MID SUFFOLK DISTRICT COUNCIL

TO:	Cabinet	REPORT NUMBER: **MCa/22/19**
FROM:	Cllr Jessica Fleming Cabinet Member for Environment	DATE OF MEETING: 5 September 2022
OFFICER:	Anita Cacchioli - Director for Operations	KEY DECISION REF NO. CAB357

TREE CANOPY COVER SURVEY

1.   PURPOSE OF REPORT

1.1   Following adoption of the Biodiversity Action Plan by Mid Suffolk District Council, officers have been working with specialists to identify and map habitat networks across the district.

1.2   One area of this data collection work has focused on tree canopy cover within the district, using new technology to create an accurate inventory of trees within each ward and quantify ecosystem services these trees provide.

1.3   The tree canopy cover survey work has been completed. This report details the results of the survey, outlines how the data will be used to strategically develop future Mid Suffolk District tree planting programmes and details the method proposed to make collected data available to the public.

1.4   The purpose of this report today is therefore to present the results of the tree canopy survey to Cabinet and for the Cabinet to agree the recommendations informed by the data collected.

2.   OPTIONS CONSIDERED

2.1   Option One: Publication of the ward-by-ward Mid Suffolk Tree Canopy data online in the form of interactive web maps and a detailed report, attached in Appendix a.

Option Two: Internal use of the data only. This is not the recommended option as the canopy cover data covers the entire land area of the district and provides information which could benefit other organisations, parishes and individual residents.

3.   RECOMMENDATIONS

3.1   The Cabinet resolves to publish in full the web maps and canopy cover survey data on the Babergh and Mid Suffolk District Council website.

3.2   The Cabinet resolves to develop a formal Tree Planting Strategy to guide all future tree planting within the district to ensure that, where possible, the greatest benefit is achieved.

3.3   The Cabinet resolves to identify feasible canopy cover percentages for each ward, options for delivery of planting to achieve this target and the creation of a vision for the future.

3.4	The Cabinet resolves to delegate authority to the Portfolio Holder for Environment along with the Director of Operations to complete these actions.
	REASON FOR DECISION
	The Tree Canopy Survey has, for the first time, provided quantifiable evidence to prove the value of trees as an incredible natural capital asset. Publishing the data will be invaluable in helping people understand the benefits of trees. Developing a strategic delivery model for increasing canopy cover across the district ensures we are planting the right tree in the right place to provide benefits to residents and wildlife.

4.   KEY INFORMATION

4.1   Trees provide a multitude of benefits to people and are also implicitly linked to other key concepts that are emphasised and highlighted within The National Planning Policy Framework (NPPF). Sustainability, ecosystem services and green infrastructure are all dependent on the significant contribution that trees in the urban forest make. Of the 16 sections in the NPPF, trees can contribute to meeting the objectives of 11.

4.2   Whilst some of the social and aesthetic benefits can be difficult to measure, there are tools which help quantify and value some of the environmental benefits provided by trees, including carbon storage, carbon sequestration, stormwater reduction, and pollution removal.

4.3   In July 2021, consultants from Treeconomics Ltd. we employed carry out a tree canopy survey of each ward in Mid Suffolk District and produce a tree planting strategy.

4.4   Tree canopy cover can be defined as the area of leaves, branches, and stems of trees covering the ground when viewed from above. Using the National Tree Map (NTM) by Bluesky International Ltd it is possible to identify all trees and shrubs in England and Wales over 3m in height using stereo aerial photography. This produces three data sets, Crown Polygons, Idealised Crowns and Height Points.

