06	1.24	1.16	1.17	0.01
10	42.2	27.4	28.1	0.7	15.80	11.96	11.99	0.03	1.16	1.12	1.12	0.00
20	36.2	24.0	24.4	0.5	15.50	11.79	11.81	0.02	1.13	1.10	1.10	0.00
50	30.5	20.7	20.9	0.2	15.21	11.62	11.63	0.01	1.10	1.08	1.08	0.00

100	28.0	19.3	19.4	0.1	15.08	11.55	11.56	0.01	1.09	1.07	1.07	0.00
150	27.0	18.7	18.8	0.1	15.04	11.52	11.53	0.01	1.08	1.07	1.07	0.00
200	26.6	18.5	18.6	0.1	15.01	11.51	11.51	0.00	1.08	1.07	1.07	0.00

Option C

Theydon Road												
Distance (m)	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	41.3	26.5	26.8	0.3	15.48	11.81	11.83	0.02	1.22	1.19	1.19	0.00
10	34.9	22.4	22.6	0.2	15.16	11.61	11.62	0.01	1.18	1.17	1.17	0.00
20	32.8	21.1	21.2	0.1	15.06	11.55	11.55	0.01	1.17	1.16	1.16	0.00
50	31.0	20.0	20.0	0.1	14.96	11.49	11.49	0.00	1.16	1.16	1.16	0.00
100	30.2	19.5	19.6	0.0	14.92	11.46	11.46	0.00	1.16	1.16	1.16	0.00
150	30.0	19.4	19.4	0.0	14.91	11.45	11.46	0.00	1.16	1.15	1.15	0.00
200	29.9	19.3	19.3	0.0	14.91	11.45	11.45	0.00	1.16	1.15	1.15	0.00
A121 between Wake Arms Roundabout and M25												
Distance (m)	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	92.1	55.0	56.4	1.4	17.77	13.13	13.19	0.06	1.36	1.24	1.24	0.01
10	60.0	36.9	37.6	0.7	16.47	12.34	12.37	0.04	1.23	1.16	1.16	0.00
20	48.6	30.4	30.9	0.5	15.95	12.03	12.06	0.02	1.17	1.12	1.13	0.00
50	37.8	24.4	24.6	0.3	15.43	11.74	11.75	0.01	1.12	1.09	1.09	0.00
100	32.8	21.7	21.8	0.2	15.19	11.60	11.61	0.01	1.10	1.08	1.08	0.00
150	30.9	20.6	20.7	0.1	15.09	11.55	11.55	0.00	1.09	1.07	1.07	0.00
200	29.9	20.1	20.1	0.1	15.04	11.52	11.53	0.00	1.08	1.07	1.07	0.00

B1393												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	59.6	38.5	39.8	1.4	16.60	12.51	12.57	0.06	1.24	1.17	1.18	0.01
10	43.0	28.2	28.9	0.7	15.84	12.02	12.06	0.04	1.16	1.12	1.13	0.00
20	36.7	24.3	24.8	0.5	15.54	11.83	11.86	0.03	1.13	1.10	1.11	0.00
50	30.7	20.6	20.8	0.3	15.24	11.64	11.66	0.01	1.10	1.08	1.09	0.00
100	28.0	18.9	19.1	0.1	15.10	11.56	11.57	0.01	1.09	1.08	1.08	0.00
150	27.0	18.3	18.4	0.1	15.05	11.53	11.53	0.01	1.08	1.07	1.07	0.00
200	26.5	18.0	18.1	0.1	15.02	11.51	11.52	0.00	1.08	1.07	1.07	0.00
A104												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	59.1	37.2	38.8	1.5	16.57	12.42	12.49	0.07	1.24	1.16	1.17	0.01
10	42.2	27.4	28.2	0.8	15.80	11.96	11.99	0.04	1.16	1.12	1.12	0.00
20	36.2	24.0	24.5	0.5	15.50	11.79	11.81	0.03	1.13	1.10	1.10	0.00
50	30.5	20.7	21.0	0.3	15.21	11.62	11.64	0.01	1.10	1.08	1.08	0.00
100	28.0	19.3	19.4	0.2	15.08	11.55	11.56	0.01	1.09	1.07	1.07	0.00
150	27.0	18.7	18.8	0.1	15.04	11.52	11.53	0.01	1.08	1.07	1.07	0.00
200	26.6	18.5	18.6	0.1	15.01	11.51	11.51	0.00	1.08	1.07	1.07	0.00

Option D

Theydon Road												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	41.3	26.5	26.6	0.1	15.48	11.81	11.82	0.00	1.22	1.19	1.19	0.00
10	34.9	22.4	22.5	0.0	15.16	11.61	11.61	0.00	1.18	1.17	1.17	0.00
20	32.8	21.1	21.2	0.0	15.06	11.55	11.55	0.00	1.17	1.16	1.16	0.00
50	31.0	20.0	20.0	0.0	14.96	11.49	11.49	0.00	1.16	1.16	1.16	0.00
100	30.2	19.5	19.5	0.0	14.92	11.46	11.46	0.00	1.16	1.16	1.16	0.00
150	30.0	19.4	19.4	0.0	14.91	11.45	11.46	0.00	1.16	1.15	1.15	0.00
200	29.9	19.3	19.3	0.0	14.91	11.45	11.45	0.00	1.16	1.15	1.15	0.00
A121 between Wake Arms Roundabout and M25												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	92.1	55.0	56.0	1.0	17.77	13.13	13.18	0.04	1.36	1.24	1.24	0.00
10	60.0	36.9	37.4	0.5	16.47	12.34	12.36	0.02	1.23	1.16	1.16	0.00
20	48.6	30.4	30.8	0.3	15.95	12.03	12.05	0.02	1.17	1.12	1.13	0.00
50	37.8	24.4	24.6	0.2	15.43	11.74	11.75	0.01	1.12	1.09	1.09	0.00
100	32.8	21.7	21.8	0.1	15.19	11.60	11.61	0.01	1.10	1.08	1.08	0.00
150	30.9	20.6	20.7	0.1	15.09	11.55	11.55	0.00	1.09	1.07	1.07	0.00
200	29.9	20.1	20.1	0.1	15.04	11.52	11.52	0.00	1.08	1.07	1.07	0.00
B1393												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	65.8	41.3	42.2	0.8	16.60	12.52	12.55	0.04	1.33	1.26	1.27	0.00
10	47.5	30.1	30.5	0.4	15.78	11.99	12.01	0.02	1.25	1.21	1.21	0.00
20	41.1	26.2	26.4	0.3	15.47	11.80	11.81	0.01	1.21	1.19	1.19	0.00

50	35.0	22.4	22.5	0.1	15.17	11.61	11.61	0.01	1.18	1.17	1.17	0.00
100	32.3	20.7	20.8	0.1	15.03	11.52	11.53	0.00	1.17	1.16	1.16	0.00
150	31.2	20.1	20.1	0.1	14.98	11.49	11.49	0.00	1.16	1.16	1.16	0.00
200	30.7	19.8	19.8	0.0	14.95	11.48	11.48	0.00	1.16	1.16	1.16	0.00
A104												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	59.1	37.2	38.3	1.1	16.57	12.42	12.47	0.05	1.24	1.16	1.17	0.01
10	42.2	27.4	27.9	0.5	15.80	11.96	11.98	0.03	1.16	1.12	1.12	0.00
20	36.2	24.0	24.3	0.4	15.50	11.79	11.80	0.02	1.13	1.10	1.10	0.00
50	30.5	20.7	20.9	0.2	15.21	11.62	11.63	0.01	1.10	1.08	1.08	0.00
100	28.0	19.3	19.4	0.1	15.08	11.55	11.55	0.01	1.09	1.07	1.07	0.00
150	27.0	18.7	18.8	0.1	15.04	11.52	11.53	0.00	1.08	1.07	1.07	0.00
200	26.6	18.5	18.5	0.1	15.01	11.51	11.51	0.00	1.08	1.07	1.07	0.00

Option E

Theydon Road												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	41.3	23.3	23.5	0.2	15.48	10.21	10.22	0.01	1.22	1.18	1.18	0.00
10	34.9	20.2	20.3	0.1	15.16	10.06	10.06	0.00	1.18	1.17	1.17	0.00
20	32.8	19.2	19.3	0.1	15.06	10.01	10.01	0.00	1.17	1.16	1.16	0.00
50	31.0	18.3	18.3	0.0	14.96	9.96	9.97	0.00	1.16	1.16	1.16	0.00
100	30.2	17.9	18.0	0.0	14.92	9.95	9.95	0.00	1.16	1.15	1.15	0.00
150	30.0	17.8	17.9	0.0	14.91	9.94	9.94	0.00	1.16	1.15	1.15	0.00
200	29.9	17.8	17.8	0.0	14.91	9.94	9.94	0.00	1.16	1.15	1.15	0.00

A121 between Wake Arms Roundabout and M25												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	92.1	45.2	46.4	1.3	17.77	11.22	11.27	0.05	1.36	1.20	1.20	0.01
10	60.0	31.3	32.0	0.7	16.47	10.61	10.64	0.03	1.23	1.13	1.14	0.00
20	48.6	26.4	26.8	0.4	15.95	10.37	10.39	0.02	1.17	1.11	1.11	0.00
50	37.8	21.7	22.0	0.2	15.43	10.15	10.16	0.01	1.12	1.08	1.09	0.00
100	32.8	19.7	19.8	0.1	15.19	10.05	10.05	0.01	1.10	1.07	1.08	0.00
150	30.9	18.9	19.0	0.1	15.09	10.01	10.01	0.01	1.09	1.07	1.07	0.00
200	29.9	18.5	18.5	0.1	15.04	9.99	9.99	0.00	1.08	1.07	1.07	0.00
B1393												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	59.6	32.4	33.4	1.0	16.60	10.74	10.79	0.05	1.24	1.15	1.15	0.00
10	43.0	24.5	25.0	0.5	15.84	10.37	10.39	0.03	1.16	1.11	1.11	0.00
20	36.7	21.5	21.8	0.4	15.54	10.22	10.24	0.02	1.13	1.09	1.09	0.00
50	30.7	18.6	18.8	0.2	15.24	10.08	10.09	0.01	1.10	1.08	1.08	0.00
100	28.0	17.3	17.5	0.1	15.10	10.02	10.02	0.01	1.09	1.07	1.07	0.00
150	27.0	16.9	17.0	0.1	15.05	9.99	10.00	0.00	1.08	1.07	1.07	0.00
200	26.5	16.7	16.7	0.1	15.02	9.98	9.99	0.00	1.08	1.07	1.07	0.00
A104												
	Annual Mean Nox Conc. (ug/m3)				Annual Mean N Dep (k N/ha/yr)				Annual Mean A Dep (keq/ha/yr)			
Distance (m)	BL	DM	DS	Change	BL	DM	DS	Change	BL	DM	DS	Change
1	59.1	31.6	32.8	1.2	16.57	10.67	10.73	0.06	1.24	1.14	1.14	0.01
10	42.2	24.0	24.6	0.6	15.80	10.32	10.35	0.03	1.16	1.10	1.11	0.00
20	36.2	21.4	21.8	0.4	15.50	10.19	10.21	0.02	1.13	1.09	1.09	0.00
50	30.5	18.9	19.1	0.2	15.21	10.06	10.07	0.01	1.10	1.08	1.08	0.00

