

## Epping Forest SAC Mitigation Report

Amended Second Draft Final Report

Prepared by LUC in association with Andrew McCloy and Huntley Cartwright

September 2020



**Project Title:** Epping Forest SAC Mitigation. Draft Final Report

**Client:** City of London Corporation

Version	Date	Version Details	Prepared by	Checked by	Approved by
1	April 2019	Draft	JA HL	JA	JA
2	April 2020	Draft Final	JA HL	JA	
3	April 2020	Second Draft Final	JA, HL, DG/RT, AMcC	JA	
4	Sept 2020	Amended Second Draft Final	JA, HL, DG/RT, AMcC	JA	JA

# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
	Background	1
	This report	2
<b>2</b>	<b>Research and Consultation</b>	<b>4</b>
	Documentary Research	4
	Internal client interviews	8
	Site assessment	10
<b>3</b>	<b>Overall Proposals</b>	<b>21</b>
	Introduction	21
	Overall principles	21
<b>4</b>	<b>Site specific Proposals</b>	<b>31</b>
	Summary of costs	31
	Proposals for High Beach	31
	Proposals for Chingford Plain	42
	Proposals for Leyton Flats	61
	Implementation	72
<b>5</b>	<b>Monitoring and Review</b>	<b>74</b>
	Monitoring	74
	Review	74
<b>Appendix 1</b>	<b>Access survey site notes</b>	<b>75</b>
<b>Appendix 2</b>	<b>Ecological survey site notes</b>	<b>83</b>
<b>Appendix 3</b>	<b>Legislation governing the protection of the SAC</b>	<b>84</b>

## Tables

Table 2.1 Draft New London Plan ten-year targets for net housing completions (2019/20-2028/29) in surrounding London Boroughs	5
Table 2.2 Potential impacts of visitor pressure	6
Table 2.1 Access and ecology issues at High Beach	10
Table 2.2 Access and ecology issues at Chingford Plain	13
Table 2.3 Access and ecology issues at Leyton Flats	17
Table 4.1 High Beach SAC Mitigation Concept Proposals – Summary of approximate costs	35
Table 4.2 High Beach SAC Mitigation Concept Proposals - Details and approximate costs	37
Table 4.3 Chingford Plain SAC Mitigation Concept Proposals – Summary of approximate costs	47
Table 4.4 Chingford Plain SAC Mitigation Concept Proposals - Details and approximate costs	49
Table 4.5 Leyton Flats SAC Mitigation Concept Proposals – Summary of approximate costs	65

Table 4.6 Leyton Flats SAC Mitigation Concept Proposals - details and approximate costs	67
Table 4.7 SAC Mitigation Concept Proposals – Summary of approximate costs	73

## Figures

Figure 1.1. Location plan	3
Figure 2.1. Illustrations of access and ecology issues at High Beach	12
Figure 2.2. Illustrations of access and ecology issues at Chingford Plain	15
Figure 2.3. Illustrations of access and ecology issues at Leyton Flats	18
Figure 3.1. Dragon’s Teeth controlling verge side parking in Richmond Park	24
Figure 3.2. The impact of a small catering kiosk	26
Figure 3.3. The Tamsin Trail in Richmond Park, Coxwell gravel laid on a flint base	28
Figure 3.4. Wooden bridge crossing stream on the Tamsin Trail	29
Figure 3.5. Examples of path construction details	29
Figure 4.2. High Beach SAC Mitigation Proposals	34
Figure 4.2. Chingford Plain SAC Mitigation Proposals	46
Figure 4.3. Leyton Flats SAC Mitigation Proposals	64

# 1 Introduction

## Background

- 1.1 Epping Forest lies to the east and north-east of London, just inside the M25, see **Figure 1.1**. It has great significance for its:
  - **heritage**, it is a former Royal Forest
  - **recreation**, it is one of the largest open space around London, providing significant open space opportunities for residents from within several London Boroughs, Epping Forest District and attracting visitors from beyond these areas
  - **wildlife**. Two thirds (1728ha) of the Forest's 2400 hectares is designated as a Site of Special Scientific Interest (SSSI) with 1,605ha of that area also designated as a Special Area of Conservation (SAC). It is one of the largest remaining wood-pastures in the UK, a habitat of 'principal importance' (Section 41 of the Natural Environment and Rural Communities Act 2006) and, as recorded in the SSSI citation, and is the only protected site to support all three types of lowland wood-pasture. Furthermore, the Forest's wood-pasture contains the largest population of ancient pollarded trees in the country.
- 1.2 The City of London Corporation (City Corporation) was instrumental in saving the Forest from loss due to enclosure and development by an expanding metropolis in the 1860s. In addition to winning the legal battle to save the Forest, the City Corporation then purchased the land to ensure its further physical protection. Today it is held in trust and managed by the City Corporation following the passing of an act, The Epping Forest Act, in 1878 to help to protect the rights of the public to use open spaces and for the areas to be conserved for their specific environmental features. The Act places responsibility on the City Corporation to manage the Forest as an open space for public "recreation and enjoyment" while also protecting its environmental qualities.
- 1.3 The nature conservation importance of the Forest was further recognized during the 20th Century. The protection of its wildlife was significantly strengthened and specified in more detail through later designations for large areas of the Forest as a Site of Special Scientific Interest (SSSI) and a Special Area of Conservation (SAC). The latter designation makes the City Corporation, as landowner, the competent authority for the management of the SAC features.
- 1.4 As a major visitor attraction there are continuing pressures on the Forest soils and wildlife, including its ancient tree population, and continuing increases in visits pose a significant challenge to sustaining its special character, ecological condition and the diversity of species it supports.
- 1.5 The brief for this project is to examine three of the busiest areas in the Forest, High Beach in the north west, Chingford Plain towards the south and Leyton Flats at the southern tip of the Forest (Figure 1.1), looking at the impact of visitors on the sites and to provide costed proposals for conserving and enhancing those ecological assets which give rise to its SSSI, and in particular, its SAC designations. At the same time the proposals also need to provide suitable facilities for the public to enjoy and gain benefit from visiting the open space.

### **Forest-wide Strategies: – Mitigating the impacts of increasing numbers of recreational visits**

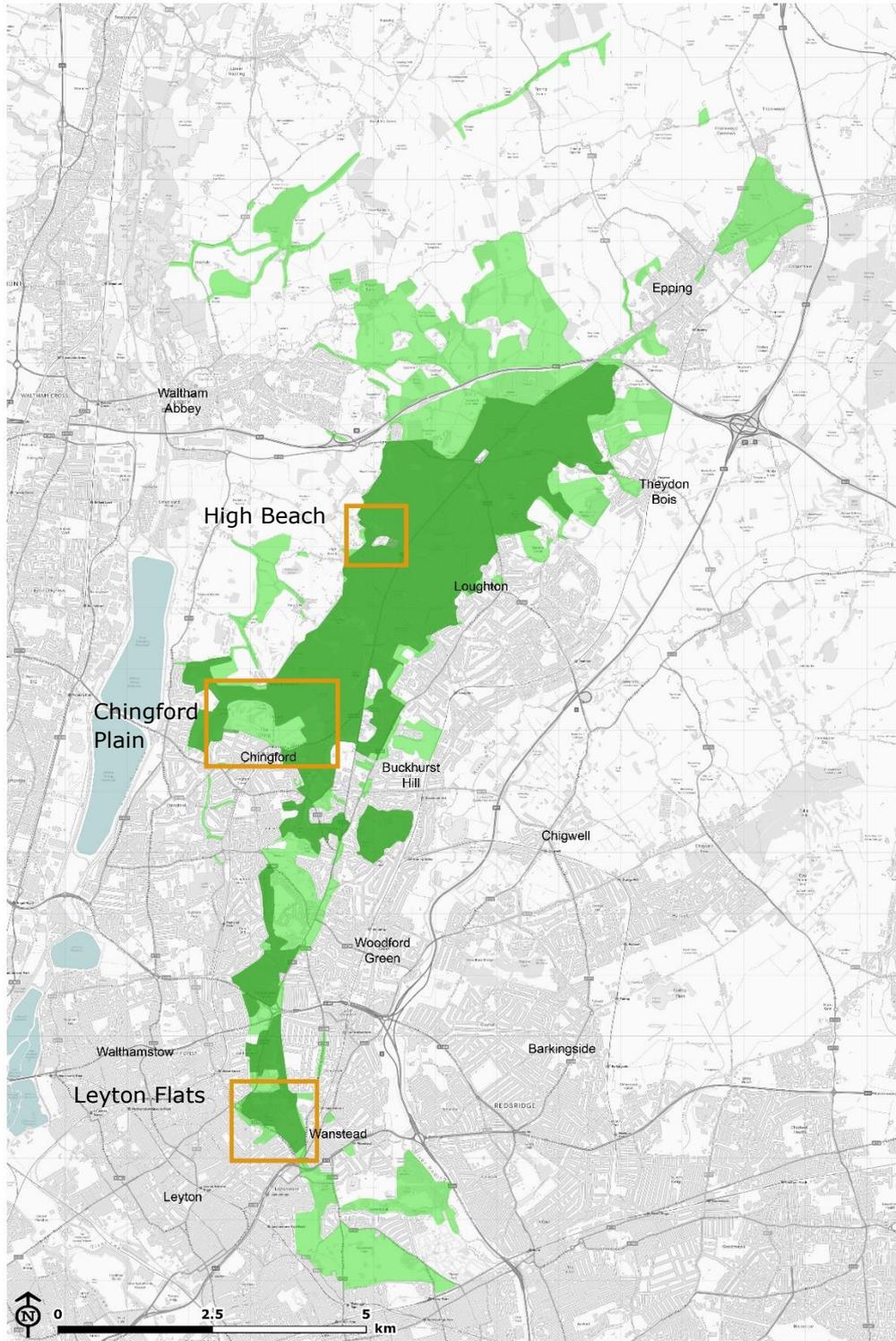
- 1.6 This will provide important information in seeking contributions as part of the Strategic Access Management and Monitoring Plan (SAMM) to mitigate the potential in-combination impacts of new housing development in the vicinity from those local authorities which lie in the Zone of Influence of the Forest as indicated by the visitor surveys (see paragraph 2.10).
- 1.7 While we are only considering three sites in the Forest it is important to emphasise that this is only part of the picture and there are additional costs to be considered by the competent

authorities seeking to protect and enhance the Forest. There is a need to consider the wider Forest context and how different locations within the Forest may affect the wider environment around the Forest and other green spaces. A broader strategy is required to manage the use of the Forest in a way that protects sensitive areas and highlights other areas which are more capable of sustaining heavier visitor pressure.

- 1.8 Hence Phase 2 of the project is to provide a brief for a tender to provide an overall Forest access management strategy (including non SSSI and SAC areas and Buffer Lands) to seek to balance conservation and access requirements under the new pressures that will develop as new housing is built as a result of the spatial strategies of the surrounding Local Plans. The Sustainable Visitor Access Strategy would be linked to other strategies for managing traffic and parking within and around the Forest but would also consider where visitors are travelling from to reach the Forest.

## This report

- 1.9 This report summarises the research, consultation and site surveys that were carried out to inform the proposals and then describes the proposals for mitigating damage to the SAC.
- 1.10 Information was gathered from:
- Existing documents and reports
  - Consultation and interviews with key staff at the Corporation of London and with Natural England
  - Site surveys by our ecologists and access specialists.
- 1.11 Based on the findings from the data gathering and site surveys, proposals are put forward for protecting and potentially enhancing the environmental assets of each site, in particular those aspects that give rise to its designation as SAC and SSSI. However in doing so the proposals also recognise the value of the sites as accessible open space and are designed to provide suitable access and facilities, which have as low an impact on the SAC as possible and retain as much as possible the informal and natural aspect of the Forest and avoid a proliferation of structures and development in the SAC.
- 1.12 While some proposals are site specific and can be described in some detail, the location and provision of paths for example, others such as the location and provision of car parking and traffic control measures, need to be considered as part of the wider Forest wide access and traffic strategy and are more conceptual until an overall strategy has been provided.



Contains Ordnance Survey data © Crown copyright and database right 2020

- Epping Forest SAC
- Epping Forest ownership boundary
- Proposal sites

**Figure 1.1. Location plan**

## 2 Research and Consultation

- 2.1 The purpose of the research, consultation and site visits is to assess:
- the current and future visitor pressure on the sites in terms of numbers and types of activity undertaken
  - the ecology of each site and its significance, particularly relative to the SAC designation
  - the impact of visitors on each of the sites and the nature of the facilities available to them
  - management of the sites.

### Documentary Research

#### Sources

- 2.2 We have assessed a number of documents which provide information applicable to the Forest as a whole and on particular sites. The following two documents have been useful in providing information on the pressures on Epping Forest as a whole, on the responsibilities that the City Corporation has in providing for public recreation and on the impact of the visitors on the Forest as a whole and on the three sites of interest:
- Epping Forest Visitor Survey 2017, produced by Footprint Ecology, updated in 2019 but the report not yet published but data from it provided by the City Corporation for this report
  - Epping Forest District Council (EFDC) Interim Mitigation Strategy for Epping Forest Special Area of Conservation, 2018
- 2.3 We have also received detailed information on the ecology of the three hotspots.

#### Summary of documentary research

##### *Visitor numbers*

- 2.4 The 2018 Interim Strategy reports that a 2014 survey for the Management Plan indicated that there were 4.2 million visits per year to the Forest.
- 2.5 There is potential for these numbers to increase very significantly, both from a general increase in population and from planned development in the surrounding local area. Several of the Mayor of London's 30 Housing Zones are located in Waltham Forest and Redbridge, which have been established in order to bring accelerated housing development in areas with high potential for growth. Several areas of growth in the surrounding Local Authorities are within a reasonable walking, cycling or driving distance of the study areas. Most are focused around existing public transport hubs, providing easy access to areas of Epping Forest.
- 2.6 A draft new London Plan was published for consultation during 2017 and the plan is currently being considered by a formal Examination in Public. The existing 2016 plan is still the adopted plan; however the draft plan is a material consideration in planning decisions. The draft plan sets out targets for housing completions for each borough. Those of most relevance to the area surrounding Epping Forest are set out in the table out below.

**Table 2.1 Draft New London Plan ten-year targets for net housing completions (2019/20-2028/29) in surrounding London Boroughs**

<b>Borough</b>	<b>Ten-year housing target</b>	<b>Annualised average</b>
Waltham Forest	17,940	1,794
Redbridge	19,790	1,979
Newham	38,500	3,850
Hackney	13,300	1,330
Haringey	19,580	1,958
Enfield	18,760	1,876

### *Epping Forest District*

2.7 Epping Forest District Draft Local Plan indicates that 11,400 new homes are to be delivered across the district within the period 2011-2033. Key considerations are outlined below:

- A large percentage of development, around 3,900 homes, will be located around Harlow near the northern boundary of the district
- 1,640 homes are proposed for Epping
- 1,190 homes are proposed around Loughton
- 1,580 homes are proposed around North Weald Bassett.

2.8 Hence the impact on the Forest and the three hotspots is liable to increase as a result of the increase on housing provision increasing the need to find suitable ways for providing a resource for recreation while still protecting and enhancing the SAC.

### *Visitor survey*

2.9 A visitor survey was undertaken during 2017<sup>1</sup> and updated in 2019, which comprised both visitor tallies at several fixed survey points and face to face interviews with visitors. The surveys were undertaken with the aim of:

- identifying where visitors originate from in order to understand where new development may result in an increase in use of the SAC
- understanding the activities taking place across the Forest; and
- informing mitigation measures.

2.10 A key purpose of the visitor survey was to identify the 'Zone of Influence' (ZOI), which is based on the collection of postcode data and where the 75<sup>th</sup> percentile of visitors comes from. The ZOI is used to inform Local Plan policy development related to the determination of planning applications and the provision of Suitable Alternative Natural Green Space (SANGS).

2.11 The ZOI for Epping Forest extends to 6.2km (6.36km in 2019), covering 13 local authority administrative areas. However, 50% of all visitors who were questioned as part of the 2019 survey lived within 2.6km of the location in the Forest where they were interviewed.

### *Visitor impact*

2.12 Both the 2017 and 2019 visitor surveys identified several potential impacts, both direct and indirect to the protected nature conservation interest of the Forest which can arise from high visitor and increasing numbers and that must be addressed in developing mitigation proposals.

<sup>1</sup>Epping Forest Visitor Survey 2017, Footprint Ecology

2.13 These are summarised below and described in more detail in the paragraphs following the table.

**Table 2.2 Potential impacts of visitor pressure**

<b>Nature of Impact</b>	<b>Cause</b>
<b>Physical Damage</b>	
Habitat loss	Soil erosion, vandalism including increased wildfire incidents
Species loss and species changes	Soil enrichment from dog fouling Harvesting, for example fungi and deadwood
Soil structure damage	Compaction and erosion and loss of microbial activity
Changes to the aesthetic appearance of the Forest landscape	Creation of desire lines Provision of visitor facilities
<b>Wildlife disturbance</b>	
Reducing rare species productivity and wildlife abundance	Disturbance to ground or low-nesting birds Harvesting impacts and other taking of plants, flowers, fungi Increased light pollution – e.g. affecting insect behaviour, reducing abundance
<b>Hazard introduction</b>	
Increased safety costs	Restricting positive management due to managing risks and consequences of anti-social behaviour, fire and vandalism, requirements for more tree safety works
Increased and accelerated introductions of novel and/or pathogenic organisms	Such as tree diseases like <i>Ramorum</i> from contaminated soil on visitors and their dogs
Increased and accelerated introductions and spread of introduced, alien plants and animals	From garden waste and deliberate dumping of other material
<b>Conflicts with sustainable management</b>	
Pressures on essential management regimes	e.g. difficulty in sustaining or re-establishing traditional grazing due to interactions with people, dogs, vehicles and roads

2.14 Trampling, compaction and wear have been identified as a major issue across large areas of the site and particularly prevalent at the hot spot sites which are included within the study. This compaction results in a direct loss of vegetation, impacts on the beneficial function of mycorrhizal and other fungal communities, direct damage of tree roots and reduction in the permeability of the soil to rainfall. A key impact on the nature conservation interest of the Forest is the damage that this causes to the roots of ancient trees, a vital component of the SAC and the subsequent loss of vigour and even death of the tree. It is useful to understand how visitors are using the site to assist in developing the most appropriate and effective design and management interventions.

2.15 The survey found that more than three-quarters of interviewees travelled to the site by car, highlighting the importance of the sites' 52 car parks as hubs of activity, with high potential for compaction and erosion in the immediate surrounding areas as visitors set out into the site. In the 2017 survey the Connaught Water Car Park on the Chingford site showed the highest percentage of visitors arriving by car, followed by the Pillow Mounds Car Park at High Beach.

- 2.16 The surveys found that dog walking was the most common activity undertaken at the site (49% of interviewees in the 2017 survey carried out in late Oct/Nov, dropping to 39% in the 2019 survey carried out in September). High numbers of visitors using the site for dog walking has the potential to impact the site in several ways. Dog fouling increases soil fertility and causes nutrient enrichment, with a subsequent adverse impacts on wildflowers through the loss of species and replacement with rank vegetation. Where dogs are not adequately controlled there is also high potential for disturbance to wildlife, for instance ground and low nesting birds. Dogs have an impact on ponds and waterbodies, causing erosion of banks, loss of marginal vegetation and turbidity in the water which can lead to loss water plants, such as the suspected loss of water violet from two of the Forest's ponds. Dogs can also disturb nesting water birds such as grebes, coots, moorhens and duck. There is also potential for conflict between dogs and livestock, which can limit the options available to manage the site through the traditional and essential grazing regimes.
- 2.17 Dog walking is generally undertaken year-round, with the vast majority of dog walkers (93%) visiting equally all year and not visiting at a particular time of year. Dog walkers were found to make the highest proportion of daily visits when compared to other recreational activities. The results also suggest that on average dog walkers travel the shortest distance from home to reach the site when compared to other users. On average the length of their walk was 2.2km which is close to the national average established by visitor surveys of 2.5km.
- 2.18 Walking is the second most common reason to visit the site (22% (2017) and 30% (2019) of interviewees), after dog walking. The surveys found that 8% of interviewees were visiting the site to cycle or use mountain bikes. Cyclists were particularly notable at Pillow Mounds, accounting for 36% of those interviewed. Jogging/running was found to account for only 5% of visitors, however this group tend to visit quite frequently when compared to those undertaking other activities, with 71% of joggers/runners visiting one to three times a week.
- 2.19 The survey found that interviewee's choice of route through the site was largely determined by previous knowledge of the area and the type of activity being undertaken. Few interviewees indicated that they based their routes on marked trails, interpretation or leaflets.
- 2.20 The survey indicates there is significant variation in the length of journey within and through the site between the various activities undertaken. Cyclists were found to take the longest routes through the site. Dog walkers were found to take the shortest routes within the site when compared to other users such as joggers or walkers, indicating the potential to develop 'sacrifice' areas or dedicated dog walking sites at key locations.
- 2.21 Groups of visitors riding horses made up a small proportion of the total number of groups recorded during the 2017 survey, however, such activity still has the potential to cause negative impact through trampling and erosion. Of the 1065 groups of people entering or leaving the site, seven were on horseback. Of the 743 groups of people recorded passing by the survey locations but not entering or leaving the site, 24 were on horseback (it would be reasonable to assume most of these had entered and left the site at other locations). The majority of visitors on horseback that were interviewed tended to visit for more than two hours, 50% visit most days and 50% visit one to three times per week. All indicated they visit year-round.

### Other visitor surveys

- 2.22 As part of the Heritage Lottery Fund-supported Branching Out Project, a 5-year visitor survey was carried out across many Forest compartments and allowed heat maps of visitor numbers and densities to be created for each area. It also provided the estimation of the annual visits which in 2014 was estimated at 4.2M (see above also).
- 2.23 Although these surveys were not examined for the compiling of this report, the choice of the three "hubs", which are the focus of this study, is as a result of the findings of the extensive Branching Out visitor survey work.

### Impacts of Covid-19

- 2.24 Although the effects of Covid-19 pandemic, and the various stages of lockdown that followed, took place at the conclusion of work for this report, it is clear that the impacts have involved the "fast forwarding" of increased visitor pressure on the Forest. Many of the damaging impacts cited

in paragraph 2.12 above have become more apparent and the diversion of resources towards increased littering and vandalism was highlighted. The inability of current resourcing (see also paras 2.27 and 2.28 below) and facilities to manage this increase in numbers, and also the changing demands of visitors (e.g. significant increase in cycling, including mountain biking), has been clear.

## Internal client interviews

- 2.25 In addition to the documentary research described above, interviews were conducted with internal staff members from the City of London Corporation in order to gather information on their understanding of the key issues that require addressing as part of the project and any mitigation opportunities that have already been identified. Interviewees were selected to ensure that a cross section of interests within the management team is represented and taken into consideration while developing proposals.
- 2.26 The staff members listed below attended interviews during March 2019:
- Jaqueline Eggleston, Head of Visitor Services
  - Geoff Sinclair, Head of Operations; & Fiona Martin, Management Planning Assistant
  - Jo Hurst, Business Manager
  - Martin Newnham, Head Forest Keeper
- 2.27 The interviews were structured by employing three key themes and areas for discussion:
- Impact
  - Resources,
  - Other information & considerations.
- 2.28 While the interviews were undertaken individually, the findings are summarised as key emerging themes from the whole interview process
- 2.29 In addition, the following provided information throughout the project:
- Paul Thomson, Superintendent of Epping Forest
  - Jeremy Dagley, Head of Conservation in the Open Spaces Department - Epping Forest, particularly on the importance of the SAC features and attributes
  - Neil Fuller, Natural England.

