



Greater Manchester Natural Capital Investment Plan

Final Report from

eftec, Environmental Finance and Countryscape
to
Greater Manchester Combined Authority (GMCA)

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Disclaimer

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Executive Summary

This first Natural Capital Investment Plan (the plan) for Greater Manchester has been produced by eftec, Environmental Finance and Countryside, making recommendations for the Greater Manchester Combined Authority (GMCA) and its partners to consider. It was commissioned by the GMCA but represents the views of the authors.

Background and Need

The need to establish and implement a Natural Capital Investment Plan to mobilise existing and new sources of funding was a key outcome from the Greater Manchester Mayor's Green Summit in March 2018.

This priority arises from the current situation in which the management of Natural Capital draws upon a relatively limited suite of business models and financing strategies, including: public sector grants, public sector service provision, private developer investment and through community-level action. These are both narrow in scope and vulnerable to future changes to the financial and economic landscape.

This plan, therefore, aims to broaden the range of potential sources of investment in natural capital. This is challenging because many different parts of society receive benefits from natural assets without paying for them. However, there are ways in which revenues can be generated, and as a result mechanisms can be developed that attract a wider range of private sector and alternative sources of investment. To move forward in developing these, this plan identifies suitable areas of potential investment and which finance models could be used.

This challenge of securing varied and sustained investment in natural capital is common to all cities across the UK. The natural capital investment plan developed for Greater Manchester is an innovative approach which can be replicated.

Vision and objectives

The plan is designed to deliver the vision of:

“A Greater Manchester where investments in natural capital enhance the long-term social, environmental, and economic health and wellbeing of its people and businesses.”

The vision defines ‘Investment in natural capital’ as **“Funding that is intended to provide a return to the investor while also resulting in a positive impact on natural capital.”** Returns are defined predominantly, although not exclusively, in financial terms, and always from the perspective of investors. There are different investor types, which are shown in Figure S.1 below.

Outside the public sector, investment in natural capital has traditionally drawn upon philanthropic sources, shown to the left of the dotted line in Figure S.1, with grants as the main form of investment. This plan is looking to support investors and investments, shown to the right of the dotted line in Figure S.1, for whom some financial returns are necessary, and which will often require some form of blended finance (a combination of funds for risk sharing).

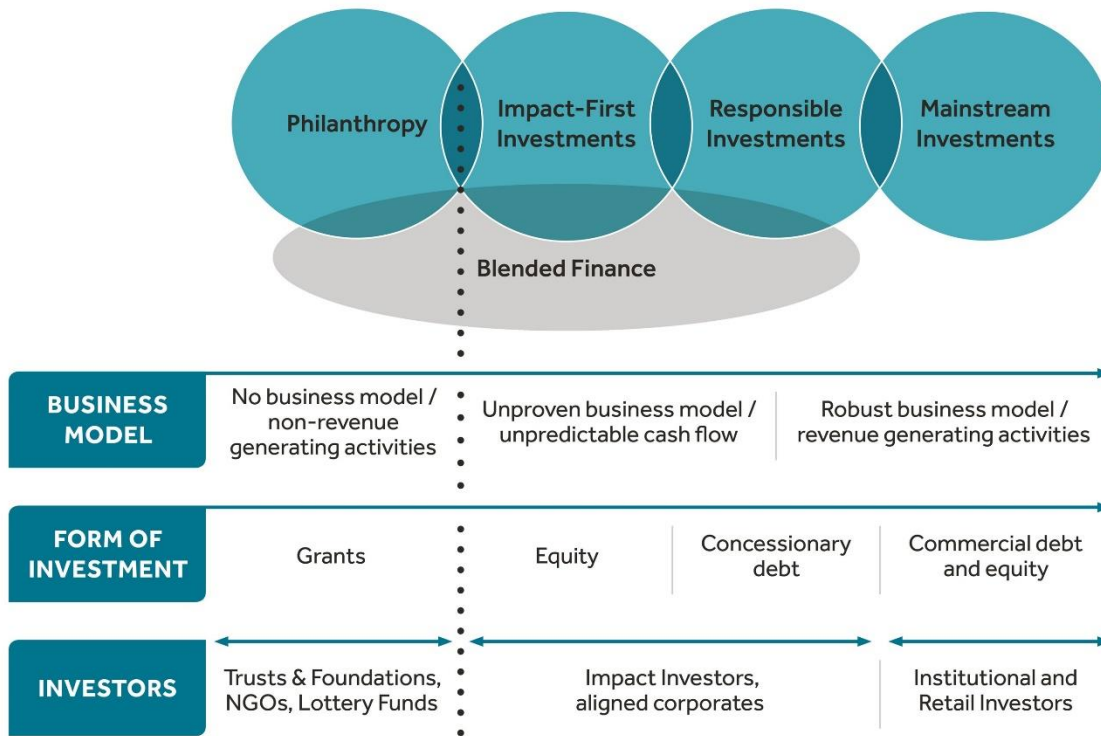


Figure S.1: Types of potential investors in natural capital

Greater Manchester has a relatively well-developed evidence base on natural capital. There are also many existing projects aiming to maintain and enhance the benefits natural capital provides. Full details are provided in the baseline review report that supports this plan. The baseline review identified the following key priorities and opportunities which the investment plan can help achieve, several of which are linked:

- a) **Improved health outcomes**, covering both physical and mental health benefits of exposure and access to the natural environment, addressing spatial health inequalities;

- b) **Improving place**, making the Greater Manchester region a more attractive place to live and work, which, in turn, will play an important role in attracting inward investment, skills and tourism. This also supports an uplift in property values;
- c) **Building resilience**, principally addressing climate change and flood risks;
- d) **Supporting the local economy**, through regeneration towards (b), and improvement in capacity to supply environmental goods and services;
- e) **Conserving and enhancing habitat and wildlife**, valued for its own sake and to increase the resilience (c) and quality of ecosystem services supporting other priorities (a) – (i). Funded via targeted investors, potentially for biodiversity net gain from development;
- f) **Sustainable travel** (e.g. walking and cycle routes where natural capital is enhanced) which can contribute to (a) and (b);
- g) **Water quality and flood management** (surface water and fluvial), which is linked to (c) and (e), and mental health in (a);
- h) **Climate regulation** including carbon storage and sequestration which support mitigation actions and urban cooling and building sheltering, which support (c), and
- i) **Air quality improvements**, including through (f) and with links to (a).

