



Investing in a Greener Greater Manchester

A nature-based
solutions
investment
guide for local
authorities



The Prince's
Responsible
Business Network

GMCA GREATER
MANCHESTER
COMBINED
AUTHORITY



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Executive Summary

To tackle the climate and ecological emergency and adapt to its impacts, we must invest in nature. Currently the UK is one of the most nature-depleted countries in the world, with high rates of urbanisation and increasingly deregulated planning processes further exacerbating this.¹ Around 85% of the UK’s population already live and work in urban environments, and this is only increasing.² If we do not work with nature to effectively adapt our built environments, our communities will face increased risk of flooding, heat stress, and poor health and wellbeing.

Local authorities across the UK have begun to invest in nature in innovative ways, but this must now be accelerated to a larger scale, embedded in normal operational practice, and supported by other stakeholders. This guide highlights how nature-based solutions can be harnessed to address strategic goals, taking a comprehensive deep-dive into the opportunities for restructuring public sector-led investment in nature through both internal and external investment opportunities.

A huge range of citizen, local authority, and nature-based solutions research from the IGNITION project and beyond underpins this guide, which pulls together the environmental, financial, and social drivers for investing in nature-based solutions. This holistic view helps to advance understandings of the value that local authorities and other key stakeholders can gain through prioritising and delivering nature-based solutions. Whilst some IGNITION research was completed within Greater Manchester, the findings remain relevant and replicable across the UK.

Accelerating local authority investment in nature can have vastly positive impacts when the scale of their assets and influence are considered. To maximise the potential of local authorities to take nature-based investment to the levels that both the planet and our communities require, we recommend the following:

Key recommendations

Share knowledge and expertise

Local authorities should continue to share knowledge and expertise, turning individual innovations into a collective advantage for the region.

Establish dedicated champions

Local authorities should work to establish a dedicated nature-based solutions champion at a senior policy level who can command the necessary resources to make things happen.

Trial and evaluate innovative financial models

Innovative financial models should be increasingly trialled and evaluated, to compliment and bolster local authority investment.

Recognise nature-based solutions

Nature-based solutions should be recognised and embedded as critical forms of infrastructure that link strategic objectives, both locally and regionally.

Use IGNITION’s Evidence Base

Local authorities should use IGNITION’s Evidence Base to support the business case for greater public sector-led investment in nature-based solutions.

Embed clear definitions

Clear definitions of what nature-based solutions are, why they are important, and how they can be implemented must be embedded within local authorities, across stakeholder networks, and amongst communities.

Engage communities

Communities should be increasingly engaged as a resource and asset that can support the delivery and maintenance of nature-based solutions.

Develop and deliver climate and biodiversity action plans

Nationally, all local authorities should develop and deliver strategic climate and biodiversity action plans that prioritise the use of nature-based solutions for resilience.

Direct funds towards nature

Local authorities should increasingly direct planning obligations and developer contributions towards nature-based solutions, where they deliver multifunctional benefits simultaneously.

Adopt a ‘nature-first’ approach

Internal teams and departments within authorities (local and combined) should adopt a ‘nature-first’ approach in decision-making, embedding nature-based solutions as business-as-usual.

Prepare for the Environment Bill

Greater Manchester local authorities should continue to prepare for the implications of the Environment Bill, by progressing the work of the Green City Region Partnership, in line with the ambitions of the Greater Manchester 5 Year Environment Plan.

Introduction

The last decade has seen an overwhelming decline in the funding of local authorities (LAs) from central government whilst, simultaneously, their civic responsibilities have remained the same or have even increased.^{3, 4, 5} This has reduced the capacity of many LAs to deliver public services, threatening those without a statutory remit.^{6, 7} In the absence of a formal mandate and dedicated funding, our urban greenspaces are particularly vulnerable to changing budgets and shifts in government policy.⁸

Critically, as the capacity of LAs to maintain or enhance their natural assets has been reduced, the need for nature-based solutions (NBS) to the growing climate and ecological crises has increased. Whilst some LAs have responded to this with innovative policymaking and collaborative project delivery, investment in NBS is still sporadic and its long-term security remains ambiguous.⁹

Recognising the increasingly stretched and limited capacity of LAs to deliver their public services, NBS can link policy agendas and deliver multifunctional benefits simultaneously. NBS can also provide resilience to the growing risks of climate change, enhance biodiversity, and improve the health and wellbeing of communities.¹⁰

A greater understanding of NBS within decision-making, policymaking, planning processes, development projects and management practices will support LAs to act on their climate emergency pledges;¹¹ encouraging a green post-COVID recovery and delivering a liveable and resilient environment for their communities.¹² Tackling these issues simultaneously provides an opportunity for LAs to deliver on their climate commitments whilst minimising both financial and physical risks.^{13, 14}

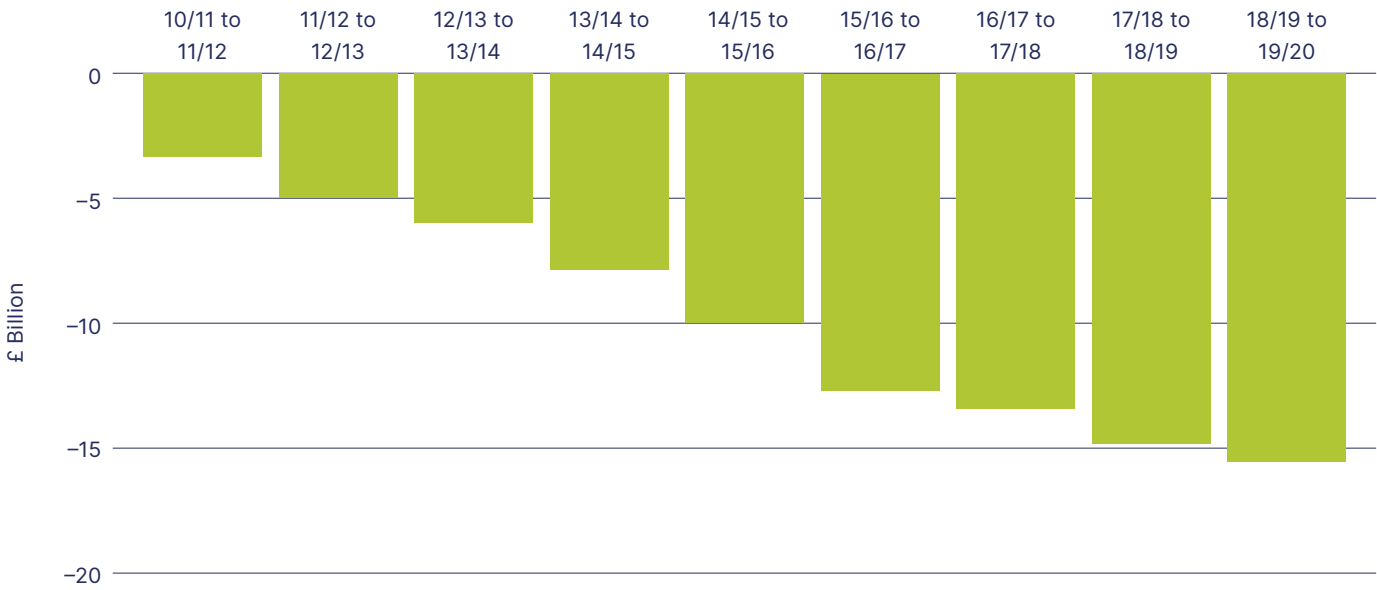
What are nature-based solutions?

Nature-based solutions are interventions that address the climate crisis by using nature to help communities build resilience to extreme weather events and other impacts of climate change. These solutions can include planting street trees and installing green roofs in urban areas to reduce flood risk and heat stress.

Between 2010–2020, councils lost 60p out of every £1 provided by central government



Reduction in core government funding 2010–2020¹⁵



Combining data from extensive citizen and LA engagement, and innovative research into NBS funding mechanisms, this guide will outline both internal opportunities (between LA departments) and external opportunities (across sectors and amongst communities) for innovation that can enhance the delivery and long-term security of NBS across the GM region and beyond.

Insights from GM citizens highlight the integral role of parks and greenspaces; reinforcing their position as a critical form of infrastructure that is essential for the health and wellbeing of both our ecosystems and communities. Additional comments from LA officers demonstrate a broad understanding of the benefits that urban NBS can deliver to the region, whilst also highlighting where further progress can be made.

This guide will present a range of innovative investment and management opportunities, demonstrating both the benefits and the feasibility of large scale, public-sector-led NBS delivery.



The Evidence

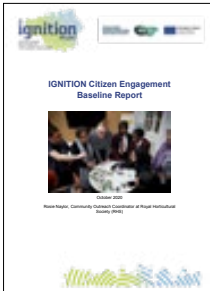
This guide combines the findings of three engagement initiatives undertaken across the GM region, as well the innovative NBS funding research conducted as part of the IGNITION project.

The citizen and LA engagement undertaken between October 2019 – December 2020 obtained valuable insights into how public attitudes towards parks and greenspaces have developed since national lockdowns have been enforced. Collating over 5,000 responses from across these three datasets (see Table 1, page 11), we have developed a comprehensive outline of both citizen and LA perspectives, priorities, and practices in relation to NBS.

The IGNITION NBS Evidence Base pulls together extensive available evidence into an open-source live repository of knowledge on NBS performance. This research was undertaken by the Greater Manchester Combined Authority (GMCA) and Business in the Community (BITC), compiling over 1,000 evidence items. The Evidence Base will continue to grow as further evidence in support of NBS is uncovered.

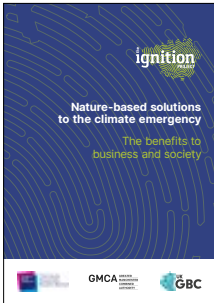
Looking across this research we have identified areas that either require or can help foster innovative approaches to NBS management and/or implementation.

Supporting Research



Citizen and LA engagement, including:

- Citizen Engagement Baseline Report¹⁶
- GM Parks User Survey
- GM LA NBS Workshop



NBS funding innovation, including:

- [IGNITION Nature-Based Solutions Evidence Base](#)
- [Nature-based solutions to the climate emergency: the benefits to business and society report](#)
- Ongoing IGNITION project research into innovative financing for NBS

Table 1: Overview of research processes

Research Project	Coordinating Partners	Project Timeline	Total Number of Responses
Citizen Engagement Baseline Report (Citizens Survey) ¹⁷	Royal Horticultural Society, City of Trees, Groundwork	November 2019 – January 2020	2,808
Greater Manchester Parks User Survey	Royal Horticultural Society, Salford City Council, Greater Manchester Combined Authority	July – October 2020	2,184
Greater Manchester Local Authority NBS Workshop ¹⁸	UK Green Building Council, Business in the Community	2 nd December 2020	132

Citizens Survey

The Citizen Engagement Baseline Report or ‘Citizens Survey’ was carried out collaboratively by the Royal Horticultural Society (RHS), City of Trees and Groundwork Greater Manchester. Across a three-month period, 2,065 survey responses were collected, and an additional 743 participants were engaged in 50 workshops delivered to 31 citizen groups across GM. A breakdown of both the survey and workshop demographics are outlined in Tables 2 and 3 below.

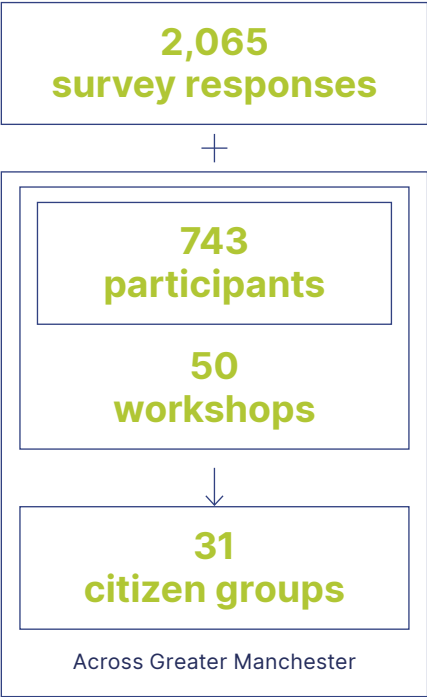
Throughout this engagement, respondents were asked if they were associated with the environmental sector, in order to gauge both the level of interaction with environmental or ‘green’ activities, and to assess levels of understanding across those groups.

Findings from the Citizens Survey suggest that GM residents appreciate the function and value of parks and greenspaces at individual and community scales, particularly regarding the provision of health, wellbeing, and wildlife benefits, and the mitigation of risks (principally flooding).

There was, however, less understanding regarding the more technical NBS interventions (e.g., green roofs, walls, and street trees) and more abstract benefits, such as urban cooling. Identifying these gaps in understanding highlights where further engagement and awareness raising activities should be targeted, to maximise buy-in for NBS from residents.

To effectively engage citizens in the upscaling and management of NBS within the city region, a clearer understanding of what NBS *are* and what they *do* is essential.

Across a 3-month period:



Association with environmental or green sector organisations	Response ¹⁹	
	Yes	No
I work in the environmental/ green sector	304	1,623
I am studying a course relating to the environment	68	1,757
I am an environmental/ green sector volunteer	325	1,564
I am a member of an environmental/green association, group or organisation	562	1,375

Table 3: Breakdown of Citizens Survey workshop audience and number of participants

Target audience	Number of participants ²⁰	
Children and young people	17/31 groups were specifically for children and young people 55%	552/743 participants were members of groups specifically for children and young people 74%
Groups based in Manchester City and Salford	20/31 groups were predominantly for Manchester or Salford residents 65%	390/743 participants were members of groups specifically for Manchester or Salford residents 52%
Balance of groups engaged in 'green activities' and groups not engaged in green activities	10/31 groups were engaged in green activities 32%	332/743 participants were members of groups engaged in green activities 45%

Greater Manchester Parks User Survey

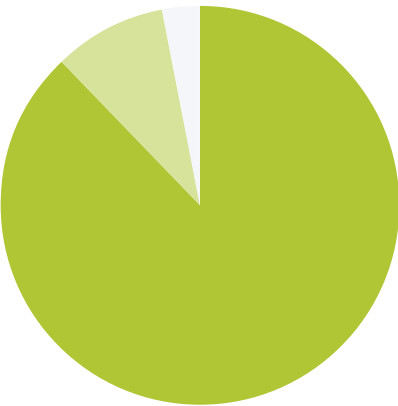
Expanding on this baseline data, the GM Parks User Survey outlines public attitudes towards parks and greenspaces amidst the COVID-19 pandemic. The GM Parks User Survey was undertaken between July and October 2020, and was coordinated by RHS, Salford City Council (SCC) and the Greater Manchester Combined Authority (GMCA).

The GM Parks User Survey data provides insights into the role and importance of GM’s parks and greenspaces to its communities. It identifies where the responsibility of their upkeep and improvement is perceived to lie, outlines the level of public willingness to support investment in parks and greenspaces across the region, and specifies the preferred types of projects that are supported. The GM Parks User Survey data found that:

- 97% of people felt that being able to access parks and greenspaces during COVID restrictions was very important (87%) or important (9%).
- 67% of people valued parks and greenspaces more (28%) or much more (39%) than before COVID.
- 62% of people visited parks and greenspaces more (31%) or much more (31%) than before COVID.
- 84% of respondents visited public parks and greenspaces at least once a week (21% are visiting public parks or greenspaces every day; 45% multiple times per week and 19% who visit once a week).
- 92% of respondents stated that they will continue to visit public parks and greenspaces at this frequency even after the COVID restrictions have been lifted.

The responses demonstrate a growing appreciation for the region’s parks and greenspaces by residents across GM, presenting a quantifiable incentive for LAs to ensure their protection and/or enhancement.