Aerial photography

Crown polygons

Idealised crowns

Height points
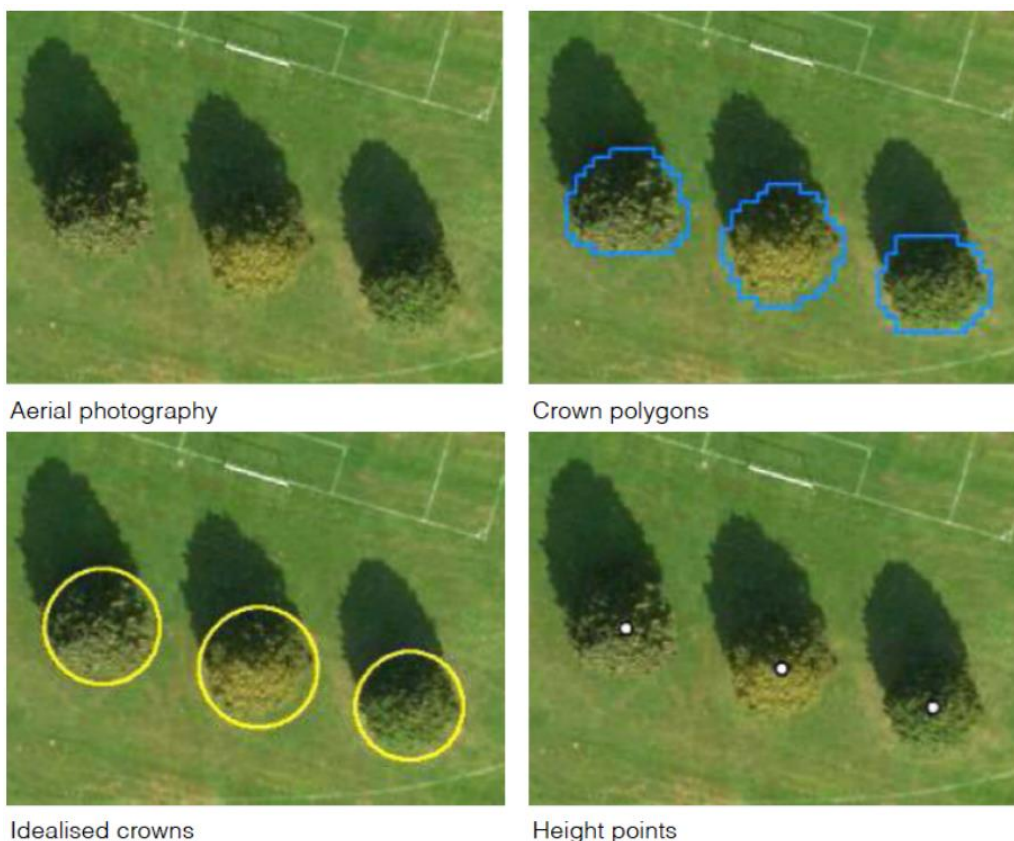
4.5 Quantifying the spatial extent of the canopy cover allows further evaluation of the ecosystem services provided through use of software (i-Tree Canopy) which produces data around carbon storage, sequestration, pollution removal and avoided runoff.

4.6 Once the quantities of ecosystem services are known, the monetary benefits and the savings to the local public sector can be estimated. Pollution damage costs are calculated using DEFRA's UK Social Damage Cost values. Carbon values calculated using the UK's centrally non-traded value for CO2 which is currently £70/tonne. Avoided runoff is calculated from the household sewerage volumetric charge by Anglian Water.

4.7 Headline figures:

Mid Suffolk tree canopy cover for all trees within the district (includes private and MSDC land)

Mid Suffolk's Urban Forest Highlights		
Average Tree Canopy Cover	8.5%	
Carbon Storage (t)	723,000	£186,000,000
Annual Carbon Sequestration (t)	29,000	£7,417,000
Annual Pollution Removal (t)	1,312	£21,831,000
Annual Avoided Runoff (m³)	2,513,000	£3,934,000
Total Annual Benefits	£33,182,000	

Mid Suffolk owned trees (only trees within MSDC land)

Mid Suffolk tree inventory - Headline Figures	
Number of Trees Measured	2,625
Most Common Tree Species	*Quercus robur, Fraxinus excelsior, Betula*
Replacement Cost	£3.2 million
CAVAT Valuation	£32.4 million
Species Recorded	123

Amounts and Values - Trees		
Carbon Storage	1,240 tonnes	£1.1 million
Carbon Sequestration	33.2 tonnes	£30,200
Pollution Removal	550 kg	£6,000
Avoided Runoff	976 m³	£761
Total Annual Benefits	£36,961	

Full details available in the canopy cover report attached in Appendix a.