The evidence base has been used to map existing projects and indicators of opportunities in Greater Manchester. Figure S.2 represents the final output of this spatial analysis, which is subject to data limitations so is only high-level guidance. Darker shading indicates areas with more investment opportunities and those that are more likely to deliver the priorities listed above.

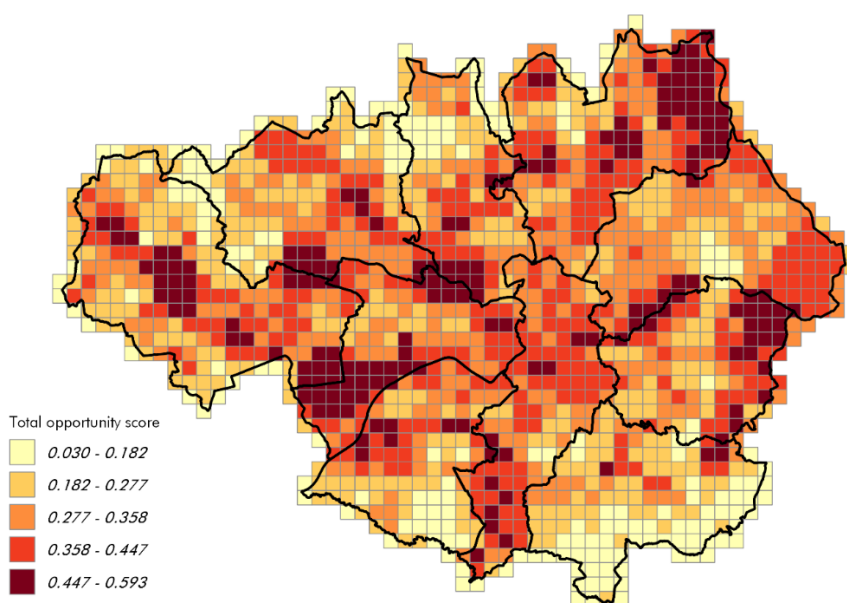


Figure S.2: Indicative natural capital priorities and opportunity map

The investment plan looks at the roles for different types of potential investors within the wider picture of the social, economic and governance structure of the city region, and the (local and national) environmental policies and regulations. Table S.1 presents a range of potential investor types in terms of their form, typical investment size, expectations, and readiness to invest.

Identifying different sources and how they fit within this wider picture can inform how the Combined Authority and other stakeholders can work more efficiently in terms of funding and policy/governance effort. It can also inform the choices between traditional environmental spending and regulation (which remain crucial to sustainable management of natural capital) and innovative financing approaches.

Natural Capital Investment Plan

The plan has three key components:

1. A pipeline of potential project types which need investment;
2. Finance models to facilitate private sector investment and the role of public sector, and
3. Recommendations to put the plan into practice over the next 5 years.

1. A pipeline of potential project types

The plan identifies a wide range of current project types and potential investment opportunities that can contribute to the vision for Greater Manchester. It then assesses the 'investability' of each in terms of: the size and predictability of revenue streams and attractiveness to investors (reflecting risks and returns). While the assessment takes account of the value generated for society, the focus is the returns (financial or other impacts) to the investors.

Figure S.3 shows the result of this assessment for a pipeline of potential project types. The highest priority, most investable opportunities in the top left-hand quadrant of the figure, provide higher returns and higher certainty, and investments in them could start within three years. Those that deliver lower returns with more uncertainty will take longer to be investable, and so are lower priorities. Drawing in investment (and providing financial and other returns to the investor) is not the solution for financing all Greater Manchester's natural capital priorities. Therefore, delivering some environmental priorities and outcomes will require continued public and philanthropic funding (see Table S.1).

Table S.1: Types of potential investors in natural capital in Greater Manchester

Investor Type	Investors	Form of investment	Typical size	Expected returns	Term	Readiness to invest
Public	<ul style="list-style-type: none"> Government/ local authority budgets (e.g. Environment Agency (EA)/ Natural England (NE)/ Forestry Commission (FC) Health budgets 	<ul style="list-style-type: none"> Funding technical assistance/ capacity building De-risking other investors 	n/a	<ul style="list-style-type: none"> Nil financial returns/ patient equity Capital value appreciation? Cost savings Public goods 	n/a or long-term	<ul style="list-style-type: none"> Limited outside of current funding
Philanthropy	<ul style="list-style-type: none"> Trusts and Foundations Non-Government Organisations (NGOs) Lottery Funds 	<ul style="list-style-type: none"> Funding technical assistance/ capacity building De-risking investment 	£10k-£2m	<ul style="list-style-type: none"> No principal repayment or returns expected Potentially provide repayable grants/patient equity 	n/a or long-term	<ul style="list-style-type: none"> High level of interest in exploring repayable models and impact investment Reduction in grant funding available
Impact investors	<ul style="list-style-type: none"> Social investors 	<ul style="list-style-type: none"> Debt investment or can operate with equity style risk 	£150k-£2m	<ul style="list-style-type: none"> Principal repayment 2%-10% returns 	3 to 5 years	<ul style="list-style-type: none"> Most do not invest in environmental projects - may be restricted to social impact led projects
Corporates	<ul style="list-style-type: none"> Water companies Insurance companies Infrastructure developers Other commercial companies 	<ul style="list-style-type: none"> CSR (Corporate Social Responsibility) Initiatives Debt or equity investment Mitigation payments 	£100k-£20m	<ul style="list-style-type: none"> Principal repayment 2%-10% returns Cost savings/ complement grey infrastructure Offsets 	3 to 5 years	<ul style="list-style-type: none"> Projects must meet investor return criteria
Institutional Investors	<ul style="list-style-type: none"> Pension funds Financial sector Green bonds 	<ul style="list-style-type: none"> Debt or equity investment 	£20m+	<ul style="list-style-type: none"> Principal repayment Commercial returns 	5-25 years	<ul style="list-style-type: none"> Enter when projects are commercially viable, or are de-risked by other investors
Retail Investors	<ul style="list-style-type: none"> Individual investors inc. High Net Worth Individuals (HNWI) Retail bonds Charity bonds Crowdfunding 	<ul style="list-style-type: none"> Debt or equity investment 	£500k-£2m	<ul style="list-style-type: none"> Principal repayment 2%-7% returns 	5-25 years	<ul style="list-style-type: none"> Limited track record Suitable for asset backed or branded projects