100	28.0	17.8	17.9	0.1	15.08	10.01	10.01	0.01	1.09	1.07	1.07	0.00
150	27.0	17.4	17.5	0.1	15.04	9.99	9.99	0.00	1.08	1.07	1.07	0.00
200	26.6	17.2	17.2	0.1	15.01	9.98	9.98	0.00	1.08	1.07	1.07	0.00

Interpretation

The key interpretation of the preceding tables is as follows:

1. There is relatively little difference between any of the Options. This is probably because all the Options have the same broad distribution for new housing i.e. clustered around Harlow, even though they vary in quantum and detailed distribution.
2. For all Options and all roads other than Theydon Road, there would be an increase in NO_x concentration up to 10-20m from the roadside (depending on link modelled) that would be greater than 1% of the Critical Level. This varies from 0.4 $\mu\text{g m}^{-3}$ (1.3% of the Critical Level) at the furthest distance, up to a maximum of 1.5 $\mu\text{g m}^{-3}$ (5% of the Critical Level) immediately adjacent to the A104 under Option C. DMRB Interim Advice Note 174/12⁶¹ classifies this as a 'small' change (which it defines in line with Institute of Air Quality Management practice as a change equivalent to 5% of the critical level or less). However, since it is over 1% of the Critical Level the contribution of the Options cannot be dismissed as imperceptible. It is therefore necessary to consider the implications of the elevated NO_x. This is done by examining the resultant nitrogen and acid deposition, since these are the two primary pathways for NO_x to affect vegetation (whether ground-based or epiphytic).
3. The calculations reported in the tables above indicate that no modelled Option results in a change in nitrogen or acid deposition rate equivalent to (or even close to) 1% of the Critical Load on any road link. Therefore, it is possible to conclude in line with DMRB and AQTAG guidelines that all Options would make an imperceptible or inconsequential contribution to local nitrogen and acid deposition within Epping Forest SAC. Due to the ability to reach this conclusion it is not necessary to undertake an assessment of nitrogen deposition or acid deposition 'in combination' with other projects and plans because, as per DMRB and AQTAG, a contribution of less than 1% is so small that it is considered never to have a likely significant effect even in combination with other projects and plans. Not all NO_x is deposited near the roadside; much is converted to other chemicals and/or dispersed more widely before being deposited. Therefore, the degree of change in nitrogen and acid deposition at a given distance from the roadside is always much smaller than the accompanying change in NO_x concentrations.
4. The change in NO_x concentrations at the roadside on several road links is predicted to be greater than 1% of the critical level (in the worst case, up to 5% of the critical level). Therefore, these cannot be described as imperceptible and require consideration 'in combination'. This is essentially achieved by examining the total Do Something NO_x concentrations, as the Do Something scenario incorporates all expected future development including currently unimplemented planning permissions, plus background traffic growth. As per footnote 68, the Critical Level for NO_x is set at 30 $\mu\text{g m}^{-3}$ to capture the role of NO_x in nitrogen deposition and particularly in growth effects. If nitrogen deposition due to a scheme can be dismissed as imperceptible even in combination, then whether the expected total NO_x concentration is over 30 $\mu\text{g m}^{-3}$ or not ceases to be particularly important and attention should be paid to other effects of NO_x that may arise other than through its role as a source of nitrogen. These may include biochemical effects e.g. enzyme activity, chlorophyll content and physiological effects e.g. CO₂ assimilation or stomatal conductivity, although many of these changes

⁶¹ The Design Manual for Roads and Bridges (Interim Advice Note 174/12 Updated advice for evaluating significant local air quality effects for users of DMRB Volume 11, Section 3, Part 1 'Air Quality (HA207/07))

may still be due to increased nitrogen rather than other effects of the gas such as acidity. Based on those studies, the physiological and biochemical effects of NO_x do not appear to occur until much higher annual concentrations are reached. Even in epiphytic plants, no research has been sourced that indicates effects, other than via nitrogen, at lower concentrations. This is reflected in WHO (2000) which states that the '*general effect threshold ... would be substantially higher if biomass production [i.e. growth stimulation] of crops is not assumed to be an adverse effect*'.⁶² Reference to the data provided within the WHO report suggests that exposure to annual average concentrations below 100 µg m⁻³ are unlikely to cause direct biochemical or physiological effects based on the available studies and it may be that concentrations considerably above 100 µg m⁻³ would be required in the field before an effect was observed. From the tables above, the highest 'in combination' (Do Something) 2033 NO_x concentration predicted on the modelled links from these Options is 56.5 µg m⁻³ immediately adjacent to the A121 between the Wake Arms Roundabout and the M25. This is certainly high enough for nitrogen deposition to be well above the minimum critical load but is well below the likely minimum NO_x concentration at which other effects, unrelated to growth stimulation and nitrogen deposition, are likely to occur.

In summary therefore, based on the traffic flow data for the modelled links and using the criteria set by AQTAG, it can be concluded that there will be no adverse effect on the integrity of Epping Forest SAC from either option, either alone or in combination with other plans and projects.

However, it can also be seen from these tables that, even allowing for some improvement in background air quality to 2033 from improved emissions technology, the total nitrogen deposition rates adjacent to all modelled links will reach, or exceed, the lowest point of the currently used critical load range for Epping Forest SAC. As such, while the modelling indicates that none of the HMA Options can be 'blamed' for making a significant contribution to the future elevated nitrogen deposition rates, when all traffic is taken together there clearly will remain potential for a continued negative effect on the SAC by 2033. Therefore, while it may not be required as 'mitigation' it is considered appropriate that the HMA authorities pursue the Memorandum of Understanding and use it as a basis to work cooperatively with The Corporation of London, Natural England and other partners to achieve material improvements in air quality and nitrogen inputs to Epping Forest SAC by 2033, such as through delivery of the Forest Transport Plan and Forest Nitrogen Action Plan.

⁶² WHO Regional Office for Europe, Copenhagen, Denmark, 2000. Air Quality Guidelines – Second Edition. Chapter 11

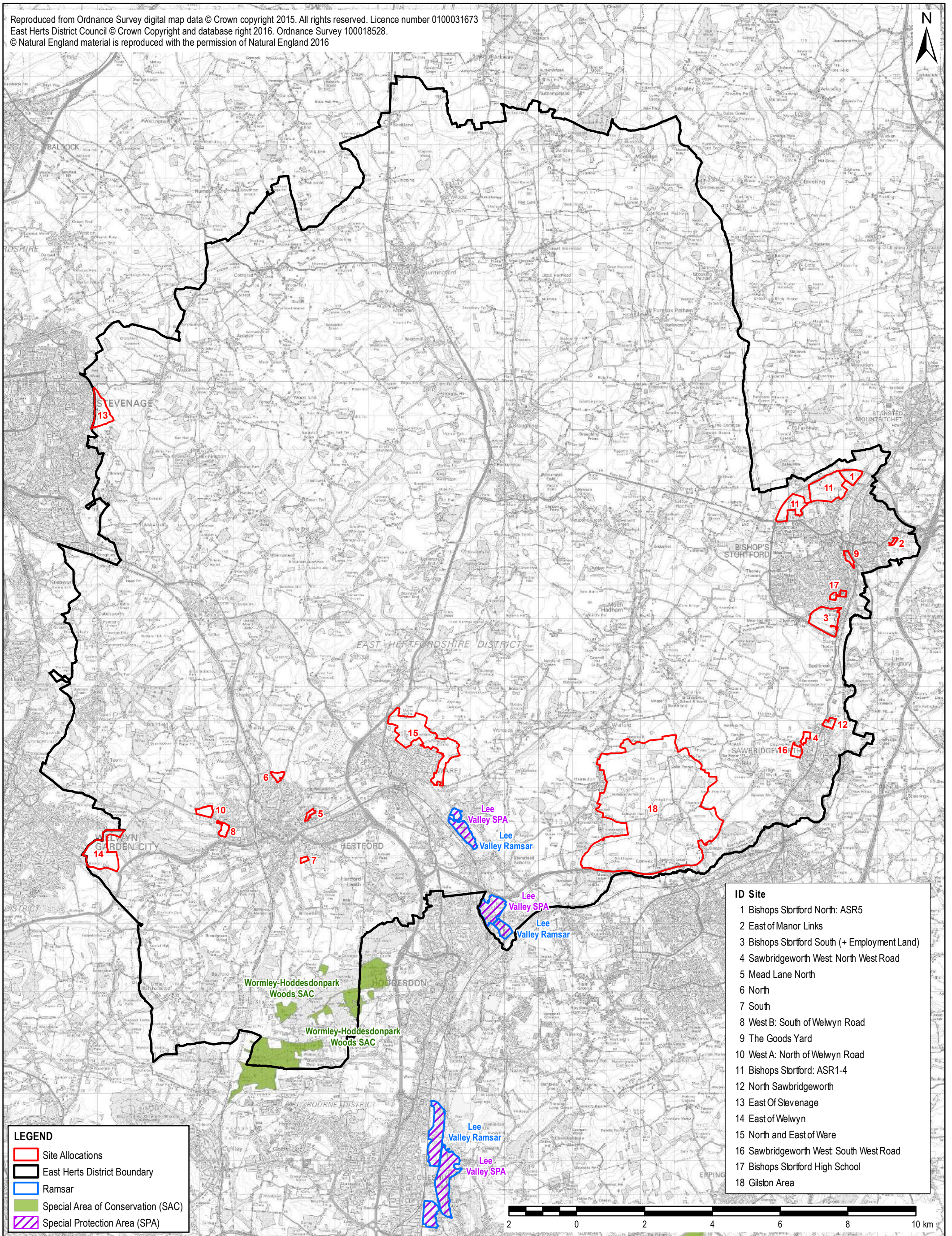
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ID Site	
1	Bishops Stortford North: ASR5
2	East of Manor Links
3	Bishops Stortford South (+ Employment Land)
4	Sawbridgeworth West North West Road
5	Mead Lane North
6	North
7	South
8	West B: South of Welwyn Road
9	The Goods Yard
10	West A: North of Welwyn Road
11	Bishops Stortford: ASR1-4
12	North Sawbridgeworth
13	East Of Stevenage
14	East of Welwyn
15	North and East of Ware
16	Sawbridgeworth West South West Road
17	Bishops Stortford High School
18	Gilston Area