### ***Impact from recreation***

- 2.30 There was a strong awareness of the need to accommodate public recreation and enjoyment of the Forest, through obligations set out in the Epping Forest Act, while needing to mitigate the impact of those visitors on the SAC. However, in addition to the key list of issues and impacts identified in the visitor survey, interviewees provided more detail regarding impacts at several specific areas on site:
- There is a proliferation of informal paths and trampling at Chingford Plain.
  - In more accessible 'urban' areas, there are a cultural issue with some visitor's attitude towards fires, barbeques, litter and picking wild produce.
  - There are issues at Chingford Plain with illegal raves and traveller occupation and there may be a need to reconfigure some car parks with bunds, ditches and posts.
  - Issues at Leyton Flats included the poor condition of two of the car parks along Whipps Cross Road, lack of visitor facilities, compaction and erosion of the edge of Hollow Lake, a number of desire lines causing loss of habitat on the open acid grassland and reports of range of anti-social behaviour issues in the more wooded portions of the site.
- 2.31 Several issues and opportunities relating to visitor facilities were identified:

- At popular locations, such as Chingford Plain, there is excessive trampling and the spreading out of compacted areas of soils over both grassy areas and under ancient trees, which is likely to get worse with increased visitor pressure. Suggested solutions were for better direction of visitors through clearer signposting and more clearly defined paths.
- There is a lack of toilets and catering facilities across the Forest.
- There needs to be a strategic assessment of car parks and their capacity and locations. Several car parks need to be better signposted and promoted, with better connectivity to existing facilities. (for example, Honey Lane to High Beach, Bury Road to The View at Chingford Plain),
- There needs to be a strategic assessment of the location of visitor centres.

### **Resources**

2.32 Each participant was asked their views on current resources available across the Forest and what additional resources may be required to manage increasing pressure from visitor numbers in the future. The discussions identified a need to develop additional income from visitors while also taking action to limit ecological impact. The major themes that emerged are outlined below:

- Due to a decline in City Corporation funding and pressure on budgets throughout the organisation there is a need to look at additional income streams from visitors.
- Potential new funding initiatives identified by interviewees include large scale events and car parking charges, with the intention that the revenue would help to fund conservation work and visitor management.
- It was suggested that the proposals contained in EFDC Interim Mitigation Strategy will need to be reassessed to confirm that they provide sufficient funds to mitigate the impacts on the SAC in the light of an expected increase in visitor numbers in the future.

### **Other information and considerations**

2.33 Additional points that were put forward for consideration included:

- An overall Management Plan was approved by the Trustees in November 2019 and this contains strategic objectives for the Forest and will apply from 2020. It was noted that the gathering of new evidence and background information is required.
- However, it was highlighted that many specific policies and strategies for the management of the Forest are not yet written or finalised, for instance in relation to dog walking, cycling, visitor facilities, paths and benches.
- There was a desire amongst several interviewees to make more and better use of the buffer land to the north, (for instance Warlies Park) to be used for recreation and large events to take pressure off existing hot spots and absorb new visits. However, it should be noted that any such plans would need to be carefully planned to assess the likely impact on these sites, including but not limited to their ecological value.
- It was suggested that more strategic thought should go into how the Forest fits into the wider Green Infrastructure network (such as Lea Valley, Walthamstow Wetlands & Hainault Forest).
- Interviewees took the opportunity to reiterate that dogs are a key issue, especially in sensitive but popular locations like Connaught Water (dogs in water, conflict with wildlife/children/other dogs, etc) and urban areas to south. A clear need was expressed to adopt new approaches to cater for dog owners but also to protect the SAC.
- Although there are issues with mountain bikers (speed, riding off paths) there also could be opportunities to promote sustainable modes of travel to visit the Forest from north to south, and for cycling within the Forest, but any such cycling strategy, possibly part of a Forest Transport Strategy, would need to be assessed in the light of potential impacts on the SAC.

2.34 In conclusion it appears that an overarching strategic approach to the management of the Forest is needed to balance recreation and visitor management with protection of the SAC, and including topics such as zoning of activities, dog control, car parks, paths and benches as well as environmental considerations.

## Site assessment

- 2.35 Site surveys were undertaken at the three sites (High Beach, Chingford Plain and Leyton Flats) during March 2019. An access and recreation assessment was undertaken by an access specialist and a field assessment was also undertaken by an LUC ecologist. The following section summarises key findings from each survey. Full survey notes and annotated maps from the access and recreation assessment are included in **Appendix 1**. Maps and target notes from the ecology survey are included in **Appendix 2**.
- 2.36 The focus of the study is on the quality and condition of the qualifying features of the SAC, and the impact of visitor use of the area on those. However, consideration has also be given to the value of the mosaic of habitats that are found across the three sites, whether within or adjacent to the SAC boundary.
- 2.37 The approach for the ecological walkover survey was to undertake a summary assessment of the condition of the features that are of particular importance to Epping Forest around the three hotspot sites included in the study. Areas that appear to experience the most notable impact on habitat quality from visitor pressure and current management approach have also been highlighted and several opportunities for improvements identified. This information has been used to provide areas of focus for design and management proposals, which may comprise directing visitor movement away from particularly sensitive areas or 'formalising' access within areas of interest to improve access while limiting potential harm.
- 2.38 The Forest as a whole comprises a range of habitats including high forest, scrub, areas of bog and more open areas with semi-neutral and acid grassland. The Forest's ancient trees have been of particular consideration in developing mitigation proposals. Ancient trees can provide important habitat for a range of species. They often host significant amounts of dead and moribund wood and provide important habitat for stag beetles and other saproxylic species. Ancient trees can be particularly vulnerable to soil compaction and reducing this will be essential to maintaining the health and vigour of important ancient trees nearby areas with heavy recreation use.
- 2.39 For the purposes of the survey, the areas immediately surrounding the three sites were divided into parcels with different characteristics/habitats. These are indicated in the site notes and maps included within **Appendix 2**.

### Summary findings High Beach

- 2.40 High Beach is an attractive and popular destination, with an area of grass covered pillow mounds on a ridge providing spectacular views to the west and surrounded by woodland containing many of the ancient trees that are a key component of the SAC designation. Adding to the attraction for many is the Kings Head public house at the heart of the site, the Epping Forest visitor centre and Field Studies Centre. Other visitor facilities include a toilet block and a mobile catering outlet on the northern tip of the car park.
- 2.41 The site assessment identified the following key issues and constraints at High Beach.

**Table 2.3 Access and ecology issues at High Beach**

Issue	Impact on ecology and the SAC
<p>Visitor activity is concentrated in a relatively small area on the pillow mounds and on the slopes running down westwards from the ridge. This has resulted in high levels of erosion and degradation of acid grassland at Pillow Mounds and on the slopes below them.</p> <p>While this has created valuable habitat in its own right for several invertebrates, such as solitary bees, this needs to be controlled particularly where in close proximity to ancient trees.</p>	<p>Loss of acid grassland and potential loss or degradation of ancient trees on the edge of the grassland</p>
<p>The Car park is at full capacity at peak times and parking overflows onto the adjoining roads.</p>	<p>Potential damage to tree roots and hence tree health alongside the road.</p>

Issue	Impact on ecology and the SAC
The visitor centre is 'tucked away' with no obvious access from the car park, with little opportunity for messages regarding conservation and responsible use of the site to be conveyed.	Lack of visitor awareness of the sensitivity of the site and how they can minimise harm to the ecology.
The 'easy access' gravel surfaced footpath through woods at High Beach is inadequately signposted and as a result is under-used. In addition, the path passes close to and even under the spread of a number of ancient trees, potentially creating a hazardous situation and requiring more surgery to retain public safety than is good for the wellbeing of the trees.	Greater awareness of the path could take pressure away from unprotected areas.  Proximity to ancient trees could lead to excessive tree management to reduce risk to users.
There are several blocks of woodland containing many ancient trees that are in close proximity to areas with high recreational use. This includes a large area of woodland between Claypit Hill and Pillow Mounds; and woodland south of High Beech Loughton (Road).	Erosion of soil in root area exposes roots, damaging them and reducing their efficiency. Compaction can also arise as a result of repeated foot fall and impacts on the beneficial function of mycorrhizal and other fungal communities, direct damage of tree roots and reduction in the permeability of the spoil to rainfall
There are steep fragile slopes below Pillow Mounds which are subject to disturbance and erosion, in particular from mountain biking and horse riding.	As above, loss of some grassland habitat, although some bare ground is a valuable habitat for some invertebrates.
Speakmans Pond has issues with New Zealand pygmy weed <i>Crassula helmsii</i> . an invasive species.	Potentials degradation of opportunities for native species.
There is an area of bog located to the south west of the car park and north of Wellington Hill that appears to have reduced in extent due to limited management. This bog has been an important site for sphagnum mosses and other plants of heath and mire habitats that are important components of the wet heath SAC protected habitat. There is potential for this area to be improved and made into an area of interest for viewing	Currently lack of species variety. Restoration could bring back plants and heath and mire habitats that are important components of the wet heath protected environment.  With careful access control, could potentially help to draw visitors away from more fragile parts of the site and hence help preserve those areas.
The site is used for off-road cycling	Can create erosion and compactions which potentially damages ancient trees.

2.42 There are several areas of lower quality woodland and areas, with fewer ancient trees, that could be enhanced to direct footfall away from more sensitive areas. This includes the accessible footpath to the north of the visitor centre; and woodland to the south of the visitor centre between High Beech (road) and Epping New Road (A104).

2.43 Illustrations of access and ecology issues at High Beach are shown in **Figure 2.1**.

**Figure 2.1. Illustrations of access and ecology issues at High Beach**

	
<p>Eroded slope below pillow mounds, subject to heavy footfall.</p>	<p>Horse riding within areas of woodland.</p>
	
<p>Car park and pub at the edge of pillow mounds, with desire lines leading off into the site.</p>	<p>Riding motorised bikes at Pillow Mounds.</p>
	
<p>Heavily worn grassland.</p>	<p>Ancient trees nearby areas with erosion from heavy recreational use.</p>

	
<p>Boggy area with pioneer trees in the background.</p>	<p>Ancient trees and existing surfaced pathway.</p>

### Chingford Plain Hub

- 2.44 The Chingford Plain as the name signifies is largely a flat plain but rising to the south towards a busy road (Rangers Road, the A1069) and the Visitor Centre, the historic Queen Elizabeth's Hunting Lodge, Butlers Retreat café and a Brewers Fayre public house and hotel (the Royal Forest Pub). South of Rangers road is the Barn Hoppitt car park, part tarred and part extended over grass in summer, with a private club, the Connaught Club to the south of that. To the west the plain is bounded by the Bury Road with a public golf course to the west of that. The golf club house and car park and a larger car park for the public open space are on the east side of Bury Road. Another car park lies at the eastern end of the plain, off Rangers Road and serving a lake, Connaught Water, which is a popular attraction.
- 2.45 The landscape is varied with open grassland, (some species rich acid grassland), scrub areas, woodland containing a number of ancient trees, a stream, Lake (Connaught Water) and some smaller ponds. The eastern area of the site and the area to the north and north east, including the woodlands, Connaught Water and acid grassland are covered by the SAC designation.
- 2.46 The site is heavily used not only by individual users, but also for events generally located in the flat grassland next to the Bury Road car park and outside the SAC. The visitor centre is relatively recent; the Hunting Lodge is used for small events and the Butlers Retreat is a café, all under the control of the City Corporation. The Royal Forest Pub is privately owned.
- 2.47 The site assessment identified the following key issues and constraints at Chingford Plain:

**Table 2.4 Access and ecology issues at Chingford Plain**

Issue	Impact on ecology and the SAC
There is limited parking opposite the visitor centre (Barn Hoppitt), leading to informal roadside and verge parking, but also likely under-use of the visitor centre itself.	Potential compaction of root zones and damage to roadside trees in the SAC.
There is also limited parking at Connaught Water, resulting in parking along the verge of Rangers Road at busy periods.	Potential compaction of root zones and damage to roadside trees in the SAC.
Connaught Water is a popular destination and a path has been worn down from the visitor centre to the lake, which is muddy in wet conditions and results in a wide area of destroyed grass as visitors deviate to avoid wet areas.	Destruction of acid grassland in and out of the SAC.
Bury Lane car park is poorly configured, untidy and unwelcoming. It appears under-promoted and therefore under-used, despite having significant capacity that could accommodate large numbers of visitors.  There are no toilets attached to the public car park.	If the Bury Road car park is not seen as a suitable parking area for the site, there will be increased pressure on the Barn Hoppitt and Connaught Water car parks

Issue	Impact on ecology and the SAC
	and the adjoining roads, all within the SAC.
There is no easy, attractive or obvious walking route between Bury Lane car park and the visitor centre/The View. The current route is grassy and muddy in places and because it is not defined it has resulted in the creation of numerous and unsightly desire lines. In addition, the visitor centre and associated facilities are not visible from the car park.	The desire lines destroy the grass along the route and pass close to some large trees, potentially causing damage to the tree roots and hence affecting the health of the roots. While the route is not in the SAC, making this area more attractive may result in less pressure on the areas within the SAC.
The area is popular with dog walkers leading to the potentials for eutrophication, particularly around the car parks, if dog waste is not picked up and properly disposed of.	Environmental impacts include eutrophication of water courses, damage to riverbanks and nitrification of vegetation as well as potentially passing on disease to humans.
There is no coordination of seating areas around the Butlers Retreat, access to the Visitor Centre and to Queen Elizabeth's Hunting Lodge.	Areas of worn grass and eroded ground
The golf course is open and accessible. It appears to be used a lot for non-golfing recreation (dog walking, picnics, walking), with evident conflict and inherent dangers.	While the route is not in the SAC, making this area more attractive may result in less pressure on the areas within the SAC.
There are several examples of unsurfaced paths that run through areas of ancient trees. This includes an area to the east of the golf course adjacent to Bury Road.	Not in the SAC, but any ancient trees warrant protection.
There are several good examples of pollarded ancient trees, including oak and hornbeam, that are located to the west of the golf course.	
The parcel of woodland to the north east of the golf course supports good examples of qualifying features of the SAC.	
There is evidence of erosion around the edges of Connaught Lake, although the path and lake platforms appear to be functioning well and providing good access.	Potential loss of biodiversity.
There are areas of tussock grassland and scrub at Chingford Plain (within the SAC) that provide a useful 'buffer' between qualifying features of the SAC and areas subject to high levels of recreation.	While not necessarily representative of the qualifying features of the SAC, the area still provides a varied habitat for wildlife and interest for visitors.
There are several areas of open space that are outside the SAC boundary that may potentially provide good opportunities to direct recreational use away from more sensitive areas within the SAC. This includes areas around the golf course, and parcels of nutrient enriched grassland around the visitor centre.	Potentially divert pressure away from the SAC

**2.48** Illustrations of access and ecology issues considerations at Chingford Hub are shown in **Figure 2.2**.

**Figure 2.2. Illustrations of access and ecology issues at Chingford Plain**

	
<p>High potential for improvements at the Bury Lane car park.</p>	<p>No obvious route towards the visitor centre from the Bury Lane car park.</p>
	
<p>Start of path from Bury Road to the visitor centre.</p>	<p>Worn desire line between the visitor centre and Bury Lane car park.</p>
	
<p>Barn Hoppitt car park is heavily used and the overflow impinges on acid grassland.</p>	<p>Eroded acid grassland land on the extension to the Barn Hoppitt car park.</p>



Crossing to visitor centre from Barn Hoppitt car park.



Eroded seating area outside Butlers Retreat.



Path from Butlers Retreat towards Connaught Water.



Path from Connaught Water up hill to the visitor centre.



Stream flooding over key access paths from the north of the Forest.



Crossing point on path between Bury Road car park and Connaught Water.

	
<p>Recently surfaced path heading west from Connaught Water to the visitor centre and other access routes.</p>	<p>Board walk as part of improved access and bank protection around Connaught Water.</p>

### Leyton Flats

- 2.49 Leyton Flats is an open area of flat ground in the southern reaches of Epping Forest, close to, and almost surrounded by, heavily populated residential areas with most of the Flats within the London Borough of Waltham Forest but managed by the City Corporation as part of Epping Forest. The borders of the Flats themselves are Whipps Cross Road to the south-west, Lea Bridge Road in the west, Snaresbrook Road in the north and the Central Line railway cutting and Hollybush Hill (road) to the south and the east. The private grounds of Snaresbrook Crown Court are in the north-east corner as is the Eagle Pond, which is part of Epping Forest. The site also includes two wooded areas south of Whipps Cross Road either side of Whipps Cross Hospital.
- 2.50 Leyton Flats proper comprises about 75 hectares of land, of which 38 hectares is flat open grassland including some valuable acid grassland, 20 hectares woodland, largely oak and containing a number of ancient trees and the rest mainly ponds or wet areas. Hollow Pond is the largest pond and is a popular attraction. The whole lies on the Boyn Hill Terrace of pebble gravel and alluvium, for which past workings have produced the pits and spoil heaps to be found in parts of the area. The majority of the Flats north of Whipps Cross Road are part of the SAC. The area to the south of Whipps Cross Road and a small strip between Hollow Pond and the road are not.
- 2.51 Visitor facilities are sparse, but there are two car parks, one to the north and an informal one off Whipps Cross Road to the south. This contains a small food outlet. There is also a separate small car park further to the east next to a facility from which boats can be hired. A new transport hub, the Mini Holland development, has recently (2019) opened at the southwest corner of the Flats at the junction of Whipps Cross Road and Lea Bridge Road. Despite the lack of facilities, the Flats are heavily used by visitors, and with potential for additional users coming from proposed development of residential accommodation on part of the hospital site.
- 2.52 The site assessment identified the following key issues and constraints at Leyton Flats:

**Table 2.5 Access and ecology issues at Leyton Flats**

Issue	Impact on ecology and the SAC
Visitor infrastructure is generally poor, including very limited parking, only basic refreshments and no toilets.	Improved infrastructure should include improved interpretation to influence visitor behaviour to respect the valuable ecological areas.
There are large numbers of local users accessing the SAC from all directions on foot, rather than solely from a small number of key car parks (as is more the case at High Beach and Chingford Plain).	Makes it difficult to manage access to avoid sensitive ecological areas such as the acid grassland.
There are significant areas of erosion adjacent to Hollow Pond, some of which is wooded. It would be beneficial to	Loss of marginal and ground vegetation and hence reduction of biodiversity.

Issue	Impact on ecology and the SAC
provide more defined pathways and designated viewpoints over the lake.	Compaction over and direct damage trees roots leading to degradation of tree and health and potential loss.
There is significant footfall resulting in lots of informal paths across the open areas at Leyton Flats, with evidence of the grassland being very worn in places. These open areas comprise acid grassland and heathland, with several areas of semi-neutral grassland to the south of the site adjacent to Whipps Cross Road. There is evidence of gorse and scrub clearance in places.	Loss of valuable acid grassland and heath.
Unmanaged undergrowth and scrubby vegetation in the northern part of the area allows opportunities for anti-social behaviour. However, the area also contains ancient oak trees that are of key importance to stag beetle.	Opportunity to reduce scrub levels and increase biodiversity through the variation in habitats.
There is no direct or inviting walking route between the hospital and Leyton Flats/the SAC.	Opportunity to increase access to the environment for health and education
The only promoted route at present is the Hornbeam Trail which is inconsistently waymarked and extends northwards away from Leyton Flats.	Directing access to areas that can withstand the pressure would benefit more sensitive areas.
There is opportunity to manage scrub in the area outside the SAC between Whipps Cross Road and the hospital to create open glades and paths to direct users away from more sensitive areas.	May reduce pressure on the SAC and increase biodiversity in the area by providing a greater variety of habitats.
The car park to the south east of Hollow Pond lies partially within the SAC and may benefit from re-configuring.	From an ecological perspective it would be beneficial for the mature oaks to be retained.

2.53 An illustration of access and ecology issues at Leyton Flats is shown in **Figure 2.3**.

**Figure 2.3. Illustrations of access and ecology issues at Leyton Flats**

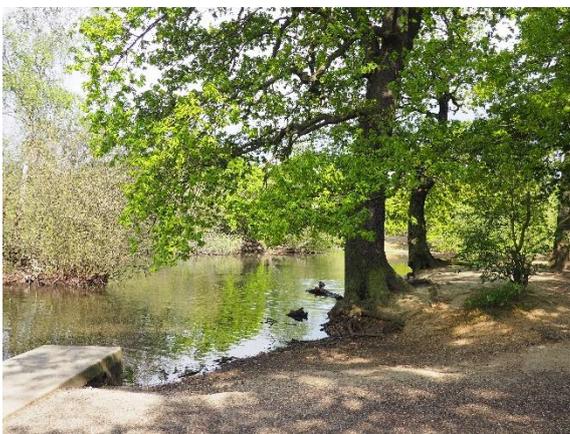




Shrubby growth next to paths reducing visibility.



Boat house and falling water levels. Compaction around tree roots.



Bank erosion exposing tree roots and preventing growth of marginal vegetation.



Facilities for disposing of bagged dog waste.



Erosion and lack of marginal vegetation along the edge of Hollow Pond.



High levels of erosion on and widening of paths near Hollow Pond.



Gorse and acid grassland in open areas at Leyton Flats.



Areas of worn grassland in open areas at Leyton Flats.

## 3 Overall Proposals

### Introduction

- 3.1 The preliminary stage of the project has provided the opportunity to develop a thorough understanding of the key issues and opportunities at each site. While each site presents its own specific challenges, the recurring themes that need to be addressed by the proposals are:
- Visitors do have an impact on the SAC in a number of different ways depending on their activities. According to the visitor surveys carried out in 2017 and 2019 the key activities are:
    - Dog walking
    - Walking
    - Cycling/mountain biking (particularly at High Beach)
    - Running
    - Family outing
  - The number of visitors is likely to increase in the near future through population growth and as a result of a number of housing projects in neighbouring areas.
  - There is a need to try and manage the movement of visitors to direct movement away from ecologically sensitive areas and ancient trees within the Forest as a whole and also locally within each site.
  - Visitor facilities at each site require some considerations (either location or function), but what is provided also needs to be considered as part of a coordinated Forest wide, or even regional, strategy.
  - While the emphasis of the proposals provided in this report are focussed on the protection of the SAC, solutions will be required that meet ecological aims and recreational needs in order to be sustainable.

### Overall principles

#### *Strategy*

- 3.2 The proposals put forward for each site are based on the following principles:
- Understanding the nature of the Forest, or specific site, and its environmental significance and the visitor impact on that
  - Where possible moving visitor activities from sensitive areas, or protecting those areas
  - Repairing existing damage and seeking opportunities for environmental enhancement
  - Looking for opportunities to improve visitors' experience without attracting more than the site can cope with.
- 3.3 While the brief for this report is to look at the three sites, the same principles can be applied to the Forest as a whole, or even looking at the Forest as a component of the surrounding region. This is particularly important when looking at the source of potential visitors, both now and after future phases of housing development and where those visitors can be best accommodated in the Forest or whether there are more suitable areas outside the Forest which would either provide additional capacity or be alternative destinations to reduce the pressure on more fragile sites, such as High Beach. The proposals for housing development are likely to not only give rise to an

increased number of visitors but also ones who are not familiar with the Forest and its sensitivities.

3.4 While it may be relatively straightforward analytical exercise to work out where visitors should go to provide them with an experience that is attractive and meets their expectations but which does not jeopardise the ecology of the Forest, making sure that they choose to go there is less straightforward. However, the following are considerations:

- Understanding the requirements of different types of users, eg easy access for users of wheelchairs and buggies, uneven topography for mountain bikers, suitable areas for walking dogs, and providing those facilities where appropriate
- Providing a suitable infrastructure, car parks, toilets, catering at a level appropriate for the capacity of the site
- Making sure that visitors are aware of the existence and nature of the site
- Providing suitable controls, eg traffic controls, limiting car park sizes, to protect sensitive areas as well as visitor safety.
- Making sure that sustainability, global ecology and climate change are a key component in the analysis and decision-making process.

3.5 For this project this strategic approach follows the site specific work and will form part of a future Sustainable Visitor Access Strategy which in conjunction with a Forest Transport Strategy can be used to provide a coordinated approach to providing and managing access to the Forest while still protecting the valuable ecology of the area.

3.6 Without the overall Sustainable Visitor Access Strategy, there are some elements of the site-specific proposals that cannot be detailed at this stage, particularly the size and location of car parks. These items have been indicated in the following paragraphs and tables. Others however respond to situations specific to the site and hence can be described in some detail.

#### *Specific measures*

3.7 For each site there are common elements:

- SAC considerations.
- Why visitors visit the site and what they do there.
- Car parks
- Visitor facilities including centres for information, ranger service, toilets
- Catering
- Paths and access provision, including board walks and bridges if needed
- Signage and waymarking

#### *SAC considerations*

3.8 Portions of all of the three sites are contained within the SAC and/or designated as an SSSI and hence management of those sites and any proposals need to be implemented with an awareness of the implications on the SAC and on the need to protect and enhance the SAC as a whole and the particular assets that give rise to the designation. In particular these include ancient trees and acid grassland.