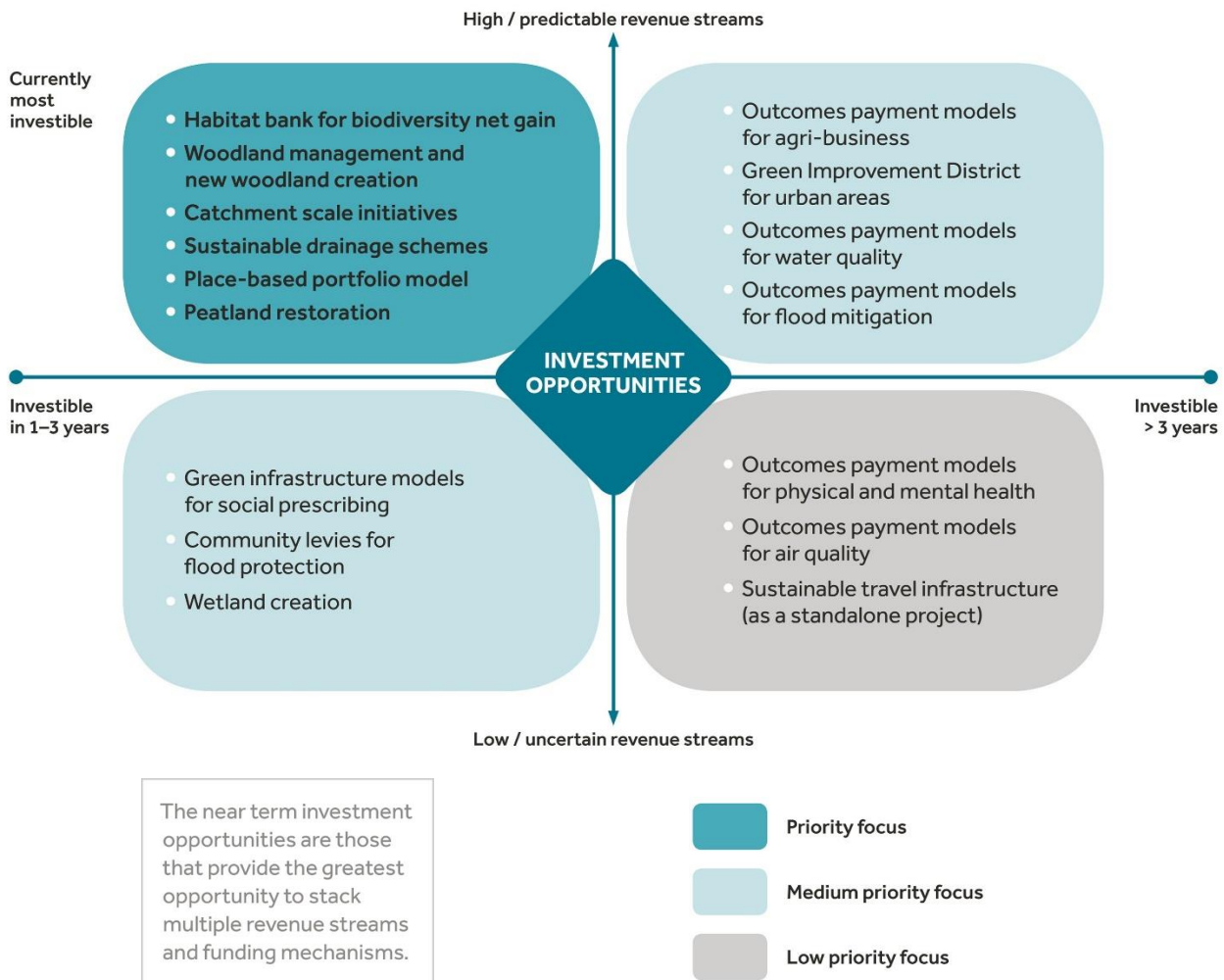


Figure S.3: Investability assessment of a pipeline of potential natural capital project types

2. Finance models

Based on the priority project types in the pipeline, the plan also identifies potential sources of investment and natural capital finance models. Finance models are recommended for three investment opportunities on the basis that they:

- Are based on more advanced business cases than the other options, with greater revenue generating capacity and near term investability;
- Have support from local stakeholders;
- Offer best prospects to motivate a significant amount of third-party investment in a reasonable time-scale, and
- Can be progressed by actions that are largely within the powers of GMCA and its partners, and in line with current policy commitments.

However, these priorities do not imply that other potential investment models should not continue to be researched and developed, especially since this is a dynamic area of public policy (e.g. due to reform to land use subsidies and regional infrastructure plans).

Place-Based Portfolio Models, could be created by leasing green and blue infrastructure (or natural capital) assets to Trusts which could then exploit new revenue opportunities, such as through prescribed health activities. They have an existing track record in the UK (e.g. in Milton Keynes, and currently being implemented in Newcastle), and are potentially suitable to Greater Manchester's assets and priorities, but are not widely known amongst stakeholders. There are several existing Trusts in Greater Manchester focused on specific benefits, geographical areas or habitats which are possible vehicles for enacting this model if they can provide adequate scale for delivery. ***A project is required to explore the feasibility of new Green and Blue Spaces Trust structures and develop the business case for it in Greater Manchester.***

Habitat and Carbon Banking sell credits from additional actions that increase biodiversity or stored carbon to organisations who want to compensate for their unavoidable impacts. A requirement for Biodiversity Net Gain (BNG) from land use developments is proposed for Greater Manchester, which would give a regulatory driver for habitat banking. Carbon credit markets remain voluntary, but carbon emissions reduction has political backing by the City-region Mayor. These opportunities have a large cross-over in delivery, so can (with careful regulation) be stacked as revenue sources for projects. Banking can achieve greater returns than existing bilateral trading through economies of scale, use of specialist skills and ex-ante delivery. ***The ecological and planning rules to deliver BNG need to be co-developed with the requirements of the finance model.***

Sustainable Drainage Systems (SuDS) have an established revenue mechanism, through a reduced water company drainage connection charge for developments. A special purpose vehicle (SPV) could deploy appropriate capital at different project stages, allowing SuDS to be deployed and the cash flows aggregated to enable investment to be scaled-up as part of the Water Resilient Cities programme. An SPV can achieve greater returns than existing bilateral transactions through specialist skills and overcoming knowledge gaps. ***Standardised contracting for SuDS works and an extended contractual commitment to water company charging rates period could improve returns under this model.***

The suggested **key role for the public sector** in the plan is to be **an investment commissioner**, developing a supportive financial environment, and business plans for specific investment opportunities. This is as per its role in the potential Urban Innovative Action (UIA) project for producing green infrastructure models (including for SuDS) that are investment-ready. This focus on one key role for the public sector, ideally established with separate accountability and governance arrangements, will avoid

diluting effort across many other potential roles and creating actual or perceived conflicts of interest.