97% felt that access to parks and greenspaces during COVID restrictions was important



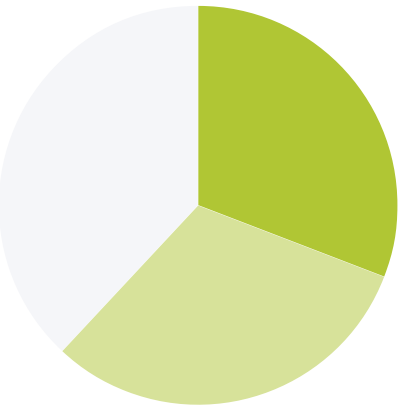
very important 87%
important 9%

67% valued parks and greenspaces:



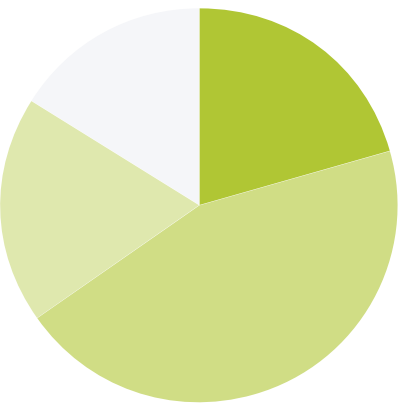
more 28%
much more 39%

62% visited parks and greenspaces:



more 31%
much more 31%

84% visited public parks and greenspaces at least once a week



every day 21%
multiple times / week 45%
once a week 19%

92% will continue to visit public parks and greenspaces at this frequency



Used effectively, this enhanced appreciation of urban greenspaces could drive community action that supports NBS delivery and maintenance, both in parks themselves and within broader intervention areas. Such action could be targeted where potential benefits are greatest (e.g., in areas where existing access to nature is limited or where communities are particularly vulnerable) or where the risks to people and place are most prominent (e.g., flood risk areas, heat island hotspots or air quality management areas).²¹

Translating this increase in appreciation for parks and greenspaces into tangible delivery of NBS will require continued community consultation, as well as sustained collaboration between LAs, third sector advocates, and potential private investors. To use the Citizens Survey and GM Parks User Survey data effectively, LAs will need to further consider the opportunities and challenges that influence NBS investment across internal teams and departments.

Greater Manchester Local Authority NBS Workshop

The LA NBS Workshop was held virtually and brought together officers from across the ten LA districts of GM to collectively address questions related to the role, function, and future delivery of NBS across the region. Participants were tasked with answering three key questions. The answers were then thematically analysed and the key themes identified are outlined in Table 4.²²

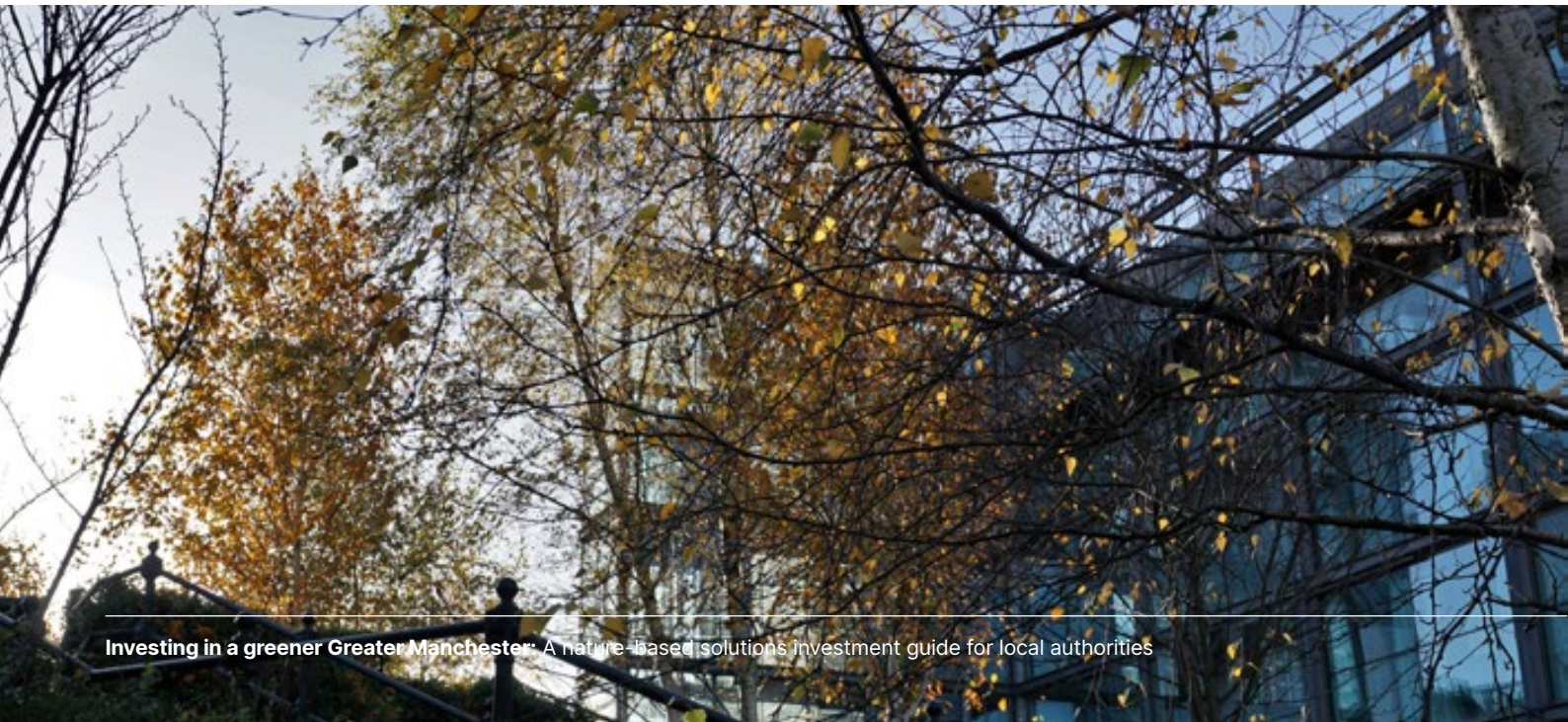


Table 4: LA Workshop questions and emergent themes

Question	Number of responses	Key themes identified
What local authority priorities do/could Nature-based Solutions satisfy, and how?	<div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div></div> <div>56</div>	<ul style="list-style-type: none">Flood risk and water qualityTargets and policiesHealth and wellbeingLiveable and sustainable communitiesBiodiversityActive/green travelManagement and maintenanceClimate adaptation and resilienceImproving existing Green InfrastructureSustainable development
What support would be useful to help make using Nature-based Solutions the ‘new normal’?	<div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div></div> <div>48</div>	<ul style="list-style-type: none">Financial supportEducation and trainingStandards and requirementsPolitical supportCase studiesPolicyCitizen engagementCollaboration
To further the funding of Nature-based Solutions within local authorities who do we need to engage, and how can the IGNITION project help encourage local authorities to look at co-investment in green spaces?	<div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div></div> <div>28</div>	<ul style="list-style-type: none">Internal teams and departmentsCommunitiesExternal organisationsUtilities companiesCentral governmentTaxationLinking agendasInnovative parks investmentInnovative management practices

IGNITION NBS Evidence Base

To establish funding models for NBS, the IGNITION project undertook a mass-collation of evidence for five urban NBS across twelve environmental, social, and economic benefits. The initial collation gathered over 1,000 individual academic articles and studies, to provide a foundation of quantifiable evidence to identify how NBS perform and who they benefit. This Evidence Base has been used across the IGNITION project and within the wider NBS sector to gain a greater understanding of the strengths and weaknesses of NBS.

This base of knowledge, and the gaps identified within it, are informing the research carried out by the University of Salford’s NBS Living Lab as part of the IGNITION project. The NBS covered were green roofs, green walls, sustainable drainage systems (SuDS), urban parks and green spaces, and street trees. The breadth of research compiled demonstrates the economic, social, and environmental drivers for investing in NBS and show that, when all benefits are considered together, the payback of NBS far surpasses their non-green alternatives.

The full NBS Evidence Base is available [here](#), along with a guide on how to use the data and the current data summaries. The [Nature-based solutions to the climate emergency: the benefits to business and society report](#) translates this vast amount of data into an accessible report, co-authored by UKGBC, BITC, and GMCA.

Evidence Summary

When considered together, the results of the Citizens Survey, the GM Parks User Survey, the LA NBS Workshop, and the NBS Evidence Base highlight a range of new and existing ways that NBS can be effectively considered within LA decision-making, policies, and practices to enhance public sector investor confidence and increase NBS delivery.

Broadly, the Citizens Survey and GM Parks User Survey show the citizen demand for greater investment in the region’s natural capital. These findings build on the case for investment

What is natural capital?

Natural capital is considered as ‘stocks’ of natural assets including geology, soil, air, water, and all living things. These elements provide value, benefits, and services to people and places.

Nature-based Solutions		Benefits
	Green walls	 Air quality
	Green roofs	 Carbon storage and sequestration
	Urban green spaces, parks and vegetation	 Water quantity and quality
	Street trees and SuDs-enabled street trees.	 Temperature
	Sustainable drainage systems (SUDS)	 Energy use
		 Noise
		 Land and property value
		 Amenity
		 Biodiversity
		 Local economic growth

in NBS made by the Evidence Base, and outline where and how LA action towards NBS implementation and management should be taken.

The Citizens Survey shows that a clearer understanding of NBS is needed to maximise the opportunity for further engagement with GM residents. Clear language and effective communication of the role, function, and different types of NBS should be considered in future community engagement activities.

The GM Parks User Survey highlights how much GM citizens value the region's green spaces at a personal level, and indicates willingness to pay towards their upkeep and enhancement. This research can help inform LAs on the potential of community-led funding mechanisms.

Alongside this community perspective, the LA NBS Workshop data reflects current LA thinking with regards to NBS. The LA NBS Workshop data highlights where city officers feel they could benefit from greater support, and outlines what they believe the current and future opportunities for NBS investment to be.

Underpinning this research, the NBS Evidence Base provides a wealth of evidence that supports the case for NBS implementation. The data can be used to inform future LA decision-making and bolster dissemination and engagement campaigns. The evidence supports the development of rational business cases for nature-positive investments.

Taken together, these findings contribute to a series of opportunities that LAs can use to assist their operations. They are supported by a range of guidance notes, resources, mechanisms, and examples to help them seize these opportunities effectively, to enhance investor confidence in NBS.



Internal Opportunities



Internal Opportunities

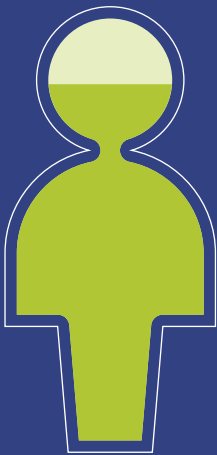
The GM Parks User Survey and the LA NBS Workshop highlighted an expectation (amongst citizens and LA officers) that the LA should take a central role in coordinating NBS delivery and management:

- 98% of GM Parks User Survey respondents see the LA as responsible for the essential maintenance of parks and greenspaces.
- 84% of GM Parks User Survey respondents see the LA as responsible for any improvements, such as play installations and wildlife planting.
- 29% of LA NBS Workshop responses identified 'internal teams and departments' as the principal stakeholders to advance NBS funding.

Of GM Parks User Survey respondents:

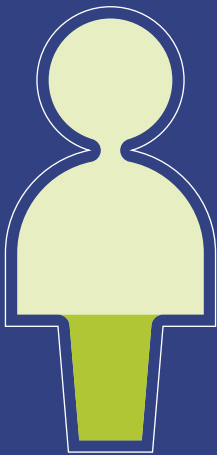


98%
see the LA as responsible for the essential maintenance of parks and greenspaces.



84%
see the LA as responsible for any improvements.

Of LA NBS Workshop responses:



29%
identified 'internal teams and departments' as the principal stakeholders to advance NBS funding.

In addition, a significant number of LA NBS Workshop attendees referenced the need to link agendas, for example between the environment, health, wellbeing and a post-COVID recovery (Figure 2 below). Similarly, there was strong reference to the need for innovation in taxation, management practices, and parks investment which suggest a range of opportunities within the internal operations of LAs.

The following section will outline a range of considerations for LAs to assist them in enhancing cross-departmental collaboration, fostering an organisational culture of change and innovation, and using alternative investment and management approaches that can embed the use of NBS as business-as-usual practices.

Figure 2: Proportional representation of themed responses to Question 3 of the LA NBS Workshop
To further funding of NBS within local authorities who do we need to engage, and how can the IGNITION project help encourage local authorities to look at co-investment in green spaces?



Build cross-departmental bridges for NBS

Increasing internal collaboration can help to embed NBS principles and practices within the operations of a wider range of teams and departments, whose operations have statutory remits. This could provide access to more varied and secure funding streams for the development and maintenance of NBS.

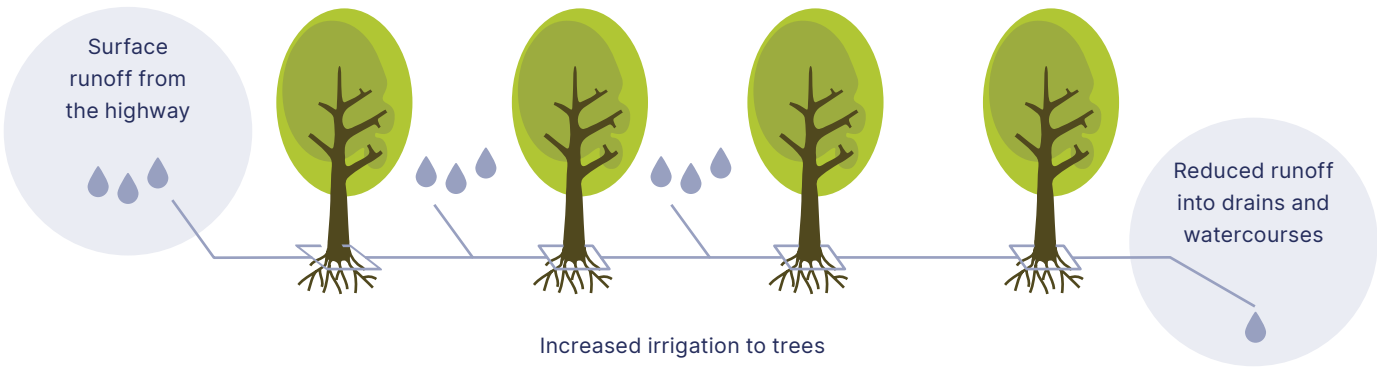
LA officials highlighted **Highways Departments, Growth and Regeneration Teams, Planners, Capital Programmes, Corporate Land Management, and Corporate Property Teams** as key stakeholders to better engage in order to advance NBS funding. The LA NBS Workshop also highlighted the need for strategic thinking across senior leadership in LAs to ensure the full lifetime costs of NBS are built into LA development plans. This would overcome the disconnect between the short and long-term costs of NBS implementation and management.

Efforts to enhance the cross-departmental scope of NBS would benefit from being **championed** further by **elected council leaders**, raising its profile within the LA. Achieving this requires the growing NBS Evidence Base to continue to be 'brought to life'. Resources such as the virtual tour of [IGNITION's Living Lab](#) or [Grow Green's 'Seeing is Believing' video tour of West Gorton Community Park](#) provide valuable assets for LA officers to use when communicating the value of NBS to colleagues and elected leaders.

