

Management of Vegetation Against Property (VAP)

Forest Operations Planning and Development Note

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FOREST OPERATIONS PLANNING AND DEVELOPMENT NOTE

VEGETATION AGAINST PROPERTY

INTRODUCTION

Forest Operations Planning and Development Notes (PDN) aim to audit and collate the City of London (CoL)'s organisational and health and safety risk management issues for key activities, alongside other management considerations, to give an overview of current practice and outline longer term plans. The information gathered in each report will be used by CoL to prioritise work and spending, in order to ensure firstly that the CoL's legal obligations are met, and secondly that remaining resources are used in an efficient manner.

The PDNs have been developed based on the current resource allocation to each activity. An important part of each PDN is the identification of any potential enhancement projects that require additional support. The information gathered in each report will be used by the CoL to prioritise spending as part of the development of the 2019-29 Management Strategy and associated Business Plans for Epping Forest.

Each PDN will aim to follow the same structure, outlined below though sometimes not all sections will be relevant:

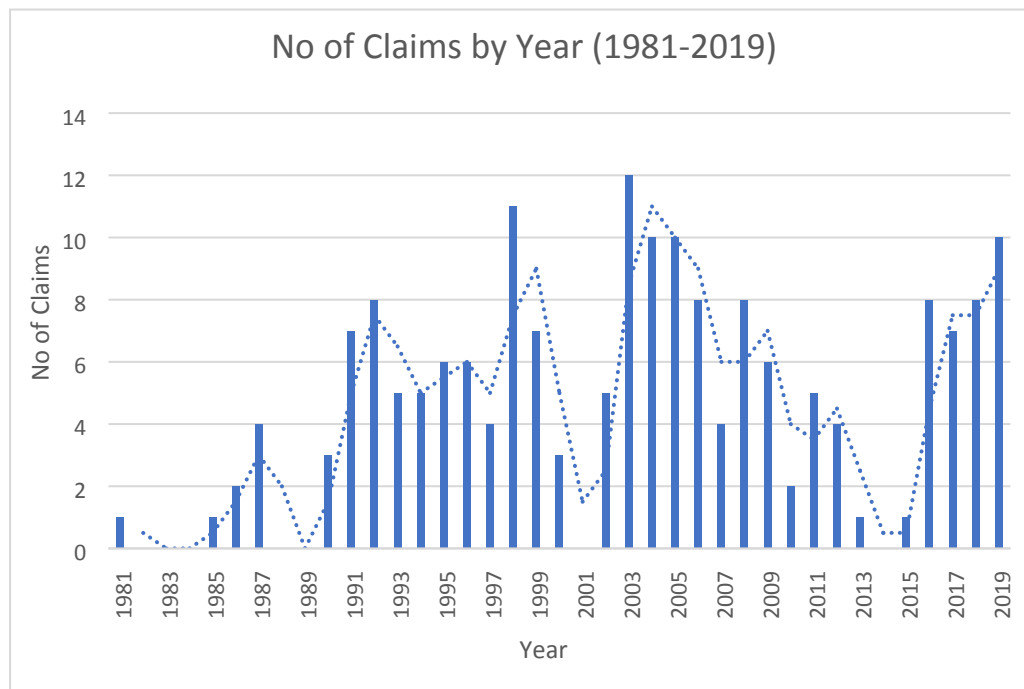
- **Background** – a brief description of the activity being covered;
- **Existing Management Protocol** – A summary of the existing protocol for the activity;
- **Property Management Context** – a list of property management constraints for the activity such as legal and statutory obligations directly relevant to the activity or location;
- **Management Considerations** – a list of identified management considerations for the activity;
- **Management Strategy** – a summary of the key operational objectives for the activity;
- **Outline Management Program** – a summary of the key management actions identified with anticipated timelines for completion;
- **Potential Enhancement Projects Requiring Additional Support** – a list of projects for which additional support would be required;
- **External Operational Stakeholders** – a list of external stakeholders who have an operational input to the activity (if any), who have been consulted as part of the compilation of the Planning and Development Note;
- **Bibliography** – a list of existing reports (if available) that have formed part of the audit for the PDN; and
- **Appendices.**

BACKGROUND

Epping Forest stretches from Manor Park, London at its southern most point to Epping, Essex at its northern most point, a total distance of 19 km (12 miles). The external boundary of the Forest is approximately 200km with the southern half of the Forest largely surrounded by urban settlement.

