

Hatfield Forest NNR & SSSI Mitigation Strategy

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Hatfield Forest National Nature Reserve and SSSI

Mitigation Strategy

Approach to Managing Recreational Pressures on the Hatfield Forest Site of Special Scientific Interest and National Nature Reserve

Executive Summary

For over a decade Hatfield Forest has witnessed increasing recreational pressure due to a doubling of visits. Recent housing developments in the local area and an exponential growth of the local population have contributed to this, largely within a 11.1km zone of influence. The National Trust, who owns and manages this unique site, has covered the costs of reactively repairing the negative impacts this visitor pressure has made on its unique range of SSSI features over this period. In seeking to address this, the National Trust has increased its management effort and associated resources within the 'Every Step Counts' feasibility project which focused on fundraising for and testing a suite of on-site mitigation measures which are now at a stage where those deemed feasible can be fully implemented as Site Access Management and Monitoring Measures (SAMMS). These are detailed extensively throughout this document.

Please note that this document considers the costings and measures required to deliver SAMMS. It does not address the strategic requirement or costings to deliver substantial offsite greenspace provision, which is also considered to be necessary to effectively avoid and mitigate impacts on Hatfield Forest.

Hatfield Forest

Hatfield Forest (the Forest) is the finest surviving example of a small medieval Royal Hunting Forest in Europe. Covering 404 hectares, it is the single largest open space in the Uttlesford District, offering great opportunities for access and recreational activities. It is situated in northwest Essex, lying five kilometres east of Bishop's Stortford, eight kilometres west of Great Dunmow, and nine kilometres to the north east of Harlow. It is bounded on the northern edge by the Flitch Way, a disused railway line, then beyond that the B1256 and the A120, both running east to west. The M11 from London to Cambridge lies just 1.6 kilometres to the west of the Forest. Farmland forms the remaining boundaries. The National Trust owns the Freehold of the site and the land has been declared inalienable in

accordance with the National Trust Act of 1907. Edward North Buxton gifted it to the National Trust in May of 1924.

All 392 hectares of Hatfield Forest are designated as a Site of Special Scientific Interest (SSSI) and a National Nature Reserve (NNR). This means that the National Trust is legally obliged to observe the provisions of the Wildlife and Countryside Act, 1981 (as amended). The National Trust has a Conservation Management Plan for Hatfield Forest which is agreed with Natural England and sets out the key management activities required to protect and enhance the notified features of the SSSI designation. The Forest's key features are: wood pasture with cattle grazing, unimproved grassland and veteran pollards; ancient coppice woodland with a long continuity of management; freshwater habitats and very high species richness of invertebrates, fungi, lichens and plants, including many nationally rare or threatened species. Sites of Special Scientific Interest (SSSIs) are bound by a conservation designation denoting a protected area in the United Kingdom. SSSIs are the basic building block of site-based nature conservation legislation and most other legal nature/geological conservation designations are based upon them, including National Nature Reserves. The current legal framework for SSSIs is provided in England and Wales by the Wildlife and Countryside Act 1981, amended in 1985 and further substantially amended in 2000 by the Countryside and Rights of Way Act. SSSIs are also covered under the Water Resources Act 1991 and related legislation.

Ongoing surveys and data collation reveal the significant diversity of flora and fauna of Hatfield Forest, which is especially important and impressive for a site in the arable claylands of north-west Essex. The species lists include 510 vascular plants 150 bryophytes, 166 lichens, over 640 fungi and over 2300 invertebrate species. These assemblages significantly contribute to the grassland, woodland and freshwater habitats, but some (e.g. fungi, lichens and invertebrates) may also be regarded as outstanding assemblages in their own right by meeting SSSI selection criteria. Of particular note is the richness of the beetle (over 700 species), fly and moth fauna. In addition, a list of 17 waxcap fungi species (*Hygrocybe*) in the grasslands. There is also a great diversity of breeding and wintering birds, with more than 60 species breeding on the site.

There are two Scheduled Monuments within the site; The Warren and Portingbury Hills, afforded protection under the Ancient Monuments and Archaeological Act, 1979. There are four listed buildings; The Shell House; Warren House; Forest Lodge; Wall Wood Cottage, all of which are Grade II except for The Shell House which is Grade II*.