LEGEND	
	Site Allocations
	East Herts District Boundary
	Ramsar
	Special Area of Conservation (SAC)
	Special Protection Area (SPA)

Project Title/Drawing Title HRA OF THE EAST HERTFORDSHIRE LOCAL PLAN		Client EAST HERTFORDSHIRE DISTRICT COUNCIL		AECOM Scott House Alençon Link, Basingstoke Hampshire, RG21 7PP Telephone (01256) 310200 Fax (01256) 310201 www.aecom.com	
EUROPEAN SITES AND HOUSING SITE ALLOCATIONS		Drawn AK	Checked JW	Approved JR	
		Date 02/09/2016	Scale @ A3 1:100,000	Purpose of Issue DRAFT	
		Drawing Number APPENDIX A FIGURE A1	Rev 01		

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File Name: I:\5004 - Information Systems\60516243_East_Herts_HRA\02_Maps\Appendix A Figure 1A - European Sites and Housing Allocations.v2.mxd

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EAST HERTS COUNCIL

DISTRICT PLANNING EXECUTIVE PANEL – 15 SEPTEMBER 2016

REPORT BY LEADER OF THE COUNCIL

INFRASTRUCTURE DELIVERY PLAN (IDP), VERSION 1, SEPTEMBER 2016

WARD(S) AFFECTED: ALL

Purpose/Summary of Report

The purpose of this report is:

- To present to Members the Infrastructure Delivery Plan (IDP), Version 1, September 2016.

<u>RECOMMENDATIONS FOR DISTRICT PLANNING EXECUTIVE PANEL:</u> That Council, via the Executive, be advised that:	
(A)	the Infrastructure Delivery Plan (IDP), Version 1, September 2016, as detailed at Essential Reference 'B' to this report, be supported as part of the evidence base to inform and support the East Herts District Plan.

1.0 Background

1.1 In order to successfully deliver the identified level of growth across the District, new housing must be supported by improvements to existing infrastructure, and where necessary, creation of new infrastructure. Therefore the identification of required schemes is a fundamental part of the plan making process.

1.2 National policy requires local planning authorities to prepare an Infrastructure Delivery Plan (IDP) in order to support the implementation of a local plan. This report presents the IDP Version 1 which, when finalised, will be submitted to the Planning Inspectorate in March 2017 alongside the East Herts District Plan.

2.0 Report

- 2.1 The purpose of an IDP is to identify the infrastructure schemes that are required in order to successfully deliver planned growth across the District. In addition, the IDP should provide information on the cost of schemes, likely funding sources and phasing. The IDP Version 1, which forms **Essential Reference Paper B**, has been prepared in collaboration with site promoters/developers and service providers, including Hertfordshire County Council.
- 2.2 At present, it is not possible to identify costings, funding and phasing information for all infrastructure schemes. The development strategy for the District is currently being finalised through the Pre-Submission version of the District Plan. When the strategy is confirmed, the Council will be able to engage in more detailed discussions with site promoters/developers and service providers in order to gather more detail on these issues. It is also likely that further infrastructure schemes will be identified through ongoing work, most notably transport modelling which is being led by Hertfordshire and Essex County Councils respectively.
- 2.3 Further iterations of the IDP will therefore be required over the coming months before a final version is prepared prior to Submission of the District Plan to the Planning Inspectorate in March 2017.

3.0 Implications/Consultations

- 3.1 Information on any corporate issues and consultation associated with this report can be found within **Essential Reference Paper 'A'**.

Background Papers

None

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ESSENTIAL REFERENCE PAPER 'A'

IMPLICATIONS/CONSULTATIONS

Contribution to the Council's Corporate Priorities/ Objectives:	Priority 1 – Improve the health and wellbeing of our communities Priority 2 – Enhance the quality of people's lives Priority 3 – Enable a flourishing local economy
Consultation:	None
Legal:	None
Financial:	None
Human Resource:	None
Risk Management:	None
Health and wellbeing – issues and impacts:	The Pre-Submission District Plan in general will have positive impacts on health and wellbeing through a range of policy approaches that seek to create sustainable communities.

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Infrastructure Delivery Plan



Version I: September 2016

1. Introduction

- 1.1 In order to successfully deliver the identified level of growth across the District, new housing must be supported by improvements to existing infrastructure, and where necessary, creation of new infrastructure. Therefore the identification of required infrastructure schemes is a fundamental part of the plan making process.
- 1.2 The Infrastructure Delivery Plan (IDP) is a 'live' document that sets out the key infrastructure requirements necessary to deliver planned growth sustainably in East Herts, along with information on costs, funding and phasing. The document will continue to be updated over the coming months, as and when further information becomes available. The IDP will be finalised in March 2017 when it will be submitted to the Planning Inspectorate alongside the District Plan. Following Submission, the final version of the IDP will still be subject to review and updates.
- 1.3 The IDP builds upon the Infrastructure Topic Paper that was produced alongside the Preferred Options District Plan. The Infrastructure Topic Paper set out an interim position on the infrastructure requirements based on the draft District Plan strategy.
- 1.4 Version 1 of the IDP identifies infrastructure schemes that are needed to support the growth and objectives set out in the District Plan 2011 - 2033. Further details on costs and phasing will become clearer prior to Submission of the District Plan as more detailed work is undertaken in collaboration with developers and service providers. This document is accompanied by the Schedule of infrastructure schemes, which can be found in Appendix 1. The Schedule outlines identified infrastructure schemes, as well as funding arrangements and phasing where this is known at present.
- 1.5 One of the objectives of the IDP is to identify where there is a 'funding gap'. This is the difference between the cost of the infrastructure required and the funding available. The funding gap will be identified over the coming months as costs of specific schemes become clearer.

2. National Policy and Guidance

2.1 The NPPF sets out the principle of achieving sustainable development. Paragraph 162 specifically deals with infrastructure stating that:

'Local planning authorities should work with other authorities and providers to:

- *assess the quality and capacity of infrastructure for transport, water supply, wastewater and its treatment, energy (including heat), telecommunications, utilities, waste, health, social care, education, flood risk and coastal change management, and its ability to meet forecast demands; and*
- *take account of the need for strategic infrastructure including nationally significant infrastructure within their areas.*

2.2 Paragraph 177 of the NPPF also sets out that infrastructure and development policies should be planned at the same time in a Local Plan to ensure there is a reasonable prospect that planned infrastructure is delivered in a timely manner.

2.3 The Government also published National Planning Practice Guidance (referred to as 'the Guidance'). The Guidance states that:

'The detail concerning planning infrastructure provision can be set out in a supporting document such as an infrastructure delivery programme that can be updated regularly. However the key infrastructure requirements on which delivery of the plan depends should be contained in the Local Plan itself.'

2.5 As such, Chapter 3 (Development Strategy) of the District Plan does identify the key strategic schemes that are required to deliver the strategy for the District. Certain schemes are also referenced in the relevant settlement specific chapters.

2.6 The NPPF also sets out a duty to cooperate (para. 179). This identifies that public bodies should work collaboratively across administrative boundaries to ensure infrastructure identified in the Local Plan is deliverable. The Council has worked closely with its neighbouring authorities and service providers throughout the Plan making process, and will continue to do so in order to finalise the IDP over the coming months.

2.7 Local Planning Authorities have only been required to prepare an IDP since the introduction of the NPPF. The IDP provides a mechanism that will enable the Council to closely monitor infrastructure provision. Therefore, the timely delivery of these schemes can be managed more effectively than has been the case previously. Where issues are identified, suitable interventions can be made.

3. Background to the IDP: Version 1

- 3.1 As part of the evidence of the District Plan, this document pulls together information from key delivery partners, including developers and service providers. The Delivery Study (produced by Peter Brett Associates), which forms part of the technical evidence base for the District Plan, also provides a significant amount of information regarding infrastructure requirements in relation to strategic sites.
- 3.2 Service providers and developers/site promoters have been consulted on the content of the IDP and, where relevant, responses have been reflected in this document. However, some information is not available at present, particularly in relation to costs of highways mitigation measures. Officers from Hertfordshire County Council have advised that, following confirmation of the development strategy contained within the Pre-Submission version of the District Plan, more detailed work can take place, in collaboration with developers and site promoters, in order to consider the design of such schemes and therefore associated costs of delivering them.
- 3.3 While it is acknowledged that there are currently gaps in the information, this should not lead to doubts about the deliverability of the proposed development sites identified in the District Plan. The Delivery Study, referred to in paragraph 3.1, assessed the financial viability of development in East Herts including generic site typologies for different types and quanta of development as well as the strategic sites specifically (Gilston Area, East of Welwyn Garden City, North and East of Ware and Bishop's Stortford South). The study concluded that the housing market in the District is vibrant, and that the vast majority of the generic site typologies are financially viable. The four strategic sites were also concluded to be financially viable. It is important that the infrastructure schemes are identified at this stage in order that more detailed work can be undertaken with the relevant parties over the coming months.

What Version 1 does do:

- 3.4 The IDP Version 1 identifies infrastructure schemes which will be required in order to support identified growth. Such schemes include site specific infrastructure, settlement specific infrastructure and other schemes which are more strategic in nature and are required in order to help deliver growth across the wider sub-region.
- 3.5 Where such schemes have been identified, the IDP seeks to present information on costs, funding and phasing.

What Version 1 does not do:

- 3.6 In order to keep the schedule of infrastructure schemes manageable and focused, on site costs associated with building works have not been identified. These include site preparation costs, connections to utilities, sustainable drainage and basic site access arrangements. These are considered to be general costs which are required as part of any development scheme and it is therefore unnecessary to identify them separately. Such costs have been considered through the Delivery Study which assessed the financial viability of development sites. In addition it is recognised that developments would be required to make financial contributions towards general infrastructure costs in accordance with the Council's Planning Obligations SPD and the Hertfordshire County Council Toolkit. These generic contributions have not been included within the IDP, unless a specific infrastructure scheme has been identified.
- 3.7 Sites identified in the Pre-Submission version of the District Plan which have already received outline planning permission (Bishop's Stortford North and Hadham Road Reserve Secondary School Site) have not been included in the IDP. While it is recognised that there is no guarantee that those planning permissions will be implemented, infrastructure requirements arising from development in those locations have been considered through the application process. It would therefore be superfluous to address those requirements through this document. However, the cumulative impacts arising from all planned development have still been considered. In addition, the Causeway/Old River Lane site has also been omitted given that it is unclear what type or mix of development will take place in this location.

