Public Document Pack

West Midlands Combined Authority

Environment & Energy Board

Date: Wednesday 10 March 2021

Time: 10.00 am **Public meeting** Yes

Venue: This meeting will be conducted virtually using Microsoft Teams
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If you have any queries about this meeting, please contact:

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SUPPLEMENTARY AGENDA

No.	Item	Presenting	Pages
Items of Public Business			
7.	Natural Capital Action Plan	Jackie Homan/ Maggie Fennell	1 - 56

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West Midlands Combined Authority

Environment & Energy Board

Date	10 March 2021
Report title	Natural Capital Plan
Portfolio Lead	Councillor Ian Courts - Environment, Energy & HS2
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Recommendation(s) for action or decision:

The Environment & Energy Board is recommended to:

(1) Agree the vision and outcomes for the WMCA natural capital work.

(2) Agree to the action plan detailed within the report.

(3) Agree to the proposed role and delivery structure for the WMCA.

(4) Support the submission of an expression of interest to the Environmental Land Management Scheme in the WMCA.

(5) Support the establishment of a Natural Capital Board and Natural Capital Officer Group.

(6) Agree the Community Green Grants programme to improve access to green space for communities across the West Midlands (subject to funding).

1. Purpose

1.1 This paper provides an overview of the WMCA Natural Capital Plan that has been developed with partners, and recommendations for actions to progress it. It also reflects on the independent advice from the WSP WM2041 Five Year Plan and extensive stakeholder engagement with natural capital leads from regional organisations, including local authorities.

2. Background

2.1 In June 2019, WMCA declared a climate emergency and in July 2019 a target date of 2041 was established for the region to achieve net zero carbon emissions. In January 2020, the WMCA strategy *(#WM2041: Actions to meet the climate crisis with inclusivity, prosperity and fairness*) was launched. This plan cut across the different actions that would be required to achieve the 2041 goal in a way that supported inclusive growth across the region. Natural capital played a key role in the strategy in terms of supporting resilience and adaptation; providing a route to mitigate climate change; and recognising the importance of green space for people across the region.

2.2 The recognition of the multifunctional benefits of natural capital continued in the follow-up paper that went to the CA Board in June 2020 (*WM2041: A Programme for Implementing an Environmental Recovery*). This paper set out the urgent activity and need for the WMCA and stakeholders to produce five-year delivery plans (four in total) in support of delivering the zero carbon target for the West Midlands by 2041. The first of these WM2041 Five Year Plans (FYPs) is being presented to the CA Board on 19th March and has implications for regional natural capital programmes.

2.3 In terms of natural capital specifically, the *WM2041: A Programme for Implementing an Environmental Recovery* paper highlighted the need to address inequalities of access to green space that had been magnified during the first Covid-19 lockdown. In response to this, the WMCA commissioned the New Economics Foundation (NEF) to produce a report on access to green space across the West Midlands. The final report is attached as an appendix. The data provided through the NEF report has now been turned into a publicly accessible data platform (available here: https://maps.tfwm.org.uk/portal/apps/opsdashboard/index.html#/3e4d8d9006c64e74a575b00a08c89c6c) that highlights parts of the WMCA (by Lower Super Output Area) where there is low access to green space. The work with colleagues in the Data Insights Team will continue to enable us to get a better understanding of what and how we can monitor our progress around improving natural capital, and access to it, across the WMCA. This will be done with other regional stakeholders who also have significant data in this space. The Community Green Grants scheme (Paragraph 2.33) will be a route to support action to redress the inequalities identified.

2.4 The WMCA has also launched the Virtual Forest website, as part of the commitment to plant more trees across the region. This is providing a focal point for people to register trees that have been planted and to share information about events and opportunities. This will be increasingly important as the WMCA accelerates delivery based on evidence in the first WM2041 Five Year Plan (going to the CA Board on 19th March 2021). This indicates that there needs to be a significant uplift in the tree planting effort across the region to support delivery of the net zero target; when Covid-19 restrictions lift the site will enable us to work with regional stakeholders to tackle this.

2.5 In addition to the work that the WMCA is undertaking on natural capital, other regional stakeholders are also involved in a broad range of projects (see 2.14 below). Working with these organisations over the last few months has indicated the need to produce a West Midlands Natural Capital Plan. This Board report sets out our plan, as well as some of the national priorities that potentially have significant bearing on this area of work, particularly the anticipated Local Nature Recovery Strategies that will be required once the Environment Bill receives royal assent (this is likely to be in the autumn of 2021). This report is based on in-depth conversations with stakeholders across the region, including local authorities, and provides an indication of next steps.

National context driving the regional approach

2.6 The Environment Bill is expected to provide a statutory framework for work on natural capital and biodiversity net gain. In the meantime, guidance is provided by the **25 Year Environment Plan**, which has stated the urgent need for this generation to leave the natural environment in a better state than we found it. The plan covers 6 themes, the first 3 being particularly relevant to this report and the region's focus:

1. **Using and managing land sustainably**
2. **Recovering nature and enhancing the beauty of nature**
3. **Connecting people with the environment to improve health and wellbeing**
4. Increasing resource efficiency and reducing pollution and waste
5. Securing clean, healthy, productive and biologically diverse seas and oceans
6. Protecting and improving our global environment

2.7 In addition to the six themes identified above, the 25 Year Environment Plan also sets out 10 goals to be achieved:

1. Clean air
2. Clean and plentiful water
3. Thriving plants and wildlife
4. A reduced risk of harm from environmental hazard such as flooding and drought
5. Using resources from nature more sustainably and efficiently
6. Enhanced beauty, heritage and engagement with the natural environment
   Measures to manage pressures on the environment:
7. Mitigating and adapting to climate change
8. Minimising waste
9. Managing exposure to chemicals
10. Enhancing biosecurity

2.8 The **Environment Bill** is the legal manifestation of the 25 Year Environment Plan. The core natural environment measures include:

- the set-up of an Environmental Protection Office,
- a requirement for Biodiversity Net Gain in new developments
- a linked up system of Local Nature Recovery Networks and Strategies (LNRS) that identify local habitats and opportunities for improvement, and

- the Environmental Land Management Scheme (ELMS) which provides subsidies to farmers and landowners based on improvements to ecosystem services and natural assets.

The recent delay to the Environment Bill means that it is now expected to get royal assent in autumn 2021, and its measures are likely to be implemented in spring 2022.

2.9 One of the key areas that may influence the natural capital work of combined authorities are the LNRSs. There are currently five pilot schemes (Cornwall, Buckinghamshire, Greater Manchester, Northumberland and Cumbria), which are due to be completed over the next few months. Following this, DEFRA will collate their learning points to provide us with valuable information to guide our own planning and delivery. There have been some initial pilots of the ELMS programme and there will be calls in April 2021 for further participants in the next set of trials. Under the recommendations we are proposing that WMCA, working with partners, submits an expression of interest for an ELMS pilot.

2.10 The **Landscape Review 2019** (also known as the Glover Review) identified issues with the current system of designating National Parks. The report called for innovation in the way we think about our National Parks and landscapes, how we connect them to urban communities, and how we ensure that there is representative diversity and inclusivity in their management. The West Midlands National Park (launched in July 2020) is cited as a positive example within the review, as are Regional Parks following the Scottish model of larger park-landscape collaborations across authority boundaries.

2.11 The **Dasgupta Review on the Economics of Biodiversity** is a landmark report commissioned by HM Treasury and released in February 2021. It calls for urgent and transformative change in how we think, act and measure economic success to protect and enhance our prosperity and the natural world, and puts forward ways in which we should account for nature in economics and decision-making. The Review defines natural capital as: 'The stock of renewable and non-renewable natural assets (e.g. ecosystems) that yield a flow of benefits to people (i.e. ecosystem services). The term 'natural capital' is used to emphasise it is a capital asset, like produced capital (roads and buildings) and human capital (knowledge and skills)'.

Key stakeholders and activity

2.12 Delivering this regional Natural Capital Plan will require the involvement of a range of different stakeholders from the public, voluntary, research and private sectors. A number of them have been contacted and consulted for this report. These include:

- Government organisations: DEFRA, the Environment Agency, the Forestry Commission and Natural England.
- Local authorities: the seven constituent authorities only (there is a recommendation below that this should be extended to non-constituent authorities for delivery).
- LEPs: Black Country Consortium, GBSLEP
- Regional nature organisations and partnerships: Local Wildlife Trusts, RSPB, Canals & Rivers Trust, Woodland Trust, Local Nature Partnerships within WMCA region

- Private sector: Severn Trent Water
- Voluntary sector: tree warden and volunteer groups

2.13 As this work develops, it is clear that our engagement will need to stretch beyond this initial group, bringing in others that will be necessary to help us achieve the scale of intervention required, for example as identified in the WM2041 FYP (detailed in 2.22). This will also include broadening the range of businesses involved; bringing significant landowners on board; and stakeholders who can support with understanding the routes to financing.

What is already happening across the region?

2.14 During the stakeholder engagement it became clear that there is already a considerable amount of work underway across the region under different natural capital thematic areas:

Parks	• Rethinking parks NESTA/National Lottery programme (Sandwell, Walsall and Coventry) • Future Parks Accelerator (Birmingham) • Garden City (Wolverhampton/Black Country) • GeoPark (Dudley/Black Country) • Love Solihull (Solihull, including tree schemes) • National Park City (Coventry)
Trees	• Existing tree strategies (Wolverhampton and Birmingham) • Tree strategy out for consultation (Coventry) • I-Tree ecosystem services measurement (Black Country) • Arden Forest vision (Solihull)
Rivers	• Opening and de-culverting (Rea, Sherbourne, Alder Brook) • Connectivity (Cole, Tame and Severn partnerships) • Flood management and restoration (Illey Brook, Smestow Brook, Tipton & Swan Brook) • Habitat restoration (Blythe and Stour)
Habitats	• Midlands Heathlands Heartlands opportunity mapping (large scale) • North Walsall Heathlands (smaller scale) • Highways green infrastructure planning, (e.g. Wildlife Ways Solihull)

2.15 This list mainly includes collaborations across more than one organisation and is not exhaustive. To date, we have collated details of more than 30 projects, around half of which were costed and totalled over £30 million within the WMCA region (allowing for some geographical leeway).

What are the challenges that need to be overcome?

2.16 **Strategic alignment.** There are a lot of local authorities, government agencies, NGOs and charities all making valuable connections and making great progress in this area. Stakeholders have been working hard in this area but have recognised the value of a central group to amplify the core messages, integrate with other political agendas and ensure best use of resources.

2.17 **Land ownership**. In order to increase tree canopy cover and increase coverage and quality of valuable habitats, a wide range of landowners will need to be engaged. Whilst many of these relationships may be primarily managed by local authorities, there will be some which sit across boundaries and the WMCA can support the implementation of new reward mechanisms like ELMs across the region.

2.18 **Competition for space**. Whilst spatial planning sits firmly with local authorities, the collating and maintenance of reliable data across the two LNP areas and the consistent access to expertise of the Natural Capital Board will ensure that the natural environment has a fair hearing alongside other concerns, and will feed into existing collaborations at WMCA like housing and regeneration, One Public Estate and transport groups across the region.

2.19 **Maintenance**. Funding for maintenance is a recurring issue and likely to increase as tree planting initiatives gather pace. Some of the new green finance mechanisms both through the environment bill and through private partnerships may be explored to support local authorities dealing with this issue, and further collaboration can be encouraged to share learning through the natural capital networks. Learning from the Millennium Forest indicates that a robust maintenance plan and consistent public education are important to avoid scepticism and disillusionment. There is also heavy reliance on volunteer work in this area which has varying degrees of success.

Vision and outcomes

2.20 Natural capital is a key part of the WMCA's environment work and also plays an important role in the work on WM2041 and helping the region achieve net zero. Our commitment is to achieve biodiversity net gain across the region, addressing the ecological emergency as well as the climate emergency. We also want to create better environments for all our people and communities.

Our vision is of a West Midlands where everybody has the opportunity to enjoy the benefits of the natural environment and that, through careful planning and collaboration, we enhance and restore the region's natural capital to address both the climate and ecological emergencies.

2.21 Some of the initial outcomes that have been developed and identified through working with partners, as well as through the Five Year Plan, are identified below. We know additional outcomes will need to be considered with the publication of the Environment Bill, for example the anticipated requirement for 10% biodiversity net gain in all new developments. The outcomes identified through the work to date are:

- Everybody can access high quality green space within a 10 minute walk of their home.
- Forestry cover should be increased from approximately 1.5% today to 13%, aligning as much as possible with the long-term aims for England (5.7m trees by 2026 and 19m by 2041).
- Creation /restoration of 5 wildlife corridors along the Cole, Rea, Sherbourne, and Blythe and HS2 development in line with our key stakeholder's priorities.
- Support the creation of 200 jobs in natural capital by 2026 (and 700 by 2041).

Actions to deliver the outcomes

2.22 The table below indicates the high-level actions that have been identified through collaboration with local authorities, regional stakeholders and evidence produced through the development of the WM2041 FYP.

Outcomes that relate to:	Proposed actions
Access to green space	• The CA is establishing a Community Green Grants programme, which will support delivery of new projects to improve access to green space. • We will continue to work with the West Midlands National Park to transform the vision into practical action through the implementation of their project pipeline. • Create and distribute a web tool to give local planning departments easy access to information on population pressure on green space.
Tree planting	• Develop an annual plan/ targets for tree planting, to be delivered with partners through the Virtual Forest. • Bring major regional landowners together in a 'tree planting summit' to promote collaboration. • Support the urban forest masterplan initiated in Birmingham and develop into regional urban forest strategy • Support initiatives from partners that align with our outcomes, for example the Commonwealth Games Legacy Forest being proposed by Severn Trent Water.
Biodiversity net gain	• Completion of full habitat mapping across the area before the end of 2021. • Creation/enhancement of urban meadows to increase biodiversity and amenity value of under used open spaces whilst reducing maintenance costs. • We will work with TfWM to explore greening of transport infrastructure, e.g. green roofs on shelters.
Wildlife corridors	• Establish a Wildlife Corridors Commission to maximise the connectivity, for both people and wildlife, between green spaces. This would incorporate through green and blue infrastructure. • Roll out regional good practice, for example a regional 'Wildlife Ways' programme, building on the work in Solihull. • Support existing projects to explore new finance mechanisms, e.g. leverage private sector finance.
Water and flooding	• Work with the Environment Agency to use natural capital measures for food alleviation, where appropriate. • Build on the findings of the circular economy routemap around water as a resource. • Build on the Water for a Sustainable Economy work, begun by the Black Country Consortium and led by the Environment Agency.

