Policy Guidance Note:

CT1 Tree Risk Management

January 2015

East Lindsey
DISTRICT COUNCIL

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Contents

Introduction

This document sets out East Lindsey District Council's (ELDC) approach to managing the risk of trees that it is directly responsible for. It aims to provide information, guidance and a framework for decision-making and prioritising tree works.

Trees are highly valued for their individual beauty, as an intrinsic and key element of the natural and historic landscape and for the wildlife they support. Decaying trees can even have importance for some of our rarer wildlife such as bats.

The Council is committed to managing safety, whilst encouraging public access, in ways that do not compromise important wildlife conservation, heritage, amenity and landscape objectives. It is therefore essential that risks from trees be considered in this wider context and that a balance will often have to be struck between conflicting priorities.

There are many statute and common law provisions that apply to tree safety – most recently the Corporate Manslaughter Act 2007, which allows for prosecution of managers of organisations where a failure in the way activities are managed or organised, results in a person's death. The National Tree Safety group provides detailed information in its publication 'Common Sense Risk Management of Trees' published December 2011.

This guidance for tree risk management is set within the context of national policies and advice for the conservation and management of woodland and trees. It contributes directly to the delivery of the Council's Tree Policy (Part One) and specifically Policy CT1 below:

CT 1: All well established trees will be subject to regular Health and Safety inspections

It is developed as part of the Council's Safety Policy, particularly section (xvi) 'Members of the Public/Visitor Safety', and is added to the list of Guidance Notes in Appendix 1 of the Safety Policy.

What is the risk?

On average, each year six people in the UK are killed by trees. So the risk of being struck and killed by a falling tree or branch, or by driving into one, is extremely low. For comparison, this is 100 times less than deaths associated with stairs.

The risk from a tree in a public space is even lower. Three people on average are killed each year by trees in public spaces, but as almost the entire population of the UK is exposed, the risk is about one in 20 million. The risk per tree, of causing fatality is of the order of one in 150 million for all trees in Britain, or one in 10 million for those trees in, or adjacent to areas of high public use. (Source: Health and Safety Executive [HSE].)

The average risk is firmly in the 'broadly acceptable' region of the tolerability of risk triangle published in HSE's Reducing Risks, Protecting People.

However, the public may not perceive this low level of overall risk, particularly following an incident. Media coverage is often disproportionately extensive because of the comparative rarity of deaths involving trees. This, combined with several high profile legal cases has resulted in Councils taking a more defensive position that can only be addressed by a detailed procedure, or system for tree risk. For example, Surrey County Council was served with a HSE improvement notice, following a fatality, that required the development of a detailed 'tree risk policy' and adoption of effective procedures.

How can risk be managed?

It is not possible to eliminate all risk, and with trees, it is not possible to observe all conditions that lead to failure, or control all factors that cause failure. For example decayed roots are not visible and it is not possible to prevent exposure to extreme gales. Also the scientific study of tree failure is not well advanced, so new information is being constantly presented to improve decision making. However there is a long-established (1949) legal principle applied to trees that risks should be kept as low as reasonably practicable (ALARP). This is more recently interpreted as 'practicable' within available budgets.

The HSE considers there are four main elements to consider for a defendable system:

- An overall assessment of risks from trees, particularly identifying groups of trees by their position and degree of public access (a zoning system).
- A system of periodic, proactive checks by a competent person linked with record taking.
- Obtaining specialist assistance and/or taking remedial action when a check reveals defects outside the knowledge/experience of the surveyor.
- A system to report damage to trees and to trigger checks after certain events e.g. severe gales.

Acceptable risk threshold

To retain the benefits of trees it is accepted that there will always remain some residual risk in return for the benefit. A number of sources (including QTRA Ltd) have suggested that an annual risk of death of 1 in 10,000 might be an acceptable figure to start with as a limit of tolerability of risk. 'For members of the public who have a risk imposed on them 'in the wider public interest' HSE would set this limit at 1/10,000 (The HSE 1996).

The Council accepts this limit of tolerability of risk to the public from it's trees and will therefore generally reduce the potential risk of harm by trees on its land to below 1 in 10,000.

The Council also needs to be able to demonstrate that the risks posed by its trees are 'As Low As Reasonably Practicable' (ALARP), taking into account the benefit provided by the individual tree. This may result in work to some trees of a risk lower than the above threshold.

Exceptionally there may be a reason to retain some trees of higher risk e.g. one with very high amenity. This decision would follow from a detailed risk assessment and only be taken with the agreement of managers and in consultation with stakeholders.