3.9 A Special Area of Conservation (SAC) is defined in the European Union's Habitats Directive (92/43/EEC), also known as the Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora and hence is protected through a number of regulations as described in Appendix 3.

3.10 The key consideration for this study is whether the proposals will result in harm upon the SAC which would be considered a Likely Significant Effect. In such an instance, an Appropriate Assessment would need to determine whether, in light of avoidance and mitigation measures the proposals would result in adverse effects on the integrity of the Epping Forest SAC. Crucially, the distinction will need to be made between those measures considered to be avoidance or

mitigation, and those considered to represent compensation. It is generally accepted that the physical loss of part a European site (for example through car park expansion) which supports the qualifying features or has the potential to do so in the future, would require compensation, i.e. the provision of a greater area of comparable habitat elsewhere. **Compensation cannot be relied upon at the Appropriate Assessment stage under the Regulations.** Indeed, if compensation is required to offset an impact on Epping Forest SAC, it would automatically fail the test of integrity. Compensation can therefore only be relied upon as part of the Derogation tests detailed above. It will therefore be critical to understand to what extent the measures proposed represent avoidance/mitigation or compensation. It is recommended that this is agreed with Natural England through the project consultation process.

- 3.11 The proposals to date have been discussed with Natural England, particularly where recommendations have been made to provide surfaced paths within the SAC, effectively removing an area of habitat equal to the surface area of the path from the habitat through which the path passes from the SAC. However further assessment and negotiations will also need to be carried out at the stage where the proposals are drawn up in more detail.
- 3.12 As well as protecting the designated SAC area, the environment of the Forest also needs to be protected as a requirement within the 1887 Epping Forest Act.

#### *Reason for visiting the site*

- 3.13 Visitors will visit a particular site for a number of reasons:
- Specific attraction/s
  - Easy access to the site, location
  - Good accessibility within the site
  - Suitable for the visitor's planned activity
  - Good facilities
  - Specific events
- 3.14 For the Forest the overall attraction is of a natural environment with a variety of habitats ranging from woodlands filled with majestic ancient trees, open grassy plains and fields, and expansive views. There are also specific attractions like Connaught Water or aspects of the Forest that attract a particular type of users, eg the varied topography at High Beach and off-road cyclists.
- 3.15 It is important to managing the site and visitors use of the site if these factors and their interrelationship are understood and these issues will be covered below as they apply to each of the three sites. However, they also need to be considered in the Sustainable Visitor Access Strategy to provide a coordinated plan for the Forest as a whole.

#### *Car parks*

- 3.16 The 2017 and 2019 visitor surveys indicated that over three quarters of visitors to the Forest travelled by car and hence make use of car parks, or overflow onto roadsides when the car parks are full.
- 3.17 Points to note about car parks are covered in the following paragraphs.
- 3.18 **Sustainability:** In this day and age with the need to reduce energy use and the burning of fossil fuels in particular the use of cars to travel to recreation sites should be discouraged, and hence the parking capacity reduced. However, until public transport networks have the capacity and coverage to provide an alternative means of travel which is perceived as being as convenient to users (eg in Central London), cars will remain the transport of choice, some say necessity, for many. Measures to take to encourage sustainable travel to the Forest could include liaison with public transport providers to improve services to the Forest and to the key features, publicity for those services, the provision of cycle facilities at entrance points and charging points for electric cars in the car parks.
- 3.19 **Location:** From a user's viewpoint, car parks need to be as close to the attraction as possible, and with easy access to the point of their visit, either from preference or necessity for those with limited mobility. Other factors which need to be considered include traffic consideration, impact

of the car park on its surroundings, both as a visual intrusion and for the traffic around it and other constraints, both natural and legislative (eg the SAC). For a car park serving multiple attractions at different points on the site, such as the Bury road car park on Chingford Plain, the optimum location will have to be a balance of various factors.

- 3.20 While the car parks for the three sites that form the subject of this report are all in place, their locations within the sites and relative to features on those sites, and the impact that has on access and visitor movement within those sites are considered in the proposals for each site.
- 3.21 The location of car parks within the Forest and the relationship between that and the distribution of visitor activity will form part of the Sustainable Visitor Access Strategy. That may also have some impact on car parks on the three sites and hence some of the proposals for those car parks are conceptual at this stage with further clarification being possible once the Strategy has been produced.
- 3.22 **Capacity:** For major attractions such as Connaught Water, there will always be pressure on the available spaces and hence overparking on verges etc outside the car park at peak times. Increasing the car park capacity can reduce pressure, but if the draw of the attraction is high, the increased capacity will probably be taken up until so many people visit the site that it reaches saturation point and starts to lose its attraction. If car parking space is constrained to below the saturation point, either as a deliberate measure to limit visitor numbers, or as a result of other factors limiting the dimensions of the car park, measures will need to be taken to control overparking on surrounding verges and other open space accessible to cars. Such measures can include wooden 'Dragons' teeth' installed on the edge of roads as in Richmond Park or traffic regulations, whichever is appropriate and would be effective for each situation.
- 3.23 Capacity could potentially be a factor in directing visitors to particular sites, in that if there are two sites that are otherwise equally attractive, then that with the greater car parking capacity and facilities would probably attract greater numbers. Again, this is a factor which will be explored in greater depth in the Sustainable Visitor Access Strategy.

**Figure 3.1. Dragon's Teeth controlling verge side parking in Richmond Park**



- 3.24 **Facilities:** This is a varied topic ranging from the design of the car park to the provision of electric charging points, depending on the location and function of the car park. Within the Forest the car parks vary from small informal car parks with natural gravel surfaces, as at Leyton Flats off the Whipps Cross Road to larger, tarred car parks as at High Beach and Chingford Plain. The informal car parks can be unobtrusive but if heavily used can suffer from potholing and require frequent maintenance. The formal car parks with a sealed surface are less sympathetic to the informal nature of the Forest, but are more accessible for those with hindered mobility, can allow greater organisation of parking and hence can be more efficient in their use of the space and are more resilient.
- 3.25 Key facilities either in the car park or in other facilities close by are **toilets**, particularly for this that have travelled far to the site, intend to spend some time there or have frequent need for the facilities, families with young children or those at the other end of the age scale. There may be less of a need for toilets in car parks suited to short visits, but even there they could serve walkers and other users of the Forest passing through the car parks as well as the drivers parking there.
- 3.26 Some form of **refreshment** provision, whether a small kiosk or a larger café is always popular in or near car parks but their provision needs to be carefully planned to avoid overcrowding, and to cater for the need for services such as power and water, and toilets. All three sites have some form of catering outlet, small cabins in the car parks at High Beach and Leyton Flats and a café close to the Barn Hoppitt car park at Chingford Plain.
- 3.27 Regardless of the size or location of the car park, **signage** is important to allow visitors to locate themselves and their destinations, to provide guidance on their surroundings, points of interest and the sensitivity of the area and how it should be treated.
- 3.28 **Bins** are useful particularly around refreshment facilities and also as encouragement to dog users to clean up after their animals and bin the waste in an appropriate bin rather than in plastic bags left in the open or not picked up at all.
- 3.29 **Cycling** is a popular activity and to be encouraged and hence provision of cycle racks is needed close to any feature that acts as a destination for cyclists. Where car parks are close to such features, the racks can be positioned in the car parks.
- 3.30 In an area where **electric cars** are increasingly used there is greater requirement for charging points to encourage their use. While the distances travelled by most users of the Forest are not large enough to drain a fully charged car, they can be useful in the more popular car parks.

#### *Facilities and Ranger service*

- 3.31 These include facilities such as toilets, bins, signs etc, which have been discussed above in connection with car parks and will be discussed in the proposals for the three sites, but also more substantial features such as visitor centres.
- 3.32 In principle the latter can range from small units providing relevant information on specific sites to larger units serving the Forest as a whole and providing a range of informational and educational services. Both High Beach and Chingford Plain have a visitor centre, the former advertised and signposted on surrounding roads as the Epping Forest Visitor and the latter appearing on a web search as the Epping Forest Visitor Centre. The Sustainable Visitor Access Strategy will need to assess the overall role of visitor centres and information points in the Forest as a whole and their role in influencing, if any, where visitors go in the Forest and on influencing the way they treat the environment of the Forest.
- 3.33 Although not necessarily linked to visitor centres, the strategy will also need to look at the potential role of a permanent or roving Ranger service. Their main roles would be liaison with visitors, acting as an "SAC ambassador", and helping to advise visitors on how they can still use the sites but in a way which minimises or prevents harm to the valuable assets of the areas they are visiting. In addition, the rangers could also be involved in the practical operations needed to maintain and enhance the environmental value of the Forest as a whole and in the individual sites.
- 3.34 This service could use visitor centre as a base, or alternatively facilities provided to enable their work could also provide some aspects of a visitor centre

- 3.35 For each of the sites the individual proposals cover the role of existing Visitor Centres on that site or in the case of Leyton Flat whether such facilities are needed. In addition, they consider the potential advantage of using an on-site or roving ranger service.

### *Catering*

- 3.36 For many any outing is embellished if it is accompanied by some form of refreshment, whether a snack and a hot drink from a kiosk or a full restaurant meal, and in some cases is the most important part of the visit with the surroundings merely a backdrop to the meal and the social interactions around that.
- 3.37 Hence sites with catering are liable to be more popular than those without and will be an important component in a strategy to influence where visitors do go within the Forest. In principle catering in sensitive areas would be avoided, while it could be used to attract visitors to sites with greater ability to withstand visitor pressure.
- 3.38 Catering facilities themselves will have an influence on their surroundings, not only in the space and services they require for the outlet to function but also in residual impact such as seating areas, additional litter bins, larger car parks to cater for additional visitors and for servicing the outlet.
- 3.39 Thus, the topic needs to be assessed at a strategic level and managed for the three sites as described in the site proposals.

**Figure 3.2. The impact of a small catering kiosk**



### *Paths and access provision*

- 3.40 Paths are a key factor in trying to manage the routes visitors take to avoid damage to sensitive habitats and environments, and to providing them with access to the Forest as a whole and to features on sites. Hence there are two issues to be addressed:
- Providing access to make those features which can withstand visitor pressure, or to features where visitors are wanted, eg to a visitor centre or catering outlet
  - Providing preferred routes that minimise harm to sensitive environments.
- 3.41 A common issue on the three sites is that many of the routes visitors take are self-defined desire lines which in cases pass too close to ancient trees, potentially harming the trees, or spread out across valuable acid grass land causing wear and loss of the habitat. Additional damage is caused if these paths pass through damp areas, become muddy and are widened as users pass around the puddles.
- 3.42 Hence a theme of the proposals for each site is to provide paths, suitably sign posted and waymarked, to guide access along a defined route and in doing so reduce wear on surrounding areas. These routes would also include bridges and board walks etc to ensure good access without additional damage in damp areas.
- 3.43 In doing so there are three points to consider:
- Whether a path is needed
  - If so, what route should be taken?
  - What is an appropriate construction and surface material?
- 3.44 For each of the three sites the principle behind deciding whether a path is needed is based on site evidence, how much damage is caused to the site and particularly to features within the SAC designation and whether that route is liable to continue to be used. An additional factor is whether a path is needed to promote a link between features on a site, a car park to a feature of interest for example, which would help divert visitors from more sensitive areas of the site.
- 3.45 Routes on each site need to consider the sensitivity of the environment of the site, but also be aware of a tendency for visitors to create the straightest and most obvious route to their destination, hence desire lines. If paths are not created on the obvious route, measures need to be taken to 'mask' the obvious route through the placing of obstacles or obscuring the view between the source of the path and its intended destination.
- 3.46 The nature of the path, the level of construction and surface material depend on:
- Level of use and current damage
  - Location within the site relative to environmentally sensitive areas and the SAC boundary, and visitor attractions
  - Nature of the route, whether flat or steep, dry or damp.
- 3.47 Where the level of damage is slight on an existing route, grass that has been flattened but not eroded for example, then a formal path may not be required unless there is a need to divert use away from the existing route. In these cases, the path can consist of a signed and a strip mown in the grass or a path in woodland indicated by wood chippings. There will be a greater need for a more substantial path in a situation where through the level of use and the nature of the ground, the existing route causes substantial erosion to the ground it is passing through. This not only causes damage to the ground and habitat, but also reduces the quality of experience for the visitors, particularly those who have reduced mobility.
- 3.48 The location of any proposed path and its construction needs to take into account both the location and nature of any feature of value, whether ecological or cultural and whether it would be within the boundary of the SAC. If so, a major consideration to balance against other factors is that constructing a surfaced path in the SAC is effectively taking habitat from that SAC and needs to be balanced or more so with suitable habitat being brought back into the SAC. This factor is discussed in more details below

- 3.49 Outside the SAC, the reduction of habitat is less of an issue, but still needs to be considered when deciding upon a path structure and surface. Factors such as the desire to make access easy between destinations might take greater priority, particularly if part of a strategy to concentrate visitor pressures in areas that can withstand that pressure.
- 3.50 Path structures are also affected by the nature of the ground they are passing through, with flat, dry and open areas requiring less structure than damp, constricted or steep areas.
- 3.51 In our proposals for each site there are essentially three types of path proposed depending on the factors outlined above:
- Informal paths, either mown grass strips in grass areas where some indication of preferred route is required to guide visitors or woodland paths outlined with branches and/or bark chippings, but where the level of use is low.
  - Paths surfaces with a natural self-binding gravel, such as Coxwell gravel. More information can be found on such natural materials in a report entitled *Hampstead Heath Pathways Review, Shared Use Pathway Improvements*, prepared by LUC on behalf of The City of London in June 2018. These surfaces are suitable for flatter areas, and in this situation can withstand heavy pressure, as in the Tamsin Trail in Richmond Park, an 11km path constructed in 1994/95 to provide an all-weather shared use path around the edge of Richmond Park, to which around 5million visits are made per year. This particular track crosses a number of streams and damp areas which are bridged with a simple wooden bridge as shown in **Figure 3.4**.

**Figure 3.3. The Tamsin Trail in Richmond Park, Coxwell gravel laid on a flint base**



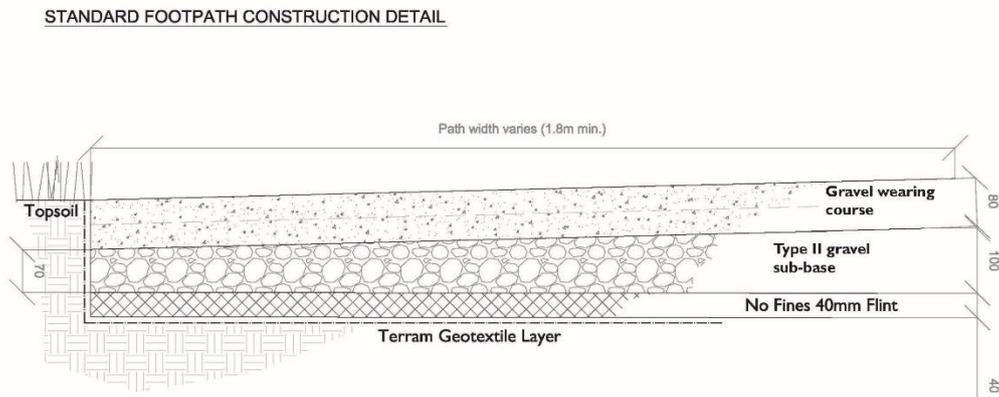
**Figure 3.4. Wooden bridge crossing stream on the Tamsin Trail**

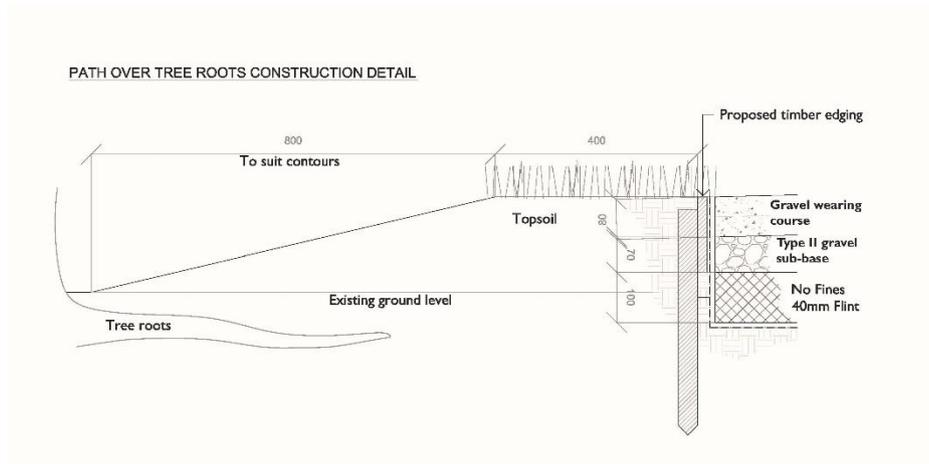


- However, the natural self-binding surfaces do not work well on slopes as they will wash away if water runs down them. While some measures can be taken during the design of the paths to drain any water falling onto the surface as quickly as possible using cambers and side slopes, in any situation where there is heavy wear and a slope, the surface will need to be a sealed surface such as a resin bonded gravel.

3.52 Apart from the surface the other construction details will be similar for the sealed and self-binding paths, with a granular base layer overlying a geotextile membrane and with the binding surface laid on top. In areas of tree roots and to raise the path over damp areas the path can be laid on top of the or even raised above the existing surface for a 'no dig' construction and contained with wooden edging boards, as shown in **Figure 3.5**.

**Figure 3.5. Examples of path construction details**





3.53 Bridges in similar rural areas as the Forest tend to be simple wooden sleeper bridges such as that shown in **Figure 3.4** but may need to be more 'engineered' if needing to be a wider span to cross stream or boggy areas.

3.54 While all these factors will be considered as they apply to each of the three sites, they will need to be considered in even more detail as part of a detailed design when or if the proposals are implemented.

#### *Signage and waymarking*

3.55 Signage and way marking are crucially important in:

- Providing an identity for the site itself and for its relationship with the Forest
- Providing information which is important to advise visitors of the nature and sensitivity of the site and Forest, but also points of interest
- To guide visitors through the Forest and to the points of interest, providing information on the nature and length of routes.

3.56 The Forest does have a variety of physical signs, and information is distributed through a variety of outlets, visitor centres, web pages and leaflets for example. The overall provision of information, the appearance, content and distribution need to form part of a Forest wide strategy, but with site specific provision for the different sites and points of access such as car parks.

3.57 The main component of this project is to protect the SAC and a key approach to achieving that is to guide visitor access along selected paths, away from ancient trees for example and to suggest acceptable ways of accessing and enjoying the Forest while still protecting its ecological value. Both signage and way marking are keys tools in this process to explain and to direct.

3.58 Hence the information and signs need to publicise the value of the SAC, where it is and why it needs to be protected and what are the special features which require the greatest protection, eg ancient trees. While the current site signs do indicate the location of the SAC and SSSI, it would be useful to include on all signs for sites in the SAC, what that means in practice, information on the features that need protecting, and how eg protective fences around ancient trees, temporary fencing on recovering areas of sensitive habitats such as acid grassland.

3.59 In addition, it would be useful to sign areas indicating when visitors are entering or in the SAC, particularly on sites such as Chingford where some areas are in and some out. This could be achieved by having a small sign on paths that enter the SAC and by having a unique SAC brand on any directional signs and way markers within the SAC.

3.60 The proposals for each site will incorporate these general principles but apply them as appropriate to the nature and conditions of those sites.

## 4 Site specific Proposals

- 4.1 For each of the separate sites, a general introduction and key objectives for the site are provided. Individual proposals are then discussed following the common elements outlined in the Overall Proposals, namely:
- SAC considerations.
  - Why visitors visit the site and what they do there.
  - Car parks
  - Visitor facilities including centres for information, ranger service, toilets
  - Catering
  - Paths and access provision, including board walks and bridges if needed
  - Signage and waymarking
- 4.2 These are then followed by a plan providing the location and description of individual projects, which are numbered, the number referred to when discussing an individual project within the context of a common element.

### Summary of costs

- 4.3 Following the plan of the proposed project for each site are two tables. The initial Table provides a summary of the indicative costs for both capital works and any resultant maintenance work, dividing the projects into High, Medium and Low priority. In addition the table also includes the overall costs of both capital and maintenance costs over the expected life of the Local Plan, assumed to be 25 years. Spreadsheets providing more construction details and budget costs follow the summary table. The costs are based on standard rates current in Q3 of 2020 and will need to be adjusted for inflation between now and whenever the projects are carried out.
- 4.4 In addition it is usual to add on a factor for contingencies, which can vary according to the complexity of the project and uncertainty of the work required but a factor of 15% is deemed to be reasonable.
- 4.5 All projects are conceptual and will require detailed design and assessment of the impact on the Forest, and may be subject to a Habitats Risk Assessment to assess for likely significant effects on the SAC. This will add the additional costs of the designers and consultants needed to carry out whatever design work and impact assessment that is required to ensure that the project is well designed and is appropriate for its location within the Forest and SAC.

### Proposals for High Beach

- 4.6 As discussed in **Chapter 2**, the key issues with High Beach are that it is a major attraction but has a sensitive environment, including an area of grass on top of pillow mounds, the slopes westwards from there and a large number of ancient trees on thin sandy/gravelly soils, and the impact of those visitors is high. Hence the proposals aim to:
- Look at ways of reducing the number of visitors
  - Repairing current damage to the environment and protecting the most sensitive features, particularly ancient trees
  - Encourage visitors to use the areas and facilities to the east of the road instead of the areas of grass on the Pillow Mounds and down the slopes from them

- Improving and making better use of the features and facilities that are there.

### **Signage and waymarking**

- 4.7 Signage and information is key to directing and informing users, positioned at access points, both in the car park and at the start of and at changes in direction on preferred routes.

### **SAC considerations.**

- 4.8 Most of the site is included within the SAC with a key feature being the number of ancient trees in the woodlands.
- 4.9 The proposals aim to guide users around these trees at a distance which provides them with protection from the potential of falling branches and protects the trees from root damage through compaction resulting from traffic (people, horses, off road bikes for example) over the roots (2,3). In addition, trees close to paths will be protected by low level fences (around 0.5m) outlining the safe distance from those trees (3) and any compaction from existing use relieved (12).
- 4.10 Additional measures to improve the biodiversity of the site are to restore the Wellington Hill Long Bog (13) and to gradually clear saplings and self-generated trees in the woodland to encourage woodland pasture with ancient trees surrounded by open grassy areas (14). This would not only improve biodiversity but provide additional interest for visitors to attract them away from the heavily eroded grass and slope areas.

### **Why visitors visit the site and what they do there.**

- 4.11 High Beach has fantastic views to the west of the Forest, open areas of grassland around the car park, extensive areas of woodland, a public house on the site and previously another one within easy access, has the Epping Forest Visitor Centre run by the Epping Forest Heritage Trust (EFHT) and Field Studies Council Centres Epping Forest Field Centre. The varied topography also attracts off road cycling and horse riding in addition to pedestrians enjoying the open grassland and walking around the area.
- 4.12 It has a long history as a visitor attraction because of the views and old trees and this goes back over 150 years so it is a challenge to change some of the use of the site but with increasing numbers of visits and soil erosion in the SAC this is an important challenge to meet. Managing visitor numbers around the Forest needs to form a part of the forthcoming Sustainable Visitor Access Strategy. However, one possible suggestion for reducing the number of people visiting High Beach is to remove road signs in the area that advertise the site and in particular those signs indicating that the Visitor Centre at High Beach is 'The Epping Forest Visitor Centre'. While it exists and serves a useful function guiding and educating local visitors, more could probably be made of its existence for visitors to the site once they arrive there as discussed below in the section on Visitor Facilities.
- 4.13 Off road cyclists are attracted to the varied topography of the site, potentially raising issues with the roots of ancient trees and other sensitive environments. As informal users, it is difficult to manage where they go, and this is a topic to be addressed in the Sustainable Visitor Access Strategy. However, at High Beach the proposal is that signage is used to try and persuade them not to use those areas of woodland with a large number of ancient trees, but instead use a less sensitive area to the west of the site (5). In addition a more regular ranger/keeper presence on site as an "SAC ambassador", see paragraph 4.19 below, will be particularly important and beginning to develop a relationship with regulars here will be important in guiding users to more appropriate locations on the site.
- 4.14 Proposals for pedestrians and horse riders are discussed under Paths etc.

### **Car parks**

- 4.15 There is a single public car park on site, with others associated with the Visitor Centre, the public house and the Field Studies Centre. This car park is heavily used and spills over onto the approach road at busy periods.

