



VALUE OF TREES

PROJECT CLOSURE

REPORT

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ADEPT

The Association of Directors of Environment, Economy, Planning & Transport

INTRODUCTION

This Project Closure Report marks the formal conclusion of the Value of Trees Toolkit project, commissioned by the Association of Directors of Environment, Economy, Planning and Transport (ADEPT) and funded by the Rees Jeffreys Road Fund.

The project aimed to provide local authorities across the country with specific guidance on tree planting, supporting them in planning for future landscapes, tackling climate change, building resilience and promoting nature recovery.

Leicestershire County Council, in collaboration with specialist consultants Treeco₂nomics, led the project.

This report explores the project's objectives, performance, key deliverables and lessons learned. The completion of this project represents a significant step forward in supporting sustainable tree planting practices and enhancing environmental resilience across the UK.

There has been significant interest in the toolkit and discussions have begun to take place with other local authorities regarding their adoption of this approach.



1. STAGE 1 - TOOLKIT DEVELOPMENT

There are challenges in ensuring the continued presence and resilience of trees along our highway network; not least the prevalence of tree pests and diseases such as ash dieback, climate change, highway design, concerns over highway safety and the issue of responsibility for their future maintenance.

Conscious of these concerns and following an approach from the Association of Directors of Environment, Economy, Planning and Transport (ADEPT), Leicestershire County Council (LCC) agreed to develop guidance and a toolkit that facilitates ambitions to re-establish trees as an important feature along the highway network. A project, funded through Rees Jeffreys Road Fund, was established to undertake this work.

The toolkit comprises four components:

A Species Selection Guide

Treconomics have drafted a 'Leicestershire Edition' Species Selection Guide that contains 350 species and cultivars including 50 species from an I-Tree study of the most populous trees in the county. This will provide developers and designers with a palette of trees from which to work for different locations.

A Valuation Matrix

A matrix in a spreadsheet format has been produced in which the species from the Selection Guide are characterised by specific parameters such as ecosystem services, biodiversity value, environmental tolerances, hardiness and climate zones. The scope of the matrix was broadened at an early stage to encompass hedgerows (five main species types and three differing dimensions).

The species have also been assigned an ecosystem services monetary value in relation to carbon storage and sequestration, air pollution absorption and storm water run-off retention over 30, 50 and 100-year periods. The matrix helps to build a picture of the multiple benefits trees can provide as part of the wider green infrastructure.



A Design Guide

A guide to best practice in terms of stock selection, planting matrices and density and post planting care with consideration for four planting scenarios within grass verges and hard surface locations.

Life Cycle Costing

A full holistic costing for all four tree planting scenarios from design to aftercare (including ancillary costs such as traffic management). Understanding the full life cycle cost will provide LCC with a robust basis for calculating commuted sums.

The toolkit was developed for specific application in Leicestershire with consideration of factors including:

- Local tree populations.
- Climate and geography.
- LCC and other local authority policy and plan context.

However, one of the project requirements was to enable the toolkit to be adaptable, so that it can be utilised by local authorities and other organisations nationwide.

Benefits

Most significantly for LCC, the benefits are in the outcomes of using the toolkit in delivering trees and hedgerows that play a central role as a component of the wider green infrastructure and delivery of ecosystem services.

In addition to their integral beauty in the landscape, trees can deliver multiple benefits as a key component of green infrastructure including carbon sequestration and storage, reduced flooding and provision of habitat for wildlife. Trees are also considered to provide health benefits by cooling urban areas, improving mental health and wellbeing and reducing fine particulate matter air pollution.

The ultimate outcome is to provide a better quality of life for county residents.



2. COMMUNICATION AND PROMOTION

Conferences and Boards

Substantial promotion of the toolkit at conferences and workshops has been undertaken prior to and following publishing, including:

- Trees, People and the Built Environment.
- Trees & Woodland Strategy Toolkit Conference.
- The Midland Highway Alliance Annual Conference.
- National Tree Officers Conference.

