TREE, HEDGEROW AND WOODLAND STRATEGY
2020-2030

WIRRAL with Wirral Initiative on Trees

Contents

EXECUTIVE SUMMARY

Executive Summary

In July 2019 Wirral Borough Council (WBC) declared a climate emergency. This means that actions and policies of the Council are examined against the impact they have on climate. WBC & Wirral Initiative on Trees (WiT) have worked on this strategy because trees, woodlands and hedges have a vital role in ameliorating climate extremes. The strategy sets out better ways of managing and increasing trees and hedgerows, in line with the recommendations of the UK Committee on Climate Change, which in January 2020 set a target of increasing UK forestry cover. Trees are vital for our environment and for humanity beyond their key role in tackling climate change. Trees, hedgerows, and woodlands are an integral part of nature, supporting a wide range of insects, animals, birds and plant life. Having trees, hedges and woodlands in our local environment is essential for the future health of nature and of people. Trees are a cost-effective way to improve the environmental quality of our urban areas, delivering physical, social and economic benefits as well as mitigating climate change, improving storm water management, air quality, biodiversity, visual amenity and more. In considering trees and planning for the future, we need a fundamental shift in attitude and perspective - to recognise trees as public assets, rather than liabilities. The major focus of this strategy is to actively protect and increase Wirral's Urban Forest – the green infrastructure of parks, gardens, woods, trees in streets, footpaths, green spaces, trees and hedges that all benefit our environment so significantly. The strategy looks at the next ten years, but it's a framework for thinking about trees, woodlands and hedgerows for the next 50 or more years and will be regularly revised and extended.

The Wirral Strategy for Trees, Woodlands and Hedges has been subject to full public consultation and significant stakeholder engagement, the results of which have shaped the final document. It has been put together by Wirral Borough Council and Wirral Initiative on Trees (WiT) and we acknowledge the substantial contribution of the Tree Council. WiT brings together Wirral Tree Wardens, The Friends of Wirral Parks Forum, Wirral Environmental Network, The Wirral Society (CPRE), Wirral Wildlife (part of Cheshire Wildlife Trust) Wirral Countryside Volunteers, Urban Beekeepers Association, Conservation Area Groups Wirral, with contributions from Urban Trees, Merseyside & West Lancashire Bat Group, Natural England. This is a good model of shared commitment and collaboration which we hope will be echoed in the forthcoming National Tree Strategy.

Vision Statement

In the ten-year span of this strategy over 210,000 trees will be planted, at least 21,000 per year.

In doing so we will replace many times over the number of trees unavoidably lost with the caveat of the unknown quantity of trees which may be lost to ash dieback.

The trees that are planted will see Wirral's tree canopy cover doubled by the time they are fully grown.

We will adopt the principle of "the right tree for the right place" in order to ensure the most resilient tree population possible.

We will establish a clear picture of Wirral's tree stock and its benefits.

We will work constructively with individuals and groups to deliver this vision.

The purpose of the strategy

• Providing a mechanism to improve the provision and care of trees, woodlands and hedgerows

• Ensuring that decisions and activities undertaken in relation to trees are made in a structured and consistent way;

• Monitoring the action plan(s) and policies for the care, management and enhancement of Wirral's trees, woodlands and hedgerows.

Overarching aims of the strategy

1. To protect, regenerate and care for Wirral's existing trees, hedgerows and woodlands

2. To plant more trees on the principle of the 'right tree for the right place' and encourage appropriate natural regeneration

3. To plant, restore and maintain hedgerows in rural and urban landscapes

4. To provide a framework for decision making and establishing a prioritised action plan for 2020-2030 and a model for many years beyond that

Objectives: Wirral Borough Council will

1. Support a survey of all Wirral's trees to form a single data base. This shows what trees we have, what condition they are in, where there are gaps to fill with trees or hedges, where we need to add variety and new species that will cope better with changes in climate or landscape and identify trees and areas which may come under threat.

2. Support a comprehensive review of Tree Preservation Orders (TPOs) and conservation areas to reassess historical orders and potentially implement new orders to protect Wirral's trees.

3. Establish the overall value of Wirral's trees, to show what condition and size they are, and how much they benefit the environment and ecosystem.

4. Establish and support local tree nurseries on Wirral to provide future tree stock that will be climate resilient and offer appropriate planting for Wirral's environment. This will include schools, community groups and volunteers collecting seeds and cuttings of suitable trees and growing them on.

5. Establish a cycle of tree risk assessment and update management and action plans on an annual basis.

6. Use and evaluate the Council's Tree Risk Assessment Management tool in making decisions about tree felling, pollarding, pruning and coppicing.

7. Use and extend the strategy to set out how Wirral will respond to Ash dieback and any other pests or diseases that threaten Wirral's existing, replacement and new tree cover.

8. Deliver a training program for staff within the affected service areas on the value of trees, TPOs, and the tree strategy's vision.

9. Improve communication channels between WBC and residents to ensure advanced notice and reasoning for essential works are given across multiple platforms from temporary signs on site to information online.

10. Create a cross-disciplinary working group to monitor how effective the strategy is, if it is used well and looking at the data base and surveys, then setting targets for planting, etc. This working group will include WiT & key representatives from the organisations whose decisions have an impact on local trees, or who will ensure a better management of the urban forest.

11. Set objectives that clearly define what future success looks like and the specific benefits the urban forest is expected to deliver together with milestones for progress during the life of the strategy.

12. Establish monitoring standards that can identify how much of the expected benefits of tree, woodland and hedgerow planting have been achieved.

13. Establish a robust partnership and community engagement programme to put the strategy into practice.

14. Establish a working partnership with private, community and charitable owners of land, businesses and local developers in the management of trees, hedgerows and woodlands, contributing to an increased canopy/tree cover across Wirral and the establishment of new copses and hedgerows.
15. Review, strengthen and implement enforcement policies at all times to ensure protection of existing trees, woodlands and hedgerows.
16. Ensure all opportunities are taken to plant new, climate resilient trees and hedgerows to support wildlife and public amenity value, and encourage appropriate natural regeneration.
17. Create cross council working practices to implement and inform this Strategy, building an informed and expert work force that supports the care and management of trees, hedgerows and woodlands across Wirral.
18. Produce a public evaluative report on progress in achieving the Strategy, in partnership with the cross-disciplinary working group, every 3 years.
19. Set guidance to be followed by WBC contractors and other partners in following this strategy.
20. Where relevant, ensure plans for new building or development make provision for retaining existing trees, space for natural regeneration and for increasing the numbers of trees and hedgerows in line with targets for increasing canopy/tree cover.

Overall approach:
- WBC will work with community partners and local, regional, and national stakeholders and value their knowledge and expertise in trees and woodlands.
- Internally WBC will build strong cross-departmental working partnerships in delivering the Strategy.
- WBC will establish an open and clear communication strategy that enables public information, advice and support to be provided, in a consistent manner.
- WBC will ensure that the Strategy is governed by an annual review process between the Council, WiT and stakeholders. This would review how effective the strategy is, how well it keeps pace with other local and national policies and the need for any updated or amended content.

The full strategy document for Wirral's Trees, Woodland and Hedgerows is available at https://www.wirral.gov.uk/treestrategy and has more details about:

Paragraph	Content
1.1 - 1.6	Why Wirral needs a Tree, Hedgerow and Woodland Strategy; what its aims, purposes, objectives and expected outcomes are? It also refers to the Vision Statement (above) and Wirral's Urban Forest
1.7 / 1.8	says more about WBC's partners and stakeholders in the strategy, and how the strategy will be monitored and governed
1.9	Talks about the Statutory Duties which determine the policy and practice of a local authority such as WBC and Appendix 2 sets out more of the relevant legislation about Trees, Woodlands and hedgerows
2.1 & 2.2	covers how we map trees, how we set targets for more trees and where those trees can be planted
2.3	covers the quality of existing trees; assessing risks from trees; valuing ancient woodland, veteran trees and notable trees; and policy on tree felling
2.4 - 2.7	covers the legal measures to protect trees, such as Tree Preservation Orders, the procedures and enforcement of orders and planning restrictions and dealing with loss or damage from vandalism or development of land
3.0 - 3.4	is about planning, replacing and planting trees that continue Wirral's legacy, but provide resilience and diversity in changing times
3.5 - 3.8	covers planting trees in the different types of area in Wirral: Woodlands, hard landscapes, trees in the highways and in parks
3.9	is about the ideas of Green Infrastructure, seeing how trees and environments connect
3.10	covers traditional Orchards, as priority zones for biodiversity.
3.11	is about protecting trees when Council land is sold on
3.12 - 3.13	is about growing, propagating and planting for resilience
3.14 / 3.15	are about threats to trees from pests and diseases and the development of land
3.16 / 3.19	are about the essential resources in managing trees: planning, training and raising the skills of staff, funding and the involving of local communities, volunteers and other stakeholders
4.0 / 4.6	is about hedges: their value, best practice for hedges in gardens, council sites, open spaces and the laws which cover them and how to manage and protect them.

Appendices contain background information and references. These will be updated with links to websites and other publications

Appendix 1: The Benefits of Trees

Appendix 2: Legislation and Standards

Appendix 3: CAVAT

Appendix 4: The Right Tree in the Right Place – Deciding What to Plant

Appendix 5: Tree Pests and Diseases: Ash dieback

1. INTRODUCTION

1. Introduction

In July 2019 Wirral Borough Council declared an environment and climate emergency. Trees are vital for our environment and for humanity and will be key in tackling climate change. Via photosynthesis trees capture carbon dioxide from the atmosphere and store it in wood and other growth. This carbon is therefore sequestrated, locked up out of the atmosphere. The instigation of a climate emergency is therefore a key driver in the need for Wirral to develop this strategy and have a 'joined-up' vision for trees across the Borough.

Trees are our natural 'armour' against climate change. Trees, hedgerows and woodlands are an integral part of nature, supporting a wide range of insects, animals, birds and plant life. Having trees, hedges and woodlands in our local environment is essential for the future health of nature and of people. Trees provide one of the most cost-effective ways to improve the environmental quality of our urban areas, delivering physical, social and economic well-being as well as mitigating climate change, improving storm water management, air quality, biodiversity and visual amenity to name but a few (Appendix 1).

Trees matter to us all for a wide variety of reasons and in developing a Strategy for Wirral, focused on trees, hedgerows and woodlands, Wirral Borough Council (WBC) will engage with the broad range of issues that inform our thinking about our environment and set out an effective programme of activity that will help all residents meet future climate and environmental challenges. In doing so a fundamental shift in attitude and perspective is required - to one that views and thinks about trees as public assets, rather than liabilities. A ten-year strategy is a starting point, and from the process of developing and implementing policies and plans based on expanding our tree, woodland and hedgerow cover, our strategy can grow, change and develop to meet future challenges.

1.1 Why does Wirral need a Trees, Hedgerows and Woodland Strategy?

This strategy has been developed in partnership with Wirral Initiative on Trees (WIT). WIT is a forum of Wirral based community groups, who are key stakeholders in the development of the strategy and ensure that the work and voice of The Tree Council and Forest Research guide WBC planning in establishing best practice in expanding tree cover across the Wirral. This strategy contributes to new thinking for a National Tree Strategy.

A local strategy is needed to guide and influence tree and hedgerow planting across Wirral - in urban and rural areas. A strategy will ensure that:

- a valid estimate of tree cover is made for the Wirral and direct the decision to set a minimum standard for tree canopy cover.

- changes to the canopy cover can be monitored and managed in the light of tree health issues. Ash dieback is now on the Wirral and by its very presence demands urgent action.

- activities that increase and enhance tree and woodland will connect to wider landscape-scale projects as part of green infrastructure strategies (National

Planning Policy Framework, National Planning Practice Guidance).

- aims contained in the Government's 25-year Environment Plan (2018) to leave our environment in a sustainable and resilient condition.
- urban forestry activity can be better focused, both across tree planting and in the management of the existing tree stock.

Wirral Borough Council's (WBC) and WIT's Strategy for Trees, Hedgerows and Woodlands will link to a series of related local policies and action plans that will shape planning and day to day decisions around nature and ground ongoing work in a sound, evidence-based framework.

1.2 Scope of the Strategy and Vision statement

WBC manages trees, woodlands and hedgerows on behalf of Wirral's residents and visitors and are custodians of trees for future generations. In developing this 10-year strategy WBC will consider the future provision of trees and set standards for their care and management in the future. The strategy will provide a framework for thinking about trees, woodlands and hedgerows for the next 50 or more years and will be regularly revised and extended. WBC will encourage all landowners to increase and maintain their stocks of trees and work in partnership with the Council to deliver this Strategy. Trees are key to Wirral as a healthy, green and aspiring place to be. Furthermore, the value that trees add to Wirral's sense of place is also vital for our public perception and benefits growth and inward investment into the Borough.

Our Vision

- In the ten-year span of this strategy over 210,000 trees will be planted, at least 21,000 per year
- In planting 210,000 trees in the next ten years we will replace many times over the number of trees unavoidably lost with the caveat of the unknown quantity of trees which may be lost to ash dieback
- The trees that are planted will see Wirral's tree canopy cover doubled by the time they are fully grown
- We will adopt the principle of "the right tree for the right place" in order to ensure the most resilient tree population possible
- We will establish a clear picture of Wirral's tree stock and its benefits
- We will work constructively with individuals and groups to deliver this vision

1.3 Wirral's Urban Forest

The Urban Forest is a term used to encompass all the trees in an urban environment, whether they be garden, street, parks or woodland trees. Wirral's Urban Forest contributes significantly to its reputation as being an attractive place to live, work in and visit. The Borough is proud of its verdant character and the tree cover helps to soften our urban environment and acts as a conditioner filtering particulate pollution, making our surroundings a healthier place. Our Urban Forest is under threat from

incremental damage from development, highway improvement schemes, pollution, underground services, cable laying and simply from the pressures of being in proximity to people's homes and workplaces. The major focus of this strategy is to actively protect and increase Wirral's urban forest.