- 4.16 In concept one way of reducing pressure on the site would be to reduce the car park and strictly enforce controls against roadside parking. However, the size of the car park needs to be considered as part of the wider Forest Sustainable Visitor Access Strategy enforcement under and a Forest Traffic Management Strategy.
- 4.17 Specific site proposals include improving access from the car park to the toilets, particularly for disabled users (1), to the Visitor Centre (7) and surfaced path (6) through the woodland.

#### **Visitor facilities including centres for information, ranger service, toilets**

- 4.18 While there is a signed road to the visitor centre, the proposals are for improved signage and pedestrian access from the car park to initially the toilet block (1) and thence to the visitor centre (6), both to make more use of these existing facilities but also to help spread visitors around the site.
- 4.19 As on all the sites, the success of the proposals relies on people following suggestions and taking notice of information supplied on signs, leaflets etc. This process can be greatly helped through an onsite presence to note when threats do occur, in giving out information and helping to steer visitors, when needed, away from vulnerable areas to those that are more resilient. We have assumed that this site would only require a part time (50%) ranger as its extent is relatively limited.
- 4.20 The service could form part of, or be accommodated within, the Visitor Centre.

#### **Catering**

- 4.21 There is a small kiosk at the entrance to the car park supplying hot drinks and snacks. The proposals suggest that this outlet be moved from its current location, where it potentially attracts people to park outside the car park, encourages compaction under the trees in the area, to an alternative location to the east of the road and in an area outside the SAC (8).

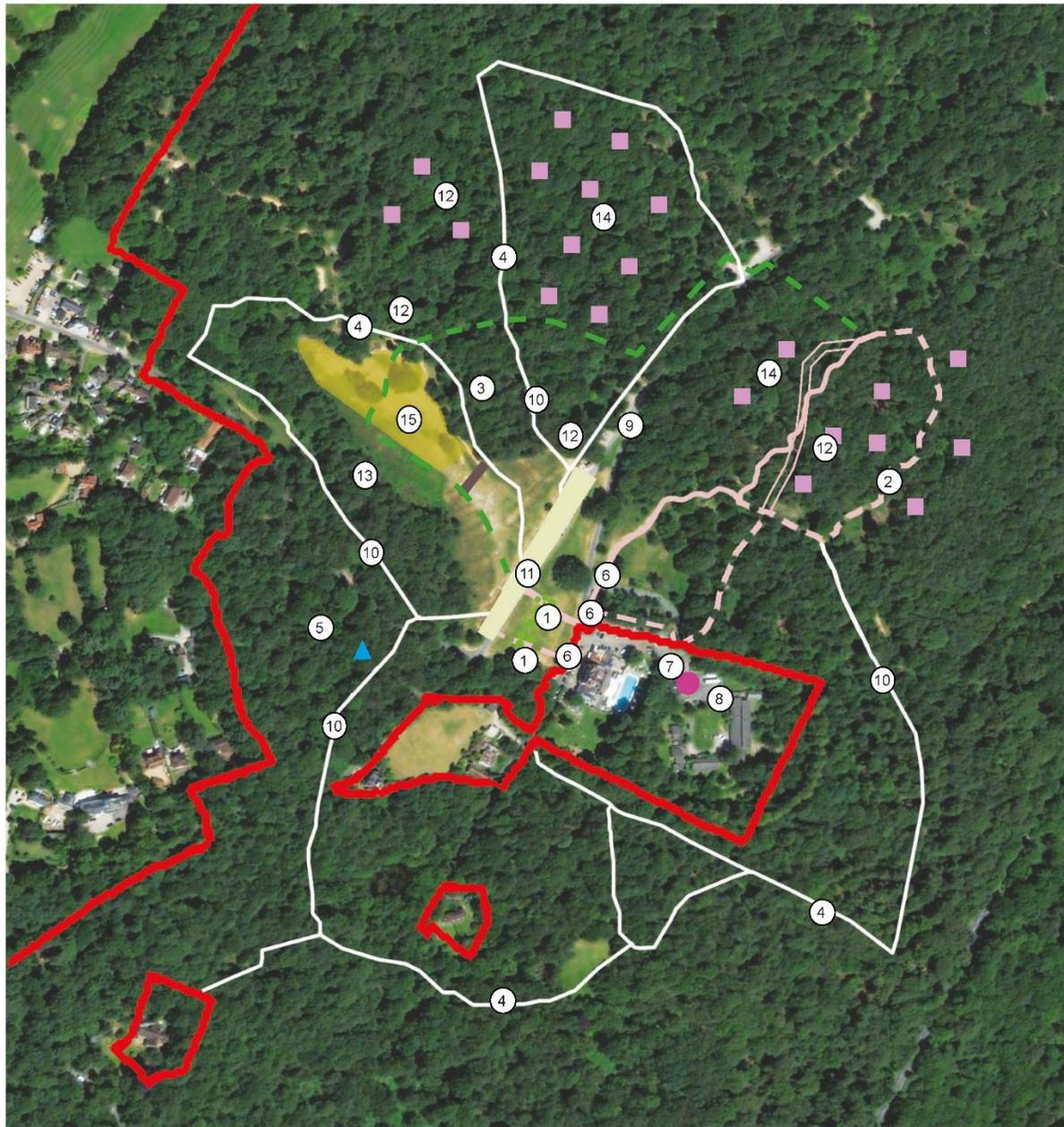
#### **Paths and access provision, including board walks and bridges if needed**

- 4.22 The proposals suggest three different types of work on paths:
- Surfaced (self-binding gravel) paths constructed to provide improved access between the car park and the facilities to the east of the car park, and to link in with the existing surfaced path (1 and 6)
  - Rerouting part of the existing surfaced path, which is positioned too close to some ancient trees, carefully removing those sections of the path which pass too close to the ancient trees (2) if that can be done safely without harming tree roots. If not consider carefully decompacting those sections.
  - Creating new sign posted routes through the woodland, either marking their way by edging with branches or surfacing with wood chip, but with routes that avoid ancient trees (4) and other vulnerable areas.

#### **Signage and waymarking**

- 4.23 Signage and information are key to directing and informing users, positioned at access points, both in the car park and at the start of and at changes in direction on preferred routes.

Fig 4.1 HIGH BEACH : SAC Mitigation Concept Proposals



ID No	Proposal	Access (A) or Habitat (H)	Priority (H, M, L)
1.	Surfaced footpaths connecting Wellington Hill linear car park to the existing visitor centre.	A	M
2.	Surface and edging improvements to the signposted accessible footpath loop and re-alignment to avoid safety hazards posed by ancient trees.	H/A	H
3.	Redirect footfall and install fences encircling vulnerable ancient trees to reduce soil erosion and compaction.	H	H
4.	Signposted, unsurfaced 5km loop from Wellington Hill Car Park created with signage to avoid ancient trees. Wood pasture restoration to be focussed around new routes.	A	H
5.	Take measures to deter mountain bike use. Aerate soil beneath trees to improve compacted ground and rooting environment.	H	H
6.	Pedestrian crossing points (e.g. raised platforms) and one-way system along Manor Road.	A	M
7.	Improve the setting of the visitor centre with better pedestrian access, planting and signage to promote the area (outside SAC) as a visitor attraction.	A	M
8.	Relocate the refreshment kiosk from the end of Wellington Hill Car Park to land outside of the SAC.	A/H	H
9.	Introduce traffic incursion measures along Manor Road to prevent car parking within the RPAs of ancient trees.	H	H
10.	Detailed interpretation signage and wayfinding on local footpaths to explain the value of the SAC.	H	M
11.	Landscape improvements around the car park.	A	L
12.	Soil amelioration and aeration to improve the rooting zone of ancient trees.	H	H
13.	Restoration of Wellington Hill Long Bog.	H	M
14.	Wood-pasture restoration.	H	H
15.	Repair erosion damage.	H	H

KEY

- Signposted, unsurfaced routes
- Existing surfaced routes
- Proposed surfaced routes
- Existing surfaced path to be removed
- Veteran tree trail
- SAC boundary
- Parking
- Visitor facility / Interpretation
- Wayfinding and entrance improvements
- Wood pasture restoration / glade clearance
- Tree / shrub / scrub planting
- Repair erosion

Source: Eeri, DigitalGlobe, GeoEye, Earthstar, Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**Table 4.1 High Beach SAC Mitigation Concept Proposals – Summary of approximate costs**

ID No	Proposal	Access (A) or Habitat (H)	Priority (H, M, L)	Capital Cost	Annual Maintenance Cost	Total cost for duration of Local Plan (assumed to be 25 years)
2	Surface and edging improvements to the signposted accessible footpath loop and re-alignment to avoid safety hazards posed by ancient trees.	H/A	H	£59,355	£2,874	£131,205
3	Redirect footfall and install fences encircling vulnerable ancient trees to reduce soil erosion and compaction.	H	H	£14,375	£2,500	£76,875
4	Signposted, unsurfaced 5km loop from Wellington Hill Car Park created with signage to avoid ancient trees. Wood pasture restoration to be focussed around new routes.	A	H	£99,600	£5,970	£248,850
5	Take measures to deter mountain bike use. Aerate soil beneath trees to improve compacted ground and rooting environment.	H	H	£2,500	£100	£5,000
8	Relocate the refreshment kiosk from the end of Wellington Hill Car Park to land outside of the SAC.	A/H	H	£92,750	£2,783	£162,313
9	Introduce traffic incursion measures along Manor Road to prevent car parking within the RPAs of ancient trees.	H	H	£8,500	£425	£19,125
12	Soil amelioration and aeration to improve the rooting zone of ancient trees.	H	H	£18,750	£3,750	£112,500
15	Repair erosion damage.	H	H	£19,200	£800	£39,200
16	Provision of a Ranger service.	A/H	H	£0	£50,000	£1,250,000
1	Surfaced footpaths connecting Wellington Hill linear car park to the existing visitor centre.	A	M	£10,080	£504	£22,680

ID No	Proposal	Access (A) or Habitat (H)	Priority (H, M, L)	Capital Cost	Annual Maintenance Cost	Total cost for duration of Local Plan (assumed to be 25 years)
6	Pedestrian crossing points (e.g. raised platforms) and one-way system along Manor Road.	A	M	£20,000	£1,000	£45,000
7	Improve the setting of the visitor centre with better pedestrian access, planting and signage to promote the area (outside SAC) as a visitor attraction.	A	M	£2,500	£500	£15,000
10	Detailed interpretation signage and wayfinding on local footpaths to explain the value of the SAC.	H	M	£5,400	£1,080	£32,400
13	Restoration of Wellington Hill Long Bog.	H	M	£29,050	£4,380	£138,550
14	Wood-pasture restoration.	A	M	£5,000	£250	£11,250
11	Landscape improvements around the car park.	A	L	£0	£5,000	£125,000
<b>Total</b>				<b>£387,060</b>	<b>£81,916</b>	<b>£2,434,948</b>
Total High Priority				£315,030	£69,202	£2,045,068
Total Medium Priority				£72,030	£7,714	£264,880
Total Low Priority				£0	£5,000	£125,000

**Table 4.2 High Beach SAC Mitigation Concept Proposals - Details and approximate costs**

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Cost	Capital Cost	Annual Maintenance Cost
1	Paths	Surfaced footpaths installed to connect Wellington Hill linear car park across Manor Road to the existing visitor centre. Paths crossing Queen's Green to be sensitive to the aesthetic of the grass area.	Paths on improved grassland to encourage access away from sensitive areas	M		Granular base, wooden edging, self-binding gravel surface, eg Coxwell	120m x 2m	240	m2	£30	£7,200.00	£10,080.00	£504.00
						Edging		240	m	£12	£2,880.00		
2	Paths	Surface and edging improvements to the signposted accessible footpath loop to reduce impact on ancient and veteran trees, i.e. diversion of the route in certain locations from within RPAs. Necessary works include the realignment of the western section of the path to avoid ancient trees that may pose a future safety hazard. Root radar will be used to carry out surveys of RPAs around existing path and new route to ensure optimum re-routing.	Help protect key SAC features.	H	SS	New path, granular base, wooden edging, self-binding gravel surface, eg Coxwell	500m x 2m	1,000	m2	£30	£30,000.00	£59,355.00	£2,874.00
						Edging		1,000	m	£12	£12,000.00		
						Removal of section of existing surfaced path	180m x 2m	360	m	£15	£5,400.00		
						Repair of existing path	630m x 2m	1,260	m2	£8	£10,080.00		
						Root Radar Survey & report		3	Day	£625	£1,875.00		
3	Habitat	Measures taken to protect from further soil erosion and compaction around tree roots at Pillow Mounds. The area forms part of the 'Epping Forest Veteran Tree Trail' promoted by the Ancient Tree Forum. Provide encircling fences to exclude access around key ancient trees and low fences to indicate protection areas for other trees. Root radar will be used to carry out surveys of RPAs around existing path and new route to ensure optimum re-routing	Help protect key SAC features.	H	SS	Cleft chestnut fencing around several trees on slopes and near Wheelchair Path - low height encircling fencing to reduce not prevent access	400mm high, 40m diameter. Rate only. See root radar report costs above to include this work.	5	nr	£2,500	£12,500.00	£14,375.00	£2,500.00
						Root Radar Survey & report		3	Day	£625	£1,875.00		

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Cost	Capital Cost	Annual Maintenance Cost	
4	Paths	Signposted, unsurfaced loop walks from Wellington Hill Car Park created to offer alternative routes instead of the direct route down Wellington Route. 5km loop walk created with signage to avoid ancient trees delineated with log edging and signage to encourage visitors to stay on the footpaths. Surfacing to be provided where necessary to protect tree root zones and encourage footfall away from more ecologically sensitive areas. Wood pasture restoration to be focused around new routes where possible, improving habitat quality and opening up views to enhance the sense of safety and security.	Help protect key SAC features. See also Wellington Hill bog - which needs to be added to this loop network and therefore is High Priority	H	SS	Wooden waymarking signs, some surfaced lengths Say 20nr (approx.)	Rate only	20	nr	£180	£3,600.00	£99,600.00	£720.00	
						Surfaced path, granular surface, wooden edging. Assume 500m	500m x 2m	1,000	m2	£30	£30,000.00			£1,500.00
						Edging		1,000	m	£12	£12,000.00			£600.00
						Loose surface path, eg wood chip from woodland maintenance operations. Assume 4.5km	4,500m x 2m	9,000	m2	£5	£45,000.00			£2,250.00
						Natural branch edging for loose surface path. Branches from woodland management tasks		4,500	m	£2	£9,000.00			£900.00
5	Habitat	Scarify/aerate ground and remove informal mountain bike trails around the roots of ancient trees to restore habitat. Provide interpretation to explain rationale for the removal of the desire lines. Monitor effectiveness of measures and consider other actions if necessary. Proposals will need to be considered alongside a strategic review of mountain bike usage across the forest to ensure there is no dispersal into other sensitive areas.	Help protect key SAC features.	M	SS	Scarify £2000 and interpretation £500		1	item	£2,500	£2,500.00	£2,500.00	£100.00	

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Cost	Capital Cost	Annual Maintenance Cost
6	Access	Road and crossing improvements to be considered as part of the Forest Transport Strategy. Pedestrian crossing points (e.g. raised platforms) created along Manor Road alongside Wellington Hill Car Park to reduce vehicle speeds and improve severance of the car park from the visitor centre and facilities. One-way system and revision of parking provision to be considered in combination with reducing car parks to the north of the site that negatively impact upon the SAC.		M	SS/WS	Raised traffic mound across tarred road - and associated warning signs / markings	1 no	1	nr	£20,000	£20,000.00	£20,000.00	£1,000.00
7	Access	Improve the setting of the visitor centre with better pedestrian access, planting and signage to promote the area (outside SAC) as a visitor attraction	Help protect key SAC features by encouraging visitors to more robust areas.	M	SS	Paths covered above. Appropriate wooden signs to match existing Epping Forest style	10	10	nr	£250	£2,500.00	£2,500.00	£500.00
8	Access	Relocate the refreshment kiosk from the end of Wellington Hill Car Park to the visitor centre to divert the 'honeypot' to land outside of the SAC and create a hub of activity around the visitor centre	Help protect key SAC features.	H	SS			35	m2	£2,650	£92,750.00	£92,750.00	£2,782.50
9	Access	Introduce traffic incursion measures along Manor Road to prevent car parking within the RPAs of ancient trees	Help protect key SAC features.	H	SS/WS	Signs and wooden dragons teeth	10no signs	10	nr	£250	£2,500.00	£8,500.00	£125.00
						Dragons teeth - short timber stakes at 1.5m centres	600	600	m	£10	£6,000.00		£300.00
10	Signage	Detailed interpretation signage and wayfinding on the local footpaths to encourage visitors to keep to the footpaths and explain the value of the SAC	Help protect key SAC features by encouraging visitors to more robust areas.	H	SS/WS	Wooden waymarking posts, signs to match existing Epping Forest style	30 no of each	30	nr	£180	£5,400.00	£5,400.00	£1,080.00
11	Habitat improvement	Landscape improvements around the car park (trees, planting, maintenance of swales, maintenance of footpaths and access points) to improve visual amenity and promote easier access to and from the car park.		L	SS	In maintenance contract - Approx. costs needed, see also transport start comments		1	item	£5,000	£5,000.00		£5,000.00

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Cost	Capital Cost	Annual Maintenance Cost	
12	Habitat improvement	Reducing and mitigating against physical pressure on the root zone of ancient trees and improving management utilising the City Corporation 'keystone tree' data to prioritise work. Measures to include a range of interventions as deemed necessary per tree including aeration, mulching, signage, interpretation and fencing. Innovative techniques such as foliar sprays and mineral soil ameliorants may be trialled on less important trees in the first instance.	Help protect key SAC features.	H	SS	Signage and protective fences	50 wooden interpretation signs,	50	nr	£250	£12,500.00	£18,750.00	£3,750.00	
						Aeration, mulching, foliar feed	In maint contract							
							Protective fences as 3 above, 400mm high, 40m diameter. Rate only	5	nr	£1,250	£6,250.00			
13	Habitat improvement	Restoration of Wellington Hill Long Bog through re-grading, slowing water flow and tree felling (subject to further scoping and feasibility). Access and interpretation should be provided in the area, with board walks used as required to provide access across steep, challenging topography. If restored, the area would provide a good example of the range of habitats found at the forest and a point of interest and education. Also include protection with fencing of accessible ancient trees.	Improving biodiversity, protecting ground from trampling compaction and encouraging use of more robust areas away from ancient trees/fragile soils	H	SS	Timber Boardwalk - say 20m (tbc)	20m x 1.3 - 1.8m wide	20	m	£915	£18,300.00	£29,050.00	£2,905.00	
						Sluice / Dam		3	nr	£1,500	£4,500.00			£225.00
							Cleft chestnut fencing around several trees on slopes and near Wheelchair Path - low height encircling fencing to reduce not prevent access	5	nr	£1,250	£6,250.00			£1,250.00
14	Habitat improvement	Wood-pasture restoration.	Improving biodiversity and encouraging use of more robust areas.	M	SS			1	item	£5,000	£5,000.00	£5,000.00	£250.00	
15	Habitat improvement	Repair of eroded areas	Helping repair and protect key SAC features.	H	SS	Protective chestnut cleft fencing - low height	1m x 400m	400	m	£10	£4,000.00	£19,200.00	£800.00	
						Decompaction	0.76ha	7,600	m2	£2	£15,200.00			

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Cost	Capital Cost	Annual Maintenance Cost
16		Provision of a Ranger service/SAC Ambassador service for liaison with visitors, to run the dog liaison and cyclist liaison groups and oversee specialist habitat maintenance and restoration. The costs shown are for one person at Grade C with overheads (NI etc) and estimated share of equipment - IT, vehicle etc.	Help protect key SAC features	L	SS/WS	In maintenance contract		1	Person/year	£50,000	£50,000.00		£50,000.00
Sub-total												£387,060.00	£81,915.50
<b>A Summary of Total Approx. Costs for High Beach</b>												<b>£468,975.50</b>	

## Proposals for Chingford Plain

- 4.24 As discussed in **Chapter 2**, Chingford Plain is a major attraction where part of the site is outside the SAC, the main car park is to the west of the site, the Visitor Centre is in the middle and to the south and one of the major visitor attractions, a lake known as Connaught Water is on the eastern edge. This means that paths between Connaught Water and the Visitor Centre complex are created across the SAC, damaging the protected habitat they pass across. In addition, the closest car park to the Visitor Centre, Butlers Retreat Café and public house, is small car park, Barn Hoppitt, that in summer extends onto and degrades valuable grass land in the SAC.
- 4.25 The Plain is also close to Chingford station and has good potential for visitors using public transport to visit the Forest, and there is a golf course to the west which even when used as a golf course, provides good potential for walkers and dog walkers to exercise in areas outside the SAC.
- 4.26 The proposals aim to:
- Protect the environment and habitats within the SAC
  - Look at ways of making the most of the areas and facilities outside the SAC and hence protecting the SAC
  - Making the Bury Road car, outside the SAC on the west side of the Plain, more efficient and attractive to visitors, so reducing the pressure on the other two car parks on the site, Barn Hoppitt and Connaught Water, both within the SAC.

### SAC considerations.

- 4.27 The eastern and southern sections of the Plan are within the SAC with a variety of habitats including acid grassland on the slopes that separate Connaught Water from the Visitor centre and other facilities in the complex. Desire lines leading up the slope, particularly at the start of the route, at pinch points and in damp areas wear away the grass, cause compaction as well as providing hindered access for those that are less mobile. The proposals are to provide a surfaced path to guide users along a more restricted path through the grassland and reduce the area of grassland destroyed by the passage of people.
- 4.28 However this would involve taking an amount of habitat equal to the area of surfaced path out of the SAC, and as explained in Para 3.10 above:
- 'It is generally accepted that the physical loss of part a European site (for example through car park expansion) which supports the qualifying features, or has the potential to do so in the future, would require compensation, i.e. the provision of a greater area of comparable habitat elsewhere.'
- 4.29 The proposals suggest the construction of two paths, one sealed path from Connaught Water up the grass slope to the Visitor Centre (6) and the other a path surfaced with a natural self-binding gravel providing easy access from the Bury Road car park to Connaught Water (5). The areas of the two paths within the SAC are:
- |   |                     |
|---|---------------------|
| • Self-binding gravel surface, 380m at 2m wide      | 760m <sup>2</sup>   |
| • Sealed surface path, 150m in the SAC at 2.5m wide | 300m <sup>2</sup>   |
| Hence the total amount of SAC lost to surfacing is: | 1,060m <sup>2</sup> |
- 4.30 However, the proposals also include the closing of the temporary summer extension of the Barn Hoppitt car park onto an area of acid grassland in the SAC, an area of 0.65ha or 6,500m<sup>2</sup>. Hence there is a net gain into the SAC of 5,440m<sup>2</sup>.
- 4.31 Although this area of the car park is not surfaced it is suffering soil erosion across 10 - 20% of its area and compaction elsewhere. It does support some acid grassland flora including sand spurrey and this could be expanded and integrated with the management of the surrounding wood-pasture, including by grazing in the future. Some raised areas of bare areas could be retained to attract solitary bees - to increase SAC populations of these insects which have small colonies by Warren Pond.

- 4.32 In addition, providing clear and accessible paths within the SAC should mean that foot traffic will be confined to a smaller area and hence a smaller portion of the SAC will be damaged by visitor pressure.
- 4.33 Works have been proposed to the stream (3) running from close to Bury Road car park towards Connaught Water to open areas up and vary the bank side, to provide a more varied habitat and Biodiversity net gain through increasing the area of damp grassland and willow scrub habitat to the benefit of wildlife including the declining willow warbler, but also to provide more interest for visitors.
- 4.34 Suggestions have also been put forward (14) to improve the environment on the banks and edges of Connaught Water to reduce compaction from earlier access prior to the path being constructed, and to encourage and plant additional marginal and natural wood land edge vegetation. Again these measures both enhance biodiversity in the SAC and provide added interest for visitors.
- 4.35 The overall ecological quality of the Plain is high, both in and outside the SAC with a variety of habitats and it is important that this is monitored and managed on a regular basis to maintain this quality, both through the management of use, ensuring for example that events are of a size or nature that do not damage their sites, and dealing with more natural issues such as the occurrence of *Crassula* in Butlers Pond close to the Butlers Retreat Café.

