

Appendix 1: Bristol's Trees Scrutiny Working Group - Q&As

Ref	Question	BCC officer comments (with consideration of witnesses' comments)
1	What is the estimated tree canopy we are trying to double?	The One City targets (increase tree canopy by 25% by 2035 and 100% by 2046) do not give an absolute target canopy – but do say to increase it from a 2018 baseline. Tree canopy 18% using i-Tree Canopy method.
2	What barriers are there to doubling the tree canopy in the city?	<ul style="list-style-type: none"> • Need for Bristol Green Infrastructure Strategy; Tree planting opportunity mapping across all land types; Toolkit to prioritise tree planting to unlock benefit • Capital investment; Revenue provision; Incentives for city landowners to plant trees; • Underground services in grey spaces; Spaces already 'used for other things' e.g. recreational use of green space, non-woodland habitats, grey space use for vehicles and car parking. • Loss of trees to disease – e.g. ash dieback, age, climate stress • Engagement and vision setting to drive agenda for change; Lack of authoritative 'Tree Board'
3	What is the change to the tree canopy – growing or reducing - and why?	<p>No comprehensive city data on tree loss or tree planting across all land use / ownership. Would be difficult to obtain reliable data. There is insufficient data to measure the flux of change in tree canopy based on loss of trees and planting of trees.</p> <p>Periodic measurement of actual canopy via sampling would provide comparable data- against an overarching KPI canopy cover target. There is a need for both leading and lagging indicators: a KPI canopy measure is a lagging indicator and gives no indication of future change. Where large trees get felled and replaced – by necessity, replacement planting is using small stock – it is neither biologically sensible or cost effective to attempt to plant large stock (i.e. older and larger trees). BCC is measuring the contribution to canopy of tree planting through its One Tree Per Child and TreeBristol programmes - see 2020/21 report.</p>
4	Are we measuring the rate of loss of mature trees to development?	<p>Data is extractable, but not collated or published, nor expressed in terms of canopy loss – if that is the agreed metric (tree loss is considered with British Standard categories: A, B, C, D – where a category A tree is healthy and significant).</p> <p>Monitoring is required to quantify loss / gain. This should include projected contribution from additional number of trees required by the compensation standard (and 10% biodiversity net gain as this is applied and relates to trees).</p>
5	Will we achieve the target on current trends?	<p>The contribution made by One Tree Per Child and TreeBristol in year 20/21 is around 20 ha [this is a projected figure]. If tree canopy baseline is 18% - hence doubling target is 36% by 2046, this requires an annual net increase of c. 80 ha/yr. This 20 ha contribution does not reflect loss. Nor does it measure any contribution by other landowners across the city.</p> <p>Meaningful discussion required to agree targets, plans, resources and roles.</p>

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6	Why is tree maintenance, protection, planting and felling controversial; Who decides when trees are managed in parts of the city estate e.g. streets, parks, housing land etc? Is the management scheme keeping up with what's needed and if not why?	<p>Tree loss is emotional. Often tree loss is associated with personal gain – like development. Trees are living things that have a life, which includes decline, decay and death. Within an urban context we need to manage public safety which means felling trees before they fall down. Inevitably, we fell large trees and plant small trees, which heighten the sense of loss. There is a public information challenge. Most objections relate to the loss of trees to development. A clear and resourced replacement planting protocol with known planting sites would lessen anxiety about loss. BCC tree risk management is well informed and works within industry risk tolerance – but this difficult to communicate.</p> <p>Resources are of course an issue – there is not an unlimited pot of money to manage trees and few land-owners make trees their sole purpose. BCC supports trees, but makes decisions in a balanced way – which includes removing trees where the case is made -whether for safety reasons or for development.</p>
7	What can be done about mature trees that are now affecting highway access, mobility, and safety?	<p>There are options e.g. widening pavements / narrowing roads alongside accepting some limitations within guidelines and ultimately removal where options are reasonably exhausted.</p>
8	How are existing trees in streets, parks and estates protected against damage?	<p>Young trees are typically protected with metal guarding until established. A strimmer guard is placed round the base of the tree. If the grass were allowed to grow long around the tree – a metre or so - this would avoid the need for close strimming.</p> <p>Trees planted in woodland are protected with spiral guards to prevent rodent damage and biodegradable mulch mats are put round the tree to protect from weed competitions. As trees mature and guards are removed and strimmer guards eventually lost, there is risk that trees are damaged by strimming and mowers - across all land ownership. The best option is to allow the grass to grow long around the tree – this will get rank overtime - if there is enough shade then it should not develop into scrub - but some maintenance will be required eventually. This is somewhat a perception issue – we are used to grass being 'neat' around trees – hence close mowing – leaving it to grow long (and rank) is good for nature and the tree -but can look 'messy' and attract litter – this change in management at scale should be part of a wider engagement around managing land for nature.</p>
8a	What is being done to reduce damage from mowing and strimming or spraying where young or existing trees get	<p>Some damage does occur, but the incidence is generally low and isolated and generally this is not a significant issue. New woodland planting areas on BCC land are mapped and grounds operatives made aware. Pesticides are not generally an issue for larger stock trees in streets where pesticide weed control may still be applied. Salt damage is much more significant problem despite well-regulated applications – salt it is an inevitable pollutant of soils where trees are next to the highway – and where SUDS schemes are</p>

