Surrey's Greener Future

SURREY COUNTY COUNCIL

SURREY'S NEW TREE STRATEGY

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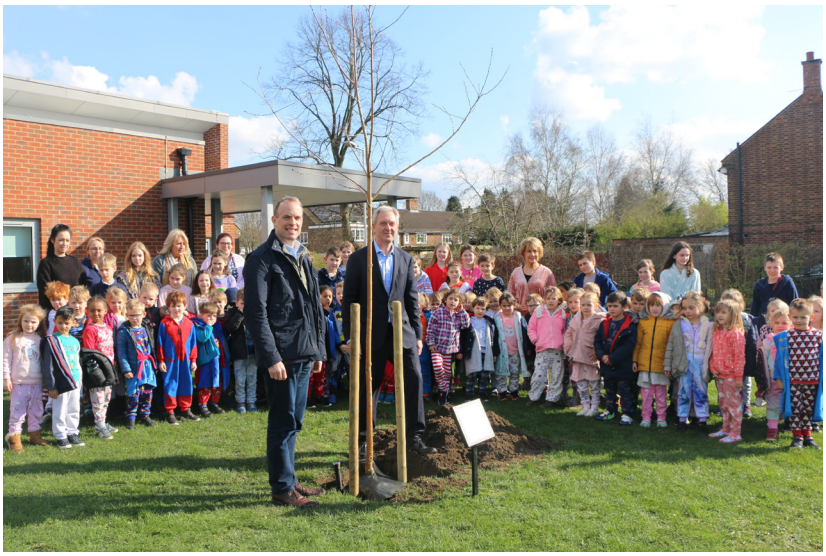
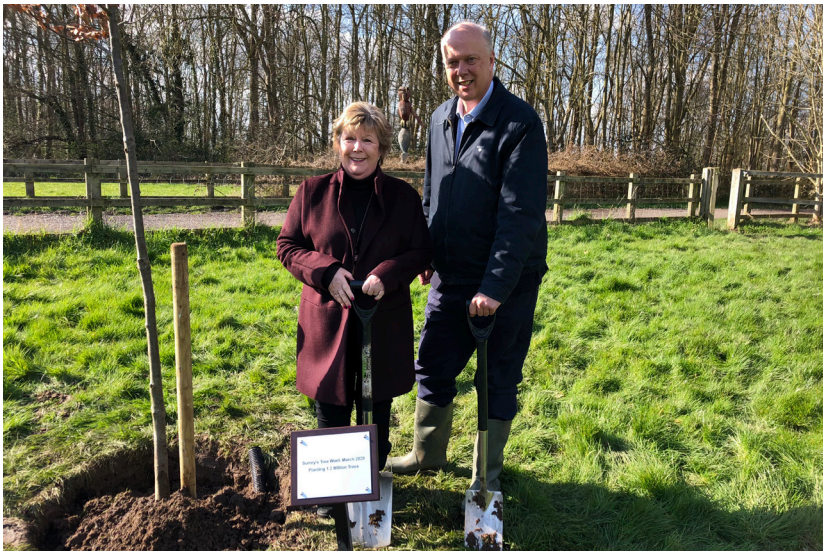
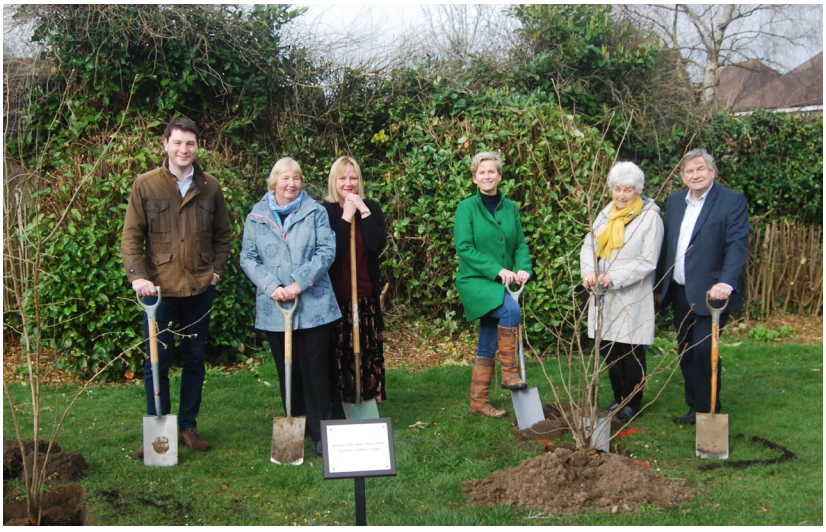


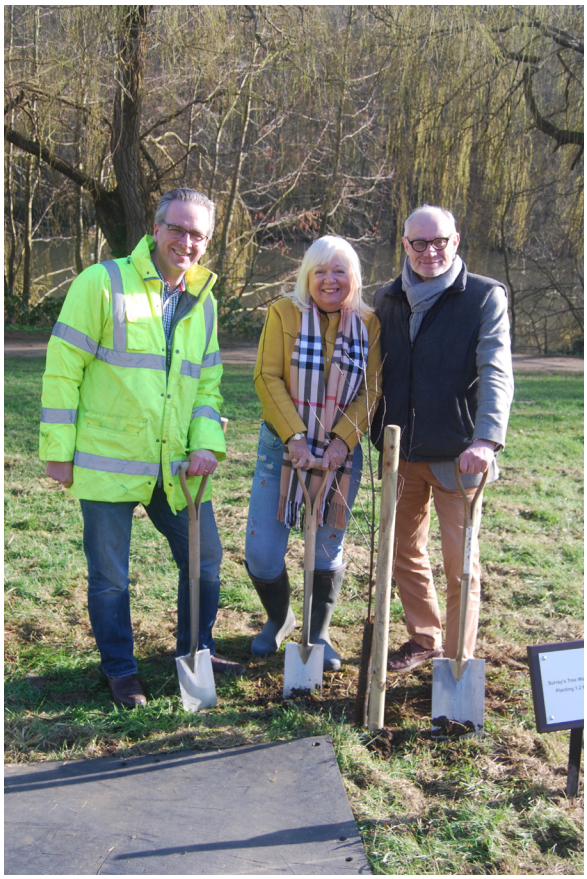
Elmbridge I Dominic Raab, Foreign Secretary and MP for Esher and Walton, planted a tree at Cranmere Primary School in Elmbridge as part of Surrey Tree Week in March 2020. (Picture: Dominic Raab MP and Cllr Tim Oliver, Leader of Surrey County Council (SCC). The children are in fancy dress for World Book Day.)



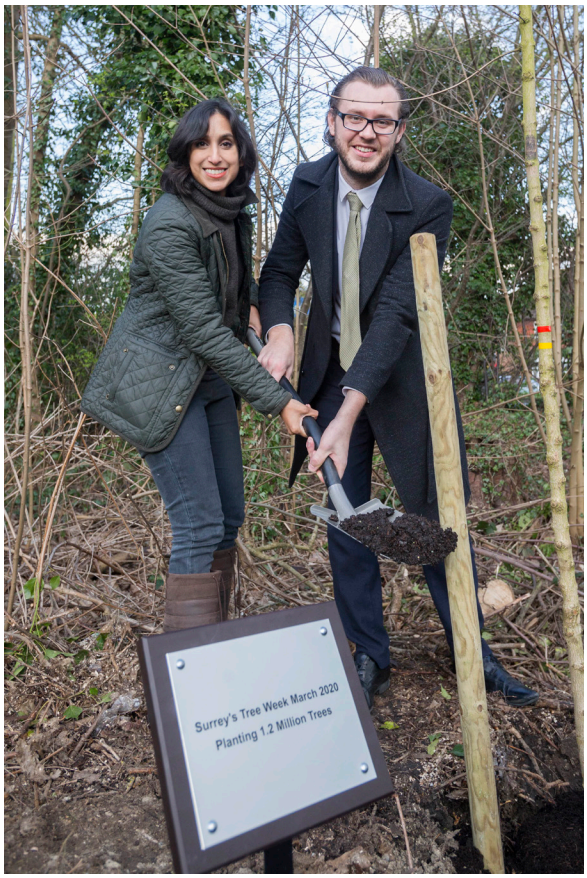
Epsom and Ewell I Chris Grayling, MP for Epsom and Ewell, planted a tree at Horton Country Park Local Nature Reserve in Epsom. (Picture: Chris Grayling MP and Cllr Bernie Muir, SCC and Epsom and Ewell Borough Council).



Guildford I Angela Richardson, MP for Guildford, planted a tree in Stoke Recreation Ground, Guildford. (Picture: Matt Furniss, Cabinet Member for Highways, SCC; Cllr Pauline Searle, Guildford Borough Council (GBC); Cllr Angela Goodwin, GBC; Angela Richardson MP, Cllr Caroline Reeves, Leader of GBC and Cllr Mike Goodman, Cabinet Member for Environment and Waste, SCC).

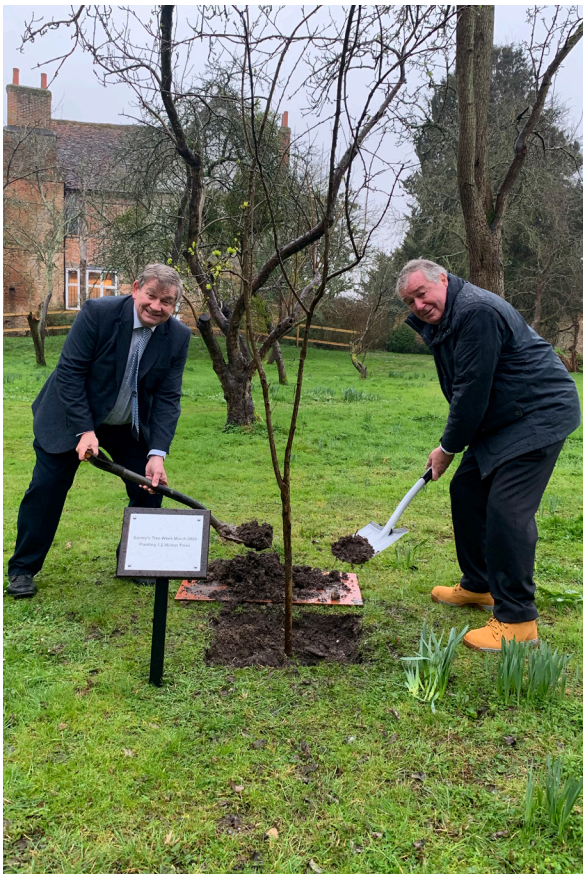


Reigate and Banstead I Crispin Blunt, MP for Reigate, planted a tree in Priory Park, Reigate. (Picture: Cllr Mark Brunt, Leader of Reigate and Banstead Borough (RBBC) Council; Cllr Natalie Bramhall, RBBC and Deputy Cabinet Member for Property, SCC and and Crispin Blunt MP.)



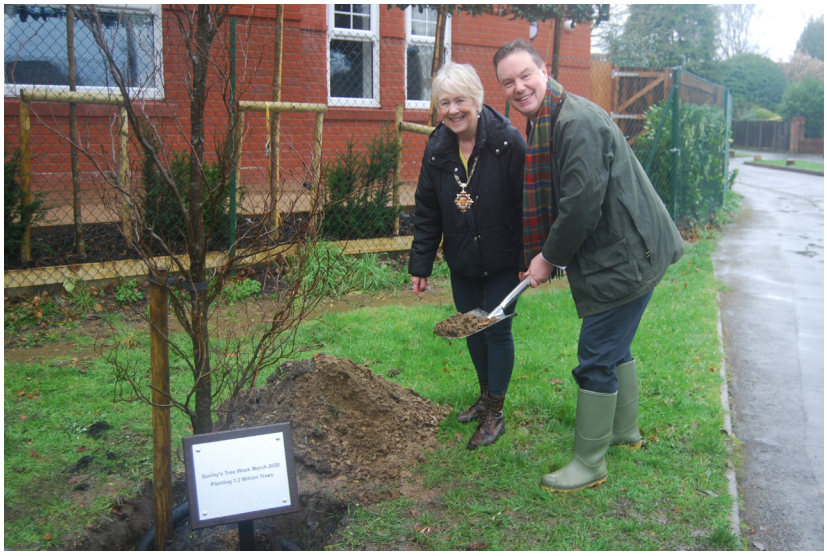
Tandridge I Claire Coutinho, MP for East Surrey, planted a tree at Godstone Fire Station. (Picture: Claire Coutinho MP, and Cllr Cameron McIntosh, SCC).

Runnymede I Dr Ben Spencer, MP for Runnymede and Weybridge, planted a tree at Royal Holloway, University of London, in Egham. (Picture: Cllr Mark Nuti, Deputy Cabinet Member, SCC; Dr Ben Spencer MP; Dr David Ashton, Deputy Principal of Royal Holloway).