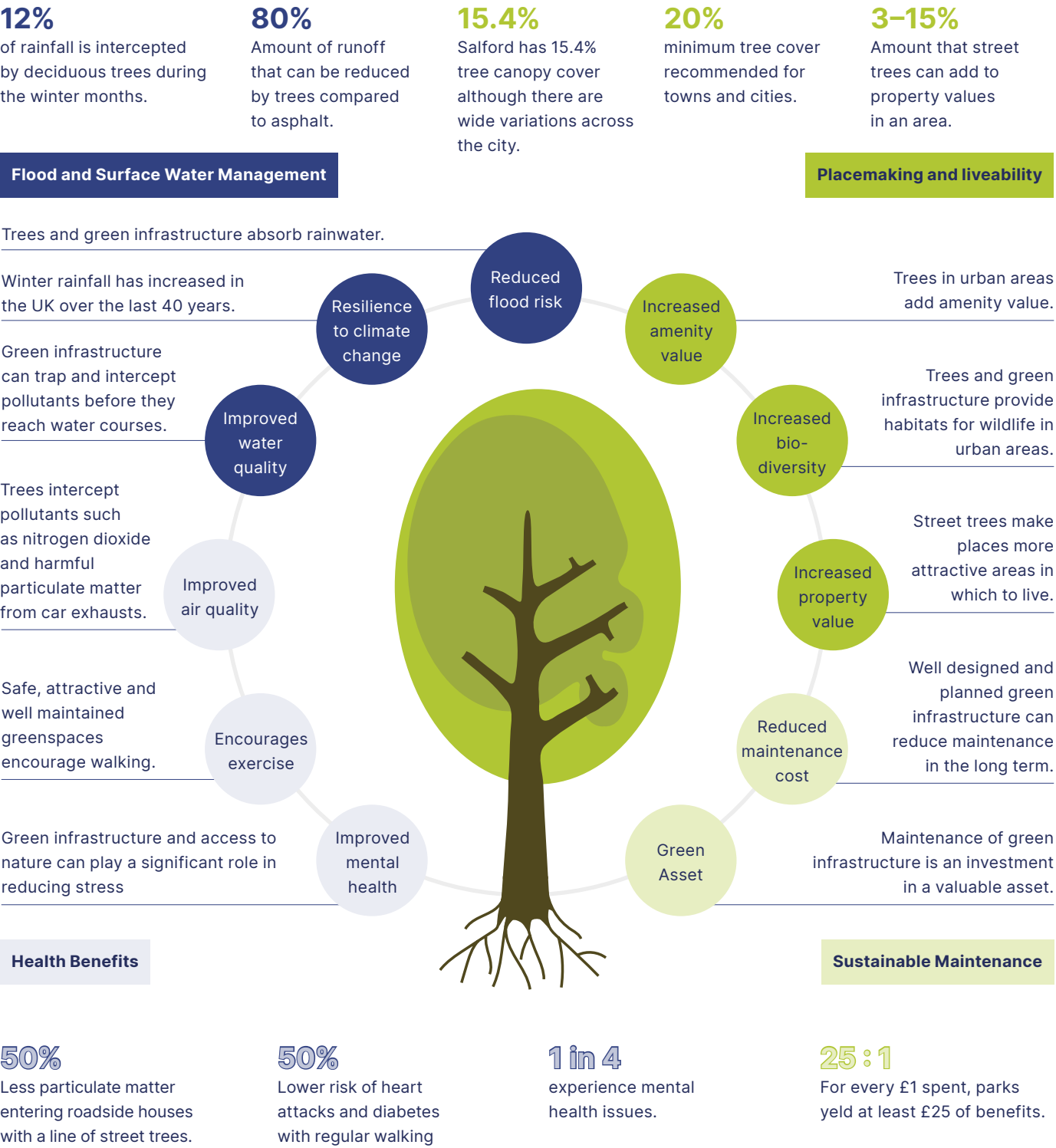
Crucially, NBS can bridge strategic objectives and offer synergies for multiple LA priorities,²³ providing their function and benefits are understood and communicated effectively. Multi-agency public sector funding can pool resources to deliver mutual objectives. Identifying opportunities to link NBS across multiple LA agendas will increase access to funding.

Example: Salford City Council’s Green City Programme

Salford City Council’s Green City Programme (GCP) took a cross-departmental approach, placing nature at the heart of a city-wide regeneration initiative. The GCP has successfully leveraged funds from Salford City Council’s Highways Department to invest in NBS and deliver multiple projects on the ground. The programme recognised the capacity of NBS to meet multiple strategic objectives simultaneously: enhancing placemaking and liveability, providing health and wellbeing benefits, reducing flood risk and improving surface water management, and delivering economic returns on investment in the long-term.



Why are they doing this in Salford?

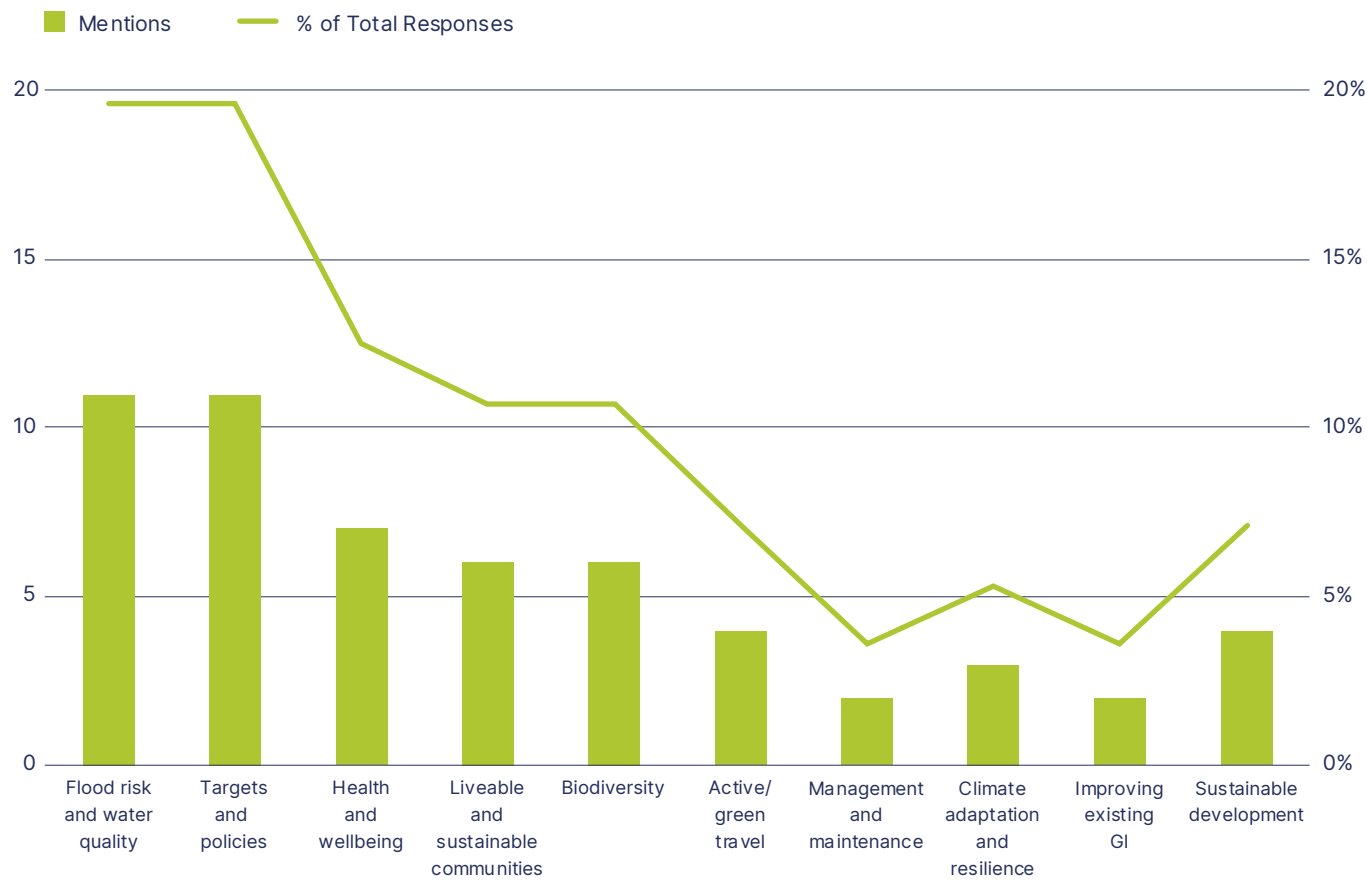


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Findings from the LA NBS Workshop highlight which LA priorities (or agendas) GM officers perceive NBS as capable of satisfying (Figure 3 below). The variations in responses also highlight where links to LA priorities are weaker, signposting where future training and education efforts could be targeted to have the most value.

Increasing NBS expertise and practices within LAs would improve efforts to link NBS across more LA agendas, diversifying and enhancing them. Using [Public Practice Placements](#) presents one means of practically enhancing LA capacity for more proactive and progressive placemaking.

Figure 3: Thematic distribution of responses to Question 1 of the LA Workshop
What local authority priorities do/could nature-based solutions satisfy and how?



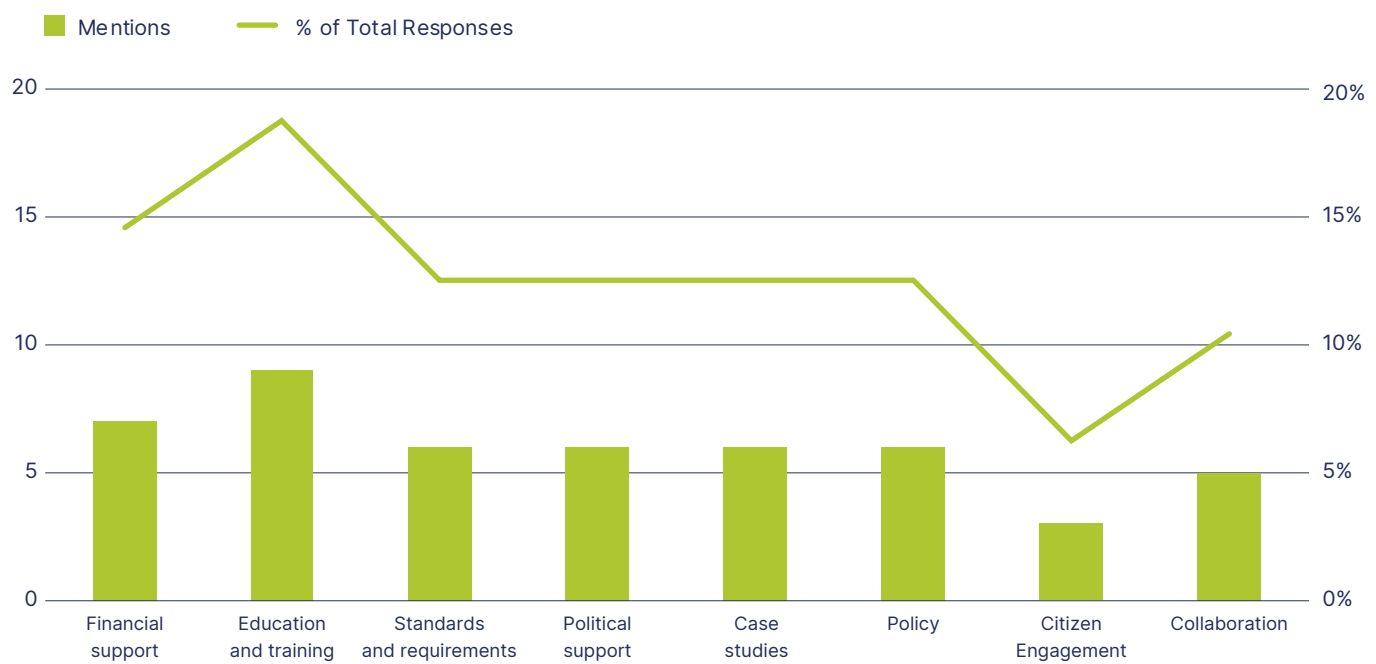


Foster a culture of innovation

‘Business-as-usual’ operations will not deliver on environmental commitments either locally or nationally, and the future-proofing of our communities requires continued innovation in approaches to placemaking and place management. If LAs are to ‘build back better’ and initiate a ‘green recovery’ following the COVID-19 pandemic, innovative approaches to in-house NBS investment and management must be explored.

According to GM LA officials, facilitating a change from established practices and embedding the implementation of NBS as the **‘new normal’** within LA operations requires the following:

Figure 4: Thematic distribution of responses to Question 2 of the LA Workshop
What support would be useful to help make using NBS the new normal?

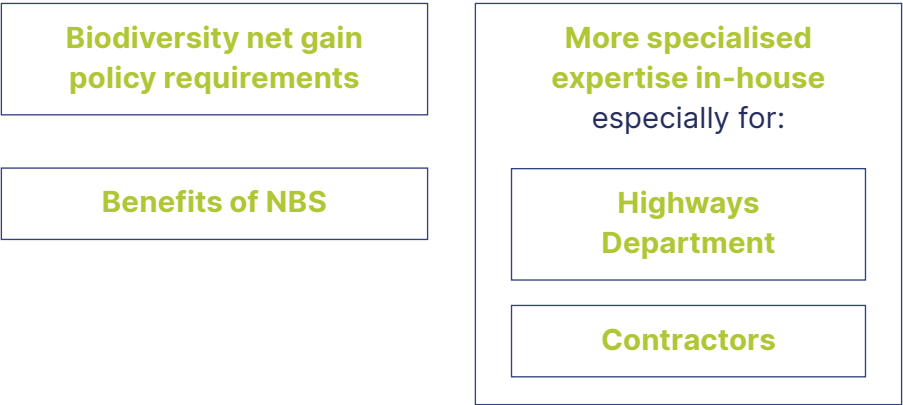


Upskilling internal teams through greater education and training initiatives will be essential if NBS principles and practices are to become established norms. Multiple responses pointed to the need for training regarding the emerging biodiversity net gain policy requirements, as well as for further information regarding the benefits of NBS. Findings also pointed to the need for more specialised expertise in-house, particularly within Highways Departments and amongst contractors.

Regarding biodiversity net gain, CIEEM and the Planning Advisory Service , and the GMCA provide information that can help LA officers plan and prepare for their transition towards embedding biodiversity net gain as common practice.

When considering the benefits of NBS, the IGNITION project report – Nature-based solutions to the climate emergency – clearly outlines the benefits to both business and society and provides an overview of associated CAPEX and OPEX figures for a range of interventions (see Figure 5). The extensive IGNITION NBS Evidence base and its supporting resources also provide a starting point to delve deeper into the statistics surrounding NBS performance, which can then be extracted into funding or business proposals as well as communications on NBS. Utilising robust evidence that supports the financial case for NBS delivery and management will lessen the perceived risks associated with its short and long-term investment and will bolster the case for its enhanced consideration.

Education and training needed:



What is biodiversity net gain?

Biodiversity net gain is an approach to development that leaves biodiversity in a better state than before. Biodiversity net gain requirements will be brought into effect by the Government’s Environment Bill. Biodiversity net gain principles aim to ensure that developments minimise any negative impacts, restore existing areas and provide an overall increase in natural habitat and ecological features.

What is CAPEX and OPEX?

The Capital Expenditure (CAPEX) and Operational Expenditure (OPEX) of NBS refer to the initial costs of implementation and the long-term costs of maintaining and managing any interventions, respectively.