1.4 Purpose of the Strategy

The purpose of this strategy is to deliver the aims and objectives set out below by,

- Providing a mechanism to improve the provision and care of trees, woodlands and hedgerows.
- Ensuring that decisions and activities undertaken in relation to trees are made in a structured and consistent way; and
- Monitoring the action plan(s) and policies for the care, management and enhancement of Wirral's trees, woodlands and hedgerows.

1.5 Overarching aims of the strategy

1. To protect and care for Wirral's existing trees, hedgerows and woodlands.
2. To plant more trees on the principle of the 'right tree for the right place' and encourage appropriate natural regeneration.
3. To plant, restore and maintain hedgerows in rural and urban landscapes.
4. To provide a framework for decision making and establishing a prioritised action plan for 2020-2030.

1.6 Outcomes

Wirral Borough Council will:

1. Support a survey of all Wirral's trees to form a single data base. This shows what trees we have, what condition they are in, where there are gaps to fill with trees or hedges, where we need to add variety and new species that will cope better with changes in climate or landscape and identify trees and areas which may come under threat.
2. Support a comprehensive review of Tree Preservation Orders (TPOs) and conservation areas and their enforcement to reassess historical orders and potentially implement new orders to protect Wirral's trees.
3. Establish the overall value of Wirral's trees, to show what condition and size they are, and how much they benefit the environment and ecosystem.
4. Establish and support local tree nurseries on Wirral to provide future tree stock that will be climate resilient and offer appropriate planting for Wirral's environment.
5. Establish a cycle of tree risk assessment and update management and action plans on an annual basis.
6. Use and evaluate the Council's Tree Risk Assessment Management tool in making decisions about tree felling, pollarding, pruning and coppicing.
7. Implement an Ash dieback policy and develop relevant policies to pre-empt or manage any other diseases that will adversely affect Wirral's existing, replacement and new tree cover.

8. Deliver a training program for staff within the affected service areas on the value of trees, TPOs, and the tree strategy's vision.

9. Improve communication channels between WBC and residents to ensure advanced notice and reasoning for essential works are given across multiple platforms from temporary signs on site to information online.

10. Create a cross-disciplinary working group, involving key representatives from within or outside the organisations whose decisions have an impact on local trees, or who might have much to gain from a better management of the urban forest.

11. Establish monitoring standards that support the delivery of expected benefits of tree, woodland and hedgerow planting.

12. Establish the overall value of Wirral tree population and describe its profile in quantitative, qualitative and functional terms.

13. Have objectives that clearly define what future success looks like and the specific benefits the urban forest is expected to deliver in order to provide a critical compass for guiding action.

14. Ensure that a robust partnership and community engagement programme is designed to fuel delivery.

15. Establish a working partnership with private landowners, businesses and local developers in the management of trees, hedgerows and woodlands, contributing to an increased canopy/tree cover across Wirral and the establishment of new copses and hedgerows.

16. Review, strengthen and implement enforcement policies at all times to ensure protection of existing trees, woodlands and hedgerows, encourage appropriate natural regeneration and to ensure all opportunities are taken to plant new, climate resilient trees and hedgerows to support wildlife and public amenity value.

17. Create cross council working practices to implement and inform this strategy, building an informed and expert work force that supports the care and management of trees, hedgerows and woodlands across Wirral.

18. Produce a public evaluative report every three years on progress in achieving the strategy, in partnership with the cross-disciplinary working group.

19. Set guidance to be followed by WBC contractors and other partners in following this strategy.

20. Where relevant, ensure plans for new building or development make provision for retaining existing trees, space for natural regeneration and for increasing the numbers of trees and hedgerows in line with targets for increasing canopy/tree cover.

1.7 WBC partners and stakeholders

A wide range of individuals and groups have important roles and interests in the Borough's trees and WBC knows it cannot achieve the vision of this strategy alone. In developing and delivering this strategy WBC wants to bring people along with it. Some of the key stakeholders WBC will need to engage and work with are detailed below, this is not exhaustive:

Communities	Local Groups & Contributors	External Partners
• Residents • Council Elected Members • Visitors • Businesses • Landowners	• Wirral Initiative for Trees • Wirral Tree Wardens* • The Friends of Wirral Parks Forum* • Wirral Environmental Network* • The Wirral Society* • Wirral Wildlife* • Wirral Countryside Volunteers* • Urban Beekeepers Association* • Conservation Area Groups Wirral* • Merseyside & West Lancashire Bat Group • The Tree Council • Natural England *WIT members (2020)	• Magenta Housing • Directorate of People, Place & Economy (Community Action Wirral, Birkenhead Business Improvement District, Love Liscard & Wirral Chamber of Commerce) • Merseyside Ecological Advisory Service • Liverpool City Region Local Nature Partnership • Cheshire Local Nature Partnership • The Woodland Trust • Forestry England • Mersey Forest • National Trust

Figure 1: Partners, Stakeholders and Contributors

There is a huge breadth of knowledge and expertise on trees, hedgerows and woodlands on Wirral, both within the Council and within communities, individuals and private and third sector organisations. WBC will work with stakeholders and value their knowledge and experience in trees and woodlands.

Internally WBC will build strong cross departmental working partnerships in delivering the Strategy. Supporting this approach will be an open and clear communication strategy that enables public information, advice and support to be provided, in a consistent manner.

The trees, woodlands and hedgerows of Wirral are not isolated, they link into the wider regional woodlands of Cheshire and the Mersey Forest. By considering tree, woodland and hedgerow provision at local, regional and national levels WBC will engage with stakeholders and partners more effectively and ensure WBC protects, maintains and extends Wirral's trees, hedgerows and woodlands.

1.8 Governance

It is important that this strategy remains a live document up to 2030 and is continuously used, updated and referred to. WBC propose that the Wirral Tree Strategy is governed by an annual review process between the Council and stakeholders. Taking account of the Council's emerging statutory development plan and Green Infrastructure Strategy this would cover:

- Performance of the strategy
- The relevance of the strategy in relation to local and national policy
- The need for any updated or amended content in the strategy as necessary
- A published report every three years

We are aware that government is in the process of developing a National Tree and Open Spaces Strategy. WBC will therefore ensure that our local strategy fits into the national strategy once developed. This may involve refocusing our existing strategy to maximise national opportunities (e.g. around funding) and local implementation.

Research continues to support best practices in managing tree stocks, new tree and hedgerow plantings and inform developing strategies. WBC strategy will evolve in response to best practices and changes in legislation.

1.9 WBC Statutory Duties

As the Local Authority for the Borough of Wirral, WBC have a wide variety of statutory duties which WBC are required to perform by law. All landowners have a common duty of care under the Occupier's Liability Acts (1957) and (1984) and statutory duties under the Health and Safety at Work etc. Act (1974).

WBC owns all or parts of eight Sites of Special Scientific Interest (SSSIs), which are nationally important sites. WBC is obliged to manage the SSSIs it owns to achieve "good" or "unfavourable recovering" condition as defined by Natural England. This involves good tree management and encouraging natural regeneration on woodland SSSIs (Dibbinsdale), but also involves removal of trees on sites where they are inappropriate, such as lowland heathland (Heswall Dales and Thurstaston Common).

WBC is bound by the "biodiversity duty" (NERC Act 2006) "The public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity." (Natural Environment and Rural Communities Act 2006)

2. TREE, HEDGEROW AND WOODLAND MANAGEMENT

2: Tree, Hedgerow and Woodland Management

2.0 Protection and maintenance of existing trees, hedges and woodland

In protecting and maintaining existing trees, hedges and woodland, WBC will need to answer questions of:

- Location (where is our best canopy cover and where is the least canopy cover?)
- Land use (where will WBC plant trees?)
- Quality of existing stock (Tree risk assessment and identification of ancient woodland, veteran and notable trees)
- Protection and enforcement of legal measures to protect existing tree stock as well as newly planted trees.

To ensure Wirral's trees are protected, The Council will carry out a review of existing Tree Preservation Orders (TPOs) and conservation areas across the borough and consider implementing additional orders and more extensive enforcement where appropriate. WBC is committed to a single strategy and related policy implementation whereby all relevant departments build, maintain and use one resource/database.

2.1 Location of trees and how we set targets for more:

How many trees do we have and where? WBC and WIT have as one of their priorities to establish an accurate record, to plan for having more of the right trees in the right places to meet our share of national targets of increasing the contribution which trees can make to our environment. We will create such a record by using effective tools, like i-Tree Eco. This takes a scientifically-determined sample to give a standardised calculation of the effectiveness of trees in lowering temperature, pollutants, greenhouse–effect gases or in increasing the benefits for our quality of life.

Just counting trees doesn't really help, as a two-foot high sapling and a 300 year-old oak coming into its prime, each count as one tree, but they don't make the same difference to our environment. We have existing information which shows that less than 5% of Wirral is woodland. Data on tree canopy cover, which include all trees, whether in gardens, fields, parks woodland, urban spaces or streets indicates that Wallasey has 9% of tree cover, Birkenhead 12.1%, Wirral West 16.5%, and Wirral South 17.9%. Measuring the tree canopy still does not provide a basis for calculating the full benefits of trees in the same way as the intended i-tree eco programme can, which can take into account the type, condition, size, age, health and other vital statistics of trees. Wirral will therefore create a baseline through i-tree Eco as a starting point for setting targets for how many trees we must maintain and replant.
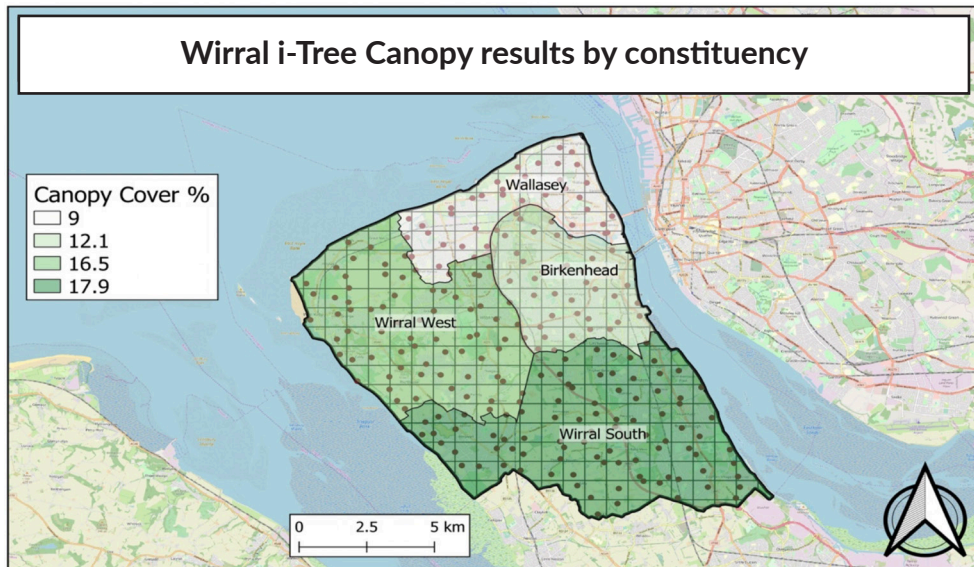
Figure 2: i-Tree Canopy Cover Wirral 2020

The target for tree canopy cover for Wirral is also a moving one, as we expect damage, disease, development and deterioration will add to the numbers of trees we need to replace. For example, based on areas similar to Wirral which have had ash dieback, similar tree pests and diseases for a while now, we can expect losses of between 20 - 35% of our current trees. The national targets to achieve environment benefits are also likely to be increased and Wirral's targets should also be able to respond as more spaces are identified as suitable for extending local tree cover.

Wirral will have a target to, over the next 30 years, increase the climate benefits from tree cover by 50%, by both protecting existing trees, by allowing space for natural regeneration and by planting new ones.

WBC and WIT will establish and review the baseline survey in the first year of the strategy and each year measure progress and set revised targets for restoration, regeneration and replanting to achieve maximum benefits.

2.2 Where can trees be planted?

There is a maze of national legislation around planning, development and now sustainability and climate change to take into consideration. Local policies and existing plans need to be considered, updated, and new approaches may need to be added to the strategy.

The decision to plant a tree requires consideration of:

- Choice of site – geology, soils, local weather conditions, soil water content
- Choice of tree - climate resilient
- Choice of nursery to prevent transmission of disease
- Choice of size of tree to plant
- Aesthetic or environmental concerns

- Care and maintenance before, during and after planting and through the following 3-5 years
- Pests and diseases
- Where natural regeneration is more suitable than planting

Tree planting locations should always be one of the first and most important decisions when considering space allocation in the urban environment in particular. Obtaining professional advice and the permission of the local tree officer (for planting on public land) is essential. Obtaining the advice of an arboricultural consultant (for planting on private land) is also recommended when considering tree planting locations. The national response to climate change has to been to attract large sums of money for community groups to plant trees. For a realistic approach to tree planting, all the above considerations must be taken into account when applications are made for funding.

WBC recognises where trees should not be planted in some areas e.g.

- Species-rich grassland e.g. Wirral Country Park at Thurstaston, Bodens Hey in Dibbinsdale.
- Marsh e.g. Bidston Marsh Local Wildlife site
- Lowland Heathland e.g. Thurstaston Common, Heswall Dales
- Sand dunes e.g. Harrison Park

These habitats are valuable in their own right and are increasingly rare throughout the UK and globally. WBC will consider the need for maintenance, removal or regeneration of existing trees from these sites on a site specific basis being mindful of the characteristics of the site and following best practice.

2.3 Quality of existing stock

2.3i) Tree risk assessment

The risk of being struck and killed by a tree or branch falling is extremely low (in the order of one in 10 million for those trees in or adjacent to areas of high public use). However, the low level of overall risk may not be perceived in this way by the public, particularly following an incident. (Health and Safety Executive (reviewed 2014)

Public safety aspects will be addressed by WBC as part of their approach to managing tree health. A sensible approach will ensure the maintenance of a healthy tree stock, the sound management of the environment and will satisfy health and safety requirements. WBC has commissioned a Tree Risk Assessment Strategy in 2019 and has appointed a Tree Risk Management Co-ordinator for 2020 onwards.