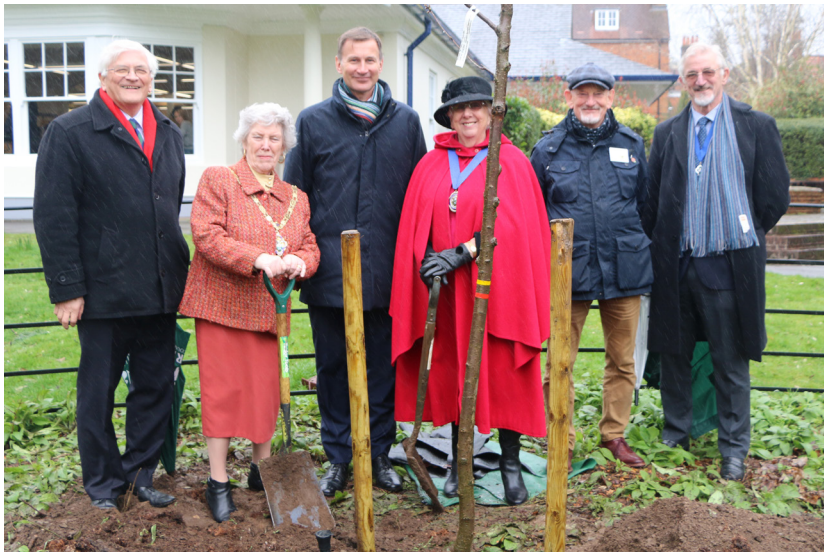


Mole Valley I Sir Paul Beresford, MP for Mole Valley, planted a selection of heritage fruit trees in the ancient orchard at West Horsley Place. (Picture: Cllr Mike Goodman, SCC and Paul Beresford MP.)

Surrey Heath I Michael Gove, the Chancellor for the Duchy of Lancaster and MP for Surrey Heath, planted a tree in School Lane, Bagshot. (Picture: Michael Gove MP; Cllr Valerie White, Chair of Windlesham Parish Council; and children from Bagshot Infant School.)



Woking I Jonathan Lord, MP for Woking, planted trees on land next to Horsell Lodge Care Home in Woking. (Picture: Jonathan Lord MP, and Cllr Beryl Hunwicks, Mayor of Woking)



Waverley I Jeremy Hunt, MP for South West Surrey, planted five trees outside Farnham Library. (Picture: Cllr Peter Martin, SCC; Cllr Pat Evans, Farnham Town Mayor; Jeremy Hunt MP; Cllr Penny Marriott, Deputy Mayor of Waverley; Cllr George Hesse, Farnham Town Council and Cllr Peter Marriott, Consort to the Deputy Mayor of Waverley.)

FOREWORD

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The UK Government has committed to achieving net zero carbon emissions by 2050, and on 9 July 2019, Surrey County Council (SCC) followed suit by declaring a climate emergency and committing to work with partners to agree Surrey's collective response.

To this end, we have worked with district and borough authorities, businesses, residents and experts to develop an ambitious and forward-thinking Climate Change Strategy for the county, which identifies actions across several key sectors that will ultimately contribute to achieving a net zero carbon target for the county by 2050, in line with the national target. Within that strategy, the role of land and specifically, green infrastructure, is identified as having significant potential to capture and store carbon emissions, as well as helping the county to adapt to a changing climate. The Strategy sets a target for the planting of **1.2 million new trees by 2030.** The very first of these 1.2m new trees in Surrey was planted on 5 October 2019 at the Surrey Hills Wood Fair by the Leader and Chairman of SCC.

Trees play an important role in sequestering carbon dioxide (CO_2), which is the most prevalent greenhouse gas in the United Kingdom. However, to enable them to do this important job, it is important that the necessary conditions are in place for trees to grow to maturity.

However, trees have the potential to do so much more. They help in adapting our communities to the effects of climate change, to reducing the risks of flooding and the urban heat island effect. They enhance the biodiversity of the county, have a positive impact on our health and wellbeing, and help filter air pollution and noise. These benefits link trees to the place ambition set out in our Community Vision for Surrey in 2030, as well as the work we are undertaking in SCC to bring the countryside back to residents. We believe that nature should be accessible to all of our residents, young and old, from all walks of life. Planting 1.2m new trees across our county will help achieve this ambition.

In addition to planting new trees in Surrey, it is essential that we protect and maintain, in an environmentally sustainable way, the existing trees and woodland which we already have. This involves using our planning powers to minimise the impact of development on trees and woodlands. After all, it is the trees that we plant today which our children and grandchildren will be playing under in years to come.

We have committed to facilitate the planting of 1.2 million trees - one for every Surrey resident - by 2030.

Although this is a New Tree Strategy, it is not just about planting trees. We include hedgerows and other woody vegetation in our planting ambitions. Further, we will work with our partners and follow advice from experts when it comes to decisions about which trees are planted and where. This also includes commitments to where we will not plant trees, notably in areas of open, landscapes such as chalk grasslands, heath lands and flood plains, that are rich in rare wildlife and which are themselves very important carbon sinks.

Trees and woodlands provide numerous biodiversity benefits, providing areas of important habitat for countless species of wildlife.

The ambition to plant 1.2 million trees is not something that SCC can deliver alone. Therefore, this strategy is for the whole of Surrey, including residents, businesses and the public sector, with the County Council taking a coordinating role. We must all work together in the fundraising and implementation to deliver this as a shared responsibility, through which we will all reap the benefits.

Mike Goodman
Cabinet Member Environment and Waste

ENDORSEMENT

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"The value of our trees and woodlands are numerous and the opportunities that trees offer in the fight against climate change, as well as responding to the impacts, are increasingly appreciated and mobilised by Governments around the world.

The UK Government has given a clear mandate that we need to rapidly increase the number of trees planted in this country to help mitigate climate change. Trees and woodland are already a key character of Surrey and the Council's target to facilitate the planting of an additional 1.2 million trees in the county over the next ten years is a positive step.

The Forestry Commission supports Surrey's New Tree Strategy, in particular the emphasis on the right tree in the right place, and maintaining and protecting both newly planted, as well as existing, trees and woodland in the county. Proper planning and maintenance creates healthy and robust woodland which is better able to thrive in our changing climate, provide important habitats, and deliver the multitude of benefits we all appreciate.

The Forestry Commission can support landowners with funding for woodland as well as urban trees and also provide advice on the design and maintenance of new woodland and forests.

By working together, we can maintain and extend our treasured woodlands and treescapes, increase understanding and engagement, and further enhance England's most wooded county for the benefit of us all."

Matthew Woodcock, MBE
Forestry Commission

1.1 THE VALUE OF SURREY'S NATURAL ENVIRONMENT

Surrey boasts swathes of abundant, well-loved and internationally recognised countryside, which draws a large percentage of Surrey's 26 million day visits per year[1]. Much of our land is ecologically rich, containing protected habitats, including 64 Sites of Special Scientific Interest (SSSI) over 15,400 hectares. Surrey is the most wooded county in England, which is particularly notable in light of the county's proximity to London. Our landscape is also shaped by agricultural land: 40% of the Surrey Hills Area of Natural Beauty (AONB) is farmland.

The county's natural environment offers a wealth of benefits. It makes a significant contribution to Surrey's economy through tourism[2] and the production of food and goods, as well as contributing to the health and wellbeing of our residents. Our trees, habitats and vegetation, which collectively make up the county's natural capital, also play an important role in mitigating and adapting to climate change, which is explored further in this Strategy. However, our natural environment is vulnerable to risks associated with development, over-use from tourism and farming, extreme weather patterns and invasive diseases.

The county's natural environment offers a wealth of benefits.

It is recognised that more must be done to understand the condition and full potential and value of our natural environment, as well as how we can best support that environment. Over the next year, the Council will develop a **Land Use Framework** which will set out how we best work with partners across the county to do just that. The development of this Framework will involve key partners, including the borough and district authorities, Surrey Nature Partnership, Surrey Wildlife Trust, Surrey Hills AONB, the Forestry Commission, Natural England, as well as land owners and other stakeholders.

The scope of this Framework will include all of Surrey's vital natural capital. It will develop an approach that will enable decisions about how land is used, managed and protected to be made in view of multiple benefits, including climate change mitigation, adaptation and flood management, biodiversity improvements and commercialisation. The Framework will also explore the role of planning policy across all 12 local authorities in the county in achieving this and maximising biodiversity net gain from future developments. This New Tree Strategy is a key first step in the development of that coordinated approach to land use and will be a pivotal piece within the Framework.

[1] This is based on 2012 Visit Surrey research, which showed that 26m day trips were made to Surrey. https://www.visitsurrey.com/
[2] In 2012 tourism related expenditure supported 5.6% of total employment in Surrey. Visit Surrey https://www.visitsurrey.com/

1.2 TREES AND CLIMATE CHANGE

Trees, in particular woodland, play an important role as carbon sinks. Picture, Gatwick Airport

In order to tackle climate change, it will be necessary for societies globally to significantly reduce the production and consumption of activities that emit greenhouse gases. There is also an important role for initiatives which capture and remove greenhouse gases from the atmosphere.

Trees, and other forms of natural capital, capture and store, or sequester, carbon dioxide (CO_2), which is the most prevalent greenhouse gas[3] in the United Kingdom. Woodland has been shown to be the most effective habitat at CO_2 sequestration, as emissions are sequestered within the soil as well as the trees. **Appendix 1** shows the carbon sequestration properties of different types of habitats.

As a result, many international climate scientists have recommended that planting trees is one of the cheapest and most effective ways of taking CO_2 out of the atmosphere[4]; however, for this to happen, it is important that the necessary conditions are in place for trees to grow to maturity, which can take many years. As such, it is important that the impact from this Strategy has a mutual benefit for, and does not come at the expense of, other types of natural capital, which can be quicker to establish and which also play an important role as carbon sinks.

A number of factors dictate the rates of CO_2 sequestration of trees, including; species, location, the physiological and physical condition of the tree as well as the underlying air and water pollution levels. It is also important to note that trees are dynamic and can release, as well as capture, CO_2; for example, if a tree dies and the wood decays, or if the tree is burnt, then the CO_2 stored within it is released back into the atmosphere.

[3] Department for Business, Energy and Industrial Strategy, 2018 UK Greenhouse Gas Emissions, Final figures, 4 February 2020. Available from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/862887/2018_Final_greenhouse_gas_emissions_statistical_release.pdf

[4] Science 05 Jul 2019: Vol. 365, Issue 6448, pp. 76-79, DOI: 10.1126/science.aax0848. Available from https://science.sciencemag.org/content/365/6448/76

Surrey County Council's (SCC's) commitment to plant 1.2 m trees has the potential to sequester an estimated 300,000 tonnes of CO_2 over their lifetime (approximately 40 years).[5] Although this amount is relatively small in the context of the county's total annual emissions of 6 million tonnes of CO_2 (2018/19), it makes an important contribution to our work to address the Council's declared climate emergency, helping to raise awareness of the issue and inspiring residents, businesses and other organisations to take action.

We plan to deliver rapid carbon reduction through our Climate Change Strategy, published in April 2020. The Climate Change Strategy has identified objectives across a number of key sectors, one of which is Land Use and Food Systems, which includes the role of green infrastructure and land in the county in capturing and storing carbon emissions. The Strategy sets a target of planting 1.2 million new trees by 2030, supported by a strategic priority to 'increase the potential of Surrey's land, biodiversity, current and future woodland to sequester and capture carbon, and to strengthen resilience to climate change.'

In addition, trees play an important role in climate change adaptation by providing areas of shade in built-up urban areas during heatwaves as well as providing a source of natural flood risk management. Finally, increasing tree cover in the county will create biodiversity benefits and increased habitats, provided that the right trees are planted in the right places. A full overview of the benefits of trees is included at **Appendix 2.**

Within this context, tree planting provides a symbolic and important contribution to our work to address the climate emergency, helping to raise awareness of the issue and inspire others to take action, while providing a significant range of benefits in helping us adapt to a changing climate.

1.3 NATIONAL POLICY CONTEXT

The Government has planted over 22 million trees since 2010, and has committed to increase tree planting in the UK for the benefit of the environment. The Government's manifesto[6] included the target of planting 30,000 hectares of trees per year, across the UK, by 2025.

This ambition is reflected in Government's 25 Year Environment Plan[7] (2018), which includes an aspiration to plant 180,000 hectares by the end of 2042. The Plan also calls for more use of flood risk management approaches that work with natural systems, such as tree planting and creating and sustaining wetlands.Further, in January 2020, the UK's Committee on Climate Change (CCC) released a report on Land Use which asserted that Britain must double its tree planting efforts in order to contribute towards a zero carbon UK by 2050[8].

[5] This figure is based on the Government's Woodland Carbon Code, which estimates that one hectare of healthy UK woodland sequesters approximately 360 tonnes of CO_2. Information about the code can be found at https://www.woodlandcarboncode.org.uk/

[6] Conservative Party Manifesto, 2019 https://vote.conservatives.com/our-plan

[7] https://www.gov.uk/government/publications/25-year-environment-plan

[8] Land Use: Policies for a Net zero UK, Committee for Climate Change, January 2020 https://www.theccc.org.uk/publication/land-use-policies-for-a-net-zero-uk/

The CCC's recommendation specified that the area of woodland cover in the UK increase from the current 13% to at least 17% by 2050, this is based upon annual tree planting levels reaching at least 30,000 hectares from 2024, possibly up to 50,000 hectares, with one-fifth of agricultural land turned to tree planting and growing plants for fuel.