Concerns relating to recreation

Hatfield Forest is currently experiencing rapid and unsustainable growth in visitor numbers which is putting it under considerable pressure and there are signs that the SSSI, NNR and other designated/protected features are being degraded and damaged. Part of the growth in visitor numbers can be attributed to the exponential increase in housing in the local area over the last 10-15 years. The Forest's clay soils are vulnerable to visitor pressure. For example, while such soils can become very hard and resistant to foot traffic in summer, in the wetter winter they are very vulnerable to poaching. Habitat loss is occurring and not recovering.

The whole of the Forest was assessed as 'Unfavourable Recovering' condition when it was last formally assessed by Natural England in 2011. The trampling impacts are considered to be causing direct damage to a sizeable area of the Forest's vegetation and therefore represent a threat to achieving favourable condition status. Thus, if the recreational impacts are not adequately addressed, with implications for sustained recovery, there is a significant risk that the Forest will be assessed by

Natural England to be in 'Unfavourable' condition, with significant losses of biodiversity.

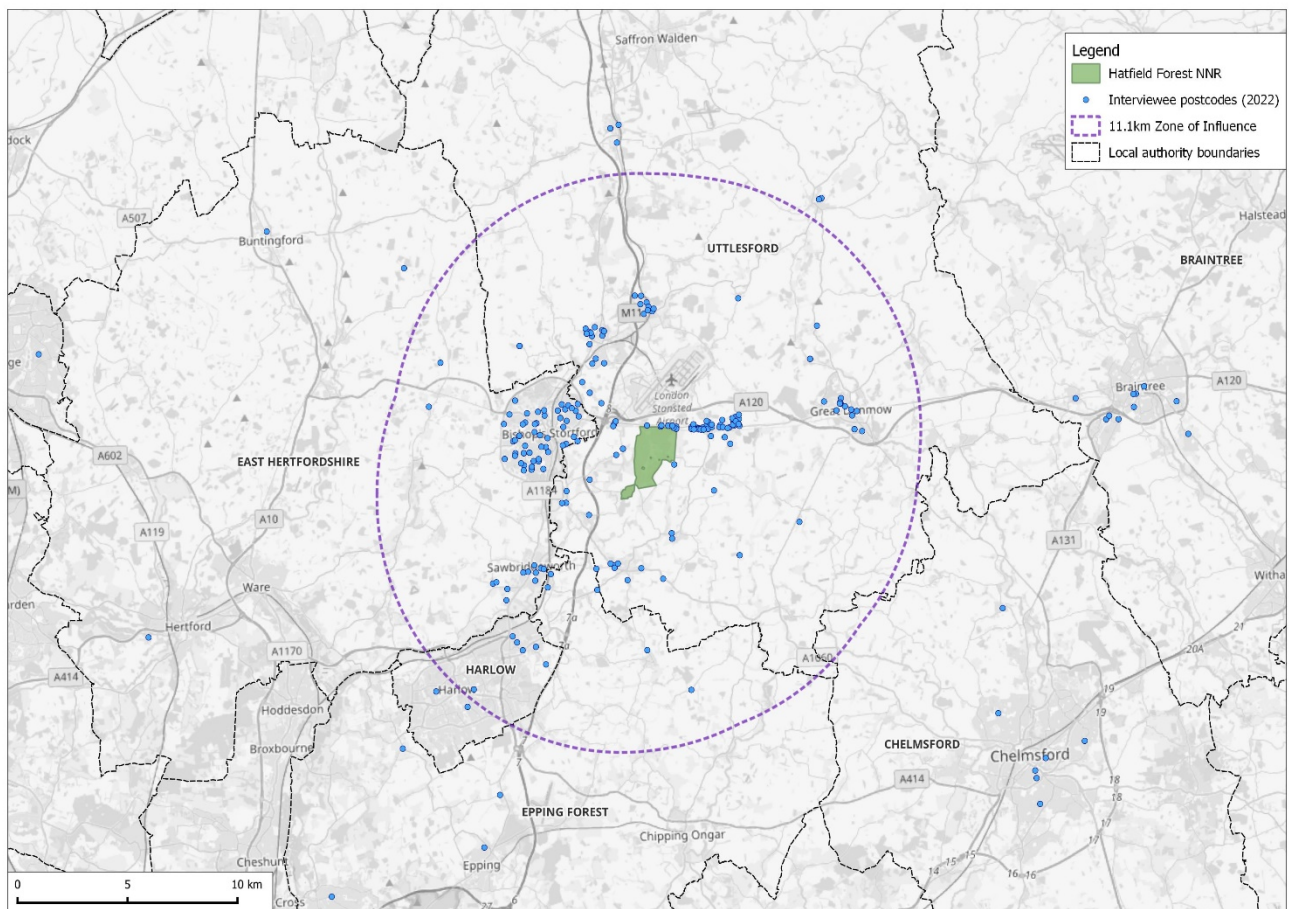
Zone of Influence

The National Trust commissions visitor surveys every 5 years, conducted by external conservation consultants, Footprint Ecology. The most recent survey was carried out in 2022, in which 281 interviews were completed, and it is this data which has informed the most current Zone of Influence.

These interviews ascertain information including what drives that individual to visit Hatfield Forest, their mode of transport to get there, but vitally a home post code which gives an insight into where visitors to Hatfield Forest travel from. These post code locations are plotted onto a map and the linear distance between the home post code and survey point is recorded. The mean distance is then taken from all values and calculated at the 75th percentile (industry standard), to give a Zone of Influence. This is illustrated on the map below.

This exercise is completed, according to survey data, every 5 years and the Zone of Influence may be updated as necessary in consultation with NE and LPA partners.

The Zone of Influence and associated maps are utilised to define which developments will directly impact Hatfield Forest, which LPA's are required to observe this mitigation strategy, and where developer contributions are appropriate.



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The Role of the Local Authorities

Various laws and planning policies protect the interest features of SSSIs from development, from other damage or neglect. Local Planning Authorities (LPAs) are required to have policies in their development plans which protect SSSIs, as required by the National Planning Policy Framework (NPPF).

Para.180 of NPPF (20 July 2021 update) states: 'When determining planning applications, local planning authorities should apply the following principles':

- a) If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.
- b) Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest.
- c) Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists
- d) Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