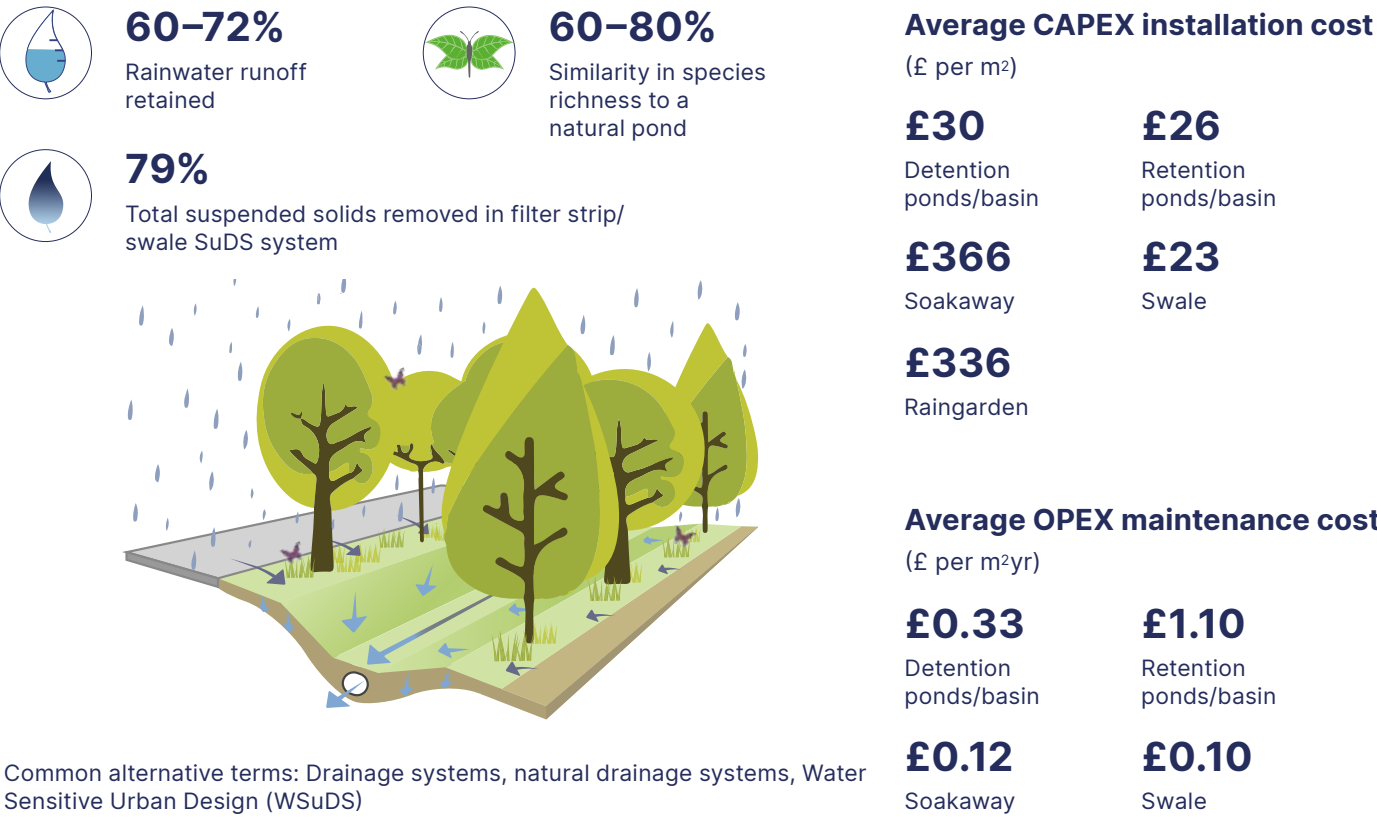
Figure 5: Benefits, CAPEX, and OPEX of multiple NBS

The following illustrations provide a summary and comparison of the headline findings* for each of the NBS researched.

* Average cost data taken from IGNITION project cost collation database, containing technical reports and supplier information

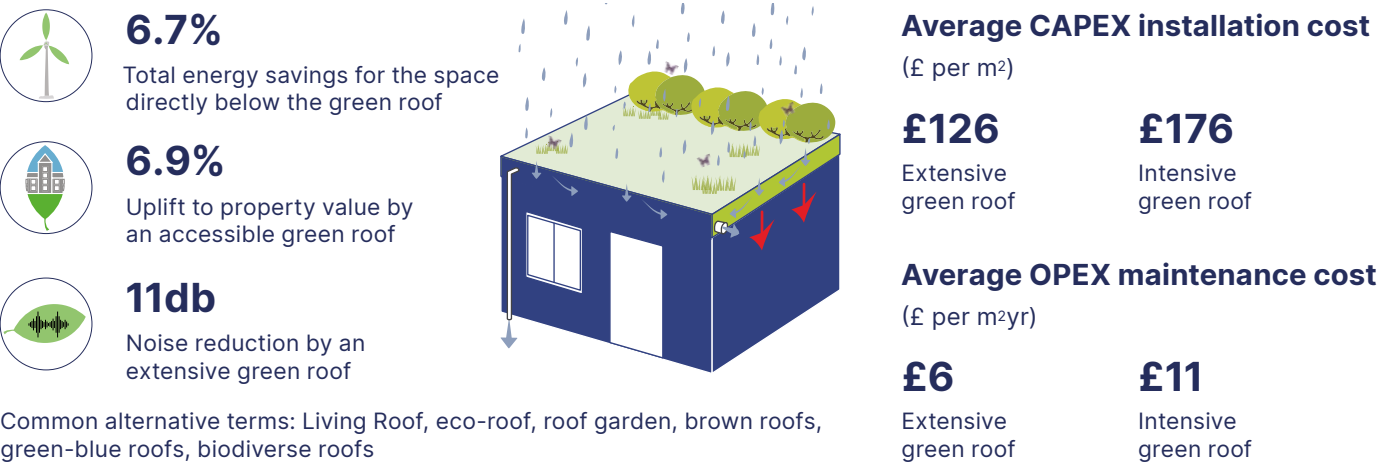
Sustainable drainage system (SuDS)

The management of surface water runoff within the urban environment to mimic the natural drainage processes, while supporting broader biodiversity and amenity aims



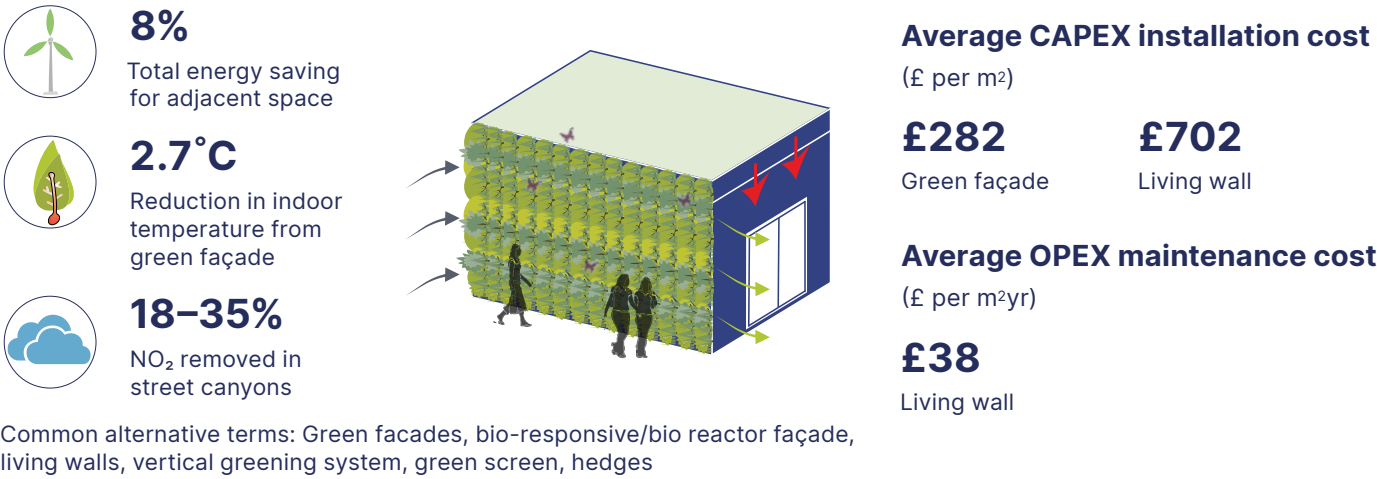
Green roof

Vegetation growing on any structure’s horizontal surface



Green wall

Vegetation growing on or against a vertical surface



Street trees

Trees located next to or within a public road

SuDS-enabled street trees

Street trees combined with a sustainable drainage system



Urban parks and green space

Areas that are naturally or artificially covered with vegetation (e.g. grass, bushes or trees). Can range from playing fields and highly maintained environments to relatively natural landscapes

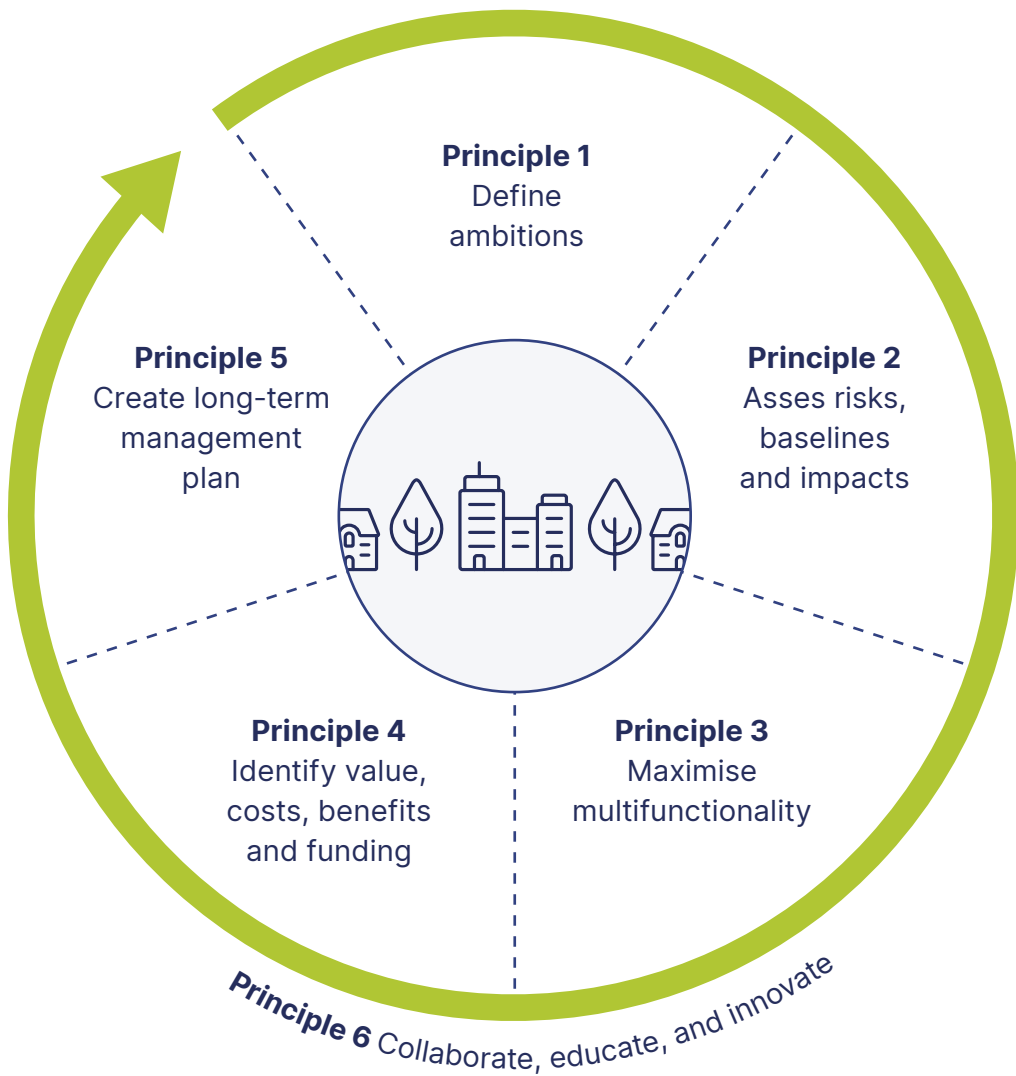


Common alternative terms: Urban parks, urban green cover, amenity grassland and sports pitches

To support organisations to increasingly consider NBS, UKGBC’s ‘[Principles for delivering urban Nature-based Solutions](#)’ report provides guidance on how to plan, design, deliver and manage urban NBS, defining six overarching principles to assist decision-makers and practitioners (see Figure 6).²⁴

Together, the principles and their supporting methods and case studies are intended to be of use to a broad spectrum of built environment professionals, including planners and policymakers, as well as engineers, architects, contractors, developers, and building owners, occupiers, and operators. The principles address some of the key themes identified within the

Figure 6: Principles for delivering urban nature-based solutions



LA NBS Workshop (see Figure 4), particularly regarding matters of financing (both short and long-term), collaboration and community engagement, existing standards (for NBS), and emerging policies.

With a focus on local government, Public Practice offers an extensive range of practice notes that are tailored to inform, upskill, and assist LA officers around a range of innovative topics. The findings and guidance are derived from research undertaken during professional placements within LAs and cover a broad range of key themes that relate to LA operations:

Table 5: Practice notes and guidance for innovating internal operations

Theme	Guidance
Climate	<ul style="list-style-type: none">How can authorities meet their carbon emissions target in new developments?How can officers respond to the climate crisis within an authority?
Infrastructure	<ul style="list-style-type: none">How can the public sector plan and deliver more inclusive and sustainable infrastructure?How can authorities develop and implement a green infrastructure strategy?Making the case for a green infrastructure strategy
Communities	<ul style="list-style-type: none">Setting up structures for community-led governance on strategic sitesHow is COVID-19 changing the way councils engage with communities?How can authorities lay the foundations for meaningful public participation?How can local authorities facilitate meanwhile use for long-term community benefit?
Health	<ul style="list-style-type: none">How is COVID-19 changing public planning?
Delivery	<ul style="list-style-type: none">How can public sector housing delivery teams share knowledge to improve design quality?How can authorities engaged in direct delivery monitor design quality?
Planning	<ul style="list-style-type: none">What does the planning department of the future look like?How can we monitor and evaluate the impact of design review?

Fostering a culture of innovation for NBS needs continued knowledge sharing and the communication of experiences and evidence, to help officers better understand the benefits to people, place, and planet.

However, any approaches that challenge established norms still need to be tried and tested to ensure the principle delivers in practice. LAs are therefore increasingly experimenting, particularly regarding alternative management structures for their natural assets.

Alternative greenspace management

Differential mowing techniques have been considered to lower maintenance costs to the LA and simultaneously enhance biodiversity.

However, whilst ‘mow less, pay less’ principles have gained some momentum amongst LAs, cost savings are not always guaranteed. Maximising the benefits to biodiversity may require greater investment from the LA.²⁵ Whilst alternative management practices may not always provide cost savings, they do provide a much wider range of benefits (particularly when combined with wildflower planting initiatives),²⁶ which could be viewed as a greater return on any money invested.

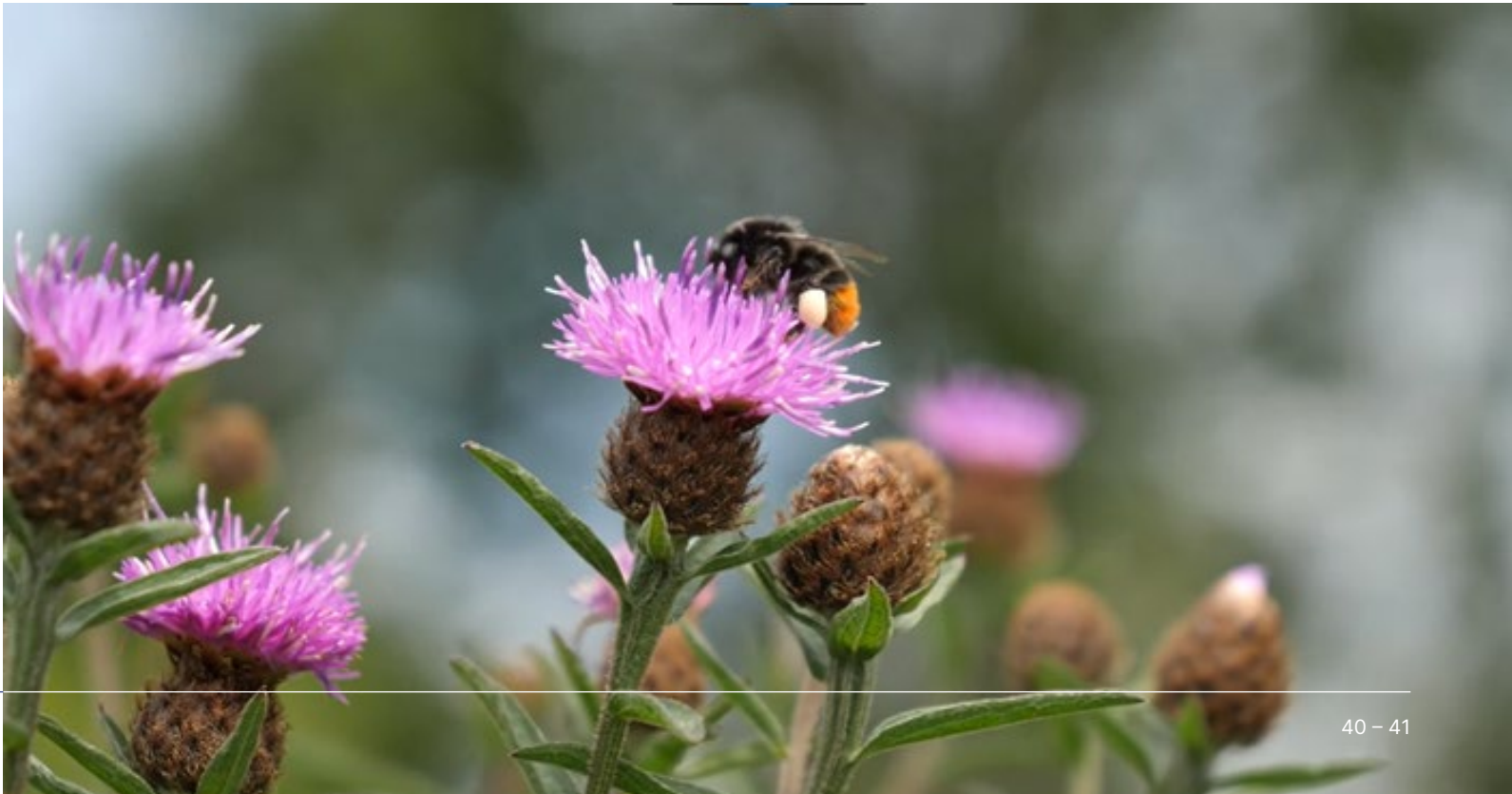
The management of high-quality, multi-functional public parks and greenspaces is becoming increasingly difficult for LAs, and the long-term maintenance demands of NBS are a common obstacle to their consideration. This has led to a groundswell of research into innovative funding mechanisms for these critical infrastructures.