These targets surpass Government's current aspirations. Although this target has not been formally adopted by Government, it shows the rapidly developing thinking that is happening at a national level which is turning increasing focus to the role of trees in the environment agenda.

1.4 TREES IN SURREY

Surrey is the most wooded county in England, with approximately 42,091 hectares[9] or 24% coverage of woodland,[10] compared to the proportion of national woodland coverage at around 10%. Estimates differ but the most reliable data indicates that just below 21% of Surrey consists of mixed deciduous and Beech and Yew woodland, with an additional 3% cover as coniferous plantation.

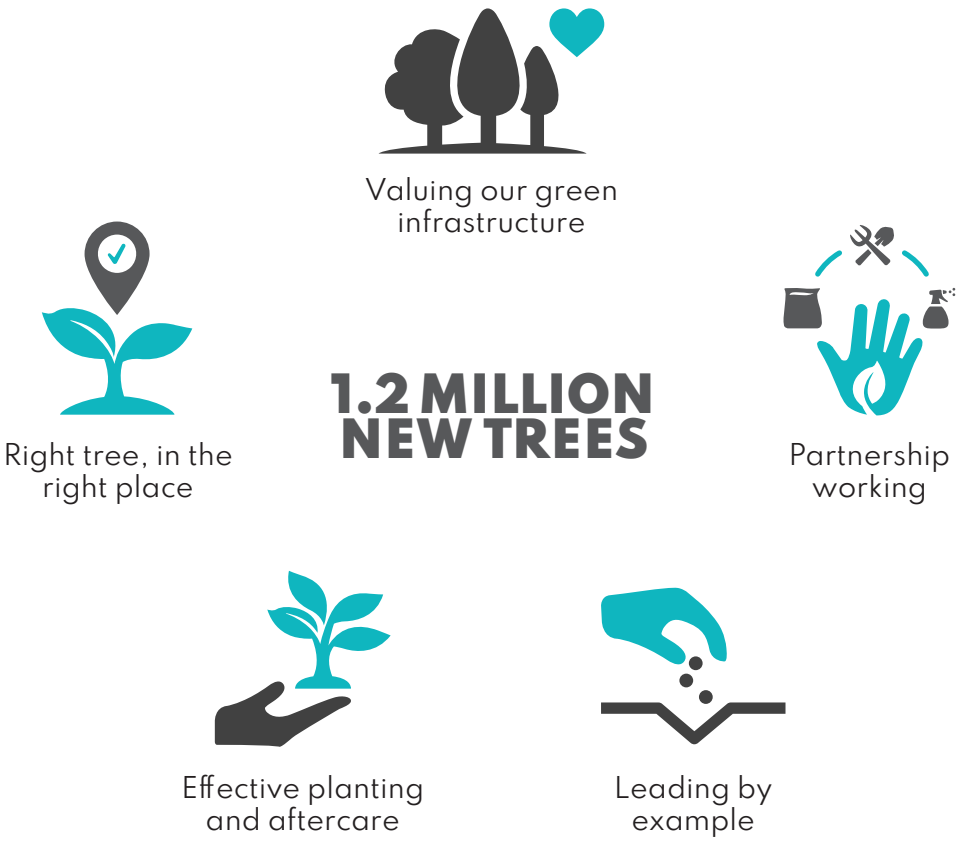
SCC owns, or manages, through an Access Agreement, over 4,000 hectares of countryside, 33% of which is wooded. The estate has been managed in partnership with Surrey Wildlife Trust since 2002. The Trust and the Council have made enormous progress in the management of this countryside estate with over 99% of the estate's SSSI sites now deemed to be, in 'favourable' or 'favourable, recovering' condition by Natural England. As of April 2020, woodland management of the estate has come under the responsibility of SCC, with Surrey Wildlife Trust retaining responsibility for all other aspects of countryside management. The estate also supports a significant area of England's remaining concentration of lowland heathland, as well as some vital areas of chalk downland, which are protected from tree growth, as well as other invasive species.

Urban trees

Recent data from a study by Forest Research, which measures the tree canopy cover of 283 towns and cities across England, found urban tree coverage varied considerably in Surrey's urban areas, but that all areas surveyed in the county met the minimum coverage recommended by Forest Research.[11] Farnham and Frimley were found to have the highest urban tree coverage at 45% and 36.6% respectively. Guildford was found to have the lowest coverage at 21.2%, largely reflecting the borough's large areas of flood plain that are considered unsuitable for tree planting. The breakdown of urban tree coverage is included in **Appendix 2.**

[9] National Forestry Inventory from Forestry Commission Research in 2016
[10] Surrey Nature Partnership (2017). The State of Surrey's Nature. https://www.surreywildlifetrust.org/sites/default/files/2017-12/State%20of%20Nature%20in%20Surrey%20Web.pdf
[11] Doick, Kieron & Davies, Helen & Moss, Joe & Coventry, Rob & Handley, Phillip & Vaz Monteiro, Madalena & Rogers, Kenton & Simpkin, Phil. (2017). The Canopy Cover of England's Towns and Cities: baselining and setting targets to improve human health and well-being. Available at https://www.researchgate.net/publication/322337570_The_Canopy_Cover_of_England's_Towns_and_Cities_baselining_and_setting_targets_to_improve_human_health_and_well-being

2.1 SCOPE AND PURPOSE OF THE STRATEGY



This Strategy will play a key role in the delivery of SCC's Community Vision for 2030[12] specifically the ambition that 'Residents live in clean, safe and green communities, where people and organisations embrace their environmental responsibilities.'

It is also a key initiative within the Council's Climate Change strategy, with the ambition that by 2050 Surrey will be a zero carbon county, which was published alongside this Strategy in April 2020.

This Strategy sets out our vision for the planting of 1.2 million new trees, how we will work with partners to deliver this ambition, and the principles we will consider when making decisions about planting.

High quality management of our existing trees and woodland is clearly of central importance. This will be addressed within the Land and Property Strategy, which is being developed over the current year. Therefore, this strategy focuses primarily on the planting of new trees and woodlands, within a wider context of improving tree and woodland management overall. Throughout this strategy, we signpost to further information and technical details, which can be found in the Strategy's accompanying appendices and, where appropriate, guidance from our partners.

[12] Surrey County Council, Community Vision for Surrey in 2030 https://www.surreycc.gov.uk/council-and-democracy/finance-and-performance/our-performance/our-organisation-strategy/community-vision-for-surrey-in-2030

2.2 VISION

The vision for our New Tree Strategy is set out below:

> **'BY 2030, SURREY WILL BENEFIT FROM 1.2 MILLION NEW TREES, WITH THE RIGHT TREES PLANTED IN THE RIGHT PLACE, INCLUDING BOTH URBAN AND RURAL LOCATIONS, AND SUPPORTED TO GROW TO MATURITY.'**

MP Michael Gove and children from Bagshot Infants School planting a tree during Surrey Tree Week 2020.

3. STRATEGIC OBJECTIVES

The following strategic objectives set out how we intend to meet our vision:

1. **Partnership working |** We will collaborate with partners to facilitate the planting of 1.2 m new trees in Surrey by 2030.

2. **Right tree, in the right place |** We will adopt and advocate the "right tree, right place" principle to maximise benefits, reduce risk and build resilience for existing, and new, trees planted.

3. **Effective planting and aftercare |** We will adopt and advocate best practice in terms of planting practice, aftercare and protection to ensure both planted trees and naturally regenerated woodland survive and thrive.

4. **Leading by example |** As a major landowner in Surrey, we will identify areas of our own estate where trees and woodland can be planted, in order to increase overall tree coverage.

5. **Valuing our existing green infrastructure |** We will develop our approach to the management and protection of trees across the county. This will include the role of planning policy in supporting, where appropriate, the safeguarding of existing trees and planting of trees in new developments.

PARTNERSHIP WORKING

Surrey's New Tree Strategy

PARTNERSHIP WORKING

We will collaborate with partners to facilitate the planting of 1.2 million new trees in Surrey by 2030.

This is an ambitious target, and one that the Council will deliver by working closely with residents and partners, including all levels of government, businesses, public sector organisations, schools, landowners, and community organisations.

We will achieve this objective by adopting the following measures:

1. We will create, or sign-post to, guidance and practical support for residents and partner organisations in the planting of trees. This support could include identifying appropriate areas of land where planting could occur, sourcing suitable trees and seed sources, and support with planting and aftercare.
2. We will work with partners to collaboratively identify sources of funding to plant trees, through fundraising, attracting grant funding, and exploring how we can better support our partners with tree planting and related tree maintenance.
3. We will collaborate with partners to deliver campaigns which will engage residents by raising awareness about the benefits of trees and encouraging tree planting.
4. We will work with partners to develop an appropriate web-based monitoring mechanism to capture information about newly planted trees in the county.

RIGHT TREE, IN THE RIGHT PLACE

Surrey's New Tree Strategy

RIGHT TREE, IN THE RIGHT PLACE

We will adopt and advocate the "right tree, right place" principle to maximise benefits, reduce risk and build resilience for existing, and new, trees planted.

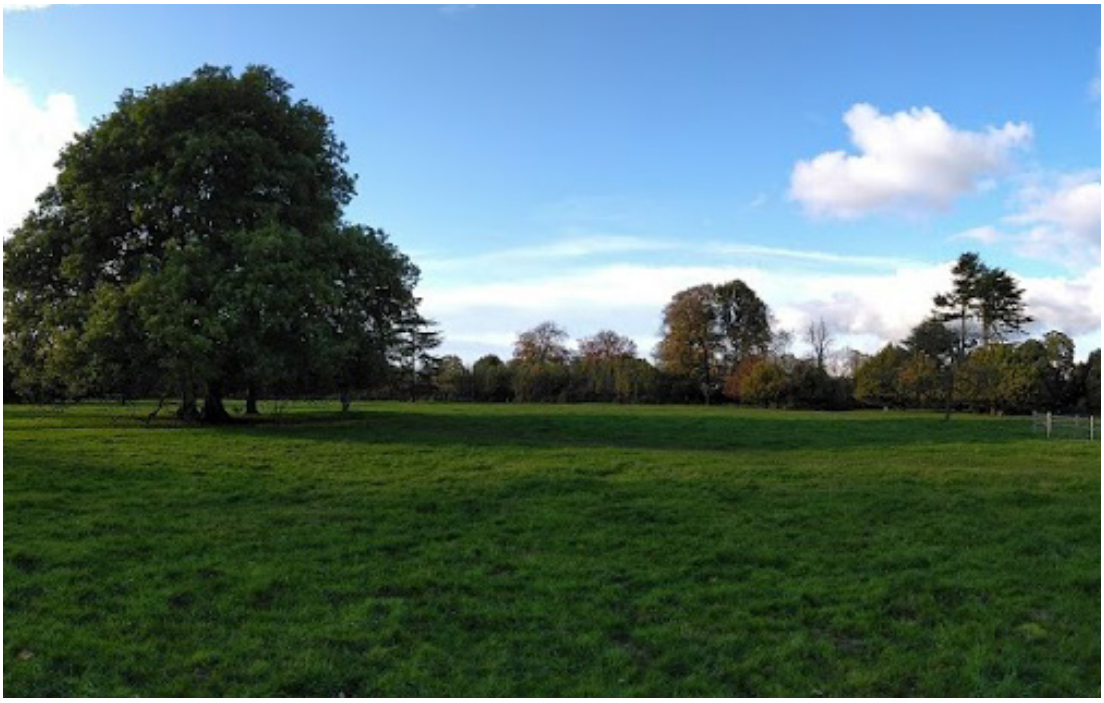
Surrey's trees and woodlands can only help reduce the negative impacts of climate change if they are fundamentally resilient to the impacts of climate change themselves. Sourcing the right trees, and the right mix of trees, is therefore crucially important to ensure that the trees we plant are able to withstand the extreme weather patterns associated with our changing climate, as well as disease, which can result in significant tree loss.

Care must also be taken in decisions regarding suitable planting locations, in order to give trees and woodland the best chance of survival. There will be different factors and considerations for each location.

We will achieve this objective by adopting the following measures:

1. We promote an understanding of the appropriate locations for planting trees and woodland as set out in **Appendix 3**. These will include:
   - Extending existing, and creating new, areas of woodland;
   - Urban settings;
   - Farmland, including planting new hedgerows, and planting trees within existing hedgerows;
   - School grounds;
   - Community sites (including parks and sports pitches);
   - Private land and gardens;
   - New development sites;
   - Vacant or derelict/reclaimed land (including closed landfill sites);
   - On privately owned land adjacent to motorways; and
   - On highways and other major roads, where appropriate and where this does not compromise the integrity of the road surfaces and safety of road users.

   We will also consider opportunities to work with partners outside of Surrey to plant trees in upstream locations to reduce flooding risk to the county.
2. We will encourage partners to avoid planting in sensitive areas, e.g. those that already have a high biodiversity or carbon sequestration value, in order to protect ecologically rich landscapes such as chalk downland and lowland heathland.
3. We will ensure that a diverse range of trees are planted to avoid mono-cultures, which are less resilient and offer less biodiversity benefit, by adopting and advocating the principle of the 10,20,30 urban tree planting protocol, developed by



Sunbury, Surrey

the Forestry Commission, a tree population should include no more than 10% of a particular species, 20% of any one genus, or 30% of any family[13].