### Why visitors visit the site and what they do there.

- 4.36 Chingford Plain has a range of different attractions for a range of users. For many, Connaught Water is the attraction with newly formed accessible path and boardwalks around the lake, for others the facilities at the Visitor Centre complex, the areas of open grass for walking, with or without dogs, and holding events and for others, potentially the gateway to the Forest to the north.
- 4.37 The proposals main aim is to recognise the requirements of the range of different users, recognise the potential impact they have on the site in general and on the SAC in particular and try to mitigate that impact as described in the following paragraphs and **Table 4.2**.
- 4.38 As has already been noted elsewhere in this report, the issues need to be assessed as part of an overall strategy for managing access over the Forest as a whole. At this stage many of the proposals described below look at measures which can address an immediate issue, reducing the impact from walkers in sensitive grass areas for example, but questions on the overall capacity of Chingford Plains and whether that needs to be expanded to relieve pressure on other areas of the Forest need to be assessed as part of an overall Sustainable Visitor Access Strategy.

### Car parks

- 4.39 There are three public car parks in the plain, one to the east serving Connaught Water, one opposite the Visitor Centre (Barn Hoppitt) and the largest off Bury Road to the west. Both the Connaught Water and Barn Hoppitt car parks are heavily used and cars overflow on to the nearby roads at peak time. Hence our proposal is to improve the Bury Road car park (1) and also improve links between it and the Visitor Centre complex as well as with Connaught Water.
- 4.40 In its location outside the SAC, and close to Chingford station, this car park has the potential to be a gateway to the Forest, and depending on the plans for the golf club could be form a hub for visitors with information (9), catering, toilets, facilities for cycling and an increased capacity. At this stage and before the Sustainable Visitor Access Strategy has been produced, the improvements proposed are relatively low key, improving access to the Visitor Centre and to Connaught Water and adding toilet facilities, to provide for the immediate needs. The access improvements include more pronounced signage at the exit from the car park towards the Visitor Centre and trimming vegetation in the copse to the east of the car park so that the Visitor Centre can be seen from the car and the start of the path to the Centre.
- 4.41 The car park at Connaught Water is tarred and well defined, is within the SAC so there are no suggestions to increase its capacity. However clear signs are needed in the car park to advertise the presence and location of the Bury Road car park. In addition, parking on Rangers Road close to the car park needs to be controlled as part of a Forest Traffic Management Strategy.

- 4.42 The Barn Hoppitt car park has a small section which is tarred and marked, but extends in the summer over an adjoining area of valuable acid grassland. The proposals (12) are to close the summer extension to allow the grassland to recover once more contribute to the SAC. However it is recognised that the location of the car park close to the Visitor Centre complex is attractive for some but essential for those with limited mobility. Hence the proposals are to increase the proportion of blue badge places in the car park, advertise the presence of the Bury Road car park, potentially provide a few additional marked bays on the adjoining road to the Connaught Club. Measures would need to be taken to discourage parking outside the car park, again as part of the Forest Traffic Management Strategy.
- 4.43 In addition, access across Rangers Road to the Visitor Centre complex would be improved, particularly for disabled users, through the provision of a speed control table across the road.

#### **Visitor facilities including centres for information, ranger service, toilets**

- 4.44 Chingford Plain has a comprehensive range of visitor facilities centred around the Epping Forest Visitor Centre, as described in Chapter 2.
- 4.45 A future Sustainable Visitor Access Strategy needs to assess whether an additional set is required in the Bury Road car park to serve visitors using the west side of the Plains, and accessing the Forest from Chingford. However, to support the desire for more people to use this area of the Plain and reduce pressure on the SAC in the east, it is recommended that toilet facilities be provide in the Bury Road car park. In addition, the proposals described below aim to improve access to and information on the existing facilities.
- 4.46 Suggestions have been made to make the Visitor Centre and surrounding areas outside the SAC more attractive, and hence reduce pressure on the SAC. One suggestion is to use the area of grassland outside the Centre as an informal play area (7) for children. In addition it is suggested that the landscape around both the Visitor Centre and the Butlers Retreat café is improved (16) to provide a coherent, clearly signposted meeting point for the access paths to Bury car park and Connaught Water and avoiding the current areas of bare earth, muddy in wet conditions. The improvements would also to provide a seating area for the cafe where the tables are not based on bare earth, again muddy in wet conditions.
- 4.47 As on all the sites, the success of the proposals relies on people following suggestions and taking notice of information supplied on signs, leaflets etc. This process can be greatly helped through an onsite presence to note when threats do occur, in giving out information and helping to steer visitors, when needed, away from vulnerable areas to those that are more resilient. We have assumed that this site requires at least a full-time ranger due to its size, level of use and complexity.
- 4.48 The service could form part of, or be accommodated within, the Visitor Centre.

#### **Catering**

- 4.49 With the café in Butlers Retreat and the public house there is a good range of catering facilities around the Visitor Centre. There is also a small café attached to the golf club close to the Bury Road car park. As part of the move to try and persuade visitors to use the western area of the Plain, the Sustainable Visitor Access Strategy needs to consider the potential for increasing and improving this facility (9), not to compete with the main Visitor Centre but to cater for those walking dogs or themselves in the area of the Bury Road car park, or around the current golf club to the west of the car park and for visitors arriving from Chingford station.
- 4.50 To avoid additional pressure on the Connaught Water car park, it is suggested that catering not be provided there.

#### **Paths and access provision, including board walks and bridges if needed**

- 4.51 The proposals suggest three different types of work on paths:
- Surfaced (self-binding gravel) path (5) constructed to provide level all weather access between Bury Road car park and Connaught Water. The path would follow existing desire lines, initially to the north of the stream, crossing this at the point of an existing bridge to the south of the stream and then curving further south to meet at a junction with a major path

form the north of the Forest, an access path back up to the Visitor Centre and an existing surfaced path from Connaught Water. The path passes through an interesting variety of regimes, including grassland, scrub, and a water feature. In addition, it provides an easy link between the Bury Road car park and one of the key attractions on the site, Connaught Water, as well as providing a component in a circular walk from the car park to the Visitor Centre.

- Three sealed gravel paths to cater for heavy wear and steep slopes on popular routes.
  - One is between Bury Road car park to the Visitor Centre(2) and is proposed not only to cater for existing use and the resultant damage but also to encourage people visiting the Centre to use Bury Road car park by improving the access between it and the Visitor Centre.
  - Another path links the end of an existing surfaced path from Connaught Water up the slope to the Visitor Centre (5).

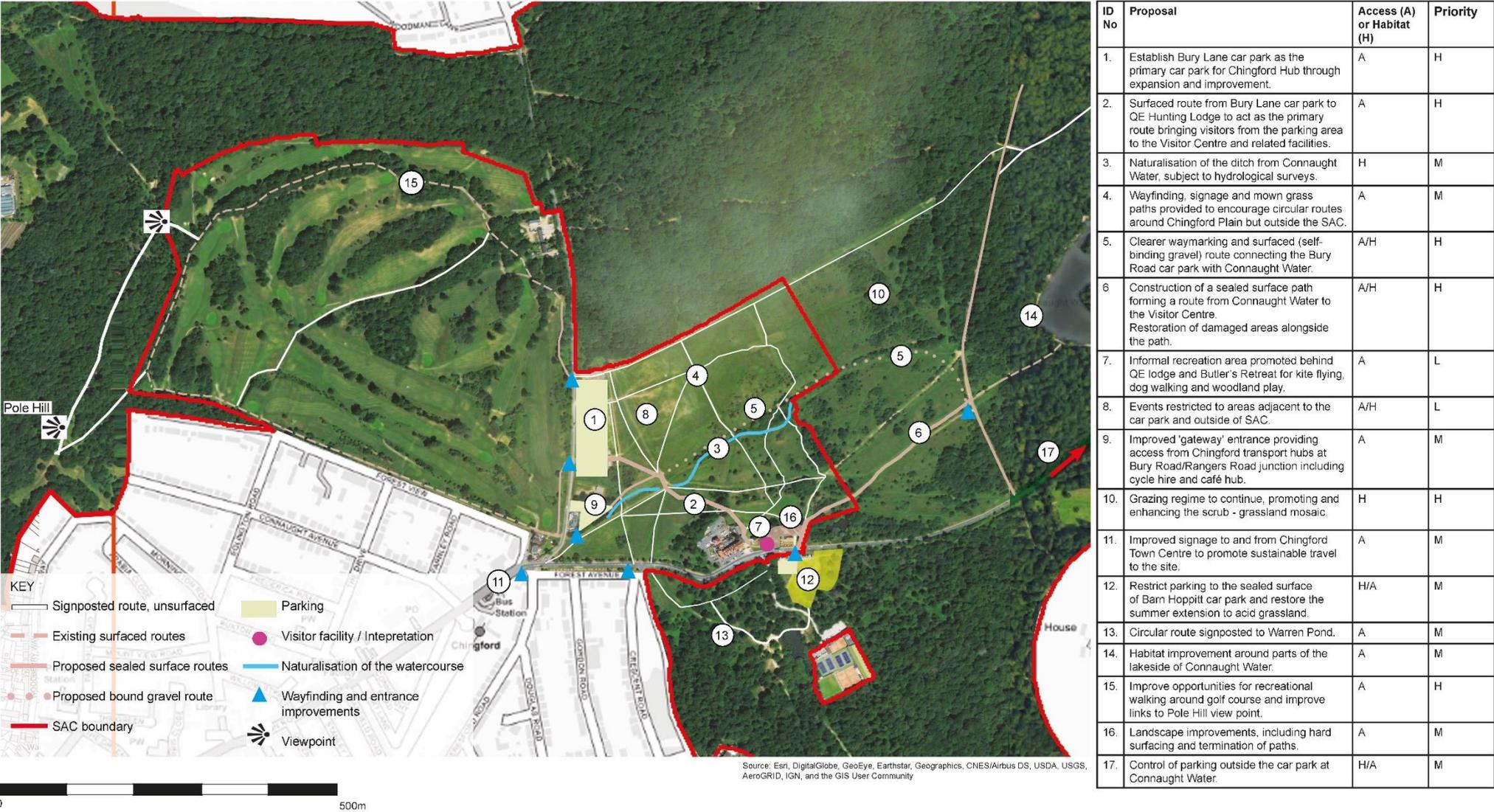
Both would require bridges to cross drains and damp areas and are proposed as the current desire lines are difficult to access in wet condition and result in wide areas of worn earth. The more defined paths will limit access across the grass to a level which not result in worn areas and loss of habitat. For both the construction work would also include measures to recover damaged areas outside the path line.

- The third areas of sealed path extend an existing sealed path around the perimeter of the golf course (15) to provide easier access from Bury Road car park and to encourage walkers to use the area as a circular route and to provide easier access to the well-known viewpoint, Pole Hill, to the southwest of the golf course.
- There are existing informal routes which require monitoring to ensure that damage does not occur on a regular basis causing lasting damage to the environment they pass through. In addition, informal paths through grassland can be mown (4) to create additional circular routes in the areas outside the SAC.

### Signage and waymarking

- 4.52 Signage and waymarking is key to directing and informing users, positioned at access points, at changes in direction on preferred routes and at points on long paths to confirm that the users is still on the right path as discussed in **Chapter 3 on Overall Proposals**.
- 4.53 This is particularly important on a complex site like Chingford Plain where destinations cannot always be seen. A particular example of where good signage is important is at the exit from Bury Road car park, which needs not only to welcome visitors to Epping Forest, emphasising the ecological value of the site as well as its attractions but also give clear directions to the Visitor Centre and Connaught Water. Another will be the junction between the existing surfaced path from Connaught Water, the path from the north of the Forest, the new surfaced path to the Visitor Centre and the streamside path back to Bury Road car park.
- 4.54 In the Overall Proposals it has been suggested that the signs and waymarking posts indicate the boundaries of the SAC and this would be particularly appropriate on Chingford Plain where part of the area is outside the SAC.

Figure 4.2 CHINGFORD PLAIN: SAC Mitigation Concept Proposals



Source: Esri, DigitalGlobe, GeoEye, Earthstar, Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**Table 4.3 Chingford Plain SAC Mitigation Concept Proposals – Summary of approximate costs**

ID No	Proposal	Access (A) or Habitat (H)	Priority (H, M, L)	Capital Cost	Annual Maintenance Cost	Total cost for duration of Local Plan (assumed to be 25 years)
1	Establish Bury Lane car park as the primary car park for Chingford Hub through expansion and improvement.	A	H	£828,950	£41,645	£1,870,075
2	Surfaced route from Bury Lane car park to QE Hunting Lodge to act as the primary route bringing visitors from the parking area to the Visitor Centre and related facilities.	A	H	£84,582	£4,229	£190,310
5	Clearer waymarking and surfaced (self-binding gravel) route connecting the Bury Road car park with Connaught Water.	A/H	H	£81,720	£4,086	£183,870
6	Construction of a sealed surface path forming a route from Connaught Water to the Visitor Centre. Restoration of damaged areas alongside the path.	A	H	£75,170	£3,209	£155,383
15	Improve opportunities for recreational walking around golf course and improve links to Pole Hill view point.	A	H	£54,700	£3,235	£135,575
18	Provision of a Ranger service.	A/H	H	£0	£50,000	£1,250,000
3	Naturalisation of the ditch from Connaught Water, subject to hydrological surveys.	H	M	£15,000	£750	£33,750
4	Wayfinding, signage and mown grass paths provided to encourage circular routes around Chingford Plain but outside the SAC.	A	M	£7,200	£1,440	£43,200
9	Improved 'gateway' entrance providing access from Chingford transport hubs at Bury Road/Rangers Road junction including cycle hire and café hub.	A	M	£597,500	£30,250	£1,353,750

ID No	Proposal	Access (A) or Habitat (H)	Priority (H, M, L)	Capital Cost	Annual Maintenance Cost	Total cost for duration of Local Plan (assumed to be 25 years)
10	Grazing regime to continue, promoting and enhancing the scrub - grassland mosaic.	H	M	£17,670	£1,447	£53,845
11	Improved signage to and from Chingford Town Centre to promote sustainable travel to the site	A	M	£2,500	£500	£15,000
12	Restrict parking to the sealed surface of Barn Hoppitt car park and restore the summer extension to acid grassland.	H/A	M	£14,000	£163	£18,063
13	Circular route signposted to Warren Pond.	A	M	£6,875	£250	£13,125
14	Habitat improvement around parts of the lakeside of Connaught Water.	A	M	£24,500	£750	£43,250
16	Landscape improvements, including hard surfacing and termination of paths.	A	M	£360,000	£7,200	£540,000
17	Control of parking outside the car park at Connaught Water.	H/A	M	£5,000	£0	£5,000
7	Informal recreation area promoted behind QE lodge and Butler's Retreat for kite flying, dog walking and woodland play.	A	L	£0	£0	£0
8	Events restricted to areas adjacent to the car park and outside of SAC.	A/H	L	£0	£0	£0
<b>Total</b>				<b>£2,175,367</b>	<b>£149,153</b>	<b>£5,904,195</b>
Total High Priority				£1,125,122	£106,404	£3,785,212
Total Medium Priority				£1,050,245	£42,750	£2,118,983
Total Low Priority				£0	£0	£0

**Table 4.4 Chingford Plain SAC Mitigation Concept Proposals - Details and approximate costs**

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or part of wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance Cost
1	Parking	<p>Establish Bury Lane car park as a primary car park for the site as it is outside of the SAC, it has considerable capacity and is currently under-used.</p> <p>Ensure it is appealing to visitors as the primary car park through rationalisation of the layout of the car park, improved sightlines to the Visitor Centre and obvious access paths, improved planting and clear signage to other areas of interest in the area.</p> <p>Provide bins suitable for the disposal of dog waste.</p>	Encouraging use of areas outside the SAC for amenity use and hence reducing the impact on the SAC	H	SS and WS							£828,950	£41,250
						Hot rolled asphalt, 'countryside kerb edges, entrance and exit signs, 10% disabled signs	1.10ha	11000	m2	£75	£825,000		
						Standard litter bins	5	5	nr	£400	£2,000		

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or part of wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance Cost
		Look at measures to avoid commuters using the car park for day long parking.											
		Improved signage from Rangers Road attractions to Bury Lane Car Park to ensure visitors can find the car park.				Epping Forest Signs	3	3	sets	£650	£1,950		£195
2	Paths	Sealed gravel surfacing, 2.5m wide, to the route from Bury Lane car park to QE Hunting Lodge to act as the primary route bringing visitors from the parking area to the visitor attractions. Include bridges to cross over damp areas of watercourses. This route lies entirely outside the SAC but needs to be sensitive to the historic landscape around the protected QEHL building	Encouraging use of the areas outside of the SAC by providing improved access facilities. Directing use to specific, less sensitive areas.	H	SS	Sealed gravel, (assume resin bound) granular base course timber edging, 1 x timber bridge with span of 10m	343m x 2.5m	858	m2	£75	£64,350	£84,582	£4,229
						Edgings - timber	686	686	m	£12	£8,232		
						Bridge	10m	1	nr	£12,000	£12,000		

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or part of wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance Cost
3	Habitat	Naturalisation of the ditch from Connaught Water, with appropriate hydrological survey as might be required. This will provide ecological enhancements to habitat outside of the SAC. Increase wetland habitats and willow carr for birds and insects. Includes improvement of drainage to reduce flooding where path crosses main path from north of Epping Forest. Extent of the latter needs additional survey before costing.	Improve biodiversity	M	SS	Selective felling of riverside shrubs and digging out of some areas, coppicing and layering of willow, creation of shallow muddy scrapes along a more sinuous stream line.	100m trees, 100 m reworking bank profile	100	m	£50	£5,000	£15,000	£750
						Insertion of sluice boards and flow inhibitors at key points		20	nr	£500	£10,000		
4	Signage	Wayfinding and signage provided to encourage circular routes around Chingford Plain but outside the SAC, with routes demarcated by unsurfaced mown paths only.  Supply with bins suitable for dog waste at points close to the car park and further afield to encourage responsible behaviour from dog owners. (See also ranger service/SAC Ambassadors below)		M	SS	Timber post signs and finger posts	20 plus 10	30	nr	£200	£6,000	£7,200	£1,440
						Standard waste bins	3	3	nr	£400	£1,200		
5	Paths	Provide a sealed natural gravel 2m wide path from the Bury Road to Connaught Water, to provide a clear link suitable for buggies and less mobile users and hence provide a suitable alternative to using the smaller and limited capacity car park at Connaught Water.  Review exact route and review requirement for the length of surface required as this passes over important dry grassland habitat.	Encouraging the use of facilities outside the SAC, while recognising the attraction of Connaught Water and hence provide a path that minimises the need for dispersed desire lines in the SAC.	H	SS	Granular base, timber edging for 5% of length, sealed with self-binding gravel, eg Coxwell. 2 x 5m span timber bridges	830m x 2m	1660	m2	£30	£49,800	£81,720	£4,086

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or part of wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance Cost
						Edgings - timber	686	1660	m	£12	£19,920		
						Bridge	5m	2	nr	£6,000	£12,000		
6	Habitat	Repair of damage from desire lines along current desire line. Measures to include decompaction of existing path and encouragement of the growth of longer acid grass. Suggested that in April / May selected areas be enclosed with temporary chespale (or netting) fencing, to allow the grass to grow. Areas chosen initially chosen to block existing desire lines, but positions changed annually to extend areas of recovered grassland. De-compaction of the established desire lines during this 'recovery period' will also deter primary pedestrian traffic across the area by making access less attractive and in turn reducing erosion and compaction.		H	SS	Chespale temp fencing	100 m chespale	100	m	£10	£1,000	£11,000	
						Decompaction	0.5ha	5000	m2	£2	£10,000		
6	Paths	Sealed surface path, 2.5m wide, joining Connaught Water to the visitor centre and QE Hunting Lodge to replace the wide and muddy desire line. Clearly marked at either end and at junctions with other paths.	Ensuring that there is a clear and visible connection between the visitor centre and the highly popular Connaught Water to encourage users away from the grass areas and hence	H	SS	Sealed gravel, granular base course timber edging, 2 x timber bridge with span of 5m	430m x 2.5m	1075	m2	£30	£32,250	£64,170	£3,209

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or part of wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance Cost
		Construction methods for path should adequately deal with drainage issues by raising path level or through the use of board walks/wooden bridges.  Review exact route and review requirement for the length needing to be surfaced	minimise damage to the SAC.			Edgings - timber	686	1660	m	£12	£19,920		
						Bridge	5m	2	nr	£6,000	£12,000		
7	Access	Informal recreation area promoted behind QE lodge and Butler's Retreat for kite flying, dog walking, as well as woodland play area to ensure Butlers Lodge and QE Hunting Lodge continue to act as a primary hub for visitors to Epping Forest.	Reduce impact on SAC by providing desirable recreation attractions outside the SAC.	H	SS	No Capital Works Proposed						£0	
8	Access	Events promoted in the areas of Chingford Plain adjacent to Bury Lane Car Park, and only in areas outside of the SAC land	Reduce impact on SAC by providing desirable recreation attractions outside the SAC.	H	SS	No Capital Works Proposed						£0	

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or part of wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance Cost
9	Parking	Improved entrance, cycle hire and café hub at Bury Road/Rangers Road junction. These should include toilet facilities to allow visitors to use the car park as a base for exploring the area to the west, including paths around the golf courses and to the Pole Hill viewpoint, and away from the main visitor facilities on Rangers Road.	Encouraging use of areas outside the SAC for amenity use and hence reducing the impact on the SAC.		WS	Café (100m2), cycle hire and Toilet (70m2) = 170m2 @ £3500/m2	1	1	nr	£595,000.00	£595,000	£597,500	£29,750
		The area should act as a gateway to the forest from Chingford transport hubs and to promote sustainable and healthy modes of transport for visitors to Epping Forest Improvements to include interpretation to communicate the importance of the forest as a place for wildlife and exploration.	Encouraging sustainable modes of transport.										
		Encourage the use of sustainable methods of transport to the area by publicising the nearby Chingford Station, installing cycle racks and electric charging points for electric cars.				Signage	10	10	nr	£250	£2,500		

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or part of wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance Cost
		Improvements will need to be considered alongside Forest Transport Strategy. Improve links to Bury Lane car park.											
10	Habitat	<p>Grazing regime to continue, promoting and enhancing the scrub - grassland mosaic. Replacement/removal of 10-yr old Invisible Fence cable with GPS IF system is the eventual aim within the next 5 years.</p> <p>The GPS system would allow greater flexibility in holding cattle within different areas to adjust to events and changing visitor pressures at different times of the year</p>	Improving biodiversity	M	SS	Remove existing cable providing invisible fence	2.2km	2200	m	£6	£13,200	£17,670	
						Software maintenance costs for 15 years at £1,000 per year							£1,000
						Provide GPS collar for each grazing animal, replace after 10 years	nr	15	nr	£298	£4,470		£447
11	Signage	Improved signage to and from Chingford Town Centre for pedestrian and public transport connections, especially to the rail station, in order to promote sustainable transport to the site.	Wider environmental benefits from use of sustainable transport	H	SS	Signage	10	10	nr	£250	£2,500	£2,500	£500
12	Parking	Modify provision of car parking at and around Barn Hoppitt car park.	Restoration of species rich acid grassland in SAC and additional bare earth habitats to increase biodiversity	H	SS and WS.							£14,000	

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or part of wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance Cost
		<p>Use only the paved area, marking half the spaces for blue badge holders and with signs to alternative parking at Bury Road.</p> <p>Prevent the use of SAC area as an overflow car park</p>			<p>Review of car parking throughout the Forest should be considered as part of the Forest Transport Strategy and sustainable visitor strategy. Traffic calming measures should be considered along Ranger's Road, such as implementing a speed restriction zone and provision of platforms linking the car park with Queen Elizabeth's Hunting Lodge and Butler's Retreat.</p>								

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or part of wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance Cost
		Carry out de-compaction and works to promote regrowth of acid grassland in this area. Create some areas of raised bare ground to attract solitary bees - to increase SAC populations of these insects which have small colonies by Warren Pond				Decompaction and natural regeneration. Assume low maintenance, eg cut every two years and remove arisings.	0.65ha	6500	m2	£2	£13,000		£163
			Create some areas of raised bare ground to attract solitary bees					100	m2	£10	£1,000		
13	Signage	13. Circular route signposted to Warren Pond.	Providing a variety of interests close to the visitor centre.	M	SS	Signage	5	5	nr	£1,000	£5,000	£6,875	£250
						Root radar survey to be carried out around ancient trees, existing pathways and desire lines with a view to displacing routes away from RPAs		3	days	£625	£1,875		
14	Habitat	Discouraging access to the lake edge in some parts through the use of reed planting in the water and additional marginal and then meadow/scrub (where there is space) planting on the strip of ground between the lake edge and the path, after decompaction.	Improving biodiversity	M	SS	Temp chespale fencing, 1m high to protect from geese,	200m chespale	200	m	£10	£2,000	£24,500	£400
						Planting shrubs and marginal species	600m2 planting	600	m2	£35	£21,000		£200