WBC & WIT will determine an inspection and recording regime with relevant control measures, following current industry standards and best practice. Individual tree inspection may only be necessary in specific circumstances, for example, where a particular tree:

- is in a place frequently visited by the public;

- has been identified as having structural faults that are likely to make it unstable; and
- has been identified for regular monitoring after a decision has been made to retain it with these faults.

Any planned work on trees or woodland on council land will take account of biodiversity issues e.g. bird nesting, bats roosting. At initial assessment, before any work on trees is undertaken, the local ecology will be assessed by a competent and experienced person and decisions regarding work on trees will take the expert's conclusions into consideration. Biodiversity considerations will be prioritised when providing advice, guidance and planning around tree risk management and all recommendations provided to private landowners.

2.3ii) Ancient woodland, veteran trees and notable trees

Ancient woods, defined as those continuously wooded since 1600CE, are home to more threatened species than any other habitat in the UK. They are the closest we have to natural woodland in the UK and an irreplaceable part of our heritage. Traditional orchards are included here as they are home to wildlife and provide rare and valuable habitats.

WBC will make every effort to find resources to care properly for its woodland holdings, including Dibbinsdale SSSI and Local Wildlife Sites such as The Dungeon, The Beacons and Eastham Country Park. This will include resources to help people to realise the value of these woods and use them without harming the wildlife. WBC will work with local communities and interested groups to achieve this.

The Woodland Trust has produced a guide to help people recognise trees that have special interest and to help justify why a tree (or group of trees) stands out from others of the same species. Sometimes it is important that their specific qualities can be clearly recognised, so they can be properly protected and managed.

WBC will take into account the value of existing mature trees and to look at a greater range of options whereby trees can be retained safely. We need to keep existing 'old' trees to ensure future veteran trees!

2.3iii) Tree Felling

Sometimes it may be necessary to fell trees at a site after risk assessment has been undertaken. WBC will only fell trees when they are dangerous and there is a risk of people being injured, or disease would have adverse impact on the remaining stock. A tree is considered dangerous if it is in very poor condition, for example because of a significant or notifiable disease or if it is structurally unsound. Taking the decision to remove or cutback a tree is always the absolute last resort and one the Council makes when there is no other option.

For every tree the Council fells on public land, at least two trees or more will be planted as soon as possible in an appropriate place in line with the replacements table in section 3.4. The number of replacement trees planted will be determined in relation to the size of the original tree felled in order that the climate benefits

will be the same within a reasonable time frame. Wherever possible, replanting will be in the same area as the felled tree, but if this is not possible, appropriate trees will be planted elsewhere on Wirral. This ensures overall increase in the number of trees.

Entire Deadwood, if safe, can provide a hugely important contribution to naturally succeeding woodland habitat. By leaving more deadwood in place, where it is possible and safe to do so, habitats may be established for a wide variety of invertebrates and other organisms.

WBC tree risk assessment strategy will always seek all alternative options to felling trees or removing hedgerows:

- Keep dead and dying trees wherever possible, as they provide important habitats for wildlife
- When looking at a dying tree, consider managed retrenchment or turn retained standing trunks into a feature or sculpture
- Leave cut or fallen branches as complete as possible. Leave them where they fall or move them closer to the tree to decay naturally and even artistically – decaying wood is too valuable to be burnt
- Stumps are important reservoirs of biodiversity and provide an historical record of a tree. Leave them to decay naturally
- Where health and safety concerns exist, felling is rarely the only option. Changing public access routes so they are kept away from the tree or reducing the extent of the tree canopy are often amongst acceptable alternative strategies.

The gradual incremental tree loss due to poor quality tree work and unnecessary felling is one of the biggest threats to the privately owned urban and suburban tree-scape. WBC commits to working with its partners to improve standards of tree surgery on Wirral and better inform the public in best practice in tree care.

2.4 Protection and enforcement of legal measures to protect existing tree stock

There is extensive legislation and policy development in England that supports environmental best practice. In relation to trees, the key policies are:

2.4i) Tree Preservation Orders (TPOs)

TPOs are administered by WBC and are made to protect trees that bring significant amenity benefit to the local area. This protection is particularly important where trees are under threat. All types of tree but not bushes or shrubs, can be protected, and a TPO can protect anything from a single tree to all trees within a defined area or woodland. Any species can be protected, but no species is automatically protected by a Tree Preservation Order. 'Amenity' is not defined in law, so authorities need to exercise judgment when deciding whether it is within their powers to make an Order. Orders should be used to protect selected trees and woodlands if their removal would have a significant negative impact on the local environment and its enjoyment by the public. Before authorities make or confirm an order they should be able to show that protection would bring a reasonable degree of public benefit in the present or future,

thereby evidencing that it is expedient to serve a TPO.

Conservation Areas have protection to ensure permission is required to work on trees and some hedges and time is allowed to apply TPO protection where appropriate. Before authorities make or confirm an order they should be able to show that protection would bring a reasonable degree of public benefit in the present or future. It may be expedient to make a TPO if WBC believes there is a risk of trees being cut down or pruned in ways which would have a significant impact on the amenity of the area. Conservation Areas protect trees by requiring that anyone proposing to cut down or carry out work on a tree in a conservation area must give six weeks' prior notice. The purpose of this requirement is to give WBC time to consider making an order on the trees. A Conservation area notice is not an application for consent under an Order. Instead, it is used to protect trees in Conservation Areas which are not protected by TPOs. WBC commits to vigorously enforce all infringements of TPO's and Conservation Area protections.

TPO's do not cover trees on Council owned land because the same level of protection will be given to its own tree stock. This will be an important and relevant position as more trees are planted on Wirral in public areas.

2.4ii) Legislation, policy and guidelines

There is an extensive literature available for Local Authorities and landowners/ homeowners on the management of trees, hedgerows and woodlands. The Climate Change Act (2008) is the basis for the UK's approach to tackling and responding to climate change. It requires that emissions of carbon dioxide and other greenhouse gases are reduced and that climate change risks are prepared for. The Department for Environment and Rural Affairs (DEFRA) is leading on domestic adaptation policy and WBC will take into account 'best practice' when implementing this strategy.

There are a number of British Standards that provide clear, best practice guidance and recommendations on many issues. (There are a number listed in the Appendix 2). Two key standards are BS3998: 2010 Recommendations for Tree Work and BS5837: 2012 Trees in relation to Design, Demolition and Construction - Recommendations.

There is a range of legislation that protects biodiversity and urban green spaces by regulating planning, contamination and conservation, including the Wildlife and Countryside Act 1981, Environmental Protection Act 1990 and the Planning Acts. The National Planning Policy Framework (2019) makes it clear that planning policies and decisions should contribute to and enhance the natural and local environment by: protecting and enhancing valued landscapes, recognising wider benefits from natural capital and ecosystem services – including of trees and woodland; providing for net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures. In addition to this, 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

A Green Future: Our 25 Year Plan to Improve the Environment (2018) has a broad remit, but highlights trees and woodland as key to improving our environment, the creation of more green infrastructure, and improvements in health and wellbeing. Planting more trees in and around our towns and cities is an important aspect of this plan.

Wirral's emerging Local Plan will replace the existing policies in the Unitary Development Plan to set out the Council's approach to achieving sustainable development with an overall framework for future land use planning decisions to 2035. The tree strategy will help to support new policies that will cover the planting of new trees and hedgerows in landscaping plans and the protection to be given to existing species. Trees, woodlands, hedgerows and indigenous plant species are considered to be an essential feature for most landscaping schemes for maintaining and improving the distinct character of all areas in Wirral, and should be used positively in future plans to address climate change and bring multiple benefits for local communities and the wider environment to achieve net biodiversity gain. Relevant planning policy in the Council's, Unitary Development Plan (UDP saved 2007) that will remain in force until the emerging Local Plan is adopted include, Policy GR5 Landscaping and Development (which requires the submission of landscaping proposals before full planning permission is granted), Policy GR7 Trees and New Development Policy (sets out how trees need to be assessed on development sites). Section 13 of the UDP also provides for nature conservation including the protection of networks of natural habitat and corridors of importance for wildlife. New criteria for Local Wildlife Sites were adopted by WBC in 2017.

2.5 Deliberate damage and vandalism

Damage to trees, both deliberate and through ignorance, is sadly common. Criminal damage includes cutting down, lopping or topping trees, snapping saplings, setting fires beneath trees and various other attempts to kill trees.

Accidental or careless damage to trees includes vehicle impact, damage from strimming and mowing around trees and compaction from parking on grass verges etc.

Damage may also be related to highway use and maintenance by the installation of driveways, infrastructure and signage or through contamination from salt in grit or hydrocarbons etc.

WBC will apply suitable planning conditions to protect new and existing trees and enforce them.

Most damage to trees is through ignorance and will be addressed by information and education campaigns but cases of deliberate or wilful accidental damage will be prosecuted and fines based on CAVAT valuations. Capital Asset Valuation of Amenity Trees (CAVAT) is a system that is recognised nationally and by the courts. CAVAT enables a compensation value for damage to or loss of an amenity tree. (See Appendix 3)

Viewing trees as public assets, rather than liabilities will allow WBC to make better and more consistent decisions about Wirral's tree stock in all areas of

conflicting interests and damage. This will also facilitate responses where the value of a single tree in monetary terms enables quantifiable and justifiable decision making.

2.6 Trees and development

Propopsals for development and other land use changes will need to consider how trees, woodland and hedges will be successfully integrated with the overall scheme. To avoid future conflict, the following must be carefully considered: appropriate space for retained and new trees to allow for future growth and spread; how to avoid damage due to compaction of soil, severing roots or branches; and the need for infrastructure and service installation as well as the presence of pre-existing or new utility provision to be mindful of trees. In exceptional circumstances where the loss of existing trees and hedgerows can be fully justified through a site specific aboricultral assessment, provision will be required for replacement plantings in a suitable location with equivalent or more compatible species in accordance with the table in section 3.4. Developers should use the Council's pre-planning application service to obtain expert advice on the matters that will need to be addressed, before a formal planning application is made.

2.7 Highway works and utility services

Work associated with installation and repair of utility services: Street trees are very vulnerable to damage which can cause at best, loss in vigour and at worst, death, both of which may take several years to become evident. It also poses a health and safety risk if trees are made unstable (severing of major roots) and work just covered over. Utility services should be aware of and work to the current National Joint Utilities Group 10 Guidelines on the planning, installation, and maintenance of utility apparatus in proximity to trees.

WBC commits to holding discussions and agreeing terms of best practice with any company or organisation that has permitted development rights.

3. PLANNING FUTURE TREE STOCK

3. Planning Future Tree Stock

3.0 Deciding what to plant

Climate change means that the range and distribution of trees will change over time, also the range of tree pests and diseases. Increasing temperatures may allow more non-native trees to survive over a wider area, but reduce the suitability of some native tree species, especially in urban centres. This presents challenges for how WBC manages existing trees in Wirral and for future planting:

- Consideration of the future climatic suitability of new trees as the climate in Wirral changes, especially given the long life span of many trees
- Consideration of how our existing tree stocks may be affected by changing climatic conditions and potentially greater frequency of extreme weather events

Whilst trees will be affected by climate change, they are part of the solution to how WBC mitigates and adapts to the challenges that climate change presents.

There are many factors which need to be considered when planting urban trees, woodland trees and hedgerows, involving both species selection and the actual growing and living conditions for the trees in the future. (See Appendix 4: The Right Tree in the Right Place – Deciding What to Plant)

3.1 Wirral Tree Legacy

Wirral's existing tree stock contains a mixture of native and non-native species of different ages in our streets, parks and countryside. We need a variety of tree species, and trees of varying age in order to create a legacy for the future.

Mature, larger trees are particularly important for our legacy, for their ecological value and for the ecosystem services they provide (such as carbon stored from the atmosphere). Some woodlands lack young trees because of excessive trampling (e.g. Eastham Country Park) or lack of light (e.g. parts of Dibbinsdale). Natural regeneration should be encouraged in and around woodlands and wherever feasible.

It is always important in planting that WBC select the right tree for the right place. This way WBC may select non-native tree species for particular sites. (See Appendix 4)

However, WBC recognise the benefits of planting native trees, particularly for biodiversity and in our planting schemes WBC will endeavour to plant native trees and trees that will grow to a large size as appropriate to each individual site, and to encourage natural regeneration where possible.

WBC will take expert and up to date advice on species to plant e.g. as replacements for diseased ash, so as to gain the greatest benefit to wildlife and people. Wherever possible WBC will plant locally grown and propagated trees.

The Council will also work with all landowners to promote best practice in tree planting and managing trees, woodland and hedgerows on their land.

3.2 Specification, planting and maintenance

Unless a tree reaches maturity and is healthy, it cannot deliver its full benefits. Many of the trees in urban areas are merely 'surviving, not thriving' wasting the time and finance invested in their purchase and planting. To ensure the trees WBC plant reach their potential they need to be correctly sourced, planted, established and then maintained.

A wider range of trees species ensures that more trees can withstand any challenge which, like Dutch Elm disease, could wipe out one susceptible variety. It can also increase the landscape value and the diversity of species in our ecosystem and the wildlife it supports. Correct species choice for the setting of the mature tree is essential at the initial design stage.

WBC will plant the right tree for the right place. WBC and others seeking to plant need to carefully consider site conditions now and into the future. The national push to raise money for tree planting has created opportunities for local communities to apply for funds to plant trees, woodlands and hedgerows. WBC will support such applications working as a partner to ensure that all planting follows best practice guidelines.

Even though some failure is to be expected, WBC will ensure that all trees it plants follow best practices. This includes ensuring water in periods of high temperature and/or drought, and all appropriate protections are made.

There is a target for WBC and partners to identify 'the right places' – in this case, patches of land (e.g. road verges, road-sides) that will be planted up each year of the strategy, to work towards increasing the overall tree canopy cover on Wirral. Collaboration with local communities will be vital to success when planting urban trees across the Borough on publicly owned land each year.

By planting over 210,000 trees across the ten-year strategy, the Council will greatly increase Wirral's canopy cover from an estimated 13% to around 25%. This planting is in addition to the replacement of tree losses of up to 20% from ash dieback and other tree diseases.