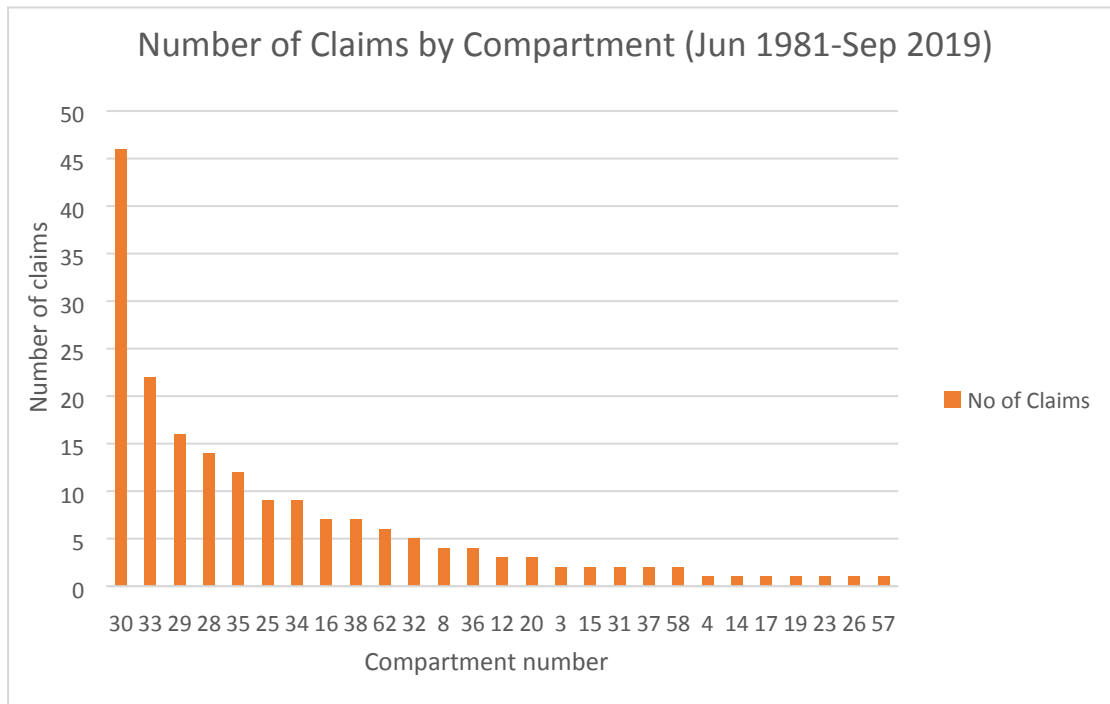
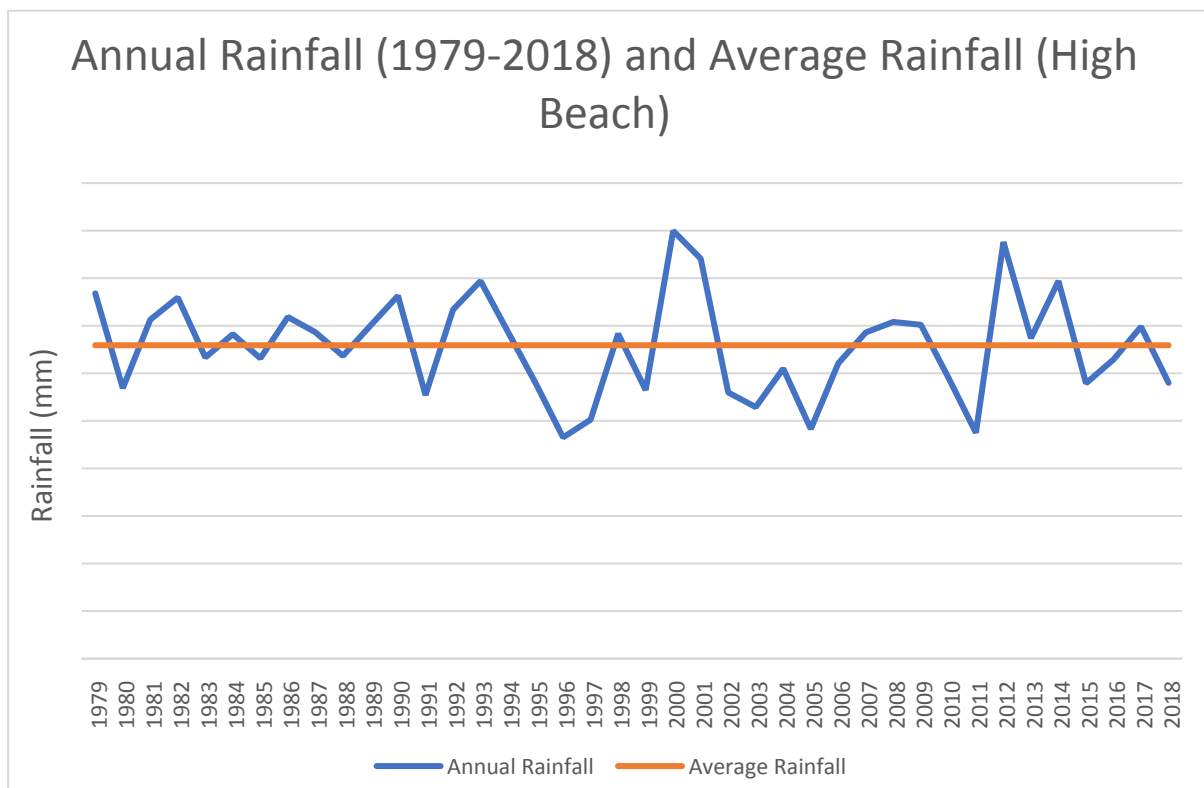
Most of Epping Forest has an underlying geology of London clay and/or sand / gravels. The London clay is particularly prone to seasonal shrinkage and expansion, which can lead to problems of subsidence and heave in buildings. Where properties are founded on shrinkable clay soils, up to 80% of subsidence claims are related to trees which cause damage by drawing significant quantities of water from shrinkable clay soils leading to ‘differential movement’ within the property concerned.¹ When a neighbour identifies a differential movement concern in their building, it is standard practice for building surveyors to consider the tree growth in the surrounding area. Inevitably this often implicates trees owned by the City of London as the cause of the differential movement. Between June 1981 and September 2019, 184 subsidence notifications have been made to Epping Forest (Figure 1).

Figure 1: Subsidence Claims by year



Since 1994 48% of subsidence claims to the City Corporation of London have resulted in a payment. Claims have been made in 27 of the 52 compartments that make up the Forest and Buffer Lands, with three compartments (29, 30 and 33) accounting for 46% of claims, reflecting both the close proximity of these areas to buildings and their underlying soil type. As well as proximity to buildings and soil type, comparison of the annual rainfall figures (Figure 3) with the subsidence claims by year (Figure 1) indicates that the weather also appears to affect the number of claims received; these increase following dry years and decline in normal and wet years.

¹ Royal & Sun Alliance (2013), The Subsidence Handbook, page 66

Figure 2: Subsidence Claims by Compartment**Figure 3: Annual Rainfall at High Beach (1979-2018)**

Legal Context

The owner of a tree has a responsibility to ensure that it does not damage his neighbours' property. Where it is established that a tree is causing damage, the neighbour may be able to compel the owner to prune, maintain or remove the offending tree to prevent further damage, and may also recover the costs of repairs². Appendix 3, which has been taken from the Subsidence Handbook, outlines the key court cases covering subsidence claims.

Any recovery action against the City of London is likely to be brought either as a private nuisance or a negligence claim. In either case it is necessary to establish causation and foreseeability of damage. In deciding causation, the Complainant needs to provide evidence of the presence of the tree roots, the nature of the soil, soil desiccation and seasonal and progressive movement of the damaged building. A Claimant only has to persuade a judge that it is more likely than not that the tree(s) in question caused the damage.

Damage is foreseeable if the tree owner knew or ought to have known that there was a real risk of damage if they did not take available preventative measures. It has generally been accepted that local authorities have been aware in principle since the mid-1970s that certain trees in dry conditions cause damage to adjacent properties if they are not properly managed. The reality is that the City of London will have difficulty in establishing a defence that vegetation related subsidence damage was not foreseeable.