As part of this role, GMCA and partners would need to create an **Investment Readiness Fund (IRF)**¹. This fund is estimated to require a minimum of £1m from foundations, corporates, Corporate Social Responsibility (CSR) budgets, High Net Worth Individuals (HNWI), and philanthropists to provide specialist finance, legal and other skills to help develop business plans for natural capital projects to improve their presentation to investors. An example of a social IRF unlocked £18 in investment (from private investment, institutional investors, banks, corporates and HNWIs) for every £1 spent by government². The proposed Greater Manchester Environment Fund (GMEF) could provide a governance function for an IRF, such as the potential UIA project (for green infrastructure models, including SuDS).

Several roles in the finance models can be carried out by the private sector (e.g. a trading desk for carbon or biodiversity credits). Actual or perceived conflicts of interest in the public sector can deter outside investment. To avoid this, the involvement of the public sector (e.g. as land use planning authorities, ensuring verification of biodiversity net gain takes place, purchasing of health outcomes) could be managed by **separate bodies with distinct accountability requirements and governance**. It would be useful to have **oversight by GMCA** to ensure there is feedback and the ability to improve the investment models over time.

3. Actions

The plan outlines how finance models could be applied to three investment opportunities which are considered the most advanced in terms of being able to mobilise investment. Potential time-bound actions to deliver the investment plan are summarised in Figure S.4, with more detailed actions presented in Figure S.5. Drivers to encourage and manage private sector involvement need to be put in place or strengthened in the immediate term of up to 1 year. In the short term (1 -2 years), business plans could be developed for investments, supported by an IRF. In the medium term (3-5 years), delivery, monitoring and verification, and feedbacks would need to take place, led by a suitably independent body.

¹ A potential Urban Innovative Action project, that could support this function, is at an advanced stage of development for Greater Manchester, but is not yet agreed: <https://www.uia-initiative.eu/en/news-events/discover-22-new-projects-3rd-uia-call-proposals>

² <https://www.sibgroup.org.uk/resources/in-pursuit-of-readiness>

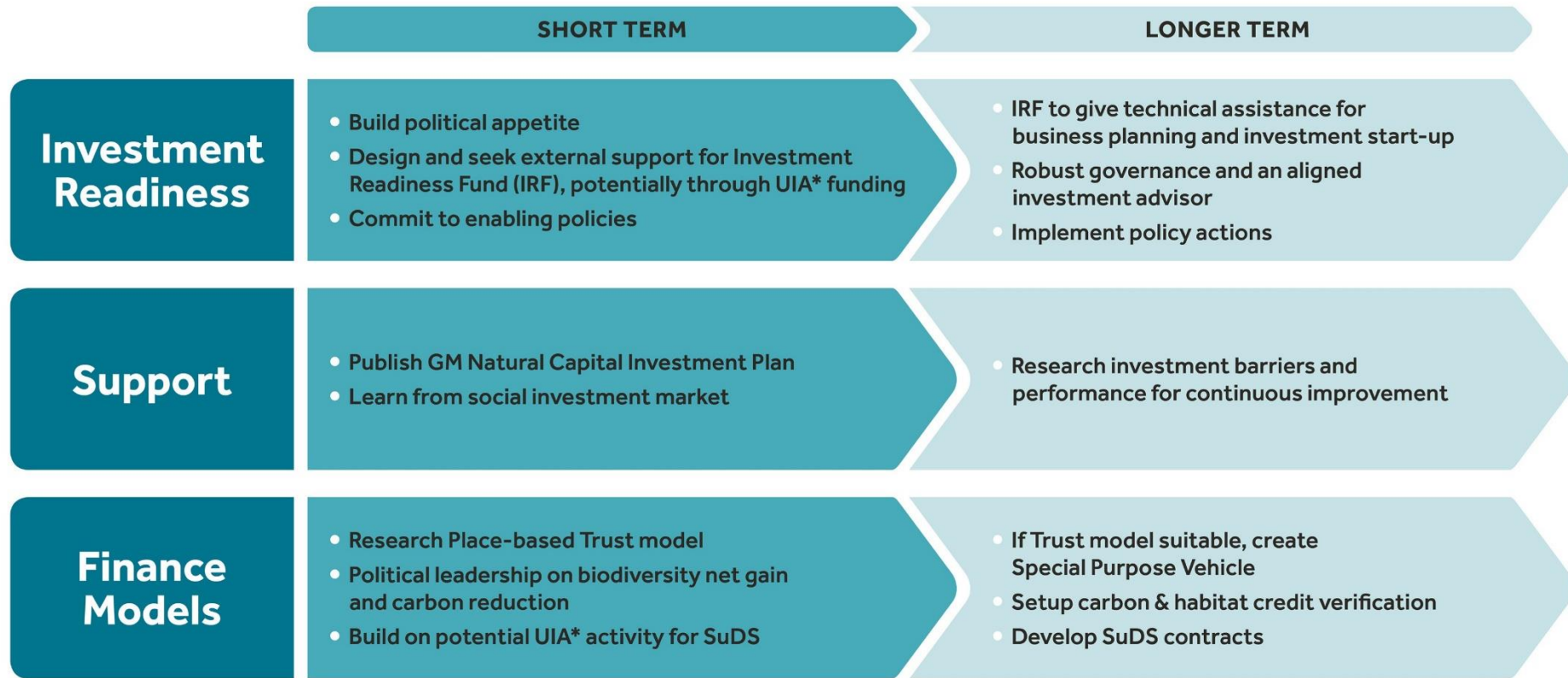
The actions are broken down into three key areas:

- Develop business plans for priority investments;
- Take forward policy actions to incentivise investments, and
- Define governance systems for investments.

The order in which milestones can be met depends on the context. For some, without policy actions, there will be no or insufficient investment (e.g. habitat banking). For others, where there are local / national policy incentives already in place, other actions become more urgent. Implementing the roadmap is not a linear process. For example, business plans may need to be drafted and adjusted to reflect developments in policy and governance requirements.