The work has also been presented at:

- ADEPT Transport and Connectivity Board.
- ADEPT Environment Board.
- Leicestershire Planners - Task and Finish Group.
- Future Highways Research Group.
- Trees and Design Action Group.
- LCC Tree Planting Project Board.
- ADEPT Engineering Board.
- ADEPT Planning Group.
- Woodland Creation Accelerator Fund meeting.
- MHA Carbon Steering Group.
- MHA Development Managers' Group.
- Planning and environment stakeholder workshops.

Press and Publicity

The work has been covered extensively in national and local media.

Most significantly, Value of Trees (VoT) was used as a case study in the CHIT's white paper, 'Green and blue infrastructure: A transport sector perspective', and pieces also appeared in Highways Magazine.

- [Highways Magazine April 2023](#)
- [Reference in Highways Magazine](#)
- [Horticulture Weekly](#)
- [CHIT Green/Blue Infrastructure](#)
- [The Planner](#)
- [Local Council Roads Innovation Group \(LCRIG\)](#)

The report, species selection matrix and evaluation tool have been published on the ADEPT and LCC websites.

Engagement

A series of engagement exercises were undertaken with a wide range of stakeholders to collect and gather views on key issues, including:

- Internal LCC stakeholders from across the authority (planning ecology, forestry, growth, highway engineers).
- Conservation charities (the Wildlife Trust, National Forest, Tree Council).
- National public bodies (Natural England, Forestry Commission and the Environment Agency).
- District and borough councils (planning and green spaces).
- Developers and transport consultants.

The engagement work helped the team to understand some of the potential opportunities and problems in delivery of the approach and where gaps in information exist.

Discussions regarding the potential for adoption of the toolkit elsewhere have been undertaken with Oxfordshire and Essex councils.

3. STAGE 2 - THE PILOT

Stage 2 of the VoT project involved the application of the toolkit to a selected highway planting scheme.

The chosen site forms part of a residential housing development in Leicestershire created by Jelson Limited. The development holds a variety of housing types, with associated access roads and public open space. The full report is presented in the Appendix.

The trial covers:

- Survey of existing site and characteristics.
- Use of VoT species selection matrix.
- Assessment of ecosystem service provision.
- Consultation with residents - a letter of consultation was sent to residential properties near and adjacent to existing trees.
- Tree supply, site preparation, planting and aftercare.
- Monitoring and recording.

Design and Planning

Using on site evidence, and considering approved layout plans, the following criteria was used to influence the VoT species selection process for the site:

- Tolerance to drought:
 - Soil space and verge construction suggest water availability will be low/intermittent.
 - Selection set to include 'moderately sensitive', 'moderately tolerant' and 'tolerant'.
- Ecosystem service provision:
 - The development features very few trees, requiring each tree to supply maximum ecosystem benefit.
 - Carbon sequestration selection set to include 'high' and 'medium'.
 - Avoided run-off selection set to include 'high' and 'medium'.
- Mature crown height.
- Tree species featured in the original landscape design reach 15-20 metres at maturity.
- Selection set at 4 metres to <20 metres.
- Crown spread:
 - Narrow street with houses either side.
 - Original layout had 22 trees planted as an avenue.
 - Selection set at 4 metres to <10 metres.
- Crown shape:
 - Tree species featured in the original landscape design have an ovoid shape and upright growth habit.
 - Selection set to remove wider spreading forms ('globular' and 'irregular').

The selection tool found 22 different species which could be considered suitable to the site, and which provide a high level of ecosystem services.

Planting

- Trees were sourced by LCC from a reputable nursery provider with high bio-security standards, using species selected in the VoT matrix.
- Site preparation took place just prior to planting, to minimise disruption for site users.
- The planting station was excavated to 1 metre deep and 2m x 2m wide where possible, before cultivating and backfilling with suitable soil.
- Trees were planted to LCC specification using a double stake and tie, with mower guard and mulch.
- Trees were planted in February 2024.
- The trees have been entered into LCC's established aftercare programme:
 - Watering at 50lt per week between 1st May and 31st August.
 - Check/remove stakes and ties as needed.
 - Top up mulch where required.
 - Remove stake and tie when tree is established.