What is expected in future versions of the IDP?

- 3.8 As noted previously, further work is required in order to better understand the costs associated with specific infrastructure schemes. Information on phasing and funding will also be refined prior to Submission of the District Plan in March 2017.
- 3.9 In addition to providing further detail on infrastructure schemes that have already been identified, it is likely additional schemes will also be identified through ongoing work. In particular, Hertfordshire and Essex County Councils are continuing to progress transport modelling work (COMET and VISUM models respectively). Again, any further information will be reflected in future iterations of the IDP.

4. Methodology

4.1 The Schedule of infrastructure schemes can be found in Appendix 1. This section provides information on the different headings contained within Schedule.

Infrastructure Category

4.2 There are three categories of infrastructure identified:

- **Site specific schemes:** These schemes are required to directly support development in a single location.
- **Town wide schemes:** These schemes aren't just site specific and are required to cater for cumulative impact from multiple sites across a settlement.
- **Strategic schemes:** These schemes are required to support development over a larger geographical area, including the wider housing market area.

Infrastructure Requirement

4.3 The Schedule also splits infrastructure schemes by type. These are as follows:

- **Transport:** Includes road network and junction improvements, pedestrian and cycle links and public transport infrastructure.
- **Community Facilities:** Includes health facilities, community centres, libraries, places of worship, sports facilities and play areas.
- **Green Infrastructure:** Includes public amenity space and sustainable drainage.
- **Education:** Early Years Education, Primary and Secondary schools (or First, Middle and Upper schools where appropriate).
- **Utilities:** Off-site upgrades only.
- **Waste Management:** Refuse and recycling facilities.

Lead Agencies

4.4 This column seeks to identify who the Council needs to work with in order to deliver the specified infrastructure scheme.

Estimated Cost

4.5 This section provides the cost of schemes where this information is currently available. It should be noted that some costs are based on estimates. For instance, Hertfordshire County Council has provided standard cost assumptions for new or expanded schools based on projects that have been delivered across the county.

Programme/Phasing

4.6 At present this section provides information on phasing based on the broad time periods contained in the District Plan development strategy. It is essential that infrastructure is provided in a timely fashion, based on trigger points related to the quantum of development. Phasing of infrastructure is dependent on the timing of planning applications and projected build out rates. Therefore, following confirmation of the strategy within the Pre-Submission District Plan, more precise information can be identified through detailed discussions with developers and service providers. In particular, the Council will be seeking to agree 'Statements of Common Ground' with the developers involved with all proposed site allocations. These Statements will identify timelines for planning applications and subsequent delivery of development, as well as required infrastructure schemes. These Statements will be agreed prior to Submission of the District Plan in March 2017. Future iterations of the IDP will need to reflect the content of these Statements.

Delivery Priority

4.8 The Schedule seeks to identify the priority of individual infrastructure schemes as identified below. While a system of categorisation has been used, it should be noted that the Council expects all identified infrastructure schemes to be delivered in a timely manner in order to support planned development.

- **Critical:** These schemes are essential and development could not take place without them being delivered at the required time.
- **Important:** Includes schemes that are needed to make the development acceptable.
- **Place shaping:** These schemes are required to improve the quality of specific developments and usually include the provision of public open space and other forms of green infrastructure.

Potential Funding Sources

4.9 This final column identifies how specific infrastructure schemes could be funded. A large number of schemes will be provided for on-site, and fully funded by the respective developers. Therefore no extra funding needs to be identified.

4.10 In certain locations, on or off-site highways improvement works will be required in order to support specific development schemes. These would normally be secured through Section 278 agreements where the developer enters into a legal agreement with Hertfordshire County Council to fund a particular scheme.

4.11 Infrastructure schemes that are more strategic in nature, and are required as a result of multiple development sites, may be funded by Section 106

agreements. For larger schemes, such as upgrades to motorway junctions, other forms of funding will be required in addition to Section 106. This may include Government funding and/or funding from the Hertfordshire Local Enterprise Partnership (LEP).

Appendix 1: Infrastructure Schedule

Bishop's Stortford							
	Infrastructure Requirement	Description	Lead Agencies	Estimated Cost	Programme / Phasing	Delivery Priority	Potential Funding Sources
Town wide	Transport	Widening of Station Road Bridge to provide safe access for pedestrians and cyclists	HCC	TBC	TBC	Critical	S106/S278
	Transport	Bus priority measures along London Road into town centre	HCC	TBC	TBC	Important	S106
	Transport	Off-site cycle works	HCC	£120,000	TBC	Important	S106
	Community Facilities	Possible expansion of health facilities in accordance with CCG requirements	CCG	TBC	TBC	Critical	S106
BISH10: The Mill Site	Transport	New footbridge to facilitate pedestrian access to the town centre over the river Stort	Canals and Rivers Trust	TBC	2022-2027	Important	S106/Standard Off-site Development Cost
	Transport	Pedestrian and cycle friendly route between the station to the south of the site along Dane Street towards new crossing over Stort	Developer	TBC	2022-2027	Important	S106/Standard Off-site Development Cost
	Green Infrastructure	Green Infrastructure, Play areas and public amenity green space.	Developer	TBC	2022-2027	Place-making Infrastructure	Standard Development Costs
Page 467							

Page 468 BISH7: Goods Yard	Transport	Passenger Transport Interchange and parking provision at Bishop's Stortford railway station	Developer/Network Rail	TBC	2017-2022	Important	S106/S278
	Transport	Pedestrian and cycle routes from Goods Yard to town centre and station via Anchor Street Leisure Park	Developer/HCC	TBC	2017-2022	Important	Standard Development Costs
	Transport	Enhanced passenger transport services to the town centre and the station including the creation of a sustainable route through the site	Developer/HCC	TBC	2017-2022	Important	Standard Off-site Development Cost
	Green Infrastructure	Green Infrastructure, Play areas and public amenity green space.	Developer	TBC	2022-2027	Place-making Infrastructure	Standard Development Costs
BISH4: Hadham Road	Transport	Sustainable transport measures that include walking and cycling and enhanced passenger transport services	Developer/HCC	TBC	2017-2022	Important	Standard Development Costs
	Green Infrastructure	Green Infrastructure, Play areas and public amenity green space.	Developer	TBC	2017-2022	Place-making Infrastructure	Standard Development Costs
	Community Facilities	Retention and enhancement of outdoor playing pitches on the western parcel of the site.	Developer	TBC	2017-2022	Important	Standard Development Costs
BISH9: East of Manor Links	Transport	Sustainable transport measures which encourage walking and cycling through the site, including the provision of a new pedestrian crossing point on Dunmow Road	Developer	TBC	2017-2021	Important	S278/Standard Development Costs

	Green Infrastructure	Green Infrastructure, Play areas and public amenity green space.	Developer	TBC	2017-2022	Place-making Infrastructure	Standard Development Costs
	Education	All through Primary & Secondary School (2FE Primary with potential to expand to 3FE, and 6FE Secondary with potential to expand to 8FE)	Developer/HCC	£27,640,000 plus expansion costs + land purchase	2017-2022	Critical	S106/Standard Development Costs
	Transport	Priority junctions on Obrey Way	HCC	TBC	2017-2022	Critical	S278/Standard Off-site Development Cost
	Transport	Roundabout on St James Way for site access	HCC	TBC	2017-2022	Critical	S278/Standard Off-site Development Cost
	Transport	New roundabout at Whittington Way-Bishop's Avenue T-Junction for site access	HCC	£1,800,000	2017-2022	Critical	S278/Standard Off-site Development Cost
	Transport	Highway improvements at London Road-Whittington Way junction	HCC	TBC	2017-2022	Important	S278/Standard Off-site Development Cost
	Transport	The provision of cycleways and footways that provide links into the existing residential area, including appropriate treatment of the Hertfordshire Way and other public rights of way.	Developer/HCC	TBC	2017-2022	Important	Standard Development Costs
	Transport	New or enhanced bus service serving town centre and railway	HCC/service provider	TBC	2017-2022	Important	S106

	station.					
Education	Early Years Education	Developer/HCC	£460,000	2017-2022	Critical	Standard Development Costs
Community Facilities	GP Surgery and other care	Developer/CCG	£500,000	2017-2023	Critical	Standard Development Costs
Community Facilities	Community Centre	Developer	£700,000	2017-2024	Important	Standard Development Costs
Community Facilities	Library Facilities - Off site	HCC	£220,000	2017-2025	Place-making Infrastructure	S106
Utilities	Undergrounding of existing overhead power line	National Grid	TBC	2017-2022	Important	Standard Development Costs
Green Infrastructure	Green Infrastructure, Play areas and public amenity green space.	Developer	TBC	2017-2022	Place-making Infrastructure	Standard Development Costs

Buntingford							
	Infrastructure Requirement	Description	Lead Agencies	Estimated Cost	Programme/ Phasing	Delivery Priority	Potential Funding Sources
Town wide	Education	2FE First School	HCC	£7.64 million	2017-2022	Critical	S106
	Education	Edwinstree Middle School expansion	HCC	TBC	2022-2027	Important	S106
	Transport	Dualling of the A10 Southbound	HCC	TBC	2017-2022	Important	S106/LEP
	Transport	A10/London Road Roundabout upgrades	HCC	TBC	2017-2022	Important	S106/LEP
	Transport	Community transport provision	HCC	TBC	2017-2023	Important	S106
	Community Facilities	Possible expansion of health facilities in accordance with CCG requirements	CCG	TBC	TBC	Critical	S106

Hertford							
Page 472	Infrastructure Requirement	Description	Lead Agencies	Estimated Cost	Programme/ Phasing	Delivery Priority	Potential Funding Sources
Town wide	Transport	Bus priority measures along the A119 and A414 - Following implementation of Hertford Strategic Solution.	HCC	£450,000	2027 onwards	Important	S106/S278
	Transport	Bus service frequency enhancement along North Road corridor	HCC	TBC	TBC	Important	S106
	Transport	Access improvements at Hertford North railway station to include a new bus interchange.	Network Rail	£100,000	TBC	Important	S106
	Education	Expansion of Hollybush Primary School	HCC	£3 - 3.5 million	2017-2022	Critical	S106
	Community Facilities	Possible expansion of health facilities in accordance with CCG requirements	CCG	TBC	TBC	Critical	S106
HERT2: Mead Lane Area	Transport	Upgrade existing footways on Mead Lane to 3m pedestrian/cycleway to the south side of Mead Lane in addition to improvements to the towpath and links with the adjoining area and the town centre (in particular addressing links to Hartham Common and Kings Meads)	Developer/HCC	TBC	2022-2027	Important	Standard Development Costs