Joint Mitigation Protocol

The Joint Mitigation Protocol (JMP) is an industry agreed method of subsidence claims management where trees are implicated as being the cause of building movement. It seeks to establish best practice in the processing and investigation of tree root induced building damage, benchmarking time scales for responses and standards of evidence. With regard to Local Authority owned trees, the protocol identifies evidential requirements (Appendix 3) for both the Complainant and the Local Authority based on the value of the tree and gives a timetable for this evidence to be forthcoming. The overall aims of the protocol are to "speed up the process of claims handling, decision making and mitigation implementation leading to resolution, while at the same time recognising the value of trees in the built environment and providing local authorities with all the investigative evidence required at the beginning of the process".³

Not all stakeholders in the subsidence claims management process are signed up to the protocol; however, as far as practical, the COL Epping Forest seeks to work to the JMP standard. Being seen to manage effectively our tree root nuisance responsibilities towards our neighbours is considered essential for reducing potential liabilities and for helping our neighbours find timely resolution to any subsidence problem. This report outlines the process and practice for managing the City of London's tree root nuisance responsibilities at Epping Forest.

CAVAT

Capital Asset Value for Amenity Trees (CAVAT) is a tool for valuing amenity trees and is widely adopted across the UK within local authority tree departments. It is also incorporated into the Joint Mitigation Protocol for use in the assessment of subsidence cases and is the tree valuation method adopted into the COL Epping Forest subsidence management process, supplemented with additional narrative detailing the importance of the tree(s) concerned. The

² Royal & Sun Alliance (2013), The Subsidence Handbook, page 120

³ <https://www.ltoa.org.uk/resources/joint-mitigation-protocol>

CAVAT system includes two methods: the Full Method, which is used by staff at Epping Forest to provide a compensation replacement value for single trees; and the Quick Method, which is used to determine the value of a population of trees as an asset, for asset management purposes. An example of a completed CAVAT valuation is given Appendix 5.

EXISTING MANAGEMENT PROTOCOL

Following the receipt of a subsidence claim, the City of London's subsidence procedure for handling claims is given in Appendices 1 & 2 and is the process that is followed at Epping Forest. Alongside meeting the requirements of the COL subsidence process at Epping Forest, there are four key outcomes that we seek to achieve when managing subsidence claims:

1. The value of the trees as environmental assets is assessed and factored into deliberations;
2. The liability of the Forest for any building damage is robustly challenged;
3. COL Epping Forest record management is durable and accessible over long periods; and,
4. Ongoing COL Epping Forest management responsibilities are identified and built into work programs.

In outline, the procedure followed on receipt of a claim at Epping Forest concerning subsidence is as follows:

- Claims are mapped on to the COL GIS system and electronically filed on the COL subsidence database;
- At the request of the Col Insurance Department, a CAVAT assessment is undertaken;
- All historic tree inspection data and statutory designations for the area/tree(s) in question is collected;
- A site report on the management history and value of the tree(s) is prepared and submitted to the COL Insurance team;
- *(The liability assessment is undertaken by the COL insurance team);*
- At the request of the COL Insurance Department, works are carried out as required and recorded in the COL database;
- Ongoing maintenance works are recorded and added to the Vegetation against Property (VAP) work program; and,
- All works are currently carried out by the COL in-house Arboriculturist Teams, and can include tree removal, tree reduction, stump poisoning, stump grinding, and vegetation clearance as required.

PROPERTY MANAGEMENT CONTEXT

The following property management issues have been identified in relation to the management of Forest vegetation in response to subsidence concerns.

Tree Safety

- Areas of subsidence concern typically overlap with Tree Safety management zones. There is the potential to integrate management actions for tree safety with those to mitigate subsidence concerns, especially in areas more prone to claims.

Statutory Designations

- Many areas affected by VAP issues are within SSSI and/or SAC designated areas. Permission from Natural England may be required for work to be undertaken in these areas.
- Tree Preservation Orders (TPO) may apply to trees and permission from the Local Authority is required before work to these trees can be carried out.
- Conservation Area designations may apply and permission from the Local Authority is required before work to these trees can be carried out.
- All British bat species are protected by law and any works to trees hosting bats requires a license from Natural England prior to works beginning. A Bat assessment is undertaken on each tree identified as a subsidence concern and, as required, a method statement to reduce / eliminate the potential impact of the works on the protected species will be given as part of the COL assessment of the tree(s).

Invasive / Alien Species

- Oak Processionary Moth is present in Epping Forest. Should it be present in a tree requiring work, safe working protocols need to be followed to ensure the health and safety of the arborists working on the tree and to prevent further spread of the moth.
- The presence of any other invasive species at the site will be noted and protocols followed accordingly, e.g. for Russian Vine.

Boundaries / Property

- Vegetation trespass: There is an opportunity to integrate management actions for vegetation trespass with those to mitigate subsidence concerns, especially in areas identified as more prone to claims.
- Wayleaves: There is an opportunity to integrate management actions for wayleaves with those to mitigate subsidence concerns, especially in areas identified as more prone to claims.
- Illegal encroachment onto Epping Forest: Works to mitigate subsidence damage can leave a boundary open to encroachment and safeguarding against this and/or ongoing monitoring may be required.

Highway Verges

- If a claim is adjacent to the public highway, reference should be made to the COL Highways Vegetation Management PDN in managing the outcomes of any claim and the opportunity to integrate management actions.

Utilities

- The presence of and possible impact on any utilities present needs to be noted. There is an opportunity to integrate management actions for services with those to mitigate subsidence concerns, especially in areas identified as more prone to claims.

MANAGEMENT CONSIDERATIONS

Ecological

- Veteran Tree(s) have been and will continue to be implicated in subsidence claims. The high number of subsidence claims within Compartment 29 is of particular concern for COL Epping Forest, as the compartment includes an assemblage of veteran Oak pollards of international significance (at Barn Hoppit). Oak trees are one of the trees most commonly associated with subsidence. Protection of veteran trees is of the utmost importance due to their unique biodiversity and this will be reflected in the CAVAT assessment undertaken.
- Plant species of conservation interest may also be present on or around the trees requiring work, for example Bluebells (*Hyacinthoides non-scripta*) and Moschatel (*Adoxa moschatellina*). Works to mitigate subsidence may have an adverse impact on these important ground flora species unless particular care is taken to avoid impact whilst undertaking works.
- There is an opportunity to integrate management actions for conservation with those to mitigate subsidence concerns, especially in areas identified as more prone to claims. For example, the risk of subsidence claims can be reduced through creating and maintaining open ground in sensitive subsidence areas, which also fulfills conservation targets of opening glades within the Forest.