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	damaged by contractors in parks, streets, and estates?	designed to take run -off -which may then be a salty solution. Use of natural regeneration should also be part of the solution to increasing tree cover – deciding to stop mowing grassland will allow, if conditions are right, for trees to become established – with no requirement for machinery. Hand removal of weeds around young trees to favour establishment is preferred, but rarely done consistently or at the right time –hence we rely on biodegradable mulch mats (not herbicides). Use of certain pre and post emergent herbicides has been demonstrated elsewhere to have no negative impact on established specimen trees and is standard practice to remove the need to mow close to trees
9	What factors are used when tree felling is being considered e.g. for street trees – how is risk assessed. Could the level of risk be adjusted? How would this affect the budget? What part do insurers and surveyor’s reports play in this. Is access to their advice available?	BCC has adopted industry risk thresholds and as considered appropriate by the HSE. Perhaps the question should be less about ‘adjusting risk tolerance’ to whether there are options beyond felling. If a tree is in decline and becoming structurally compromised – the requirement may be to act to reduce risk to an acceptable level – felling is not the default – as such pruning is often all that is required. There is an option available to consider the Safe Useful Life of a tree – if considered fewer than 5 years, even with pruning this would suggest felling and replacement was the most appropriate action. Limited budgets will clearly influence this view of safe useful life and appetite to prune on a regular cycle (with repeated costs) v a one-off felling cost. It is important to recognise particularly high value trees like veteran trees or ancient trees or ones of significant amenity value -all to some degree subjective categories - such trees are more worthy of investment. Our insurer expects that we have in place and appropriate tree risk management plan and resource in adherence.
10	How do we measure carbon and ecological value when managing trees?	Sequestered carbon is not a factor in deciding to prune or fell a tree. Carbon sequestered when planting trees is not a particular driver in deciding to plant – other factors such as habitat gain, air quality mitigation, urban heat island mitigation are more relevant. Forests do have a significant role in helping to remove carbon from the atmosphere – requiring billions of trees in functional forests. In a city like Bristol, whilst trees do remove carbon, other benefits are more significant. The carbon code is available to project carbon sequestration. Trees and woodland can be a significant habitat for a wide range of plant and animals (alongside fungi, lichens, slime molds and micro-organisms). We are duty bound to recognise this ecological function and value particularly European Protected species such as all species of bats and UK protected species including birds. Tree and woodland management (and planting) should assess impact on wildlife requiring appropriate ecological survey / ecological impact assessment and corresponding action. Tree planting (woodland, wood pasture, orchards, natural regeneration, specimen trees in streets and parkland) can all contribute to ecological function – hence we recognise the West of England Nature Recovery