Air quality	• Develop a regional air quality strategy that compliments the work of local authorities, particularly focusing on particulates (which will be an additional requirement coming through the Environment Bill).
Climate resilience	• Prepare a regional climate adaptation plan to understand the main risks faced by the region and measures that need to be taken. • Establish a network of rain garden demonstrators as part of a behaviour change/ communications campaign.
Cross-cutting initiatives	• Build natural capital indicators into the WM2041 Business Pledge so businesses understand how they can support natural capital. • Work with the proposed WM2041 Citizen's Panel to support new natural capital initiatives. • Trial a natural capital apprenticeships scheme as part of the Green Skills Strategy (to be delivered as part of the FYP). • Include natural capital projects as part of the Net Zero Neighbourhood Demonstrator proposed in the CA response to the WM2041 FYP. • Develop an approach to natural capital accounting for the region.

The role of the WMCA

2.23 As outlined in the introduction, during the completion of the Natural Capital Plan, WMCA also produced its first Five Year Plan (FYP). In relation to natural capital, the FYP identifies that:

- Tree planting and more specifically, increasing the area of sustainably managed forests, has an important role to play in achieving net zero carbon emissions through direct sequestration of carbon dioxide from the atmosphere.
- In addition to afforestation there are a number of broader nature-based solutions that can contribute to meeting net zero targets by locking up carbon over the long term. This includes improved management of semi-natural habitats such as heathland and grassland, better soil conservation and land use for agro-forestry.

2.24 The FYP GIS mapping identified that 15% of the WMCA area is suitable for woodland planting according to the criteria applied. This would meet the previous forestry cover target set by the Independent Panel on Forestry in 2012 but not the latest figure of 17-19% set by the Climate Change Committee in 2020. The FYP also considered the use of some of the land for the development of utility scale solar PV and wind installations so these areas have been discounted to avoid double counting, leaving a maximum 13% of the total WMCA area which can be utilised, equivalent to almost 12,000 ha (an increase from approximately 1.5% today). This includes repurposing 9,000 ha of agricultural land to increase tree cover, as well as creating green spaces and woodland areas in 20% of urban and peri-urban areas, equivalent to 10,000 ha. The costs to 2026 would be in the region of £60m for a quarter of the planting within the first FYP. The delivery of these targets now align with the development and delivery of this Natural Capital Plan.

2.25 To deliver its natural capital priorities, the WMCA is well-positioned to connect with the UK government and regional bodies, supporting local authorities as we navigate the implementation of the new environmental measures set out in the draft Environment Bill. We can also provide clear communications to individuals and communities across our region to show clearly how everyone's efforts fit into the wider picture.

Potential support from WMCA could include:

1. Convening a Natural Capital Board uniting Local Nature Partnerships and relevant local organisations to provide expert guidance to WMCA and our local authorities.
2. Celebrating the diverse natural capital successes and approaches across our region, possibly becoming the world's first hub of tree cities.
3. Ensuring the region can benefit from forthcoming trial outcomes to ensure we choose the best route for natural capital investment planning, whilst getting our data in order ready for the Environment Bill completion.
4. Integrating natural capital with social and economic agendas, some of which are already recognised as best in class – this could lift them still further.
5. Innovating in the development of new 'national park' concepts tailored for the needs of urban communities.
6. Linking the work on natural capital in with other WM2041 initiatives to maximise impact, for example engaging the private sector through the Net Zero Business Pledge and supporting the work through our behaviour change programme with the Behavioural Insights Team.

2.26 All of the above combine to provide measurable improvements to our natural environment, better access to quality nature for all our residents with priority for those with the poorest access, and a wealth of economic, physical, social and human co-benefits that complement our wider goals.

2.27 The Young Combined Authority manifesto (shared with the Environment and Energy Board in December 2020) makes a clear commitment to natural capital, both for its own sake and with reference to the mental health benefits and the need for inclusive and diverse access to green space. We need to include them on this journey.

Supporting actions for project and programme implementation

2.28 The table below indicates the range of supporting actions that need to be taken immediately, as well as during the next five years as part of the WM Natural Capital Plan; this has been developed in conjunction with regional stakeholders. The delivery of these are subject to funding being secured both in the WMCA but also by regional partners. They are also subject to external factors, for example the progress of the Environment Bill.

Key area of activity	Identified gap/ opportunity	Immediate	Next 5 Years	Key stakeholders for delivery
Delivery of Environment Bill	New legislation explained in Paragraph 2.8.	Follow LNP 9 point plan (see appendix) to ensure all relevant data is easily accessible.	Liaise with all local authorities to support successful implementation and provide single channel of contact with DEFRA.	Natural Capital Board
Delivery of measurable environmental improvements	The measurable improvement of nature and clear expression of the related multiple benefits to businesses and society is fundamental.	Agree initial key performance indicator dashboard.	Develop targets and metrics of success, explore financing options for data maintenance.	Natural Capital Board
Vision and regional showcase	The diversity of approaches to environmental improvement across the region is a great USP which we should be shouting about. This could be achieved through the preparation of a regional plan for natural capital.	Complete project set up and scoping for WMNP project and produce draft website.	Develop delivery of recognised value through award/assessment process and commissioned visioning projects.	Natural Capital Board
Communication	If we get good communications networks set up around these ideas, the potential for learning and accelerating the roll out	Set up Natural Capital Board with wider stakeholder mapping and defined focus. The WMCA has recently	Keep expert board in contact with major infrastructure projects and groups, review targets and aspirations.	WMCA and local authorities.

	of benefits is huge. This was identified as an important cross-cutting element of the FYP work.	appointed the Behavioural Insights Team to support WM2041 behaviour change and communications campaigns; there is the potential for natural capital to feature as an element of this work.		
Integrating natural capital with other strategies.	Natural capital cannot sit by itself in a separate strategy document, we should integrate it fully with our social and economic agendas. The plan we produce will highlight areas of focus, but it will need to link into work on skills, housing and transport, for example.	Identify strategic themes that could successfully integrate natural capital. Investigate this theme with Future Parks Accelerator project outputs.	Further integration with other departments across WMCA and Natural Capital Officers Group as required.	WMCA and local authorities.
Investment	The green finance landscape is changing, we need to engage with this to convert challenges into opportunities. Issues around natural capital need to be part of a 'whole place' approach to development.	Review LNRS trial outcomes and integrate relevant advice at step 8 of LNP proposal. Explore opportunities with Severn Trent Commonwealth Games Forest and Eight Hills Regional Park.	Develop robust suite of finance options relevant to the West Midlands with regular review and shared learning, use mayoral influence and PR to promote and maximise opportunities. In addition, the WMCA is proposing that natural capital would form a part of the Net Zero Neighbourhood demonstrator that is being considered as part of the investment fund	WMCA, local authorities.

			proposals for delivering the WM2041 FYP.	
Employment and skills	Landscaping, horticulture, ecology and forestry are not recognised as core industries for the region, however the aggregated requirement across WMCA region could lead to a significant opportunity to create new green jobs.	Work with local authorities and Natural Capital Board to identify specific demands for green skills through ambitions in their local plans/SPDs and the project pipeline.	Use aggregated demand across the region to guide conversations and build relationships with relevant trade associations and training providers. The FYP indicates that 700 jobs could be established in this area to achieve net zero by 2041. The Green Skills Strategy, that is being proposed, would support the detail and delivery of this.	WMCA, local authorities, industry stakeholders.
Community	Regional and catchment scale landscape projects still need to engage local communities. The WMCA is well-placed to build prestige and cultural change around natural capital.	Encourage and support acceleration of existing local authority initiatives that build public awareness and engagement e.g. tree charters, national park city etc and related PSR initiatives such as social prescribing. Initiate green grants scheme to improve access to the most deprived urban communities.	Continue to build language and understanding of the many benefits of nature to our communities particularly encouraging storytelling from residents and evidence from practical initiatives. Further, our delivery of the WM2041 FYP indicates the potential for roll out of a programme of Community Green Grants, working in conjunction with local communities and delivery partners. The data platform, built using the work done by NEF (Paragraph 2.3), indicates where initial work and investment might take place.	Local authorities, Natural Capital Board.
Supporting Local Green Plans	General communications around green principles and support in removing	Set up robust communications around the common natural	Build networks and seek feedback on how to support local authorities in removing	Local authorities, WMCA,

	systemic barriers should boost the delivery of local green plans.	capital principles that underpin all the region's local plans.	systemic barriers to boost the delivery of local green plans.	industry stakeholders.
Planted streets and transport resilience	Some of the modal shift and climate change adaptation for transport could link closely with natural capital interventions and benefit from sharing learning and best practice.	Celebrate local successful tree planting initiatives, engage with TfWM colleagues to support their work.	Continuation of these actions.	Local authorities, TfWM.
Data	We need a robust and consistent data across the region as a foundation for the environment bill delivery.	Provide plan and costing for first 3 steps of LNP plan (appended).	Completion of LNP appended plan including web data portal, and long-term progression alongside natural capital board recommendations	WMCA, Natural Capital Board, local authorities.

Supporting regional scale natural capital projects

2.29 As well as the thematic opportunities described above, the WMCA is also home to large scale innovations building on the Glover Review recommendations (Paragraph 2.10). These offer opportunities to bring passion for protecting the natural environment and engaging people with nature to large urban communities.

2.30 The **West Midlands National Park** is a unique concept originating from Birmingham City University which aims to cut across boundaries and sectors presenting a united vision of our landscape and culture to local, national and international communities. This project needs seed capital to demonstrate practical manifestations of the concept and develop 'prototype processes' to show how it could work in practice. In 12 months' time we should expect to see a draft website and some early project trials using the assessment process to demonstrate the value proposition and funding mechanisms. WMCA should provide project management executive support for this as detailed in the MoU.

2.31 The **Eight Hills Regional Park** on the southern border of the region has more of a precedent to follow with a few Scottish and English examples of large scale landscape management to benefit people and wildlife, and is likely to provide a good opportunity to trial practical green finance and private sector partnership models to the benefit of urban communities particularly in the south of the WMCA area.

2.32 The **Commonwealth Games Forest** is a project that shows the potential impact of private sector engagement with Natural Capital and has high aspirations of bringing social benefits as well as the environmental services of woodland space to urban communities. It is providing early insight into some of the challenges and details of building relationships with landowners that will become so important for further delivery of the FYP.

Potential funding and financing sources for delivery (limitations and criteria)

2.33 Some of the delivery could be funded through traditional grant-based approaches. Each of these schemes has different scale and criteria, some of which would be more appropriate for delivery partners to apply for. The main ones that are currently available include:

- Potential to apply for ELMs tier 3 pilot to investigate landowner-related finance
- Heritage Lottery Funding for wider landscape schemes
- Health and wellbeing funding routes through PSR collaborations
- Potential future funding options through DEFRA e.g. NEIRF (Natural Environment Investment Readiness Fund), Nature for Climate fund

2.34 It is also important that we also begin to consider potential new financial solutions for natural capital that take us beyond a grant-based approach. These sources could include:

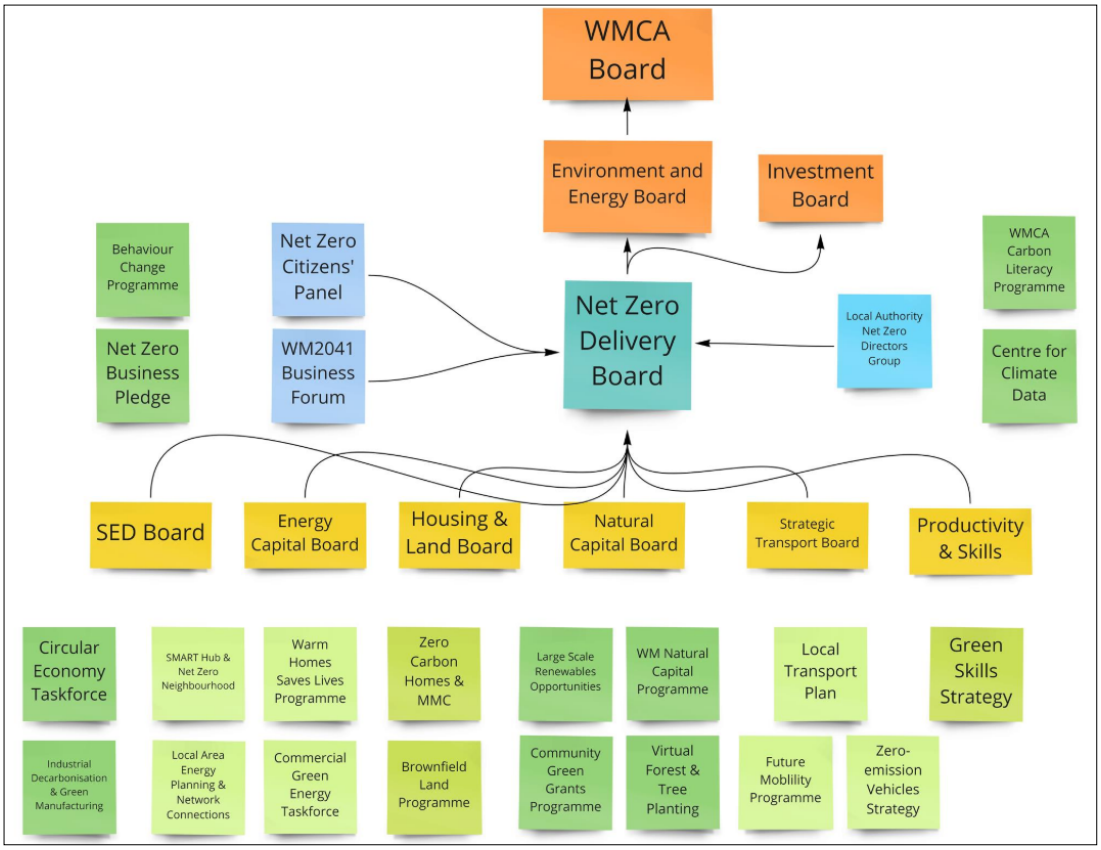
- Crowdfunding (Future Parks Accelerator are currently conducting a trial)
- Private finance models e.g. through river catchment partnerships
- Balance between commercial and non-commercial tree planting

- Locally developed initiatives e.g. co-operatives, community interest companies

2.35 Finally, the WMCA is exploring the potential for rolling out a programme of **Community Green Grants**. These are outlined in the WM2041 FYP CA Board paper in more detail. The aim is to boost natural capital, and promote biodiversity net gain across the region, as well as addressing the inequality of access to green space that the NEF work identified. The grants scheme would enable us to work with delivery partners across the West Midlands to provide community grants to roll out projects to create, enhance and improve access. We would work with local authorities and environmental NGOs whose expertise would ensure that the right schemes are delivered in the right places.

Structure for delivery

2.36 In order to support delivery of the Natural Capital Plan it is recommended that WMCA convenes a **Natural Capital Board** for the region**,** to bring together stakeholders to provide support for work on biodiversity net gain and nature-based solutions. This will include a wide range of issues, including: tree planting, taking responsibility for a Local Nature Recovery Strategy and work to support funding and roll out of community green grants. Delivery will happen in conjunction with local partners and also in working with large scale infrastructure projects like the Commonwealth Games and HS2 and considering wider strategic planning issues. **The Natural Capital Board will publish an externally-facing Natural Capital Plan as soon as possible after publication of the Environment Bill based on the material in this board report and further development work in the meantime**. An initial meeting to shape this Board has been held and it is proposed that it will sit in the WM2041 delivery structure in the following way (this is subject to approval by the CA Board on 19th March):



2.37 It is also recommended that WMCA convenes a **Natural Capital Officer Group** with local authorities to strategically co-ordinate opportunities in support of the Natural Capital Board, ensuring local authority duties and services such as planning, parks and open spaces maintenance, highways and resilience are engaged appropriately. We would anticipate including the WMCA non-constituent authorities into these discussions.