Heritage and Landscape

- Parts of Epping Forest are historic designed landscapes, for example Highams Park and Wanstead Park, where some potentially desirable management actions may also contribute towards reducing subsidence concerns. There is an opportunity to integrate management actions for heritage and landscape with those to mitigate subsidence concerns, especially in areas identified as more prone to claims.

Access

- The provision of access routes for the public or under wayleave agreements provides an opportunity to integrate management actions for access with those to mitigate subsidence concerns, especially in areas identified as more prone to claims.
- Removal of tree(s) on the land boundary might facilitate unauthorized access onto Forest land, e.g. through garden extensions and dumping.

Community Liaison / Consultation

- Typically trees of subsidence concern are located close to residential areas and potentially prominently located. The CAVAT valuation provides an assessment of the amenity value which will influence the management outcomes; however, work to a tree(s) may require prior community liaison and consultation if the tree is particularly valued.

Local Plans

- Change of neighbouring land use from open field to residential use will increase risk management liabilities for root nuisance (and tree safety) in areas with shrinkable clay soils.
- In known problem subsidence areas (e.g. Compartments 29, 30 and 33), adopting a proactive approach to challenging development where VAP issues many impact high value trees could help to reduce future harmful impacts to tree(s) of high importance for conservation.

MANAGEMENT STRATEGY

Overall objectives for managing vegetation against property in Epping Forest:

1. To ensure the COL Subsidence Claims management procedure is met to agreed timeframes;
2. To provide a local VAP management procedure to meet record keeping and ongoing management responsibilities;
3. To reduce our long-term liability and maintenance costs for managing vegetation against property, including integrating subsidence related works with habitat and access management works.

OUTLINE MANAGEMENT PROGRAM

Objective	Action	Timing (Years)
1/2	Maintain a database of all claims, including GIS plotting, reports and correspondence.	Ongoing
1/2/3	Maintain a work programme for all ongoing mitigation works for existing and new claims.	Ongoing
3	Review the potential to reduce third part liabilities, including root nuisance, through integrated land management actions (e.g. see Appendix 6 for an example of indicative proposals).	2022
1/2/3	Subsidence mitigation works program implemented as required.	Annual

APPENDICES

1. Third Party Subsidence - Claims Handling Procedure
2. Flow chart TRN claims procedure
3. Joint Mitigation Protocol Evidential Requirements for Council Owned Trees
4. Legal context, key case
5. Example CAVAT assessment
6. Compartment 30 Indicative integrated management proposals for specific areas

APPENDIX 1: COL THIRD PARTY SUBSIDENCE - CLAIMS HANDLING PROCEDURE



Third Party Subsidence - Claims Handling Procedure Notes

Introduction

Subsidence claims can be technical, complex and often take a long time to settle. These claims can also be very costly, and the aim of these procedure notes is to agree a process that manages subsidence claims efficiently with an aim to mitigate costs to the City.

What is subsidence?

Subsidence is caused when the ground beneath a building moves. There can be several causes, but the most frequent causes are tree root nuisance and defective drainage.

Certain species of tree require a lot of water and will take water from the surrounding soil through their roots. If the surrounding soil is composed of clay, the ground can become very dry, and the soil compacts. If the building above is not adequately supported by good foundations, or the foundations cannot cope with the compaction of soil, the building sinks and cracking occurs.

Subsidence can be identified by diagonal tapering cracks, often emanating from the corner of a door or window.

Defective drains can cause subsidence, as the water leaking from the drains washes away the small particles at the top of the soil, causing the ground to move downwards.

How can subsidence be managed?

If tree roots are proven to be the cause, there are several options for mitigation, including crown reduction and regular pruning. Third parties will always push for trees to be removed, but unless we have concerns regarding the safety of the tree, or there is no amenity value, tree removal should be the last resort.

Other ways of managing subsidence include rehydration systems, tree root barriers and underpinning of the property. Again, underpinning should really be a last resort, as it is extremely costly.

When is movement not caused by subsidence?

There are many cases of movement that are not caused by subsidence, including:

- Landslip
- Natural settlement of the building
- Defective workmanship/design
- Heave (upwards movement of the soil due to rehydration)

First notification of subsidence claims

The first notification of a claim will usually be sent to the Open Spaces department by the claimant's representatives. The purpose of this is so that Open Spaces can identify if the trees are the City's responsibility. If the trees are not the City's responsibility the claim can be immediately redirected.

If the trees are the responsibility of the City, the claimant's representative should submit a pack of evidence including:

- Area of damage
- Site plan
- Photographs of the damage, general area, vegetation
- Arboricultural report
- Details of the City's vegetation, and third party vegetation
- Root analysis
- Drainage report
- Trial pit and borehole data
- Level and crack monitoring (at least 12 months' data if possible)
- A mitigation request per tree identified (e.g. crown reduction, removal, no action)

The pack of evidence is sent to the Insurance and Risk Management (IRM) team, to forward to the City's insurers for a claim to be set up. The insurers will acknowledge the claimant's representatives.

CAVAT report

Once the claimant's representatives have confirmed which of the City's trees they believe are implicated, and have provided us with their request for mitigation, Open Spaces should provide the Insurance Team with a CAVAT report. This report should include the following information for each tree:

- CAVAT value
- The condition (e.g. signs of disease or impact damage)
- The age
- The inspection and maintenance records
- A copy of the tree safety policy

Previous claims

The IRM team will check the City's claims handling system (LACHS) for records of any previous claims at the risk address, and within the surrounding area.

Loss adjusters

Once the CAVAT report and supporting documentation (including details of previous claims) is available, the claim will be referred to a loss adjuster to act on the City's behalf. The loss adjuster will visit the site, review the evidence and report back to the City and the City's insurers with advice on liability and recommendations for next steps.

The City's preferred adjusters are The Graham High Group Ltd (GHG). If GHG are acting for the claimant and a conflict of interests would occur, McLarens can be instructed.