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or part of wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance Cost
		<p>Some areas would still be left open to provide access to the open water, and views across the water, particularly where the path is already close to the water or board walks have already been constructed.</p> <p>Selected areas of worn and eroded ground on the opposite side of the path to the lake could also be decompacted and either protected while the existing vegetation grows, or additional meadow species/ shrubs planted where there is space to boost the vegetation cover. Note that such planting would be planned to leave plenty of space around the path. Species would be carefully chosen to match the natural vegetation already growing in this part of the SAC.</p>				Additional smaller gauge fencing strong enough to protect new planting from Canada geese and coots, 1m high	100m	100	m	£15	£1,500		£150
15	Paths	<p>Provide a circular route around Chingford Golf Course signposted from Bury Lane car park to relieve recreational pressure from the eastern section of Chingford Plain. The majority of the route is already surfaced, with surfacing required along the eastern sections.</p> <p>Improve links to the viewing point at Pole Hill to the west and provide seating via an additional viewing point on the edge of the SAC.</p>	Providing alternative attractions outside the SAC.	H	22	Sealed gravel, (assume resin bound) granular base course timber edging	300m x 2m	600	m2	£75	£45,000	£54,700	£2,735
						Edgings - timber	600	600	m	£12	£7,200		

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or part of wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance Cost
		<p>Provide a shorter informal circular route across the golf course, ensuring the alignment takes into account user safety and avoids potential conflict with golfers.</p> <p>Consider carefully positioning a path through the centre of the golf course, but avoiding greens and fairways, to provide a shorter circular walk.</p> <p>Ensure that paths are well signed with information to help avoid conflicts between walkers and golfers.</p>											
						Signage	10	10	nr	£250	£2,500		£500

No.	Type	Proposal	Mitigation impact	Priority	Site specific (SS) or part of wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance Cost
16	Access/paths	Landscape improvements, Lay hard surface outside the Butler's Retreat and Visitor Centre to improve the seating area and provide a coordinated access point to Connaught Water and to the Bury Road car park.				Sealed surface to match existing. Assume Yorkstone paving	0.2ha	2000	m2	£180	£360,000	£360,000	£7,200
17		Retain Connaught Water car park as it but manage parking outside the car park.	Reduce impact on roadside habitats and vegetation	L	WS, Forest Traffic Management Strategy SS			1	item	£ 5,000.00	£5,000	£5,000	
18		Provision of a Ranger service liaison with visitors, to run the dog liaison, golf course and cyclist liaison groups and oversee specialist habitat maintenance and restoration. The costs shown are for one person at Grade C with overheads (NI etc) and estimated share of equipment - IT, vehicle etc.	Help protect key SAC features	L	SS/WS	In maintenance contract		1	Person/year	£50,000	£50,000		£50,000
Sub-total												£2,175,367	£149,153
<b>A Summary of Total Approx. Costs for Chingford</b>												<b>£2,324,520</b>	

## Proposals for Leyton Flats

- 4.55 Leyton Flats, at the southern end of the Forest and surrounded by residential development is a heavily used area of grassland, woodland and with a popular waterbody, Hollow Pond, adding to its appeal. The majority of the main body of the site to the north of Whipps Cross Road is within the SAC and the acid grassland being both a key component in the SAC and under threat from a variety of informal paths worn through it. The woodland areas are dense in parts, contain ancient trees and are the scene of antisocial activities.
- 4.56 South of the Flats is Whipps Cross Hospital, site of additional residential development potential, and two areas of open space outside the SAC. A key transport hub, the mini Holland site has recently been developed at the south west corner of the Flats.
- 4.57 The proposals aim to:
- Protect the environment and habitats within the SAC particularly the acid grassland
  - Coordinate access across the site and to the rest of the Forest
  - Coordinate the services and parking on its edges
  - Improve the variety of habitats with the woodland areas while still protecting the ancient trees
  - Make the areas of open space to the south of Whipps Cross Road more accessible and an alternative recreation facility for those living this side of the road, and as a resource for the hospital to offer as a facility for improving the wellbeing of their patients and for those working in and visiting the hospital.
- 4.58 As for the other two sites, the management of Leyton Flats can be viewed at two levels, what can be done in the short term, and what a longer term more strategic view of both the Flats and the Forest as a whole might suggest. One aspect of the latter is assess the possibility of moving the concentration of activities in the flat, currently based around a car park and Hollow Pond to the south of the site, and impacting on the acid grassland, towards the north and west of the site, away from the acid grassland.
- 4.59 However, while bearing that in mind the scope of this study has been to concentrate on measures that protect the SAC and improve access in the short term.

### SAC considerations.

- 4.60 Apart from a narrow uneven strip along Whipps Cross Road, the main body of Leyton Flats is in the SAC, with the eastern end of the site particularly valuable for its acid grassland and small areas of heathland vegetation. The woodland also contains a number of ancient trees, a key feature of the SAC designation with associated species such as stag beetles.
- 4.61 A feature of the site is that the boundary is relatively open with few defined entrances and the acid grassland is seen as an area of free access, hence the numerous worn paths over it. In addition, the largest and busiest car park abuts the grassland again encouraging use of it as a recreation ground, with its associated wear.
- 4.62 The direct proposals for mitigating this situation are based around providing alternative paths (1) around the edges of the grassland, signed and with an explanation of the need to follow them, and recovering the worn grass (2). It is proposed that the alternative paths follow the routes of two access routes around the grassland required by the Fire Service to allow access for their tenders should fires break out on the grassland and threaten the surrounding development. While it is understood that these measures will not be followed by all users, it is expected that most will, hence reducing the wear to a sustainable level.
- 4.63 The more indirect measures are to reduce the number of people visiting the Flats themselves by providing attractive alternative sites for their use outside the SAC to the south of Whipps Cross Road (12 and 15), and/or ultimately moving the car park and facilities away from the grassland.

- 4.64 The proposals include measures to improve the habitat in the woodland, an area of oak pollards and wood-pasture habitat that needs opening up by creating linked glades (11), improving the growing conditions for ancient trees and potentially bringing back acid grassland as part of a wood pasture, improving biodiversity, providing open habitat for Stag Beetles for example but improving visibility along paths and improving the accessibility for visitors throughout the site.
- 4.65 Additional improvements to the environment include the construction of a surfaced path, with occasional boardwalks, around Hollow Pond, and relieving the compaction that has resulted around trees on the banks from free access to the pond.
- 4.66 The Flats have a number of ponds beside Hollow Pond, as well as being noted as having poor drainage resulting in damp areas, which it is proposed to manage to accentuate the dampness and provide additional habitat variation (10).
- 4.67 The proposals suggest that the current activities along the south side of the Flats, a boating activity and small informal car park to the west and a car park and catering kiosk further east, be amalgamated into a single coordinated site (7) where the catering kiosk is currently located, and improve the car park. To provide sufficient room for the proposals, the car park would protrude into the SAC by approximately 0.09ha. However, if the Boating facility and its associated car park were to be moved, approximately 0.55ha could be recovered and brought into the SAC.

#### **Why visitors visit the site and what they do there.**

- 4.68 Leyton Flats provides an interesting variety of habitats for walkers, including dog walkers, large areas of open grass for informal recreation, and a popular lake for walking around, boating on and angling. The small refreshment kiosk is also a well-used facility.

#### **Car parks**

- 4.69 There is one tarred public car park to the north of the Flats, a small informal and unsurfaced car park serving the boating concession and anglers and larger unsurfaced car park at the south-eastern corner of Hollow Pond.
- 4.70 While the 2019 visitor survey indicate that a lower percentage of visitors arrive at the site by car than for other sites in the Forest, there is a current demand, and some parking facility is needed to service the catering kiosks, so it is proposed that the informal car park is redesigned to improve its efficiency and surfaced as part of a coordination of the boating concession and catering service (7).
- 4.71 With the removal of the boating facility to this location, the informal car park that serves it currently can be restored, including decompaction, particularly around the roots of trees.
- 4.72 There are no current proposals for the northern car park.

#### **Visitor facilities including centres for information, ranger service, toilets**

- 4.73 There are few facilities for visitors on Leyton Flats, apart from the boating concession and the catering kiosk. In particular there are no toilets.
- 4.74 As mentioned above it is suggested that the existing facilities be reorganised and relocated to concentrate such activities in one spot and allow the rest of the site to retain its natural character.
- 4.75 In the reorganisation it is suggested that the scope of the facilities be expanded to provide toilet facilities and some form of information outlet to provide information on the SAC, the habitats within it and how visitors can help protect it by keeping to designated paths,
- 4.76 As on all the sites, the success of the proposals relies on people following suggestions and taking notice of information supplied on signs, leaflets etc. This process can be greatly helped through an onsite presence to note when threats do occur, in giving out information and helping to steer visitors, when needed, away from vulnerable areas to those that are more resilient. We have assumed that this site requires a part time ranger due to its limited size, level of use and complexity.
- 4.77 The ranger could use the catering and toilet facilities and operate the information services as well as walking the site and being involved in habitat restoration and management work.

### Catering

- 4.78 It is felt that the current level of catering provided through the kiosk as suitable for the site, but as discussed above should be incorporated into a more coherent visitor facility.

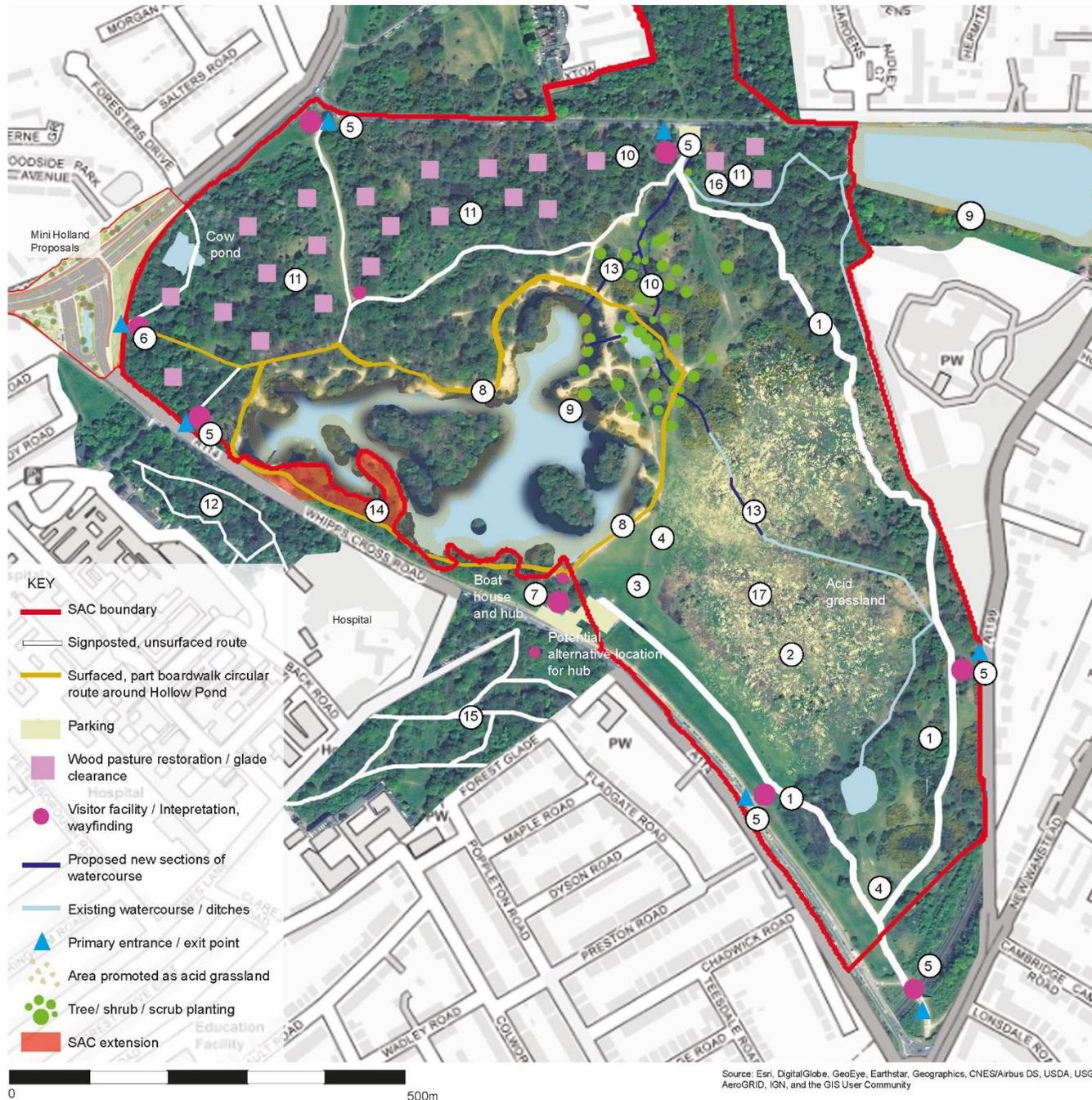
### Paths and access provision, including board walks and bridges if needed

- 4.79 The proposals suggest two different types of work on paths:
- Surfaced (self-binding gravel) path (6) constructed to provide level all weather access between the entrance from the new Mini Holland transport hub towards Hollow Pond and a circular path around Hollow Pond (8) built to prevent further compaction of the banks and surrounds of the pond. The latter would also include a number of boardwalks to bridge some drains and inlets as well as providing additional interest for visitors. The path from the Mini Holland hub is intended to attract visitors into the less used areas of the Flats to increase public presence and discourage antisocial use, and through the other paths on site to provide access to the surrounding areas.
  - There are existing informal routes which require monitoring to ensure that damage does not occur on a regular basis causing lasting damage to the environment they pass through. The new Fire Defence Lines (1) will not be surfaced but will need to be monitored to ensure that excessive wear does not take place, degrading the level of access and potentially pushing people to use the open grassland instead thereby potentially threatening the SAC.

### Signage and waymarking

- 4.80 Signage and waymarking is key to directing and informing users, positioned at access points, at changes in direction on preferred routes and at points on long paths to confirm that the users is still on the right path as discussed in **Chapter 3 on Overall Proposals**.
- 4.81 At Leyton Flats there is still need for directional signage but there is also need for clear information and signage to direct users onto the paths away from the acid grass land areas, particularly on the edge of the car park where it butts up against the grassland and at the point after the entrance across the railway line at the south east corner of the site and where the two Fire Defence Lines part (4) .
- 4.82 In the Overall Proposals it has been suggested that the signs and waymarking posts indicate the boundaries of the SAC and this would be appropriate on Leyton Flats where part of the area is outside the SAC and would serve to emphasise the importance of the SAC.

Figure 4.3 LEYTON FLATS : SAC Mitigation Concept Proposals



ID No	Proposal	Access (A) or Habitat (H)	Priority (H, M, L)
1.	Fire defence lines, preferred pedestrian route.	A	H
2.	Measures to reduce erosion of acid grassland.	H	H
3.	Provision of amenity grassland area to deter access onto acid grassland.	A/H	M
4.	Signage installed to educate visitors about protection of acid grassland.	H	M
5.	Improvements to established entry and exit points to Leyton Flats (Blue triangle). Development of a furniture strategy to rationalise furniture provision across the site.	A	M
6.	Significant entrance improvements associated with the Whipps Cross 'Mini-Holland' scheme and access to Cow Pond.	A	M
7.	Review location and type of visitor facilities.	A/H	H
8.	Circular, surfaced trail, with boardwalks where necessary around Hollow Ponds.	A	M
9.	Edges of the existing Hollow Pond and Eagle Pond naturalised and re-graded where possible to improve wetland habitats.	H	M
10.	Development of existing wet woodland habitat.	H	M
11.	Glade creation, clearance and wood-pasture restoration to improve growing conditions for ancient trees, focussed around improved access routes.	H/A	H
12.	Access enhanced and promoted to non-SAC land to the south of Leyton Flats adjacent to the hospital.	H/A	M
13.	Improve flow and function of water courses/ drains, subject to hydrological survey.	A/H	M
14.	Restore habitat and include as part of SAC	A/H	M
15.	Access enhanced and promoted to non-SAC land to the south of Whipps Cross Road, particularly for dog walkers and as a facility for the adjacent school.	A/H	M

**Table 4.5 Leyton Flats SAC Mitigation Concept Proposals – Summary of approximate costs**

ID No	Proposal	Access (A) or Habitat (H)	Priority (H, M, L)	Capital Cost	Annual Maintenance Cost	Total cost for duration of Local Plan (assumed to be 25 years)
1	Fire defence lines, preferred pedestrian route	A	H	£33,350	£1,751	£77,125
2	Measures to reduce erosion of acid grassland	H	H	£17,650	£650	£33,900
7	Review location and type of visitor facilities.	A/H	H	£317,500	£25,775	£961,875
11	Glade creation, clearance and wood-pasture restoration to improve growing conditions for ancient trees, focussed around improved access routes.	H/A	H	£1,500	£500	£14,000
18	Provision of a Ranger service	A/H	H	£0	£50,000	£1,250,000
3	Provision of amenity grassland area to deter access onto acid grassland.	A/ H	M		£0	£0
4	Signage installed to educate visitors about protection of acid grassland.	H	M	£1,250	£250	£7,500
5	Improvements to established entry and exit points to Leyton Flats (Blue triangle). Development of a furniture strategy to rationalise furniture provision across the site.	A	M	£150,000	£7,500	£337,500
6	Significant entrance improvements associated with the Whipps Cross 'Mini-Holland' scheme and access to Cow Pond.	A	M	£23,300	£2,330	£81,550
8	Circular, surfaced trail, with boardwalks where necessary around Hollow Ponds.	A	M	£285,840	£14,292	£643,140
9	Edges of the existing Hollow Pond and Eagle Pond naturalised and re-graded where possible to improve wetland habitats.	H	M	£43,000	£2,450	£104,250
10	Development of existing wet woodland habitat.	H	M	£6,000	£500	£18,500

ID No	Proposal	Access (A) or Habitat (H)	Priority (H, M, L)	Capital Cost	Annual Maintenance Cost	Total cost for duration of Local Plan (assumed to be 25 years)
12	Access enhanced and promoted to non-SAC land to the south of Leyton Flats adjacent to the hospital.	H/A	M	£41,602	£7,810	£236,852
13	Improve flow and function of water courses/ drains, subject to hydrological survey.	A/H	M	£1,350	£0	£1,350
14	Restore habitat and include as part of SAC	A/H	M	£37,500	£1,500	£75,000
15	Access enhanced and promoted to non-SAC land to the south of Whipps Cross Road, particularly for dog walkers and as a facility for the adjacent school.	A/H	M	£39,178	£4,434	£150,026
16	Clearance of the old Lido site to open up the habitat and create greater capacity for visitors to the north side of the pond. This work would be in addition to works outlined in Item 11 above.	A/H	M	£1,600	£48	£2,800
17	Restoration of grazing to manage the health and grassland in face of increasing fire risk and visitor pressure, in conjunction with 2 above.	H	M	£2,980	£1,298	£35,430
<b>Total</b>				<b>£1,003,600</b>	<b>£121,088</b>	<b>£4,030,798</b>
Total High Priority				£370,000	£78,676	£2,336,900
Total Medium Priority				£633,600	£42,412	£1,693,898
Total Low Priority				£0	£0	£0

**Table 4.6 Leyton Flats SAC Mitigation Concept Proposals - details and approximate costs**

No.	Type	Proposal	Mitigation impact	Priority/	Site specific (SS) or wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance cost
1	Paths	Fire defence lines (routes clear of woody vegetation) to provide access for fire trucks and to provide a defensible area to help prevent a spread of fire from Leyton Flats to adjacent housing. These lines also provide a preferred pedestrian route around the SAC acid grassland and will be waymarked accordingly. The southern path will need a concrete culvert to cross a ditch.	Reduce number of desire lines on acid grassland.	H	SS	Clearance of shrubs to provide line. Use existing bridges to cross streams	1,140m x 5m (north) 530m x 5m (south)	8350	m2	£1.00	£8,350	£33,350	£501  £1,250
						Concrete culvert suitable to take the weight of a 40-tonne fire tender	10m span, 4m width - allow for 3nr 1050 dia concrete pipes with concrete slab over. Grilles to upstream pipes	1	nr		£25,000		
2	Habitat	Measures to reduce erosion of acid grassland, a key feature of the SSSI and habitat which is characteristic of Leyton Flats. The area is also included as part of the dry heath areas of Epping Forest; a qualifying habitat of the SAC. This area is to be protected from further damage and erosion and measures taken to repair damage from compaction and to encourage the growth of acid grassland. Suggested that in April / May selected areas be enclosed with temporary chespale fencing, to allow the grass to grow. Areas chosen initially chosen to block existing desire lines, but positions changed annually to extend areas of recovered grassland. De-compaction of the established desire lines during this 'recovery period' will also deter primary pedestrian traffic across the area by making access less attractive and in turn reducing erosion and compaction.	Protection and enhancement of acid grassland	H	SS	Temporary chespale or netting with wooden posts fencing	200m	200	m2	£10.00	£2,000	£17,650	£400
						Decompaction	7200	7200	m2	£2.00	£14,400		

No.	Type	Proposal	Mitigation impact	Priority/	Site specific (SS) or wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance cost
		Users will be steered around the edge of the grassland on to the fire defence lines routes with notices explaining the reason for temporary closure (see 4). Ongoing monitoring will assess the effectiveness of this approach and whether further action is needed to re-shape patterns of use and eliminate informal paths and desire lines. Some bare patches left to provide different habitats.				Signage to match Epping Forest style	5	5	nr	£250.00	£1,250		£250
3	Access	Amenity grassland area maintained close to the car park and Hollow Pond only. Low key barriers such as logs or temporary fencing may be necessary in the short term to confine recreational use (especially the exercising of dogs) to this area. Provision of bins for disposal of dog waste.	Protection of sensitive acid grassland habitat	H	SS	No additional work							
4	Signage	Signage installed to educate visitors about why the acid grassland needs to be protected to attempt to deter visitors from crossing the sensitive area.	Protection of sensitive acid grassland habitat	H	SS, but tied into a Forest wide strategy for interpretation and signage for a coordinated approach to design styles.	Signage to match Epping Forest style	5	5	nr	£250.00	£1,250	£1,250	£250
5	Access	Improvements to already established entry and exit points to Leyton Flats (Blue triangle) This should include improved litter / dog waste disposal, parking and vehicle management, consistent interpretation, wayfinding and signage, consideration of sightlines. A furniture strategy for the site should be produced to rationalise furniture provision across the site.	Mainly improvement to access but suitable interpretation could help educate visitors to the need to respect the ecology of the Flats and way finding could direct visitors away from ecologically sensitive areas.	H	SS, but tied into a Forest wide strategy for interpretation and signage for a coordinated approach to design styles.	Hot rolled asphalt car park, countryside kerb edgings.	0.2ha	2000	m2	£75.00	£150,000	£150,000	£7,500
6	Access	Significant entrance improvements associated with the Whipps Cross 'Mini-Holland' scheme. Provision of a connecting path towards the area of Cow Pond but away from the edge of the pond to allow for the development of habitats. Additional signage and interpretation provided.	Some increase in biodiversity.	H	SS/WS tied into a Forest wide strategy for interpretation and signage for a coordinated approach to design styles	Gates and signs	1	1	set	£5,000.00	£5,000	£23,300	£2,330
						Timber Boardwalk - Provisional length 20m (tbc)	20m x 1.3-1.8m wide	20	m	£915.00	£18,300		