LPA's are then required to consult Natural England on planning applications which might affect the interest of an SSSI (such a development might not be within or even close to the SSSI itself). Consistent with this, Natural England screens planning applications that fall within Hatfield Forest's 11.1km Zone of Influence (ZOI) and advises when mitigation should be sought from new developments.

It is considered that developers proposing new residential developments within the Zone of Influence (11.1km of Hatfield Forest) should be expected to address the impacts of their development on Hatfield Forest and apply the mitigation hierarchy as set out in Para.180 of the National Planning Policy Framework and set out above. It should be ensured that housing developments of an appropriate size avoid impacts on vulnerable sites by including high quality green infrastructure within their design. Where there would be adverse residual recreational impacts upon Hatfield Forest, a financial contribution towards mitigation measures within the Forest's own boundaries via a Strategic Access Management and Monitoring Strategy (SAMMS) should be proposed.

The provision of substantial high-quality Green Infrastructure (GI) incorporated within development sites is essential as it provides the recreational resource close to where people live, which then limits the need for new residents to travel to Hatfield Forest for recreational purposes, therefore minimising

future visits. However, Hatfield Forest provides a unique experience for its visitors which cannot be replicated at other locations, meaning that developments providing Substantial On-Site Green Infrastructure will not prevent / intercept all visits to Hatfield Forest. It would therefore be expected that with a growing population within its zone of influence (ZOI), there would also be a corresponding growth of visits, regardless of alternative green space within the ZOI. This would inevitably result in adverse residual impacts on Hatfield Forest which must be mitigated by additional means. Accordingly, financial contributions from developments would collectively ensure that mitigation measures are compatible with the ongoing SSSI habitat restoration and strategically help to increase the resilience of Hatfield Forest to future visitor pressure.

The combined approach of substantial high-quality GI provision and SAMMS are both essential components to effectively alleviate the adverse impacts on Hatfield Forest SSSI, NNR from the development (either allocated within Local Plans or speculative / windfall). They would also help prevent further deterioration of the SSSI features and ensure the ability to achieve favourable condition status is not constrained.

Evidence base

The evidence gathered to highlight and measure the attributable impacts both the visitor numbers and habits of those utilising Hatfield Forest can be divided in to five main areas:

People counters – Electronic “counters” at the 24 external entrances to Hatfield Forest provide an accurate measure of how many visitors come to the Forest, and where they arrive. The figures from these counters provide indication that increasing visitor numbers linked to exponential local housing growth correlated with increasing impacts particularly to the woodland ride (grassy path) network and subsequently the coppice interiors and wood pasture.