Monitoring

Newly planted trees take 24-36 months to become established and can stand free of their stakes and ties.

This signifies that the tree has developed a strong enough root system to supply structural support and phenological requirements (e.g. enough fine roots to absorb moisture, gasses and nutrients required for growth). Once established, the tree will grow to its eventual mature size, increasing in height, width and trunk diameter. A regular and steady increase in size, with vigorous and obviously healthy foliage to match, are indicators of a well established and thriving tree.

- Each tree will be recorded within LCC's tree management system and given a unique identification number. Inspections and work actions will be recorded within the tree management system.
- Trees will be checked throughout the aftercare programme as part of normal maintenance regimes. A formal inspection will be conducted at the time of planting. Periodic assessment will be made during the year.
- Health assessment and images will be collected at each formal inspection and as required.

Trees which do not establish will be replaced and the aftercare programme restarted for the specimen.

Further reporting will be provided at the end of each growing season until the trees are established and thriving.

4. NEXT STEPS AND CHALLENGES

It may be problematic for some third parties to apply the matrix to specific scenarios, using the data in its raw form and so work has begun on investigating options for a user-friendly software package that can be rolled out for general use beyond stage 2.

During project discussions, the issue of how to encourage third party take up of the toolkit has been raised. LCC has already published a Tree Charter in collaboration with the National Forest, and it has been proposed that the Charter be developed further to include an action plan to which stakeholders could become signatories. Developed in partnership, this extended Charter would give stakeholders a valuable sense of ownership and investment in the approach.

Further promotion and feedback on the application of the toolkit will be undertaken. Once a software package has been developed this will be publicised to encourage uptake outside Leicestershire.

Feedback has been received from third parties following conference presentations and during workshops and meetings, particularly regarding the application of the species selection matrix. In response to this feedback, supplementary datasets have been added to the matrix, including whether species are native to Great Britain or naturalised and what type of location they are suitable for (parks, paved areas, SuDS schemes etc.).

The option of incorporating the toolkit into LCC's Highway Design Guide (currently under review) has also been considered as a way of introducing the approach into the highway observations and approvals process. This could add significant weight to the delivery phase of the project.

Embedding it within local planning policy would add additional credibility to the VoT approach. LCC will offer to work with planning authorities in their application of the National Design Guide, National Planning Policy Framework and Environmental Net Gain.

With local authorities seeing dwindling maintenance budgets and increases in material costs affecting viability of development schemes - both raised as an issue during project workshops - the funding of and responsibility for the future maintenance of trees along the highway has been questioned. The toolkit will provide a sound basis for understanding the costs involved in trees near the highway and for seeking opportunities for funding tree procurement and management. Nevertheless, responsibility for future maintenance is still a point for debate.



CONCLUSION

At this juncture it is difficult to fully establish the performance of the VoT toolkit in relation to the pilot scheme; the real proof of success will be beyond the formative years following planting, when the trees have fully established and been shown to thrive.

What can be determined at this point is that the toolkit, if properly applied, provides an excellent framework for delivering high quality design and planting proposals. The toolkit is simple to follow for individuals with a little knowledge of the subject matter although, as with any tool, it requires a level of officer judgement that may mean referring to someone with reasonable experience and understanding.

Delivery of the toolkit will ensure the right tree is in the right place so that they thrive in their chosen location. It will provide a blueprint for tree planting and management that can be applied by third parties as well as in house design and will give a sound understanding of the cost and benefits of trees, giving a robust argument for the continued funding of their planting and maintenance.



ACKNOWLEDGEMENTS

This project was led by:

Leicestershire County Council manages 2,575 miles (4,145km) of roads throughout the county.