3. Financial Implications

The delivery of the WMCA natural capital programme is dependent on resourcing. This has been partly outlined in the WM2041 FYP paper going to 19th March 2021 CA Board. There are recommendations in there that will support the acceleration of a regional Natural Capital Programme, in terms of revenue to support the capacity of the Environment Team to support the role of the WMCA and to develop the work on Community Green Grants.

4. Legal Implications

There are no legal implications as a result of this paper or the Natural Capital Plan. Any legal implications will be considered as part of the approach to delivery of the Natural Capital Plan.

5. Equalities Implications

The work that has been undertaken on natural capital is central to the addressing the challenges related to climate change; natural capital has a key role to play in both mitigation and adaptation. However, we have been clear from the outset that WM2041 must also have significant social and economic benefits for the region. Natural capital has emerged as an area where there are currently clear inequalities of access to high quality green space, either because of distance or pressure on what is currently available. The work that we will be taking forward will look to address this, driven by data that is available to us.

6. Inclusive Growth Implications

WM2041 was established as a programme that had inclusive growth embedded within it. The commitment to transition to net zero in the WM2041 plans, as well as the alignment with the UN Sustainable Development Goals, underpin our whole approach to addressing climate change. This also runs through the FYP, where we have highlighted co-benefits around addressing climate change. These range from reduction of fuel poverty through an extensive retrofit programme, through to natural capital solutions and widening access to green space for people across the region.

7. Geographical Area of Report's Implications

The Natural Capital Plan covers all local authorities of the West Midlands and the delivery will also involve non-constituent members, which we have reflected in the membership of the Natural Capital Officer Group.

8. Other Implications

None.

9. Schedule of Background Papers

Final NEF report
LNP report

LEVELLING UP THROUGH GREEN INFRASTRUCTURE INVESTMENT

An intersectional analysis in West Midlands Combined Authority

New Economics Foundation

Title: Levelling up through green infrastructure investment

Date: December 2020

Authors: Alex Chapman and Jasmeet Phagoora

Client: West Midlands Combined Authority

Quality assured by: Elizabeth Cox **Date**: December 2020

The consultancy of the New Economics Foundation, NEF Consulting helps put new economics into practice with people and the planet at the heart of decision-making.

The New Economics Foundation is the UK's leading think tank promoting social, economic, and environmental justice to transform the economy so that it works for people and the planet.

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CONTENTS

EXECUTIVE SUMMARY

There is a renewed focus on green space enhancement, not only to restore nature and mitigate climate change, but to improve our wellbeing. The collection of national and international research is growing and we are now beginning to understand how engaging with green space enhances different components that make up our wellbeing. Through the Covid-19 crisis there has been growing recognition of inequities in access to green space. Five key indicators broadly control the extent of the wellbeing benefit an individual derives from green space: greenness, proximity, quality, accessibility, and frequency of use. West Midlands Combined Authority (WMCA) has ambitions to support its constituent local authorities (LAs) to make targeted interventions which improve green space provision and simultaneously mitigate climate change and tackle wellbeing inequalities exposed by the Covid-19 pandemic.

NEF Consulting was commissioned by WMCA to investigate the intersection between green space access and social inequity, and to develop an approach to targeting interventions. Exploratory analysis focused on physical barriers (population pressure on green space and proximity to green space) and social/demographic characteristics (socioeconomic deprivation, age and ethnicity). Maps were developed to visualise the location of 'hotspots' of socioeconomic characteristics and poor green space access. Generally, the exploratory analysis found:

- Walsall and Birmingham rank relatively high for absolute park space when compared with other LAs in the UK. However, all seven LAs in WMCA rank very low in terms of relative park space per person in the UK (population per m^2 of green space).
- A strong correlation between population pressure and socioeconomic deprivation was identified. With the exception of Solihull, across all LAs a high level of deprivation correlated with greater population pressure on green space. However, communities with high levels of deprivation were typically closer to green space.
- Black, Asian and Minority Ethnic (BAME) populations in Birmingham, Coventry and Walsall showed greater population pressure on green space than non-BAME populations. Many BAME populations are also experiencing high rates of deprivation.
- Broadly, older populations experience less population pressure on green space in comparison to younger populations, but are also often further away from green space.

Each LA has a different context, local issues, priorities and demographics. While headline findings present a common trend across the West Midlands, the purpose of the analysis was to identify particular 'hotspot' areas with poor access to green space. Through our mapping approach we identify many areas where the above issues and inequities are particularly acute. We also identify areas which buck the above trends and where issues present which might be hidden by the aggregate analysis, for example locations where a large young population is also particularly far away from green space.

Exploring *why* the barriers exist is out of the scope of this research. To understand in more detail any deficits in green space provision we would need to go into more detail on the types and functions of the green spaces available, i.e. analysing amenity and quality. The data only tells part of the story, which is why it is important to engage with local communities to a) further explore their green space usage, the barriers faced and why, and b) understand what they want out of their local green space.

A literature review of relevant interventions implemented outside of the West Midlands region was undertaken to offer ideas and inspiration for tackling the challenges and barriers of access to green space in 'hotspot' areas. Broadly, intervention ideas were categorised into the following typology:

a) **Re-purposing space / creating new spaces.** Ideas include regenerating brownfield sites, creating pocket parks and accessible rooftops.
b) **Infrastructure for travel and connectivity.** Consideration of *how* people would get to green spaces (examples include green corridors, cycling networks, public transport and walking routes).
c) **Enhancing existing space.** Actively management green spaces, improving biodiversity, preserving heritage and inclusion of facilities or multi-functional uses.
d) **Greening space.** The wellbeing generated by an urban space goes beyond just parks, and can be enhanced through the broader 'greenness' of the area. Examples of greening include tree planting and creation of "living" walls on facades and roofs.

There are a range of interventions that could be delivered, at a range of scales. From the creation of a new park through to a community vegetable patch. A combination of ideas drawn from WMCA, the exploratory analysis and case study examples for implementing interventions for 'hotspot' areas are detailed below:

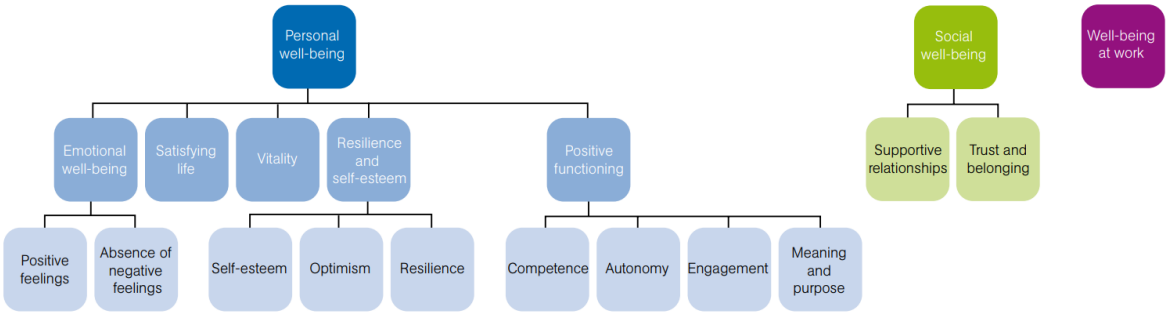
1. **Creating a West Midlands Green Spaces Taskforce.** It is important that a strategic approach is taken and co-ordinated by a group of representatives from the LAs involved. The group should ensure the involvement of individuals from a variety of departments such as public health, transport, and cultural services to enable a holistic approach to improving green spaces and should administer the recommendations below.
2. **Building on the evidence base to prioritise 'hotspot' areas.** Further research should be carried out to identify the relationship between green space, socioeconomic characteristics and physical barriers to accessing green space.
3. **Involving residents.** Whilst the exploratory analysis has identified certain 'hotspots', qualitative evidence gathered from residents will enable WMCA to dig deeper into the issues highlighted by the data, and confirm where the highest need is and *why*. It is important that residents are consulted at each stage of the process, from planning and design through to implementation, to ensure the interventions are fit for purpose.
4. **Data sharing platform or designated data officers.** A platform or designated data officers from LAs would ensure consistent data collection, and the sharing and monitoring of data. This would inform the evidence base as well as ensuring that data provided from LAs is of the same standard and level of detail.
5. **Capacity building and sharing best practice.** LAs should be encouraged to share best practice and build on the learnings shared from other LAs. They should set out key ways of working to enable greater collaboration as well as effectiveness and efficiency. This has been done in Greater Manchester as part of the Bee Network.
6. **A Community Green Grant Fund targeting 'hotspot' areas.** This would enable WMCA to support LAs to improve access to green space and tailor interventions to local context. Ambition and funding should be set as high as is feasibly possible, commensurate with the scale of both the climate and ecological crisis, and the deficit in green space provision highlighted across the WMCA area.

INTRODUCTION

The climate crisis, ecological breakdown, deepening social and spatial inequality and the Covid-19 pandemic; all have brought issues of provision, access, and quality of green space into sharp relief. This report focuses on the intersection between green space provision, well-being, and social inequity.

It is over ten years since NEF deconstructed the different components of well-being in the National Accounts of Well-being.[1] There is now a significant amount of national and international evidence on the well-being benefits to individuals from green spaces, and how engaging with nature and green space supports different components of well-being (Figure 1). The research distinguishes between impacts on meaning and purpose in life (eudaimonic well-being), resilience (hedonic well-being), emotional well-being and life satisfaction (detailed as "satisfying life" in the National Accounts of Wellbeing).

Figure 1: Subcomponents of well-being, from the National Accounts of Well-being (NEF, 2009)



At the headline level, living in generally 'greener' urban areas is associated with reduced mental stress and increased life satisfaction.[2] As data quality and our understanding of the human-green space connection improves we are able to break down the nuance in this relationship. Five key indicators broadly control the extent of the wellbeing benefit an individual derives from green space: greenness, proximity, quality, accessibility, and frequency of use.

Greenness. Evidence from a UK study has shown that both life satisfaction and emotional well-being[i] improve as the amount of green space in an urban area increases.[3] However, perceptions of 'greenness' stretch beyond just parks and into the broader urban environment. Studies in the UK have shown that simply the act of seeing nature in an individual's day-to-day life can enhance wellbeing.[4] An Austrian study found further positive associations between perceived greenness and well-being.[5]

Proximity. Evidence from London illustrates that life satisfaction is greater when green space is within 300 metres of a household.[6] Similarly for coastal communities, living less than 5 km from the coast is associated with better mental health (on the General Health Questionnaire composite indicator) than living between 5km and 50km away.[7]

[i] Described as "psychological health" as a proxy

Quality. Happiness[ii] is always found to be greater in natural compared to built-up environments, including across ecosystems ranging from semi-natural grassland, woodland, moors and heathland.[8] An individual's perceived quality of the green space matters. Higher satisfaction with the quality of green space has been proven to be significantly associated with higher mental well-being.[9] Broadly, the more 'restorative' the environment is perceived to be, the more well-being will be derived,[10] and perceived 'restorativeness' is strongly linked to the biodiversity of an area.[11, 12]

Amenity. The presence of good quality green space does not necessarily precipitate use. Green space takes many forms, ranging through sports pitches and playgrounds, cemeteries, blue spaces (leisure lakes), and nature reserves. Different spaces meet the needs of different groups and provide different sorts of wellbeing benefits. For instance, an elderly individual may derive less benefit from a children's play park, and a young family may derive less from a bird watching reserve. This has been explored in studies which measure what characteristics of a green space precipitate more exercise benefits for elderly people.[13]

The linked issues of **accessibility** and **frequency** of visits to green spaces also play an important role in supporting well-being. Individuals who visit green spaces daily are almost twice more likely to report greater meaning and purpose in life than those who never visit them.[14] Accessibility is closely linked to proximity, the likelihood of being a frequent visitor is higher for those who live in greener areas, and those living with 5km of the coast. However, frequency is also typically lower in areas with greater levels of deprivation.[15] This points to the key moderators of accessibility and frequency of visits to green spaces: deprivation, inequality, and the intersection with social and demographic factors.

Covid-19 has exposed inequities in access to green space. Households located closer to green spaces command a higher price,[16] implying that people who are wealthier have greater access to green space. It is also widely understood that wealthier households tend to have larger garden space, and many poorer households have no garden space at all. The number of households across the UK without a garden has also been on the increase.[17]

Where green space is not in immediate proximity, factors such as time constraint come into play. Issues such as care giving and long working hours, which are typically not evenly distributed across societal groups, can restrict access to green space. NEF together with What Works Wellbeing has explored the relationship between green space activities and health inequalities – finding that the provision of access to high quality green space can be a 'levelling' factor, which reduces wellbeing inequality.[18]

Gendered and racial dimensions of access to green space is less well understood. From the limited research body, we do know that deprived areas are most in need of transport connectivity as local green space is most stretched and prone to overcrowding. A study in Sheffield illustrated that population pressure on green space could be approximately one third higher in low income areas compared to high income areas.[19] A study in Bradford identified that areas with higher accessibility to green space typically had more white residents than those areas with lower accessibility.[20] Both of these factors could be critically important to the wellbeing of groups in the UK population through the Covid-19 crisis.

[ii] While happiness is not detailed as a sub-component in the National Accounts of Well-Being, it is linked to "positive feelings".

The barriers to access and Covid-19

Official government guidance on staying well during the lockdown advises us to enjoy nature and exercise outside once a day.[21] During the peak of the crisis households were advised to "stay local and use open spaces near to your home where possible" while keeping "at least 2 metres apart from anyone outside your household at all times".[22] Guidance from the police, at the peak of the pandemic, clarified that households could drive to reach the countryside, as long as "far more time is spent walking than driving".

These restrictions were necessary, but their impacts were unequal. Not all households have green spaces near to their homes, for example, in the city of Bradford just two thirds of households (65.6%) are within 300 metres of green space.[23] Approximately 24% of households do not own a car and for many public transport was not an option due to safety risks. Those households are concentrated in the lowest income quintile, where 46% of households are without a car.[24]

NEF research, tracking use of green spaces across the UK's local authorities through the peak of the Covid-19 crisis highlighted these barriers in action. Over the analysed period in April 2020 the poorest 20 local authorities reported an average 28% reduction in the use of parks compared to the baseline period, meanwhile the wealthiest 20 local authorities reported no change in park use.