Example: Naturalising the Borough in Wigan

Wigan Council’s [Naturalising the Borough](#) campaign has re-evaluated the LA’s grass cutting programme to support rare species of wildflowers and attract wildlife.²⁷ The campaign has been delivered as part of Wigan Council’s ‘The Deal 2030’, which is the LA’s strategic response to a £160 million funding gap. The underpinning rationale of ‘The Deal’ is to instigate a behavioural change in the LA and amongst its communities, to ensure high-quality outcomes for people, whilst delivering the required savings.

Example: Plymouth Meadows Campaign

Plymouth City Council’s [Plymouth Meadows 2020](#) project started as a response to constrained budgets and limited LA capacity to deliver grounds maintenance services (such as grass cutting). The project has taken a phased approach: 1) allowing areas of grass and wildflowers to grow; 2) allowing those sites to mature; and 3) ensuring sites are cut at the end of the year to ensure they flourish again the following year. The project has collaborated closely with [Plantlife](#) and [Buglife](#), who offered technical assistance and expertise.



Utilise innovative investment opportunities

The LA NBS Workshop signposted innovative approaches such as **generating revenue through events fees, selling goods and services** within parks and greenspaces, or **altering grounds maintenance practices** to reduce costs and enhance biodiversity (where possible). Effectively utilising such approaches is dependent upon nature-positive investments being viewed as both viable and essential. There is significant research and evidence that outlines the increasing viability of nature-positive investments and their long-term cost efficiencies. Both natural capital accounts or ecosystem service assessments and valuations of associated cost-avoidance can be used to identify investment and management opportunities.²⁸

The value of nature's services can appear most significant when considered in relation to health and wellbeing. Across GM, CO₂ sequestration from GI is valued at £2.4million/year and is calculated to prevent the loss of 12,000 cumulative life years, directly prevent 60 deaths and avoid costs to health care services of £264million/year.²⁹

The IGNITION NBS Evidence Base and Nature-based solutions to the climate emergency report found strong evidence across urban NBS for benefiting physical health, mental health, and the financial impact NBS can have for businesses that incorporate nature for their employees' wellbeing. This sits alongside amenity data from urban parks and green spaces on reducing crime rates and improving quality of life, roadside safety, willingness to pay, and social cohesion.

Investing in the quality of nature is an investment in the health of local communities, and the role of green social prescribing (and green volunteering in general) is becoming increasingly acknowledged as a cost-effective means of providing benefits for both nature and people.³⁰ Investing further in the connection of public health and environmental agendas is crucial if LAs

What are ecosystem services?

The many benefits that natural assets and processes provide to humankind are defined as 'ecosystem services'. These can be the products provided to people by nature (food, water and resources) or nature's ability to regulate the climate, support ecosystems (via the water or nutrient cycle), or provide cultural benefits (through the personal, recreational and spiritual values of nature to people).

are to ‘build back greener’ from the COVID-19 pandemic, in line with the ambitions of the GM [Five-Year Environment Plan](#).

Crucially, translating monetised values into practicable revenue streams remains a key challenge to mainstreaming NBS, particularly within a resource-scarce public sector.

The approaches below present some potential opportunities for generating revenue for NBS, which LAs can investigate further.

Taxation

LAs could use novel forms of taxation that support the management of existing green infrastructure, or investment in new NBS.

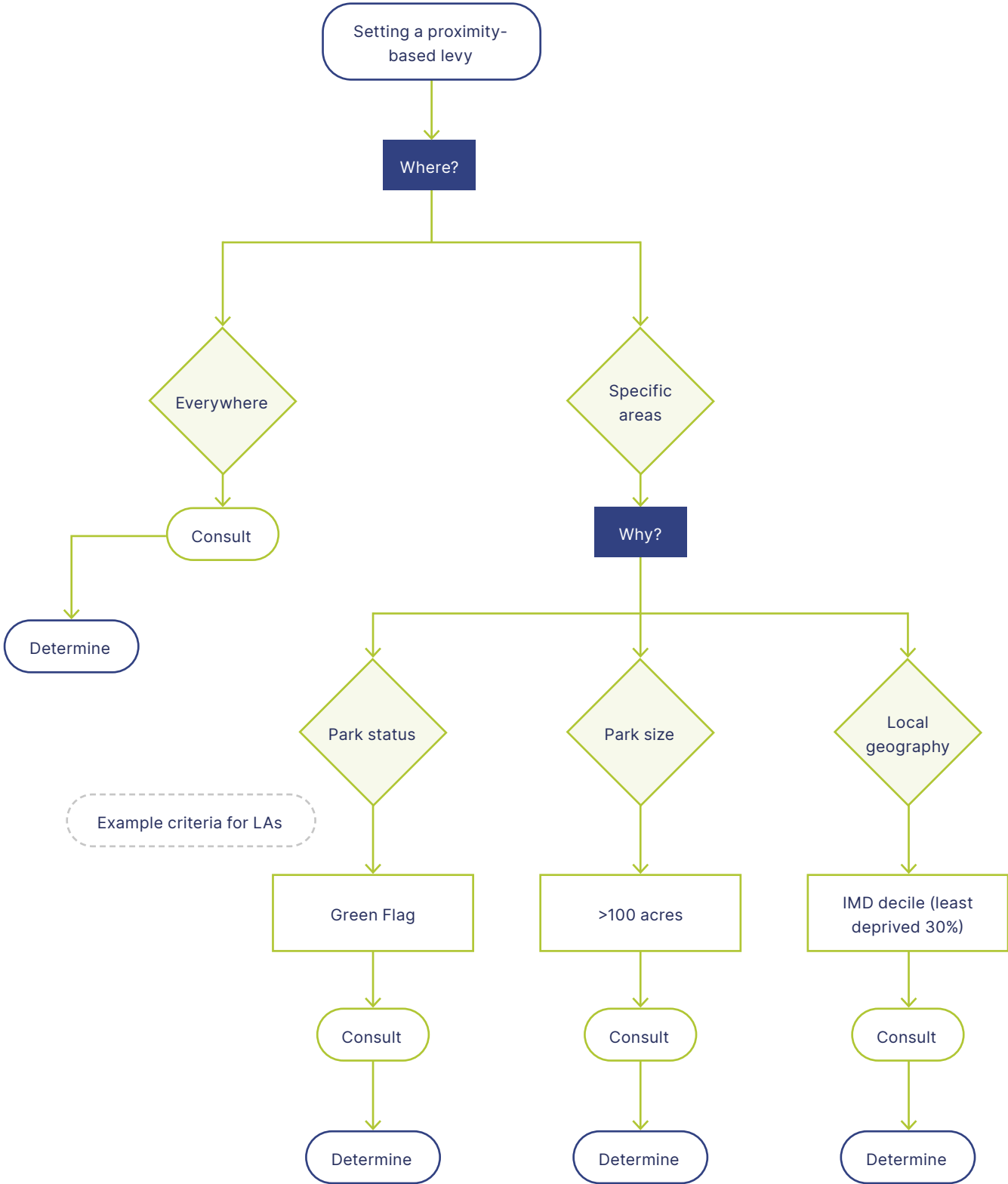
Whilst proximity-based taxation models have been used to generate secure funding streams for parks and greenspaces,³¹ these can be difficult to replicate successfully due to stakeholder resistance, ambiguities surrounding the criteria for setting a levy or tax (see Figure 7), and the equity of any designations.

Service charge models are increasingly being considered by LAs as a viable means of funding the long-term maintenance of any NBS delivered within new development projects. The [City Finance Lab](#) project has been investigating the feasibility of such approaches in Manchester, specifically in the strategic regeneration of both the [Northern Gateway](#) and [Mayfield](#) sites. The outcomes and lessons from the City Finance Lab project will be valuable for other LAs, both across GM and nationally.

What is green infrastructure?

Whilst NBS refer to individual interventions, green infrastructure can be defined as those networks of natural, semi-natural, and environmental features that are strategically planned across urban and rural settings, to deliver a wide range of benefits at multiple scales. Green infrastructure principles champion the interconnectivity, accessibility, and multifunctionality of natural assets.

Figure 7: LA decision tree for nature-based solutions levy designation



Planning gain and developer contributions

Utilising planning gains may be more popular with residents than proximity-based levies or service charges, though may generate opposition from other stakeholders, such as developers. Section 106 (S106) obligations or a Community Infrastructure Levy (CIL), where administered, have the potential to generate funds for investment in NBS. Obtaining planning obligations requires:

- Defining them as necessary to make the development acceptable.
- Directly relating them to the development.
- Ensuring they are fairly and reasonably related in scale and type to the development.

In addition, directing such funds towards NBS puts them in direct competition with other essential public services that have formal mandates (such as education or social housing). Even so, between 2015–2019, Manchester City Council generated over £750,000 for ‘parks and leisure’ services through S106 contributions.^{32, 33} In the same period, Salford City Council spent £2.9m on open space projects and maintenance via funds generated through S106.³⁴

Any planning obligations obtained must increasingly prioritise funds for nature-positive interventions that use the principles of NBS, particularly where they can satisfy multiple strategic agendas simultaneously.

Looking to the near future, the emerging market for biodiversity net gain credits could bypass the competing agendas associated with S106 and CIL. The product of impact offsetting, biodiversity net gain credits present LAs with an opportunity to generate and channel funds towards nature-positive projects.³⁵ It is therefore essential that GM LAs continue to work positively towards the development of GM’s Biodiversity Net Gain Action Plan and monitor, evaluate, and disseminate the findings of the Chat Moss Habitat Bank Credit Scheme pilot.^{36, 37}

What are biodiversity net gain credits?

When biodiversity net gain cannot be created onsite or offsite locally, there will be the option to purchase statutory credits from Government. These credits will then be invested into the creation of biodiversity elsewhere. Purchasing credits should be a last resort as per the biodiversity mitigation hierarchy (see Section 1.4 here).

Output-based payments for ecosystem services

LAs could use output-based payments for ecosystem services (PES) to rationalise and subsidise investment in NBS, though achieving this depends upon collaboration and support from other stakeholders.³⁸ Such payments are made based on the ecosystem services provided, for example, an increase in biodiversity. Alternatively, payments could be made according to the amount of CO₂ or NO₂ sequestered by a green wall, or the amount of surface water attenuated by street trees. An initial understanding of NBS performance can be gained from the IGNITION NBS Evidence Base and the Nature-based solutions to the climate emergency report.

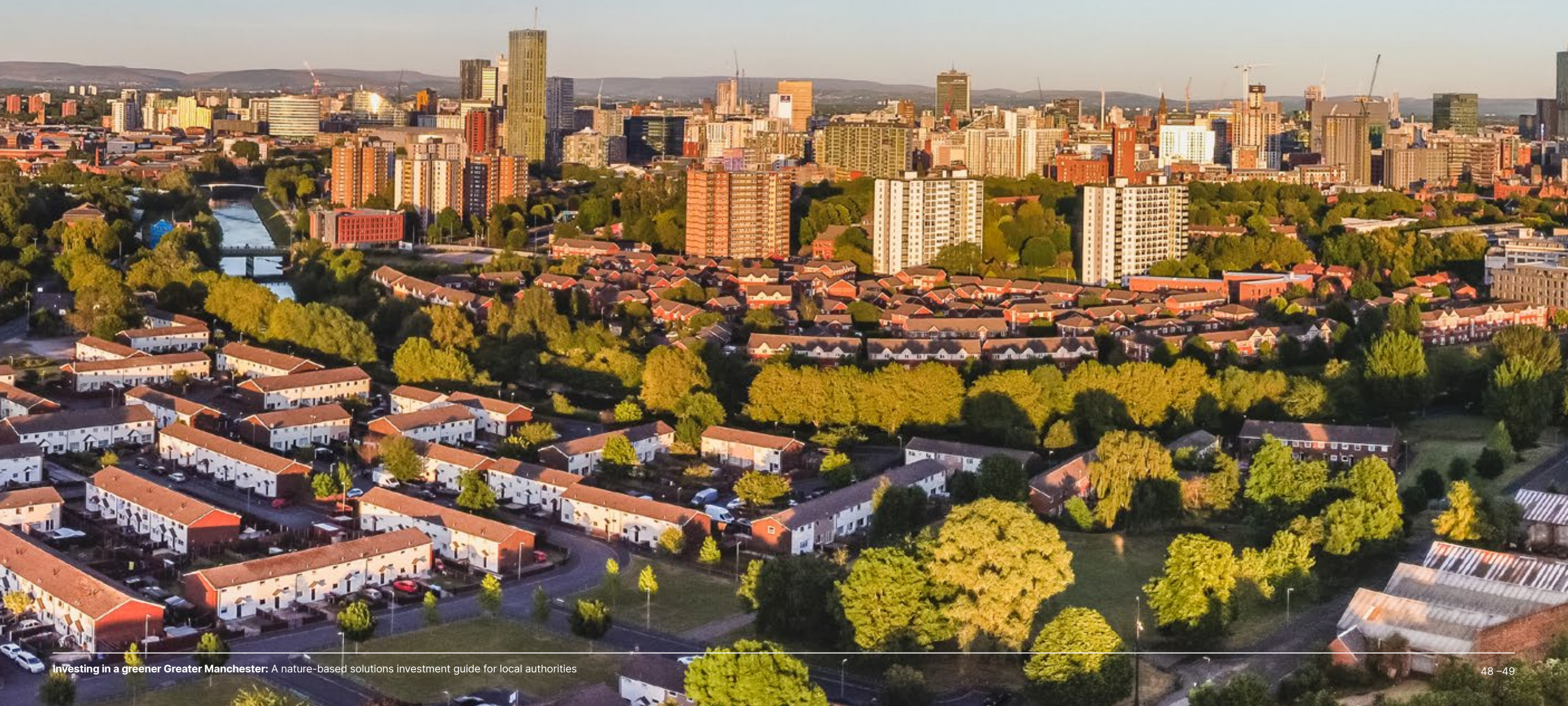
Getting committed contractual agreements for a prescribed level of uplift in ecosystem service provision has been considered impractical to date. However, there are opportunities to be seized if LAs can work with others to tie in output-based PES with the emerging markets for both biodiversity and environmental net gain requirements.³⁹

What is environmental net gain?