Leicestershire is one of the least wooded areas of the country with currently around 6 per cent woodland - well below the national average of 10 per cent. The authority has undertaken to plant or facilitate the planting of 700,000 trees - one for every person in the county - as part of its pledge to become a net zero carbon neutral county by 2045.

www.leicestershire.gov.uk

This project was funded by:

Leicestershire County Council is grateful for the funding provided by the Rees Jeffreys Road Fund whose objectives

are to foster improvements in the engineering, management, design and use of roads to deliver safer, more environmentally sensitive, aesthetically pleasing and enjoyable outcomes.



Rees Jeffreys Road Fund

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This project was commissioned by:

The Association of Directors of Environment, Economy, Planning & Transport (ADEPT) is the voice of place directors who are responsible for providing day to day services including local highways, recycling, waste and planning whilst planning for the longer term.

ADEPT

ADEPT is a membership based, voluntary organisation with members across England. We bring together directors from county, unitary, metropolitan and combined authorities, along with sub-national transport bodies and corporate partners drawn from key service sectors.

ADEPT members develop long term strategies, investment and infrastructure needed to make their places resilient, sustainable, inclusive and prosperous. They drive clean, sustainable growth, delivering the projects that are fundamental to creating more resilient communities, economies and infrastructure. These services include housing, environmental and regulatory services, planning, economic development, culture and highways and transport.

ADEPT develops, supports and represents members to make their places more resilient, sustainable, inclusive and prosperous, leading the transformation of local authorities. We proactively engage with central government on emerging issues, promoting initiatives aimed at influencing policy, regulation and funding, developing best practices and by responding to government initiatives and consultations.

For more information on ADEPT please visit the website: www.adeptnet.org.uk

- ADEPT members are the place-making strategists and policy shapers across top tier local authority areas
- ADEPT members are specialists, delivering services and sharing best practice across key sectors including environment, planning, housing, transport and economy
- ADEPT members design strategies for the future, taking communities beyond 2035
- ADEPT members operate in networks, cutting through boundaries to work with partners across the political, public, private and community sectors
- ADEPT members provide opportunities to develop new talent, supporting the place directors of tomorrow

ADEPT

The Association of Directors of Environment, Economy, Planning & Transport

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APPENDIX



FORESTRY AND ARBORICULTURAL GROUP

VALUE OF TREES TRIAL

Hinckley

10th July 2023

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Included separately to this report

- Tree survey schedule
- Site plans
- Value of Trees species selection matrix
- Value of Trees ecosystem service provision
 - After 10 years
 - After 50 years
 - After 100 years

INTRODUCTION

In recognition of the benefits they offer for communities and wildlife, Leicestershire County Council (LCC) have produced a Value of Trees toolkit that aims to help reverse the decline of highway trees and hedgerows, which have suffered from the impacts of pests and diseases such as Ash Dieback.

The work was commissioned by the Association of Directors of Environment, Economy, Planning and Transport (ADEPT) and funded by the Rees Jeffreys Road Fund and supplies guidance on:

- How to select the right tree species for specific locations
- Information about the monetary value of different tree species in terms of the ecosystem services they provide (carbon storage and sequestration, managing flooding and air pollution)
- Life cycle costs of trees (the cost of looking after trees over their lifetime)
- Best practice guidance on how to procure, plant and maintain trees so that they thrive

PURPOSE

This report provides starting details for the VoT trial.

LCC are grateful for the agreement reached with Jelson Limited in allowing the Council to trail Value of Trees (VoT) on a pre-selected site.

The trial covers:

- Survey of existing site and characteristics
- Use of VoT species selection matrix
- Assessment of ecosystem service provision
- Consultation with residents
- Tree supply, site preparation, planting and aftercare
- Monitoring and recording

SITE

The site forms part of a residential housing development created by Jelson Limited. The development holds a variety of housing types, with associated access roads and public open space. Landscape design approved as part of planning consent granted by Hinckley & Bosworth Borough Council includes trees planted within the street scene. Dedicated highway around the development, including trees in the verge, is subject to adoption by LCC under a section 38 agreement.