4.8 In addition to the maps available in the tree canopy report document (Appendix a), digital maps and an accompanying website have been created to allow publication and easy access to the ward-by-ward data. Screen shots of the pre-release (beta) version of the website site are attached in Appendix b.

4.9 **Achievable tree canopy cover in Mid Suffolk District.**

4.9.1 The average canopy cover in Mid Suffolk is 8.5% with wards ranging from 6.0% in Stow Thorney, to 12.8% in Claydon and Barham

4.9.2 Using data from the canopy cover survey and the Ordnance Survey, it is possible to calculate land available for planting, considering artificial surfaces, private gardens and existing canopy cover.

4.9.3 The total actual plantable space available on public land (council owned) in Mid Suffolk this is 2,530Ha.

4.9.4 Planting trees across all this plantable space would increase canopy cover in Mid Suffolk to 11.4%. However, this assumes trees planted on all open space, which is not viable.

4.9.5 The next phase of work is to calculate the achievable % canopy cover for each District and ward along with determining tree planting locations which will achieve the greatest impact to society. This will include identifying suitable sites for establishing new woodland and options for strategic land purchase.

4.9.6   This will be done using a Multi Criteria Decision Analysis (MCDA) with Geographic Information System (GIS) software. Planting locations will be assessed according to the following criteria.

- Areas with high levels of pollution

- Areas with high social deprivation

- Areas within 10m of a road (increased air pollution removal by trees)

- Areas at risk of flooding

- Areas of poor health

- Areas with greater surface temperature

- Areas of low grade agricultural land over 1000m2

4.10   These criteria will be used to create a prioritised tree planting opportunity map of 'potential' and 'actual' plantable space' across private and publicly owned land. This will include a breakdown of necessary costs to meet the achievable canopy cover target and identify potential sources of funding.

4.11   **Potential pests and diseases**

4.11.1 Pests and diseases are a serious threat to our trees with risks exacerbated by our changing climate. Of all current threats to tree health, there are two main concerns.

4.11.2 Acute Oak Decline (AOD) is a recent disease only observed in the UK over the last 20 years. It affects mature trees which suffer thinning of leaves and an inability to fight off pests.

4.11.3 Ash dieback, caused by a destructive fungus (H. *fraxineus*) has had a major impact on ash populations.

4.11.4 The European Ash (Fraxinus excelsior) is the most susceptible to dieback and using tree survey data it has been possible to quantify the replacement cost of these trees.

4.11.5 Across Mid Suffolk owned land, European Ash make up 8.3% of the inventory with a replacement cost of £188,000.

4.11.6 A prime objective of the tree planting strategy will be to create a strong population consisting of a wide variety of species to increase the resilience of trees through population diversity.

4.12   **How we will use this data**

4.12.1 The Council's 'Tree and Hedgerow Planting Programme' for parishes will be open for application later in 2022 and trees will be available for all parishes. However, the canopy cover data allows identification of areas where there is low % cover or gaps in existing habitat corridors and enables the biodiversity project manager to target specific areas where additional planting will be most beneficial.

4.12.2 Trees can contribute to meeting the objectives of the National Planning Policy Framework, improving journey quality, and encouraging use of alternative transport corridors along with improving the 'liveability' of urban areas. They also provide valuable habitat, increasing biodiversity and therefore recreational value. Data from this study will be used to guide planners and developers to improve green infrastructure within developments, targeting resources to the areas that need it most, filling gaps in habitat networks and advocating sustainability and resilience.

4.12.3 Grant funding is available for woodland creation through the Forestry Commission, but to date this hasn't been explored due to the difficulty of identifying suitable sites. Using GIS to overlay tree canopy, land use and land type data allows more strategic identification of areas which could provide space for woodland creation - either through working with landowners or strategic land purchase.

5.   LINKS TO CORPORATE PLAN

5.1   The Joint Corporate Plan (2019-27) is designed to address the challenges and seize the opportunities facing the districts and their organisations for the foreseeable future. The Councils' vision is to have 'great communities with bright & healthy futures that everyone is proud to call home.'