Environmental net gain expands upon biodiversity net gain principles to consider the function of wider benefits, such as flood protection, recreation and improved water and air quality.



External Opportunities



External Opportunities

Collaborating and engaging beyond local government is essential to establish NBS as a key driver for a truly green recovery.

LA officers identified ‘external organisations’ and ‘communities’ as integral stakeholders to engage in order to further the funding of NBS. Engaging more widely can open up a range of investment opportunities from public-private partnerships to endowment schemes, innovative green and blended finance mechanisms, or community-led initiatives.

Opportunities for wider collaboration within the governance and planning of NBS could provide LAs with a means of developing new investment and management opportunities to increase and enhance natural capital.

Use communities as an asset

Findings from the Citizens Survey and GM Parks User Survey demonstrated that GM residents are willing to contribute to the maintenance and improvement of parks and greenspaces (see Figure 4), which is corroborated by studies in the NBS Evidence Base showing similar statistics.

The GM Parks User Survey data identified that:

- 91% of people were prepared to pay for items and services during a visit to public parks or greenspaces.
- 49% of respondents were willing to spend £2–5 per person per visit, on services or items, such as food and drinks or activities, and 30% between £5–10 per person per visit.
- 66% of respondents would not be put off visiting a park of greenspace if there were charges for some items and services (it was made clear that this would not be a charge for access).

The GM Parks User Survey data identified that:



The existing evidence in the IGNITION NBS Evidence Base shows:

- **50%** of park users visit a local business before or after their visit⁴⁰
- **10%** increase in willingness to pay for products associated with high green cover⁴¹

The GM Parks Survey data also identified what services and activities residents would be most willing to pay for (see Figure 8), as well as what park and greenspace projects they would be willing to donate towards (see Table 7) and their preferred means of donation (see Table 8).

Figure 8: Willingness of GM residents to pay by activity and service

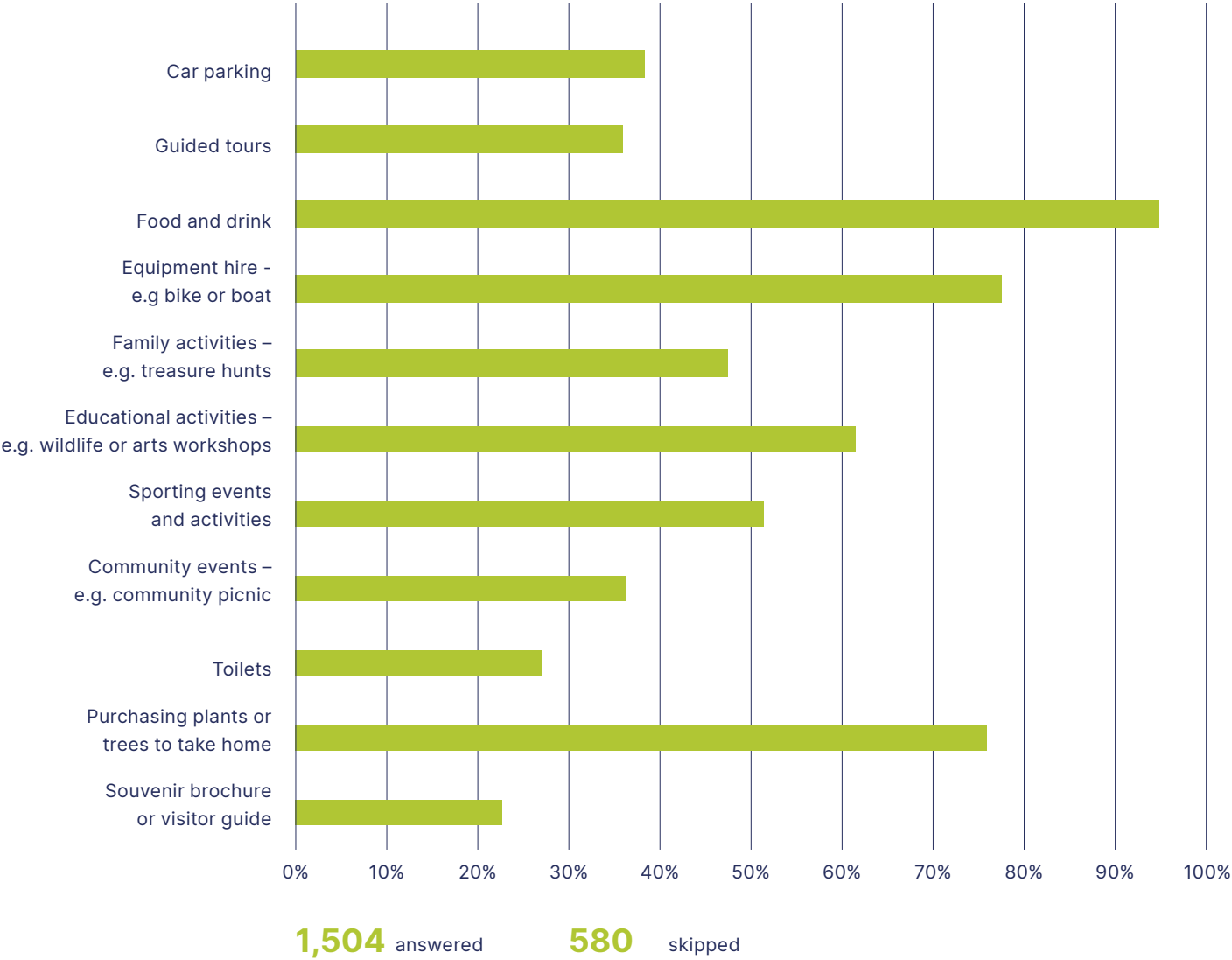


Table 7: Willingness of GM residents to donate by project type

Answer Choices	Percentage	Number
Planting trees or creating woodlands	75.09%	1,028
Wildlife projects	71.51%	979
Projects to reduce the effects of climate change	57.34%	785
Community growing spaces	39.66%	543
Events and activities	36.23%	496
Toilets	30.75%	421
Heritage projects	30.31%	415
Outdoor furniture (e.g., benches, bins and signs)	30.09%	412
General park maintenance	27.61%	378
Play areas or skate parks	27.10%	371
Sculptures or art projects	21.91%	300
Formal planting	20.60%	282
Outdoor gyms or sports areas	17.53%	240
		TOTAL 1,369

Table 8: Preferred method of donation for GM residents

Answer Choices	Percentage	Number
One-off payment of donation – contactless donation	49.52%	780
One-off payment or donation – cash box	36.1%	569
Sponsor a tree/bench	35.56%	560
A payment or membership scheme for regular visitors	26.10%	411
One-off payment or donation – Mobile app donation	22.67%	357
I would not want to make a donation	14.54%	229
Leave a legacy	9.33%	147
		TOTAL 1,575

Drawing on these findings, there are clear service and activity-related opportunities for LAs around the provision of food and drink services, the establishment of equipment hire, and selling plants or trees for residents to take home.⁴²

These findings support the benefits from NBS for wider local economic growth, such as in green business districts (this is explored further on [page 69](#)).


Example: Mile End Park’s Mixed-Use Greenspace

Mile End Park, located in the London Borough of Tower Hamlets, generates around 50% of its annual budget from income-generating opportunities situated within the park. The mixed-use space is home to an ecology park, a range of ecology and arts pavilions (both available to hire), a karting track, a leisure centre and stadium, a climbing wall and other outdoor activities and commercial vendors (which lease available units).⁴³


The GM Parks User Survey results support the business case for similar service and activity-based models. Park appreciation and use is at a record high and responses suggest this trend is set to continue post-COVID. However, the type of income-generating opportunity used by LAs will determine their capacity to raise funds for NBS. For example, in Manchester, large-scale events in big parks (such as Heaton Park or Wythenshawe Park) generate the most income. Over 70% of Manchester City Council’s park’s income comes from Heaton Park alone.

As well as payments for services, GM residents demonstrated an overwhelming willingness to donate towards nature-based projects. Wildlife projects, tree or woodland planting, or interventions to mitigate climate change were the most preferred donation options for GM residents. The delivery of NBS could incorporate all three of these projects and should therefore be considered as a holistic means of using this philanthropic capital.


Service and activity-related opportunities for LA:



Provision of food and drink vending services



Equipment hire



Selling plants or trees for residents to take home

Most preferred donation options:



Wildlife projects



Tree or woodland planting



Climate change interventions

Capturing this potential is a key area of consideration for LAs, and the findings from the GM Parks User Survey show that one-off contactless donation methods are most popular for supporting these initiatives.

Developed as part of the [Rethinking Parks Programme](#), Nesta has published a [‘Using contactless donation in parks’](#) guide that covers:

- The CAPEX and OPEX of installation and management of contactless donation points.
- The ins and outs of associated communications and engagement campaigns.
- Their placement and location within parks.
- Their technical functionality outdoors.

The guidance covers the challenges and opportunities of using contactless technologies for park donations from two locations in the North and South of England.

Alternatively, LAs could explore the opportunities associated with emerging ‘text-to-donate’ approaches, though ensuring the longevity of such investments remains challenging.

Example: Scotland’s Parks4Life Fund

The [Parks4Life Fund](#) – established in partnership between [Greenspace Scotland](#) and [MyParkScotland](#) – is the country’s first dedicated fund for parks and greenspaces. The fund is supported by an endowment grant from the National Lottery Heritage Fund, which matches the sum of donations. As of April 2021, the initiative has raised over £24,000 to support parks improvements, activities, and projects across Scotland.

Community Municipal Investments

Emerging as a way for communities to invest in public service provision and see a low risk return on that investment, Community Municipal Investments (CMIs) allow community members to mobilise their money for public good. LAs set the expenditure plan for CMIs and are responsible for managing and delivering the projects, whilst the public funds them.

Money for projects that benefit communities and nature can be generated where traditional budgets are unable to allocate sufficient funds. At present there are two LA-oriented CMIs in operation in the UK facilitated by [Abundance Investment](#) for Warrington Council and West Berkshire Council. CMIs are one of an emerging suite of green finance initiatives that provide opportunities for LAs to innovate their investment through cross-sector collaboration.

Payment methods to explore



One-off
contactless donation



‘Text-to-donate’



Unlock capital through green finance

Green finance refers to a wide range of bonds, loans and funds that can be used to channel investments towards environmentally positive outcomes. This area of environmental economics is rapidly innovating and LAs could utilise a growing number of these approaches to drive investment in NBS.

The [Greater Manchester Natural Capital Investment Plan](#) was established following the Mayor's Green Summit in 2018, to mobilise existing and establish innovative sources of funding for nature. The plan aims to enhance the opportunities for investment in natural capital, acknowledging the complexities in delivering an attractive return to the investor, whilst ensuring wider benefits in the long-term. The plan has 3 key stages:

1. Identify a pipeline of potential project types which need investment.
2. Develop finance models to facilitate private sector investment without further burdening the public sector.
3. Produce recommendations to put the plan into practice over the next 5 years.

In addition, the Scottish Conservation Project's [£1 Billion Challenge Route Map](#) sets out a range of innovative green finance initiatives that aim to close the gap between the *need* for climate and nature-positive investment, and the act of funding such interventions (see Table 9 below).⁴⁴ LAs could use an increasingly diverse range of green finance mechanisms to fund the initial delivery and long-term maintenance of NBS. Whilst the scope and function of green finance mechanisms is varied, collaboration is key to the success of all these approaches.

Table 9: £1 Billion Challenge Initiatives

Mechanism	Function	Benefits	Status
Natural Capital Pioneer Fund	Impact investors provide capital (initially supplemented by grant funding) to businesses meeting an agreed, environmentally positive criterion. Profits from the businesses are then repaid to the investors with interest.	<p>The fund can boost innovation for businesses aiming to protect and enhance biodiversity.</p> <p>Steered by conservation finance specialists and an investment committee, the fund would ensure positive benefits for nature are delivered.</p>	Ready to use
Nature-Climate Bond	LAs issue bonds directly to the public via a crowdfunding platform. Initial investments are drawn from a wide pool of small stakes, with returns produced through long-term savings or via income generation of interventions that are funded.	<p>Low stake, low risk, and easy to establish. These bonds could fund NBS, such as the creation of greenspaces or delivery of SuDS.</p> <p>This model provides a cost-effective means for LAs to tackle the climate-biodiversity crisis and provide for local communities.</p>	In active development
Invasive Non-Native Species Loans	<p>Loans are made available to stop the spread of invasive non-native species (INNS).</p> <p>These could be paid back via management cost savings over time.</p>	<p>INNS are 1/5 key drivers of biodiversity loss globally, therefore limiting their impact would relieve pressures on aquatic and terrestrial ecosystems.</p> <p>Such biosecurity measures can provide physical and financial protections against the negative impacts of INNS.</p>	In active development
Marine Fund	Contributions from industry representatives that rely on the marine environment, to fund protection and restoration campaigns.	<p>The levy could generate funding for a wide range of conservation activities or environmental improvements.</p> <p><i>(This model is only suitable in certain geographies)</i></p>	In active development

Mechanism	Function	Benefits	Status
Vacant and Derelict Land Fund	<p>Investors contribute to the restoration of vacant and degraded land and transform it into profitable business opportunities that deliver biodiversity benefits.</p> <p>Returns would come through the sale or lease of the restored land for pre-approved biodiversity-related businesses (e.g., vertical farming).</p>	<p>Restored sites could accommodate environmental enterprises and connect previously disconnected greenspaces.</p> <p>Many vacant and derelict sites are located in close proximity to communities that experience high levels of socio-economic deprivation, with low access to greenspace. Restoration of these sites would therefore provide a wide range of benefits to communities and the local economy, as well as biodiversity.</p>	Conceptual development
Landscape Enterprise Networks	<p>Brings multiple organisations together to deliver effective investment in our landscapes.</p> <p>Landscape Enterprise Networks (LENs) create a platform to aggregate payments for ecosystem services, which can also be blended with public finance to fund ‘public goods’.</p>	<p>LENs help business to invest in the natural assets upon which they depend, framing such nature-based investments as an exercise in risk management that will abate long-term costs.</p> <p>LENs champion the multifunctionality of landscapes in order to maximise the benefits to regional economies and society.</p>	Ready to use
Nature-Based Carbon Payments: ‘Carbon Plus’	Offsetting ‘unavoidable’ emissions by purchasing nature-based carbon credits.	Payments could go towards funding peatland restoration or woodland planting, enhancing aquatic environments or greening our cities through NBS implementation.	Conceptual development
Net Positive for Nature	Money from developers or landowners is invested back into nature, so that beneficial outcomes outweigh any negative impacts associated with development.	Compensatory measures can be used to ensure nature is provisioned for across the development life cycle. Other such measures include biodiversity and environmental net gain requirements.	Conceptual development
Blended Finance	Combining private investment with public sector funding, grants or other philanthropic sources.	<p>This mechanism facilitates levels of investment that would not be possible from individual financial stakeholders.</p> <p>The collaborative approach that is championed by blended finance initiatives makes them more holistic projects and also benefits their longevity.</p>	In active development

Explore co-investment opportunities

There is a strong culture of cross-sector, environmentally focused collaboration across GM, which should continue to be nurtured and developed. The region has benefited from the collaboration of LAs, environmental NGOs, and universities; successfully attracting funding for green infrastructure research and NBS projects.

The NBS Evidence Base helps its users to identify where one intervention can provide multiple benefits simultaneously, some of which will benefit stakeholders directly. This then provides a foundation to identify where co-investment opportunities are possible. Co-investment approaches benefit from harnessing generic NBS qualities, such as the energy reduction (and subsequent cost savings) accrued via the thermal insulation of green roofs and walls.

Whilst there has been positive action towards raising the status of NBS within policy, decision-making and developments across GM, there is still further progress needed to unlock the full potential of the innovative, co-investment mechanisms outlined here.