If the claimant's representatives refuse to provide evidence, the City's loss adjuster can be instructed to carry out site investigations on behalf of the City. The cost of these investigations can be passed back to the claimant if the City's adjuster finds that the City's trees are not the cause of movement.

Liability

If the evidence suggests that the City's trees are causing the movement, GHG will work with the City to agree the most suitable mitigation measures. Mitigation measures will be carried out in agreement with the City's insurers and the claimant's representatives.

Once the claimant has submitted a full pack of evidence that proves the City's trees are to blame, mitigation measures must be carried out within a reasonable period of time.

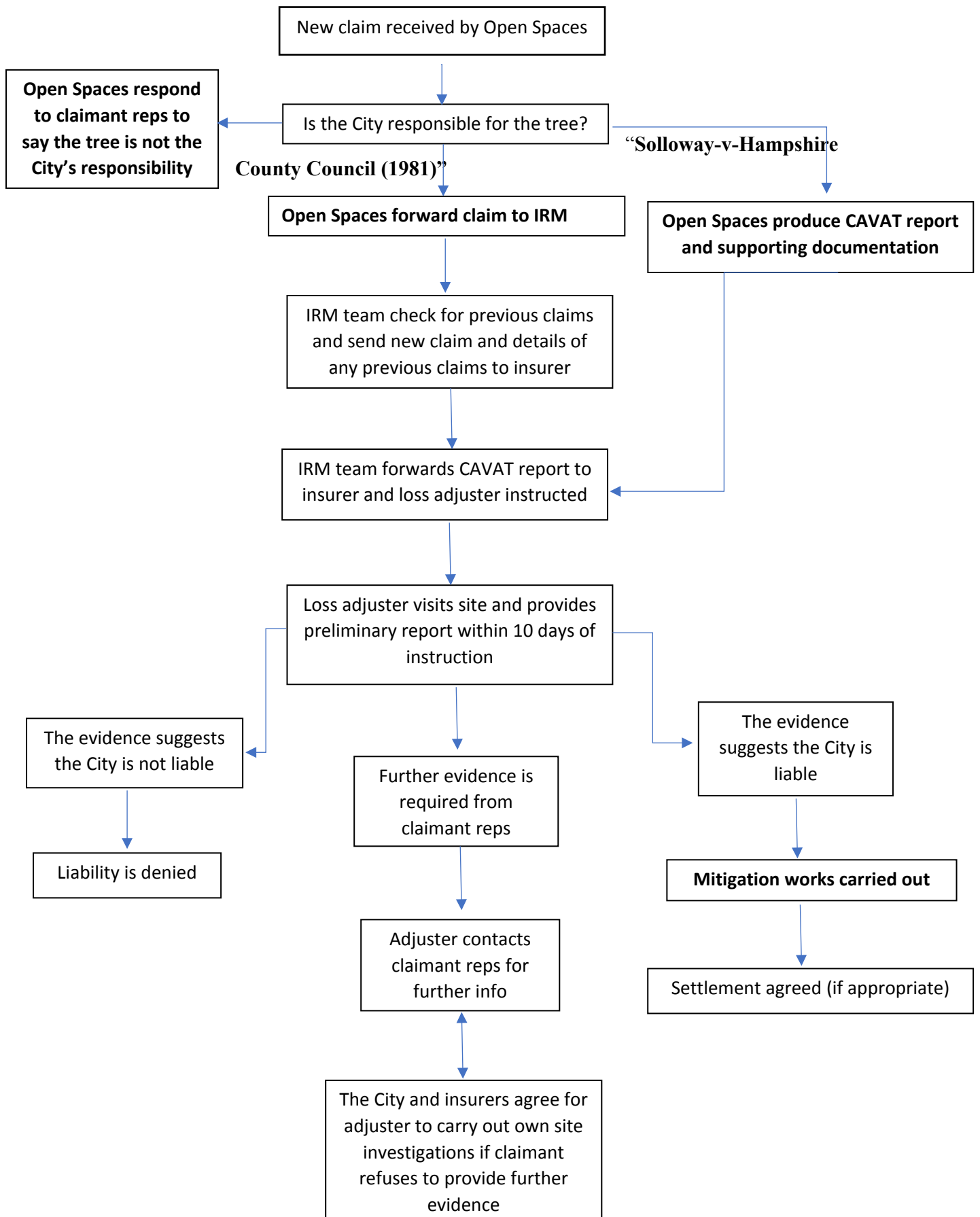
Timescales

The claimant has six years from the date of loss to bring a claim, however with subsidence claims each new day that damage occurs constitutes a new date of loss. Therefore, limitation runs from the date that the property has stabilised.

Record keeping

The Open Spaces department will maintain a record of all mitigation works agreed, to ensure that agreed pruning cycles are adhered to.

The IRM team will maintain a record of all claims on the City's claims handling database (LACHS). The reason for denying or accepting liability will be recorded within the notes section of the claim record, and all relevant emails, documents and decisions will be saved within the Diary/Notes function.

APPENDIX 2: FLOW CHART TRN CLAIMS PROCEDURE (Open Spaces responsibility in bold)

APPENDIX 3:

Joint Mitigation Protocol Evidential Requirements for Council Owned Trees

Maximum Timeline in	Building Insurer (or their representative) visits the property & assesses if cause of damage is subsidence and if council tree or other factors are likely to be implicated. If the tree, then the Tree Controller/Risk Manager is identified.
7 days	Building Insurer (or their rep.) writes to Tree Controller within 7 calendar days of identifying Tree Controller seeking: 1. Contact details of the individual/department responsible for control of the tree, along with any reference, to assist communication regarding tree management and liability. 2. Contact details of their liability Insurer if appropriate. 3. The value of the tree (low, medium or high) as determined by the Tree Officer.
21 days	Within 14 calendar days of receiving the correspondence referred to above, the Tree Controller/Tree Officer will respond to the Building Insurer (or their rep.) giving responses to questions 1, 2 & 3 above.
81 days	Within 60 calendar days of receiving the value of the council tree, the Building Insurer (or their rep.) will submit either: a) A letter confirming withdrawal of the case, on the basis that the site investigation has not implicated the council tree in the damage, and that the file should be closed. b) A "Submission of Evidence" based on the tree's CAVAT value with the requested mitigation (pruning/felling). Low Value Trees - may be removed & replaced. Medium Value Trees - make an important contribution to the area. High Value Trees - make an extremely important contribution to the area. Low Value Trees: 1. Report on damage to building. 2. Plan & profile of foundations. 3. Plan of site showing location of building in relation to all trees and significant vegetation in vicinity of site. 4. Trial pit cross section to underside of foundation depth plus borehole through base of trial pit to a minimum depth of 3m (explanation to be provided if borehole unable to reach 3m depth). Borehole log to be provided. 5. Root ID from beneath underside of foundation. Medium Value Trees: All of the above plus: 6. Soil moisture content readings at 0.5m centres, starting at the underside of the foundation, down to 3m depth of B/H. 7. Liquid limit test results at underside of foundation and approx 2m depth 8. Plastic limit test results at underside of foundation and approx 2m depth. 9. Soil plasticity calculated from LL – PL. 10. Control borehole to 3m depth with log, with same tests as above, if it is possible to locate such a borehole on the site and remote from the influence of any vegetation. If impossible then explanation needed. 11. Oedometer or suction test results at underside of foundation & 1.0m centres down depth of 3m borehole ONLY when there is NO control borehole. If there is a control borehole then other tests listed are sufficient. 12. Shear vane test results at 0.5m centres, starting at the underside of the foundation, down to 3m depth of borehole(s). 13. CCTV & hydraulic testing to drains (excluding Water Board owned) located within 3m distance of area of subsidence damage. If unable to water test due to no access/blind entries/etc then give reason. 14. Crack monitoring is required on a maximum of 2 month frequency and is to be set up ideally at time of first visit by building insurer representative or within 7 days of 1 st visit. Send all available readings with Submission of Evidence. High Value Trees: All of the above EXCEPT crack width monitoring, plus: 15. Control borehole (if possible) & point of subsidence borehole, each to 5m depth (not 3m as for medium value). 16. Level monitoring commencing at outset of claim for a relevant period (max. 12 months) using a deep datum (if possible) to 8m depth, otherwise use deep manhole. 17. Particle Size Distribution Analysis to BS 1377 Part 2 test 9.0 on a single soil sample taken from a 1m zone below the underside of foundation (Only if drains are present within 3m of the site of damage).

	Joint Mitigation Protocol Evidential Requirements For Council Owned Trees (Continued)
109 days	A. Unless mutually agreed to the contrary, if the requested mitigation scope is not accepted within 28 calendar days of submission of the "Evidence" then the case falls outside this Joint Mitigation Protocol.
172 days	B. Mitigation is to be completed within a maximum of 13 weeks of the date of the Submission of Evidence. If tree removal cannot be agreed without longer term, crack or level monitoring evidence, then the Tree Controller will arrange for pruning to be completed as soon as is practicable but no later than 13 weeks from date of Submission of Evidence.
1 year	C. In cases other than single trees owned by the local authority, e.g. where there are multiple trees/vegetation and/or multiple ownerships an arboricultural report may be required at the discretion and expense of the building insurer. This report should identify & detail the physical attributes of ALL trees & significant woody vegetation in the area of damage. It should also state proposed mitigation which should include the option of pruning/on going maintenance if thought to stand a reasonable chance of bringing about stability. D. The Building Insurer will want to proceed with repairs within 1 year from outset of claim. E. By mutual agreement all the above timescales may be varied. F. Protocol to be reviewed after 12 months in operation.

APPENDIX 4: LEGAL CONTEXT, KEY CASES

The details below are based on the Subsidence Handbook (2013) pages 125 -129 and from professional reports and are only given by way of background to highlight the main context in which the City of London is currently liable for Root Nuisance. Further legislation and case law applies and the list below is not exhaustive.

The Leading decision on liability and causation

Paterson v Humberside County Council (1995): To succeed in a recover action a Claimant must establish that his neighbour's tree(s) were the "effective and substantial" cause of damage to his property.

Rupert St John Loftus- Brigham v London Borough of Ealing (2003): The Court of Appeal reaffirmed that the correct test was whether the Defendants' tree roots were an effective cause of damage.

Local authorities: foreseeability of damage

Solloway v Hampshire County Council (1981) confirmed that foreseeability of damage needed to be established. There must be a real risk of damage that is not less than the action or steps that would need to be taken to reduce or remove the risk. Knowledge of the defendant is also important.

Berent v Family Mosaic Housing and the London Borough of Islington (2012): The Court of Appeal confirmed the position that there must be a 'real risk' of damage before deemed foreseeable knowledge is inferred.

Russell v London borough of Barnet (1984): It has generally been accepted that by virtue of their experience and financial resources, local authorities have been aware in principle since the mid 1970's that certain trees in dry conditions cause damage to adjacent properties if they are not properly managed.

Inadequate Foundations

Bunclark v Hertford County Council (1977): Established that it is no defence to say that the property was particularly vulnerable because of the poor construction. "Tree roots take their victim as they find them". See also *Paterson v Humberside County Council*.

What if the tree predates the house?

McCombe v Read (1955): Established that it is no defence for a tree owner to argue that the trees were present before the property that has suffered damage.

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APPENDIX 5: EXAMPLE CAVAT ASSESSMENT

Capital Asset Valuation of Amenity Trees (CAVAT) Assessment

Erehwon

22nd October 2018



Prepared for: Naomi Stefanie, Insurance and Risk Management Officer

Prepared by: Richard Edmonds, Senior Conservation Officer

Checked by: Geoff Sinclair, Head of Operations

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Introduction

1. The City of London was advised that the property, Erehwon, has suffered differential movement and damage that they consider has been caused by trees growing opposite to the property and influencing the soils beneath its foundations.
2. In response to being informed of the possible property issue a Capital Asset Valuation for Amenity Trees (CAVAT) was undertaken on the 22nd October 2018 on two of the trees identified by the insurer's Arboricultural Assessment for felling. This note describes the finding of this assessment.
3. We report below on the trees using the same numbering system as OCA Insurance Services in the Arboricultural assessment

Tree 1

4. T1 is an English Oak (*Quercus robur*)
5. T1 is a young semi-mature tree that makes up part of a short section of woodland edge.
6. The CAVAT assessment for this tree gave a valuation of £2,531 (Appendix 1)
7. T1 has developed a one-sided crown due to competition and shading of other trees. It is growing adjacent to the public footpath and has a slight lean towards the highway
8. The tree is located adjacent to a Site of Special Scientific Interest (SSSI) and Special Area of conservation.
9. T1 is in a good healthy condition however due to its proximity to the public highway and leaning habit it will require remedial work in the future as its growth will eventually impact on the highway and a nearby street lamp. Therefore, I expect it to have a life expectancy of 20 to 40 years as a consequence of the need for intervention at a future point.