4. We will ensure that tree species and woodland types that are planted are appropriate to the particular conditions of a site. We will follow advice from experts regarding the incorporation of non-indigenous tree species, which are better adapted to hotter and drier climatic conditions, prevailing associated exotic pests and diseases these conditions may bring.
5. We will adopt and advocate the provision of seeds and trees from nurseries operating strict biosecurity and quality control mechanisms in alignment with Government guidance, in order to mitigate the risk of introducing new pests or disease to existing trees and woodland. We will also explore how to source sufficient quantities of trees from the UK, in order to avoid reliance on imports.
6. We will seek opportunities to prioritise better connectivity of woodland, through woodland expansion and the creation of new hedgerows and copses, in order to create wildlife corridors and reverse impacts of habitat fragmentation. Where appropriate we will encourage natural regeneration of woodland.
7. We will consult with our local partners to make informed decision on the right tree, in the right place, in view of the purpose and intended benefits of trees planted, for example, leisure, amenity, air quality, noise reduction, wildlife value, and/or economic value (e.g. timber production, biomass, job creation opportunities).

[13] Forestry Commission, 2019 https://www.gov.uk/guidance/urban-tree-challenge-fund

EFFECTIVE PLANTING AND AFTERCARE

Surrey's New Tree Strategy

11 EFFECTIVE PLANTING AND AFTERCARE

We will adopt and advocate best practice in terms of planting practice, aftercare and protection to ensure both planted trees and naturally regenerated woodland survive and thrive.

It is widely recognised that a significant proportion of newly planted trees fail to survive to maturity. Successful new tree planting relies on an integrated approach to careful design, nursery production and planting site management. All parts of the process are important and need careful consideration if new trees are to successfully achieve independence in the landscape.

The amount, and cost, of aftercare required for a newly planted tree to successfully reach establishment phase is determined by numerous factors including the size and species of the planting, the environment, soil type, exposure of the location, and the prevailing weather conditions during the growing season. Ongoing maintenance requirements are also determined by similar factors; for example, such requirements are often much higher for urban trees or trees planted on the highway for reasons of health and safety.

We will achieve this objective by adopting the following measures:

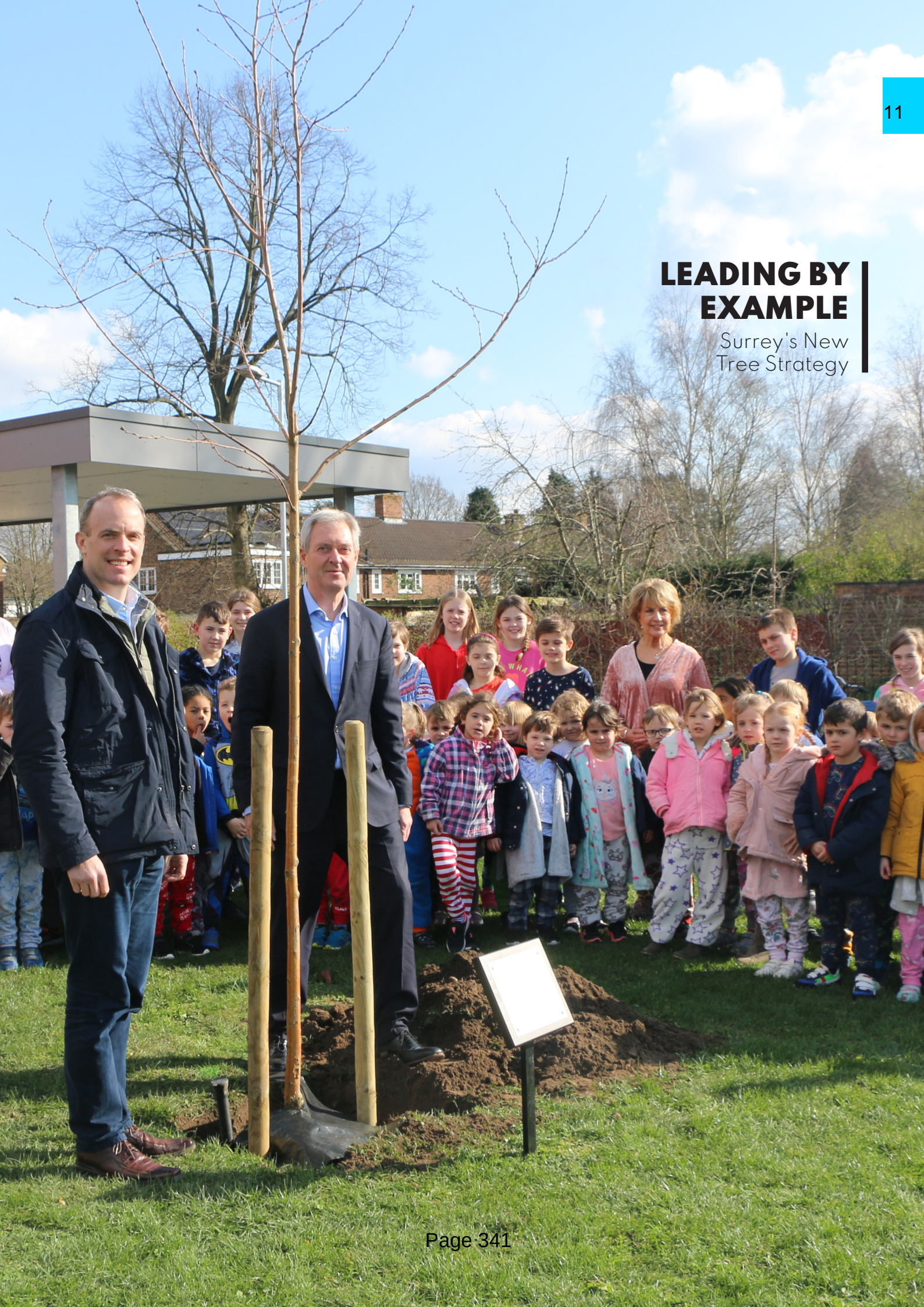
1. We will adopt and advocate recognised best practice in all aspects of tree planting, aftercare and maintenance, from the perspective of design, planning and implementation, in order to maximise chances of survival.
2. We will adopt and advocate clear and comprehensive technical specifications covering planting and maintenance.[14]
3. We will work with experts to evaluate and progress plans to proactively manage woodlands to include their expansion by natural or planted means. We will adopt and advocate proactive and sustainable woodland management aligned with the Forestry Commission's UK Forestry Standard.[15]
4. We will not facilitate the planting of trees, particularly those in urban areas or along the highway, without first identifying and allocating the necessary maintenance costs.
5. We will monitor and publicly report on the number and establishment of new trees planted in Surrey and encourage our partners to do the same, through the previously -mentioned web-based monitoring system, to enable us to identify the number of trees planted in various locations and to ensure their continued development.

[14] This relates specifically to British Standard BS 8545:2014, Trees: from Nursery to Independence in the Landscape. https://www.thenbs.com/PublicationIndex/documents/details?Pub=BSI&DocID=306058

[15] The UK Forestry Standard guidance sets out the UK governments' approach to sustainable forestry, including standards and requirements, regulations and monitoring, and reporting. https://www.gov.uk/government/publications/the-uk-forestry-standard

LEADING BY EXAMPLE

Surrey's New Tree Strategy



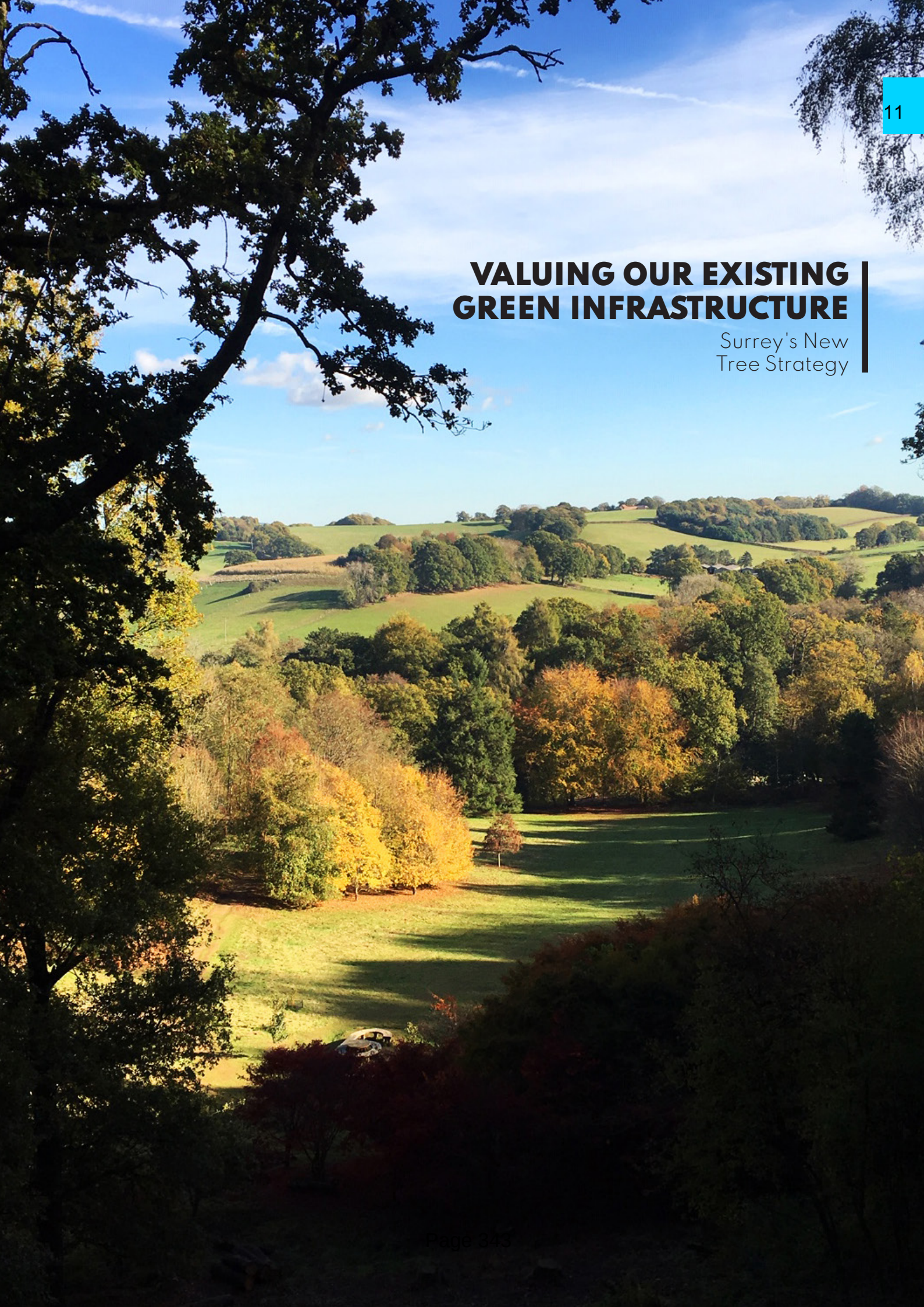
11 LEADING BY EXAMPLE

As a major landowner in Surrey, we will identify areas of our own estate where trees and woodland can be planted in order to increase overall tree coverage.

SCC owns more than 4,000 hectares of countryside, as well as the highway network across the county, several closed landfill sites and a substantial number of properties across the county – all of which offer opportunities for increased tree planting activity.

We will achieve this objective by adopting the following measures:

1. We will calculate and publish the existing tree cover and distribution within land managed internally or externally, through partnership and lease arrangements.
2. We will set ourselves targets to increase tree cover within our urban and rural landholdings by 2030 and performance manage our progress in meeting this target, quantifying specifically the CO_2 reduction and biodiversity improvements achieved.
3. We will ensure that ambitious targets for tree and woodland planting and maintenance on SCC's estate are included within the Council's emerging Land and Property Strategy
4. We will calculate and publish the existing tree cover and distribution within land managed internally or externally, through partnership and lease arrangements.
5. We will review our existing tree management arrangements across the corporate estate and evaluate different management models, including the planting and production of tree crops for timber and biomass.
6. We will use the revised guidelines for planting trees along Surrey's highways, included in **Appendix 4.** These set out the requirements which must be met for trees to be planted along the highway in order to ensure the integrity of road surfaces and the safety of road users and pedestrians.



VALUING OUR EXISTING GREEN INFRASTRUCTURE

Surrey's New Tree Strategy

11 VALUING OUR EXISTING GREEN INFRASTRUCTURE

We will develop our approach to the management and protection of trees across the county. This will include the role of planning policy in supporting, where appropriate, the safeguarding of existing trees and planting of trees in new developments.

Alongside the recognised need to increase the tree cover of the county, it is of equal importance to suitably safeguard and manage our existing green infrastructure. This includes woodlands within private and public ownership, and individual trees. The County is particularly fortunate to feature both numerous ancient woodlands and many individually recorded veteran trees, which provide historic landscape and biodiversity value of national and international importance.