5.2   The Joint Corporate Plan identifies six strategic priorities as set out in the visual below. Environment is one of those six, and the success of the Councils' ambitions on climate change and biodiversity are intrinsically interlinked with the strategies that underpin the other five priority areas of Housing, Communities, Well-Being, Economy and Customers. The response to Climate Change is not just the business of Environment but of every part of the Councils' strategic framework. Conversely, Environment plays a key part in every priority within the Corporate Plan.

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6. FINANCIAL IMPLICATIONS

6.1 The expenditure to employ consultants to create the tree canopy cover survey and produce a tree planting strategy was approved by Portfolio holders in June 2021.

6.2 For Mid Suffolk, the cost was £21,878 funded from the Growth and Efficiency Fund.

6.3 There will be additional financial implications associated with the delivery of aspirations to increase tree canopy cover. We will explore opportunities to mitigate some of these costs through accessing external grant funding.

6.4 As work develops and further funding is required there will need to be a future request to the environment reserve to support delivery. It is difficult to set out clear and actual costs at this stage. Any actions and schemes will be subject to individual business cases and financial evaluation to assess associated costs as required.

6.5 Individual business cases for each proposal will be presented to Cabinet for discussion and approval.

7. LEGAL IMPLICATIONS

7.1 Tree canopy cover maps were created using National Tree Map data from BlueSky International Ltd. We have licenced permission for the use of the data until 30/05/2024 at which time a further licence fee will need to be paid, or the data removed from our systems. This would affect any online digital mapping data only, not published documentation.

8. RISK MANAGEMENT

8.1 Key risks are set out below:

Risk Description	Likelihood	Impact	Mitigation Measures
1.The Councils do not meet their aspiration to enable net biodiversity gain, habitat and species decline continues unchecked.	Unlikely (2)	Bad (3)	Biodiversity Action Plan provides a robust set of options for delivery of beneficial actions. Approaches are evidence based. The impact of initiatives is monitored closely. The release of finance is based on business cases.

2. The effects of habitat loss results in irreversible damage to numbers of native species and loss of biodiversity.	Unlikely (2)	Disaster (4)	Continue to work alongside our peers both in Suffolk and nationally, collaborating where appropriate and sharing best practice and lessons learned.

9.   CONSULTATIONS

9.1   No formal consultation has been undertaken to date.

10.   EQUALITY ANALYSIS

10.1   In preparing this report, due consideration has been given to the Councils' statutory Equality Duty to eliminate unlawful discrimination, advance equality of opportunity and foster good relations, as set out in Section 149(1) of the Equality Act 2010.

11.   ENVIRONMENTAL IMPLICATIONS

11.1   The collection and mapping of accurate ecological data will allow the Public Realm team to deliver a range of appropriate, targeted interventions which improve habitats of all kinds for plants and animals Mid Suffolk District and will add to our understanding of natural capital.

11.2   Trees are implicitly linked to key concepts within the National Planning Policy Framework (NPPF). Sustainability, ecosystem services and green infrastructure are all dependent on the significant contribution that the trees in our district make.

11.3   Well-designed new woodlands not only capture Carbon dioxide (CO_2) but deliver a wide range of other benefits too. Sustainably managed woodlands perform a vital role as carbon sinks and reservoirs by capturing CO_2 from the atmosphere and storing it as a component of wood itself.

11.4   Roadside green infrastructure, particularly hedges or a combination of hedges and trees help to cut down the spread of air pollution from roads, including black carbon, harmful heavy metals, and microscopic particles.

12.   APPENDICES

	Title	Location
(a)	Babergh and Mid Suffolk Tree Canopy Cover Assessment	Attached
(b)	Snapshots of draft tree canopy cover web pages	Attached

13. BACKGROUND DOCUMENTS

13.1 Babergh and Mid Suffolk District Councils Carbon Reduction Management Plan
https://baberghmidsuffolk.moderngov.co.uk/documents/s19374/Appendix%20A%20-%20Carbon%20Reduction%20Management%20Plan.pdf

13.2   Babergh and Mid Suffolk District Councils Biodiversity Action Plan
https://baberghmidsuffolk.moderngov.co.uk/documents/s20689/Appendix%20A%20-%20Biodiversity%20Action%20Plan.pdf

14. REPORT AUTHOR

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