	Transport	A link between Marshgate Drive and the existing spur road to the east of the site to facilitate pedestrian and cycle access and which should also complete the circulatory route to allow for the extension of bus routes into the area	Developer/HCC	TBC	2022-2027	Important	Standard Development Costs
	Transport	The widening of Marshgate Drive to allow for improved vehicular and pedestrian access and car parking/car share scheme to be delivered within a Green Streets approach	Developer/HCC	TBC	2022-2027	Important	Standard Development Costs
	Transport	Bus services diversions and bus stop provision between the site and Hertford town centre/Hertford North.	HCC	TBC	2022-2027	Important	S106
	Transport	Hertford East Station access improvements / new station interchange	Network Rail	TBC	2022-2027	Important	S106
	Green Infrastructure	Green Infrastructure, Play areas and public amenity green space.	Developer	TBC	2022-2027	Place-making Infrastructure	Standard Development Costs
HERT3: West of Hertford (Welwyn Road and Thieves Lane)	Transport	Pedestrian/cycle routes between Hertford West site and Perrett Gardens - Welwyn Road site only	Developer/HCC	TBC	2017-2022	Important	S106/Standard Development Costs
	Transport	Pedestrian/cycle routes from Sele Farm estate to public footpaths/bridleways in locality	Developer/HCC	TBC	2017-2022	Important	S106/Standard Development Costs

Page 474	Transport	New shared footway/cycleway along Welwyn Road	Developer/HCC	TBC	2017-2022	Important	S106/Standard Development Costs
	Transport	Enhanced passenger transport services to include new bus stops on B1000 Welwyn Road	HCC	TBC	2017-2022	Important	S106/S278
	Green Infrastructure	Contributions towards the Panshanger Country Park	TBC	TBC	2017-2022	Place-making Infrastructure	S106
	Green Infrastructure	Green Infrastructure, Play areas and public amenity green space.	Developer	TBC	2017-2022	Place-making Infrastructure	Standard Development Costs
	Utilities	Upgrades to sewerage system	Thames Water	£350,000	2017-2022	Critical	S106
HERT4: North of Hertford	Transport	Upgrades to pedestrian/cycle routes to town centre and enhanced passenger transport services	Developer/HCC	TBC	2017-2022	Important	S106/Standard Development Costs
	Transport	Old Cross junction improvements	HCC	£350,000	2017-2022	Important	S106/S278
	Green Infrastructure	Green Infrastructure, Play areas and public amenity green space.	Developer	TBC	2017-2022	Place-making Infrastructure	Standard Development Costs
	Utilities	Upgrades to the sewerage system	Thames Water	TBC	2017-2022	Critical	S106
HERT5: South of Hertford	Transport	Upgrade pedestrian and cycle way along Mangrove Road to Simon Balle School and towards the town centre	Developer/HCC	TBC	2017-2022	Important	S106/Standard Off-site Development Costs

	Green Infrastructure	Green Infrastructure, Play areas and public amenity green space.	Developer	TBC	2017-2022	Important	Standard Development Costs
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Sawbridgeworth

	Infrastructure Requirement	Description	Lead Agencies	Estimated Cost	Programme/ Phasing	Delivery Priority	Potential Funding Sources
Town wide	Community Facilities	Possible expansion of health facilities in accordance with CCG requirements	CCG	TBC	TBC	Critical	S106
SAWB2: Land North of West Road & SAWB3 Land South of West Road	Transport	Footway/cycleway from West Road to Mandeville School and Leventhorpe School	HCC	£30,000	2017-2022	Important	Standard Development Costs
	Transport	Footway enhancements along southern side of West Road	HCC	TBC	2017-2022	Important	Standard Off-site Development Costs
	Transport	Upgrade of A1184/West Road/Station Road junction	HCC	£200,000	2017-2022	Critical	S106/S278
	Transport	Potential upgrade to A1184/High Wych Road junction	HCC	TBC	2017-2022	Important	S106/S278
	Green Infrastructure	Green Infrastructure, Play areas and public amenity green space.	Developer	TBC	2017-2022	Place-making Infrastructure	Standard Development Costs
	Education	Expansion of Mandeville School by 1fe	HCC	£3 - 3.5 million	2017-2022	Critical	S106

SAWB4: Land North of Sawbridgeworth	Transport	Enhanced pedestrian and cycle links to town centre	Developer	TBC	2022-2027	Important	Standard Development Costs
	Green Infrastructure	Green Infrastructure, Play areas and public amenity green space.	Developer	TBC	2022-2027	Place-making Infrastructure	Standard Development Costs

Ware							
	Infrastructure Requirement	Description	Lead Agencies	Estimated Cost	Programme / Phasing	Delivery Priority	Potential Funding Sources
WARE2: North and East of Ware	Transport	Link road (Widbury Hill to A1170/A10)	Developer/HCC	£6,130,000	2022-2033	Critical	Standard Development Costs/S278
	Transport	Bus Services	HCC	£3,000,000	2022-2033	Important	S106
	Transport	Crossing point improvements	Developer/HCC	£30,000	2022-2033	Important	S106/S278
	Transport	Rush Green improvements	HCC	£160,000	2022-2033	Important	S106/S278
	Water	New foul sewer	Thames Water	£5,000,000	2022-2033	Critical	S106
	Education	Primary Education for 2fe school	Developer/HCC	£7,640,000 + cost of land purchase	2022-2033	Critical	Standard Development Costs
	Education	Secondary Education for 6fe school	Developer/HCC	£20,000,000 + cost of land purchase	2022-2033	Critical	Standard Development Costs/S106
	Community Facilities	Town centre improvements	TBC	£2,500,000	2022-2033	Important	S106
	Community Facilities	GP surgery and provision for pharmacies and dentists.	Developer/CCG/NHS	£2,000,000	2022-2033	Important	Standard Development Costs
	Community Facilities	Community Centre	Developer	£1,000,000	2022-2033	Important	Standard Development Costs

	Community Facilities	Indoor and outdoor sports facilities (which may be shared use) to include, junior football and mini soccer pitches;	Developer/Sport England	TBC	2022-2033	Important	Standard Development Costs
	Community Facilities	Creation and maintenance of green spaces over 10 years	Developer	£5,000,000	2022-2033	Important	Standard Development Costs
	Transport	Bus priority scheme on Ware High Street	HCC	£85,000	2022-2033	Important	S106
	Transport	Shared footway/cycleway between site, High Oak Road area and Wodson Park	Developer/HCC	£325,000	2022-2033	Important	S106/S278/Standard Development Costs
	Green Infrastructure	Green Infrastructure, play areas and public amenity green space.	Developer	TBC	2022-2027	Place-making Infrastructure	Standard Development Costs

Gilston Area

Page 480	Gilston Area						
	Infrastructure Requirement	Description	Lead Agencies	Estimated Cost	Programme/ Phasing	Delivery Priority	Potential Funding Sources
GA1: The Gilston Area	Transport	Widening of Central crossing over River Stort, including for sustainable transport solutions	HCC/ECC	£15,966,100.00	2022-2033	Critical	S106/S278
	Transport	Improved access to Harlow Town Station and Adjoining Areas	ECC/HCC	£1,622,761.00	2022 onwards	Important	S106/S278
	Transport	Pedestrian/Cycle improvements (off site)	HCC/ECC	£1,232,683.00	2022 onwards	Important	Standard Off-site Development Cost
	Utilities/Transport	Utilities diversions in connection with transport infrastructure	HCC/ECC	£1,995,762.00	2022-2033	Critical	Standard Off-site Development Cost
	Utilities	Miscellaneous off-site drainage works	Developer/Housebuilder	£1,210,763.00	2022 onwards	Critical	Standard Off-site Development Cost
	Green Infrastructure	Green Infrastructure, Country parks, Play areas and public amenity green space.	Developer/Housebuilder	£18,220,996.00	2022 onwards	Place-making Infrastructure	Standard Off-site Development Costs
	Utilities	Off-site electrical Installations	National Grid	£8,102,796.00	2022-2033	Critical	Standard Off-site Development Costs

	Utilities	Off-site water upgrades	Thames Water	£9,340,168.00	2022-2033	Critical	Standard Off-site Development Costs
	Utilities	Off-site gas upgrades	National Grid	£4,024,787.00	2022-2033	Critical	Standard Off-site Development Costs
	Utilities	Off-site communication ducts upgrades	Service Provider	£1,451,052.00	2022-2033	Critical	Standard Off-site Development Costs
	Education	Outdoor sport: Primary School Playing Fields	Developer/HCC	£4,488,028.00	2022-2033	Critical	Standard Development Costs
	Education	Outdoor sport: Secondary School Playing Fields	Developer/HCC	£5,757,499.00	2022-2033	Critical	Standard Development Costs
	Education	6x Creche facilities	Developer/Service Provider	£1,103,779.00	2022-2033	Critical	Standard Development Costs
	Education	5x 3FE Primary School provision	Developer/HCC	£51,041,574.00	2022-2033	Critical	Standard Development Costs
	Education	14 FE Secondary School provision	Developer/HCC	£50,000,000.00	2022-2033	Critical	Standard Development Costs
	Community Facilities	3x Primary Care Health Centres including provision for GP surgeries, pharmacies and dentists.	Developer/CCG/NHS Provider	£18,290,213.00	2022-2033	Important	Standard Development Costs

Community Facilities	Community Centres	Developer	£4,242,837.00	2022-2033	Important	Standard Development Costs
Community Facilities	Libraries	Developer/HCC	£870,526.00	2022-2033	Important	Standard Development Costs
Community Facilities	Police Station	Developer/Hertfordshire Constabulary	£528,753.00	2022-2033	Important	Standard Development Costs
Community Facilities	Places of worship	Developer/Service Provider	£1,532,617.00	2022-2033	Important	Standard Development Costs
Transport	Bus Services	Developer/HCC	£6,976,248.00	2022-2033	Important	S106
Waste Management	On site and waste/recycling sorting facilities	Developer	£2,619,438.00	2022-2033	Important	Standard Development Costs
Community Facilities	Public Art	Developer	£3,103,129.00	2022-2033	Important	Standard Development Costs
Transport	Hammarskjold/Fifth Ave/Velizy Ave 'Longabout'	Essex CC	£3,500,000.00	2022-2033	Important	S106/S278
Transport	Dualling of A414 towards M11 Junction 7 between A1169 Southern Way and M11 J7	Essex CC	£2,800,000.00	2022-2033	Important	S106/S278

	Transport	Second Ave/Velizy Ave 'Throughabout'	Essex CC	£3,500,000.00	2022-2033	Important	S106/S278
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East of Stevenage