The plan shows the organisations that can take the recommended actions, and the estimated costs of such actions (see Table S.2). This includes a range of actions by GMCA, local authorities (some specifically by land use planning departments), and other partners including the wider research community (e.g. Universities).

The majority of actions have low cost implications for the public sector (e.g. publication of this plan, implementing policy actions), with some of these costs already covered by existing project funding (e.g. the Natural Course Project). Significant costs relate to specific actions, such as establishing an Investment Readiness Fund and financing Place-based Trusts. However, external funding can be sought for these, such as through the potential Urban Innovative Action fund. **Therefore, the actions recommended to take this natural capital investment plan forward do not place a large and additional financial requirement on the public sector.**



*Urban Innovation Action – Funding TBC

Figure S.4: Investability assessment of a pipeline of potential natural capital project types

<p>Immediate (6-12 months)</p>	<p>Short term (1-2 years)</p>	<p>Medium term (3-5 years)</p>
<ol style="list-style-type: none"> 1. Publish Natural Capital Investment Plan 2. Assess investment appetite for specific finance models 3. Commit to policy actions to drive investment (e.g. BNG requirement) 4. Design Investment Readiness Fund, building on potential UIA funds but retaining broader natural capital remit, to develop business plans against which investments can be made 5. Research and consult on a Trust model taking long-term leasehold of a portfolio of natural capital assets 6. Research approaches to identifying and implementing SuDS opportunities 7. Draw learning from the social investment market 	<ol style="list-style-type: none"> 8. Implement policy levers to drive or enable investments 9. Confirm governance choices and purpose of other public sector roles, such as on possible Greater Manchester specific investment vehicles (e.g. GMEF) 10. Appoint investment advisor to GMCA with aligned interests 11. Form Investment Readiness Fund: <ol style="list-style-type: none"> a. Create prospectus and carry out fund raising b. Provide technical assistance for writing business plans and preparing the appropriate governance structure. c. Manage the development of business plans. 12. Establish monitoring and verification of returns on different investments (e.g. carbon or biodiversity credits) 13. Manage project start-up and delivery 14. Research with stakeholders to overcome barriers for opportunities in pipeline, e.g: <ol style="list-style-type: none"> a. In health sector to define returns needed to justify investment in natural capital. b. Develop standardised contract form and longer charge reduction periods for SuDS 	<ol style="list-style-type: none"> 15. Manage project delivery 16. Monitor and verify returns to investors and society 17. Further investment readiness funding to develop business plans for opportunities in pipeline 18. Raise targeted funds to deliver and scale investment opportunities 19. Gather learning from research and improve approaches

Figure S.5: Timeline of actions to start and manage the Greater Manchester Natural Capital Investment Plan

Table S.2: Actions to implement the Natural Capital Investment Plan, lead organisations and estimated costs

Actions	Specific actions by timescale		
	Immediate (6 – 12 months)	Short (1 – 2 years)	Medium (3 – 5 years)
Supporting actions:			
Communications	1. Publish Plan Costs: low - internal <i>GMCA</i>	Further communications Costs: low - internal <i>GMCA</i>	
Research	7. Learn from social investment market - research project to support Action 4 Costs: moderate £40,000 (drawing from the potential UIA activity and/or external research funding – see action 14) <i>Public sector partners and research bodies</i>	14. Research to overcome barriers Costs: TBC. <i>Mainly externally funded - connect to existing developments (e.g. Defra Urban Pioneer) and research programmes (e.g. Economic and Social Research Council)</i>	16 Monitor and verify returns 19 Gather learning & improve approach Costs: TBC. <i>Wider society/ existing research community and funds</i>
Investment preparation actions:			
GMCA Policies		8. Implement Policy levers, and 9. Confirm governance choices Costs: low - internal <i>GMCA, LAs and partner costs</i>	

Actions	Specific actions by timescale		
	Immediate (6 – 12 months)	Short (1 – 2 years)	Medium (3 – 5 years)
Supporting actions:			
	<p>2. Assessment of investment appetite</p> <p>Costs: low - internal <i>GMCA</i></p> <p>3. Commit to policy actions</p> <p>Costs: low – internal <i>GMCA, LA and partner costs</i></p>	<p>10. Appoint aligned investment advisor</p> <p>Costs: TBC, ongoing <i>Public sector and partners costs / incentives (e.g. could be supported by potential UIA activity, or Defra Urban Pioneer).</i></p>	
Investment Readiness Fund (IRF)	<p>4. Design the IRF (includes potential UIA activity)</p> <p>Costs: moderate £50,000 - £80,000 to setup, and plan raising capital <i>Public sector, partners & external funders – e.g. drawing from existing Natural Course project and could be supported by potential UIA activity</i></p>	<p>11. (a) provides technical assistance and (b) manages development of business plans.</p> <p>Costs: significant for <i>IRF</i> – seek £1m + from a variety of external sources (e.g. potential UIA activity, philanthropic sources)</p> <p>13. Manage project start-up and delivery</p> <p>Costs: moderate for <i>IRF</i> – could be supported by potential UIA activity</p>	<p>17. Further investment readiness funding to pipeline</p> <p>Costs TBC. <i>IRF and a variety of external sources, building on 11 (b)</i></p> <p>15. Manage project delivery</p> <p>Costs: moderate for <i>projects</i></p>

Finance model actions:

Actions	Specific actions by timescale		
	Immediate (6 – 12 months)	Short (1 – 2 years)	Medium (3 – 5 years)
Supporting actions:			
Place-based Portfolio Model	<p>5. Research and consult on Trust leasing natural capital assets</p> <p>Costs: moderate £40,000 for research – could be supported by 3rd party funding such as the Future Parks Accelerator, public sector health and environment policy research</p> <p>Internal consultation - low costs for <i>public sector and partners</i></p>	<p>Depending on (5), establish special purpose vehicle</p> <p>Costs: high (approx. £1m – <i>Public sector and partners</i> to seek 3rd party funding, e.g. from public health budgets, philanthropic sources)</p>	
Habitat/Carbon Banking Model	<p>(Actions 2 & 3)</p> <p>Costs: low - internal <i>Public sector and partners</i> costs, drawing from existing workstreams</p>	<p>(8)</p> <p>Costs low – internal <i>Public sector and partners</i></p> <p>12. Establish independent monitoring and verification body</p> <p>Costs: moderate <i>Public sector and partners</i></p>	<p>16. Independent monitoring & verification of returns</p> <p>Cost: moderate (<i>potentially a new monitoring & verification body</i>)</p>
SuD _s Model	<p>Potential UIA activity under (Action 4)</p> <p>Costs: low - internal <i>Public sector and partners</i> costs, possible to fund within potential UIA activity</p>	<p>14. (b) Develop standard SuDS contract and longer period</p> <p>Costs: moderate potential funding from <i>RICE project or UIA activity</i></p>	