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		Network and opportunities to support habitats within the network including expanding habitats that contribute to the network.
11	Can we quantify their economic, health and social value, for example in reducing energy demand, reducing heat-related deaths and illnesses?	i-Tree Eco 6 model of Bristol's tree canopy done in 2018 calculates a monetary value for a range of tree-based ecosystem services.
12	What is the current stored carbon 'stock' and how is it changing.	See i-Tree eco 6 modelling. The baseline was done in 2018 and has not been repeated. There are opportunities for stored carbon to be a Key Performance Indicator – see approach pursued by Birmingham City Council.
13	How will we know ecological value is increasing?	There are three areas of relevant work: <ol style="list-style-type: none"> 1. To define a wildlife index. This will include a selection of species which can be monitored; with BCC working in partnership with others to ensure the relevant data can be collected and analysed. Initially setting a baseline, which can then be used to monitor change. 2. Meaning of 30% land managed for nature - Opportunity to measure increase in amount of land 'managed for nature' 3. Options for 'Ecological Network Mapping in Bristol' - The GIS mapping and modelling work should initially highlight potential gaps or barriers, and opportunities in the network. The mapping/modelling could be run again in the future, reflecting changes in habitats and could demonstrate where the ecological network, or permeability of the city has improved.
14	Is the ecological value being affected over time by choice of species planted for other considerations	We select native species for woodland and wood pasture type planting – as these contribute most to the Nature Recovery Network. In streets and other specimen tree planting we plant a range of species – within a 'Right Place, Right Tree, Right Reason' approach and underpinning this is a drive for variety – to avoid risk of disease or loss to other factors if we relied too heavily on only a few types of tree – hence we consider species choice also within the 30:20:10 rule of thumb i.e. no more than 30% from any Family, no more than 20% from any Genus and no more than 10% from any Species. Street tree selection includes more non-native and varietal trees – matching performance to conditions. As such increasing biodiversity is an objective alongside other desired benefits / functions - see design guide.
15	Who decides the choice of species?	Tree officers / nature conservation officer.

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16	<p>What budgets are available to add to the number of trees, and how are these restricted [e.g. replacement funds spent within 1 mile; university funds; sponsored trees]? How does this affect where new trees can be planted?</p>	<ol style="list-style-type: none"> 1. BCC has no capital / revenue fund to replace or plant trees. 2. BCC invests in 1.5fte officers to deliver One Tree Per Child and TreeBristol tree planting programmes (with capital costs supplied by others) 3. S.106 funds (devolved and non-devolved) dedicated for tree planting are published here. s.106 funds are un-evenly distributed according to the development site and because spend is typically limited to within a mile of the development and is expected to be spent within the same Area Committee. Two payments are detailed in the Supplementary Planning Document: £3,319/ tree or £765/tree. The higher sum is to provide an equivalent tree in hard standing – typically within the pavement or road (a street tree). The £765 figure includes a capital cost allocation of £295 to purchase, plant, protect and establish a standard sized tree in open ground (no engineered tree pit), of the remaining sum, £393 is to provide longer term maintenance and the balance is project cost and a risk of failure provision. 4. Tree sponsorship is available here. The charge is £295/tree to purchase, plant, protect and establish a standard size tree. Revenue/project management and risk provision are excluded from the cost. Typically sponsorable locations are replacement trees i.e. do not increase the revenue burden as already part of the managed stock of trees. Around 800 locations are currently available for sponsorship – with c. 120 privately / corporately funded per year. 5. BCC is partnering with Trees for Streets intending to increase the number of locations sponsored and progressing to residents’ proposing planting sites. 6. Funding is available from dedicated grants e.g. Forestry Commission woodland creation (although scheme sizes in Bristol are below the fundable threshold), Urban Tree Challenge Fund and Bristol Greenstreets public programme- £1/4 million grant awarded 2020, Trees for Climate fund – grant award pending £130k for 2020/21, + other grants 7. Transport settlement grant? Potential for significant Green Infrastructure spend within Liveable Neighbourhoods approach. 8. Replant Bristol – a partnership between Bristol City Council, Woodland Trust, Forest of Avon Trust and Bristol Tree Forum - included a fundraising campaign – One Tree Per Employee -generated £20k in 2019/20 – potential to re-light this campaign matched to progress-able planting schemes. 9. Other philanthropic funding e.g. 2021/22 Queen’s Green Canopy initiative £10k raised from business via Lord Lieutenant (70 specimen trees), £6k Goram Homes (70 mini orchards) etc.
17	<p>The distribution of trees is unequal: How can we</p>	<p>A deeper analysis is required to evidence disparity. There is evidence of a correlation between low tree cover and higher indices of deprivation – see here, range 9-27% (based on 18% average tree canopy via I-Tree</p>