Infrastructure Requirement	Description	Lead Agencies	Estimated Cost	Programme/ Phasing	Delivery Priority	Potential Funding Sources
Transport	3x roundabouts on Gresley Way for site access	Developer/HCC	TBC	2017-2022	Critical	S106/S278
Transport	Enhancements to pedestrian accessibility along Gresley Way	Developer/HCC	TBC	2017-2022	Important	Standard Off-site Development Costs
Transport	Enhanced passenger transport service	Developer/HCC	TBC	2017-2022	Important	S106
Transport	The provision of cycle-ways and footways that provide links into Stevenage including existing cycle networks	Developer/HCC	TBC	2017-2023	Important	Standard Development Costs
Transport	Upgrade to Gresley Way/A602 Junction	HCC	£426,000.00	2017-2022	Critical	S106/S278
Education	Education provision - 2FE Primary School	Developer/HCC	£7.64 million + the cost of land purchase	2017-2022	Critical	Standard Development Costs
Education	Early years education provision	Developer/Service Provider	TBC	2017-2023	Critical	Standard Development Costs
Utilities	Electrical overhead lines to go underground	National Grid	TBC	2017-2022	Critical	Standard Development Costs

	Green Infrastructure	Green Infrastructure, Play areas and public amenity green space.	Developer	TBC	2017-2022	Place-making Infrastructure	Standard Development Costs
	Community facilities	GP surgery and provision for pharmacy and dentist.	CCG/NHS Provider	TBC	2017-2022	Critical	Standard Development Costs

East of Welwyn Garden City

Infrastructure Requirement	Description	Lead Agencies	Estimated Cost	Programme/ Phasing	Delivery Priority	Potential Funding Sources
Transport	Alignment of A414/Holwell Lane roundabout	HCC	£140,000.00	2017-2033	Critical	S278/Standard Off-site Development Cost
Utilities	Diversion costs-relocation of existing EE mobile telecommunications mast	Developer/Service Provider	£88,150.00	2017-2033	Critical	Standard Development Costs
Green Infrastructure	Green Infrastructure, Play areas and public amenity green space.	Developer	£8,184,287.00	2017-2033	Place-making Infrastructure	Standard Development Costs
Transport	A414/B195 Birchall Lane/ Cole Green Lane Roundabout improvements	Developer/HCC	£2,309,530.00	2017-2033	Critical	S278/Standard Off-site Development Cost
Transport	Roundabouts on Birchall/Cole Green Lane	Developer/HCC	£826, 406	2017-2033	Critical	S278/Standard Off-site Development Cost
Transport	Annual bus service contribution	HCC	£1,294,704 (£258, 941 per annum for five years)	2017-2033	Important	S106
Transport	Enhanced pedestrian and cycle linkages	Developer	TBC	2017-2033	Important	Standard Development Costs

	Utilities	Off-site utilities upgrades	Developer/Service Provider	£4,702,803.00	2017-2033	Critical	Standard Off-site Development Costs and Supplier Duty-to-Provide
	Education	2FE Primary School	Developer/HCC	£7.64 million + the cost of land purchase	2017-2033	Critical	Standard Development Costs
	Education	6-8FE Secondary School	Developer/HCC	£20 - 30 million plus land purchase	2017-2033	Critical	Standard Development Costs
	Education	Nursery education and childcare	Developer/Service Provider	£3,636,188.00	2017-2033	Critical	Standard Development Costs
	Community facilities	Library facilities	Developer/HCC	£286,488.00	2017-2033	Important	Standard Development Costs
	Community facilities	GP surgery and provision for pharmacies and dentists.	CCG/NHS/Developer	£3,636,188.00	2017-2033	Important	Standard Development Costs
	Community facilities	Community Centre	Developer	£451,769.00	2017-2033	Important	Standard Development Costs
	Community facilities	Sports Facilities	Developer/Sport England	TBC	2017-2033	Important	Standard Development Costs
	Community facilities	Children's play facilities: 4x LAP, 2x LEAP, 1x NEAP	Developer	£1,085,347.00	2017-2033	Important	Standard Development Costs

Transport	Improvements to National Cycle Network 61 cycle route into Hertford	HCC	TBC	2017-2033	Important	S106
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Strategic Infrastructure							
	Infrastructure Requirement	Description	Lead Agencies	Estimated Cost	Programme/ Phasing	Delivery Priority	Potential Funding Sources
Strategic Infrastructure	Transport	A1(M) Junction 3 improvements	Highways England	£5,352,000.00	2022-2027	Critical	S106/LEP/Government Funding
	Transport	A1(M) Junction 4 improvements	Highways England	£1,560,000.00	2022-2027	Critical	S106/LEP/Government Funding
	Transport	M11 J7a - contributions to M11 J7a / link road / roundabout / bridge ((a) New Junction 7a of the M11 to include two-lane Link Road to new roundabout north of B183 Gildden Way, new bridge over Sheering Road and new two-lane link from the roundabout north of B183 Gildden Way tying into B183 Gildden Way with a new roundabout)	Highways England/Essex CC	£45,000,000.00	2022-2027	Critical	S106/Possible transfer of Road Investment Strategy 1 (Government Funding) currently attributed to Junction 7 (below)
	Transport	M11 J8 Improvements (Full option)	Highways England/Essex CC	TBC	2027-2033	Critical	S106/LEP/Government Funding

Transport	M11 J8 Improvements (interim option)	Highways England/Essex CC	£13,000,000.00	2022-2027	Critical	£1,000,000 from Greater Cambridge/Greater Peterborough LEP. Bid for Road Investment Strategy 2 funding. Bid for Growth and Housing Fund. Bid for Local Growth Fund Round 3 funding from South-east LEP.
Transport	M11 J7 Improvements	Highways England/Essex CC	£34,000,000.00	2022-2027	Critical	Road Investment Strategy 1 (Government Funding)
Transport	Second crossing over River Stort	HCC/ECC	£47,240,582.00	2022-2027	Critical	S106/S278
Transport	Amwell Roundabout Improvements	HCC	£4,200,000.00	2022-2033	Critical	S106/S278
Transport	Little Hadham Bypass	HCC	£29,860,000 (2014 figures)	2019	Critical	LEP/Government Funding
Transport	Hertford Strategic Solution	HCC	100 million plus	2024 onwards		LEP/S106/Government Funding

EAST HERTS COUNCIL

DISTRICT PLANNING EXECUTIVE PANEL – 15 SEPTEMBER 2016

REPORT BY LEADER OF THE COUNCIL

EAST HERTS DISTRICT PLAN – PRE-SUBMISSION VERSION 2016

WARD(S) AFFECTED: ALL

Purpose/Summary of Report

The purpose of this report is:

- To present to Members the consolidated East Herts District Plan Pre-Submission Version 2016 and to seek agreement to publish the Plan for consultation under Regulation 19 of the Town and Country (Local Planning) (England) Regulations 2012 as amended.

RECOMMENDATIONS FOR DISTRICT PLANNING EXECUTIVE PANEL: That Council, via the Executive, be advised that:

(A)	the East Herts District Plan Pre-Submission Version 2016, as detailed at Essential Reference ‘B’ to this report, be agreed and published for consultation for a period of six-weeks in accordance with Regulation 19 of the Town and Country Planning (Local Planning) (England) Regulations 2012 as amended;
(B)	the Head of Planning and Building Control, in consultation with the Leader of the Council, be authorised to make non-material typographical, formatting, mapping and other amendments to the Plan, prior to its publication for consultation in November 2016; and
(C)	the ‘Frequently Asked Questions’ paper, as detailed at Essential Reference Paper ‘C’ to this report, be agreed and published alongside the Plan.

1.0 Background

- 1.1 The District Plan sets out the Council's planning framework to guide future development and the use of land in the district. It identifies how East Herts will grow and develop whilst at the same time maintaining its attractiveness as a place to live, work and visit. The Plan covers the period 2011–2033. Once adopted, the policies in the District Plan will replace the policies in the Local Plan 2007.
- 1.2 The District Plan, together with the Minerals and Waste Local Plans for Hertfordshire and any adopted Neighbourhood Plans, form the Development Plan for the district. The Development Plan is the basis upon which planning applications must be determined, unless there are material planning considerations that indicate otherwise. The policies of the Development Plan should be read as a whole.
- 1.3 The District Plan is a long-term document which provides certainty to communities and businesses as to where development will be provided and, likewise, where development will be restricted. It also allows infrastructure providers to plan effectively for the future.
- 1.4 Work on the emerging District Plan has been ongoing now for a number of years. An Issues and Options consultation was undertaken in 2010. This was followed by a Preferred Options consultation which was undertaken in 2014.
- 1.5 The issues raised through the Preferred Options consultation have been considered by Members at previous District Plan Executive Panel meetings on the 24 May, 21 July, 25 August and 8 September 2016, together with draft revised District Plan chapters.
- 1.6 The preparation of the District Plan has been informed by an extensive evidence base which has been kept up to date and reviewed in the light of the representations received. The evidence base is available to view on the Council's website at www.eastherts.gov.uk/technicalstudies.
- 1.7 The Council has worked closely with a number of bodies during the preparation of the District Plan in accordance with the Duty to Co-operate. In particular, the Council has worked closely with Hertfordshire County Council to ensure that the infrastructure

implications of individual sites and different development distribution options, including cumulative impacts, have been properly understood and considered. The Council has also worked closely with its housing market area partners (Harlow, Epping Forest and Uttlesford Councils) to address the spatial distribution of housing across the four districts. Meetings have also been held with other adjoining local authorities to discuss cross-boundary issues. Joint policy wording has been developed with Welwyn Hatfield Borough Council relating to Birchall Garden Suburb (East of Welwyn Garden City).

- 1.8 This report presents the final consolidated District Plan (Pre-Submission Version), a copy of which is contained in **Essential Reference Paper 'B'**, and seeks Members' agreement to publish the Plan for a six-week period of consultation under Regulation 19 of the Town and Country (Local Planning) (England) Regulations 2012 as amended.

2.0 Report

Content of the Pre-Submission District Plan

- 2.1 The Pre-Submission District Plan sets out the vision, policies and proposals to guide future development and the use of land within East Herts. It provides certainty to members of the public and developers as to where development is likely to take place and guides decision-takers on the most appropriate forms of development over the Plan-period to 2033.
- 2.2 The structure of the Pre-Submission District Plan is similar to the structure of the Preferred Options District Plan with sections on the development strategy (including settlement/site specific policies) and topic specific policies.
- 2.3 As required by the National Planning Policy Framework, the District Plan seeks to positively plan for growth and as such identifies sites that will deliver in excess of 18,000 homes over the Plan-period.
- 2.4 The Pre-Submission District Plan comprises the following:
- **Chapter 1: Introduction** explains what the District Plan is and refers the reader to the extensive evidence base that has informed the Plan. It also contains sections on the duty to co-operate and strategic planning, and sustainable development.