Where these trees and woodland assets are directly in our ownership and management, we can directly manage these precious natural features as part of our operational management.

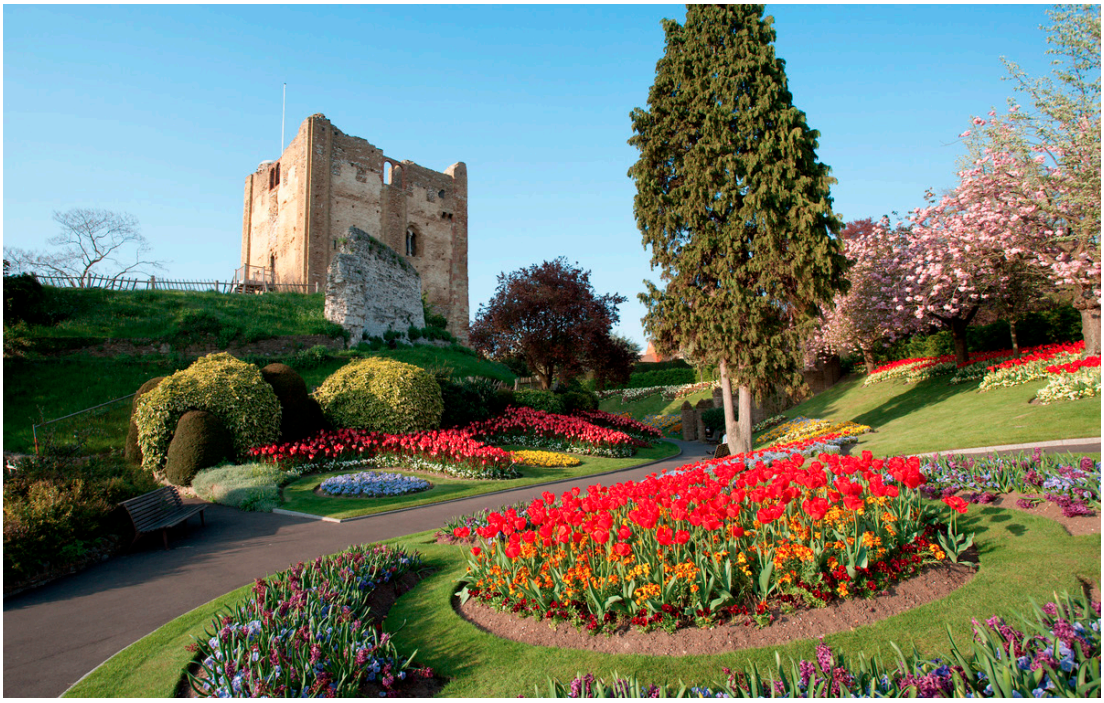
We must also consider the role of planning policy in the protection of existing trees, habitats and green infrastructure in the approval and delivery of new developments.

Currently the size, value, condition and location of a habitat is considered within a site assessment undertaken to support a planning application. In the Environment Bill 2019[16], Government set out a mandatory biodiversity net gain, which will require developers to ensure habitats for wildlife are enhanced, with a 10% increase in habitat value compared to the pre-development condition of the site.

We will achieve this objective by adopting the following measures:

1. A robust approach to tree management in Surrey will be addressed in the Land and Property Strategy. In the meantime, we will manage our existing trees and woodlands in an environmentally sustainable way to improve chances of survival and deliver maximum benefits to residents, wildlife, and specifically:
   a) We will endeavour to protect individual and groups of trees on our own land through mechanisms such as Tree Preservation Orders where appropriate.
   b) We will review our decision-making processes that relate to trees, including our position on consultation with the public on proposed tree works. We will work with partners to source the funding necessary to ensure the right level of ongoing maintenance.

[16] Environment Bill, 2019-21, https://services.parliament.uk/bills/2019-19/environment.html



Guildford Castle, Surrey

c) We will conserve existing trees on our estate. Where possible and appropriate we will replace removed trees with new ones on our (non highways) estate.
d) We will continue to implement our Tree Risk Management Policy to mitigate, where possible, tree-related risks on our estate and highways.

2. We will safeguard and raise awareness of the county's veteran trees, which some boroughs and districts have declared as 'Heritage Assets' within planning policy. We will adopt and advocate that all ancient and ancient semi-natural woodland (including planted ancient woodland sites (PAWS) and restored native woodland on ancient sites (RNWAS)) are proactively managed in accordance with current Forestry Commission-approved management plans.
3. In our own role as a planning authority, and by working with our borough and district partners, we will develop planning policies that support appropriate retention of existing trees and the planting of new trees. This will involve the following:
a) As the planning authority for minerals, waste and the Council's own developments, SCC will ensure that when the Waste and Minerals Plans are reviewed, they take account of the requirement for biodiversity net gain and the need to retain and plant trees where possible.
b) We will ensure that all SCC's own development gives rise to a net gain in trees and green infrastructure, as well as being targeted to reduce adverse environmental impacts, such as air pollution and solar radiation.
c) We will, wherever possible, ensure that trees that are removed by developers are replaced. Replaced trees will be additional to our 1.2m new trees target.

4. GOVERNANCE AND NEXT STEPS

Shepperton High Street

A Trees Officer Task Group is currently working with relevant partners to develop an action plan that sets out how the strategy will be delivered. We aim to publish the first iteration of this action plan in September 2020. The Task Group will meet every two months to review progress to date and will report updates to the SCC Climate Change Board and external partners every six months. The action plan is a live document and will be updated as and when required and reviewed every year.

We plan to include a dedicated section on tree planting on SCC's website which will provide information for residents and partners on our plans and progress, and how they can get involved to support the initiative.

Finally, we will be reliant on future support from Government to achieve some of our long term objectives, and will lobby for support with the following:

- Policy changes which will incentivise land owners to plant trees and woodland.
- Additional funding for urban tree planting initiatives, to include establishment and maintenance costs.

For more information about the Strategy please visit:
www.surreycc.gov.uk/trees or email trees@surreycc.gov.uk

APPENDICES
APPENDIX 1.

CARBON SEQUESTRATION POTENTIAL OF WOODLAND COMPARED TO OTHER HABITATS

Research by Natural England[17] demonstrates that woodland is the most effective habitat type in terms of carbon sequestration (see Table 1 from their report below). The first column shows the average tonnes of carbon per hectare sequestered in soils to a maximum depth of 15 cm, for a number of different habits. The second column shows the average tonnes of carbon sequestered in above ground vegetation per hectare for the same habitat. Combining the carbon stock in soils and vegetation reveals the highest carbon stock is in coniferous woodland (at 140 tonnes of carbon per hectare (t Cha^{-1})), followed by broad leaf, mixed and yew woodland (at 133t Cha_{-1}). Despite this it is important to note carbon sequestration properties of other habitats, particularly heathland, which is a protected landscape in Surrey.

Table 1. Carbon stock average estimates by broad habitat.

Habitats	Carbon stock in soils (t Cha^{-1})	Carbon stock in vegetation (t Cha^{-1})
Dwarf shrub Heath	88	2
Acid grassland	87	1
Fen, mash and swamp	76	?
Bog	74	2
Coniferous woodland	70	70
Broad leaf, mixed & yew woodland	63	70
Neutral grassland	60	1
Improved grasslands	59	1
Arable and horticulture	43	1
Coastal margins (UK)	48	?

There is no similar data for marine habitats in England or the UK

Data on terrestrial habitats soils from CS2007 in England [Note – CS2007 figures are from 15 cm depth soil samples]; on coastal and marine habitats from NEA 2011 UK-level; on vegetation from Ostle et al 2009, except for woodlands which comes from Broadmeadow and Matthews 2003 and it is an average for 50 yrs rotations

[17] Alonso, Weston, Gregg and Morecroft, 2012, Natural England Research Report NERR043, Carbon storage by habitat: Review of the evidence of the impacts of management decisions and condition of carbon stores and sources, available at http://publications.naturalengland.org.uk/publication/1412347

APPENDIX 2. BENEFITS OF WOODLAND AND URBAN TREES

11

Trees and woodland bring numerous benefits, these benefits are summarised below.

AIR QUALITY

Trees and other forms of vegetation can have a positive impact on air quality in urban areas. Trees can remove small amounts of particulate matter (PM) pollutants from the air through deposition to the surface of the leaves. The benefits of deposition by trees and vegetation, however, is far outweighed by the control of emissions from their source (ie vehicle exhaust pipes). Where trees can really benefit is by providing a barrier, physically separating people from major pollution sources, such as roads. This is particularly important at locations where people most vulnerable to air pollution congregate such as schools, hospitals and care homes. Researchers conclude, therefore, that tree planting should be integrated into urban planning and policy,[18] a point which is covered in Strategic Objective 5.

In Surrey, it is estimated that the equivalent of 471 deaths per year can be attributed to long-term exposure to particulates[19]. The main cause of poor air quality in the county is transport, due to general congestion, through traffic on the motorway network (M25/M23/M3) and road traffic travelling to Heathrow and Gatwick airports. Surrey currently has 27 Air Quality Management Areas (AQMAs) in relation to particulate matter[20]. This highlights the need for urban planting within Surrey to reduce the health impacts of pollution, largely caused by transport, alongside measures to reduce emissions.

[18] Air Quality Expert Group, Impacts of Vegetation on Urban Air Pollution, https://uk-air.defra.gov.uk/assets/documents/reports/cat09/1807251306_180509_Effects_of_vegetation_on_urban_air_pollution_v12_final.pdf
[19] Public Health England, 2015
[20] Air Quality – Surrey County Council, April 2020. https://www.surreycc.gov.uk/roads-and-transport/policies-plans-consultations/transport-plan/surrey-transport-plan-strategies/air-quality-strategy

HEALTH AND WELLBEING

In addition to the potential air quality benefits of trees on health described above, there have been numerous research studies which have demonstrated the benefits of trees and green spaces on our general health and wellbeing[21]. The countryside provides space for physical activity, which has a multitude of physiological and psychological benefits. In 2005, the Department of Health released an action plan that indicated that regular physical activity contributes to the prevention of more than 20 conditions including coronary

[21] https://nhsforest.org/evidence-benefits

heart disease, diabetes, certain types of cancer, mental ill-health and obesity[22].

Trees have been specifically linked to improvements in stress, anxiety and mental health issues. Several studies have shown that urban residents suffering from stress experienced less anxiety when they had a regular exposure to trees, compared to those who did not.[23]

[22] Department of Health (2005) 'Choosing Activity: a physical activity action plan', Cm 6374, London, Department of Health. cabeurl.com/2o
[23] Ulrich RS, Simmons RF, Losito BD, Fiority E, Miles MA & Zeison M (1991) Stress Recovery During Exposure to Natural and Urban Environments, Journal of Environmental Psychology 11 : 201 -230 3

EDUCATION

Trees and woodlands also provide an accessible education resource allowing learning through play, adventure and exploration, engaging children and young people. Research by the National Academy of Sciences, in 2015, showed that higher levels of exposure to green spaces are associated with improved cognitive development in primary school children,[24] including improvements in working memory and attentiveness.

[24] Payam Dadvand (P.) et al (2015), Green spaces and cognitive development in primary schoolchildren. Available from https://www.pnas.org/content/112/26/7937.

ECONOMY

Green infrastructure supports local economic growth through the attraction of visitor spending, environmental cost savings, health improvement, market spend and employment generation.[25]

Although locally based traditional woodland industries, such as sawmills and furniture manufacturers have been in decline in Surrey over the last sixty years, there remains a market for locally sourced, good quality timber and there is consumer demand for niche, high quality wood related products. These industries are supported by the Surrey Hills Enterprises and SCC's Rural Surrey Leader programme[26]. There is also demand for locally sourced and produced woodfuel products. The benefits of these local wood-related industries is that they can support the required and necessary maintenance of woodland, which in turn results in healthier and more robust woodland.

Rural tourism also makes a significant contribution to the local economy. In 2012, £853 million was generated in visitor day trip expenditure in Surrey and tourism expenditure supported 5.6% of the total employment in Surrey[27].

[25] Eftec (2013) Green Infrastructure's contribution to economic growth: a review
[26] Rural Surrey LEADER, https://www.ruralsurreyleader.org.uk/
[27] Surrey Woodland Study 2008, Surrey County Council. Available from https://www.surreycc.gov.uk/__data/assets/pdf_file/0003/96735/Surrey-Woodland-Study-2008.pdf

CLIMATE CHANGE ADAPTATION

11

As well as sequestering CO_2 to mitigate climate change, trees also play an important role in adapting to the extreme weather events brought on as a result of climate change. In urban areas tree canopies can provide natural cooling during heat waves, minimising the heat island effect. Trees can reduce the impact of flooding by intercepting rainfall and soaking up excess ground water. Trees can also reduce soil erosion and excessive sediment entering watercourses, capture pollutants and thereby reduce the level of pollution entering groundwater.