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	<p>measure this inequality, for example through tree equity calculations? It has been said that “a map of tree cover is too often a map of income and race, especially in cities.” To what extent does this inequity correlate to factors such as deprivation and race in Bristol?</p>	<p>Canopy method). The picture will be more complex in that tree cover is also a function of street design and historic planting. As noted below the US has developed a national ‘tree equity mapping tool’ – no such tool is available at a national level in the UK and would require development. In e.g. Los Angeles, California a recent tree planting campaign was identified as a social equity issue (not as such a tree planting initiative) – noting that poorer districts had lower tree cover where residents more relied on public transport, where walking and waiting to get on a bus meant enduring hot sun and no shade and richer people used air-conditioned cars.</p>
18	<p>Do our existing tree planting policies and practices [e.g. prioritising replacements] contribute to this inequity? If so, how can we change that?</p>	<p>Demographic analysis is required alongside impact of current policy and practice. One tree per child prioritises planting in areas of low tree cover and higher indices of social deprivation – see annual reports here</p>
19	<p>What options are there for creating new tree locations e.g. in streets or open spaces? How is the extra cost of street tree pits versus replacements in existing pits to be tackled?</p>	<p>Outline modelling done to define number / area of trees required to double tree canopy. Opportunity mapping required to identify space within ‘area sharing principle’. Liveable Neighbourhood pilot in St George is modelling potential of public realm grey and green space to accommodate trees within ‘area sharing principle’. Establishing trees in grey spaces will cost more than using green space – but transforming grey space with GI (including trees) delivers multiple benefits – which can be costed and argued - in response to climate resilience and ecological emergency ambitions – and unlocking health and inward investment potential. GI in grey spaces will contribute to Urban Greening Factor as a means to measure progress towards more nature-based solutions. The Liveable Neighbourhood pilot in St George is exploring cost and value. Standard accounting rules will need to flex to consider societal value. BTRS is a contribution commitment for replacement planting within 1 mile. Whether a street or a publicly owned plot of land is suitable for replacement planting should be determined by the Council.</p>
20	<p>What opportunities are there to reduce the cost of new street tree pits by combining them with other street works?</p>	<p>This is already happening – with highway enhancement schemes providing the capital sum to install tree pits alongside the main capital works thereby with funding via s.106 / other sources providing the tree – ideally with revenue provision (as s.106 allows).</p>

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21	How can we identify locations for new tree planting so they have the biggest impact?	Opportunity mapping required at scale to identify strategic potential. Benefit criteria can be developed based on range of deliverables considering canopy score, canopy contribution, deprivation indices, climate resilience factors (heat amelioration, flood mitigation), carbon sequestration etc. A study in 2010 of 28km ² of the city identified tree planting locations within the public highway network using a simple cost and benefit ratio - where cost was 'low' (planting in green space) or 'high' (planting in grey space) and benefit was either 'low' (space could only accommodate a small tree when mature) or 'high' (space could accommodate a large tree when mature). We note significant partnership potential with BTF Tree Champions.
22	How well protected are trees of value in the city? How much are the limitations to TPOs or other protections affecting the way trees are being protected? Is there scope for better protection for amenity, maturity, ecological value, shade, etc?	TPOs are used to protect amenity where it is expedient to do so – i.e. to make an TPO there must be risk of loss. TPOs don't, and should not, be used to 'protect high value trees without consideration of risk'. TPOs are primarily about amenity and do not place significant value on other tree-based benefits. TPO procedures have been reviewed by Government and largely have remained the same. Bristol could develop a wider 'value-based approach' but this could not replace the statutory process. The emerging Biodiversity Net Gain and associated Biodiversity Metrics to quantify loss and replacement – extend to trees, particularly street trees – which provides a way to quantify requirements for replacing loss.
23	How can we improve the communication about how trees are protected and managed and what can or cannot be done or where cost is an obstacle?	It would be useful to have a better awareness of Bristol residents' understanding about tree protection, tree management and tree planting – reflecting targets, statutory processes, council (and other landowners policies). It would be useful to work with Bristol Tree Forum to understand their understanding and expectations reflecting their role.
24	How can the 'politics' or controversies be managed better with stakeholders or are choices being made that could be changed?	Shared understanding and shared solutions. A wider exploration of issue and communication would be informative and inclusive.
25	What training could be used to ensure all planning officers know the policies and	It is noted that tree officers are professionally trained.

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	importance of trees and ensure appropriate measures and conditions when dealing with applicants?	
26	How is the procurement of trees managed?	Trees are purchased for planting on BCC land via the manager of the plant nursey at Blaise. Stock is purchased from accredited UK suppliers on a cost – value basis.
27	What is the scope for having trees planted and available for play [e.g. tree climbing]?	Trees should be planted within play spaces for shade, amenity and structure. Children also climb trees – there is no policy either way to promote trees as climbing structure, as providing trees as climbing structures presents risk management issues.