Through the Covid-19 crisis there has been growing recognition that deficient access to green space has the potential to amplify the UK's mental health crisis. In particular, a public debate took place about the opening up of private golf courses,[25] and in some areas saw creation of new traffic-free active travel routes. While many local areas have led the way both in and out of times of crisis in pioneering new approaches to increasing access to green space there remains an urgent need to address public green space provision which now sits at the nexus of multiple social and environmental crises.

Purpose of the research

WMCA has ambitions to support its constituent local authorities to make targeted interventions which improve green space access and simultaneously mitigate climate change and tackle wellbeing inequalities exposed by the Covid-19 pandemic. NEF Consulting was commissioned by the West Midlands Combined Authority (WMCA) to scope out a method for investigating the intersection between green space access and social inequity, and targeting appropriate interventions.

METHODS

Intersectional framework

In order to guide the research a simple framework was developed from the literature review to understand how the different parameters which affect green space access interact with different indicators of disadvantage and/or social characteristics which modify the way an individual/community interacts with green space (Table 1). Frequency of use is treated as a variable which, in the absence of any physical barriers, is modulated by social and demographic factors. These social and demographic factors are not independent of each other. Table 1 details what has been analysed in this report, and highlights that the extent of analysis to-date represents a relatively limited look at the range of potential 'intersections' which could give rise to inequalities in green space access.

Table 1: A potential framework for developing an intersectional understanding of barriers to benefiting from green space

		Physical barriers				
	Social/ demographic characteristics	Population pressure	Proximity/ access route	Perceived quality	Amenity	Greenness
Frequency of use	Socioeconomic deprivation	*Analysed*	*Analysed*			
	Health deprivation					
	Educational attainment					
	Caring responsibilities					
	Age	*Analysed*	*Analysed*			
	Gender					
	Ethnicity	*Analysed*	*Analysed*			

Cells highlighted in green in Table 1 are parameters that have not been explored due to limited data availability and resource limitations. Data on the physical barriers (perceived quality, amenity and greenness) is not available for the majority of local authorities and primary data collection is outside the scope of this research. Data on social characteristics are not publicly available at a granular level, for example indicators of health deprivation (e.g. diabetes and childhood obesity). This paper explores the interaction between the following social/demographic characteristics (a) deprivation, (b) age and (c) ethnicity and both (1) population pressure and (2) proximity to green space.

Data sources

A wide variety of data sources were compiled in order to scope the potential for intersectional analysis. The aim was to analyse data at the most localised level possible, this meant using the Lower Super Output Area (LSOA) administrative boundary wherever possible, and the Middle Super Output Area (MSOA) where LSOA data was not available. The Office for National Statistics (ONS) dataset released in May 2020 provides a range of different estimates of green space provision across the UK calculated from the Ordnance Survey (OS) UK Green Space map.[26] Socioeconomic parameters were collated from ONS official labour market statistics (nomis) released in the 2011 census[27] for data on ethnicity and the ONS population estimates for Mid-2019 estimates for Lower Layer Super Output Areas in England and Wales by Single Year of Age and Sex[iii] for data on age.

Statistical analysis

Distance from green space

The core metric for distance from green space is a variable contained within the ONS/OS dataset which estimates the percentage of postcodes within a local area which are within 300m of a park, public garden, or playing field. Using this metric to make comparisons between local areas means accepting a core assumption that the number of people living within each postcode within a local area remains reasonably consistent. This assumption was deemed acceptable as the LSOA area unit is very localised, and postcode-based populations would not be expected to vary significantly over such scales.

Population pressure on green space

The second core metric relates to population pressure on green space. To develop this metric some transformation of ONS/OS data was required. ONS/OS provide data on the average combined area (m^2) of green space within a 1,000m radius of a household. However, this metric lacks any recognition of the population density within that same area. To account for this we calculated average population density in the local area, and scaled the resulting figure to work out the approximate number of people likely to be living within a 1,000m radius.

There is a key deficiency with this approach. Local population density was calculated using the area and population size of the relevant MSOA – contexts where one MSOA is next to another MSOA with a very different population density has its limitations. For instance, if a green space sits at the boundary of two MSOAs with very different population densities, our method will not detect the influence of the neighbouring high-density MSOA on the experience of the population living in the neighbouring low-density MSOA with regard to their shared green space. This issue only arises in the case of shared green space, i.e. green space within 1,000m of multiple MSOAs, and where those areas have significantly different densities. As the method aggregates over wide areas, and most urban areas contain a large number of green spaces, this issue is not expected to undermine the general usefulness of

[iii] ONS (2020) Lower Super Output Are population estimates. https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/lowersuperoutputareamidyearpopulationestimates [accessed 28/08/2020]

the data. Its biggest likely impact will be to understate the population pressure experienced by communities at the urban periphery when they travel to use inner city green spaces. This highlights the importance of understanding the local context when targeting interventions at areas this method identifies as 'hotspots' of concern.

Summary statistics

While the focus of this report was on the identification of localised hotspots, a summary statistical analysis was conducted on the dataset at the local authority level. Our aim in doing so was to check for common trends across the key parameters of green space access, distance and population pressure, in the way they relate to socioeconomic parameters. The findings of this analysis are detailed in Table 2. Green cells indicate stronger statistical correlations based on standard indicators (correlation co-efficient and p-value). The strength of any statistical correlation found varied strongly across local authorities.

Some of the strongest correlations were seen in combination 1, population pressure and Socioeconomic deprivation. With the exception of Solihull, across all local authorities a high level of deprivation (i.e. a lower decile) correlated with greater population pressure on green space (although the relationship was found to be very weak in Wolverhampton). An opposing trend was measured in Solihull, but this finding should be treated with caution as Solihull contains very few areas with proportionately high deprivation. This finding goes some way to explaining why more deprived areas may have seen a greater decline in green space usage during the peak of the Covid-19 crisis. Population pressure on green space being a particularly strong deterrent to green space use when social distancing is required. Communities with high levels of deprivation however, were typically closer to green space (combination 6).

Other correlations tested were found to be generally weak. Broadly speaking, older populations experienced less population pressure on green space than younger populations (combinations 4 and 5), but the reverse relationship was evident in distance from green space (combinations 7 and 8). These two trends can be explained primarily by the tendency of a higher density of older populations in rural areas. Correlations were found in relation to ethnicity, but were strong in only a minority of Local Authorities. BAME populations in Birmingham, Coventry and Walsall in particular showed greater population pressure on green space (combinations 2 and 3).

Table 2: Summary of statistical correlations between parameters across all constituent local authorities. Green cells indicate combinations with a stronger and/or more robust statistical correlation, versus white cells indicating little or no correlation between variables.

		Birmingham	Coventry	Dudley	Sandwell	Solihull	Walsall	Wolverhampton
1	**Green space per person & IMD rank**	Cor: 0.329 [0.26, 0.39] P-value: <2.2e-16 T: 8.77	Cor: 0.263 [0.13, 0.39] P-value: 0.0002049 T: 3.78	Cor: 0.138 [0, 0.27] P-value: 0.05135 T: 1.96	Cor: 0.206 [0.06, 0.34] P-value: 0.004745 T: 2.86	Cor: -0.255 [-0.41, -0.09] P-value: 0.002878 T: -3.04	Cor: 0.321 [0.18, 0.45 P-value: 2.346e-05 T: 4.35	Cor: 0.08 [-0.07, 0.23] P-value: 0.3161 T: 1.0058
2	**Green space per person & white pop decile**	Cor: 0.191 [0.12, 0.265] P-value: 1.166e-06 T: 4.9087	Cor: 0.249 [0.11, 0.38] P-value: 0.0004311 T: 3.5823	Cor: -0.067 [-0.2,0.07] P-value: 0.3451 T: -0.94	Cor: -0.12 [-0.26,0.025] P-value: 0.1042 T: -1.63	Cor: 0.12 [-0.05,0.28] P-value: 0.1633 T: 1.402	Cor: 0.176 [0.02,0.32] P-value: 0.0229 T: 2.296	Cor: -0.084 [-0.24,0.07] P-value: 0.296 T: -1.0485
3	**Green space per person & non-white pop decile**	Cor: -0.191 [-0.26, -0.11] P-value: 1.166e-06 T: -4.91	Cor: -0.25 [-0.38, -0.11] P-value: 0.0004101 T: -3.5962	Cor: 0.066 [0.07, 0.2] P-value: 0.3534 T: 0.9301	Cor: 0.12 [-0.02,0.25] P-value: 0.1043 T: 1.6325	Cor: -0.12 [-0.28, 0.05] P-value: 0.1748 T: -1.3642	Cor: -0.178 [-0.32, -0.03] P-value: 0.0223 T: -2.3096	Cor: 0.084 [-0.07, 0.23] P-value: 0.295 T: 1.0508
4	**Green space per person & age under 18**	Cor: -0.111 [-0.18,-0.03] P-value: 0.005086 T: -2.8113	Cor: -0.098 [-0.23,0.04] P-value: 0.1712 T: -1.3736	Cor: -0.056 [-0.19,0.08] P-value: 0.4292 T: -0.792	Cor: -0.134 [-0.32,-0.05] P-value: 0.008101 T: -2.6769	Cor: -0.011 [-0.18,0.15] P-value: 0.8992 T: -0.127	Cor: -0.236 [-0.37,-0.087] P-value: 0.002179 T: -3.1137	Cor: -0.112 [-0.26,0..04] P-value: 0.1619 T: -1.4055
5	**Green space per person & age 65 plus**	Cor: 0.294 [0.22,0.36] P-value: 3.351e-14 T: 7.7616	Cor: 0.288 [0.15, 0.41] P-value: 3.351e-14 T: 7.7616	Cor: 0.106 [-0.3,0.24] P-value:0.1325 T: 1.5104	Cor: 0.175 [0.03,0.31] P-value:0.01694 T:2.41	Cor: -0.057 [-0.22,0.11] P-value:0.5113 T:-0.6586	Cor: 0.269 [0.12,0.4] P-value: 0.0004329 T: 3.5919	Cor:0.122 [-0.03,0.27] P-value:0.1265 T:1.5364
6	**% postcodes within 300m & IMD rank**	Cor: -0.189 [-0.29, -0.11] P-value: 1.365e-06 T: -4.8765	Cor: -0.193 [-0.32,-0.05] P-value: 0.00691 T: -2.73	Cor: -0.133 [-0.27,0.005] P-value:0.05974 T: -1.894	Cor: -0.091 [-0.23,0.05] P-value: 0.2175 T:-1.2375	Cor: -0.047 [-0.21,0.12] P-value:0.59 T: -0.54	Cor: -0.115 [-0.26,0.04] P-value: 0.1371 T: -1.4941	Cor: -0.194 [-0.33,-0.04] P-value:0.01469 T:-2.4675
7	**% postcodes within 300m & % age under 18**	Cor: 0.162 [0.09, 0.24] P-value: 3.554e-05 T: 4.1642	Cor: 0.055 [-0.08, 0.19] P-value: 0.4443 T: 0.76657	Cor: 0.085 [-0.05,0.22] P-value: 0.23 T: 1.2039	Cor: -0.137 [-0.16,0.13] P-value:0.8525 T:-0.1862	Cor: -0.013 [-0.18,0.15] P-value: 0.8812 T: -0.14976	Cor: 0.12 [-0.03,0.26] P-value: 0.1305 T: 1.5195	Cor: 0.159 [0.002,0.3] P-value:0.04611 T: 2.0105
8	**% postcodes within 300m & % age 65 plus**	Cor: -0.105 [-0.18, -0.027] P-value: 0.008099 T: -2.6563	Cor: -0.22 [-0.35,-0.09] P-value: 0.001657 T: -3.1907	Cor: -0.14 [-0.27, -0.003] P-value: 0.04504 T: -2.017	Cor: -0.04 [-0.18, 0.1] P-value: 0.5845 T: -0.54	Cor: 0.019 [-0.15, 0.19] P-value: 0.8266 T: 0.219	Cor: -0.11 [-0.25,0.04] P-value:0.1693 T:-1.9807	Cor: -0.14 [-0.29,0.01] P-value: 0.07959 T:-1.7646

Indexed ranking system

A simple index-based ranking system was developed to identify location 'hotspots' where socioeconomic parameters intersect with indicators of poor access to green space. LSOAs in the study area were separated into deciles across all socioeconomic and green space parameters, i.e. given a ranking of 1-10. For example where 1 would represent high population pressure and 10 would represent low population pressure. To explore the intersection between one socioeconomic and one green space parameters the deciles corresponding to the variables of interest were summed together. This created a new ranking on a scale of 2-20. An LSOA with a score of 2 would have both very high population pressure per m^2 of green space, and a strong socioeconomic characteristic identified in the

intersectional analysis framework (Table 1), such as high deprivation levels or a prevalence of BAME population.

Mapping

Maps were developed to visualise the location of ‘hotspots’ of socioeconomic characteristics identified in the intersectional analysis framework and poor green space access. Mapping was conducted in QGIS, and the Open Street Map was used as the base layer. Administrative boundary Shapefiles were collected from Government datasets, and the OS Green Space layer was accessed from Ordnance Survey’s Open Data collection. Additional analysis of general ‘greenness’ (i.e. green space not officially designated a park) was conducted using the Open Street Map QGIS plugin.

FINDINGS

Green space use in West Midlands Combined Authority

Data tracking community use of green space is extremely limited. With the exception of some ad hoc monitoring conducted by councils there is no data at levels below Local authority regions. At the Local authority level limited time series data is provided by Natural England's Monitor of Engagement with the Natural Environment Survey (MENE). The average number of visits made by residents across WMCA to the natural environment is typically well below the national local authority average (Table 3). While densely populated urban areas usually report lower rates of visits, the comparator areas listed in Table 3 highlight that this is not always the case.

Green space use since the onset of the Covid-19 pandemic has been in flux. An initial extended period of extremely depressed green space usage was followed by a sharp rise once the tightest lockdown measures were lifted. However, in many areas green space usage patterns remain altered, and it is likely that some communities remain reluctant to visit spaces due to the residual risk of Covid-19 transmission.

Two key themes emerge from a review of the trends in green space use across WMCA through the Covid-19 crisis (Figure 1). First, the significant reduction of green space use in the months of February to May. The recorded levels are often significantly below their level in January (mid-winter) which is clearly unusual given the seasonality of green space use and expected levels in spring. Second, green space in WMCA largely reflected national trends until July 2020, at which point green space use in the West Midlands dropped well below the UK average (typically around 33 percentage points lower).

Sandwell recorded higher relative levels of green space use between March 2020 and July 2020 in comparison to the other local authorities across WMCA (Figure 2). Broadly, green space use in Sandwell was in line with or above the national trend. Dudley, Birmingham and Wolverhampton saw the lowest use of green space in WMCA (Figure 2 and Figure 3). It is not clear what has driven the trends from the data, but this may relate to localised prevalence of Covid-19 cases. The local authority level data should be approached with caution as it is not clear how accurate the Google Mobility dataset is at this scale, and the approach utilised is highly sensitive to the baseline (reference) level of green space use set in January 2020.