Parks Foundations

Using multi-sector collaboration to support parks with time, expertise and funds, Parks Foundations are independent charities that are made up of a board of trustees, LAs, staff members, volunteers, and local businesses. They are designed to work alongside LAs and help to add value to parks and greenspaces by:

- Generating income.
- Coordinating volunteering opportunities.
- Supporting community activities.
- Encouraging park usage.
- Promoting the benefits of parks for public health and wellbeing.

Example: Bournemouth’s Parks Foundation

The Bournemouth Parks Foundation (BPF) is now a financially independent charity that drives innovative fundraising campaigns with total revenues of over £100,000 a year. The BPF also manages a community-run café, runs physical and mental health and wellbeing walks, provides free yoga sessions, and regularly raises funds for projects through grants or crowdfunding.

Parks Foundations offer a way for GM’s LAs to capture and mobilise the local value and potential identified by the GM Parks Survey. Nesta has published a ‘[How to set up a Parks Foundation](#)’ toolkit that can assist LAs in the design and delivery of Parks Foundations.

SuDS ‘payments for outcomes’ model

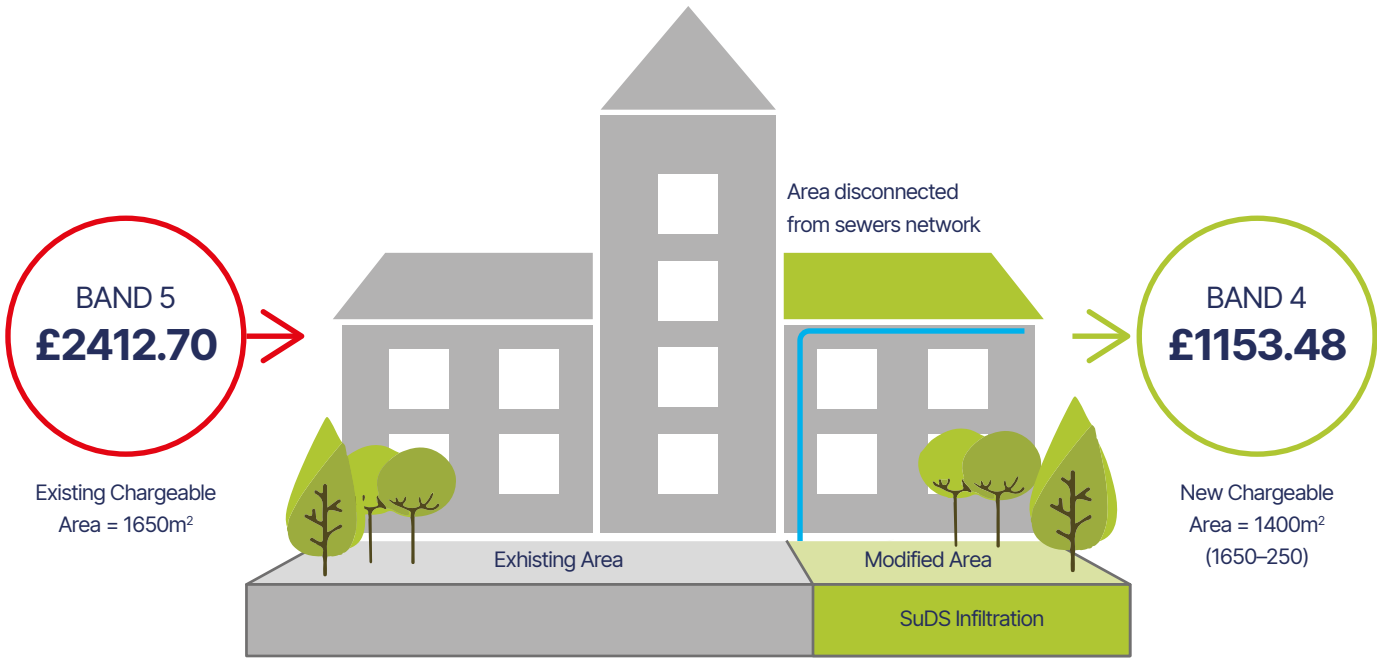
Findings from the LA NBS Workshop recognised ‘**utility companies**’ as key stakeholders to be engaged further in the delivery of NBS. The initial programme of work for the IGNITION project has investigated the potential for funding NBS SuDS retrofits across publicly owned sites. This approach targets sites within priority areas for the water company, maximising the water management benefits while also providing incentives to site owners by reducing their wastewater charges, through the banding charge mechanism (illustrated in [Figure 9](#)). In principle, the upfront costs involved in the installation of SuDS can be offset against and repaid through payments for outcomes, such as reduced sewer overflows or sewer flood incidents.

The IGNITION project is currently working with United Utilities (the regional water and wastewater wholesaler) to agree a pipeline of projects to trial this approach. If successful, the project will finalise a governance model and investment case to approach wider private and public investors. The continued engagement of LAs with the IGNITION project and United Utilities will therefore assist the development of this model and may help to deliver cost-effective SuDS retrofits that provide a wide range of ecosystem service benefits.

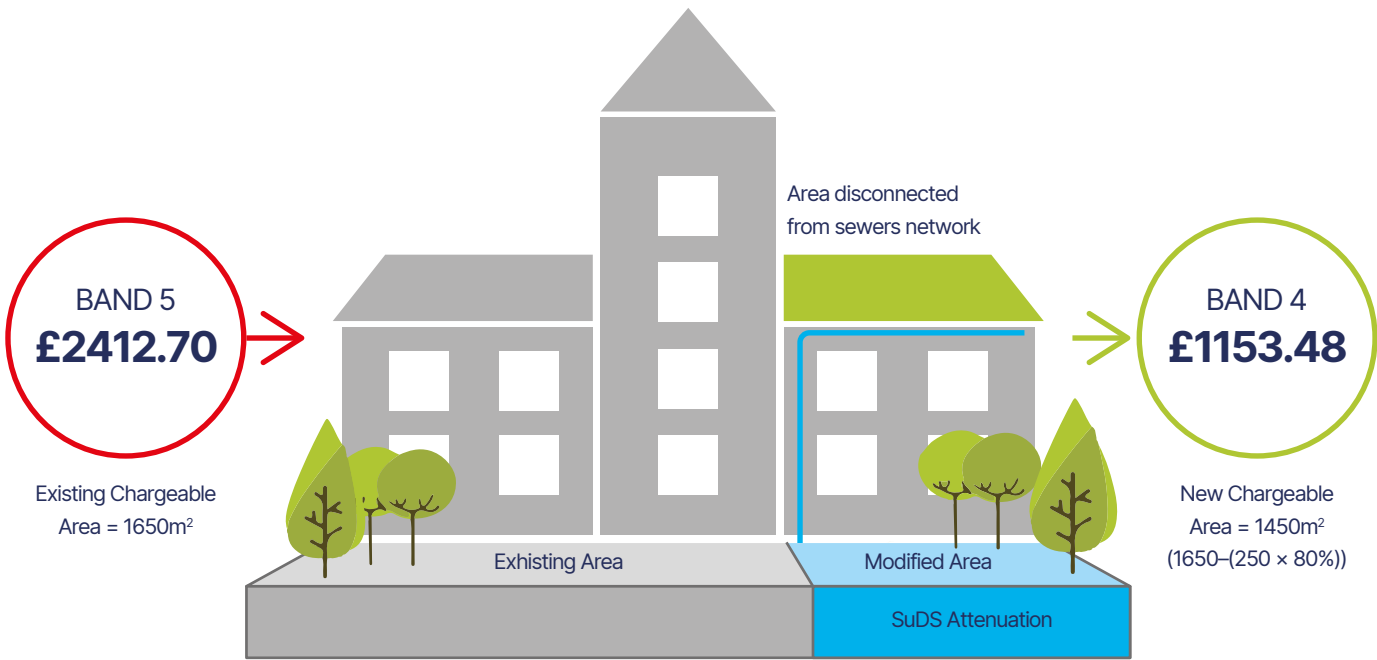


Figure 9: Ignition Banding Charge Model

Method A: SuDS Infiltration



Method B: SuDS Attenuation



Example: SuDS for Schools

The banding charge aspect of the model has been tested at [Moorlands Junior School](#) (located in Sale, GM borough of Trafford), where the installation of SuDS has provided an annual saving of £ 2,811.⁴⁵ This is in addition to maximising the nature-based education opportunities for the children, installing an area with plants that attract wildlife, enhancing the biodiversity of the school grounds and providing space for outdoor lessons.⁴⁶

Example: Dales Brow SuDS Co-Investment

The [Dales Brow SuDS project](#) was co-financed and delivered collaboratively via a partnership between City of Trees, Salford City Council, the University of Salford, the Environment Agency, the Natural Course, and United Utilities. A £127,000 co-investment in the neighbourhood-scale SuDS scheme turned a previously waterlogged greenspace into a multifunctional asset, utilising NBS to deliver multiple benefits to all stakeholders. The SuDS serve a vital drainage function, reducing pressure on the combined sewerage system while contributing to improved water quality. This transformed wetland site now enhances biodiversity and provides a high-quality recreation space, benefiting the local area and its community members, and encouraging inward investment. The site provides climate change adaptation benefits at a relatively low cost; something that could be easily replicated with the right investors.

Green roofs ‘payments for outcomes’ model

The IGNITION NBS Evidence Base documents how green roofs can:

- Provide a 6% energy saving through thermal insulation.
- Capture 75% of rainfall.
- Provide a 7% increase in property value (when the roof is accessible).

In most cases, however, these benefits and savings are not effectively considered when investing in green roofs. By continuing to quantify and communicate the value of the ecosystem services green roofs can provide, capital investments in green roof infrastructure can be increasingly rationalised against the long-term benefits they deliver.

Example: Stockport Bus Interchange Green Roof Installation

A cost-benefit analysis (CBA) of [Stockport Interchange’s regeneration plans](#) found that a self-irrigating blue-green roof system could deliver capital cost savings compared to storm attenuation tanks, whilst providing wider environmental and social benefits as well. The CBA concluded that using NBS could provide capital cost savings of £116,000 by avoiding the need to dig through contaminated soil and rock. In addition, the CBA quantified that £14,100 could be saved per annum through reducing the wastewater banding charge via the use of NBS (see [page 65](#) for more information regarding banding charge reductions).

Green roofs can provide:



6% energy saving



75% rainfall capture



7% increase in value
when the roof is accessible

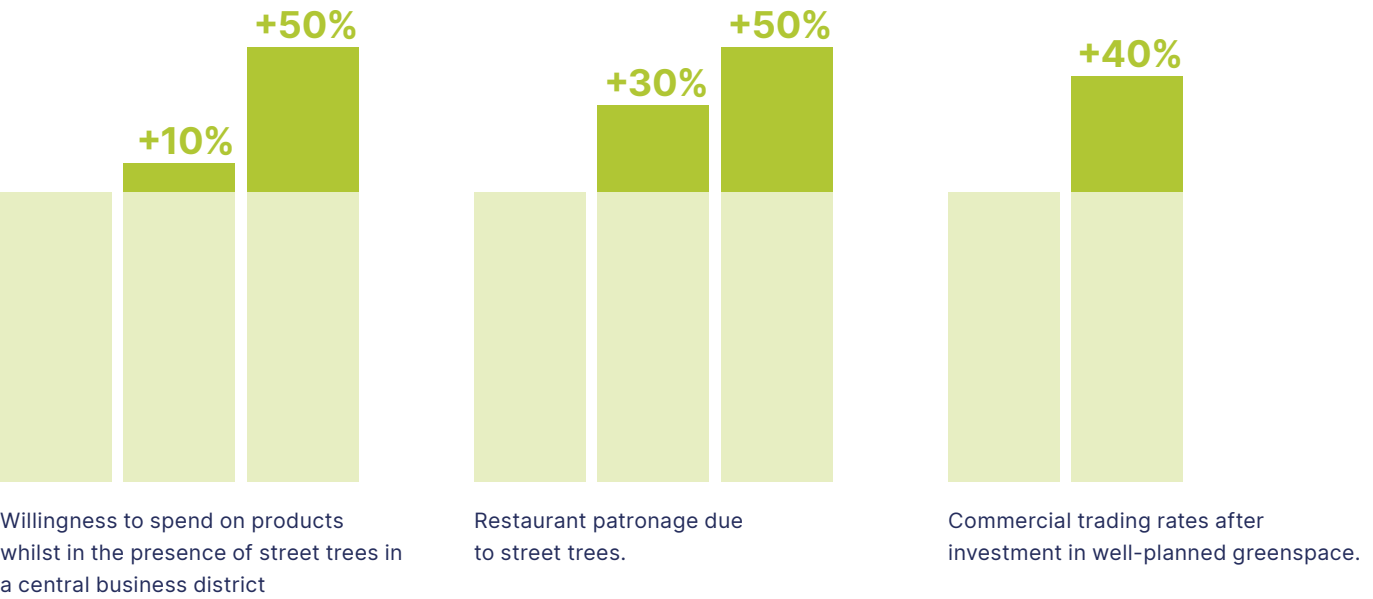
Public-private partnerships

Business Improvement Districts (BIDs) are formed via partnerships between public and private actors, who agree on an additional levy to be charged on top of standard business rates in order to fund projects. Funds generated by BIDs could be used to deliver NBS that provide protections to at-risk infrastructures (for businesses operating in an area of flood risk, for example) or to provide wider benefits to business and society.

The [Nature-based solutions to the climate emergency: The benefits to business and society](#) report documented:

- 10–50% increase in willingness to spend on products whilst in the presence of street trees in a central business district.⁴⁷
- 30– 50% increase in restaurant patronage due to street trees.⁴⁸
- 40% increase in commercial trading rates after investment in well-planned greenspace.⁴⁹

The [Nature-based solutions to the climate emergency: The benefits to business and society](#) report documented:



Public-private partnerships could therefore link the environmental and economic benefits of investing in NBS.

Example: Victoria’s Green Business Improvement District

The [Victoria BID](#) (in central London) undertook a green infrastructure audit in 2010, to understand how and where green features could best improve flood resilience, enhance biodiversity and provide socio-economic benefits to businesses, workers, residents and tourists. The initiative mapped the ecosystem services provided by green infrastructure across the BID and assessed their economic value, making an evidenced business case for nature-positive investments across the BID.

Long-term investment models

To ensure long-term provisions are made for nature, LAs could use stewardship models, endowments, or service-charges. Organisations such as [The Land Trust](#) or [Fields in Trust](#) work to protect parks, greenspaces and other natural assets in perpetuity, forging partnerships with LAs, landowners, and communities and acting as interim site managers.⁵⁰ As stewards of greenspace, such organisations can assist in the development of long-term investment plans via endowment structures, service charge models or others.

Endowments can provide long-term funding for NBS from the interest gained on investments in assets, either via property or stock value. Endowments facilitate a steady return, though this is dependent upon the initial endowment being large enough to yield the requisite income. LAs would benefit from the technical services and expertise of organisations such as [The Land Trust](#) or [The Parks Trust](#) to manage investments.

Target stakeholder engagement campaigns

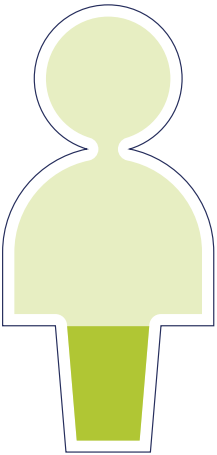
Future engagement between GM LAs and both business and community members can be informed by the findings of the Citizens Survey, GM User Parks Survey, and the NBS Evidence Base.

Both the Citizens Survey and GM Parks User Survey highlighted a limited understanding of the terms green infrastructure and NBS. ‘Climate resilience’ was even more poorly understood, with only 27% of respondents reporting a complete understanding of the term. It is important that these terms are more clearly understood by community members so that localised NBS investment can be recognised as enhancing the climate resilience of their neighbourhoods.