EDUCATION

Trees and woodland, and ancient woodland in particular, provide a habitat for a diverse range of species. With considered planning, strips of planted land or trees outside of woods (TOWs) can be created to provide links between areas of woodland, urban parks and gardens, allowing wildlife to move freely in and out of urban areas and creating additional habitat space.[28]

[28] Benefits of Urban Trees, A Guide by GreenBlue Urban, 2016, www.greenblue.com

SURREY'S CURRENT URBAN TREE CANOPY COVERAGE

Recent data from a study by Forest Research has measured the tree canopy cover of 283 towns and cities across England[29]. When viewed from above, tree canopy cover is 'the layer of leaves, branches, and tree stems that cover the ground[30]. Based on the results of the survey, the average urban tree canopy cover in England is 16%.

[29] Doick, Kieron & Davies, Helen & Moss, Joe & Coventry, Rob & Handley, Phillip & Vaz Monteiro, Madalena & Rogers, Kenton & Simpkin, Phil. (2017). The Canopy Cover of England's Towns and Cities: baselining and setting targets to improve human health and well-being. Available at https://www.researchgate.net/publication/322337570_The_Canopy_Cover_of_England's_Towns_and_Cities_baselining_and_setting_targets_to_improve_human_health_and_well-being
[30] Treeconomics, Urban Tree Cover, 2017, urbantreecover.org/urban-forest-cover

While the study does not include urban tree canopy data for all the towns in Surrey county, it does give a picture of urban tree coverage in some parts of the county. Of the 283 towns and cities that Forest Research measured, Farnham had the highest coverage, with 45% urban tree cover. The lowest of the towns in Surrey that was measured was Guildford at 21%. For context, the lowest urban tree coverage in the UK is 3% in Fleetwood, Lancashire.

Urban tree coverage for the towns in Surrey that were included within the research are presented below.

TOWN	URBAN TREE COVERAGE %
Farnham	45
Frimley	36.6
Dorking	34.3
Woking	33.2
Reigate	27.8
Leatherhead	22.3
Guildford town	21.2

Forest Research recommends that towns and cities should aim to achieve 20% tree canopy cover as a minimum.

APPENDIX 3. LOCATIONS FOR PLANTING

11

URBAN SETTINGS

- Opportunities for urban planting could include residential areas and housing estates, shops and office car parks, town centre locations, industrial estates, and derelict land.
- Appropriate tree planting can enhance the local environment, bringing benefits in relation to air quality, biodiversity, climate change adaptation (shading, cooling, flood mitigation), mental health and wellbeing and sense of place.

HIGHWAYS, AND LAND ADJACENT TO MOTORWAYS AND MAJOR ROADS

- In general, the easiest location for tree planting on the highway network is on grass verges (subject to space and other constraints), although this can bring challenges.
- Trees can also be planted in the footway, roundabouts, traffic islands, or potentially on the road as part of major capital schemes.
- Appropriate tree planting on the highway network can bring benefits such as absorbing pollutants from road traffic, creating a barrier between the highway and nearby locations such as schools, reducing exposure to air pollution, reducing flooding, and creating green corridors for wildlife, linking community green spaces.
- For further information see **Appendix 4**.
- Land alongside motorways and high trafficked A roads also provides an opportunity for tree planting with a range of benefits including creating barriers to improve air quality.

OPPORTUNITIES TO PLANT IN COMMUNITY SITES

- Opportunities could include parks, schools, colleges, hospitals, playing fields and other open spaces.
- Organisations that own or manage land (such as schools) may have access to additional funding streams. Organisations and charities that may be able to provide funding include the Woodland Trust, The Tree Council and Tree Appeal.
- The Tree Council's Tree Planting Guide[31] includes information on choosing and assessing a site, considering local ecology, and choosing the right tree for the site (for example, avoiding species that produce poisonous fruit in sites where children play).

[31] The Tree Council Tree Planting Guide. Available from https://treecouncil.org.uk/wp-content/uploads/2019/12/Tree-planting-guide.pdf

- The Tree Council also provides information on developing school orchards[32] which provide a range of health and educational benefits. The Woodland Trust also provides a range of resources, information and free trees through their Tree Tools for Schools[33].
- Community orchards can be created to provide green space in urban areas and build community skills and food security.

[32] School Orchards, Learning through Landscapes. Available from https://treecouncil.org.uk/wp-content/uploads/2019/12/School-Orchards.pdf
[33] Woodland Trust, Tree Tools for Schools, http://www.treetoolsforschools.org.uk/menu/

PRIVATE LAND / GARDENS

- There is a great deal of public interest in trees, and householders with sufficient garden space may be able to plant trees on their own land as part of the 1.2m trees programme, with SCC providing encouragement, guidance, and help with sourcing trees.
- Trees in gardens and on private land can contribute towards wildlife corridors, e.g. between urban parks.
- The Royal Horticultural Society provides a Beginners Guide to Planting[34].

[34] Royal Horticultural Society, Planting in the Garden, https://www.rhs.org.uk/advice/beginners-guide/planting

WOODLANDS

- Creation of new or extended woodlands can provide a range of benefits, particularly where these create corridors for species and provide connectivity between sites.
- The Forestry Commission provide a comprehensive guide to creating new woodlands[35].

[35] Forestry Commission, Create Woodland Overview, 2018 https://www.gov.uk/guidance/create-woodland-overview

FARMLAND / HEDGEROWS

- Surrey's farmland and open spaces offer good potential for planting hedges and trees.
- Hedgerows provide benefits including valuable habitats and corridors for wildlife, providing shelter for stocks and crops, and reducing windspeed and erosion.
- There may be an opportunity to encourage farmers to engage in agro-forestry if a suitable funding model can be found. This may depend on policy and availability of grant funding from Government.

11

WATER COURSES AND FLOOD MITIGATION AREAS

- Trees can mitigate the effects of flooding by intercepting rainfall and soaking up excess ground water.
- By increasing tree coverage at upstream locations, this can slow the flow of water and reduce accumulation at lower levels.
- Trees can also reduce soil erosion and excessive sediment entering watercourses, capture pollutants and thereby reduce the level of pollution entering groundwater.

RECLAIMED LAND (MINERAL SITES) AND CLOSED LANDFILL SITES

- Reclaimed land on mineral sites provide an opportunity for tree planting.
- Closed landfill sites also present a good opportunity.

DEVELOPMENT LAND - PLANNING

- New developments offer an opportunity for tree planting and woodland creation as outlined in Strategic Objective 5.

WHERE WE WON'T PLANT TREES

- There are areas that are inappropriate for planting trees due to their existing habitat and carbon storage levels. These include Surrey's protected heathlands and downlands. We will adopt the Right Place Right Tree approach in assessing potential locations.

APPENDIX 4. BENEFITS OF WOODLAND AND URBAN TREES

FOREWORD

Surrey's Community Vision for 2030 contains the ambition that:

'Residents live in clean, safe and green communities, where people and organisations embrace their environmental responsibilities'.

This ambition reflects Surrey residents' desire to preserve their county for future generations and recognises that people and organisations are collectively responsible for ensuring Surrey is safe, free from pollution and has open, green spaces to enjoy in the future.

The UK Government has committed to achieving net zero carbon emissions by 2050, and on 9 July 2019 the council followed suit by declaring a 'Climate Emergency' and committing to work with partners to agree Surrey's collective response, which will include a strategy for becoming carbon neutral as early as possible.

Surrey Highways has developed this best practice guide, to assist Surrey Highway Officers, Local Tree groups and Residents' Associations as well as individuals who live and work in Surrey. The guidelines provide information on what to consider as well as how to progress opportunities to plant trees and shrubs on highway land and enhance existing highway verges.

The guidelines are designed to guide and are not a definitive policy on tree planting or verge enhancements. Each request will be considered on its merits and where both funding and resources are available, opportunities will be exploited to help fulfil Surrey's Community Vision for 2030.

Matthew Furniss
Cabinet Member for Highways

PLANTING ON THE HIGHWAY

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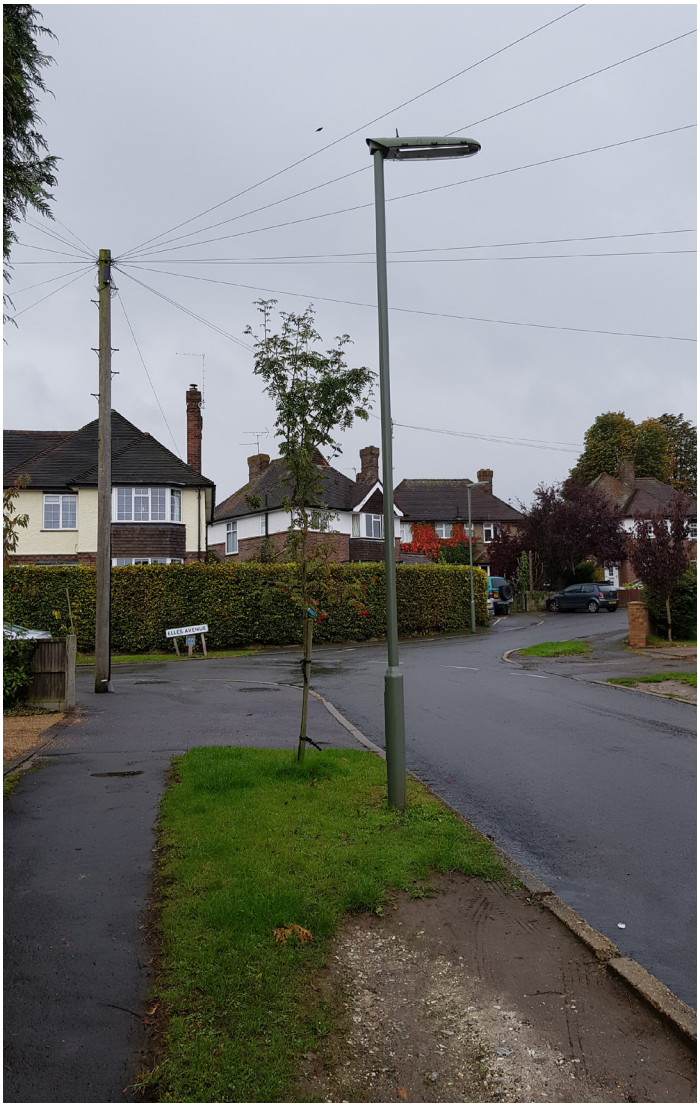


Rowan tree planted under telephone cables and too close to a street lighting column – this will cause issues in the near future.

Surrey County Council encourages planting on the highway, but it is vital that the right tree or shrub is planted in the right location and supported by proper maintenance.

Many years ago, planting was undertaken by developers and local authorities with limited thought on the future use of the road or the likely size of the tree. This has resulted in important lessons being learnt and a change in what is considered suitable on an urban street.

Greening our highway, including trees and shrubs bring many benefits to people and the environment.

Planting can help to support wildlife, provide shade and shelter, improve air quality, reduce noise or flooding but also help to green our streets.

Surrey County Council has a number of pressures on the Highways budget, but will consider locations proposed by individuals as well as groups. Fees to cover administrative costs are payable by applicants, currently set at £25 (as of 2020) but will be subject to review and will be available on our fees & charges webpage. In some cases planting cannot be carried out due to overhead cables, street lights, signs, road visibility and underground services.

Surrey County Council will endeavour to respond positively to tree and shrub planting requests.

Where the site is suitable but the Council is unable to fund the tree planting, individuals and groups are encouraged to raise the funds to ensure the planting can be progressed.

TREE SPECIES

Trees are a living thing and as such ultimately have a lifespan. Before they die they may be removed as a result of disease or for safety reasons.

In order to ensure that there will be trees in the future, it is important that when new trees are brought into the street scene, they are a mixed population of tree types.

This is so that if a disease or pest were to damage one type of tree, the losses would not be too significant as there would still be immune trees in the locality. In addition, like flowering plants and shrubs, each tree type may have different leaf colour and particular time of the year when it is most glorious.

Annex A contains a provisional list of trees which will be considered by the County Council Arboriculture team to plant on the highway. The Council will only permit species which are native or are compliant with bio-security measures and fully approved for use in the United Kingdom. The list is not exhaustive, but the trees listed have known qualities which complement the highway. This may include the type of root growth, the height and spread of the tree canopy, seasonal arisings and resistance to current diseases or pests which are prevalent in today's changing climate. The list is designed to help prevent an ongoing costly maintenance burden to the taxpayer and minimise potential damage to highway land or private property.

PROTECTING TREES

Urban trees are not protected in the same way as young trees growing in their natural environment where they would be surrounding vegetation to provide shelter. Urban tree locations can be vulnerable to wind and disturbance from pets, pedestrians, vehicles and general highway maintenance activities.