3.3 Species diversity selection

Lower diversity of species and genetic types increases risks from pests, diseases and climate change. Rather than specify a small group of 'reliable performers' which make up the majority of planting schemes WBC will encourage a wider range of genera and species, and natural regeneration where possible. Towns need large, mature trees to deliver the widest possible range of environmental benefits in urban areas.

Retention is always better than planting. There must be trees in varying age classes to replace the mature trees as they decline and die. It is important to allow for loss in all age classes due to damage, past poor maintenance, or disease so that the planting programmes deliver the target tree canopy levels. The urban environment is often difficult for trees and therefore the choice of tree species must be appropriate to the place to get maximum benefit. Trees lost or made vulnerable through climate change and disease will need to be replaced with more resilient species.

In coastal areas exposed to saline winds, trees may not be appropriate e.g. sand dunes. Where trees can be encouraged careful species selection for the conditions is essential.

Imported diseases and pests are a major threat to our trees, so all trees bought by WBC will be certified as grown and propagated in the UK. WBC will support local communities and groups in setting up tree nurseries using locally collected seed, to access a wider genetic pool than is available commercially. Natural regeneration will be facilitated where possible.

3.4 Replacement planting

Except in and around woodlands and some plantations, where natural regeneration is to be encouraged, replacement planting is essential to ensure continuity of the tree stock. A single young tree will take many years to achieve the size and scale of a large mature one and one for one replacement does not give the same benefit, nor does it give the increase in canopy cover WBC need. If it is found necessary to remove trees the Council will ensure that appropriate replacement based on a site related arboricultural assessment takes places in line with the table below in order to help us achieve our tree canopy cover target by 2050. Trees will generally be replaced in the same location but in some circumstances a nearby location may be more practical and appropriate. (Section 2.3iii)

Trunk Diameter of exisiting tree (cm)	Number of replacement trees
Up to 29.9	2
30 to 39.9	3
40 to 49.9	4
50 to 59.9	5
60 to 69.9	6
70 to 79.9	7
80 plus	8

3.5 Woodland planting

As with individual trees, it is important to recognise that the establishment period of new woodlands is vital. This process could take many years, depending on the species planted and conditions of the site. In the establishment period measures such as watering in periods of drought or protection against damage may be required. The after care is therefore equally important as the initial planting.

Planting schemes need to ensure diversity in species planted. A mix of species better replicates naturally seeded woodlands and provides greater resilience against disease. Monocultures of single species of trees can quickly develop and are at greater risk of disease.

Newly planted woods can appear barren and unwelcoming, with few woodland flowers. We will seek to establish woodland wildflowers and shrubs where and when possible, either at planting or when shade is sufficient. While no-one can create the specialist flora of an ancient woodland such as Dibbinsdale in a few years, establishing as diverse a woodland flora as possible will increase wildlife, including insects, enhance the landscape, and make new woodlands more attractive to people. Space for natural regeneration will be needed to allow for improvement to the tree stock in and around existing woodlands and some plantations.

As discussed, many new tree planting schemes, especially woodland habitat creation, can look very mundane for many decades as they establish and are often depauperate (species poor). Contemporary design concepts should therefore be considered along with nature conservation and habitat creation methods to achieve successful placemaking – planted sites which are distinctive and authentic yet relate to their surroundings. Much needed increases to taxomonic diversity can be achieved by considering accommodating the establishment of other flora and by utilising a facsimile of naturally occurring plant communities by selecting an eclectic mix of species drawn from parallel habitats around the world to improve the cosmetic nature of the site and add authenticity as well as resilience. It is recognised that inauthentic sites are seldom valued so placemaking is a vital concept in the long-term success of a site.

Just as placemaking is vital to the success of a planting scheme, place keeping is equally important. Place keeping is considering the future and ongoing maintenance requirements of the plant community over the life of the scheme. Whilst considering species fitness for the spatial confines of the site before planting goes a long way to ensuring successful place keeping by reducing maintenance costs, funding streams and endowments should be considered as all trees require cyclical inspection and upkeep to ensure that they are safe and stable.

Woodlands need a range of tree ages, densities and species for the benefit of biodiversity and continuity of crown cover. Areas of young, dynamic growth lock away more carbon than an increasingly aged and dying one. To increase habitat types and create a healthy woodland, woods need to be actively managed. Management can include glade creation, ride widening, thinning and coppicing as well as new planting. New woodlands will be well designed to be attractive to wildlife and people e.g. scalloped edges, wide rides and glades.

3.6 Trees in hard landscapes

It is a priority to plant trees in areas within hard surfacing such as car parks, streets and pedestrianised areas. It is better to design open planting areas, but where this is not possible, special planting techniques are available which ensure adequate soil volumes to ensure the trees reach their full potential. The publication by TDAG, 'Trees in hard landscapes - a guide for delivery' considers practical challenges and solutions to allow integration of trees in our streets, civic spaces and surface car parks.

These areas are the most challenging urban environments for growing trees but are also the areas that benefit most from their inclusion. The Council commits to best practice in the use of modern planting techniques which have been researched and developed to enable successful tree establishment and growth in these areas.

3.7 Existing trees in the highway

Urban air quality in the UK is most affected by road traffic emissions producing nitrogen dioxide and particulate matter. Commercial food cooking and wood-fuel stoves are also significant sources of particulate matter in some areas. Trees absorb some nitrogen dioxide and particulate matter by acting as a 'filter'. The simplest and best way to improve air quality is to plan urban places to reduce sources of pollution. Green infrastructure can help reduce pollution by providing welcoming spaces through which people will prefer to walk or cycle rather than drive. Improvements can be made from modifications to the urban environment, including the number, size, and position of urban trees and hedges e.g. around school playgrounds, health centres, shopping areas.

Trees add considerably to our streetscape and parking areas however streets offer a very unnatural environment for trees and so they need special care and protection. In residential areas verges have often been resurfaced with tarmac and used for parking and where tree roots could previously access adjacent gardens, these have now been paved. Highway trees are not only located within the carriageway and footways but also within verges and small areas of green space. These areas need to be retained and protected as they provide a better growing space than fully hard surfaced areas and opportunities should be taken wherever possible to reinstate this soft landscaping. Because it is difficult to get replacement trees established in the existing highway, the removal of street trees will only be considered as a last resort where all other solutions have been considered.

WBC will set best practice for urban tree pit use maintaining and improving existing tree plantings where possible.

3.8 Trees in parks

Nationally, the most successful parks have effective Friends Groups and thorough management plans. On Wirral, with 240 parks and green spaces, we have around 55 Friends Groups - these provide a potential for local input into the management of individual parks and contribution to a Borough wide Forum. Parks are very important contributors to the overall environment and landscape character of the area. Parks include some key heritage designed landscapes, where the overall design and the treescape must be maintained in future management and restoration plans. In other parks tree cover will be increased in line with site specific, design led management plans that seek to maximise the aesthetic, social, health and ecological benefit of our parks. Parks offer a clear exemplar of planning for the future and best practice in tree care, maintenance and planting. This may include thinning and replanting to improve tree stock resilience, although in the context of climate change and inevitable tree losses

through disease, the principle should be that retention is better than replanting.

Ecologically rich areas, especially with trees, have been shown to help reduce people's stress levels and improve general mental health and well-being. Wildlife continues to decline nationally. Parks have an important role to play in supporting wildlife and will be managed to encourage this. Entire deadwood along with underplanting of trees in parks contributes to a richer wildlife.

In the last two years, there have been considerably more trees felled than replaced in parks and open spaces. This strategy will rebalance this, through ensuring better management plans that anticipate future climate and tree problems. WBC will commit to working constructively with Friends Groups and other stakeholders to review park management plans in light of both climate change plans and Wirral Tree, Woodland and Hedgerow Strategy.

3.9 Green Infrastructure

The provision of green infrastructure in and around urban areas is now widely recognised as contributing towards creating places where people want to live and work. Natural England defines green infrastructure as a 'a network of multi-functional green space, both new and existing, both rural and urban, which supports the natural and ecological processes and is integral to the health and quality of life of sustainable communities'.

Parks and Gardens:	Urban parks, Country and Regional Parks, formal gardens
Amenity Greenspace:	Informal recreation spaces, housing green spaces, domestic gardens, village greens, urban commons, other incidental space, green roofs
Natural and semi-natural urban greenspaces:	Woodland and scrub, grassland, heath or moor, wetlands, open and running water, wastelands and disturbed ground), bare rock habitats (e.g. cliffs and quarries)
Green corridors:	Rivers and canals including their banks, road and rail corridors, cycling routes, pedestrian paths, streets through housing areas, and rights of way. By joining up separated patches of green space, including woodland, plant and animal species can thrive
Other:	Allotments, community gardens, city farms, cemeteries and churchyards

WBC is developing a Green Infrastructure Strategy. This Tree, Hedgerow and Woodland policy will sit alongside any green infrastructure policies as protection of existing and planting of new trees, woodlands and hedgerows is of relevance to all areas identified above.

In addition to woodlands, there are smaller groups of trees and hedgerows planted across the Borough. These provide a visual and auditory barrier to separate housing from other uses, busy roads and railways and other residential areas. Trees and hedgerows, especially in urban areas, can help provide visual barriers as well as barriers to pollution, noise and wind.

WBC will identify and strengthen existing green corridors and create new corridors including by tree planting.

3.10 Orchards

Traditional and organically managed orchards, such as at Brimstage Hall, are a much-loved part of our heritage and countryside. They are recognised as a Priority Habitat by the Natural Environment and Rural Communities Act 2006. Orchards can be attractive places yielding food for people and habitat for wildlife. Threats to old orchards include neglect, intensification of agriculture and pressure from land development.

WBC will not allow the loss of traditional orchards to development and where traditional orchards are under threat it will protect these e.g. through the use of Tree Preservation Orders. To encourage healthy eating and to provide the next generation of traditional orchards, WBC will actively encourage the planting of community orchards where possible.

3.11 Sale of Council land

Where Council land is sold or leased there may be an increased risk of tree loss and failure to replace them. Valuable trees will be identified and protected prior to sale or transfer of the land to retain the Borough's asset for the benefit of the wider population. WBC will expect the new landowners or lease holders to work within the guidelines of The Tree Strategy and where appropriate will ask for annual data from them regarding the future condition on felling and planting to feed into our figures for monitoring progress.

3.12 Nurseries

Large-scale tree planting is promised nationally, however, sourcing the number of trees proposed will be difficult. Importation of trees played a part in the rapid spread of Ash dieback and further importation runs the risk of importing more pests or diseases. Commercial stock often comes from a limited genetic base and is therefore vulnerable when new disease strikes. WBC will actively engage with volunteer-assisted nurseries that can collect local seed and grow up until large enough to plant out. This will provide a variety of local genotypes and trees that are likely to be adapted to local conditions. While this should not be the only source of trees for Wirral, it can play an important part and increase community involvement in new trees while at the same time managing biosecurity i.e. the prevention of the introduction and spread of harmful organisms.

The primary driver for including biosecurity in procurement policy is to prevent the transmission of pests and diseases due to transportation of tree stock, specifically transportation without adequate oversight or an effective audit trail attributing ownership and a chain of custody from seed to planted tree at its

final destination. Thinking about biosecurity early in the planning cycle, will be a crucial factor in mass tree planting schemes e.g. national charity-based funding schemes

3.13 Planting for resilience

The vision of the Tree Health Resilience Strategy (2018) is to

- build the resilience of England's trees, woods and forests.

and

- to enhance the benefits that trees provide, by mitigating and minimising the impact of pests and diseases and improving the capacity of our trees to adapt to changing pressures.

Climate Change Accord: a call for resilient forests, woods and trees (2015), defines resilience (in the context of climate change) as "Forests, woods and trees continue to thrive and adapt in the face of climate change impacts and associated environmental pressures, and thus deliver the multiple benefits they provide for people and wildlife, now and in the future". This strategy will contribute to Wirral's emerging strategy on climate change.

3.13i)   Environmental goals for tree resilience:

1. **Extent** - a continued increase of trees, woods and forests
2. **Connectivity** - joining habitats together by corridors and stepping-stones of **wildlife habitat**
3. **Diversity** - increasing the genetic, age and structural diversity of our treescape
4. **Condition** - encourage healthier trees and thriving woodlands and forests

Using these environmental goals for tree resilience, WBC will improve the baseline diversity, health and condition of our treescape to equip our trees to be able to withstand future pests and diseases better. These environmental goals are critical to all components of resilience.

3.14 Tree pests and diseases

Trees, like all plants, can be attacked by a wide variety of diseases and pests. Dutch Elm Disease in 1970's severely reduced the elm population. WBC's tree risk management programme will consider the threat of diseases to trees which WBC manage The most important disease in the short term is Chalara Ash-dieback. (See Appendix 5)

There are opportunities to harvest seed from Wirral's own existing tree stock. Mature trees which have naturally seeded in Wirral are likely to be best suited to Wirral's climate and growing conditions and may be disease resistant. For example, certain mature Wych Elms (Ulmus glabra) in Wirral appear to show resistance to Dutch Elm Disease.

Following good biosecurity practices is critical for preventing the introduction of pests and diseases.

3.15 Trees and development of land

Planning applications will need to demonstrate that there will be enough room for the future growth of new and retained trees to ensure long term retention and avoid pressure from future occupiers to top, lop, or fell healthy trees due to safety concerns or effects on living conditions in order to obtain reasonable sunlight and unshaded external amenity space. Planning applications will need to provide sufficient information to enable proper consideration of trees on and around the development site with tree survey and planting scheme with appropriate root protection zones undertaken to the latest British Standard. The selection of new species to be planted will use the "right tree for right place" approach.

3.16 Tree management plans

Trees and woodlands need long term management to ensure their current and future value. Opportunities will be taken on both Council and private land to achieve this long-term management. This will be done through funding applications, working with communities, partner landholders and land managers and, within developments, through planning conditions and obligations as set out in the forthcoming Local Plan.