Table 3: Average estimated weekly visits to the natural environment by local authority, small sample sizes are highlighted with an asterisk[28]

Region	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
National average	69	59	65	67	68	73	73	78	86	90
Birmingham	36	38	50	46	46	46	39	51	53	60
Coventry	17	18	71	57	43	55	71	55	51	57
Dudley	62	48	53	48	55	62	59	44	53	66
Sandwell	42	24*	50	44*	34*	56	39*	35*	36	61
Solihull	59*	26*	77*	48*	69*	45*	50*	50*	72*	70*
Walsall	35	26	20	41	34	59	60	64	57	68
Wolverhampton	63	25*	50	43	59	74*	69*	48*	44*	70
Staffordshire	62	61	71	73	77	74	78	84	103	101
Stoke-on-Trent	21	40	48	66	77	67	59*	73*	75	97*
Milton Keynes	121	82	106	83	94	126	78	80	104	86
Peterborough	89	50	103	80	60*	No data*	52	77	94	82*
Manchester	39	41	54	65	60	47	51	76	58	60*
Leeds	81	61	66	67	55	72	60	76	57	203

Figure 1: Google mobility data indicating the change in public movement in West Midland's green spaces (compared to a baseline of the 5-week period Jan 3 – Feb 6, 2020)

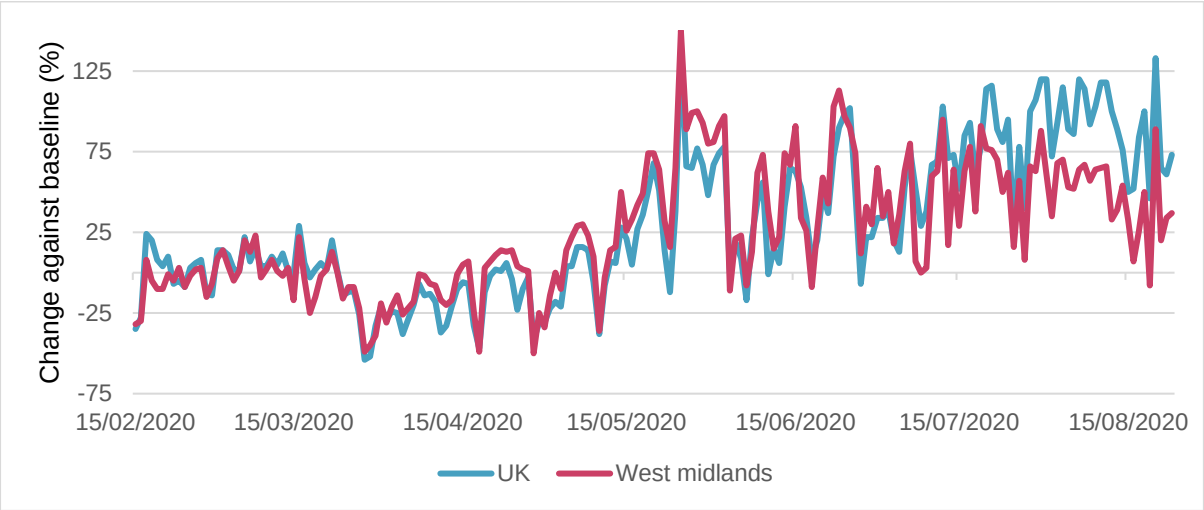


Figure 2: Google mobility data indicating the change in public movement in green spaces in four local authorities (compared to a baseline of the 5-week period Jan 3 – Feb 6, 2020)

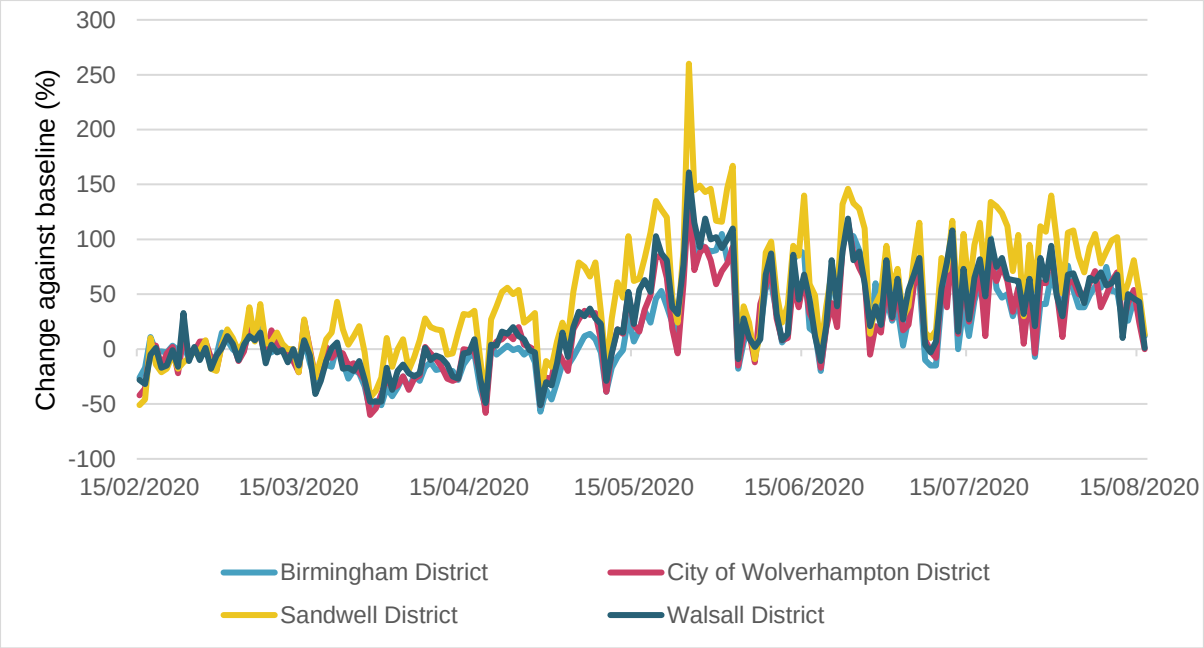
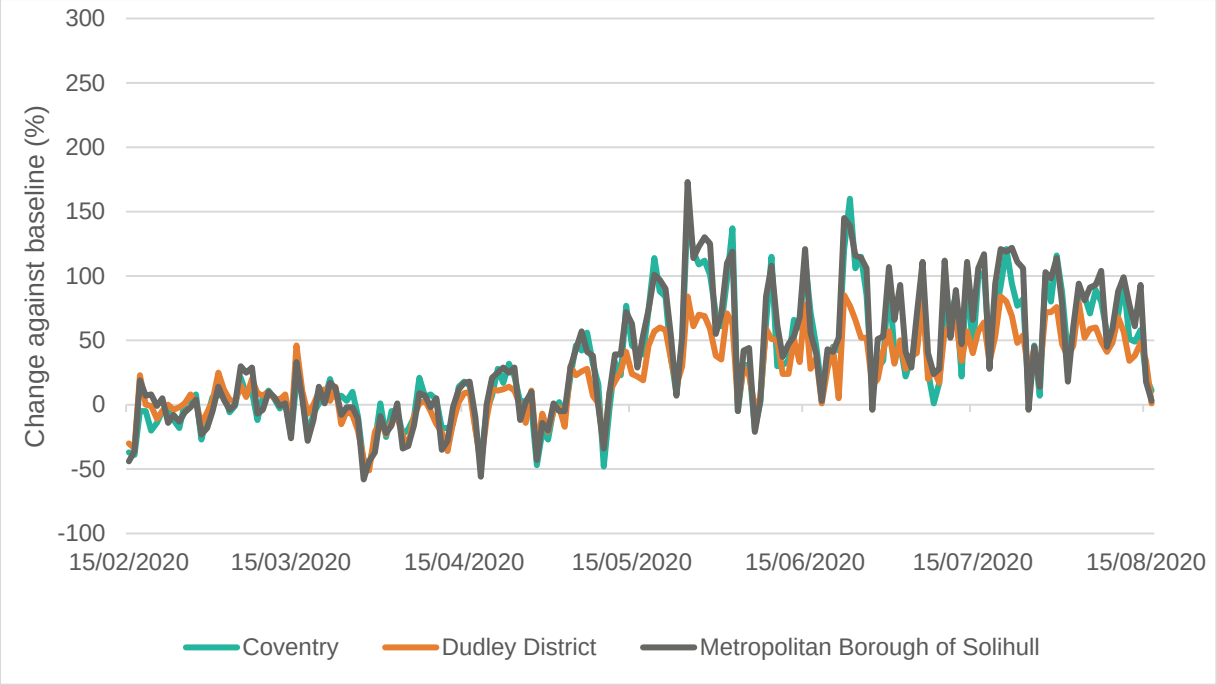


Figure 3: Google mobility data indicating the change in public movement in green spaces across three local authorities (compared to a baseline of the 5-week period Jan 3 – Feb 6, 2020)



Systematic data collection on public green space use trends among sub-populations is severely lacking across most of the UK. The Monitor of Engagement with the Natural Environment (MENE) survey is the only high quality national dataset explicitly addressing green space use, but does not provide data at geographic scales below the Local authority level.

Greenness of West Midlands Combined Authority

There are many different types of green space, and many different features of urban areas which can contribute to the perceived 'greenness' of an area. While issues such as vegetation cover, connectivity and size of green space matter for the biodiversity of an area, perceived greenness also has a role to play in determining the wellbeing people derive from their environment.

The ONS/OS parks dataset helps us understand the extent of officially designated park space in an area. As a general rule, urban areas typically have high absolute areas of officially designated park space (when compared to rural areas), but lower levels of area relative to their population size. This is true for all seven local authorities in WMCA. Walsall and Birmingham rank relatively high across the UK for absolute park space. All seven local authorities rank very low in terms of relative park space. Dudley and Coventry perform poorly across both metrics (Table 4). The rankings of WMCA Local Authorities are similar to comparable areas such as Leeds and Manchester, but trends in Peterborough and Milton Keynes highlight that poor performance on these indicators is not inevitable in a populous urban area, but question of design.

Table 4: National rankings of local authority (out of 373 local authorities across England, Wales and Scotland) by official provision of green space with and without consideration of population density

	Rank of "average combined size of parks, public gardens, or playing fields within 1,000m radius (m2)"	Rank "average combined size of parks, public gardens, or playing fields within 1,000m radius (m2)/population density" (decile shown in brackets)
Birmingham	19	267 (3)
Coventry	141	340 (1)
Dudley	187	348 (1)
Sandwell	115	333 (2)
Solihull	45	171 (6)
Walsall	22	237 (4)
Wolverhampton	231	362 (1)
Lichfield	40	36
South Staffordshire	333	219
Stoke-on-Trent	16	196
Milton Keynes	28	96
Peterborough	10	27
Manchester	136	350
Leeds	144	263

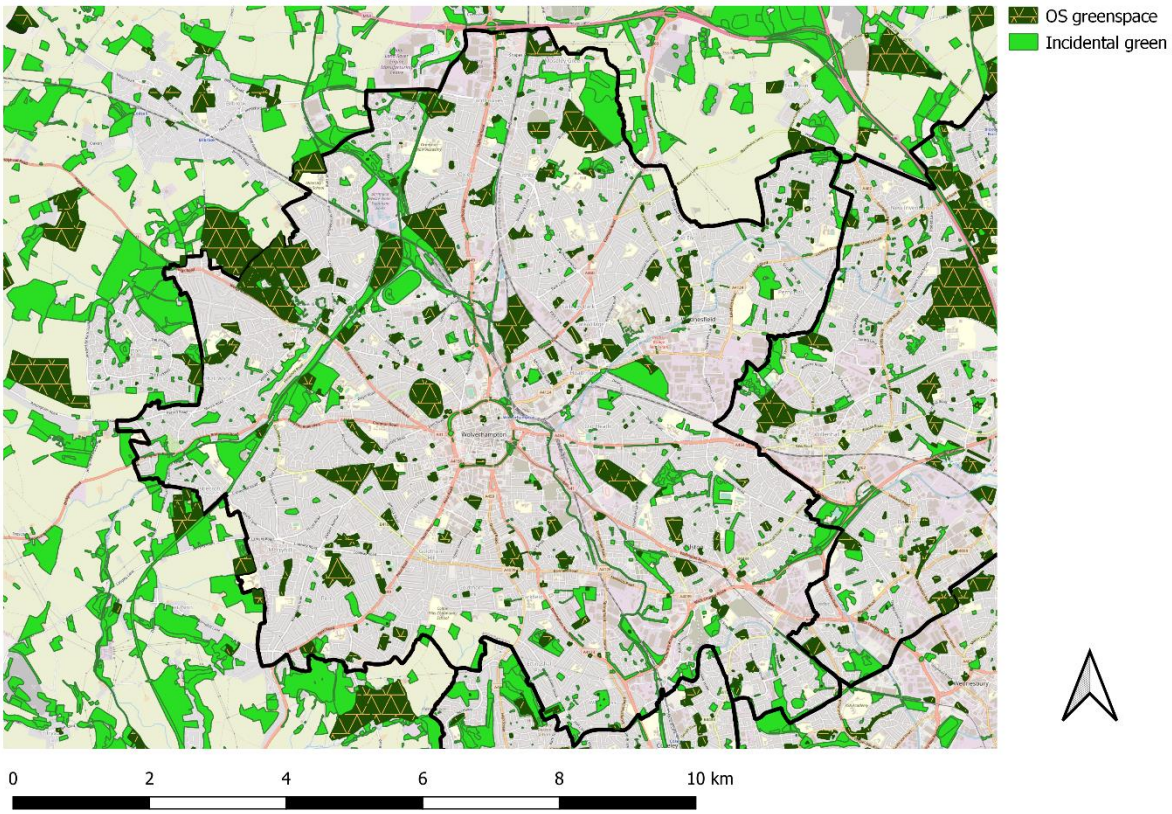
To understand in more detail any deficits in green space provision we would need to go into more detail on the types and functions of the green spaces available, i.e. analysing amenity as discussed above. This is possible within current datasets but was outside the scope of this research. Such an exercise is sometimes undertaken by councils in their green space strategies (see for example Coventry's Green Space Strategy, 2019) and has been undertaken for Birmingham's Future Parks Accelerator, but no consistent approach is applied across the region. A potential system would rate types of green space by the social services they provide and then map the provision of those services across communities.

Conversations were held with representatives from some local authorities, to sense check map based analysis and initial findings. The analysis suggests that WMCA contains many areas which will be perceived as 'green' which are not officially designated as park space. Indeed some of these areas are likely utilised as parks, however isolating and categorising these spaces in the data is extremely difficult. Figure 4 shows a map of officially designated OS greenspace[iv] in Wolverhampton and our categorisation of 'incidental greenspace'. The

[iv] In this case the officially designated green space mapped includes local golf courses, however these are not included as parks in our quantitative analysis.