Tree 2

10. T2 is an English Oak (*Quercus robur*)
11. T2 is a semi-mature tree that makes up part of a short section of woodland edge. It is growing adjacent to the public footpath and has heavy branching developing towards the highway
12. The CAVAT assessment for this tree gave a valuation of £31,910 (Appendix 2)
13. The tree is located either immediately adjacent or partially inside a Site of Special Scientific Interest (SSSI) and Special Area of conservation.
14. T2 is in a good healthy condition with its stem covered in Ivy and is a potential bat roosting site. T2 has developed from a scrubland oak to an open crowned tree and is becoming a prominent individual tree on the edge of an urban location.

Conclusion

15. The CAVAT assessment for T1 and T2 was cumulatively £34, 441
16. Due to the foreseeable work that will be required to Tree T1 it could be felled, without prejudice, as part of the highway vegetation and tree safety management in this area.
17. T2 is becoming a distinctive and significant part of the Woodland edge without which the edge would be predominantly low scrub and bramble. We have no reason to undertake significant works on it and would wish to retain it in as natural a condition as possible.

Appendix One: T1 CAVAT Assessment

CAVAT

SPREADSHEET TO CALCULATE VALUE OF INDIVIDUAL TREE STOCK (FULL METHOD)

Only enter data in the pale-green boxes

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CAVAT	Quantities you measure / look up	Calculated Values
Step 1: Basic Value		
Measured Trunk Diameter	31.00	
Unit Value Factor	15.88	
Basic Value		£11,985.71
Step 2: CTI Value		
Community Tree Index (CTI) Factor	150	
Community Tree Index (CTI) Value		£17,978.57
Step 3: Location Value		
Location Factor	100	
Location Value		£17,978.57
Step 4: Functional Crown Value part 1		
Structural Factor	40	
Structural Value		£7,191.43
Step 5: Functional Crown Value part 2		
Functional Crown Factor	40	
Functional Crown Value		£2,876.57
Step 6: Amenity Value		
Positive Attributes Factor	30	
Negative Attributes Factor	-20	
Amenity Value	110	£3,164.23
Step 7: Full Value		
Life Expectancy Factor	20 - <40	
FINAL VALUE		£2,531

Appendix Two: T2 CAVAT Assessment

CAVAT

SPREADSHEET TO CALCULATE VALUE OF INDIVIDUAL TREE STOCK (FULL METHOD)

Only enter data in the pale-green boxes

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CAVAT	Quantities you measure / look up	Calculated Values
Step 1: Basic Value		
Measured Trunk Diameter	59.00	
Unit Value Factor	15.88	
Basic Value		£43,415.46
Step 2: CTI Value		
Community Tree Index (CTI) Factor	150	
Community Tree Index (CTI) Value		£65,123.19
Step 3: Location Value		
Location Factor	100	
Location Value		£65,123.19
Step 4: Functional Crown Value part 1		
Structural Factor	50	
Structural Value		£32,561.59
Step 5: Functional Crown Value part 2		
Functional Crown Factor	70	
Functional Crown Value		£22,793.12
Step 6: Amenity Value		
Positive Attributes Factor	50	
Negative Attributes Factor	-10	
Amenity Value	140	£31,910.36
Step 7: Full Value		
Life Expectancy Factor	>80	
FINAL VALUE		£31,910

APPENDIX 6: Compartment 30 Indicative integrated management proposals for specific areas

Compartment 30, The Pines / Newlands Road

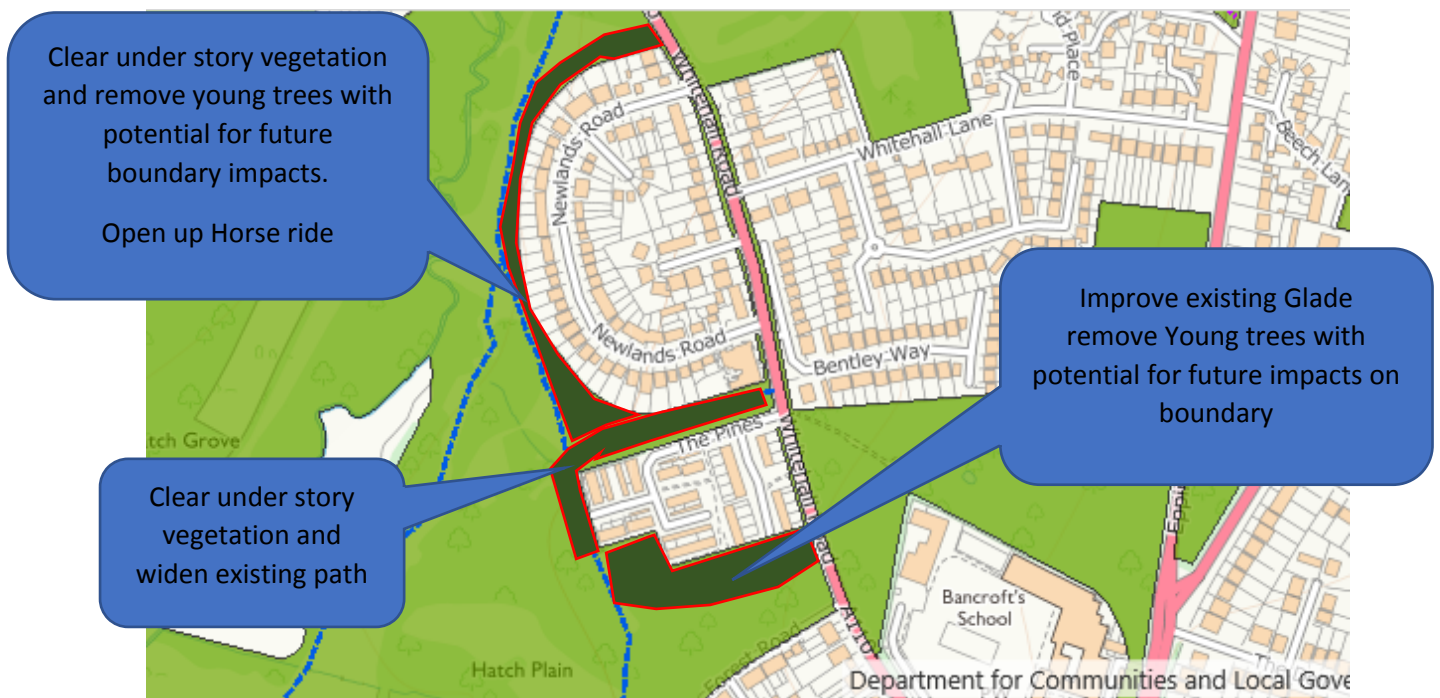
Background

Compartment 30 which has the highest number of subsidence issues by compartment that we have on the Forest.