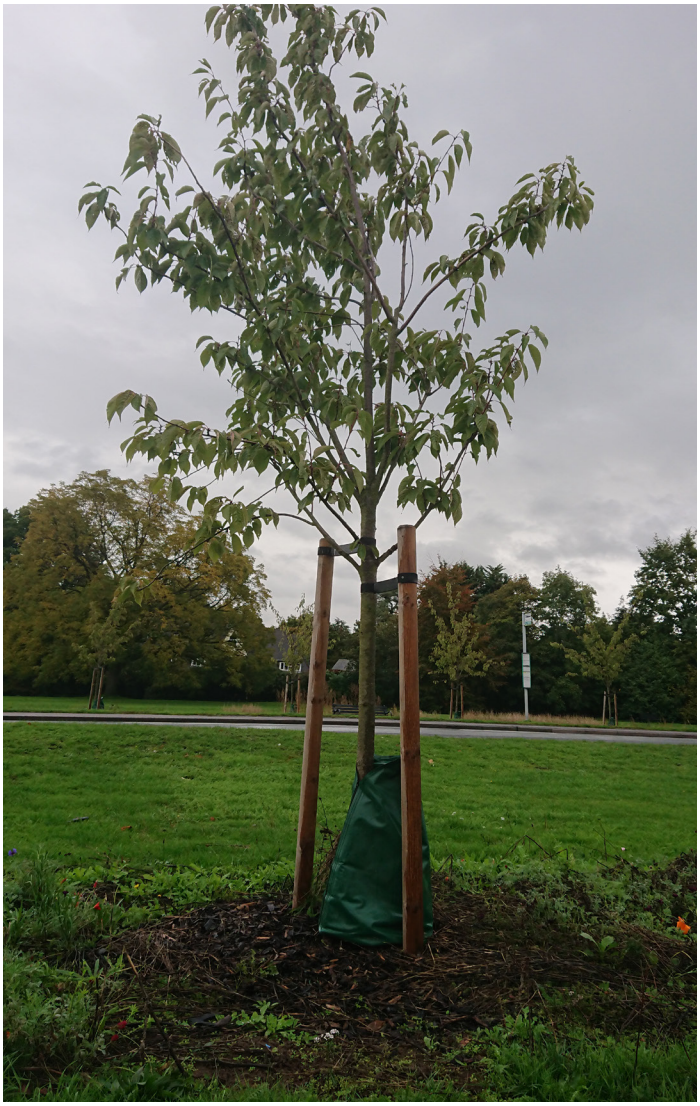
Trees will be provided with suitable protection against animals and mechanical devices such as grass strimmers. The primary means of protection will be by planting in the right place, using stock of suitable size and using mulch under the tree to prevent grass and weeds growing near to it in the first few years. The mulch should be over a 1m diameter or square area, and to a depth of 50- 75mm, without touching the new tree itself. Mulching helps to conserve water and prevent weeds growing around the tree.

STAKING TREES

Most highway trees will require staking initially. This will help protect it from highway users and strong winds whilst it establishes itself.

Stakes should go into the ground at least 60cm, to ensure it is stable enough to support the tree. It is important to remove the stakes after 18-24 months, to prevent damage to the tree from the support strap becoming too tight, and also ensuring that the tree becomes capable of standing on its own, without support.

If a tree relies on the supporting stakes the tree may grow fewer roots and develop a weak tree base – resulting in a tree unable to withstand typical Surrey weather, if the stakes rot.



Young tree with stakes and feed / water bag

MAINTENANCE OF NEWLY PLANTED TREES

Surrey County Council cannot undertake the ongoing maintenance of a young tree, and volunteers will be required to regularly water the tree in its first two years, particularly during the growing seasons.

Where suitable, the use of tree planting feeding bags or root drenches will be encouraged, to ensure trees remain hydrated particularly in the summer. The watering bags slowly release water and help keep trees moist for healthier growth. They are quick and easy to install and can reduce the time taken to water each tree by volunteers. It is critical that the tree is not allowed to dry out for the first two years.

Formative pruning will also be encouraged by volunteers to ensure clean and healthy growth from an early age with the aim of minimising long-term tree health problems.

Some trees will die either naturally or through vandalism or damage. In this event, trees will not automatically be replaced. Each site will be assessed independently, taking into consideration factors such as available funding or local air quality issues.

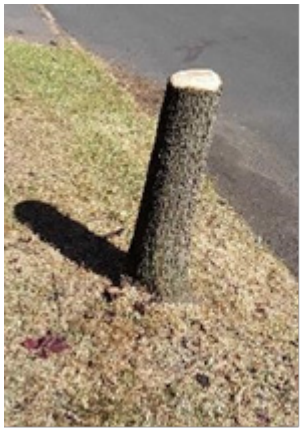
11

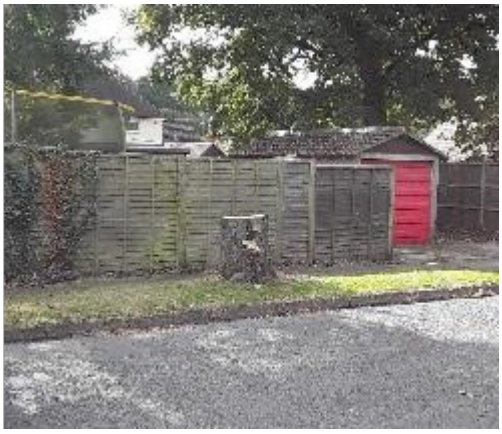
TREE STUMPS

The Council has a limited arboriculture budget and we prioritise our works on a risk- based approach. This means that the majority of our highway trees on grass verges and footways are felled to a 1m stump. In the right place these stumps can be beneficial to insects, such as the stag beetle. Stumps are hence only removed where they present a significant obstruction to users of the highway.

Individuals may be permitted to fund the removal of the stump from grass verges and are encouraged to use a Surrey County Council and Arb Association approved contractor. All contractors working on the highway, must have their Street Works qualifications as a minimum of LA (Location and avoidance of underground apparatus) and O1 (Operatives - Signing, lighting and guarding).

The Council will provide statutory undertakers plans before any stump grinding is permitted on the highway. Surrey County Council must be informed of any stump which is removed from the highway.





Picture: Tree stumps left from felled trees, cut to approximately 1m in height

GRASS VERGES

The easiest place to dig a hole, in order to plant a tree, is generally considered to be the grass verge. Grass verges vary in size from a minimal 30cm through to a wide expanse which may be larger than 30m square. Grass verges are also the easiest location for statutory undertakers to dig trenches to locate their pipes and cables in.

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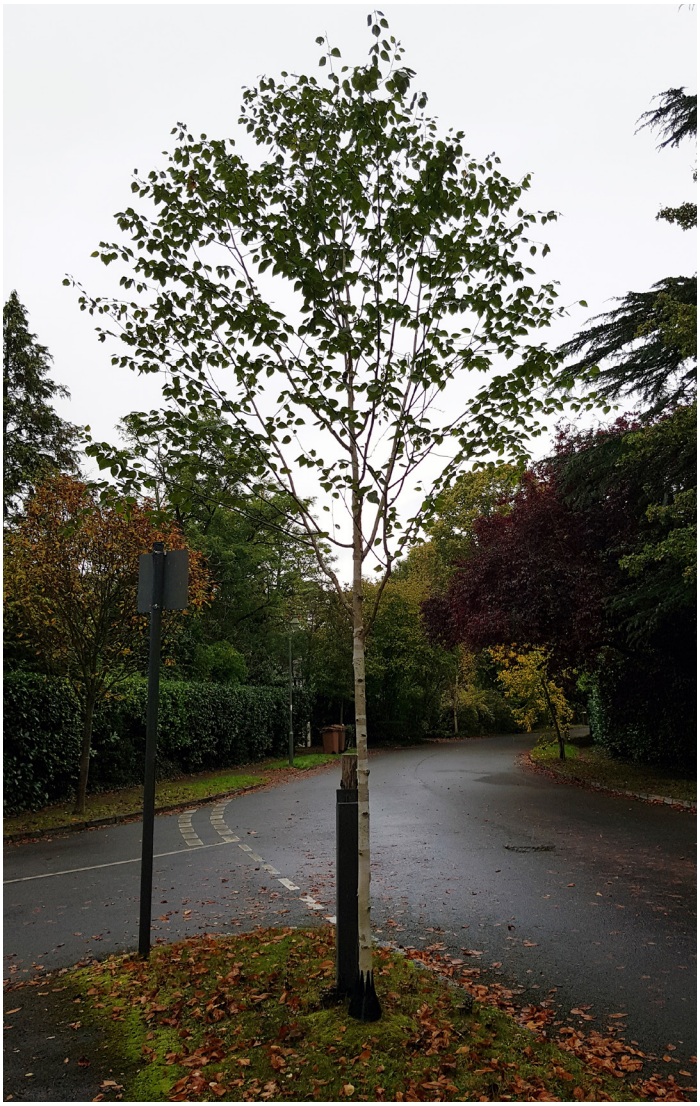


Silver birch tree planted too close to the road – and will in just a few years encroach onto the road and likely be damaged by vehicles brushing past it.

Before any grass verge is considered to be a suitable location to plant a tree, the following considerations must be taken into account:

- Is the grass verge part of the public highway?
- Are there cables, wires overhead or a street lighting column close to the location?
- Are there existing statutory undertakers cables and pipes within the verge – if so, is there space for tree planting to take place?
- Does the adjacent property have existing vegetation or trees on their boundary property?
- If there are properties adjacent to the grass verge, is the property owner in agreement to have a tree planted close to their boundary?
- Is the verge wide enough to sustain a tree, and ensure that as it grows it will not grow over the road or block the footway?

FOOTWAY

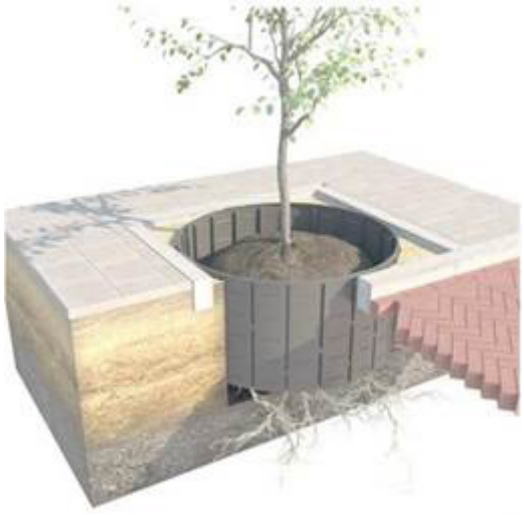
Planting trees on the footway, requires a tree pit to be installed to prevent the footway collapsing into the tree hole.

Tree pits will always be a minimum of 1m square or diameter. When considering installing a tree pit, it is important that the footway width is not reduced to below 1.6m to allow full access along the footway.

The tree species for tree pits are specific to ensure the tree can establish itself. Ideally a medium sized tree requires 12 m^3 to give it the best start and chance in life. Most of our footways do not have this area of space between private properties and the road, and hence the choice of tree species are limited.

Paved surfaces and utility pipe and cables are vulnerable to root damage. It is important to not plant trees too close to existing known utilities. Tree roots should also be guided downwards, for a minimum of 300mm to remove the possibility of either the road or footway suffering from root heave.

In most locations there will be the need to install specific tree root restriction materials, rather than allowing the tree roots to potentially cause damage to the footway or road. There a number of suppliers of such materials, and an example is below.



An example of a Ribbed Root Barrier Panel, courtesy of Green Tech. The panels can be used in a circular, square of straight line direction to protect underground service or the highway surfaces.

THE ROAD

There may be opportunities to plant trees on the existing road network, however due to the requirement for the installation of load-bearing systems for tree rooting environment (for instance rafts or crates) to protect the tree and its roots from compaction, the size of excavation required means that these opportunities would be limited to capital funding and larger schemes.

New developments with sustainable drainage systems, such as swales and structural soil are better suited to identifying areas where trees can be designed into the built environment.

Further details on planting trees within the streetscene can be found in Annex D.

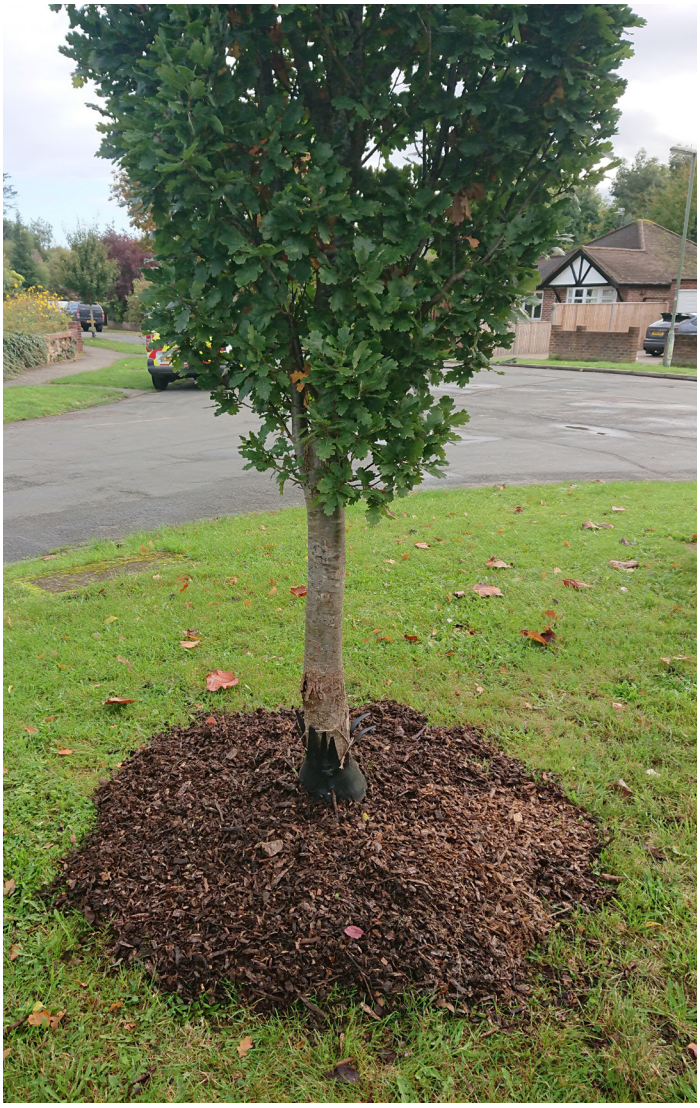
PLANTING SHRUBS

11

A shrub or bush is usually smaller than a tree, often having multiple permanent stems branching from or near the ground. Shrubs can grow both tall and wide, and must be chosen carefully as ongoing maintenance costs must be considered.