- **Chapter 2: Vision and Strategic Objectives** sets out the overall strategic vision for development in East Herts over the Plan period to 2033. The vision is supported by a set of strategic objectives which when considered together provide the framework for the policies set out in the District Plan.
- **Chapter 3: The Development Strategy** sets out the Council's strategy for delivering growth in East Herts over the Plan period up to 2033.
- **Chapter 4: Green Belt and Rural Area beyond the Green Belt** sets out the purposes of the Green Belt and includes policies to safeguard the rural area.
- **Chapter 5: Chapter 5: Bishop's Stortford** includes the development strategy for the town and sets out site specific policies for the following locations:
 - Bishop's Stortford North (2,529 homes)
 - Reserve Secondary School Site, Hadham Road (0-163 homes)
 - Bishop's Stortford South (750 homes)
 - Bishop's Stortford High School Site, London Road (0-150 homes)
 - The Goods Yard (at least 400 homes)
 - The Causeway/Old River Lane (up to 100 Homes)
 - East of Manor Links (50 homes)
 - The Mill Site
- **Chapter 6: Buntingford** is focused on seeking to ensure that the impacts of development can be mitigated and managed within the overall infrastructure of the town. The chapter sets out the requirement for a new first school in the town.
- **Chapter 7: Hertford** includes the development strategy for the town and sets out site specific policies for the following locations:
 - Mead Lane Area (200 homes)
 - West of Hertford (550 homes)
 - North of Hertford (150 homes)
 - South of Hertford (50 homes)

- **Chapter 8: Sawbridgeworth** includes the development strategy for the town and sets out site specific policies for the following locations:
 - Land north of West Road (125 homes)
 - Land south of West Road (175 homes)
 - Land north of Sawbridgeworth (200 homes)
- **Chapter 9: Ware** includes the development strategy for the town and sets out a site specific policy for the following location:
 - Land North and East of Ware (1,000 homes within the Plan-period with a further 500 homes beyond 2033, subject to suitable mitigation).
- **Chapter 10: Villages** sets out the policy approach to development in Group 1, Group 2 and Group 3 Villages.
- **Chapter 11: The Gilston Area** includes the development strategy for the area and sets out a site specific policy for development in this location (10,000 homes to be delivered in this Plan-period and beyond. It is anticipated that approximately 3,000 homes could be delivered by 2033).
- **Chapter 12: East of Stevenage** includes the development strategy for the area and sets out a site specific policy for development in this location (600 homes).
- **Chapter 13: East of Welwyn Garden City** includes the development strategy for the area and sets out a site specific policy for development in this location (1,350 homes).
- **Chapter 14: Housing** sets out the Council's approach to addressing the need for different types of housing across the district. It includes policies relating to type, mix and density of new housing, Affordable Housing and Gypsies, Travellers and Travelling Showpeople housing requirements.
- **Chapter 15: Economic Development** sets out the Council's approach to employment land and employment generating uses. It seeks to retain employment areas for their role in providing local job opportunities, and allocates new areas for businesses in order to facilitate an anticipated growth in jobs

and to encourage investment into East Herts, reflecting the Council's Economic Development Vision and Action Plan.

- **Chapter 16: Retail and Town Centres** sets out the Council's approach to new retail opportunities and where changes of use are proposed. The changing role of town centres is acknowledged and the Plan seeks to ensure that where retail development occurs it ensures the vitality and viability of the district's thriving market towns.
- **Chapter 17: Design and Landscape** sets out the Council's approach the design of development and how it responds to the local landscape setting. It encourages high standards of design quality and the retention of key landscape features through an integrated approach to green infrastructure. It also sets out the Council's approach to extensions and alterations to dwellings.
- **Chapter 18: Transport** sets out the Council's approach in seeking a reduction in the growth of car usage combined with the greater use of more sustainable modes of transport and improved accessibility, in order to help achieve sustainable development in the district. It includes policies relating to Sustainable Transport; Safe and Suitable Highway Access Arrangements and Mitigation; and Vehicle Parking Provision.
- **Chapter 19: Community Facilities, Leisure and Recreation** sets out the Council's approach to the creation and retention of open spaces and facilities for sport and recreation. It also sets out the Council's approach to the retention of community facilities, the prevention of loss of facilities and creating new facilities through development. It also sets out the Council's approach to health and wellbeing, and education.
- **Chapter 20: Natural Environment** sets out the Council's approach to the conservation, protection and enhancement of the natural environment; not only designated sites of international, national and local importance, but non-designated assets that contribute to wider ecological networks. Registered species and habitats will be protected, and development proposals are expected to avoid and mitigate harm through an integrated approach to green infrastructure.
- **Chapter 21: Heritage Assets** sets out how development is expected to protect and preserve the district's rich and varied

historic environment. Opportunities will arise through development to enhance designated and non-designated heritage assets. The chapter also sets out the requirement to assess archaeological interests, and to sustain and enhance Conservation Areas and Listed Buildings.

- **Chapter 22: Climate Change** seeks to ensure that new development is designed in a way that mitigates the impacts of climate change by reducing carbon emissions. The policies in the chapter also encourage the provision of renewable energy technologies where appropriate.
- **Chapter 23: Water** identifies the Council's approach to mitigating flood risk from different sources and protecting and enhancing water quality. It also seeks to ensure that new development makes efficient use of water resources.
- **Chapter 24: Environmental Quality** sets out how development will be expected to take account of contaminated land and land instability. It also advises that assessments will be required to assess noise pollution, light pollution and air quality impacts, both in terms of the impacts arising from development and the impacts existing sources may have on the siting of new development.
- **Chapter 25: Delivery and Monitoring** sets out the way in which the Council will work with service providers and other bodies in order to ensure the timely provision of infrastructure schemes that are required to support planned development. It also identifies how the implementation of the District Plan will be monitored in order to ensure that the policies remain effective.

2.5 The Plan also contains four Appendices:

- Appendix A: Key Diagram
- Appendix B: Strategy Worksheet
- Appendix C: Monitoring Framework
- Appendix D: Glossary

Appendices A and B have been updated to reflect the development strategy set out in the Pre-Submission District Plan. Appendix C: Monitoring Framework takes account of the issues raised through the Preferred Options consultation (see Agenda Item 8) and has been updated to align with the Pre-Submission District Plan. Appendix D: Glossary has been updated to align it

with the Pre-Submission District Plan.

- 2.6 A copy of the consolidated Pre-Submission District Plan is contained in **Essential Reference Paper 'B'**.
- 2.7 A **Policies Map** (previously known as the Proposals Map) will accompany the District Plan. The Policies Map shows the main policy designations, such as Green Belt, housing allocations, employment areas, environmental assets, conservation areas and open spaces.
- 2.8 A **Sustainability Appraisal** (SA) has informed the preparation of the District Plan. Reasonable alternatives to the policies and sites have been assessed at various stages in the preparation of the District Plan and this has informed the development of the spatial strategy and the selection of sites. As well as an appraisal of each policy and site it includes an assessment of the cumulative effects of the Plan against sustainability objectives. More information on the Sustainability Appraisal can be found at Agenda Item 12.
- 2.9 A **Habitats Regulations Assessment** (HRA) has also been undertaken to identify any aspects of the emerging District Plan that would have the potential to cause a likely significant effect on Natura 2000 or European sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites). The HRA concludes that the District Plan will not result in a likely significant effect, either alone or in combination, upon any European Sites. This conclusion is contingent upon the implementation of a monitoring programme and the delivery of mitigation where identified, in particular in relation to Wormley-Hoddesdonpark Woods SAC and Epping Forest SAC. More information on the Habitats Regulation Assessment can be found at Agenda Item 13.
- 2.10 An **Infrastructure Delivery Plan** (IDP) has also been prepared in consultation with infrastructure providers and other stakeholders and sets the requirements for the level of growth identified in the Pre-Submission District Plan. Sites which already have planning permission have not been included as provision will already have been made through section 106 agreements. The examination Inspector will expect a level of certainty relating to the first five years of the Plan. More information on the Infrastructure Delivery Plan can be found at Agenda Item 14.

Consultation on the Pre-Submission District Plan

- 2.11 Subject to agreement it is proposed that consultation on the Pre-Submission District Plan will commence on the 3rd November 2016 for a six-week period closing on the 15th December 2016.
- 2.12 At this stage in the plan-making process the Council will be seeking views on whether the District Plan is sound and meets the tests set out in the National Planning Policy Framework (NPPF). In other words whether:
- the Council has planned for the district's housing, employment and infrastructure needs;
 - the District Plan is based on sound evidence;
 - the development proposals identified within the District Plan can be delivered by 2033; and
 - the District Plan is consistent with national policy, and enables sustainable development.
- 2.13 While respondents are free to comment as they choose, in order to have the greatest influence at this stage it is advisable that representations should relate to the soundness of the Plan or to its compliance with legal requirements. This is because these are the broad areas that the Inspector will focus on in examining the District Plan. These are explained below.

Soundness

Regulations state that a local planning authority should submit a Plan for examination which it considers to be 'sound' – namely that it is:

- **Positively prepared** – the Plan should be prepared based on a strategy which seeks to meet objectively assessed development and infrastructure requirements, including unmet requirements from neighbouring authorities where it is reasonable to do so and consistent with achieving sustainable development;
- **Justified** – the Plan should be the most appropriate strategy, when considered against the reasonable alternatives, based on proportionate evidence;
- **Effective** – the Plan should be deliverable over its period and based on effective joint working on cross-boundary strategic priorities; and

- **Consistent with national policies** – the Plan should enable the delivery of sustainable development in accordance with the policies in the National Planning Policy Framework.

Legal Requirements

When considering if the Plan meets its legal requirements, the Inspector will consider a number of issues including:

- **Local Development Scheme** – has the Plan been prepared in accordance with the timetable set out on the Local Development Scheme?
- **Statement of Community Involvement and relevant regulations** – has consultation on the Plan been in accordance with the Council’s Statement of Community Involvement and have the appropriate bodies been consulted?
- **Duty to Co-operate** – has the Plan been prepared in co-operation with other local planning authorities and prescribed bodies, such as the Environment Agency and the Local Enterprise Partnership, to identify and address any issues?
- **Sustainability Appraisal** – has an adequate Sustainability Appraisal been carried out?
- **Appropriate Assessment** – has an adequate Appropriate Assessment under the Habitats Regulations been carried out?
- **National Policy and Legislation** – does the Plan comply with national policy and legislation, for example, the National Planning Policy Framework.