No.	Type	Proposal	Mitigation impact	Priority/	Site specific (SS) or wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance cost					
7	Access	<p>Review location of visitor facilities. Determining the location of any new visitor facilities must be carefully considered, with public transport arrivals considered a priority. Consideration may also need to be given to moving car parking capacity north of Hollow Ponds to ensure long-term protection of acid grassland from dogs, dog faeces and erosion.</p> <p>Subject to further scoping and impact assessment, there may be an option to provide a new interpretation facility, boat hire facility, refreshments (e.g pop-up cafe at the Lido site once cleared - as shown on the map above) and toilets close to the main car park (outside SAC). Remove small car parks adjacent to boat house and relocate the boathouse adjacent to the new visitor facilities. Demolish existing brick 'diner' adjacent to the car park.</p>	<p>Overall protection of ecology of Flats.</p> <p>Possible improvement of some areas of habitat.</p>		<p>WS, All works should be considered alongside the Forest Transport Strategy and impending sustainable visitor strategy and taking into account the likely future growth and development in the surrounding area, such as the proposed re-development of Whipps Cross Hospital.</p>		Assume new visitor centre is to be same size as existing					£317,500	£9,525					
								Café (50m2) and Toilet (40m2) = 90m2 @ £3500/m2	1	1	nr			£315,000.00	£315,000	£15,750		
								Signage	10	10	nr			£250.00	£2,500	£500		
8	Path	<p>Circular, surfaced trail, with boardwalks where necessary (with appropriate measures to protect ancient trees) promoted around Hollow Lake to provide attractive and highly accessible pedestrian route for visitors and deter activity from more sensitive areas such as the acid grassland habitat.</p>	<p>Protection of habitat through more controlled visitor access.</p>	H	SS	<p>Granular base, wooden edging, self-binding gravel surface, eg Coxwell.</p> <p>Bridges and areas of board walk</p>	1660m x 2.5	4150	m2	£30.00	£124,500	£285,840	£14,292					
														Edging	3320	m2	£12.00	£39,840
														5m bridge	5	nr	£6,000.00	£30,000
														Boardwalk - 2m wide?	100	m	£915.00	£91,500
9	Habitat	<p>Edges of the existing Hollow Pond and Eagle Pond naturalised and re-graded where possible to improve wetland habitats.</p>	<p>Increased biodiversity</p>	M	SS	<p>Regrading some areas (approx. 10% of perimeter), additional marginal planting</p>	200m	200	m	£40.00	£8,000	£43,000	£2,150					
														Marginal Planting	1000m2	1000	m2	£35.00
10	Habitat	<p>Existing wet woodland habitat managed to diversify woodland types and improve habitats for wildlife associated with standing water (subject to hydrological investigation to assess viability)</p>	<p>Increased biodiversity</p>	M	SS	<p>Clearance of scrub to open area to light.</p>	0.2ha	2000	m2	£0.50	£1,000	£6,000	£500					
														Scraping other areas to provide deeper wet areas.	0.1 Ha	1000	m2	£5.00

No.	Type	Proposal	Mitigation impact	Priority/	Site specific (SS) or wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance cost	
11	Habitat	Glade creation, clearance and wood-pasture restoration to improve growing conditions for ancient trees. Glades created alongside footpaths for improved edge habitat and to make the path feel safer and to deter antisocial activity. Retain older trees for their landscape and ecological value.	Increased biodiversity	H	SS	Clearance of scrub under major trees (20% of area)	2ha	2000	m2	£0.75	£1,500	£1,500	£500	
12	Access/paths	Access enhanced and promoted to non-SAC land to the south of Leyton Flats adjacent to the hospital, in order to decrease visitor pressure on the SAC. Enhancements could include creating more open areas, benches, dog bins, but retaining large and old trees for their landscape and ecological value, including retaining and maximising habitat features for stag beetles. Footpaths un-surfaced, but indicated with clear wayfinding and signage from key access points.	SAC protection through reduction of visitor pressure on Flats.	H	SS	Mown paths	510m x 2m	1020	m2	£0.10	£102	£41,602	£510	
						Clearance of scrub	1ha	10000	m2	£0.50	£5,000			
						Litter bins	10	10	nr	£400.00	£4,000			£800
						Benches	20	20	nr	£1,500.00	£30,000			£6,000
						Signage	10	10	nr	£250.00	£2,500			£500
13	Habitat	Improve flow and function of water courses/ drains via Hydrological Survey, particular to encourage flow to Hollow Pond. Better connectivity of ditches and standing water bodies will provide valuable habitat as well as limit access across the acid grassland.	Improve biodiversity	M	SS	Survey Dredging Bank shaping	2 days	2	days	£675.00	£1,350	£1,350		
14	Habitat	Removal of built elements and improvement of growing conditions for trees and marginal planting	Improve biodiversity, particularly for ancient trees	M	SS	Demolition of existing boat shed.	Overall area 0.6ha	1	item	£7,500.00	£7,500	£37,500	£1,500	
						Recovery of existing informal car park								
						Recovery of existing car park - return to natural ground	6000	6000	m2	£5.00	£30,000			

No.	Type	Proposal	Mitigation impact	Priority/	Site specific (SS) or wider strategy (WS)	Construction	Dimensions	Quantity	Unit	Rate	Total	Capital Cost	Annual Maintenance cost	
15	Access/paths	Access enhanced and promoted to non-SAC land to the south of Leyton Flats adjacent to the hospital, in order to decrease visitor pressure on the SAC. Enhancements could include creating more open areas, benches, dog bins, but retaining large and old trees for their landscape and ecological value, including retaining and maximising habitat features for stag beetles. Footpaths un-surfaced, but indicated with clear wayfinding and signage from key access points. Emphasise features likely to attract dogwalkers away from the main Leyton Flats	SAC protection through reduction of visitor pressure on Flats.	H	SS	Mown paths	890m x 2m	1780	m2	£0.10	£178	£39,178	£134	
						Clearance of scrub	0.5ha	5000	m2	£0.50	£2,500			
						Litter bins		10	nr	£400.00	£4,000			£800
						Benches	20	20	nr	£1,500	£30,000			£3,000
						Signage	10	10	nr	£250	£2,500			£500
16	Habitat and access	Clearance of the old Lido site to open up the habitat and create greater capacity for visitors to the north side of the pond. This work would be in addition to the wood pasture restoration works outlined in Item 11 above.		M			Assumed area of old Lido Site - area to be confirmed	200	m2	£8.0	£1,600	£1,600	£48	
17	Habitat	Restoration of grazing to manage the health and grassland in face of increasing fire risk and visitor pressure, in conjunction with 2 above.	Help protect and enhance SAC features and provide a (Description needs finishing at end)	M		Software maintenance costs for 10 years (at £1,000 a year)						£2,980	£1,000	
						Provide GPS collar for each grazing animal	nr	10	nr	£298	£2,980	£298		
18	Access	Provision of a Ranger service for liaison with visitors, to help run the dog liaison and Whipps Cross hospital site liaison groups and oversee specialist habitat and restoration. The costs shown are for one person at Grade C with overheads (NI etc) and estimated share of equipment - IT, vehicle etc	Help protect key SAC features	H	SS/WS	In maintenance contract		1	Person/year	£50,000	£50,000		£50,000	
<b>Sub-total</b>												£1,003,600.00	£121,087.90	
<b>A Summary of Total Approx. Costs for Leyton Flats</b>												<b>£1,124,687.90</b>		

## Implementation

- 4.83 The proposals put forward in the report are the result of a process of analysis and discussion but at this stage are still conceptual.
- 4.84 To implement any will require:
- Detailed analysis of the site of each of the proposals including a base line survey of key indicators of the conditions of the site,
  - Detailed design and costing
  - Consultation with key organisations including Natural England to assess the likely impact of those proposals on the detailed properties of that site, including its ecology. This may include an independent HRA with stage 1 assessment of LSEs of the scheme(s) and ensuring that all works are required for the better management of the SAC (see Appendix 3)
  - Final design taking account of the consultation and impact assessment
  - Construction.
- 4.85 The costs of the HRA for the works are likely to be around £5,000 for an HRA – with about 7 -8 days (£675 - £700 per day for consultant) to screen all the documents and the proposals for LSEs, liaise with NE and then prepare a full HRA with a possible Appropriate Assessment (AA) to determine whether there will be long-term adverse impacts on the integrity of the site for any proposal that reaches this trigger.
- 4.86 Each of the proposals that are not directly connected with the nature conservation management of the Epping Forest SAC features, or which may be potentially damaging to the Site of Special Scientific Interest, would need to be part of an HRA of the SAMMS proposals.
- 4.87 Design and consultation costs will vary according to the complexity of the project and the different specialisations that will be needed to fully design, assess and deliver each project. Costs could vary from around 5% for simple projects to 15% for more complex ones.
- 4.88 With the above in mind Table 4.7 summarises the potential project implementation and maintenance costs for all three sites.

**Table 4.7 SAC Mitigation Concept Proposals – Summary of approximate costs**

<b>Area</b>	<b>Approximate Total Capital Cost</b>	<b>Contingency allowance (15%)</b>	<b>Design/consultancy fees (15%)</b>	<b>Total project implementation cost</b>	<b>Approximate Total, annual Maint cost</b>	<b>Approximate Total Cost for Life of Local Plan (assumed to be 25 years)</b>
Total High Priority	£315,030.00	£47,254.50	£47,254.50	£409,539.00	£69,201.50	£2,139,576.50
Total Medium Priority	£72,030.00	£10,804.50	£10,804.50	£93,639.00	£7,714.00	£286,489.00
Total Low Priority	£0.00	£0.00	£0.00	£0.00	£5,000.00	£125,000.00
<b>High Beach Total</b>	<b>£387,060.00</b>	<b>£58,059.00</b>	<b>£58,059.00</b>	<b>£503,178.00</b>	<b>£81,915.50</b>	<b>£2,551,065.50</b>
Total High Priority	£1,125,122.00	£168,768.30	£168,768.30	£1,462,658.60	£106,403.60	£4,122,748.60
Total Medium Priority	£1,050,245.00	£157,536.75	£157,536.75	£1,365,318.50	£42,749.50	£2,434,056.00
Total Low Priority	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
<b>Chingford Total</b>	<b>£2,175,367.00</b>	<b>£326,305.05</b>	<b>£326,305.05</b>	<b>£2,827,977.10</b>	<b>£149,153.10</b>	<b>£6,556,804.60</b>
Total High Priority	£370,000.00	£55,500.00	£55,500.00	£481,000.00	£106,403.60	£3,141,090.00
Total Medium Priority	£633,600.00	£95,040.00	£95,040.00	£823,680.00	£42,749.50	£1,892,417.50
Total Low Priority	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
<b>Leyton Flats Total</b>	<b>£1,003,600.00</b>	<b>£150,540.00</b>	<b>£150,540.00</b>	<b>£1,304,680.00</b>	<b>£149,153.10</b>	<b>£5,033,507.50</b>
<b>Total</b>	<b>£3,566,027.00</b>	<b>£534,904.05</b>	<b>£534,904.05</b>	<b>£4,635,835.10</b>	<b>£380,221.70</b>	<b>£14,141,377.60</b>

## 5 Monitoring and Review

- 5.1 This report is based on the situation current in Q3 of 2020, but only touching the impact of changes in circumstances that have resulted from the Covid-19 virus. It and the proposals contained within it need to undergo a process of monitoring and review.

### Monitoring

- 5.2 Monitoring is a process of assessing the performance of the report by:
- Monitoring the implementation of the proposals, how many are implemented for example
  - How successful are the projects in achieving their objectives, for example increasing biodiversity and protecting the SAC through ecological monitoring for example, or by accommodating increasing visitor numbers while still protecting the SAC and Forest.
- 5.3 The review should be carried out on an annual basis internally and with the involvement of key stakeholders with the results assessed and used to inform the ongoing implementation of the proposals.
- 5.4 In terms of some of the issues raised in this report and for the three sites that are singled out in this report, some measures of the success of the proposals could include but not be limited to:
- Reduction in the number of informal desire lines across sensitive habitats, acid grassland, and in the root zones of ancient trees for example
  - Successful introduction of marginal vegetation on lake edges, Hollow Pond and Connaught Water for example.
  - Increased awareness in visitors of the sensitivity and value of the Forest and the SAC, and hence a corresponding increase in the respect in which they treat it.

### Review

- 5.5 The purpose of the review is to assess the report and proposals to see if they are still valid at the time of the review, perhaps reflecting changes in policy, changes in requirement, changes in the way that the site is used. It is suggested that reviews are carried out at five-year intervals.
- 5.6 They should be informed by regular visitor surveys and assessments of impacts on the ecology and fabric of the Forest and SAC in particular.
- 5.7 The first review should also reflect recommendations and policies arising out of the upcoming Sustainable Visitor Access Strategy.
- 5.8 Reviews should include input from those involved in the management of the Forest as well as key stakeholders such as Natural England, representatives of interest groups as well as local areas and authorities affected by or benefiting from the Forest.

# **Appendix 1**

## **Access survey site notes**

## **Epping Forest SAC Mitigation Strategy – site notes on recreational constraints & opportunities (Andrew McCloy)**

### **1. HIGH BEACH**

#### Constraints

- Visitors concentrated in small area
- Car parks at capacity at peak times
- Veteran trees very close by
- Steep fragile slopes below Pillow Mounds
- Visitor centre too tucked away and opportunity for messages re conservation and responsible visiting being lost

#### Opportunities

- Contain casual visitors in open grassy space in front of car park (Pillow Mounds), eg by creating viewpoint/topograph, or defining edge of open grassy space by low post and rail fencing
- Realign main path down eroded open hillside west of Pillow Mounds to keep users on single route and deter them from spreading out across eroded slope, into bog, etc; or consider creating more sustainable route entirely down to Wellington Hill from Pillow Mounds
- Clear signs/waymarked routes(s) for horse riders and mountain bikers
- Deflect visitors who want to explore woodland below Pillow Mounds to less sensitive woodland on southern edge (less veteran trees here)
- Use peripheral car parks as 'jumping off' points for visitors to High Beach, eg Honey Lane/A121, via better signage and promotion
- Create short circular waymarked walks away from most sensitive sites, eg open slopes, and promote accordingly
- Relocate snack bar from front car park/woodland edge to a more central location by toilets and visitor centre, away from SAC and start of eroded downhill path
- Long term: promotion of off-site alternative forest venues (buffer land) for recreation - especially large participation events, eg Warlies Park

### **2. CHINGFORD HUB**

#### Constraints

- Limited parking adjacent to visitor centre (Barn Hoppitt) and at Connaught Water
- Bury Lane car park poorly configured, untidy and unwelcoming, under-promoted and hence under-used
- No easy, attractive or even obvious walking route between Bury Lane car park and visitor centre/The View - grassy, often muddy route at present
- Golf course open and accessible, used for non-golfing recreation (dog walking, picnics, walking) with evident conflict and inherent dangers

### Opportunities

- Improve car parking offer at Bury Lane to make it a key starting point for visitors - consolidate 2-3 separate car parks into 1-2, better surfacing and possibly minor landscaping, improved local signage, better interpretation, dog waste bins, etc
- Make strip adjacent to Bury Lane car park (outside SAC) more inviting, obvious and welcoming for general users (eg clearly signposted, shorter grass, unobtrusive fencing?) in order to cater for off-lead dogs, ball games, picnics, informal events, etc - in other words, a sacrifice strip to keep general users away from SAC
- Create a clear and sustainable all-weather pathway along the sight line between Bury Lane car park, visitor centre/The View and Connaught Water to encourage direct flow of visitors - thus increase in footfall at visitor centre and discourage spreading out on to SAC, leading to proliferation of paths, etc
- Provide cycle parking at Bury Lane car park
- Increase capacity of Barn Hoppitt car park opposite visitor centre
- Improve path signage on and around golf course, plus better marked-out paths, to discourage non-golfers from straying on to fairways but steer them around edge of SAC
- Long term: could golf course be slightly reduced in size so that a strip opposite Bury Road car park (away from SAC) could be specifically used for off lead dog exercise, or ball games, picnics, etc

### **3. LEYTON FLATS**

#### Constraints

- Poor all-round visitor infrastructure, including very limited car parking, only basic refreshments and no toilets
- Large numbers of local users accessing SAC from all directions, lots of informal paths
- Well developed undergrowth in northern part of SAC allowing opportunities for anti social behaviour
- No direct or inviting walking route between the hospital and Leyton Flats/the SAC

#### Opportunities

- Need more positive messaging and strategy re responsible dog walking and behaviour, including more dog waste bins, eg at Snaresbrook car park
- Improve main car park on south side by consolidating two small untidy car parks (laterally along grassy roadside strip - outside SAC), rationalising signage and interpretation
- New combined refreshment/toilet block could include interpretation and user information
- Creation of nature trail/sensory trail around Hollow Pond, to tie in with hospital/health and wellbeing angle (and possible new sources of funding?)
- Clear scrub to create new pathways through woodland to south of Whipps Cross Road/A14 to better connect Leyton Flats with hospital.
- Create waymarked trails across Leyton Flats to steer users on set routes and away from sensitive areas (the only promoted route at present is the Hornbeam Trail which is inconsistently waymarked and extends northwards away from Leyton Flats)
- Clear undergrowth to create open glades, deterring anti social behaviour (more visibility) and boosting biodiversity

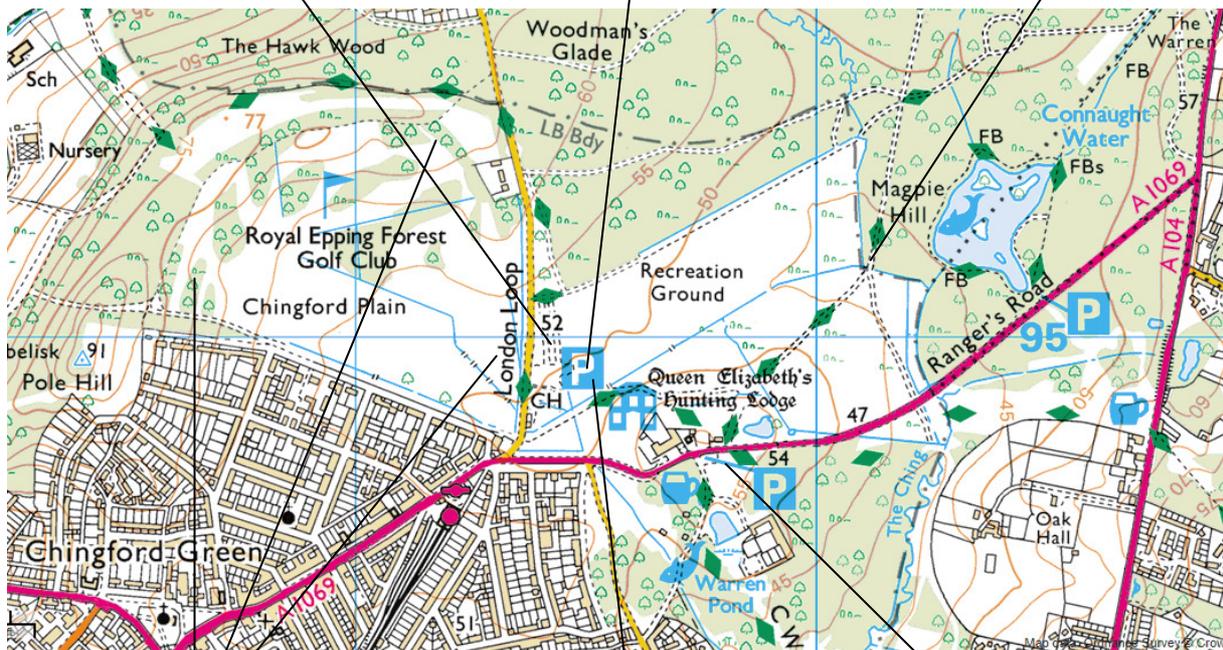


# CHINGFORD HUB – recreational development opportunities

Consolidate the existing Bury Lane car parks into a tidier, durable, more inviting and practical base for visitors

Define a strip immediately adjacent to the car park, outside the SAC, for general recreational use (eg dog exercise, kite flying, ball games, etc)

Create a single, defined and hard-wearing route between Connaught Water and visitor centre to encourage 2-way flow of people



Better marked-out paths and improved path signage on and around golf course

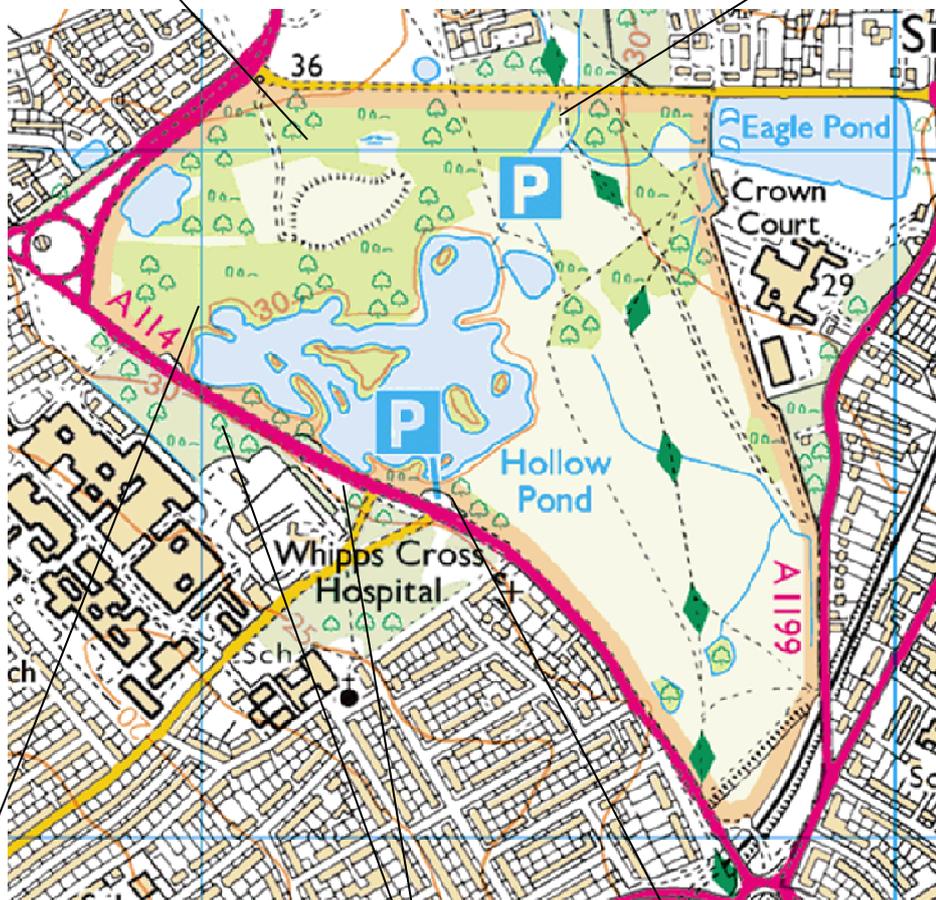
Create a permanent, sustainable walking route between Bury Lane car park and The View visitor centre that is obvious, inviting and easy to use

Car park for The View visitor centre (Barn Hoppitt) could be extended into existing overspill green field

# LEYTON FLATS – recreational development opportunities

Clear undergrowth to create open glades and better visibility, deterring anti-social behaviour

Create short waymarked trails from car parks (could be theme-based or fitness angle) around Leyton Flats to encourage habitual visitors to use set routes and keep away from sensitive areas



Create nature trail / sensory trail around Hollow Pond, to tie in with hospital / health and wellbeing angle, but also to steer visitors on set route

Scrub clearance and new paths to better connect hospital with Leyton Flats

Consolidate 2 car parks into one, reconfigure and possibly landscape along existing roadside strip, ideally new refreshment/toilet/visitor facility, steer visitors (especially dog walkers) on to open grassy area adjacent to car park

# Appendix 2

## Ecological survey site notes

**Ecology site notes.** Please refer to site plans for target note locations and areas at each site.

### **High Beech and Honey Lane Visitor Hotspot**

#### Area F: Woodland

- This area of the woodland supports lower quality woodland and a bog that has dramatically reduced in extent. Opportunity to encourage visitors to walk through this area of the woodland and to re-instate the bog by clearing trees in close proximity and making it a feature for visitors to look at. **(TN5)**

#### Area G: Woodland

- The accessible walk is well designed and feel that is it important to retain this so that visitors can experience these features. Due to the low numbers of veteran trees it is suggested that the path is retained/altered slightly so that they do not directly overhang the path. There also need to consider levels of compaction by keeping visitors to the path. In addition to this there is opportunity to connect this path better to the car park, provide signage and interpretation boards. **(TN3)**
- This area of the woodland supports a large number of veteran trees and support features that are integral to the SAC. Important to minimise damage to veteran trees from compaction and erosion created by heavy footfall and mountain biking, as well as other activities such as fires , horse riding and informal play, such as ropes swinging from veteran trees. **(TN6)**