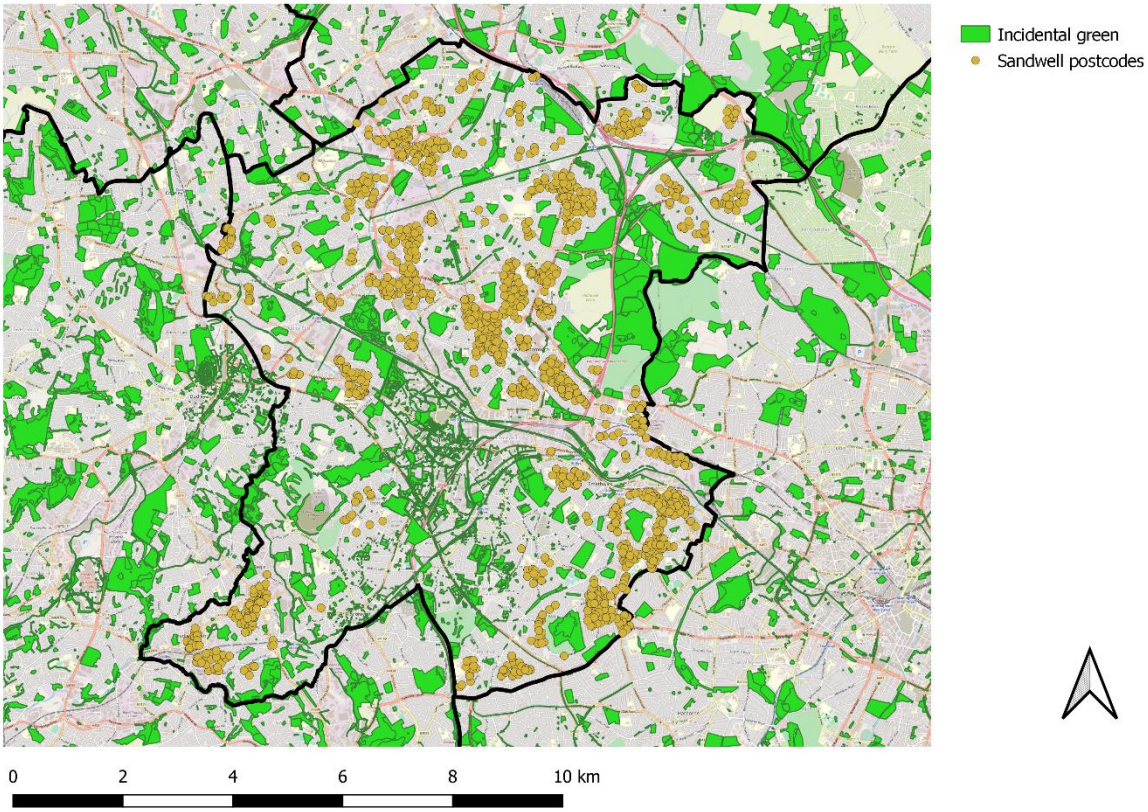
types of spaces which have been picked up by our analysis technique includes areas which are not easily accessible to the public, such as the centre of Wolverhampton race course and inaccessible water courses, and areas which are highly accessible to public such as the greenery lining walking and cycling routes, and accessible water courses. Our technique also identifies green spaces which may technically be accessible but are not designed for public use, and a small number of spaces which appear to be derelict or under-utilised. Areas which are clearly under agricultural management are excluded.

Figure 4: Officially recognised green space (dark green hatched) and 'incidental' (light green) green space in Wolverhampton



There are many ways the incidental green space provision could be analysed, each with strengths and weaknesses. Figure 5 illustrates an analysis performed on Sandwell, which highlights postcodes which are more than 5 minutes' walk from any incidental greenspace. This is one way of highlighting areas where residents may have a less 'green experience' of daily life in their community. This measure is imperfect as it does not include urban trees unless they are attached to a green area, it also does not consider (front facing) private gardens which may contribute to an area feeling more green. The fact that the method does not consider private gardens does, however, give it an advantage over methods which use satellite imagery to measure greenness and hence struggle to exclude private gardens. Testing suggests the method is typically successful in identifying housing estates without incidental green space, a feature which seems particularly common where older terraced housing is present.

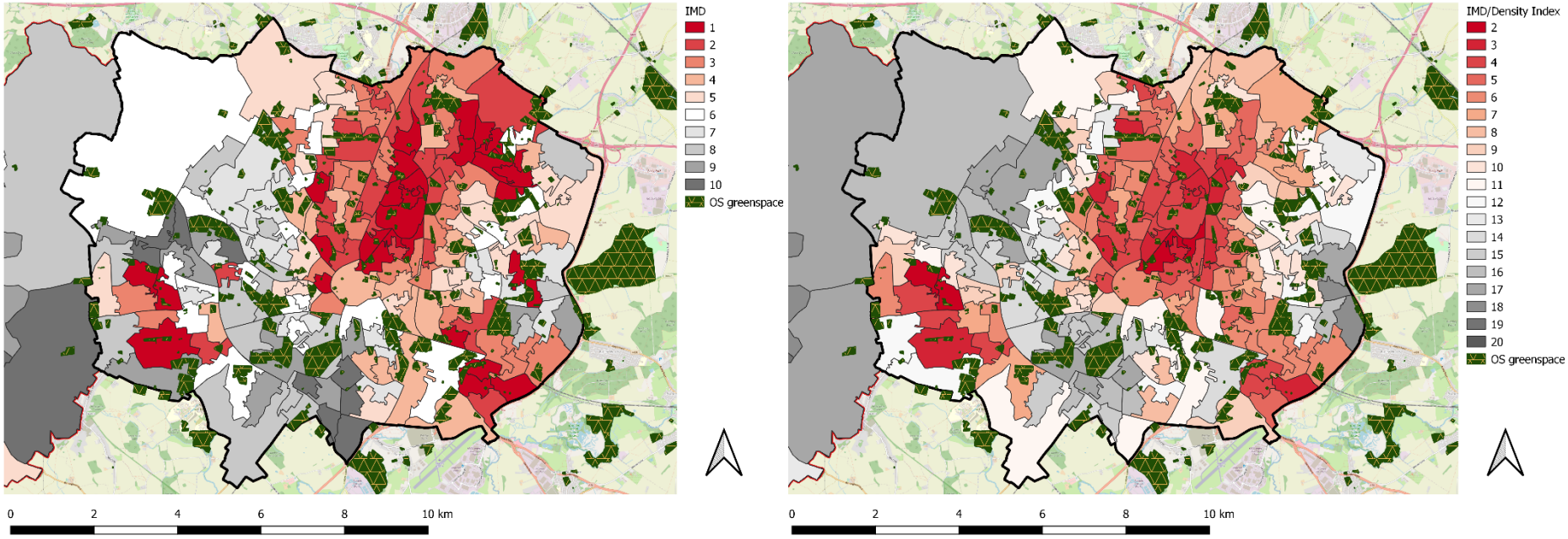
Figure 5: Sandwell postcodes more than 5 minutes' walk from any incidental green space (excluding golf courses)



Deprivation and access to green space in WMCA

Figure 6 presents a map of deprivation (left) and a map of deprivation scaled by population pressure on green space (right). There are large clusters of highly deprived areas in WMCA, of which many have a high population density per m^2 of green space. The red areas in the two maps are not dissimilar, indicating that the majority of areas with higher levels of deprivation in WMCA have higher population density per m^2 of green space. Areas with lower levels of deprivation do not in general present high population density, suggesting that there is a particular need to focus on those deprived areas for improving green space access.

Figure 6: Index of Multiple Deprivation (IMD) Deciles (left) and an index of IMD scaled by population pressure on green space (right) in Coventry



Age and access to green space in WMCA

Two indexes were created to explore age and proximity to green spaces. Figure 7 presents the proportion of postcodes in each LSOA that are within 300m of green space scaled by the proportion of population aged under 18 years, and Figure 8 presents the proportion of postcodes in each LSOA that are within 300m of green space scaled by the proportion of population aged 65 and over.

Across WMCA there are many areas that have a high proportion of young people under 18 years of age with greater average travel distances from green spaces (i.e. lower proportions of postcodes that are within 300m of a green space). In comparison, we see that those aged 65 and over are typically located closer to green spaces with very few LSOAs scoring low in the index. Both indices indicate hotspots of poor green space proximity, but these hotspots are typically in very different locations, and indeed different solutions will be appropriate.

Figure 7: Index of proximity to green space (300m) scaled by population aged under 18 in Sandwell

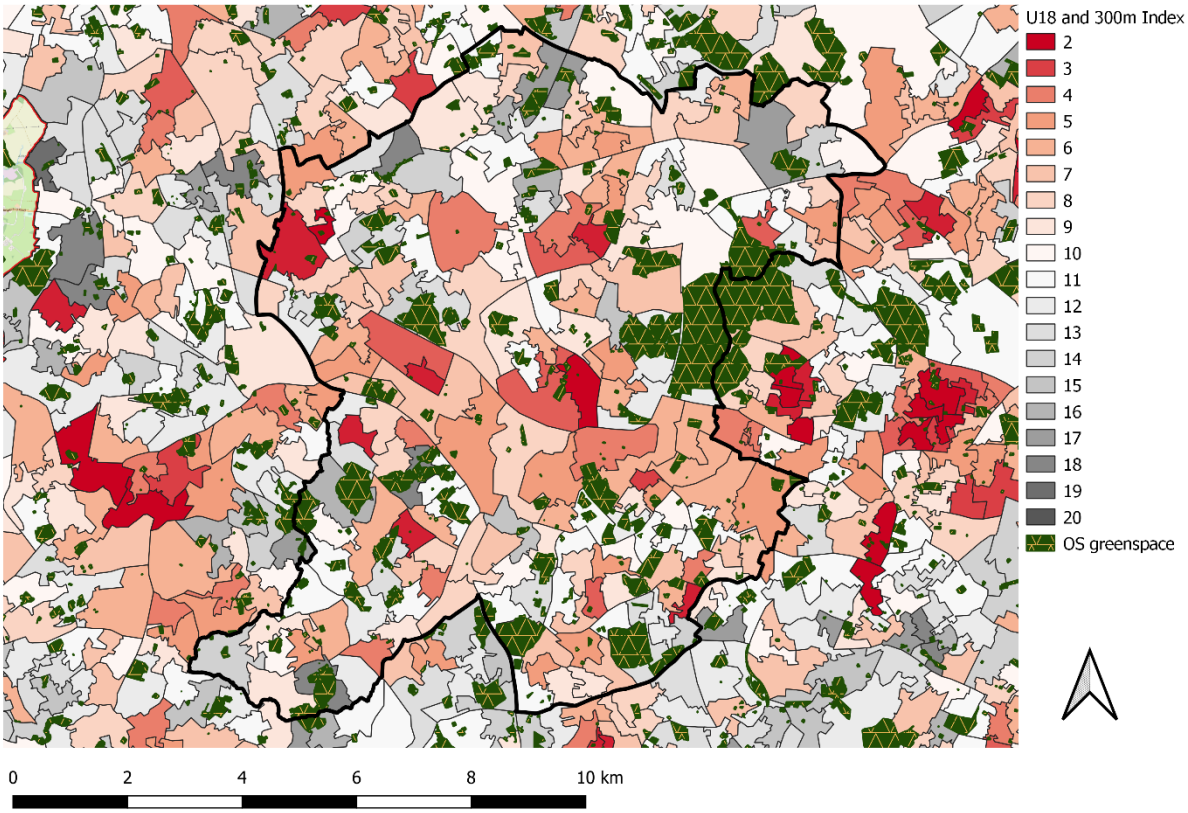
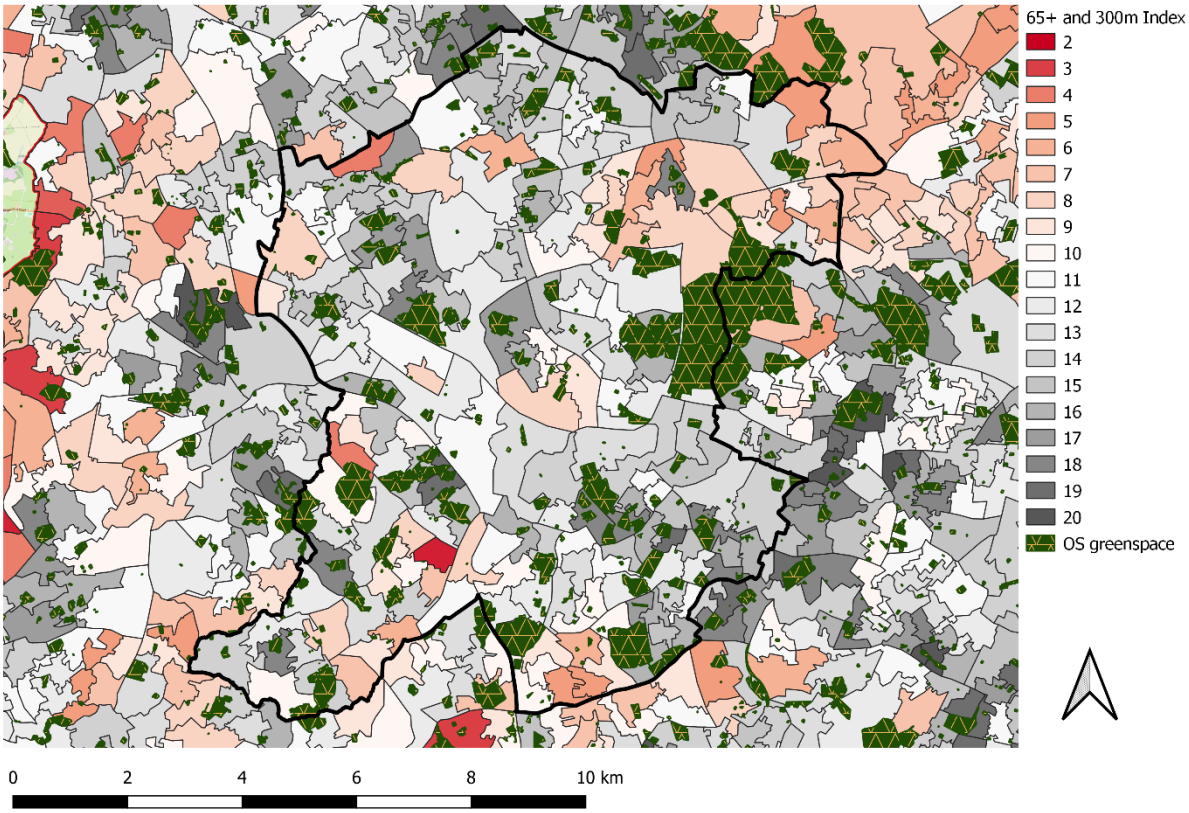


Figure 8: Index of proximity to green space (300m) scaled by population aged over 65 in Sandwell



Ethnicity and access to green space in WMCA

The relationship between ethnicity and access to green space has not been explored in depth in UK literature. The following figures highlight the proportion of Black and Minority Ethnic population against population pressure on green space (Figure 9) and proximity to green space (Figure 10). WMCA has a very significant population of ethnic minorities. Many of these communities are also experiencing high rates of deprivation. This analysis also highlights that many of these communities experience both high population pressure on green space, and in some cases (but to a lesser extent) poor proximity to green space. For a better understanding of these issues, the quality and amenity value of green spaces available to ethnic minorities, and the barriers (social, economic, and cultural), which may prevent communities utilising these spaces would need to be explored.