Forestry & Arboriculture undertook a survey of trees around the site on 14th July 2022. Please refer to the attached site plans, tree schedule and associated images.

- 30 trees were identified, 29 of which are genetically identical clones of a single species (*Carpinus betulus* 'Frans Fontaine')
- Trees were found in poor to fair health
- Trees were dead or missing
- Several trees across the site are in the verge directly next to the road
- Many of the trees were produced by the growing nursery with branches to near ground level
Whilst a desirable feature for the species it is counter to permitted landscaping design

- Low branches are considered a direct obstruction to highway visibility, for pedestrians and road users but more pointedly residents existing their driveways
- Removal of low branches to create the specified 1.3m clearance would be highly detrimental to tree health
- Branch removal would stimulate species characteristic growth of prolific new shoots along the entire stem. The prolific growth would need to be removed annually to avoid expected issues with visibility splays and blocked footpaths

The highway verge appears to be constructed to standard design with a consolidated subbase of milled waste or road stone; concrete haunching used to support kerb and edging stones extending into the verge space; 300mm depth topsoil to support urban grass. As a result, there is very little useable soil or organic compound which could be utilised by trees. The highway verge therefore presents a hostile environment in which establishing trees would be problematic.

SPECIES SELECTION MATRIX

VoT selection tool allows users to choose criteria to help find trees suited to a particular planting site. Species can be chosen by their tolerance or sensitivity to known site constraints; by noted landscape values; by known mature size and growth form; and their rating of green service provision.

A brief was not set as part of the VoT trial for Faray Drive. Using on site evidence, and considering approved layout plans, the following criteria was used to influence the VoT species selection process for Faray Drive:

- Tolerance to drought
 - Soil space and verge construction suggest water availability will be low/intermittent
 - Selection set to include 'moderately sensitive', 'moderately tolerant' and 'tolerant'
- Ecosystem service provision
 - The development features very few trees, requiring each tree to supply maximum ecosystem benefit
 - Carbon sequestration selection set to include 'high' and 'medium'
 - Avoided run-off selection set to include 'high' and 'medium'
- Mature crown height
 - Tree species featured in the original landscape design reach 15-20 metres at maturity
 - Selection set at 4 metres to <20 metres
- Crown spread
 - Narrow street with houses either side
 - Original layout had 22 trees planted as an avenue
 - Selection set at 4 metres to <10 metres
- Crown shape
 - Tree species featured in the original landscape design have an ovoid shape and upright growth habit
 - Selection set to remove wider spreading forms ('globular' and 'irregular')

The selection tool found 22 different species which could be considered suitable to Faray Drive, and which provide a high level of ecosystem services. Please see attached results for full species list and set criteria.

Of the species identified many are in common production within UK plant nurseries. Certain selected species are not in such wide UK production but might be considered highly desirable for their visual amenity or uniqueness.

Without pre-order or contract supply it can be difficult to ensure selected species are available. LCC will look to use the following species: - *Freeman's maple and Lobell's maple, grey alder, Chinese birch and Monarch birch, erect common hawthorn and broad-leaved cockspur thorn, Kobushi magnolia, Manchurian cherry, whitebeam, hardy rubber tree/* (extinct in its native range). Confirmation of the precise species and number of each species chosen will be provided in future reports.

ECOSYSTEM SERVICE PROVISION

The tables below show ecosystem services provided by species selected for use at Faray Drive over 10 years, 50 years, and 100 years. Please also refer to the Full tables attached to this report.

Over a short period, trees from alder, birch and thorn species provide the majority contribution to ecosystem services. Freeman's maple and hardy rubber tree are shown to be significant contributors to ecosystem services over a longer period.