3.17 Staff skills and training

Arboricultural inspections and works are carried out to the relevant British Standards and following current industry best practice guidance. All staff dealing with trees whether in a planning, landscape, design, highway, safety or operational context will hold the relevant skills, experience and qualifications to undertake their particular roles. Wirral's Ranger Service includes several staff with excellent woodland management skills. These skills will be recognised and used, including training other staff. Rangers will be kept informed of all plans and contribute to initiatives about the sites they manage.

Arboriculture is a skilled profession, and for good reason as arboricultural work done improperly can be dangerous and pose risks both to people, property and trees. In the UK two accreditation schemes exist which provide assurance of the competence and skill of contractors:

- Arboricultural Association
- International Association of Arborists

WBC contractors will be held to arboricultural association standards and relevant British Standards for all work, and to set best practice in managing its own tree estate.

3.18 Funding

There is no statutory funding for parks and green spaces in general, and the pursuit of funding for tree strategy implementation will prove to be one of the biggest challenges to the success of the strategy. However, the Council and its partners will use a variety of mechanisms and streams to fund and achieve the Tree Strategy's objectives, including the Urban Tree Challenge Fund, Climate

Emergency funding and applying to the Council's capital finance programme. The Council and Tree Strategy's governing board will also monitor and apply for any funding opportunities the Government may launch in the future to support tree planting.

3.19 Community and voluntary engagement

Trees are known to have wide community benefits:

- Positively influencing property value (Tyrväinen & Miettinen, 2000)
- Fostering a sense of safety in communities (Kuo, Bacaicoa, & Sullivan, 1998)
- There have even been studies investigating links between well maintained trees and lower crime rates (Kuo & Sullivan, 2001).

Community support and voluntary engagement will be vital to the successful implementation of this strategy. WBC commits to building a good communication strategy to attract support, advice and help from across local communities.

- A wealth of knowledge and experience exists in Wirral's communities around trees and woodland which WBC need to tap into.
- Members of the public on the ground are in the best position to spot signs of tree disease, vandalism etc. or other woodland issues in their local areas.
- Community involvement in tree planting, whether it be the council's planting proposals or those of community or private sector interests will create a sense of ownership for new and expanded trees and woodlands. A sense of community pride will protect new trees and woodlands from vandalism.

Trees are key to sense of place, identity and pride in local communities

WBC will develop effective communication channels using both online and paper-based platforms as well as face-to-face local meetings to support the strategy and effectively communicate about the occurrence of and reasoning for planned works. WBC will share this information more widely with interested groups, individuals and the general public and will encourage residents to get involved with local tree planting efforts to reassure them that the trees planted over the strategy period will replace many times over the number of trees unavoidably lost.

4. WIRRAL'S HEDGEROW STRATEGY

4. Wirral's Hedgerow Strategy

4.0 Definition of a hedgerow

A hedgerow or hedge is a line of woody plants, at least 20m long and up to 5m wide, usually one which is or was a boundary. (Hedgerow Regulations 1997).

The Climate Change Committee (CCC) advocates increasing hedgerows alongside other methods of carbon capture in its May 2019 report, Net Zero: The UK's contribution to stopping global warming. The last hedgerow survey, in 2007, recorded 500,000km of hedgerow in the UK. Extending this by 40% would require the creation of 200,000km of new hedges across rural and urban landscapes – which equates to about half the length of Britain's road network.

Hedgelink (www.hedgelink.org.uk) is an important partnership that brings everyone interested in hedgerows together, to share knowledge and ideas, to encourage and inspire, and to work with farmers and other land managers to conserve and enhance our hedgerow heritage. Hedgelink recommends that everyone with the capacity to promote planting and seeding of hedges through urban and rural landscapes should commence or continue with the urgency that the climate change emergency requires

Hedgerows are an undervalued resource that are in danger of being lost from our towns and cities. They are important for biodiversity and provide a range of benefits to people. In the past, hedges were used as larders of healthy seasonal food – apples, berries and nuts were collected as a healthy tasty supplement to the diet. They also provided firewood and were a source of animal feed. Today, we need them as wildlife corridors and because of the large numbers of animals from songbirds to pollinating insects that they support. Existing urban hedges are often clipped, sterile habitats. By changing peoples' perception of what a hedge should be, from a neat 'box' to a more natural and 'wild' hedge, we can improve many urban edges for both biodiversity and for food.

4.1 Value of hedges

Hedges have great benefits for wildlife and are typical of the English landscape.

- They act as refuges, food sources, shelter and corridors for movement of wildlife.
- The presence of some taller trees adds to their wildlife value, as song-posts, perching posts and shelter.
- Hedges benefit people by filtering pollutants from the air, lessening noise and providing screening, all at human height. They are of particular benefit in urban areas and around key sites such as schools and hospitals and along roads.
- Hedges can be valuable where height or width is restricted so larger trees are inappropriate.
- Hedges need to be maintained to keep their value, being best when growing densely without gaps. Hedge-laying styles are characteristic of the area.

- Valuable hedges e.g. species-rich hedges or ones of historical importance can be protected by The Hedgerow Regulations 1997 and/or Local Wildlife Site designation. (Ref: Local Wildlife Site Selection Criteria for the Cheshire region, 2014. Adopted by WBC in 2017).

Hedgerows are acknowledged as an important part of green infrastructure and WBC Council will seek to protect and manage existing hedges and encourage the planting of new ones. WBC will, when considering new planting in urban areas, always explore the option of hedgerow planting.

4.2 Council hedges

Hedges will be retained on Council land wherever possible. Young hedgerows will be managed to ensure that they develop into healthy mature hedges in accordance with good practice as set out by Hedgelink or similar expert groups.

The Council will also increase stocks of traditional, locally native hedgerows where appropriate and will encourage the inclusion of hedgerow trees where suitable. In certain urban locations hedges of exotic or ornamental species may be more suitable and will still contribute significantly to amenity and wildlife. Leyland Cypress hybrids will not normally be specified for use as hedging on Council property. Hedges in house gardens are the responsibility of individual owners/tenants and WBC will provide advice and guidance to encourage their retention and sustainable management.

4.3 Hedges on private land

Although most hedges cannot be protected by a TPO, certain hedges can be protected from removal under the Hedgerows Regulations 1997 or the Local Wildlife Site system. Hedges may also be protected within Conservation Areas. Through advice and guidance, WBC will encourage the sustainable management of hedges in private ownership. For hedges on development sites WBC will seek protection, improvement, replacement and new planting of hedges. New hedges will also be sought where appropriate to act as boundary features.

4.4 Enforcement

WBC will ensure that existing hedgerow legislation is properly enforced. WBC will prosecute offenders who damage or destroy hedges in contravention of the law. Where an offence has been committed WBC will take appropriate enforcement action which may include prosecution proceedings.

All requests for works to hedges on private land will be assessed in accordance with statutory requirements by the Local Planning Authority to determine whether an application is needed under the Hedgerows Regulations 1997 and any other subsequent legislation. Requests for work to hedges on Council property will be assessed and authorised by WBC with reference to the Hedgerow Regulations 1997 and DETR best practice guidance. For hedges on private land the Local Planning Authority is required to determine a Hedgerow Removal Notice including an assessment as to whether the hedge can be classed as "important" under the Hedgerow Regulations.

4.5 High Hedge Legislation

Complaints relating to evergreen hedges over 2m in height will be considered in the context of the High Hedges legislation as set out in Part 8 of the Antisocial Behaviour Act 2003 which gives local authorities powers to adjudicate in unresolved disputes over high evergreen hedges: the complainant must first try to resolve the issue through negotiation with the hedge owner. The Ministry for Housing Communities & Local Government has published explanatory leaflets: Over the Garden Hedge, which offers advice on how people can settle hedge differences without involving the Council and High Hedges: complaining to the Council, which explains what complaints local authorities can consider and how they will deal with them.

5. USEFUL REFERENCES, PAPERS AND WEBSITES

5. Useful References, papers and websites

NB: Appendix 2: Legislation and Standards provides a list of relevant legislation influencing Trees, Woodlands and Hedgerows.

BSI-Bat-Microguide-UK-EN Micro guide to surveying for bats in trees and woodland An introduction to BS 8596 for non-specialists
https://shop.bsigroup.com/upload/273444/BSI-Bat-Microguide-UK-EN.pdf

Department for Environment, Food and Rural Affairs (DEFRA) https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs

The Forestry Commission
https://www.gov.uk/government/organisations/forestry-commission

Forestry England https://www.forestryengland.uk

Forest Research: Forest Research is Great Britain's principal organisation for forestry and tree related research https://www.forestresearch.gov.uk

Papers from Forest Research

- Liz O'Brien, Kathryn Williams, Amy Stewart (2011) Urban health and health inequalities and the role of urban forestry in Britain: A review https://www.forestresearch.gov.uk/research/review-urban-forestry-in-urban-health-and-health-inequalities/

- Madalena Vaz Monteiro, Phillip Handley, James I. L. Morison and Kieron J. Doick (2019) The role of urban trees and greenspaces in reducing urban air temperatures – Research Note Forest Research www.forestresearch.gov.uk

- Urban Forestry and Woodland Advisory Committee Network England's Urban Forests: Using tree canopy cover data to secure the benefits of the urban forest https://www.forestresearch.gov.uk/tools-and-resources/tree-canopy-cover-leaflet/

- Vadims Sarajevs (2011) Health Benefits of Street Trees Forest Research

Tree Economics – for information on i-tree Canopy and i-tree Eco
https://www.treeconomics.co.uk/about/

i-Tree www.itreetools.org

Hedgelink http://www.hedgelink.org.uk

Hedgelink covers the farming, wildlife, landscape, historical and cultural importance of hedgerows.

Natural England https://www.gov.uk/government/organisations/natural-england

Countryside Survey https://countrysidesurvey.org.uk/content/reports-2007

The State of Nature 2019 https://nbn.org.uk/stateofnature2019/reports/

The Arboricultural Association - A brief guide to legislation for trees (modified 2019) https://www.trees.org.uk/Help-Advice/Public/A-brief-guide-to-legislation-for-trees

Legislation governing Tree Preservation Orders and tree protection in conservation areas (2014) https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#Protecting-trees-in-conservation-areas

The Tree Council: https://www.treecouncil.org.uk

The Woodland Trust: https://www.woodlandtrust.org.uk

The Woodland Trust (2017) Maximising the benefits of woods and trees for local authorities

https://www.woodlandtrust.org.uk/publications/2017/08/benefits-of-woods-and-trees-for-local-authorities/

National Tree Safety group: http://ntsgroup.org.uk

Research papers

Kuo, F. E., Bacaicoa, M., & Sullivan, W. C. (1998). Transforming inner-city landscapes: Trees, sense of safety, and preference. Environment and Behavior, 30(1), 28-59. https://doi.org/10.1177/0013916598301002

Liisa Tyrvainen and Antti Miettinen (2000) Property Prices and Urban Forest Amenities

Journal of Environmental Economics and Management, 2000, vol. 39, issue 2, 205-223

Frances E. Kuo, William C. Sullivan (2001) Environment and Crime in the Inner City: Does Vegetation Reduce Crime? Environmental Behavior https://doi.org/10.1177/0013916501333002

DJ Nowak, DE Crane (2002) Carbon storage and sequestration by urban trees in the USA - Environmental pollution, 2002 - Volume 116, Issue 3, Elsevier

Nilsson, K., Sangster, M., Gallis, C., Hartig, T., de Vries, S., Seeland, K., Schipperijn, J. (2011) "Forests, Trees and Human Health" Springer Netherlands https://www.springer.com/gp/book/9789048198054

Trees and Design Action Group: www.tdag.org.uk

• Trees in Hard Landscapes: A Guide for Delivery (2014) pdf
  http://www.tdag.org.uk/trees-in-hard-landscapes.html

• Tree Species Selection for Green Infrastructure: A Guide for Specifiers - a comprehensive, research-based decision-making tool on selecting appropriate species for a range of contrasting planting scenarios. A free copy of the guide and its companion database can be downloaded from the website http://www.tdag.org.uk/species-selection-for-green-infrastructure.html

• The Canopy London's Urban Forest: A Guide for Designers, Planners and Developers (2011)
  http://www.tdag.org.uk/uploads/4/2/8/0/4280686/tdag_canopyweb.pdf

- No Trees, No Future (2010) An introduction on the role of trees and key best practices to ensure new developments make the most of the financial, social and environmental value trees can contribute to places
http://www.tdag.org.uk/no-trees-no-future.html

- Trees can make our space (2010)
http://www.tdag.org.ukuploads/4/2/8/0/4280686/trees_can_make_a_space.pdf

- Report on CABE Space Research Scholarship - Designing a compatible treescape

Woodland Heritage (2015) Climate Change Accord: a Call for Resilient Forests, Woods and Trees

https://www.woodlandheritage.org/news/2018/5/4/climate-change-accord-a-call-for-resilient-forests-woods-and-trees

Trees for Cities www.treesforcities.org

England's Community Forests www.communityforest.org.uk

Intergovernmental Panel on Biodiversity and Ecosystem Services https://ipbes.net/global-assessment-report-biodiversity-ecosystem-services

Local Wildlife Site selection criteria for the Cheshire Region

https://www.cheshirewildlifetrust.org.uk/sites/default/files/2018-06/Cheshire%20LWS%20selection%20criteria.pdf

NICE (National Institute for Health and Care Excellence - Air pollution: outdoor air quality and health Quality standard [QS181] Published date: February 2019
https://www.nice.org.uk/guidance/qs181/chapter/Quality-statements

APPENDIX

Appendix 1: The Benefits of Trees

Climate change	**Countering climate change**	Trees remove carbon dioxide to create a carbon sink
		Trees provide significant low carbon options for building/engineering
	Tempering severe weather	Trees attenuate heavy rains and slow down flooding making sustainable urban drainage systems more effective
	Moderating temperatures	Trees evaporate water, reflect sunlight, provide shade and overall cut the urban heat island effect
Environmental improvements	**Valuable aesthetics**	More attractive landscape: eyesores hidden: delight to senses with colour, movement, sounds, shade and smell
	Reducing soil erosion	Preserve soil and keeps carbon locked in
	Improve on air and water quality	Trees act as natural filters, absorbing pollutants and particulates. They provide food and shelter for wildlife, increase biodiversity, counter species loss
	Contributing to wildlife	More diverse eco-systems with planting of resilient trees can better withstand climate change and environmental stress and fill gaps
Economic advantage	**Profitable by-products**	Timber; renewable fuel via coppicing; Compost/leaf litter mulch: fruit – community orchards; woodchip
	Reducing green space costs	Trees are much less maintenance intensive
	Reducing building costs	Provides renewable building materials and reduces costs of heating and cooling
	Contributing indirectly to local economies	People more productive/job satisfaction increased: job creation: attractive for inward investment: retail areas with trees perform better: adds value to property: boosts tourism & recreation revenue
Social and well being benefits	**Wide range of health benefits**	Less asthma (cleaner air): lowers risk of skin cancer, (shade) other benefits quicker patient recovery times: positive impact on mental health and well-being: encourages exercise that can counteract heart disease and type II diabetes
	Assisting urban living	Improves building energy efficiency; alleviates fuel poverty. improves winter protection; increased pedestrian safety; reduced traffic noise; moderated microclimate; increased CO2 absorption; reduced crime levels; improves quality of the urban environment
	Adding to social values	More harmonious environments; creates community focal points and landmark links including ancient, veteran and notable trees; helps sense of place and local identity; higher public esteem and pride for place; greater community cohesion
	Offering spiritual / emotional value	More harmonious environments; creates community focal points and landmark links including ancient, veteran and notable trees; helps sense of place and local identity; higher public esteem and pride for place; greater community cohesion
	Benefiting education	Concentration increases in "natural" classrooms: better learning

Appendix 2: Legislation, standards and best practice guidelines

Legislation affects how the Council manages its own trees and how we approach the management and protection of privately-owned trees. The following list offers brief guidance on the most relevant legislation.