Figure 9: Index of BAME population scaled by population pressure on green space in Walsall

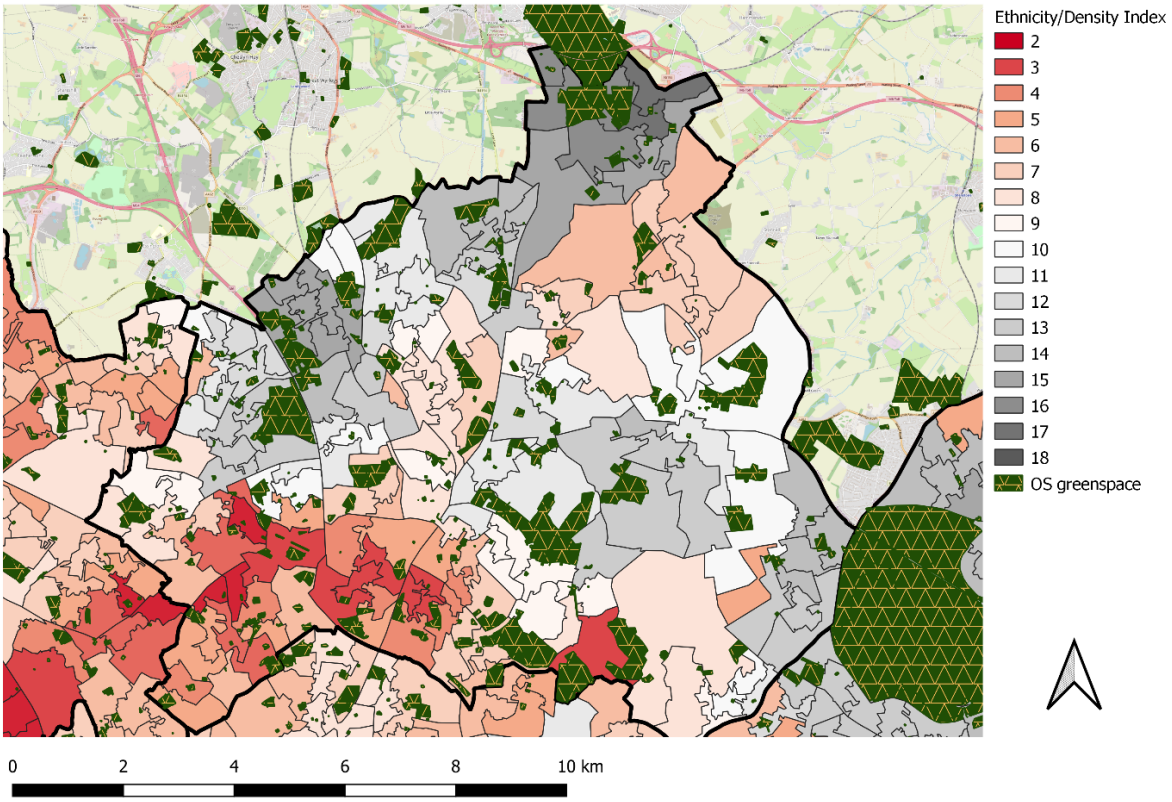
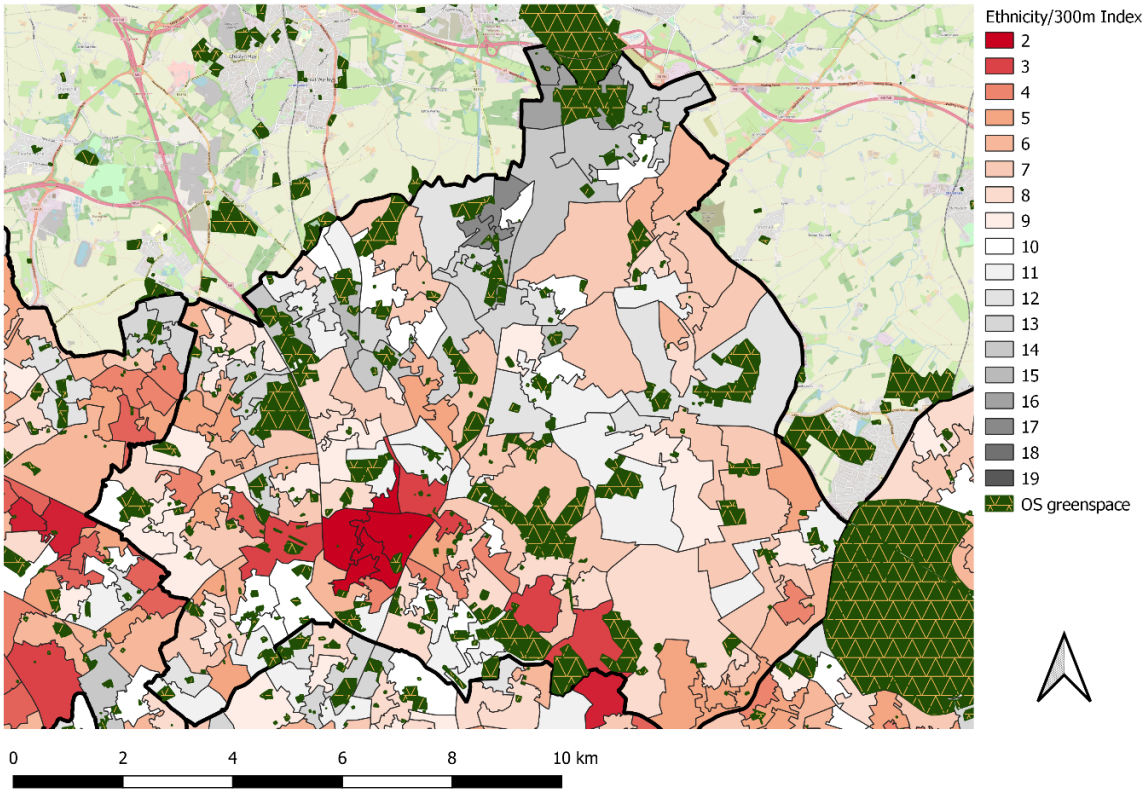


Figure 10: Index of BAME population scaled by proximity to green space (within 300m) in Walsall



INTERVENTIONS

In our consultation with the WMCA constituent authorities, officers reported a wide range of interventions which have, and are currently being applied in the area. These ranged through restoration of small local parks, creation of new spaces as part of new developments, and repurposing spaces such as golf courses. There was however, widespread concern that authorities are working within a highly restrictive environment in terms of capacity, funding, and planning powers. Exploring these barriers in-depth was outside the scope of this research, but they are one of the focus areas of the Birmingham Future Parks Accelerator which has ongoing work looking at effective green space governance and cross sector/theme collaboration.

A literature review of relevant interventions implemented outside the West Midlands region which might offer ideas and inspiration for tackling the challenges and barriers of access to green space in the identified 'hotspot' areas was undertaken as part of this research. There is a large evidence base on successful interventions that encourage the use of green spaces – with a particular focus on improving health and well-being. While there is a rich literature on improving health and well-being through nature-based interventions, there are fewer examples of interventions that focus on improving access to green space in UK literature. The dearth of literature in this area largely echoes the challenging planning environment in the UK over the past two decades, which has limited authorities' abilities to proactively create new green spaces. The recent announcement of Mayfield Park in Manchester, a new park in an already heavily urbanised space, represented a rare exception, as did the Olympic Park when it re-opened in 2014.

Table 5 illustrates a typology of interventions using the intersectional framework. We recognise that many socioeconomics characteristics are not independent of each other therefore fewer examples of cohort specific interventions are included. Table 5 provides an overview of examples found in the literature that could address particular socio-economic issues as well as physical barriers. If further developed this typology could be used as a guide for WMCA when targeting 'hotspot' areas and engaging with communities.

Table 5: Intervention typology

	Population pressure	Proximity / Access	Perceived quality	Amenity	Perceived Greenness
Socio-economic deprivation ***Health deprivation*** ***Age*** ***Gender*** ***Ethnicity*** ***Educational attainment***	**Re-purposing space / creating new green spaces:** Pocket Parks Regenerating brownfield sites Accessible green roofs	**Infrastructure for travel and connectivity:** Green corridors Cycling networks Canal paths and walking routes Public transport	**Enhancing existing spaces:** Active management of spaces Preserving heritage Improving biodiversity	**Re-purposing space & enhancing existing spaces:** Multi-functional green spaces Inclusion of facilities for target cohorts	**Greening space:** Urban tree planting Green buildings Eco-restoration

The following sections provide more detail on examples from Europe and the UK that address the barriers and challenges to accessing green space.

Creating, repurposing, and regenerating spaces

Creating new spaces where possible or re-purposing existing spaces can address barriers of both proximity and population pressure on green space. The following examples show the importance of design when creating inclusive green spaces.

Superkilen, Copenhagen[29]

The Superkilen is an urban park that cuts through one of the most multi-cultural neighbourhoods in Copenhagen. The City Council of Copenhagen introduced a programme for urban renewal that promotes social integration through the design of the public space. The project was designed by architectural firms with the aim of creating an inclusive space. As part of the design, elements and objects from different countries were integrated into the design to represent the different cultures of the local residents, such as palm trees from China, Armenian picnic tables, benches from Brazil and swings from Iraq. The park is made up of three zones: green park (for children and play), red square and black market. The park is part of a network of bike paths and green spaces that connect two districts with one another, facilitating cycling into the area and integrating with a wider cycling and walking network. While the SuperKilen is strongly driven by contemporary architecture practice and promoting integration across communities, it provides an example of an inclusive space created for all ethnicities, cultures and religions.

Derbyshire Street Pocket Park, London Borough of Tower Hamlets[30]

Pocket parks are locally identified, smaller areas of green space that can help individuals escape the busyness of the city. In London, 100 pocket parks have been created for all people to enjoy. Each pocket park is unique and should be designed taking into account the needs and constraints in a particular area.

Pocket parks could address many of the barriers / challenges to green space access if planned well. The Pocket Park programme[31] was used to create sustainable drainage systems (ensuring surface water naturally drains away) and demonstrate how they can be implemented in the urban environment as well as creating a useable, accessible green space. The Derbyshire Street pocket park addressed a few of the core components in our intersectional framework:

- **Accessibility.** The pocket park is located at the end of Derbyshire street in east London, primarily used for parking but with motorists avoiding the space due to being a 'dead end'. A new path and cycle lane was put in place to link the back of the street to another – with the aim of making a connected path. Cycle storage facilities were also built-in, to enable people to park their bikes. Raised kerbs around the garden were built-in to help with accessibility for partially sighted users.

- **Amenity.** This is a multi-functional space that includes a seating area and space for community events and activities. Sustainable drainage systems were put in place, mitigating local flood risk. In the summer, the planted areas are maintained by local volunteers. Bins were also integrated into the design to avoid littering. The space was well lit at night enabling use at any time of the day.

- **Quality.** While there is no evidence around perceived quality for local residents, it is clear that the space aimed to enhance biodiversity. Green roof bike and bin shelters were created with habitat panels that provide nesting sites for bees, insects and birds. The area itself was near tall trees and native plant species were planted.

Other potential additional benefits from a space like this could be reduced fly-tipping (if highlighted as a hot spot for it) and reduced anti-social behaviour. However, it is not clear to what extent the pocket park achieved this.

Infrastructure for travel and connectivity

In order to enable greater access to green spaces, places have to be well-connected. While connectivity is typically context specific, there are some examples of large scale projects to improve usability of transport infrastructures and encouraging use of more sustainable methods of travel.

Bee Network, Greater Manchester[32]

The Bee Network is the longest planned walking and cycling network in the UK, connecting every neighbourhood in Manchester. In order to encourage more walking and cycling in the city, the network aims to have safer streets and junctions as well as create more innovative designs. For example, improving road surfaces and planting trees. The Bee Network is based on a set of design standards, such as ensuring two pushchairs can fit on a walking

path and people of any age would choose to use cycling paths. The new standards and ways of working involved a training programme for ten local authorities and community engagement. Neighbourhood Network Planning sessions were held and Greater Manchester has built on best practice to increase the speed of development of the network. Transport for Greater Manchester has produced a best practice consultation guide.

A framework called “Streets for All”, with several indicators and factors is used to check the standards of the Bee Network design and plans, and are used to provide an overall score of quality. Factors include; inclusivity, integration, health, environmentally responsible, safe and secure, reliable and well maintained and resilient. Indicators that sit under these are components relating to movement and place such as ‘attractiveness’ and ‘diversity / mix of uses’.

Green Corridor (Passeig de Sant Joan), Barcelona

Green corridors are green infrastructure, such as trees and flowers, that link green spaces to one another. The networks provide connectivity for wildlife as well as the public. Passeig de Sant Joan is an urban green corridor aimed at increasing ecological and social connectivity in Barcelona. The key aims were to prioritise pedestrian use of the corridor as well as create a ‘green zone’ extending up to Ciutadella Park.[33] The project involved development of a larger pedestrian path, planting new trees and preservation of existing trees. A new two way bicycle lane was also put in. The intervention created greater ecological and physical connectivity across urban and green sites whilst increasing the amount of green open spaces for residents.[34]

Greening space

The wellbeing generated by an urban space can be enhanced through attention to the ‘greenness’ of the urban experience’. Around the world, the creation of “living” walls on facades and roofs is growing in popularity.

South Lambeth Road, Vauxhall[35]

The aim of the “living wall” was to create a safer space that improve air quality as well as improving visual aesthetic of the space. Local businesses came together in order to create a cleaner and greener space in the area.

Gold Lane, Edgeware[36]

The project on Gold Lane in Edgeware was the first of its type in London. Notting Hill Housing Group aimed to generate environmental benefits from their social housing by introducing green roofs. The project improved building aesthetics as well as reducing surface water run-off. Residents of the green roofed housing noted that they don’t often turn their heating on and their children enjoy the insects attracted to the area such as butterflies and bees.

Enhancing existing spaces

In addition to creating new spaces for people to use, there is benefit in improving existing spaces. The two examples below provide projects of different scale aiming to improve access to green space – changes can be as little as removing litter and putting up signage to inclusion of new facilities such as outdoor gyms and toilets.