Many shrubs will need to be kept well-watered during dry periods. Safe access to the shrub area and volunteers to water the plants will be required to ensure the shrub grows successfully. All shrubs and their locations must be approved by the Arboricultural team before planting takes place.

PLANTING A MEMORIAL TREE OR SHRUB



Fastigiate Oak, located on a wide urban verge, with a 1m diameter mulch circle.

Individuals may contact Surrey County Council with a request to plant a tree or shrub to commemorate an occasion or person. Memorial planting will be self-funded by 3rd parties, as per the process in Annex 2.

It is important to note that Surrey County Council will not permit plaques to be placed on or near the tree or shrub, and that if it subsequently dies or is damaged accidentally or deliberately it is not possible for Surrey County Council to fund a replacement.

MAINTAINING GRASS VERGES

Many grass verges which run alongside the highway are the responsibility of Surrey County Council. We work very closely with the 11 District and Borough Councils within Surrey, and in some areas they directly manage these grass verges on our behalf.

Restoring biodiversity and encouraging natural grass land and native wild flowers along some of our grass verges is an opportunity to support insects, wildlife and grassland species. Areas of highway can be considered for encouraging native wild flowers and grasses to grow – however, these sites must be approved by the Council to ensure that the safety of the highway users is paramount.

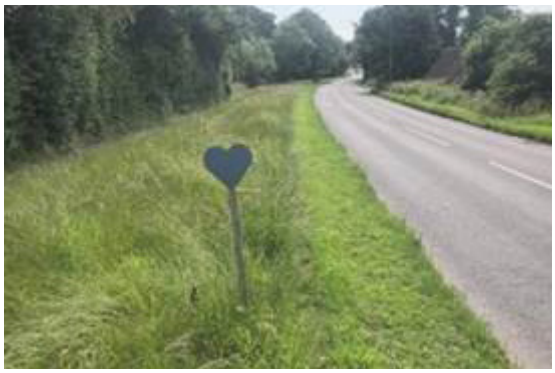
GRASS CUTTING

Surrey County Council currently funds four urban grass cuts and two rural grass cuts in a year.

Grass cutting is an important part of maintaining the highway network. If the verges were left uncut, it would take a very short period of time before plant diversity declines as scrub and woodland develops.

Grass cuttings in the main are not collected, as this requires alternative equipment to the standard highway verge cutting machinery and the cost of upgrading cutting machinery is too prohibitive for many contractors.

Rural verges, particularly with roads of a speed limit of 50mph or more, will continue to require a minimum of a 1m swathe strip to be cut in April/May. This ensures that the carriageway edge remains clear of overgrown vegetation, which if not cleared could impact on draining water from the carriageway. Cyclists may also be obstructed by the vegetation and pedestrians will not have a safe place to walk where there is no footway. If a footway exists on the grass verge, the grass will continue to be cut either side of the path, to ensure the path does not become overgrown.



The 'Blue' campaign is a national campaign to encourage biodiversity along the highway.

All verges should have a full width cut in the autumn to prevent woody shrub growth, and self- seeded saplings growing in inappropriate locations.

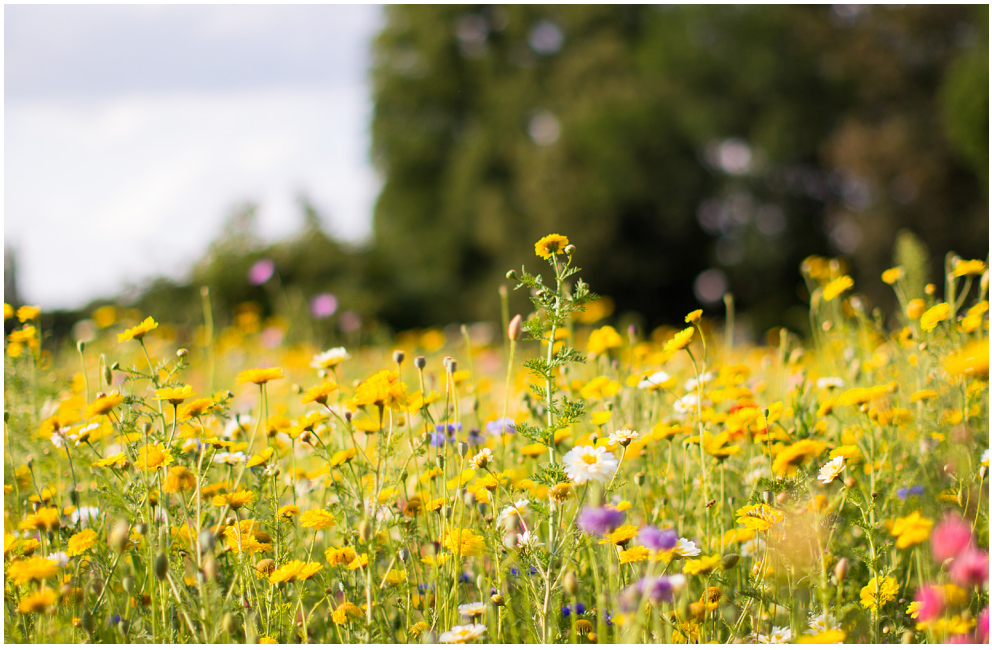
Where rural verges are left to grow until autumn, Blue shaped hearts can be planted to indicate to highway users it has been deliberately left. The "BLUE" campaign is a nationally led campaign to encourage biodiversity and is gaining popularity across the country. Their work is collaborating with PlantLife.

WILD FLOWERS

Surrey County Council encourages the sewing of native flower seeds. Native seeds will encourage biodiversity improvements – although may not be as bright and colourful as some non-native flowers. Planting generic mixes of wildflower seed does little to conserve locally occurring wild flowers and can have a negative impact on natural native flora. Sewing mixes of seeds can be expensive and labour intensive to maintain unless planning and preparation work is undertaken. Many seeds require a period of cold to germinate, so need to be sewn by late summer, or very early in the Spring.

Sowing seeds on existing grass verges are less likely to be successful than if they are sewn on a scarified verge. Grass is a quick growing plant, and as such will often outgrow wild flowers providing shade to them and stifling their growth. Scarifying verges can be costly, if extensive temporary traffic management is required, and it can also encourage weeds to grow initially, and labour will be required to remove the weeds until the wild flowers establish themselves.

Wildflowers flourish on areas where there are low nutrients. Where verges are being developed, consideration of replacing the soil on verges with limestone scalpings and a very thin layer of soil should be undertaken. Wild flowers would thrive on this area, and a reduction in the number of grass cuts should be evidenced within a short period of time.



ALTERNATIVE TREATMENT OF VERGES

Surrey County Council encourages the use of alternative verge management, which may include the use of cut and collect machines, where available, undertaking a single cut each year in set rural areas.

The use of cut and collect machinery on both the rural and urban verges can reduce the thick thatch that can build up on verges. Where machinery is not currently available, volunteers can be encouraged to assist with boosting natural wild flower growth by raking up and collecting the grass following a cut where it is safe to do so. This will help reduce the nutrients in the grass verge which means that slower-growing wild flower species can start to replace lush grass growth.

In urban areas this may result, over time, in considerably fewer number of cuts being required to keep the grass at a standard height. Grass cuttings can be deposited in areas of verge with trees or those areas of verge which can hide the grass cuttings. These grass cuttings once they have mulched down can be used to protect newly planted trees and recycled.

PROTECTING AREAS OF GRASS VERGES

Some areas of verge may contain certain species of wildflowers or grasses which are of a specific interest to a group or the wider community. Where individuals or groups identify areas which they have nurtured or which they wish to nurture, permission must be sought from Surrey County Council.

The Highway Maintenance Engineer will assess the site and ensure that the safety of highway users or those wishing to work on the highway is not put at risk from an area designated with specific maintenance requirements. Where it is safe to do so, the area may be identified by the use of passively safe markers. The correct process for registering an area of verge for protection is at Annex C.

HERBICIDES

Surrey County Council will only use approved herbicides to specifically treat invasive weeds such as Giant Hogweed and Japanese Knotweed on their highway verges. Herbicides are not sprayed on a grass verge to inhibit grass growth.

Please consider mature size of tree selected and potential to affect adjacent property. Do not regard space over adjacent property as potential growing space.

SMALL HEIGHT (5 – 12M)

Requires 10m^3 and minimum width of 1.1m to grow.

Latin Name	Common Name	Description
Prunus Royal Burgundy	Royal Burgundy	Purple leaves
Acer campestre var Elegant	Field Maple	Autumn colour
Liqustrum lucidum variegata	Chinese Privet	Evergreen
Corylus Colurna or Te-Terra Red	Turkish Hazel	Large green leaves or red leave

MEDIUM HEIGHT (12 - 17M)

Requires 20m^3 and a minimum width of 2m.

Latin Name	Common Name	Description
Gleditsa tricanthos Variance: Subnurst; Ruby Lace	Honey Locus	Yellow leaves
Koelreuteria paniculara	Price of India	Flower
Pyrus calleryana chanticleer	Ornamental Pear	Autumn colour

LARGE HEIGHT (17M+)

30m^3 and a minimum width of 3m.

Latin Name	Common Name	Description
Fagus sylvatica	Beech	Foliage native
Acer psedoplantanus varieties	Sycamore	Draught tolerant
Ginko biloba	Ginko	Pollution tolerant

Other options are available for nomination subject to approval from the Arboricutlure team and availability from the tree nursery.

ANNEX B
PROCESS FOR TREE PLANTING

11

Requests for tree planting can be accepted at any time of the year, however trees will normally be planted between November and December.

Common tree orders need to be placed with the tree supplier by February, the year of planting, in order to secure those trees for that year.

Specific trees may require 2-3 years notice, in order that a nursery can grow and develop them to a suitable size.

CUSTOMER

- Location is requested for a tree.
- Include a map and or sketch of location.
- Send to Highways, to allocate to local team.

MAINTENANCE ENGINEER

Maintenance engineer considers location:

- Checking for obvious signs of stats above and below ground.
- Sight lines.
- Adjacent trees and street lighting columns.
- Pass on to Arb team.

ARBORICULTURE TEAM

- Check location for size and potential species.
- Meet customer, discuss options, including liaising with properties fronting the verge if required.
- Discuss funding and aftercare of tree.
- Gain quote from SCC contractor to plant trees.
- Send quote to customer (if requires 3rd funding).
- Agree who will undertaken the works - and when.
- Raise PO or pass stats to 3rd party.
- Audit completed works at month 0, 6, 12 & 18.

ANNEX C
PROCESS FOR REQUESTING A VARIATION TO THE EXISTING VERGE MAINTENANCE REGIME

11

CUSTOMER

- Identifies an area of highway verge.
- Provides a location map and details.
- Contacts Surrey Highways.

LOCAL AREA OFFICE

- Maintenance Enginner considers area being proposed
- Discusses with Customer the desired outcome and ongoing verge maintenance
- If agreed, or further advice - pass to Principal Engineer for Environment works

PRINCIPAL ENGINEER

- Log proposal on Verge Enhancement spreadsheet.
- Agree changes with D&B or Contractors.
- Update GIS maps.
- Audit changes after spring and autumn cuts.
- Update customer.

ANNEX D
ALTERNATIVE SOLUTIONS TO GREENING OUR HIGHWAYS

11

Planting trees where vehicles drive, park or turn
Rafts or crates were tree roots can be protected as they grow. Surfacing (bituminous, blocks or grass) can then be undertaken over the top.

Rain garden tree pits
Trees and their growing area used as a soakaway for highway water. Trees are planted on the footway, with large (effectively) soakaways under them. Trees help to filter the water.

Green screens
Living Ivy screen fences – thin and take up little space.

Much development is happening in this field and hence this list is not exhaustive. Other options will be carefully considered if suggested.

ACKNOWLEDGEMENTS

Many thanks to the numerous people and organisations who contributed expertise, feedback and support to Surrey's New Tree Strategy.

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Designers
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Surrey's Greener Future

SURREY COUNTY COUNCIL

SURREY'S NEW TREE STRATEGY