Forestry Act 1967 (as amended)

This Act is primarily aimed at commercial forestry & woodlands, controlling the felling and subsequent replanting of trees; however the felling of trees outside of woodlands is also controlled by the Act. A felling licence is required to fell 5 m3 or more of timber in any one calendar quarter unless the work is part of an approved Forestry Commission or Natural Resources Wales scheme. Certain exemptions apply, which includes trees in domestic gardens and public open space, amongst others. The Act is administered by Natural Resources Wales.

Health & Safety at Work Act 1974

This Act places a duty on employers and employees whilst carrying out their work duties to take reasonable steps to avoid incidences that would be harmful to themselves or other people. This includes the prevention of the foreseeable failure of trees and tree surgery works undertaken by the Council.

Local Government Miscellaneous Provisions Act 1976

This Act gives discretionary powers to the Council to deal with dangerous trees located on private land. Trees are the responsibility of the person who owns the land on which they are growing. However, if a tree on private land becomes dangerous in a way that could harm someone else or their property and the owner does not appear to be doing anything about it, the Council can act to make the tree safe. This can be by serving a notice on the owner to make the tree safe or, in exceptional circumstances, the Council can deal with the tree themselves and recover costs from the owner. These powers are used as a last resort and are only intended for situations when there is an imminent danger.

Highways Act 1980

Section 154 of this Act gives the Council powers to deal with trees and vegetation considered to be a danger to highway users.

The Wildlife & Countryside Act 1981

This Act prohibits the intentional or reckless destruction of certain plants and animals including all wild birds, their nests, or eggs For example, it is an offence to disturb bird-nesting sites and bat roosts. Offences committed under the Act are investigated and enforced by the Police.

The Occupier's Liability Act 1957 & 1984

These Acts impose a duty on landowners and occupiers to take such care as is reasonable to see that visitors to their land, including those who do not have permission to be there, will be reasonably safe. With regard to trees, this means that the risks associated with them is as low as reasonably practicable.

Town & Country Planning Act 1990 (as amended)

The Town & Country Planning Act 1990 places a duty on Local Planning Authorities to protect trees and woodlands through the creation of Tree Preservation Orders (TPOs) and the application of conditions when granting planning permission. Tree Preservation Orders are intended to protect trees and woodlands in cases where the removal of trees would have a significant impact on the local environment and its enjoyment by the public. Planning conditions, where appropriate, can be applied when granting planning permission. These ensure that adequate provision is made for the planting of new trees and the protection and preservation of existing trees on development sites. Contravention of a TPO can result in fines for destroying a TPO tree of up to £20,000, or an unlimited fine if convicted in a Crown court, and fines of up to £2,500 for damage TPO trees. Penalties for damaging or destroying a tree protected by a Conservation Area are up to £2,500. If found guilty of such offences will result in a criminal record.

The Environmental Protection Act (1990)
http://www.legislation.gov.uk/ukpga/1990/43/contents
This act brings in a system of integrated pollution control for the disposal of wastes to land, water and air.

Hedgerow Regulations 1997 A guide to the law and good practice (DETR)

These regulations are made under Section 97 of the Environment Act 1995. They prohibit the removal of most countryside hedgerows (or parts of them) unless a hedgerow removal notice is submitted to the Local Planning Authority (LPA) and the LPA consents to the removal. Removal includes acts which could result in the destruction of a hedgerow. If the hedgerow is classed as 'important' in accordance with criteria set out in the Regulations, the LPA may prohibit its removal by issuing a retention notice within 42 calendar days from receipt of notification. The LPA can also require replacement of a hedgerow removed in contravention of the Regulations. These regulations do not cover hedgerows that form the boundary of a garden.

Technical Advice Notes 10: Tree Preservation Orders (1997)

This Technical Advice Note gives guidance on Tree Preservation Orders (TPOs). It states that "Local Planning Authorities are empowered, in the interests of amenity, to protect trees and woodlands by making Tree Preservation Orders" and that "A local planning authority may make a TPO if it is considered expedient in the interests of amenity to make provision for the preservation of trees or woodlands in their area". Further-more it states that "TPOs should be used to protect trees and woodlands whose removal would have a significant impact on

the environment and its enjoyment by the public". Other relevant TANs include:

- TAN 5: Nature Conservation & Planning (2009)
- TAN 9: Enforcement of Planning Control (1997)
- TAN 12: Design (2002).

Town & Country Planning (Trees) Regulations 1999 (Part VIII Sections 197–214)
These regulations put into place procedures that enable Local Planning Authorities to make, confirm, vary and revoke Tree Preservation Orders (TPOs) and for processing applications for works to trees protected by TPO and notifications for trees protected by Conservation Areas under the Conservation Area General Regulations 1992. This function is dealt with by the Planning section within the Community, Wellbeing and Development Department of the Council.

Conservation (Natural Habitats & c) Regulations 1994

This regulation puts into place a European Union Directive that protects European protected species, such as bats and their roosting sites.
http://www.legislation.gov.uk/uksi/1994/2716/contents/made

Anti-social Behaviour Act 2003 (Part 8)

Part 8 of The Anti-Social Behaviour Act (2003) enables Local Authorities to investigate disputes between neighbours relating to the height of an evergreen hedge. The Act requires the complainant to have taken initial steps to try and resolve the dispute amicably before involving the Council. The local authority is not required to mediate or negotiate between the complainant and the hedge owner but to decide whether the hedge is adversely affecting the complainant's reasonable enjoyment of their property. When adjudicating on high hedge complaints, the authority has to take account of all relevant factors from both parties and ensure a balanced decision is made.

The Natural Environment & Rural Communities Act 2006

The NERC Act places a duty on public authorities, including Councils and Local Planning Authorities to conserve biodiversity when exercising their functions.
http://www.legislation.gov.uk/ukpga/2006/16/contents Section 41 Priority Habitats and Species. (replacing Biodiversity Action Plan.)
http://www.legislation.gov.uk/ukpga/2006/16/section/41

The Climate Change Act (2008)

http://www.legislation.gov.uk/ukpga/2008/27/contents
An Act to set a target for the year 2050 for the reduction of targeted greenhouse gas emissions.

Health and Safety Executive triennial review (2014)

https://www.gov.uk/government/publications/triennial-review-report-health-and-safety-executive-2014

National Planning Policy Framework

https://www.gov.uk/government/publications/national-planning-policy-framework--2 (2012/updated 2019)

'A Green Future: Our 25 Year Plan to Improve the Environment' (2018)
https://www.gov.uk/government/publications/25-year-environment-plan

DEFRA Tree Health Resilience Strategy (2018) **Building the resilience of our trees, woods and forests to pests and diseases**
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/710719/tree-health-resilience-strategy.pdf

British Standards

British Standards give clear best practice guidance and recommendations on a multitude of matters. The most relevant are listed below:

- British Standard 3998: 2010: Recommendations for Tree Work and
- British Standard 5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations.

This British Standard sets out best practice for existing and new trees with regards to design, demolition and construction of development and ensures that the relationship between trees and built structures is sustainable in the long term. It gives clear guidance on the feasibility and planning of development where trees are present, technical information on designing development around trees and gives guidance on protecting trees during construction and their aftercare requirements.

British Standard 8545 (2014): Trees: From Nursery to Independence in the Landscape – Recommendations.

This British Standard gives recommendations for transplanting young trees successfully from the nursery, through to achieving their eventual independence in the landscape, specifically covering the issues of planning, design, production, planting and management. The standard promotes the principle that successful new tree planting relies on the integration of careful design, nursery production and planting site management, into one continuous process.

Other relevant British Standards are:

- British Standard 3882 (2007): Specification for Topsoil and requirements for use.
- British Standard 3936: 1992: Specification for Nursery Stock.
- British Standard 4043: 1989: Transplanting Root-Balled Trees.
- British Standard 4428: 1989: Code of Practice for General Landscape Operations.

The UK Forestry Standard

This guidance sets out the UK governments' approach to sustainable forestry, including standards and requirements, regulations and monitoring, and reporting. The UK Forestry Standard (UKFS) is the reference standard for sustainable forest management across the UK, and applies to all woodland, regardless of who owns or manages it. The standard ensures that international agreements and conventions on areas such as sustainable forest management, climate change, biodiversity and the protection of water resources are applied in the UK. The UKFS outlines the context for forestry in the UK. It sets out the approach of the UK governments to sustainable forest management by defining requirements and guidelines and providing a basis for regulation and monitoring - including national and international reporting. This document covers key different elements of sustainable forest management:

- biodiversity
- climate change
- historic environment
- landscape
- people
- soil
- water

The Forestry Commission in England and Scotland, Natural Resources Wales and the Northern Ireland Forest Service are the main bodies responsible for implementing the UKFS. These bodies assess forestry proposals against the UKFS before giving approval and carry out checks to ensure woodland owners and managers comply with forestry regulations. The precise arrangements for implementing and monitoring the standard will vary between the four countries.

Trees and the planning system

Under the UK planning system, LPAs have a statutory duty to consider the protection and planting of trees when granting planning permission for proposed development. The potential effect of development on trees, whether statutorily protected (e.g. by a tree preservation order or by their inclusion within a conservation area) or not, is a material consideration that is taken into account when dealing with planning applications. Where trees are statutorily protected, it is important to contact the LPA and follow the appropriate procedures before undertaking any works that might affect the protected trees.

Planning conditions are frequently used by LPAs as a means of securing the retention of trees, hedgerows and other soft landscaping on sites during development and for a period following completion of the development. If it is proposed to retain trees for the long term then a TPO is often used rather than a planning condition. If valid planning conditions are in place then anyone wishing to undertake work to trees shown as part of the planning condition must ensure they liaise with the LPA and obtain any necessary consent or variation.

The nature and level of detail of information required to enable an LPA to properly consider the implications and effects of development proposals

varies between stages and in relation to what is proposed. Table B.1 of British Standard BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations provides advice to both developers and LPAs on an appropriate amount of information that will need to be provided either at the planning application stage or via conditions.

Conservation Areas

Normal TPO procedures apply if a tree in a conservation area is already protected by a TPO. But if a tree in a conservation area is not covered by a TPO, you have to give written notice to the LPA (by letter, email or on the LPA's form) of any proposed work, describing what you want to do, at least six weeks before the work starts. This is called a 'section 211 notice' and it gives the LPA an opportunity to consider protecting the tree with a TPO. You do not need to give notice of work on a tree in a conservation area less than 7.5 centimetres in diameter, measured 1.5 metres above the ground (or 10 centimetres if thinning to help the growth of other trees). You can find out more about trees in Conservation Areas in the Department for Communities and Local Government guide titled Protected trees: A guide to tree preservation procedures (withdrawn 7 March 2014) and it's replacement The National Planning Policy Framework and relevant planning practice guidance document with particular reference to Tree Preservation Orders and trees in conservation areas.

Restrictive Covenants

A restrictive covenant is a promise by one person to another, (such as a buyer of land and a seller) not to do certain things with the land or property. It binds the land and not an individual owner, it "runs with the land". This means that the restrictive covenant continues over the land or property even when the current owner(s) sells it to another person. Restrictive covenants continue to have effect even though they may have been made many years ago and appear to be obsolete. Covenants or other restrictions in the title of a property or conditions in a lease may require the consent of a third party prior to carrying out some sorts of tree work, including removing trees and hedges. This may be the case even if TPO, CA and felling licence regulations do not apply. It may be advisable to consult a solicitor.

Felling Licences

The Forestry Commission controls tree felling by issuing felling licences. https://www.gov.uk/guidance/tree-felling-licence-when-you-need-to-apply

Felling Licences are administered by the Forestry Commission. You do not need a licence to fell trees in gardens. However, for trees outside gardens, you may need to apply to the Forestry Commission for a felling licence, whether or not they are covered by a TPO. You can find out more about felling licences at Felling Licences quick guide (England) or in the Forestry Commission's booklet Tree Felling – getting permission

NJUG Volume 4 - Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (2007) - National Joint Utilities Group (NJUG).
(Note: This replaces NJUG 10). http://www.njug.org.uk/category/3/pageid/5/

NHBC Standards - Building near Trees: Chapter 4.2 (Amended 2003) – National House Building Council (NHBC).