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Abbreviations

ALC	Agricultural Land Classification
ANGSt	Accessible Natural Greenspace Standards
AQMA	Air Quality Management Area
BID	Business Improvement District
BNG	Biodiversity Net Gain
CSR	Corporate Social Responsibility
Defra	Department for Environment, Food and Rural Affairs
EA	Environment Agency
FC	Forestry Commission
GID	Green Improvement District
GIS	Geographical Information System
GM	Greater Manchester
GMCA	Greater Manchester Combined Authority
GMEF	Greater Manchester Environment Fund
GMEU	Greater Manchester Ecology Unit
HNWI	High Net Worth Individuals
ICRF	Investment and Contract Readiness Fund
IMD	Index of Multiple Deprivation
IRF	Investment Readiness Fund
LENS	Landscape Enterprise Networks
LSOA	Lower Super Output Area
MSOA	Middle Super Output Area
NE	Natural England
NCIP	Natural Capital Investment Plan
NGO	Non-Government Organisation
ONS	Office for National Statistics
SHELAA	Strategic Housing and Employment Land Availability Assessment
SME	Small and Medium Enterprise
SPV	Special Purpose Vehicle
SuDS	Sustainable Drainage Systems
UIA	Urban Innovative Action
WRC	Water Resilient Cities

1. Introduction

This first Natural Capital Investment Plan (the plan) for Greater Manchester has been produced by eftec, Environmental Finance and Countryside for the Greater Manchester Combined Authority (GMCA) and Natural Course, an EU LIFE Integrated Project.

Production of the plan was a key commitment announced at the Mayor's Green Summit in March 2018³, and will promote investment in opportunities that protect and enhance Greater Manchester's natural capital⁴ to support a healthy environment, population and economy. It builds on and complements, inter alia, the work of the Defra Urban Pioneer (including its baseline natural capital account for Greater Manchester) and the work of the Greater Manchester Environment Team, Greater Manchester Natural Capital Group, Low Carbon Hub, and initiatives across the 10 local authorities.

1.1 Project Aims and Objectives

The aim of this project is to produce a Natural Capital Investment Plan for Greater Manchester which promotes investment and delivery of opportunities to protect and enhance the natural capital of Greater Manchester.

To achieve this aim, the project is pursuing the following objectives:

- Identify a clear set of aims and outcomes for prioritising work on developing investment for the protection, maintenance and enhancement of Greater Manchester's natural capital assets;
- Identify the extent and condition of the area's prioritised natural capital assets, existing & planned projects and future pressures;
- Build on the existing evidence base to identify the required inputs (costs and options for financing), as well as benefits (both private market benefits and non-market social benefits), and beneficiaries (present and future; inside and outside the area);
- Identify and weigh up the opportunities for action, intervention and investment including a pipeline of significant investable projects;
- Outline the mechanisms for creating one or more pilot innovative natural capital finance model(s);
- Engage with key stakeholders, especially significant landowners and managers, who can ground in reality the proposed investment opportunities, and
- Provide a clear set of actions to deliver the required investment for the short, medium and long term.

A vision for the plan was developed in consultation with the project steering group at the start of the project (see section 2.1 of this report).

³ https://www.greatermanchester-ca.gov.uk/info/20005/green_city_region/117/green_summit/1

⁴ Natural capital is defined as the elements of nature that directly or indirectly produce value to people, including ecosystems, species, freshwater, land, minerals, the air and oceans, as well as natural processes and functions. It underpins all other types of capital – manufactured, human and social – and is the foundation on which our economy, society and prosperity is built (Natural Capital Committee, 2014).

1.2 Project Activity

The project’s work to develop the plan is organised through a series of project Tasks as illustrated in Figure 1.1. The identification of priorities from the baseline review (Task 2) and stakeholder consultation (Task 6) provided the basis for developing a short-list of investment opportunities (Task 3). The short-list of investment opportunities presented in this plan were refined through development of prioritisation criteria (in Task 4) which combines elements of financial and environmental economic considerations. Suitable finance models to pilot prioritised opportunities were identified (Task 5), taking into consideration existing governance structures, skills and capacity within GMCA area, and stakeholders to pilot them.

Following a stakeholder workshop (Task 6), and steering group reviews, this report presents the final plan, for the Combined Authority to consider in January 2019 (Task 7).