#### Area H: Pillow Mounds

- A well designed car park. Opportunity to improve the direction of visitors around the site and to the circular walk, visitor centre etc. which are not obvious. It should be noted that degraded acid grassland was recorded in this area adjacent to the car park. **(TN2)**
- There is extremely high levels of erosion at the Pillow Mounds and down into the woodland. This level of erosion is important for invertebrate populations, such as digger bees, however this needs to be managed in areas which lie immediately adjacent to veteran trees in this area. Due to the location of the car parks/facilities it is potentially going to be difficult to reduce the level of visitors travelling up and down the slope. **(TN4)**

#### Area I: Woodland

- Speakmans pond is located here and is known to have issues with *Crassula*. **(TN1)**
- An area of woodland with fewer veteran tree recorded. **(TN7)**

#### Area J: Woodland

- This area of the woodland supports a number of veteran trees. **(TN8)**

### **Chingford Visitor Centre Hub**

#### Area A: Chingford Golf course

- A golf course with historic value in the area. There are high levels of conflict between golfers and members of the public. Potential to improve the trail that runs along the outside of the golf course and along the edge of the woodland belt in the north and east by providing better signage for the circular walk and potential to access the Lee Valley. **(TN11)**

#### Area B: Woodland

- Woodland play area. **(TN10)**
- A good example of an unsurfaced path that runs through an area of veteran trees. **(TN6)**
- A number of pollarded veteran trees including oaks, which stag beetle rely on and hornbeam. These are important features of Epping Forest. **(TN12)**
- An area of woodland that supports qualifying features of the SAC. A large number of veteran trees were particularly recorded in the northern area of the parcel and adjacent to the golf course. **(TN13)**
- There is a very small car park at this location. At the time of survey a number of cars were recorded along the access track adjacent and there were signs of wear of the grassland suggesting that this area is sometimes used as informal over-spill parking. Potential to expand car park and formalise it in this area to allow more visitors to use this location. **(TN14)**

#### Area C: Connaught Lake

- This area comprises of Connaught Lake and associated car park. This area is well managed with defined paths, viewing platforms, good signage/interpretation and woodland play in the north-east. There is evidence of erosion adjacent to the lake which is unlikely to be avoided and signs of cars parking on the busy road next to the car park. **(TN7)**

#### Area D: Chingford Plain (within SAC)

- An area of tussocky grassland with scrub that lies within the SAC. This is a nice buffer between the qualifying features of the SAC and areas with that are subject to high levels of recreation. The paths have open rides, which visitors tend to follow and as a result reducing levels of erosion to the majority of the grassland. There are signs that is extending into the area outside of the SAC. **(TN8)**

#### Area E: Chingford Plain (outside the SAC)

- There is a visitor centre and cafe at this location. At the moment there is a lack of signage and direction, resulting in low visitor numbers to the visitor centre. There is also lots of erosion around the picnic area and a number of desire lines due to a lack of clear paths. **(TN1)**
- Potential to create vistas/ use the area to focus recreation. **(TN2)**
- The car park is poorly laid out and it disconnected from the visitor centre and cafe at the top of the hill. There is the opportunity to reconfigure this car park so that is better utilised and more welcoming, provide better signage/direction and to improve the connectivity to facilities. **(TN3)**

- Nutrient enriched grassland. Used for events, dog walking and kite flying etc. As this area lies outside of the SAC, there is the opportunity to use this area as SANGs. **(TN4)**
- Cafe for the public. Unclear due to golf course signage. **(TN5)**
- A number of anthills in this area, which suggest that the grassland is relatively old. **(TN9)**

### **Leyton Flats Visitor Hotspot**

#### Area K: Woodland Glades

- Woodland glades with areas of dense scrub and veteran oak trees that are of key importance to stag beetle. Opportunities to open up the woodland by removing scrub and creating open glades that can be improved to support edge habitats and acid grassland/heathland. **(TN1)**
- Snaresbrook car park: a small, well designed car park. Good signage and clear direction of travel for visitors. Given the number of dog walkers it is recommended that dog bins are provided. **(TN7)**
- Potential to improve entrance to the Leyton Flats and better direction/links to the Hornbeam trail. **(TN10)**

#### Area L: Woodland

- Area of woodland that is disconnected from the main area of Leyton Flats. Largely covered by woodland with high levels of scrub. Opportunity to clear the scrub and create paths/glades that visitors from the local area and hospital can use to access Leyton Flats. **(TN4)**

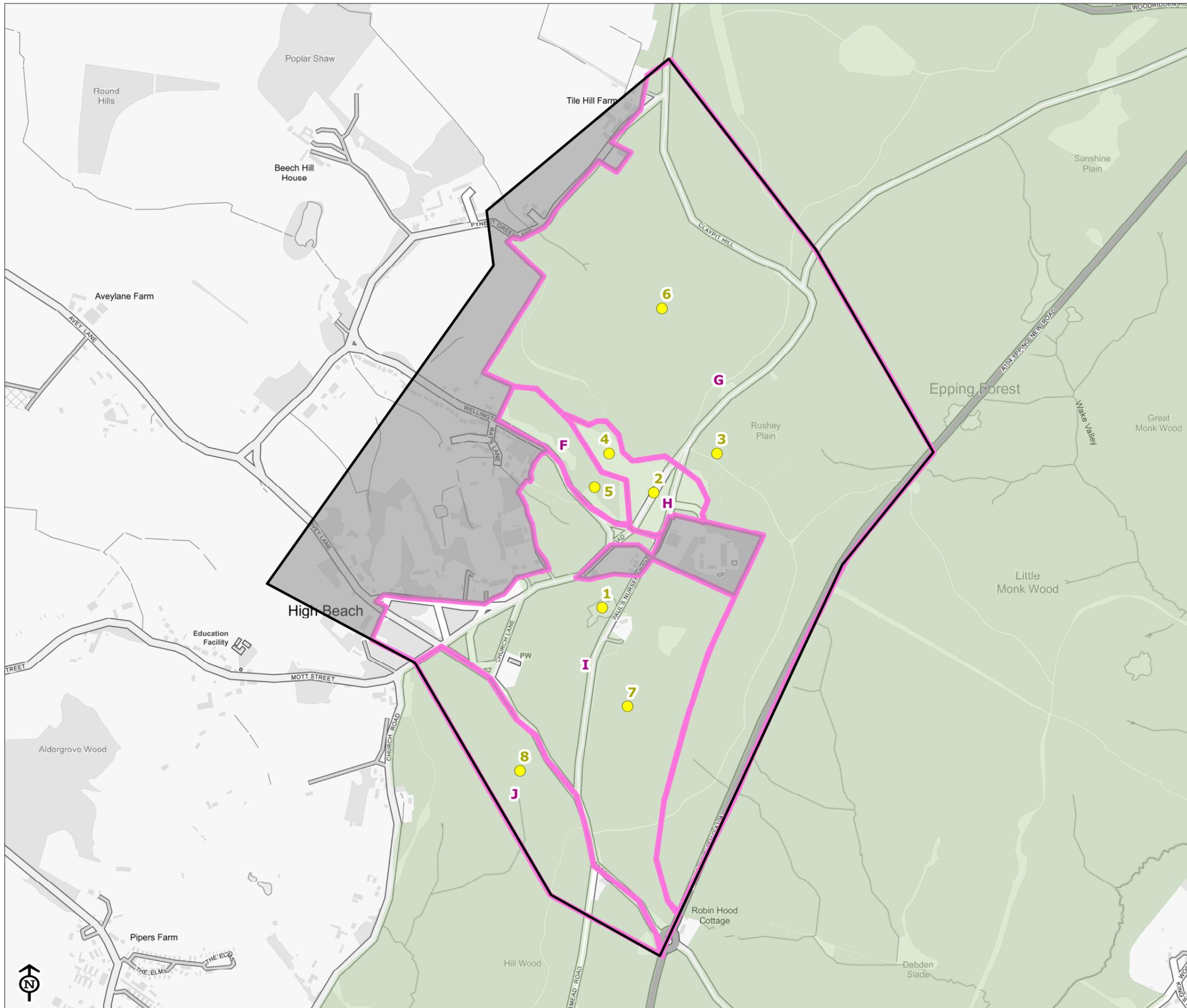
#### Area M: Hollow Pond

- This area primarily comprises of Hollow Pond with areas of woodland along the edges. These areas show high levels of erosion from heavy footfall throughout the year. There is opportunity to improve this by providing a more defined accessible footpath/sensory trail around the perimeter with access to designated viewpoints over the lake. **(TN2)**
- A very small car park that is not being used to the best of its potential. This car park lies outside of the SAC. **(TN5)**
- The car park partially lies within the SAC. Recommend that the car park is re-configured and potentially extended. There is also the opportunity to improve signage and provide better facilities for visitors. From an ecological perspective it would be recommended that the mature oaks in this area are retained. **(TN6)**

#### Area N: Acid Grassland

- An area of acid grassland/heathland with a belt of woodland in the east, a strip of neutral grassland in the south and encroaching scrub. Recommend more clear signage of trails through the site to reduce level of of footfall across the grassland, encourage visitors to remove waste, including dog poo and to manage the levels of scrub. **(TN3)**
- Different mix of more semi-neutral grassland species near to the car park and immediately adjacent to Whipps Cross Road. **(TN8)**
- Evidence of gorse clearance **(TN9)**

- Evidence of disturbance from clearance of scrub, including gorse. **(TN11)**
- Evidence of grassland being very worn in places. **(TN12)**



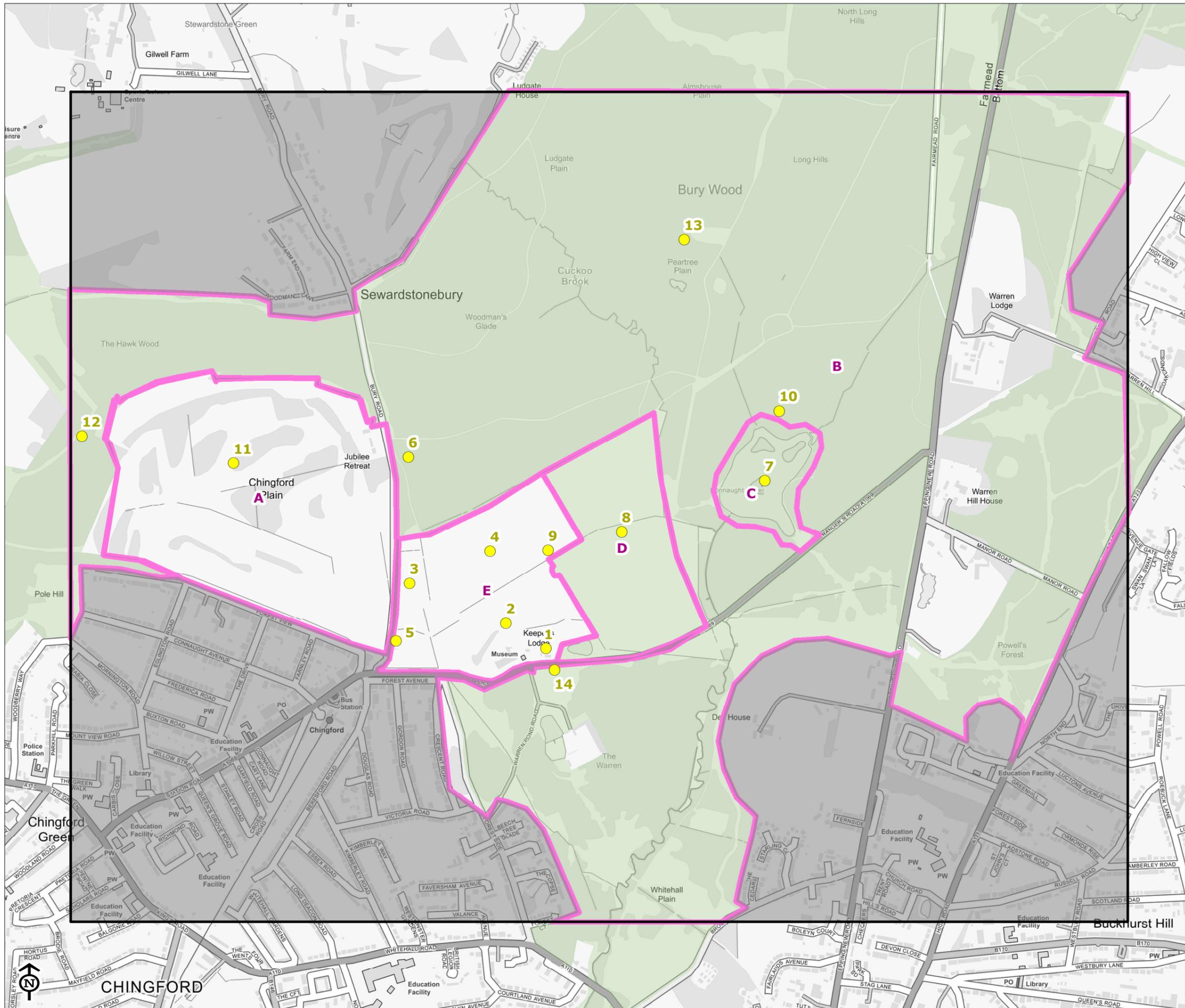
## Epping Forest SAC

### High Beach

-  Site boundary
-  Target note
-  Area
-  Epping Forest SAC

Map Scale @A3: 1:9,000



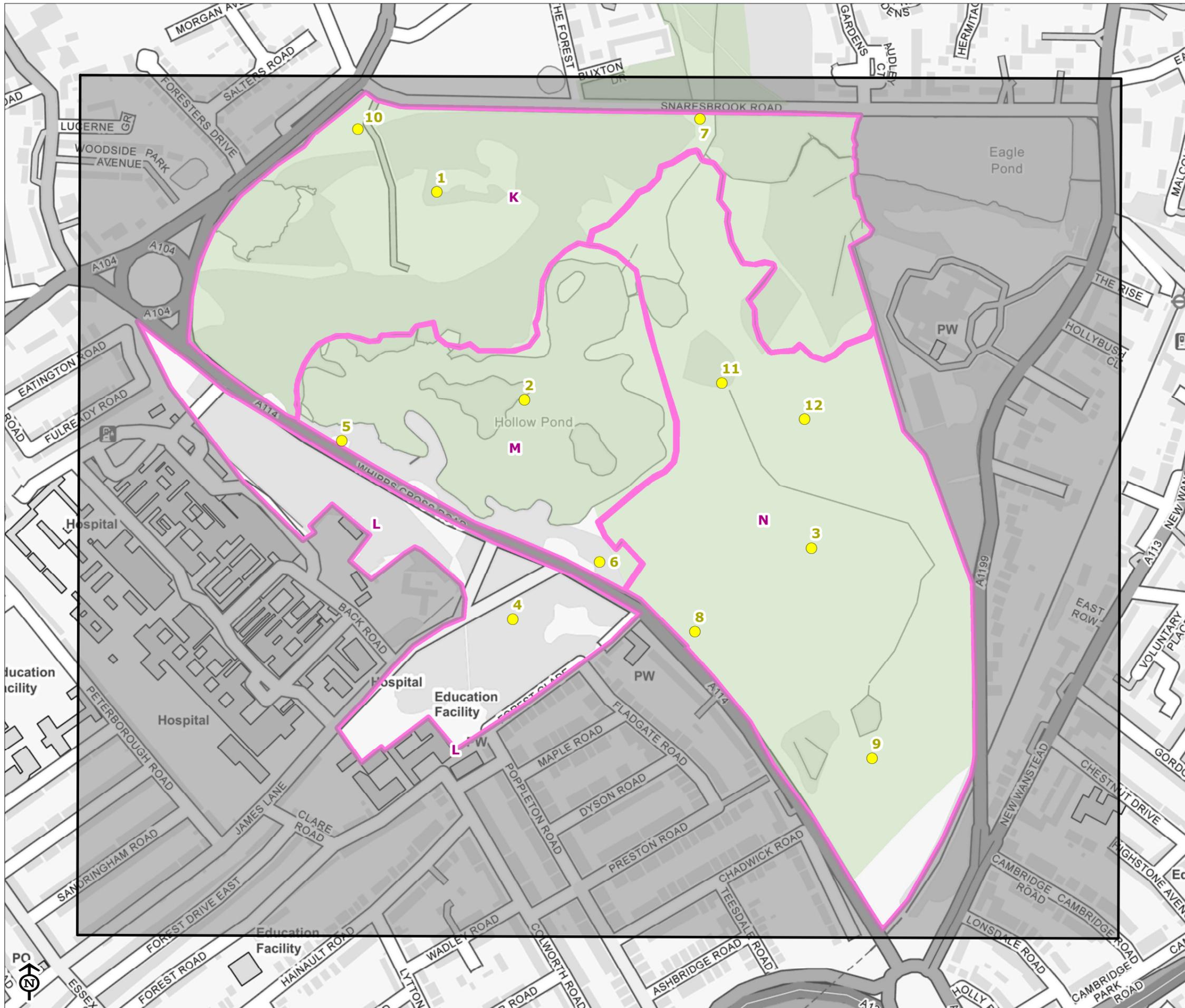


## Epping Forest SAC

- Chingford**
- Site boundary
  - Target note
  - Area
  - Epping Forest SAC

Map Scale @A3: 1:10,000





# Epping Forest SAC

- Leyton Flats**
-  Site boundary
  -  Target note
  -  Area
  -  Epping Forest SAC

Map Scale @A3: 1:5,000



# Appendix 3

## Legislation governing the protection of the SAC

1.1 A Special Area of Conservation (SAC) is defined in the European Union's Habitats Directive (92/43/EEC), also known as the Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora. They are to protect the 220 habitats and approximately 1000 species listed in annex I and II of the directive which are considered to be of European interest following criteria given in the directive.

### Requirements of the Habitat Regulations Assessment

1.2 In assessing the effects of a Project or Plan in accordance with Regulation 105 of the Conservation of Habitats and Species Regulations 2017, there are potentially two tests to be applied by the competent authority: a 'Significance Test', followed if necessary by an Appropriate Assessment which would inform the 'Integrity Test'. The relevant sequence of questions is as follows:

- Step 1: Under Reg. 105(1)(b), consider whether the plan is directly connected with or necessary to the management of the sites. If not, as is the case for the Greater Cambridge, proceed to Step 2.
- Step 2: Under Reg. 105(1)(a) consider whether the plan is likely to have a significant effect on a European site, either alone or in combination with other plans or projects (the 'Significance Test'). If yes, proceed to Step 3.
- Step 3: Under Reg. 105(1), make an Appropriate Assessment of the implications for the European site in view of its current conservation objectives (the 'Integrity Test'). In so doing, it is mandatory under Reg. 105(2) to consult Natural England, and optional under Reg. 105(3) to take the opinion of the general public.
- Step 4: In accordance with Reg. 105(4), but subject to Reg. 107, give effect to the land use plan only after having ascertained that the plan would not adversely affect the integrity of a European site.
- Step 5: Under Reg. 107, if Step 4 is unable to rule out adverse effects on the integrity of a European site and no alternative solutions exist then the competent authority may nevertheless agree to the plan or project if it must be carried out for 'imperative reasons of overriding public interest' (IROPI).

### Stages of HRA

1.3 **Table 1.1** summarises the stages and associated tasks and outcomes typically involved in carrying out a full HRA, based on various guidance documents <sup>[1], [2], [3]</sup>.

Table 1.1 Stages of HRA

Stage	Task	Outcome
<b>Stage 1:</b> HRA Screening	Description of the development plan. Identification of potentially affected European sites and factors contributing to their integrity. Review of other plans and projects. Assessment of likely significant effects of the development plan alone or in combination with other plans and projects.	Where effects are unlikely, prepare a 'finding of no significant effect report'. Where effects judged likely, or lack of information to prove otherwise, proceed to Stage 2.
<b>Stage 2:</b> Appropriate Assessment (where Stage 1 does not rule out likely significant effects)	Information gathering (development plan and European Sites). Impact prediction. Evaluation of development plan impacts in view of conservation objectives. Where impacts are considered to affect qualifying features, identify how these effects will be avoided or reduced.	Appropriate Assessment describing the plan, European site baseline conditions, the adverse effects of the plan on the European site, how these effects will be avoided or reduced, including the mechanisms and timescale for these mitigation measures. If effects remain after all alternatives and mitigation measures have been considered proceed to Stage 3.

[2] DCLG (2006) Planning for the Protection of European Sites: Appropriate Assessment

[3] RSPB (2007) The Appropriate Assessment of Spatial Plans in England. A guide to why, when and how to do it.

Stage	Task	Outcome
<b>Stage 3:</b> Assessment where no alternatives exist, and adverse impacts remain taking into account mitigation	Identify 'imperative reasons of overriding public interest' (IROPI). Demonstrate no alternatives exist. Identify potential compensatory measures.	This stage should be avoided if at all possible. The test of IROPI and the requirements for compensation are extremely onerous.

**1.4** It is normally anticipated that an emphasis on Stages 1 and 2 of this process will, through a series of iterations, help ensure that potential adverse effects are identified and eliminated through the inclusion of mitigation measures designed to avoid, reduce or abate effects. The need to consider alternatives could imply more onerous changes to a plan document. It is generally understood that so called 'imperative reasons of overriding public interest' (IROPI) are likely to be justified only very occasionally and would involve engagement with both the Government and European Commission.

## Recent case law changes

**1.5** *The People over Wind, Peter Sweetman v Coillte Teoranta* (April 2018) judgment ruled that Article 6(3) of the Habitats Directive should be interpreted as meaning that mitigation measures should be assessed as part of an Appropriate Assessment and should not be taken into account at the screening stage. The precise wording of the ruling is as follows:

*"Article 6(3) .....must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of measures intended to avoid or reduce the harmful effects of the plan or project on that site."*

**1.6** In light of the above, HRA screening stage should not rely upon avoidance or mitigation measures to draw conclusions as to whether the Strategic Plan could result in likely significant effects on European sites, with any such measures being considered at the Appropriate Assessment stage as relevant.

**1.7** HRA should also fully consider the recent *Holohan v An Bord Pleanala* (November 2018) judgement which stated that:

*"Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that an 'appropriate assessment' must, on the one hand, catalogue the entirety of habitat types and species for which a site is protected, and, on the other, identify and examine both the implications of the proposed project for the species present on that site, and for which that site has not been listed, and the implications for habitat types and species to be found outside the boundaries of that site, provided that those implications are liable to affect the conservation objectives of the site."*

*Article 6(3) of Directive 92/43 must be interpreted as meaning that the competent authority is permitted to grant to a plan or project consent which leaves the developer free to determine subsequently certain parameters relating to the construction phase, such as the location of the construction compound and haul routes, only if that authority is certain that the development consent granted establishes conditions that are strict enough to guarantee that those parameters will not adversely affect the integrity of the site."*

*Article 6(3) of Directive 92/43 must be interpreted as meaning that, where the competent authority rejects the findings in a scientific expert opinion recommending that additional information be obtained, the 'appropriate assessment' must include an explicit and detailed statement of reasons capable of dispelling all reasonable scientific doubt concerning the effects of the work envisaged on the site concerned."*

**1.8** This requires consideration of the potential for effects on species and habitats, including those not listed as qualifying features, to result in secondary effects upon the qualifying features of European sites, including the potential for complex interactions and dependencies. In addition, the potential for offsite impacts, such as through impacts to functionally linked land, and or species and habitats located beyond the boundaries of European site, but which may be important in supporting the ecological processes of the qualifying features, has also been fully considered in this HRA.

## Key Considerations for Epping Forest Visitor Hubs

**1.9** The Appropriate Assessment stage seeks to determine whether implementation of a plan or project, where Likely Significant Effects are predicted, will result in an adverse effect on the integrity of the whole European site in question. It also considers the potential for in-combination effects from development proposed in neighbouring authorities' Local Plans.

**1.10** A European site's integrity depends on it being able to sustain its 'qualifying features' (i.e. those Annex 1 habitats, Annex II species, and/or Annex 1 bird populations for which it has been designated) and to ensure their continued viability. A high degree of integrity is considered to exist where the potential to meet a European site's conservation objectives is realised and where the European site is capable of self-repair and renewal with a minimum of external

management support. Appropriate Assessment therefore needs to focus on those impacts judged likely to have an effect on the qualifying features of European sites, or where insufficient certainty regarding this remained at the screening stage.