European Landscape Convention

This convention was ratified by the UK government in 2006. It requires member states to integrate landscape into its regional and town planning policies and in its cultural, environmental, agricultural, social and economic policies, as well as in any other policies with possible direct or indirect impact on landscape.

A Better Quality of Life – UK Sustainable Development Strategy (DETR – 1999)

The government's UK Sustainable Development Strategy recognises the importance of trees and woodlands. Its aims include:

- Sustainable management of forests and woodlands through the implementation of the UK Forestry Standard.

- Protection of ancient and semi-natural woodlands.

- Woodland expansion.

- Sustainable timber production.

- Benefits for urban and rural development e.g. direct employment in forestry activities, linked employment (recreation and tourism) and the promotion of planting on degraded and contaminated land on the fringes of urban areas. Tackling Health Inequalities Programme for Action (Department for Health – 2003).
The Programme for Action sets out priorities for reducing health inequalities and addressing the underlying determinants of health. It identifies the importance of co-ordinated national, regional and local action on a range of issues, including:

- The need to increase levels of activity especially among disadvantaged groups, older people and women.

- The need to improve green spaces so that they can be used for exercise and provide children's plays areas.

- The need for better and safer local environments so people are more able to engage in social and physical activities in public spaces close to where they live and work.

Woodlands and open spaces with trees can play an important role in providing locations for recreation.

The Case for Trees in Development and the Urban Environment (Forestry Commission England, 2010).

This guidance highlights the environmental, economic, social and climate change benefits that trees contribute to the built environment, bringing together research and practical examples.

Trees in the Townscape – A Guide for Decision Makers (Trees & Design Action Group, 2012)

A 21st century approach to urban trees, one that responds to the challenges of our times. It offers 12 action-oriented principles spanning the range of planning, design, works and management issues that must be addressed for maximum economic, social and environmental returns. Each principle is supported by explanations of benefits and delivery mechanisms.

Trees in Hard Landscapes – A Guide for Delivery (Trees & Design Action Group, 2014)

The guide explores the practical challenges and solutions for integrating trees in 21st century streets, civic spaces and surface car parks, detailing the process, design and technical options. Produced in collaboration with Chartered Institution of Highways & Transportation (CIHT), the Chartered Institution of Building Services Engineers (CIBSE), the Institution of Civil Engineers (ICE), and the Institute of Chartered Foresters (ICF).

Street Works UK: The Street Works UK Vision acts as a catalyst for positive change in driving up the standards of street works in the UK - http://streetworks.org.uk Street Works UK is recognised as the UK's Industry Association for street works issues promoting best practice, self-regulation and a two-way working relationship with government as the utility arm of the Highway Authorities and Utilities Committee. They aim to provide utility industry best practice.

Local Policy & Guidance contained in Wirral Borough Council Unitary Development Plan (adopted 2000) – A new Local Plan will be available for consultation from February 2020

1. Policy GRE1: The Protection of Urban Greenspace
2. Policy GR7: Trees and New Development
3. Policy NCO1: Principles of Nature Conservation

Appendix 3: CAVAT - Capital Asset Valuation of Amenity Trees

Capital Asset Valuation of Amenity Trees (CAVAT) was developed by Chris Neilan and the London Tree Officers Association (LTOA) in 2008 and is regarded as one of the principal methods of tree valuation in the UK. Valuing amenity trees is important for calculating loss of amenity and replacement value following wilful or negligent damage, and for several aspects of urban forest management: planning, budget setting and decision-making.

CAVAT provides a method for managing trees as public assets rather than liabilities. It is designed not only to be a strategic tool and aid to decision-making in relation to the tree stock as a whole, but also to be applicable to individual cases, where the value of a single tree needs to be expressed in monetary terms.

In the UK, section 198 of the Town and Country Planning Act (1990) covers the public amenity value of trees, and places a duty on local authorities to protect trees in the public interest. However, it does not prescribe how their value should be estimated. A number of urban street trees valuation systems have been developed. The term 'street trees' is often used in the literature to mean all trees within urban areas and not just those on the street. Many countries have their own systems tailored to national specific needs. For example, the valuation methods produced by the Council of Tree and Landscape Appraisers in the USA which have been used widely (including in the UK).

Helliwell was first developed and published in 1967 and is the oldest of the three street tree valuation systems reviewed. It has been endorsed by the Tree Council and the Arboricultural Association. Revised periodically, the most recent version available for this review was released in 2008. Its main stated aim is to aid practical planning and management (e.g. felling, pruning and planting) of woodlands and urban trees by evaluating their relative contribution to the visual quality of the landscape.

The CAVAT system is targeted primarily at local authorities and publicly owned trees, providing a method for managing trees as public assets rather than liabilities. It was developed and first applied in London in 2007 and is based on the depreciated replacement cost approach. CAVAT also takes into account the contribution of location, relative contribution to amenity, social value and appropriateness, as well as an assessment of functionality and life expectancy.

The i-Tree peer-reviewed software suite was developed by the United States Forest Service which recommends its use by communities of all sizes to strengthen their urban and community forest management efforts. i-Tree Tools are in the public domain and are freely accessible.

Two of the three valuation schemes, CAVAT and i-Tree, take substantial account of the social and cultural component of the value of street trees. The Helliwell system puts an emphasis on visual amenity and, being explicitly based on expert

judgement, also appears to produce the most variable valuation outcomes of the three systems (Watson, 2002).

Discussion of CAVAT

For the most part, public realm assets are valued on an asset register; for example, land, highways, lamp columns. Trees remained as one of the few public assets that had no value or entry on the asset register. This routinely meant that when a tree removal was proposed a cursory mitigation was offered and development could proceed or, where a subsidiary planting scheme was proposed and subsequently failed, the public asset was lost. Since the adoption of CAVAT, many local authorities have either influenced developers to change their designs to avoid tree damage or received adequate compensation for tree loss.

CAVAT has also been successful in securing compensation following wilful or negligent damage to local authority trees (see www.ltoa.org.uk/resources/cavat). Typically, the local authorities have reinvested the compensation back into their trees using it to bolster budgets for local tree planting and maintenance. Furthermore, the case studies have illustrated the little-known or rarely applied planning principle that a developer does not have an automatic right to remove a public tree just because planning has been consented on private land. They must seek permission from the local authority's department responsible for trees in order to remove the tree or work with them to secure its future.

CAVAT has also been useful in helping to change a view of trees that has become entrenched in many local authorities over recent decades. Rather than treating them as liabilities that must be strictly risk managed, they have started to treat them as assets that provide amenity that is valuable and not easily or quickly off-set. The mindset change has led to the recognition that healthy trees are assets that appreciate in value with time given appropriate management and a possible concomitant increase in the maintenance budget.

References

CAVAT (Capital Asset Value for Amenity Trees): valuing amenity trees as public assets
Kieron J. Doick, Christopher Neilan, Glyn Jones, Andrew Allison, Ian McDermott, Andy Tipping & Richard Haw, Arboricultural Journal, Volume 40, 2018 - Issue 2
Published Online: 09 Apr 2018
https://www.tandfonline.com/doi/full/10.1080/03071375.2018.1454077

Street tree valuation systems, Vadims Sarajevs, April 2011, Forestry Commission
https://www.forestresearch.gov.uk/research/street-tree-valuation-systems/

Appendix 4: The Right Tree in the Right Place – Deciding What to Plant

Key reference:
The Right Tree In The Right Place For a Resilient Future – Urban Tree Manual
https://www.forestresearch.gov.uk/tools-and-resources/urban-tree-manual/

Location

The first step when planning to plant a tree is identifying the planting location. This will determine what attributes the selected tree must have and influences all subsequent decisions. This decision ultimately determines whether the tree will thrive and fulfil its true potential and provide all its possible benefits.

Tree planting locations should always be one of the first and most important decisions when considering space allocation in the built environment

Many human-made services, infrastructure and land uses compete with trees for the same space, both above and below ground, including underground and overhead utility services, highway sightlines, interaction with road and footway kerb edging, paving or nearby property and its foundations. This can determine how well the planted tree fits into the chosen environment and what management actions will be required to ensure a trouble-free life for the tree and its neighbours.

Choosing the site, and assessment of constraints

Understanding what type of soil is present at your chosen planting site is the second step in deciding what type of tree is best suited to the location. One way of doing this is to observe the local area and see what types of trees or plants are doing well locally and what trees are absent, especially if you can identify trees that are self-seeded rather than being planted.

Most soils in urban areas are not true soils in the scientific sense. They do not have the same structure and profile as natural soils found in rural or natural settings. They are called 'made ground' and are a mixture of material that has accumulated in place as a result of human activity over many years. They may be lacking in structure, nutrients and organic matter, have high levels of acidity or alkalinity or be contaminated from salt spreading or previous industrial or other human activity. They may also be bacteria dominant rather than fungal dominant which can present a problem for newly planted trees.

Soil permeability and compaction

Permeable soils drain freely and permit air and water movement to and around the root system. Some ecosystem service benefits depend strongly on the structure of the ground in which the trees are growing.

Trees grow most successfully in uncompacted soils

Compaction in certain types of soil, sometimes described as 'panning', will inhibit the movement of air and water in the immediate vicinity of a tree's root plate. This can create conditions within the soil that are disadvantageous for root growth. In extreme circumstances this can lead to the death of the tree. Fine roots in particular are affected. If soil compaction is suspected at a planting location some form of de-compaction process such as high-pressure air injection should be used. This is particularly relevant on development sites where vehicles or materials have been used or stored on site prior to planting.

Constraints and Opportunities

The constraints of the planting location will also inform the choice of tree. Constraints may be so extensive as to dictate that the site is not suitable for tree planting, for example where there are other nature or heritage conservation considerations and specialist archaeologist, ecologist or nature conservation advice is required.

Other considerations may include drainage and other environmental factors such as shading from nearby buildings, or urban micro-climates creating frost hollows and sun or heat traps. These constraints are generally relevant to pre-existing locations, where choosing the right tree for the right place is the rule.

New developments present an opportunity to create the right place for the right tree. In this context the engineering and landscape design should accommodate trees of stature that can provide the most benefits to the urban environment and the people who live and work there.

The location of existing trees may already suggest the right trees in the right place.

Tree selection

Many factors must be considered if a tree is to establish, be healthy, grow to its full potential and offer optimal benefits for the location. These 'selection criteria' define the tolerances and qualities that the tree must meet. Carefully defining these criteria will help ensure an optimal tree selection for the location. The

Selection Criteria can be grouped as listed:

- **Tree suitability:** for example, site category and substrate availability, tree characteristics, growth requirements and constraints
- **Ecosystem services delivery:** such as amenity values, shading and supporting wildlife Ecosystem services are those benefits provided to society by the natural environment that can be priced into economic calculations.
- In urban areas, trees provide a range of different ecosystem services that improve human health and wellbeing. For example they can reduce surface temperatures by shading and through evapotranspiration, improve water quality (when planted in catchments supplying urban areas), contribute to sustainable urban drainage, provide habitats for wildlife, create wind breaks, reduce traffic noise, and enhance air quality under certain circumstances.

Disservices: the unintended problems of some species including high pollen production, proliferation of fruit, raised roots or a degradation in air quality.

Air quality refers to the amount of harmful air pollutants which people are exposed to from outside air. Poor air quality is the biggest environmental public health risk globally and brings forward an estimated 50,000 deaths in the UK each year.

In UK urban areas, the pollutants currently associated most often with deterioration of air quality are nitrogen dioxide and microscopic airborne particles. In extended periods of very warm weather, air quality can deteriorate due to the production of ground level ozone.

A related problem associated with plants (including trees) and not usually considered with the more conventional pollutants is the production and atmospheric transport of allergenic pollen. Because it is not harmful to humans at the concentrations in the atmosphere, carbon dioxide is not usually considered in air quality discussions. Trees, like all plants, absorb carbon dioxide during photosynthesis. Globally, plants absorb 25-30% of the carbon dioxide emitted by burning fossil fuels and by deforestation. However, the carbon stored in an urban forest is typically only 2-3 weeks of the fossil fuel emissions of that city, and so makes a negligible contribution to carbon offsetting at a city scale.

Urban air quality in the UK is most affected by road traffic emissions producing nitrogen dioxide and microscopic airborne particles (PM). Commercial food cooking and wood-fuel stoves are also significant sources of PM in some areas.

A simple and effective way to think strategically about air quality management is **Reduce, Extend, Protect.**

Reduce sources of pollution: The simplest and best way to improve air quality is to plan urban places to reduce sources of pollution. Green infrastructure can help reduce pollution by providing welcoming spaces through which people will prefer to walk or cycle rather than drive.

Where reduce is not possible, some improvements can be made from modifications to the urban environment, including the number, size, and position of urban trees and hedges. These improvements are aimed at **extending the distance between the pollution source and people or providing protective green oases that absorb pollution.** Guidelines from the National Institute of Clinical Excellence provide evidenced options for air quality improvement, including a role for green infrastructure.

- Trees absorb some gases, including nitrogen dioxide, as a by-product of photosynthesis.
- Trees remove particulate matter from air by acting as a filter.
- By absorbing gases and particulate matter, trees always reduce the overall burden of pollution in the air

Three general rules of thumb can provide guidance:

1. Planting a dense canopy to extend the separation between people and the sources of pollution will always result in improved air quality below the canopy
2. A dense canopy enclosing people and sources of pollution (e.g. traffic) will tend to increase air pollution concentrations
3. Enhancing the 'crinkliness' of the grey and green urban surfaces (i.e. aerodynamic roughness and land-use heterogeneity) stirs the air and so disperses pollution

Favourable plant traits for improving air quality
The plant traits which can be linked with better particulate capture include:

- Being in leaf year round
- Large canopy leaf area
- A high canopy density that is still porous enough to allow air movement through it
- Wrinkled leaf surface, the presence of micro-roughness, veins or hairs

Absorption of gaseous pollutants usually requires leaf-gas exchange so trees must be healthily photosynthesising rather than stressed. **The resilience of planted trees therefore needs to be considered, for example tolerance to pollution, drought and urban heat.**

The allergenicity and season for common trees and crops varies. Maintaining diversity of species and tree gender are the simplest strategies for controlling pollen from urban trees. Guidelines have been produced for the reduction of urban pollen counts.

https://ec.europa.eu/environment/integration/research/newsalert/pdf/255na5_en.pdf

Ref: Reference: Carinanos, P. & Casares-Porcel, M. (2011). Urban green zones and related pollen allergy: A review. Some guidelines for designing spaces with low allergy impact. Landscape and Urban Planning. 101: 205-214.