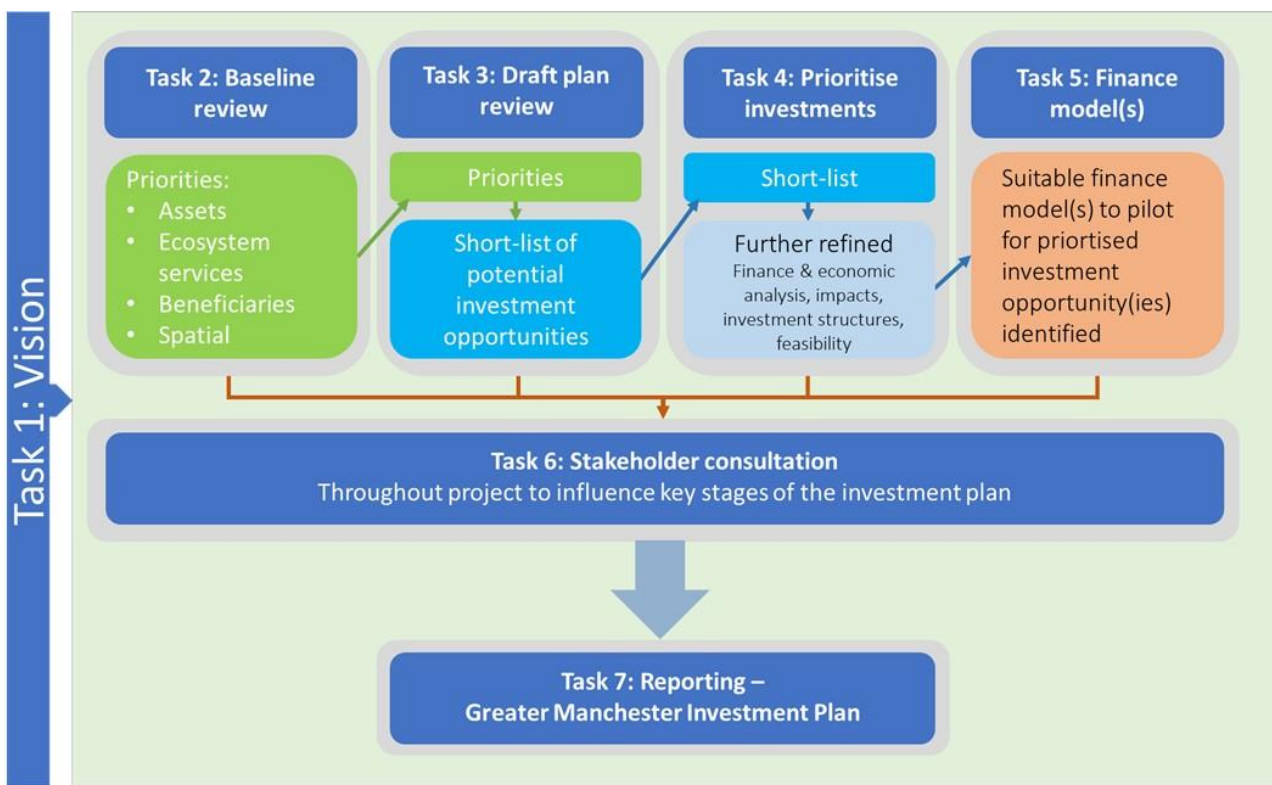


Figure 1.1: Project tasks for developing the Greater Manchester Natural Capital Investment Plan

A Stakeholder Engagement Plan was produced to ensure engagement with a broad range of stakeholders, across a variety of sectors and across Greater Manchester. The audiences within the Stakeholder Engagement Plan included:

- Property investment community
- Local businesses
- Existing partnerships
- Existing projects
- Beneficiaries and health groups
- Landowners and their representatives

- Local and City-Region Government
- Local nature or community organisations
- Natural capital experts in Greater Manchester
- Natural capital experts outside Greater Manchester
- Funders and potential investors.

Key stakeholders were engaged through a series of interviews between August – October 2018, and at a workshop on 1st October 2018. The aim of the workshop was to help shape Greater Manchester’s plan and to feed into the future development of this new approach to investing in natural capital. Mechanisms for financing natural capital and processes which can motivate finance were discussed at the workshop, and through the following interview questions:

1. What are the priority benefits and the underpinning natural capital assets for your beneficiary group?
2. Where is the link between natural capital assets and benefits well established? Where is the greatest need to improve evidence?
3. What revenue generating or cost saving mechanisms could work for the delivery of benefits? Are there opportunities to bundle/package benefits?
4. Are these the most likely to be investable opportunities in the near term? What further investment opportunities exist?
5. What sources of finance might be interested in investing?
6. What changes are required to enable feasible financing?
7. What finance models could be used to raise finance and deliver investment into projects?

Inputs from stakeholders and the project advisory group were used to inform the development of the plan.

1.3 Purpose of the Natural Capital Investment Plan

The purpose of the plan is to present the emerging investment priorities, and issues shaping them to a range of stakeholders, thereby facilitating further engagement in the plan and refinement of the details.

The plan builds on existing understanding of the state of natural capital assets in Greater Manchester and the context in which they provide benefits. This context is made up of the social and economic structure of the city region, and the (local and national) environmental policies and regulations. The plan looks at what role different sources of investment (defined based on returns to investors – see below) can play in delivering objectives within this context. While the plan takes a strategic view of how natural capital investments can contribute to Greater Manchester’s environmental objectives, it is not an environmental strategy, nor is it an environmental funding plan.

Key outputs from the plan are the priority natural capital investment opportunities; finance models that will facilitate private sector investment; suggestions on the role of the public sector; and actions over the next five years to put the plan into practice. The plan therefore informs policymakers and investors about how their actions can fit into the overall environmental management (and wider economic development)

context in Greater Manchester. This can enable the GMCA to make better allocations of resources (both in terms of funding and policy/governance effort) to achieve its environmental and social objectives.

The plan outlines how finance models could be applied to three investment opportunities which are considered the most advanced in terms of being able to mobilise investment. It also covers the potential Urban Innovative Action (UIA) project and role of the public sector. Actions are summarised in a Roadmap for natural capital investment in Greater Manchester (Section 3.5).

In particular, the plan aims to better inform choices between more traditional environmental spending and regulation approaches (which remain crucial to sustainable management of natural capital) and innovative financing approaches - these have different risks and opportunities, but potentially leverage significant additional funds.

2. Background and Approach to the Plan

This Section lays out the approach to constructing the Natural Capital Investment Plan for Greater Manchester. It summarises the salient points from the vision and baseline review tasks (Section 2.1), the approach taken to review background evidence (Section 2.2), and the results of the opportunity mapping (Section 2.3). Key gaps in the evidence base are also noted.

2.1 Principles of the Natural Capital Investment Plan

2.1.1 Vision and Approach

The vision for the plan agreed by the project advisory group is:

“A Greater Manchester where investments in natural capital enhance the long-term social, environmental, and economic health, and wellbeing of its people and businesses.”

The vision highlights the balance between taking an environmentally-led approach (versus a purely financial approach) which embraces a broad range of outcomes, while also identifying the issues most relevant to sourcing investment as defined within the vision. The working priorities adopted to put this vision into practice and the resulting project outputs are presented in Figure 2.1.