Name	Age	Replacement Value (£)	Carbon storage (kg)	CO2e storage (kg)	Carbon storage (£)	Carbon Sequestration (kg)	CO2e Sequestration (kg)	Carbon Sequestration (£)	Avoided runoff (m3)	Avoided runoff (£)	Total pollution removal (g)	Total pollution removal (£)
Acer x freemanii (Freeman maple)	10	£82	58	213	£53	2.1	7.8	£1.95	0.1	£0.00	12.2	£0.49
Alnus incana (Grey alder)	10	£82	10	36	£9	0.3	0.9	£0.23	0.1	£0.00	13.7	£0.56
Betula albosinensis (Chinese birch)	10	£82	10	35	£9	0.4	1.5	£0.37	0	£0.00	4.3	£0.18
Betula maximowicziana (Monarch Birch)	10	£82	43	159	£39	1.9	6.8	£1.69	0.1	£0.00	11.4	£0.48
Crataegus monogyna (Common hawthorn)	10	£73	13	47	£12	0.4	1.4	£0.35	0	£0.00	3.4	£0.15
Crataegus persimilis (Plumleaf hawthorn)	10	£73	21	75	£19	0.7	2.4	£0.60	0	£0.00	4.2	£0.18
Eucommia ulmoides (Hardy rubber tree)	10	£73	41	151	£38	0.8	3.1	£0.76	0.1	£0.00	8.8	£0.37
Magnolia kobus (Kobushi Magnolia)	10	£82	12	43	£11	0.5	1.9	£0.47	0.1	£0.00	5.4	£0.22
Prunus maackii (Amur chokecherry)	10	£69	32	117	£29	1.0	3.7	£0.93	0.1	£0.00	6.6	£0.26
Sorbus aria (Whitebeam)	10	£82	25	93	£23	0.8	3.0	£0.74	0.1	£0.00	5.6	£0.22

Name	Age	Replacement Value (£)	Carbon storage (kg)	CO2e storage (kg)	Carbon storage (£)	Carbon Sequestration (kg)	CO2e Sequestration (kg)	Carbon Sequestration (£)	Avoided runoff (m3)	Avoided runoff (£)	Total pollution removal (g)	Total pollution removal (£)
Acer x freemanii (Freeman maple)	50	£3,439	2,260	8,289	£2,056	16.8	61.5	£15.26	1.8	£0.00	168.4	£6.88
Alnus incana (Grey alder)	50	£3,439	243	890	£221	0.0	0.1	£0.03	1.2	£0.00	110.1	£4.51
Betula albosinensis (Chinese birch)	50	£727	474	1,737	£431	4.0	14.5	£3.60	0.7	£0.00	62.7	£2.56
Betula maximowicziana (Monarch Birch)	50	£3,439	2,309	8,466	£2,100	0.4	1.5	£0.38	1.1	£0.00	106.9	£4.37
Crataegus monogyna (Common hawthorn)	50	£1,689	734	2,691	£667	1.4	5.0	£1.25	0.6	£0.00	56.5	£2.30
Crataegus persimilis (Plumleaf hawthorn)	50	£3,083	1,055	3,870	£960	0.2	0.6	£0.14	0.7	£0.00	68.5	£2.81
Eucommia ulmoides (Hardy rubber tree)	50	£3,083	1,806	6,623	£1,643	7.6	27.9	£6.92	1.4	£0.00	133.8	£5.47
Magnolia kobus (Kobushi Magnolia)	50	£1,873	639	2,345	£581	1.7	6.2	£1.55	0.9	£0.00	82.7	£3.37
Prunus maackii (Amur chokecherry)	50	£2,949	1,609	5,901	£1,463	10.0	36.7	£9.11	1	£0.00	89.4	£3.66
Sorbus aria (Whitebeam)	50	£3,439	1,299	4,763	£1,181	0.2	0.7	£0.16	0.9	£0.00	87.6	£3.59