Some work has been carried out around the boundary over the years and one small area is subject to on-going maintenance after initial felling and clearance.

There are the beginnings of a natural Glade at the rear of the Pines which can be extended and improved, it also borders the Woodford Golf course and a Horse ride which would benefit from opening up.

The Pine's roadside boundary would also be improved with thinning of the understory behind the road side hedge.



Benefits

- Improved access to horse ride and paths;
- Improved ground condition of rides and paths;
- Glade creation (biodiversity);
- Reduced illegal rubbish dumping on Forest boundary;
- Improved monitoring and prosecution of illegal dumping; and,
- Improved access for tree safety inspection.

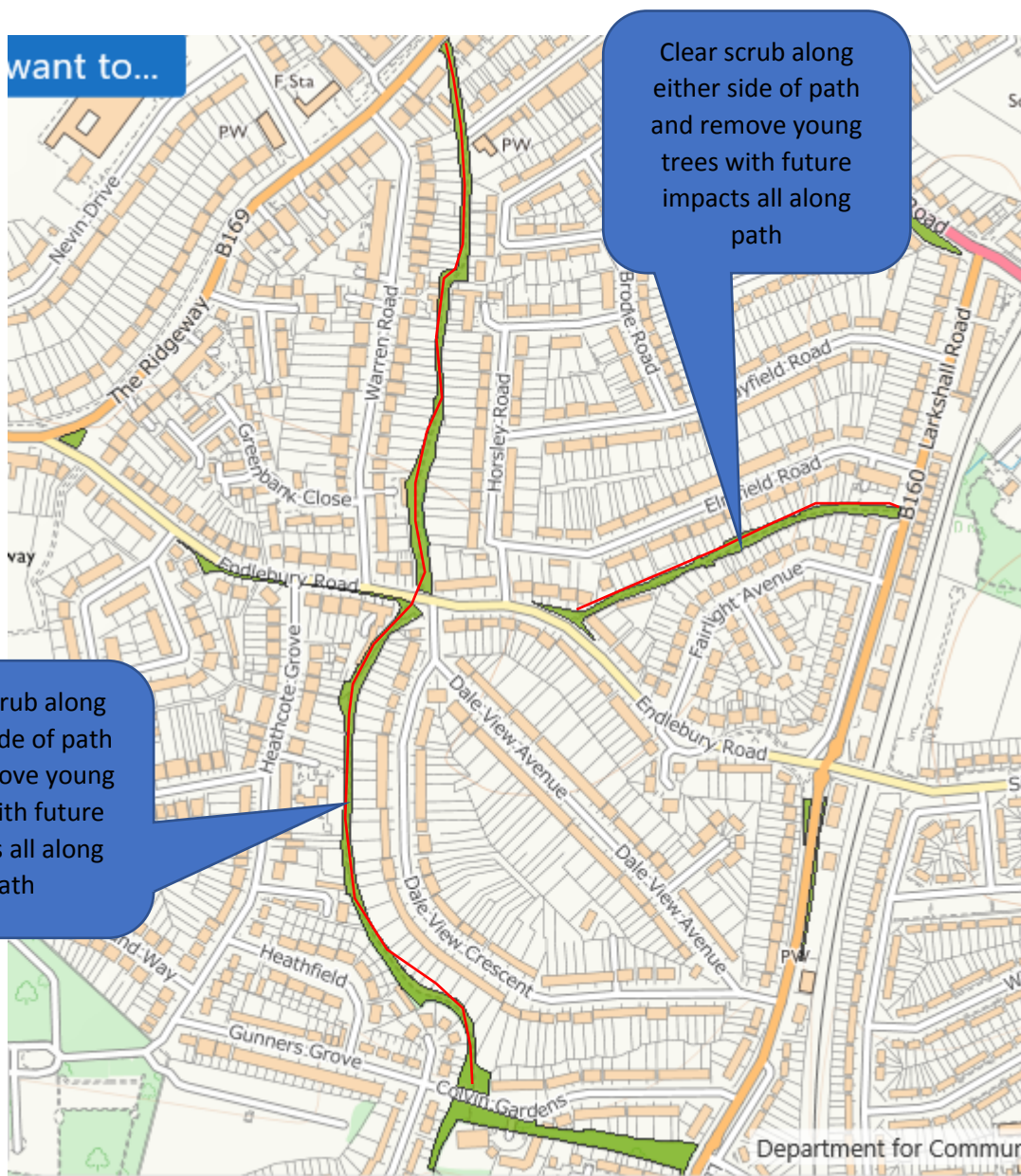
Constraints

- Area is within a designated SSSI and SAC, therefore any proposed works will need approval from Natural England.
- Works will need to be undertaken outside of the bird breeding season.

Compartment 30 Endelbury Road Indicative integrated management proposals

Background

Management of the green lanes north and south of Endelbury Road of Epping Forest has lapsed in recent years. The green lanes have been cleared in the past, but ongoing maintenance work has been sporadic, leading to the lanes becoming blocked in places, with illegal dump rubbish from properties that back on to the lanes.



Benefits

A works programme for the green lanes would:

- Improve safety for local residence;
- Improve the aesthetics and appearance of the green lanes;
- Reduce illegal rubbish dumping;
- Improve monitoring by Forest Keeper team;
- Improve public access along the green lanes; and,
- Improve access for tree safety inspections.

Constraints

- Works will need to be undertaken outside of the bird breeding season.