2.14 A ‘Frequently Asked Questions’ paper has been produced which explains what the consultation is about, how long it lasts, how to comment, document availability etc. A copy of the FAQ is attached at **Essential Reference Paper ‘C’**.

2.15 Members are requested that:

- the East Herts District Plan Pre-Submission Version 2016, as detailed at **Essential Reference ‘B’** to this report, be agreed and published for consultation for a period of six-weeks in accordance with Regulation 19 of the Town and Country Planning (Local Planning) (England) Regulations 2012 as amended ; and

- the 'Frequently Asked Questions' paper, as detailed at **Essential Reference Paper 'C'** to this report, be agreed and published alongside the Plan.

2.16 It is further requested that the Head of Planning and Building Control, in consultation with the Leader of the Council, be authorised to make any non-material typographical, formatting, mapping and other amendments to the Plan, prior to its publication for consultation in November 2016.

3.0 Implications/Consultations

3.1 Information on any corporate issues and consultation associated with this report can be found within **Essential Reference Paper 'A'**.

Background Papers

The District Plan evidence base is available at:

www.eastherts.gov.uk/technicalstudies

Previous District Planning Executive Panel reports are all available at:

<http://democracy.eastherts.gov.uk/mgCommitteeDetails.aspx?ID=151>

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ESSENTIAL REFERENCE PAPER 'A'

IMPLICATIONS/CONSULTATIONS

Contribution to the Council's Corporate Priorities/ Objectives:	Priority 1 – Improve the health and wellbeing of our communities Priority 2 – Enhance the quality of people's lives Priority 3 – Enable a flourishing local economy
Consultation:	A wide range of consultation has been undertaken in preparing the District Plan and further consultation is proposed, as detailed in this report.
Legal:	There are no direct legal implications arising from this report.
Financial:	There are no direct financial implications arising from this report. The cost of preparing a District Plan is significant and has been budgeted over the duration of its preparation.
Human Resource:	Additional staff resource has been agreed to ensure the ongoing timely preparation of the District Plan.
Risk Management:	The efficient and timely progression of the District Plan is of paramount importance and a risk assessment has been carried out to ensure that the preparation of the Plan takes place in accordance with the Council's Local Development Scheme. Without an adopted District Plan the District will be vulnerable to further unplanned development.
Health and wellbeing – issues and impacts:	The District Plan in general will have positive impacts on health and wellbeing through a range of policy approaches that seek to create sustainable communities.

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East Herts District Plan Pre-Submission Version (Regulation19)

Frequently Asked Questions

- 1. What is this consultation about?**
- 2. How long does the consultation last?**
- 3. Why should I comment?**
- 4. Can comments only be made on soundness and legal compliance?**
- 5. Hasn't the public already been consulted on the District Plan?**
- 6. I made comments on the Preferred Options consultation; do I need to comment again?**
- 7. Why does it take so long to produce a District Plan and who decides whether the Plan meets the Government's approval?**
- 8. What happens when people comment on the District Plan?**
- 9. What is an Examination?**
- 10. How do I make my views known?**
- 11. Where can I find the documents?**
- 12. Can I buy a copy of the District Plan?**
- 13. Questions**

1. What is this consultation about?

East Herts Council is consulting on the latest version of the East Herts District Plan. This stage is known as the Regulation 19 consultation, which is the final public consultation stage before the District Plan is submitted to the Planning Inspectorate for Examination. At this stage the Plan is known as the East Herts District Plan (Pre-Submission Version).

The Pre-Submission Plan takes forward a revised version of the earlier Preferred Options Plan, which was consulted on in 2014. Representations made in respect of this earlier consultation have been considered alongside updated evidence in preparing the Pre-Submission Plan.

The Pre-Submission Plan sets out the vision, policies and proposals to guide future development and the use of land within East Herts. It provides certainty to members of the public and developers as to where development is likely to take place and guides decision-takers on the most appropriate forms of development over the Plan-period to 2033.

2. How long does the consultation last?

The Pre-Submission District Plan will be available for comments for a period of six-weeks from **Thursday 3rd November** to 5pm on **Thursday 15th December 2016**.

Comments submitted after that 5pm on the 15th December may not be considered.

3. Why should I comment?

As a place shaping document, everyone can be affected and so everyone should have the opportunity to contribute – it is important to engage in the preparation of the District Plan.

4. Can comments only be made on soundness and legal compliance?

At this stage the Council is seeking views on whether the District Plan is sound and meets the tests set out in the National Planning Policy Framework (NPPF). In other words whether:

- the Council has planned for the district's housing, employment and infrastructure needs;
- the District Plan is based on sound evidence;
- the development proposals identified within the District Plan can be delivered by 2033; and
- the District Plan is consistent with national policy, and enables sustainable development.

Representations will be passed to the Inspector and it is recommended that comments should be clear, concise and targeted. While respondents are free to comment as they choose, in order to have the greatest influence at this stage it is advisable that representations should relate to the soundness of the Pre-Submission Plan or to its compliance with legal requirements. These are explained below.

Soundness

Regulations state that a local planning authority should submit a Plan for examination which it considers to be 'sound' – namely that it is:

- **Positively prepared** – the Plan should be prepared based on a strategy which seeks to meet objectively assessed development and infrastructure requirements, including unmet requirements from neighbouring authorities where it is reasonable to do so and consistent with achieving sustainable development;
- **Justified** – the Plan should be the most appropriate strategy, when considered against the reasonable alternatives, based on proportionate evidence;

- **Effective** – the Plan should be deliverable over its period and based on effective joint working on cross-boundary strategic priorities; and
- **Consistent with national policies** – the Plan should enable the delivery of sustainable development in accordance with the policies in the National Planning Policy Framework.

It is advisable that representations made at this stage should therefore focus on whether the Plan meets the tests listed above. This is because these are the broad areas that the Inspector will focus on in examining the District Plan.

Legal Requirements

When considering if the Plan meets its legal requirements, the Inspector will consider a number of issues including:

- **Local Development Scheme** – has the Plan been prepared in accordance with the timetable set out on the Local Development Scheme?
- **Statement of Community Involvement and relevant regulations** – has consultation on the Plan been in accordance with the Council's Statement of Community Involvement and have the appropriate bodies been consulted?
- **Duty to Co-operate** – has the Plan been prepared in co-operation with other local planning authorities and prescribed bodies, such as the Environment Agency and the Local Enterprise Partnership, to identify and address any issues?
- **Sustainability Appraisal** – has an adequate Sustainability Appraisal been carried out?
- **Appropriate Assessment** – has an adequate Appropriate Assessment under the Habitats Regulations been carried out?

- **National Policy and Legislation** – does the Plan comply with national policy and legislation, for example, the National Planning Policy Framework.

5. Hasn't the public already been consulted on the District Plan?

Yes – we have consulted the public several times over the last few years, most recently in 2014 when we received comments from over a thousand stakeholders including statutory consultees and members of the public.

The diagram below shows the District Plan process:



6. I made comments on the Preferred Options consultation; do I need to comment again?

The Council is not able to carry forward any comments made on previous consultations. Therefore, any comments previously submitted that you think have not been resolved would need to be submitted again as part of this consultation.

7. Why does it take so long to produce a District Plan and who decides whether the Plan meets the Government's approval?

Local Plans must be based on robust and up-to-date evidence, which meets legal requirements and tests of soundness. Evidence is rigorously tested and challenged by a Planning Inspector at an independent Examination. Many plans have had to be withdrawn for various reasons before or after Examination, including failure to comply with national policy statutory requirements. The Council should not submit its local plan before it is confident that it will succeed at Examination. To do otherwise would be inefficient and wasteful of resources, and ultimately delay adoption.

Without an adopted District Plan the district will be vulnerable to further unplanned development which may occur in undesirable locations.

8. What happens when people comment on the District Plan?

The Council will collate all the comments received during the consultation period and these will be submitted alongside the District Plan to the Planning Inspectorate.

The Council intends to submit the District Plan, the evidence supporting it, and representations received during the Pre-Submission consultation to the Planning Inspectorate in March 2017. Following this an independent Examination will take place.

9. What is an Examination?

An Examination is a form of public inquiry where an independent planning inspector, appointed by the Secretary of State, will 'test' the Plan and supporting information and judge whether it is sound and meets its legal requirements.

Further information will be provided about the Examination process before that stage begins. It is currently anticipated that the Examination will commence in late Spring/Summer 2017.

10. How do I make my views known?

There are different ways to send in your comments:

- Online at <http://consult.eastherts.gov.uk>. This is the most convenient means of submitting comments and ensures that you will be kept informed of future stages of plan preparation.
- Via email or post. A representation form can be used, which is available from the District Council and from libraries. The form should be sent to planningpolicy@eastherts.gov.uk or posted to: Planning Policy Team, East Herts Council, Pegs Lane, Hertford, SG13 8EQ.

**Remember the deadline for all comments is 5pm on
Thursday 15th December 2016.**

Please note – comments can only be deemed legitimate ('duly-made') if they are received in a written format with a name and address supplied. Comments made verbally or anonymously cannot be accepted. It is also important to appreciate that the Council is obliged to make duly-made representations available for public inspection on its website.

11. Where can I find the documents?

The District Plan and supporting documents will be available for public inspection during normal offices hours at the following locations:

- East Herts Council Offices, Wallfields, Pegs Lane, Hertford
- East Herts Council Offices, Charringtons House, The Causeway, Bishop's Stortford
- Bishop's Stortford Town Council, The Old Monastery, Windhill, Bishop's Stortford
- Bishop's Stortford Public Library, 6 The Causeway, Bishop's Stortford
- Buntingford Town Council, The Manor House, 21 High Street, Buntingford
- Buntingford Public Library, 77 High Street, Buntingford
- Hertford Town Council, The Castle, Hertford
- Hertford Public Library, Dolphin Yard, Maidenhead Street, Hertford
- Knebworth Public Library, 7 St Martin's Road, Knebworth
- Sawbridgeworth Town Council, The Square, Sawbridgeworth
- Sawbridgeworth Public Library, The Forebury, Sawbridgeworth
- Ware Town Council, The Priory, Ware
- Ware Public Library, 87 High Street, Ware

The District Plan and supporting documents can also be viewed online at: www.eastherts.gov.uk/districtplan.

12. Can I buy a copy of the District Plan?

A limited number of copies of the District Plan are available to purchase from the Council. The District Plan and accompanying Policies Map cost £35.00.

13. Questions

If you have any questions about the District Plan please contact a member of the Planning Policy Team on 01279 655261 or email planningpolicy@eastherts.gov.uk.