Where private trees are identified to pose a risk of harm of 1 in 10,000 or greater to users or structures on an adjoining Council site, the Council will seek to ensure that the risk is reduced to an acceptable level and will, where such trees are identified to be 'Dangerous', take action using its powers under the Local Government (Miscellaneous Provisions) Act 1976 as outlined in separate policy guidance note TP10.

Risk zone assessment

Tree risk can be managed by inspecting each tree individually and regularly but this has severe financial constraints. The consensus is that regular inspections should be aimed at areas of greatest risk (risk zoning) and kept to an acceptable minimum, so as not to become a financial burden. To ensure the best use of available resources, the Council's land with trees on or adjacent is divided into relative risk zones under three categories:

A Higher risk

B Intermediate risk

C Lower risk

Allocation of zones is based on an evaluation of the highest risk tree retained on a particular site using the process outlined in the Quantified Tree Risk Assessment (QTRA) System. (See 'Risk Assessment' below.)

Zoning for inspection

Prior to the Council commencing with the system of Risk Zoning based on actual tree risk outlined in this document, it was necessary to carry out a preliminary zoning exercise to determine the order in which sites are subject to their first inspection and added to the Ezytreev (ET) tree management system. This was based on a basic desk-based assessment of the trees present and targets within tree falling distance, with each site being allocated a provisional priority of A-C. This process also took into account any other factors such as reported issues or complaints, planned transfer of ownership or where management was being considered. This provisional zoning information was recorded in a database, 'The Register of Tree Inspection Zones'.

This 'Register' is made up of all land on the Council's 'Asset Holdings' mapping database, plus other sites where there is known Council responsibility for management. As sites are inspected for the first time and added to the tree management software, this register is gradually being superseded. New sites will however continue to be added to the register as and when they become the Council's responsibility, as it serves as a valuable source of information on tree related assets.

Both the preliminary and full zoning procedures are outlined in the Neighbourhoods Procedure 'Managing Risk – Trees on and adjacent to ELDC Land'.

The Inspection Zone categories are shown in **Table 1** along with the relevant zone description and the risk of harm threshold. This threshold is a QTRA probability of harm e.g. 10 is a risk of 1 in 10,000 (see QTRA, Mike Ellison).

A site where the highest risk retained tree has a risk of harm of 1 in 200,000 will therefore be Zone B.

Sites that have only trees of less than 15cm stem diameter at 1.5 metres above ground level are considered to be low risk, (based on research on tree failure from the USA, which established that most failures occur in trees with a trunk diameter greater than 15cm) and are therefore allocated to Zone C. Such trees are not subject to full risk assessment but are inspected for maintenance purposes e.g. removal of stakes/ties and formative pruning, so any issues will be noted and necessary work carried out.

Table 1

Inspection Zone	Zone Description	Risk of Harm Threshold (x 1000)
A	Higher Risk Zone	20 - 100
B	Intermediate Risk Zone	200 - 1000
C	Lower Risk Zone	>1000

Scheduled inspection and recording

The allocated zone for each site is used to prioritise inspections and determine the date for re-inspection. Generally trees in 'Higher risk zones' will be inspected at least every one and a half years, 'Intermediate risk zones' every three and a half years and 'Lower risk zones' five and a half years.

A site may be re-zoned following reassessment of the trees or a change to the highest risk tree on the site. For example, it may have been subject to risk reduction work or felling, or another trees' condition may have deteriorated, in which case the new risk level or the new highest risk tree would determine the zone allocation. Following each scheduled inspection a site's inspection zone will be updated on the ET tree management system. In this system, sites are recorded under 'site type' as Zone A, B or C. This automatically sets the reinspection interval across the system and acts as register of tree inspection zones.

Sites will be inspected according to the above schedule and where trees with significant defects are identified, a risk assessment will be carried out and recorded, for the highest risk tree(s). If the highest risk tree is found to pose a tolerable risk of harm (ROH) and is to be retained, no other trees within the site need to be recorded individually for safety purposes, provided the inspector is satisfied that they do not pose a higher risk than the first tree.

If the highest risk tree is to be removed following inspection, the process is repeated until the inspector has identified the highest risk retained tree on the site. The risk assessment for the highest risk retained tree effectively becomes the risk assessment for the site as a whole.

Taken literally this approach may mean that while the inspector will survey the whole site, only one tree is recorded and risk assessed per site (particularly on small sites). However in practice for larger sites the inspector may choose to record a handful of the higher risk trees across the different areas of the site.

Trees will be inspected and recorded in the field using ET mobile software which incorporates a QTRA risk assessment calculator. This procedure is documented in the Neighbourhoods Procedure 'Managing Risk - Trees on and adjacent to ELDC land'.