Visitor surveys – Working with independent, reputable conservation consultants, Footprint Ecology, face-to-face interviews are carried out at several locations within the Forest boundaries, across 4 days in contrasting seasons. Interview data was collated and analysed to provide evidence on visitor origins, attitudes and behaviour. Extrapolations were made, within the limits of the available data, to gauge how overall numbers of visits may compare with numbers of individual visitors. Visitor surveys are repeated every 5 years.

Vegetation surveys - Since 2014, the National Trust has used a Red/Amber/Green (RAG) method to evaluate the condition of the grassy paths (traditionally called rides). These RAG surveys are carried out by independent, reputable conservation consultants. The 9.3 km network of paths are subject to a simple Forest-wide survey, assessing the proportionate cover of vegetation and bare soil as a measure of the impact of human trampling. Paths were assessed over their normal width and categorized as red, amber or green status. This data is then combined with fixed point photography to produce a report. Surveys are undertaken and reports are written every 5 years.

Soil compaction monitoring – The Forest’s soils are analysed to give an insight into soil health, and the ecological impacts. Nationally acclaimed contractors research and measure soil density, resistance to penetration and aeration levels which are then examined against species richness. The data gathered highlights human impact across the Forest and indicates effectiveness of mitigation measures.

Ecological Impact Surveys – Carefully selected ecological surveys designed to provide insight into recreation impacts on sensitive habitats, including the Forest ride network. Data will inform effectiveness of mitigation measures and support adaptive management decisions.

All surveys and reports are commissioned every 5 years prior to SAMMS review. All monitoring mitigation measures are costed annually but only spent every 5 years.

All data, surveys and reports can be obtained from the National Trust, Hatfield Forest Estate Office on request. All surveys and reports commissioned by the National Trust are shared with Natural England.

Sustainable mitigation measures

While there is a clear need to continue to monitor visitor usage and impacts on Hatfield Forest, all the evidence gathered thus far provides the National Trust with the underpinning knowledge required for the preparation of this Mitigation Strategy in order to locally address the impacts created by increased recreational pressure arising from new residential development.

With twenty-four external entrances to the Forest, and a northern border shared with the Flitch Way, a linear Country Park, former railway line and well-used greenway connecting Braintree and Bishops Stortford, there is no immediately effective way of preventing the effects that come with rising visitor numbers, as the local population with the ZOI grows as a result of new residential development. Therefore, there is a need to undertake SAMMS measures within Hatfield Forest to mitigate for increase in adverse impacts created by the predicted rise in visitor numbers and for new developments to contribute towards their implementation.

The SAMMS mitigation measures outlined below are divided in to four key areas:

- Access Management and Infrastructure**
- Ride and Path Mitigation**
- Human Resources**
- Monitoring**

They are designed to directly protect the designated features of Hatfield Forest from impacts created by a future increase in visitor usage directly linked with development within the 11.1km ZOI. While these might be adequate in protecting the site from further usage, the associated impacts under this scenario are difficult to predict due to the unprecedented volume of visitors using the site. Therefore, it will be required to review the measures on a five-yearly basis, in conjunction with ongoing monitoring of visitor impacts and interim progress reviews of the effectiveness of each of the measures. Costs were derived from invoiced items achieved under project feasibility trials, known costs through previous invoiced works, quotations from contractors engaged for future works and previous costs with an uplift for inflation added. Wage costs have been derived from National Trust standard rates. As advised by Natural England, all measures have been costed in perpetuity (minimum of 80 years)

Type of Measure	Measure	Description	Rationale & Justification	Capital/ One-off Cost (£)	Annual Cost (£)	No. of years	Total Cost (£)
Access management infrastructure - Veteran Tree Protection	Veteran tree root protection - barriers and protective mulching	Installation of protective barriers around key vulnerable veteran tree crown drip lines.	Increasing resilience of soil near key vulnerable veteran trees to trampling and protect tree roots from compaction pressure experienced from visitor footfall.	40,000	1,500	80	160,000
Rides and Path Mitigation	Ride management from ground level & soil decompaction in central zones	Improve ride resilience through soil aeration measures and mowing regime, promoting faster recovery of soil compaction and mitigating against further compaction as a result of visitor number increase. Measures to repair and promote recovery on rides where damage through increasing footfall has occurred.	Providing greater resilience of rides / paths to be able to cope better with increasing visitor impacts and in doing so, minimise the likely impact on ride edges and the notable flora/fauna they support. Funds will support year-round mowing, spiking and aeration regime and upkeep of required equipment. Inevitable repairs will be required following periods of intense usage and extreme weather, through auguring and mulching.		10,000	80	800,000