Name	Age	Replacement Value (£)	Carbon storage (kg)	CO2e storage (kg)	Carbon storage (£)	Carbon Sequestration (kg)	CO2e Sequestration (kg)	Carbon Sequestration (£)	Avoided runoff (m3)	Avoided runoff (£)	Total pollution removal (g)	Total pollution removal (£)
Acer x freemanii (Freeman maple)	100	£12,635	7,500	27,503	£6,821	0.2	0.6	£0.15	5.3	£0.01	500.9	£20.49
Betula albosinensis (Chinese birch)	100	£3,860	2,634	9,657	£2,395	11.0	40.3	£10.00	1.2	£0.00	113.2	£4.63
Betula maximowicziana (Monarch Birch)	100	£12,635	7,500	27,503	£6,821	0.2	0.6	£0.15	1.9	£0.00	173.7	£7.10
Crataegus monogyna (Common hawthorn)	100	£7,351	4,013	14,714	£3,649	0.3	0.9	£0.23	1.3	£0.00	126.1	£5.15
Crataegus persimilis (Plumleaf hawthorn)	100	£11,269	5,648	20,712	£5,136	0.4	1.4	£0.35	1.5	£0.00	141.8	£5.81
Eucommia ulmoides (Hardy rubber tree)	100	£11,269	7,500	27,503	£6,821	0.1	0.3	£0.08	1.6	£0.00	153.1	£6.25
Magnolia kobus (Kobushi Magnolia)	100	£8,234	3,430	12,576	£3,119	0.3	1.1	£0.28	1.3	£0.00	119.5	£4.88
Sorbus aria (Whitebeam)	100	£12,635	6,952	25,491	£6,322	0.5	1.8	£0.44	1.4	£0.00	132.4	£5.41

CONSULTATION

Residential properties across the site are occupied. Whilst not yet adopted the road, path, verge and trees are in public view.

The VoT trial requires existing trees to be removed and replaced with specifically selected specimens. Removal of existing trees is likely to raise concern amongst residents who may view the existing trees without being aware of established health and safety issues.

A letter of consultation shall be sent to residential properties near and next to existing trees. An example of the letter may be found attached to this report. The letter will be hand delivered in August 2023, allowing reasonable time for consultation prior to removal and replacement of the trees.

TREE REMOVAL AND REPLACEMENT

- Work to remove existing trees and stumps, prepare the ground and plant new trees shall be undertaken by LCC Operational Highways
- Trees shall be sourced by LCC from a reputable nursery provider with high bio-security standards, using species selected in the VoT matrix
- Tree removal and site preparation shall take place slightly prior to planting, to minimise disruption for site users
- Once a tree stump is removed the planting station shall be excavated to 1 metre deep and 2m x 2m wide where possible, before cultivating and backfilling with suitable soil
- Trees shall be planted to LCC specification using a double stake and tie, with mower guard and mulch
- Trees shall be planted between December 2023 and March 2024, in the traditional tree planting season
- Newly planted trees will be entered into a County Council established aftercare program: - watering at 50lt per week between 1st May and 31st August; check/remove stakes and ties as needed; top up mulch where required, remove stake and tie when tree is established

MONITORING

Newly planted trees will take 24-36 months to become established, i.e. can stand free of their stakes and ties. This signifies that the tree has developed a strong enough root system to supply structural support and phenological requirements (e.g. enough fine roots to absorb moisture, gasses and nutrients required for growth). Once established, the tree will grow to its eventual mature size, increasing in height, width and trunk diameter. A regular and steady increase in size, with vigorous and obviously healthy foliage to match, are indicators of a well-established and thriving tree.

- Each tree shall be recorded within LCC's tree management system. Trees shall be provided with a unique identification number. Inspections and work actions shall be recorded within the tree management system.
- Trees shall be checked throughout the aftercare program as part of normal maintenance regimes. A formal inspection shall be conducted at the time of planting. Periodic assessment will be made during the year.
- Health assessment and images shall be collected at each formal inspection and as thought necessary.
- Trees which do not establish shall be replaced and the aftercare program restarted for the specimen.

REPORTING

An update of the VoT trial will be provided at end of the planting process. Further reporting will be provided at the end of each growing season until the trees are established and thriving.

Stewart Marshall
Team Leader
Forestry & Arboriculture

10th July 2023