It is important that LAs connect the dots between NBS and climate change adaptation and resilience for communities, given that 57% of GM Parks User Survey respondents reported a willingness to donate to projects that reduce the impacts of climate change. Using climate change adaptation statistics from the [Nature-based solutions to the climate emergency report \(p. 8 – 11\)](#), discussions regarding how NBS help us to adapt to increased flooding, heatwaves, and urban heat island effect can be facilitated with a range of stakeholders.

LA engagement activities would benefit from working to increase the understanding of this terminology amongst residents, to enhance public confidence in NBS and help to capture community buy-in. To achieve this, LAs could tap into the work that NGOs such as Groundwork, City of Trees (and other former Community Forest Partnerships), and RHS are already undertaking with communities at scale.

Respondents reporting a complete understanding of ‘climate resilience’:



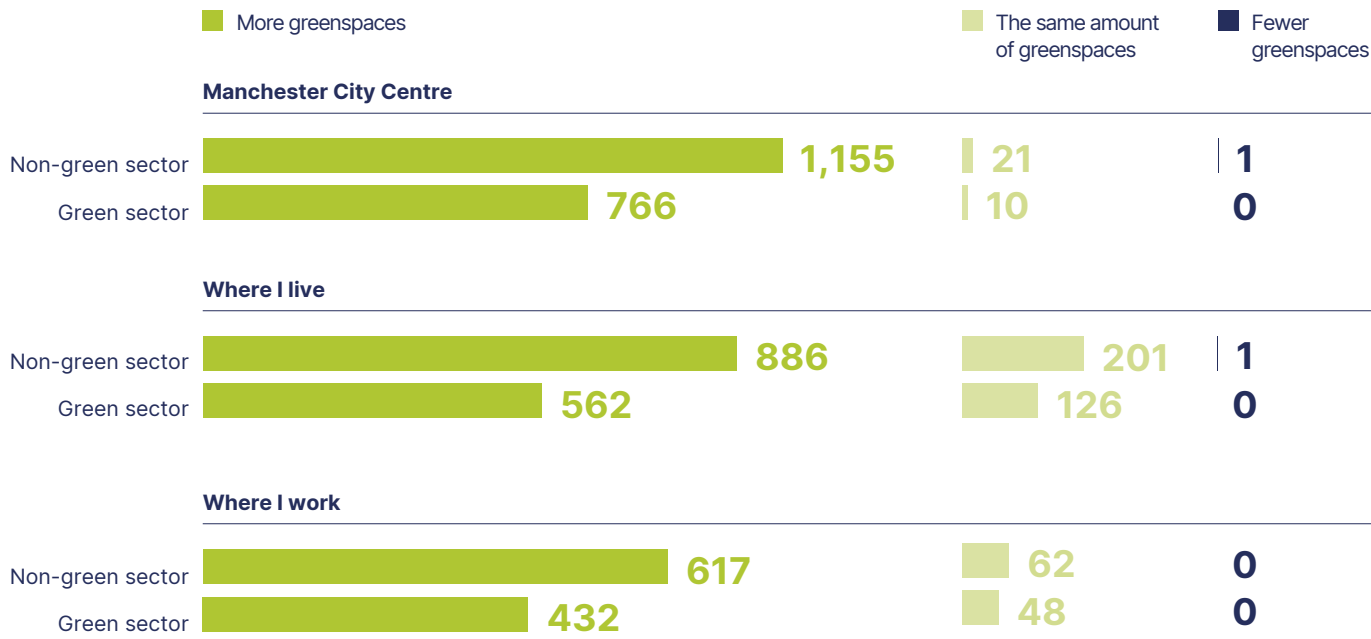
27% only

Example: Groundwork’s Eco-Streets Competition

In Spring 2021, Groundwork Greater Manchester ran their Eco-Streets competition, which offered £6,000 funding to five community groups to transform an unused and neglected area of their neighbourhood into an innovative green space that tackles climate change by prioritising NBS. The competition received over 200 expressions of interest and 45 final entries, engaging and empowering communities to come up with their own NBS to the climate crisis at the local scale.

Ultimately, LAs are likely to face increasing public pressure to ensure the quality and functionality of their natural assets is maintained. **An overwhelming majority of citizens reported that they would like to see more greenspaces in Greater Manchester** (see Figure 10 below). If LAs are to deliver NBS, with resources remaining stretched, they should reflect upon the recommendations, opportunities and guidance outlined in this report, working to bolster their good work where possible and innovate practices where necessary.

Figure 10: Citizens Survey responses to ‘would you like to see more greenspaces in GM?’



Reflections

Combining citizen, LA and NBS-related investment research from the IGNITION project, this guide progresses understandings of the innovative opportunities available to LAs, and the necessary interaction between them and public, private, third sector and community stakeholders.

These enhanced understandings should equip LAs with greater confidence to invest in NBS, increasingly embedding them as part of business-as-usual practices. As we work towards a green recovery from the COVID-19 pandemic, LAs have the opportunity capitalise on the public's enhanced appreciation of nature.

There is no quick fix for nature-positive, climate-conscious behavioural change either within organisations such as LAs or across wider society. However, the recommendations outlined at the outset of this guide and the opportunities that have followed, aim to assist the next step-change in LA decision-making and operating, helping authorities on that journey towards creating greener, more resilient, and sustainable places for people to live and work.

- | | | | | | | | | | | | | | |
|---|---|----|---|----|--|----|---|----|--|----|---|----|---|
| 1 | WWF (2021). The Living Planet Report. [online] Available at: www.wwf.org.uk/living-planet-report (Accessed: 09/04/21). | 7 | Callaway, R., Dixon, T., and Nikolic, D. (2019). Embedding green infrastructure evaluation in neighbourhood masterplans – does BREEAM communities change anything? Journal of Environmental Planning and Management 1–28. https://doi.org/10.1080/09640568.2018.1563371 | 13 | The Economist Intelligence Unit (2015). The cost of inaction. [online] Available at: https://eiuperspectives.economist.com/sustainability/cost-inaction (Accessed: 01/03/2021). | 21 | When considering climate and ecological risks and areas to target NBS interventions, the MappingGM tool provides a comprehensive spatial dataset that maps a number of opportunity and improvement areas. | 27 | Wigan Council also supported Plantlife's 'No Mow May' campaign, encouraging residents to leave their domestic gardens unmown for a month, and offering additional guidance and maintenance tips to encourage and support pollinators. | 31 | The Wimbledon and Putney Commons Levy uses a proximity-based taxation model for the management of the Commons. The levy-paying area is defined as any residence where the entrance is within three-quarters of a mile from the boundaries of Wimbledon Common via the most direct route. | | |
| 2 | Trading Economics (2021). United Kingdom Urban Population (% Of Total: 1960–2019 Data). [online] Available at: https://tradingeconomics.com/united-kingdom/urban-population-percent-of-total-wb-data.html (Accessed: 09/04/21). | 8 | Mell, I. (2018). Financing the future of green infrastructure planning: alternatives and opportunities in the UK. Landscape Research 43, 751–768. https://doi.org/10.1080/01426397.2017.1390079 | 14 | World Economic Forum (2021) The Global Risks Report 2021. [online] Available at: www3.weforum.org/docs/WEF_The_Global_Risks_Report_2021.pdf (Accessed: 03/03/2021). | 22 | Fugard, A. and Potts, H. W. W. (2019). Thematic Analysis, in SAGE Research Methods Foundations. [online] Available at: https://methods.sagepub.com/foundations/thematic-analysis (Accessed: 01/03/21). | 23 | Scott, A., Hölzinger, O., and Sadler, J. (2017). Making Plans for Green Infrastructure in England: Review of National Planning and Environmental Policies and Project Partners' Plans. Northumbria University & University of Birmingham. | 28 | When a £1 investment in parks is estimated to return £27 to LAs, comprehensive business cases can be made that support NBS financing. | 32 | Manchester City Council (2018). Annual S106 Monitoring Report. [online] Available at: https://democracy.manchester.gov.uk/documents/s2258/Annual%20S106%20Monitoring%20Report.pdf (Accessed: 13/05/21). |
| 3 | Whitten, M. (2019). Blame it on austerity? Examining the impetus behind London's changing green space governance. People, policy, place, 12(3), pp. 204–224. DOI: 10.3351/ppp.2019.8633493848 | 9 | Horwood, K. (2020). The Development of Green Infrastructure Policy in the North West Region of the UK 2005–2010. Planning Practice & Research 35, 1–17. https://doi.org/10.1080/02697459.2019.1704538 | 15 | Local Government Association (2018). Local government funding: Moving the conversation on. [online] Available at: www.local.gov.uk/sites/default/files/documents/5.40_01_Finance%20publication_WEB_0.pdf (Accessed: 10/04/21). | 16 | The Citizen Engagement Baseline Report is hereafter referred to as the 'Citizens Survey'. | 24 | UK Green Building Council (2021). Principles for delivering urban Nature-based Solutions. London, UK. | 29 | Economics for the Environment (2018). Natural Capital Account for Greater Manchester. [online] Available at: https://naturegreatermanchester.co.uk/wp-content/uploads/2018/06/NCA-for-GM-Final-Report-270618.pdf (Accessed: 10/03/21). | 33 | Manchester City Council (2019). Annual S106 Monitoring Report. [online] Available at: https://democracy.manchester.gov.uk/documents/s11261/Annual%20S106%20Monitoring%20Report.pdf (Accessed: 13/05/21). |
| 4 | Mell, I. (2020). What Future for Green Infrastructure Planning? Evaluating the Changing Environment for Green Infrastructure Planning Following the Revocation of Regional Planning Policy in England. Planning Practice & Research, 35, 18–50. https://doi.org/10.1080/02697459.2020.1714271 | 10 | Kabisch, N., Korn, H., Stadler, J. and Bonn, A. (2017). Nature-based Solutions to Climate Change Adaptation in Urban Areas Linkages between Science, Policy and Practice. Springer, Cham, Switzerland. | 17 | 743 of the Citizens Survey responses came through participation in a series of workshops held between November 2019 – January 2020. | 25 | Replacing a regular amenity mowing (cutting every 2–3 weeks and dropping the cuttings on-site) with a 'cut and collect' approach only 2–3 times a year (where the cuttings are disposed of off-site) combined with additional weed treatment (to remove dominant species) cannot ensure cost savings. Costs may even increase if ground preparation and wildflower seeding are factored in. | 30 | Greater Manchester Health and Social Care Partnership (2020). Greater Manchester Big Mental Wellbeing Conversation: Report of Findings. [online] Available at: https://hub.gmhsc.org.uk/mental-health/wp-content/uploads/sites/6/2021/01/Greater-Manchester-Big-Mental-Wellbeing-Conversation-findings-Dec-2020.pdf (Accessed: 10/04/21). | 34 | Salford City Council (2021). Planning obligations income and expenditure. [online] Available at: www.salford.gov.uk/planning-building-and-regeneration/planning-applications/planning-obligations-and-community-infrastructure-levy/planning-obligations-income-and-expenditure/ (Accessed: 27/05/21). | | |
| 5 | Local Government Association (2018). Local government funding: Moving the conversation on. [online] Available at: www.local.gov.uk/sites/default/files/documents/5.40_01_Finance%20publication_WEB_0.pdf (Accessed: 10/04/21). | 11 | Aether (2021). Progress towards UK local climate emergency targets. [online]. Available at: www.aether-uk.com/Resources/ClimateEmergencies (Accessed: 27/02/21). | 18 | The LA Workshop was held virtually and was attended by LA officials from across the 10 districts of GM. | 19 | Citizens Survey respondents could select multiple categories simultaneously. | 26 | Meadow In My Garden is a Community Interest Company (CIC) that has been established to help boost biodiversity through the sale of flower meadow seeds. The CIC supports work with communities, LAs, and landscapers to deliver wildlife- | 35 | The biodiversity net gain 'Good practice principles for development' report – co-produced by CIRIA, IEMA, and CIEEM – provides comprehensive guidance for LAs to incorporate biodiversity net gain policies within Local Plans. | | |
| 6 | Mell, I. (2017). Green infrastructure: Reflections on past, present and future praxis. Landscape Research: Green Infrastructure, 42(2), pp.135–145. | 12 | London Sustainable Development Commission (2020). The role of the UN Sustainable Development Goals in London's green and fair recovery: An insights paper. [online] Available at: www.london.gov.uk/sites/default/files/lfdc_-_sdgs_and_londons_green_fair_recovery_1.pdf (Accessed 01/03/21). | 20 | Many groups in the Citizens Survey fell into multiple categories, e.g., "a youth group engaged in green activities". | | | | | | | | |

³⁶ Greater Manchester Green City Partnership (2020). Progress Report Q3 (Oct – Dec) 2020. [online] Available at: <https://democracy.greatermanchester-ca.gov.uk/documents/s10851/05%20Progress%20Report%20Q3%2020.21.pdf> (Accessed: 14/05/21).

³⁷ The GM Green City Region Partnership has been progressing work on biodiversity net gain in line with the requirements of the forthcoming Environment Bill. Additionally, the Environment Bank provides complimentary LA-specific guidance and training for verifying biodiversity net gain assessments, establishing Habitat Banks, and ensuring the quality of biodiversity offsets is optimised.

³⁸ DEFRA have produced a ‘Best Practice Guide’ for PES schemes, suitable for all stakeholders (e.g., buyers, sellers, brokers, and regulators), which is supported by a ‘PES in Practice’ collection of case studies.

³⁹ CIEEM have produced a Briefing Paper on environmental net gain that aims to provide a practical definition of the term and provide greater clarity regarding the legislative, policy and strategic context within which environmental net gain can be delivered.

⁴⁰ The Land Trust (2018). Port Sunlight River Park. Available at: <https://thelandtrust.org.uk/space/port-sunlight-river-park/> (Accessed: 28/05/21).

⁴¹ Wolf K.L. (2003). Public response to the urban forest in inner-city business districts. Journal of Arboriculture. 29 (3): 117–126., 29(3), pp.117–126.

⁴² A majority percentage of respondents also demonstrated a willingness to pay for educational and sporting events and activities (see Figure 8).

⁴³ CABE Space (2006). Paying for Parks: Eight models for funding urban greenspaces. CABE, London.

⁴⁴ The £1 Billion Challenge Route Map has been developed by the Scottish Wildlife Trust in partnership with the Scottish Environment Protection Agency and was published in May 2020.

⁴⁵ Susdrain (2018). Moorlands Junior School SuDS: Case Study. [online] Available at: www.susdrain.org/case-studies/pdfs/suds_awards/025_18_04_30_susdrain_suds_awards_moorlands_junior_school_suds_sale.pdf (Accessed: 14/05/21).

⁴⁶ Business in the Community (2018). Water Resilient Cities: A business case for Greater Manchester. [online] Available at: www.bitc.org.uk/wp-content/uploads/2019/10/bitc-environment-report-waterresilientcitiesbusinesscasegreatermanchester-jul2018.pdf (Accessed: 12/04/21).

⁴⁷ Wolf K.L. (2003). Public response to the urban forest in inner-city business districts. Journal of Arboriculture. 29 (3): 117–126., 29(3), pp.117–126.

⁴⁸ GreenBlue Urban (2018). Street Tree Cost Benefit Analysis. Available at: www.treeeconomics.co.uk/wp-content/uploads/2018/08/GBU_Street-Tree – Cost-Benefit-Analysis-2018.pdf (Accessed: 16/07/20).

⁴⁹ Department of the Environment (1997). Managing Urban Spaces in Town Centres: Good Practice Guide. London: Department of the Environment.

⁵⁰ Liverpool City Council have pledged to protect 100 greenspaces from sale or development in perpetuity, by working in partnership with Fields in Trust. In doing so, Liverpool has become the first city in the UK to ensure every resident lives within a ten-minute walk of a protected greenspace.



the Ignition PROJECT

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Access other IGNITION reports and fact sheets or contribute to the evidence base via [our website](#).

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Download [our toolkit](#) to take steps to make your workspace greener and more resilient.

Visit the [IGNITION Living Lab website](#) to see our Nature-based Solutions in action.

Find out about all [our upcoming events](#) for business, investors, local authorities, and community groups.

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