Type of Measure	Measure	Description	Rationale & Justification	Capital/ One-off Cost (£)	Annual Cost (£)	No. of years	Total Cost (£)
Rides and Path Mitigation	Road, car park, track & boardwalk surfacing/maintenance	Capital cost to waymark parking spaces, improving space efficiency, and safe movement of pedestrians from parking facilities to footpath network. Annual programme of hardstanding track maintenance and development to account for increasing car traffic and footfall on popular, easily accessible areas.	Essential up-keep of the most resilient surfaces which will continually see an increase in usage and demand. Funding will future-proof our facilities and provisions to those with access requirements.	120,000	18,000	80	1,560,000
Access management infrastructure	Ride Rotation	Prioritised seasonal programme of resting damaged rides and opening others up using hurdles and interpretative signage. Annual refresh of interpretive signage and hurdle maintenance. Community engagement to raise awareness of seasonal rotation and the long-term benefits to access and nature.	Rest periods for woodland rides has proved to be the most effect method to reverse the effects of erosion and promote the regrowth of vegetation, ultimately improving the resilience of the surface. Annual costs will also promote access, drawing visitors to healthy, nature-rich rides that have previously benefited from a rest period.		4,000	80	320,000

Type of Measure	Measure	Description	Rationale & Justification	Capital/ One-off Cost (£)	Annual Cost (£)	No. of years	Total Cost (£)
Access Management Infrastructure	Access Interpretation, Waymarking, Signage	Design, manufacture and install signage informing, influencing and guiding visitors around the property, ensuring ease of movement and alleviating capacity pressures. Purchase and annually refresh temporary signage and associated materials.	Interpretive and waymarking signage used to channel footfall and promote access to the most resilient areas and divert footfall from sensitive areas and certain times of the year and during weather events. Capital cost will fund new age of interpretation providing info on the "why" behind ride network management, to establish a lasting culture of respect and understanding	50,000	3,000	80	290,000
Human Resourcing - Staff (National Trust)	Ranger x 1	1.0 FTE Gr.9 x 1, 37.5 hrs/wk contract (based on 2023 pay data). Reviewed for on costs & inflation	Providing support for SAMMS Consultant. Delivering effective mitigation measures. Assisting with co-production through Stakeholder Working Group and Forest Users' Forum. SAMMS-related visitor engagement. Photographic monitoring. Role to focus on community engagement and promoting sustainable access, as well as practical implementation of mitigation measures.		26,029	80	2,082,320

Type of Measure	Measure	Description	Rationale & Justification	Capital/ One-off Cost (£)	Annual Cost (£)	No. of years	Total Cost (£)
Human Resourcing - Staff (National Trust)	SAMMS Project Co-ordinator	0.5 FTE Gr.7 Consultant (based on 2023 pay data) Reviewed for on costs & inflation	<p>Providing interface between NT and statutory authorities / advisory bodies. Gaining all necessary PLCs. Delivering SAMMS projects. Interrogating, understand and report on statistical data – visitor and ecological. Procuring, implementing and supervising of external contractors/consultants. Working closely with Operations Manager on recreational pressure messaging. Working with Ranger team to help implement certain measures. Overseeing Monitoring Schedule, working with external consultant. Facilitating community out-reach. Chairing monthly project team meetings. Attending monthly Board meetings. Providing annual report to all stakeholders & LPAs. Creating end of five-year project review to direct the next five years. Set up a monitoring framework for planning applications. Monitor allocation, collection and spend of mitigation money.</p>		19,281	80	1,542,480