Woods In and Around Town programme, Scotland[37]

The Woods In and Around Town (WIAT) programme aims to tackle challenges from accessing urban woodlands and promotes them as safe and accessible spaces in Scotland through a Forestry Grant Scheme. The programme focuses on areas of high social deprivation that are within 1km of the woods and have a population of over 2,000 people. Its objectives are to:

1. Bring Urban Woodlands into active management to benefit communities
2. Create new urban woodlands to benefit communities
3. Support programme and activities that encourage people to use the woods

The WIAT programme clears rubbish and signs of vandalism as well as improving foot paths, signage and entrance gateways. It's not clear what specific intervention activities were carried out in this case however, there were significant changes as a result. The level of funding and intervention is dependent on context and need in local areas. The WIAT programme addresses the component **quality** and **accessibility.** A delivery framework was created and WIAT was delivered through a range of approaches including, public engagement plans and monitoring and evaluation, promoting quality standards and collaborating with partners to achieve objectives. An evaluation of the programme in a deprived community in North Glasgow found a highly significant change in satisfaction of physical environment in the neighbourhood in comparison to a similar area with no intervention as well as increased visits to the local woodlands in the intervention community.[38]

Saughton Park restoration project, Scotland[39]

The Saughton Park restoration project secured grant funding in 2013 to develop master plan proposals for the restoration with input from local residents using public consultation and engagement. The project was awarded further funding and is now in its construction phase.

The purpose of the restoration project is to improve the use of the park by the public and enhance and preserve the historic nature and value of the site. The project sets out to restore the park and addresses core indicators for accessing green space:

- **Accessibility.** An objective of the restoration project is to create a welcoming park for all. The design aims to improve access and physical connections to and within the park. New paths and routes for cyclists and pedestrians have been planned. The plan also aims to improve disabled parking facilities and restore/install benches and signage. The project specifically hopes to appeal to specific target groups such as; younger children and family groups & carers, over 60's and visitors with disabilities. More about what is planned to encourage these cohorts is detailed in the following point.

- **Amenity.** Plans are in place to create new facilities for the public such as a new café and public toilets. For children, the design sets out to provide a dog free area of a play park for children run around in. Other additions include outdoor gym equipment, a band stand and restoring and preserving heritage sights as community venues. Sustainable energy use has also been considered in design plans, such as installing low carbon systems (e.g. ground source heating system and solar panels).
- **Quality.** There are plans to improve layout, promote horticulture by actively managing trees, woodlands, hedges and flower beds. Biodiversity will be enhanced by planting new fruit and trees, and installing bee hives to help pollination.

There were several stages to implementation and a lot of work put in at the planning and design stage. A survey of both visitors and local residents was undertaken to inform the proposed development of the park. These were undertaken both face-to-face at the park and local community centres, and online.

Challenges to consider

While there are many UK and European examples of re-purposing and enhancing green spaces, the case studies suggest that addressing local context and engaging with local residents is a key component of design. It is important that inclusivity is a priority when considering the design of green spaces and the possible implications and trade-offs. For instance, a potential implication of enhancing or creating a new green space is gentrification. Green spaces may increase house prices which could cause displacement in lower income groups by those with higher income.[40] Another implication of a new green space is increased tourism and therefore greater population density in the green space.[41]

Prior to the design stage, the development, regeneration, and management of green space in the UK faces a myriad of political, funding, governance and regulatory challenges. Budget and capacity constraints across local authorities often lead to local authorities taking, or being forced to accept, short-term approaches.[42] A product of this environment has been the rise in recent years of the so-called ‘fleecehold’ approach to management, in which developers set up private management companies which charge a levy on local residents (above and beyond their council tax) for the management of their local parkland.[43] The loss of stewardship of green spaces represents a threat to local authorities’ ability to deliver green space enhancement in the public interest.

The same challenging planning environment often limits the opportunity for creation of new public green spaces as green space is pitted against other social goods in competition for an all-too-small pot of funds. With pressure on local authority finances ramped up further by the Covid-19 crisis and the Government’s response, and an economic crisis under way, the challenges local authorities face are only growing.

Nonetheless as Coronavirus exposes the inequity in access to good quality green space, and the climate and ecological crisis escalates, a significant opportunity arises. WMCA is in an ideal position to support local authorities to seize this moment, and indeed to capitalise on renewed central government interest in green investment.

Organisational structures vary across local authorities, introduction or improvement of green infrastructure may sit across many departments in a council and the management of spaces could also include a number of bodies (e.g. partnerships across councils, with charities or

with contractors). Co-ordinated and concerted action is needed. Local authorities require support to ensure they have strategic oversight as well as democratic influence or control over the management of green spaces.[44] Support in the evidencing of the diverse social, environmental and economic benefits of green space investment can also be useful, and a catalyst for cross-departmental and thematic integration. Finally, local authorities must be adequately financed to scale-up delivery of new and improved green space and nature.

RECOMMENDATIONS

This report has explored accessibility and provision of green space across WMCA and provided examples of ways that local authorities can consider improving their green spaces. The analysis carried out focuses primarily on the relationship between physical and socioeconomic barriers to accessing green spaces such as proximity, population density and deprivation. While the spatial analysis at this stage is exploratory, there are several suggestions for moving to delivery of new and improved green spaces. A combination of ideas drawn from WMCA, the exploratory analysis and case study examples for implementing interventions for hotspot areas are detailed below:

1. **Creating a West Midlands Green Spaces Taskforce.** It is important that a strategic approach is taken and co-ordinated by a group of representatives from the local authorities involved. The group should include or ensure the involvement of individuals from a variety of departments such as public health, transport, and cultural services to enable a holistic approach to improving green spaces. It would act as a facilitator for the recommendations below.

2. **Building on the evidence base to prioritise 'hotspot' areas.** The WMCA area appears to contain significant intersectional inequality in green space provision. Further research should be carried out to identify the relationship between green space, socioeconomic characteristics and physical barriers to accessing green space.

3. **Involving residents.** Whilst the exploratory analysis has identified certain 'hotspots', qualitative evidence gathered from residents will enable WMCA to dig deeper into the issues highlighted by the data, and confirm where the highest need is and *why*. It is important that residents are consulted at each stage of the process, from planning and design through to implementation, to ensure the interventions are fit for purpose.

4. **Data sharing platform and/or designated data officers.** A platform or designated data officers from local authorities would ensure consistent data collection, and the sharing and monitoring of data. This would inform the evidence base as well as ensuring that data provided from local authorities is of the same standard and level of detail.

5. **Capacity building and sharing best practice.** Local authorities should share best practice with one another and build on the learnings shared from other local authorities. They should set out key ways of working to enable greater collaboration as well as effectiveness and efficiency. This has been done in Greater Manchester as part of the Bee Network.

6. **A Community Green Grant Fund targeting 'hotspot' areas.** After building on the evidence, an immediate solution for specific neighbourhoods is the delivery of a community green grant fund programme. This would enable WMCA to improve access to green space and tailor interventions to local context. Ambition and funding should be set as high as is feasibly possible, commensurate with the scale of both the climate and ecological crisis, and the deficit in green space provision highlighted across the WMCA area.

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Birmingham & Black Country Local Nature Partnership

Warwickshire Coventry & Solihull Local Nature Partnership

Green transformation of the West Midlands

The Local Nature Partnerships' proposal towards a Local Nature Recovery Strategy

The Local Nature Partnerships[1] of the West Midlands Combined Authority area are committed to working with the WMCA to deliver a green transformation which helps address the global climate and ecological emergencies. Creating a healthy and resilient environment through targeted and evidence-based investment in nature-based solutions and green infrastructure will help reverse biodiversity decline whilst tackling poor air quality, pollution, flooding and overheating in urban areas; providing access to high quality green space for all will deliver improvements to the health and wellbeing of our communities; investing in training and job creation for the next generation of green sector professionals will support a post-COVID-19 recovery.

The West Midlands Industrial Strategy (2019) commits '*to developing a long-term plan for Natural Capital and to the principle of an annual net gain for natural capital, developing the tools that enable us to work towards reversing the current trend in biodiversity loss*'. The WMCA Climate Action Plan WM2041 (2020) proposes to deliver a Natural Capital Investment Strategy and Delivery Programme within the first five-year plan. The LNPs' proposal sets out how we believe these ambitions can be achieved through a partnership which brings together the regional organisations best placed to lead and inform a green transformation, developing and delivering a WMCA Local Nature Recovery Strategy[2].

Natural capital refers to the elements of the natural environment which provide valuable goods and services to people. For example, a woodland can be regarded as a natural capital asset, from which flows valuable benefits, or ecosystem services, such as flood risk reduction and carbon capture. Natural capital is composed of many assets, including soils, wetlands and urban greenspaces, whilst the ecosystem services they provide include improved human health, pollination by insects of our food crops and biodiversity. Nature-based solutions refers to the sustainable planning, management and use of natural capital to maximise the ecosystem services that tackle the challenges that society faces.

The Local Nature Partnerships' proposal

Strategic planning and investment must be based on sound evidence in order to achieve the greatest social, economic and environmental benefits from natural capital assets. Our proposal is to provide a digital (map-based) resource that decision makers can utilise. A maintained 'live' online portal will provide planners, developers, agencies, health providers, farmers and others with the information they need to help them understand how transport, housing, employment, health and agricultural decisions can be maximised to deliver a range of socio-environmental benefits. These informed decisions will contribute to achieving the long-term Local Nature Recovery Vision and Strategy. The portal will update mapped data to reflect changes to the environment which the LNPs will report directly to the WMCA Environment Board, enabling the WMCA to monitor and report publicly on both the positive and negative impacts of actions.

Examples of how the portal will help plan natural capital investment and deliver ecosystem benefits include:

- Target tree planting where it will best mitigate the impacts of climate change on flooding, air quality and biodiversity.
- Identify deficits and investment opportunities for accessible natural green space to deliver health and wellbeing benefits for those communities in most need.
- Provide guidance on urban green infrastructure needs, supporting investment in the regeneration of town centres as desirable residential, leisure and hospitality locations.

Where are we now?

There have been recent investments in developing an ecological baseline for the WMCA area which has provided an important step towards understanding the current state of the area's natural assets. Further development of these data is underway:

In 2019 EcoRecord and the Habitat Biodiversity Audit (HBA)[3], with support from the WMCA, developed an approach to the use of satellite imagery which enabled the creation of a comprehensive habitat map for the WMCA area. The Wildlife Trust for Birmingham and the Black Country and EcoRecord have been commissioned by the Black Country local planning authorities and Birmingham City Council to produce a Local Nature Recovery map and, in the Black Country, an investment Opportunities Map and Statement of Biodiversity Priorities. This work is due to be completed in spring 2021 and will form the basis for the development of the WMCA-wide Local Nature Recovery Strategy.

Next steps

We propose a series of actions which the LNPs and Wildlife Trust teams would deliver in phases to the WMCA as financed projects. WMCA would benefit from the development work already undertaken by LNP partners outlined above.

1. Collation of existing evidence and identification of additional data requirements.
2. Generation of additional WMCA-wide data including natural capital assets (habitats).
3. Ecosystems Services Assessment – utilising the data to understand the services provided by the current assets and identifying locations where there are 'deficits'.
4. Natural Capital Valuation – calculating the financial value of the ecosystem services that the assets currently provide.
5. WMCA Green Transformation Vision – a collaborative exercise undertaken with stakeholders and potential investors.
6. Identification of opportunities (locations and types) where natural capital investment will achieve the greatest socio-environmental impact.
7. Identification of natural capital investment routes and mechanisms including Biodiversity Net Gain, agricultural environment schemes and flood-risk management funds.
8. Local Nature Recovery Network Strategy – production of a written strategy, working collaboratively with partners, which details how the vision will be achieved including outcomes, opportunities and investment mechanisms.
9. Development of a web-based tool (map portal) to host and make available the data, vision and strategy.

Background context

[1.] Local Nature Partnerships (LNPs):

Local Nature Partnerships (LNPs) are non-legal partnerships established as a key Natural Environment White Paper commitment (2010). Defra set out their vision of the role of LNPs in 2012:

The ambition for LNPs is that they will help their local area to manage the natural environment as a system and to embed its value in local decisions for the benefit of nature, people and the economy. To do this effectively they will need to be self-sustaining strategic partnerships of a broad range of local organisations, businesses and people with the credibility to work with, and influence, other local strategic decision makers.

In 2012 an amendment to the Town and Country Planning Regulations (Local Planning) gave LNPs a role in cross-boundary strategic planning - technically that '*bodies bound by the Duty to Co-operate should*

cooperate with and have regard to the views of Local Nature Partnerships in the planning of sustainable development'

LNPs are recognised in the National Planning Policy Framework in the section Maintaining Effective Cooperation: '*Local planning authorities and county councils (in two-tier areas) are under a duty to cooperate with each other, and with other prescribed bodies, on strategic matters that cross administrative boundaries*. *Strategic policy-making authorities should collaborate to identify the relevant strategic matters which they need to address in their plans. They should also engage with their local communities and relevant bodies including Local Enterprise Partnerships, Local Nature Partnerships…elected Mayors and combined authorities (in cases where Mayors or combined authorities do not have plan-making powers)*'.

Birmingham and the Black Country LNP

The Birmingham and the Black Country (B&BC) LNP was recognised by the government in 2012, with a vision '*To restore a sustainable natural environment that plays an essential role in creating a vibrant, healthy and prosperous Birmingham and Black Country*', achieving this by '…*providing a single voice for the natural environment at a strategic level, representing the sub-region's perspective to national and local decision makers*'.

Warwickshire, Coventry and Solihull LNP

The Warwickshire, Coventry and Solihull (WCS) LNP was recognised by the government in 2012, with a vision that *'Our high quality environment is valued across all sectors of Warwickshire, Coventry and Solihull as being an essential part of a thriving economy, a vibrant society and a healthy future. The Warwickshire, Coventry and Solihull LNP will promote and co-ordinate action to radically improve the natural environment and ensure that it is valued across society.'*

The Wildlife Trust for Birmingham & the Black Country (WTBBC) and Warwickshire Wildlife Trust (WWT) provide secretariat function to the respective LNPs.

[2.] Local Nature Recovery Strategy (LNRS):

The overarching ambition of the Defra 25 Year Environmental Plan is to 'leave our environment in a better state than we found it and to pass on to the next generation a natural environment protected and enhanced for the future' (Defra, 2018). The plan highlights a number of key areas for action, one being to establish a Nature Recovery Network which will ensure resilient and coherent habitat networks for species, landscapes and ecosystems that provides wider benefits and value for people and helps to tackle climate change.

The Environment Bill will mean local areas will need a Local Nature Recovery Strategy to bring a broad range of groups together to deliver priorities for nature recovery at a local and national level, driving the delivery of a National Nature Recovery Network.

[3]EcoRecord and Habitat Biodiversity Audit (HBA):

EcoRecord is the Local Environmental Records Centre (LERC) for Birmingham and the Black Country and is hosted by the Wildlife Trust for Birmingham and the Black Country. The Habitat Biodiversity Audit, which covers Warwickshire, Coventry and Solihull, is an innovative project providing an unrivalled picture of detailed habitat mapping which has underpinned informed decision making on spatial planning for over two decades. The HBA Team and Partnership are managed by Warwickshire Wildlife Trust, and the team is hosted by Warwickshire County Council and links with Warwickshire Biological Records Centre.

EcoRecord and the Warwickshire Habitat Biodiversity Audit play a critical role in supporting the delivery of government policy in relation to Natural Capital, Local Nature Recovery Strategies and Biodiversity Net Gain by maintaining and developing local data infrastructure.

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