In urban areas

- Avoid planting trees that have low pollen loads near highly vulnerable sites such as schools, hospitals care homes etc.
- Avoid planting trees with high allergenic potential near highly vulnerable sites such as schools, hospitals, care homes etc. Diversity of population (tree type and gender) is the simplest approach to limiting the impacts of trees with high pollen loads or allergenic potential
- Favour trees with attributes known for filtering PM10 and PM2.5
- Favour trees with attributes known for extracting gaseous pollutants

Shading and Cooling

Trees can actively reduce temperatures in urban areas through a combination of shading and evapotranspiration (i.e. use of sunshine to evaporate water). The larger the tree canopy and the denser the shade, the greater the effect.

Tree canopy cover is also more effective than other green infrastructure for reducing overall temperatures in towns and cities. This shading and cooling is an important direct climate adaptation mechanism.

Ref: Tree Species Selection for Green Infrastructure: A Guide for Specifiers
http://www.tdag.org.uk/species-selection-for-green-infrastructure.html

Tree Species Selection for Green Infrastructure: A Guide for Specifiers includes information for over 280 species on their use-potential, size and crown characteristics, natural habitat, environmental tolerance, ornamental qualities, potential issues to be aware of, and notable varieties. The overall aim of this guide it to provide, clear, robust information to specifiers to enable appropriate species selection and aid the diversification of the urban forest. Ref: TDAG_Tree Species Guide v1.3.pdf http://www.tdag.org.uk/species-selection-for-green-infrastructure.html . There are now many sources of information to help tree selection.

Biodiversity Benefits of Trees

All trees support biodiversity and urban trees have considerable potential to sustain and enhance urban biodiversity and to help reduce biodiversity loss. If trees are being planted to maximise biodiversity, then the longer a tree species has been present in the British Isles the wider the range of other species it can support. E.g. trees such as native oaks and willows support the greatest number of species at over 400 species each, whereas introduced species such as Persian Walnut and Holm oak support far fewer species.

In urban gardens the best way to enhance biodiversity is to plant a tree (regardless of tree species). The more plant matter the more invertebrates are supported.

Invasive plant species are recognised as a major direct and indirect driver of biodiversity loss across the globe. The disruption of an ecosystem from invasive trees may cause economic or environmental harm, adversely affect human health or impact adversely upon biodiversity, including the decline or elimination of native species (through competition, predation, or transmission of pathogens) and the disruption of local ecosystems and ecosystem functions.

However, in urban centres cultivars have and will continue to play an important role in contributing to diverse and resilient tree populations. The key is to select the right tree for the right place whilst not adversely impacting on biodiversity.

Cultivated Plant Genetic Diversity

The UK has a rich cultivated plant diversity (circa 400,000 species, varieties and forms) all originating from, or derived from, wild collected material, and there are hundreds of types of trees cultivated in the UK. This diversity is of significant human, conservation and scientific value.

Planting trees of all the same type can limit biodiversity and present biosecurity issues for resilience. Some trees may be genetically identical, with large populations ofthe same clone potentially more vulnerable to pests and diseases.

Cultivated Plant Genetic Diversity

Growing and conserving a wide range of native and cultivated plant genetic diversity in urban landscapes helps to build resilience to climate change and maintains diversity to select and breed from for resistance against pests and diseases, for example resistant elms. It may also serve to provide conservation refuges for vulnerable plant species in the wild (e.g. Monkey Puzzle tree). Furthermore, as new knowledge arises it provides new uses for tree diversity that improve well-being and the urban environment.

Planting a wide diversity within urban landscapes further supports the delivery of the Convention on Biological Diversity Strategic Plan for Biodiversity 2011-2020, including Aichi Biodiversity Targets and the UN Sustainable Development Goals.

In seeking to avoid monocultures or over reliance on a few particular types of tree urban foresters frequently apply the 10, 20, 30 Rule.

This Rule states that the target for an urban tree population should be to have no more than

- 10% of a particular Species
- no more than 20% of a particular Genus
- no more than 30% of a particular Family

This rule helps to build resilience into the urban forest.

Planting and establishment of trees

The level of intervention required when planting and then maintaining a tree is a matter of professional judgement, and many larger schemes fail because of insufficient follow up care and maintenance. This can happen through a lack of dedicated resources, a conflict of priorities or not appreciating the importance of aftercare in the establishment of young newly planted trees.

Ground preparation: when digging the planting pit to assist in the tree's establishment the simplest approach is the most effective if the tree's basic physiological needs (water, an aerated root system, sunlight and access to nutrients) are met.

The type of tree production system chosen determines how the tree will be planted - Rootballed / Bare root / Container grown / Containerized. Choosing which system to use is also heavily dependent on site and aftercare considerations for the tree's long-term survival. An appropriate method needs to be used to secure the tree in place prior to the establishment of a stable and independently supportive root system. Avoiding ground settlement after planting will ensure that the tree is planted at the correct depth, thereby avoiding burying the root flare.

Once planted and secured in place in its new location, effective weed control and watering are essential during the first three to five years of the tree's life.

Transplanting young trees into a hostile urban environment can often 'shock' their physiological condition resulting in stress, a reduction in growth and difficulty establishing.

Formative pruning - often undertaken in the nursery prior to dispatching the tree to site - should continue after planting to avoid future problems. This may involve the selection of a dominant leader and removal of competing co-dominant ones, or the removal of lower branches to support the development of a crown architecture consistent with the requirements of the location the tree is planted in. Formative pruning should continue until the desired final crown architecture is achieved. If correctly applied, formative pruning will extend a tree's life span and reduce the need for intervention in later life.

References

- Woodland Trust (2012) Urban Air Quality – how trees can improve air quality
- iTree: tools for assessing and managing forests and community trees (2016) Landscape Institute Case study: Eastern Curve
- (2014) TDAG Trees in Hard Landscapes: A Guide for Delivery
- European Commission (2011) Measures to reduce the urban pollen count
- UK National Ecosystem Assessment (2011) The UK National Ecosystem Assessment
- Davies, H et al (2017) Delivery of ecosystem services by urban forests, Forest Research

Appendix 5:
Tree Pests and Diseases: Ash Dieback

https://www.treecouncil.org.uk/What-We-Do/Ash-Dieback - toolkit for considering Chalara Ash dieback.

Ash dieback is the most significant tree disease to hit the UK since Dutch Elm disease emerged in the 1970s. Ash is the third most common tree in Britain and there are up to 60 million ash trees outside woodlands in the UK. Ash dieback was first officially recorded in the UK in 2012, with only a small fraction of trees proving resistant. The Ash Dieback Action Plan Toolkit, prepared by The Tree Council brings together guidance and case studies from local authorities already tackling the issue.

A direct output from WBC Tree, Woodland and Hedgerow Strategy is the urgent development of a management plan for tackling Ash dieback which is now on the Wirral, probably since 2017/2018

Ash dieback, Hymenoscyphus fraxineus (formerly known as Chalara fraxinea), is the most significant tree disease to affect the UK since Dutch elm disease which was first recognised in the 1960s. It will lead to the decline and possible death of the majority of ash trees in Britain and has the potential to infect more than two billion ash trees1 (over 1.8 billion saplings and seedlings to more than 150 million mature trees) across the country. The Tree Council states: "findings indicate that many Local Authorities and other agencies are not prepared for the scale of resources that will be needed to deal with the public safety issues arising from this tree disease. Nor are they prepared for the aftermath. Ash trees currently provide supporting, regulating, provisioning and cultural gains, including increased land values and public well-being. Planned replanting will be needed to recover the vital ecosystem service benefits of the removed ash trees "

Ash dieback, formerly known as Chalara, affects ash and other Fraxinus species of trees and is caused by a fungal pathogen. The fungus, Hymenoscyphus fraxineus (formerly Chalara fraxinea), arrived from Asia to Europe during the 1990s and spread rapidly across Europe. Although the first official record in Britain was in 2012, evidence now suggests it arrived here earlier, with analysis demonstrating trees dying from the fungus in 2004. This invasive fungus causes a range of symptoms from foliar leaf spots to branch dieback to the death of Fraxinus excelsior (ash) trees and some other Fraxinus species. Once infected, the majority of trees will die. A few ash trees may survive the infection because of genetic factors which give them tolerance to the disease. In non-woodland situations such as urban areas, where trees tend to experience greater stress, the

percentage of UK ash that are likely to be tolerant to the fungus is not yet well understood. In woodlands, evidence from December 2018 suggests mortality rates may be between 70% and 85%. Evidence from Europe suggests that around 10% of trees were found to be moderately tolerant to the disease, with 1-2% having high levels of tolerance. The environment also has a role in how trees decline from ash dieback, with trees growing outside of optimal conditions declining more quickly.

Infection mostly occurs through sexually produced ascospores landing on leaves, but infection can also occur at the base of trunks (the root collar), probably entering the tree through lenticels. As it grows, the fungus destroys the infected tree's phloem and xylem, which results in the tree being unable to move water and nutrients around its structure. This lack of water and nutrient movement will cause the branches of the tree to fail and the tree 'dies back', hence the name. Repeated loss of nutrition and water, the depletion of energy reserves because of the lack of leaves, and the invasion of secondary root killing pathogens (e.g. Armillaria), causes the tree to become brittle, lose branches and eventually succumb to the disease. The disease can affect ash trees of all shapes and size. While the symptoms are easily visible in young trees, they are often harder to recognise in more mature trees.

To understand the scale of the potential impact of ash dieback it is necessary to gather all available data to estimate how many ash trees are in an area and/or are managed by the organisation. In the urban environment alone, in UK:

- It is estimated that there are four million urban ash trees in the UK, 4.1% of the total 89 million urban trees
- Highways England estimates that there are at least four million ash trees next to their road network
- Network Rail estimates there are 400,000 large ash trees adjacent to the rail network.
- The specific impact of ash dieback will depend upon the number and distribution of ash in any given area.

Managing Ash dieback:

- **Awareness/anticipation:** raising awareness about ash dieback and the issues it may cause and realising that work needs to be undertaken to understand and deal with the problem.
- **Planning/assessment:** preparing and developing an ADAP to help manage the problems caused by the ash dieback.
- **Action/response to ash dieback: undertaking actions** (e.g. pruning or, where necessary, felling trees) to remedy the problems faced due to ash dieback.
- **Adaptation and recovery** from ash dieback: landscape restoration in the wake of ash dieback, an essential element of any emergency process.

Collecting local ash tree data

The best starting point is to assemble all the existing local ash data from any source, such as the Forestry Commission's National Inventory of Woodland and Trees, Local Authority Tree Preservation Orders or Public Realm Tree Surveys, Ancient Tree Hunt data or records from the local Biodiversity Record Centre.

> **Example:** In Herefordshire, 2016, the authority aimed to investigate those ash trees adjacent to the highway or on council- owned land which could cause a problem if they died or fell on to the highway or a public space. During the summer of 2016, Council staff collected data to determine the potential number of ash trees within the county. There were no dedicated staff or financial resources allocated to this process and all data accessed was freely available, or available internally within the authority. Time to collate the information was estimated at 18 hours spread across several months and required extensive local knowledge

Once there is an estimate of the number of ash trees in an area the next step is to **calculate the potential budgetary costs to the organisation**

- What would be the impact on expenditure and risk if 60%/75%/90% of ash trees in the area are in decline/dead because of ash dieback in the next 5–10 years?
- What resources are required if a high number become dangerous in a single season?

> The Tree Council Toolkit provides figures for a County Council and a Borough Council, that concentrated on Council owned land only.
>
> - A County Council looked at ash in grass verges, in private ownership but within falling distance of highways, school grounds and woodland next to public areas. The estimated costs of management was over £35 million
> - A Borough Council assessment of budget implications ranged from £117,000 to £175,500

In Local Authorities, the potential impacts of dying and dangerous trees as a result of ash dieback have always been accepted as posing a significant corporate risk. Ash dieback may have impacts related to health and safety, economic, environment and reputation. There will need to be changes in management practices as ash dieback spreads. The response to ash dieback needs to be planned, to avoid working in silos and conflicting with other local policies such as landscape and biodiversity policies. Communication and collaboration is key.

Ash Survey classification:

- Ash Health Class 1 – 100%–76% remaining canopy
- Ash Health Class 2 – 75%–51% remaining canopy
- Ash Health Class 3 – 50%–26% remaining canopy
- Ash Health Class 4 – 25%–0% remaining canopy

Data suggests that as the decline in an ash tree's health becomes more visually apparent, then management decisions and practices on that tree alter. Assessing and monitoring changes becomes a crucial park of ant action/management plan. The precise speed of decline of any individual tree is currently impossible to predict and will be influenced by other factors including soil type, soil moisture levels and topography.

Photos of Dieback and Ash trees

0% Dieback - healthy crown

25% dieback

50% dieback

75% dieback

"For as long as possible, where safe to do so, retain ash trees. Favour prime, unstressed specimens, but consider that even moderately tolerant trees may have something to offer genetically to the future. Keep as many female (seed-producing) trees as possible.
DON'T GIVE UP ON ASH!"

Have you seen this?

Ash dieback causes leaf wilting and blackening (compared with healthy ash leaves)

Diseased trees/saplings typically display dead tops/ side shoots and lesions around side shoots

Ash Dieback (Chalara) has now been confirmed on Wirral

If you think you have seen something unusual please report it to:
info@record-lrc.co.uk

This disease will kill many trees, but some will recover.
Do not fell without expert advice, as it is vital that we retain trees with disease resistance

For more information, visit the Forestry Commission website:
https://www.forestresearch.gov.uk/

https://www.forestresearch.gov.uk/tools-and-resources/tree-alert/

DON'T GIVE UP ON ASH!