Type of Measure	Measure	Description	Rationale & Justification	Capital/ One-off Cost (£)	Annual Cost (£)	No. of years	Total Cost (£)
Monitoring	Visitor Surveys	Undertake summer and winter visitor surveys every 5 years prior to SAMMs review	<p>Ascertain visitor usage trends, Zone of Influence, mode of travel.</p> <p>Understand what recreational use and patterns. Enables targeted messaging and response to planning matters.</p> <p>Providing information on hotspots of high impact where focused attention can be made with mitigation measures allowing understanding of changes in usage over time.</p> <p>Providing necessary evidence to correlate visitor numbers with negative impacts to the SSSI.</p> <p>Aligning with survey strategies consistent with other sites to provide benchmarking / maximum credibility of Hatfield Forest survey.</p>		<p>2,852</p> <p>(Survey carried out every 5 years)</p>	80	228,160

Type of Measure	Measure	Description	Rationale & Justification	Capital/ One-off Cost (£)	Annual Cost (£)	No. of years	Total Cost (£)
Monitoring	Impact Surveys	Annual autumn and Summer RAG surveys & fixed- point photography. Including survey design and preparation,	<p>Providing localized evidence of visitor impacts to soils and vegetation.</p> <p>Providing a good idea of impact hotspots where focused attention can be made with mitigation measures.</p> <p>Enabling understanding of changes in +/-impacts over time.</p> <p>Providing necessary evidence to correlate increasing visitor numbers resulting in cumulative negative impacts with high visitor numbers on the NNR.</p>		280 (Survey carried out every 5 years)	80	22,400
Monitoring	Compaction Analysis Surveys	Soil sample collection at 10 locations. Data handling, analysis & report writing.	<p>Providing localized evidence of visitor impacts to soils and vegetation through effective monitoring of soil condition at targeted locations.</p> <p>Providing a good idea of impact hotspots where focused attention can be made with mitigation measures.</p> <p>Enabling understanding of changes in impacts due to the increase in visitor usage over time.</p>		680 (Survey carried out every 5 years)	80	54,400

Type of Measure	Measure	Description	Rationale & Justification	Capital/ One-off Cost (£)	Annual Cost (£)	No. of years	Total Cost (£)
Monitoring	Ecological Impact Surveys	Targeted ecological work to provide data on condition of rides, as well as wider recreation impacts on sensitive habitats. Carefully designed to feed into adaptive management.	Give clarity on visitor impact upon nature and habitat as well as measure of success of mitigation measures.		800 (Survey carried out every 5 years)	80	64,000
Monitoring	Gate Counters	Ongoing 7-yearly replacement of 22 electronic gate counters on all perimeter gates and some at strategic locations within Forest.	Providing accurate and localized data of visitor usage over time. Enabling substantive correlation of visitor impacts with peak visitor numbers / poor weather events. Enabling prioritised messaging / deployment of staff effort at specific locations throughout Forest.		3,500 (Replaced every 7 years)	80	280,000
Total				£210,000	£89,922		£7,403,760

Review of Costs

The individual costings will be reviewed for their accuracy and adjusted for pre-existing overestimations / underestimations, inflation and pay increments as guided by the National Trust. Changes to on - costs as a result of changes in nationally set levels of employer contributions for National Insurance purposes will be taken into account. Whilst the SAMMS will be formally reviewed every 5 years in line with the receipt of updated survey data, the costs of each measure will be adjusted for inflation annually, using the BCIS index as an indicator of the rate of inflation for measures relating to infrastructure, access management and monitoring, with rates of inflation for measures relating to human resourcing being steered by data published by the National Trust each year detailing changes to pay. The sums of monies secured by way of a Section 106 Agreement or CIL will be subject to an inflation related clause.

How the Costs of Mitigation will be Secured and Collected

Financial contributions towards mitigation for Hatfield Forest can be provided by developer contributions which are secured through a S016 Agreement (entered into under section 106 of the Town and Country Planning Act 1990) or via a Unilateral Undertaking (entered into by a person with an interest in the land without the local planning authority) or from Community Infrastructure Levy (CIL) monies (a fixed charge levied on new developments) where a local authority has a CIL in place. Legal obligations are entered into to mitigate the impacts of an unacceptable development proposal to make it acceptable in planning terms. They are used where it is not possible to address unacceptable impacts through a condition.

The responsibility for calculating the tariff applicable to contributions payable to the National Trust, Hatfield Forest will fall to the Local Planning Authorities.

The Local Planning Authorities will collect the contributions which will then be passed to the National Trust to spend on the mitigation measures set out in this document.

If you require any further information, please contact the National Trust or the relevant Local Planning Authority.