Non-scheduled Inspection and recording

Occasionally trees may be inspected more frequently than the above schedule - for example following complaints or after adverse weather conditions. Complaints will be managed in the ET system and the Arboricultural Officer or another member of the Neighbourhoods Service will alert Area Team Managers following adverse weather. A list of 'A' Zone sites will be provided for staff to record that sites have been inspected and noting any necessary action. This ad hoc inspection is recorded in the ET system and may then require a more detailed separate risk assessment, depending on the information gathered.

Risk assessment

The risk assessment is undertaken using the Quantified Tree Risk Assessment QTRA system (QTRA Ltd). It applies established and accepted risk management principles to tree safety management. Firstly the 'targets' (vehicles, people and property) upon which the defective tree part(s) could fail are assessed and quantified. The significant defect(s) already identified are then considered in terms of both impact potential (size) and probability of failure. Values derived from the assessment of these three components (target, impact potential and probability of failure) are combined to calculate the risk of significant harm occurring.

Works recommendations

We will follow the current British Standard for Tree Work when recommending works to trees. Where there are significant defects, decisions on recommending risk reduction work will primarily be based on the relative QTRA risk, but will also consider the ALARP principle and the most cost effective use of the tree management budget. For example, while a contractor is visiting a site to carry out tree safety work, it may be appropriate to instruct them to also carry out lower priority risk reduction or management work to the same or other trees.

Council tree work priorities

QTRA scoring is used to prioritise work by identifying the trees likely to cause the greatest harm. Those trees with a higher score will generally be dealt with first but this may be modified by species, age and location. For example, practical management goals and replanting requirements may mean some lower scoring trees may become a higher priority for work.

Work generated by inspections will be prioritised by urgency (tree risk) and examples of target response times are given in Table 2.

Table 2

Work Category	Risk of harm (QTRA bands)	Target Response Time
1	Immediate Safety Work (≤1000)	As soon as practicable
2	Priority Safety Work (2000 - 5000)	6 weeks
3	Planned Safety Work (6000 – 10000)	Within 12 weeks of inspection
4	Management work - Priority 1	Within 6 months of inspection
5	Management work - Priority 2	Within 12 months of inspection

Management works priorities

In addition to recommending works as a result of formal risk assessment, the process of on site recording of trees provides an opportunity to highlight any management recommendations.

The two management priorities outlined in Table 2 allow the prioritising of certain works above others. Examples of how this divides in practice are given below:

Management work – Priority 1

Formative pruning, thinning or other pre-emptive work that may be most cost effectively carried out at this stage, rather than being left to a later date.

Management work – Priority 2

Work primarily for aesthetic or minor nuisance reasons, or to improve the tree stock

Recording of information - maintaining records

Records of tree inspections, work carried out and by whom, and raw data must be retained, in case a claim is made against the authority. The number of records to be held along with the requirement for a clear evidence trail, in the event of a claim, is met by the ET integrated software system. This is linked to a geographical information system (GIS) with recording and access to data in the field.

Record keeping is also linked to Council Tree Policy CT7 below:

CT 7: The Council will produce and regularly update Tree Management Plans for its main areas of trees and woodlands.

The associated text explains further, that officers responsible for managing the Council's trees will use the results of regular tree inspections to compile an inventory of our tree stock and to plan a phased management programme (see paragraph 3.11 of 'Trees East Lindsey – Part One').

In practice this requirement for tree management plans will mean that in addition to inspecting these sites for tree safety, a more detailed survey will be carried out at the same time, to record recommendations for any ongoing management required.

Development of the database using integrated mapping and recording allows the Council to:

- Categorise priorities for action in varying ways and subject to resources.
- Determine future work programme and timing.
- Generate orders for tree management with detailed work schedules and costings.
- Refine and allocate budgets for tree work.
- Plan new and replacement tree planting to maintain and increase tree cover on Council land.

Resources and training

The Council will develop a single 'Tree Management Budget' that will enable budgetary control, so available resources are most effectively used in terms of reducing overall risk (ALARP) whilst considering amenity value (see Policy Guidance Note: TP1 Public Amenity Assessment).

The Council will ensure that those carrying out inspections at the various levels have adequate knowledge and training.

Background documents

Veteran Trees - A Guide to Risk and Responsibility, English Nature: EnglishNatureVetTreesRiskGuide.pdf

Towards Reasonable Tree Risk Decision-Making. Neville Fay: NFayPaper.pdf

Trees East Lindsey:
www.e-lindsey.gov.uk (search for Trees and Hedges)

Londsdale D. (1999) Principles of Tree hazard Assessment and Management. HMSO Publications.

QTRA Mike Ellison - www.qtra.co.uk

Matheny N.P. & Clark J R (1994) Evaluation of hazard trees in urban Areas. ISA Books.

National Tree Safety Group:
www.forestry.gov.uk/forestry/INFD-7T6BPP

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