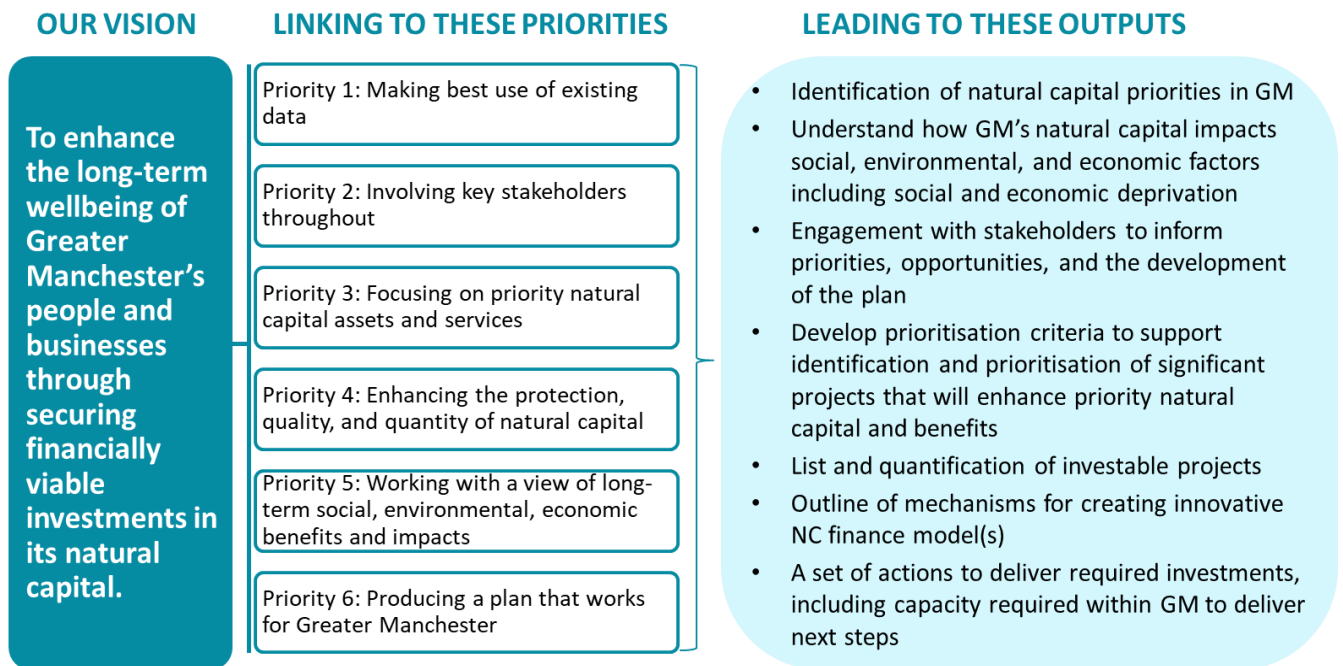


Figure 2.1: Vision, priorities and outputs for the Greater Manchester Natural Capital Investment Plan

2.1.2 Definition of Natural Capital Investment

As described in Section 1.3, it is important to be clear on the purpose and scope of the plan, and distinguish it from wider environmental spending, management strategies and plans. A clear definition of natural capital ‘investment’ (as in Box 2.1) is intended to provide this clarity.

Box 2.1: Definition of Natural Capital Investment

An investment is an asset or item acquired with the goal of generating income or appreciation.

In economics, an investment is the purchase of goods that are not consumed today but are used in the future to create wealth.

In finance, an investment is a monetary asset purchased with the idea that the asset will provide income in the future or will later be sold at a higher price for a profit.

For the purposes of this project, the focus will be investments intended to return principal (initial amount invested) or generate profit while also resulting in a positive impact on natural capital. This includes the complementary use of public and private funds to mobilise additional capital into investable or near-investable opportunities. The following definition reflects this:

Natural capital investment is funding that is intended to provide a return to the investor while also resulting in a positive impact on natural capital.

This definition distinguishes the perspective of a natural capital investment plan from that of wider environmental spending. The latter has traditionally (especially in the public sector) been assessed in terms of value for money for overall returns to society. Natural capital investment must be assessed in terms of the returns sought by the investor as well as returns to society. There are a wide range of potential investors in natural capital and the returns or impacts they seek will vary. The key principle is that, given the intention to motivate investment from sources beyond traditional public sector spend, this plan takes the perspective of the investors, rather than a wider public policy.

This investment plan identifies opportunities to generate returns from natural capital that can motivate investors, and the finance models through which funds can flow between parties to deliver these investments and returns. The terms used are defined in the glossary.

2.1.3 Investability Assessment

Individual projects could be included in the plan if they fit the definition of natural capital investment (Box 2.1) and show the potential to deliver the plan’s vision (Section 2.1.1). These projects become potential investment opportunities if:

- Their benefits can be identified using the evidence in the baseline review;
- They have the capacity to generate revenue, and
- They are attractive (e.g. based on scale, risks and returns) to investors under current policy conditions, i.e. have ‘investability’.

Assessment of investability is complex because different investors can seek different returns or impacts, and those returns can be influenced by a range of market, socio-economic and public policy factors. Public policy is crucial because many environmental benefits are only realised as financial returns when suitable markets are created by regulation.

Investability is not a binary yes/no assessment. Investment opportunities can be ready, close to, or further from being investable. Opportunities that are ready or close to investment-ready are priorities for the plan. Many opportunities require further actions or evidence to make them investable. Preparing these opportunities through identifying these further actions and feasible timescales for implementing them so that future opportunities can develop is also an important part of the plan.

Such preparation for future potential opportunities provides a structure to identify a pipeline of natural capital project types for investment in Greater Manchester, and potential timescales to take them forward. The plan cannot give a comprehensive assessment of the investability of all relevant projects. However, it describes suitable project types to demonstrate the priority investment opportunities, and examples of project types that illustrate the investment opportunities in the pipeline.

2.2 Background Evidence

This Section describes the key background evidence that was reviewed to inform the plan.

2.2.1 *Baseline Review*

The process for developing the plan started with a review of relevant strategies, frameworks, plans, projects and initiatives that are likely to influence the investment pipeline. This was a desktop exercise which used existing evidence by identifying:

- The current stock of natural capital assets and the value of services they provide;
- Natural capital investment priorities, opportunities, and needs as identified through various frameworks, strategies, and spatial data; and
- Information regarding current projects aimed at enhancing and protecting natural capital including identifying the potential/current revenue streams.

The baseline review did not aim to include an exhaustive list of all work in the natural capital area but was an initial assessment of the most obvious and relevant pieces of evidence that are likely to shape the priorities and approach to the development of the plan. Any gaps identified were included in the stakeholder engagement process. The key findings from the baseline review are summarised below.

2.2.2 Review of Priorities and Projects

If the plan is to be successful it must address the key priorities of the Greater Manchester City Region. The review of strategies and frameworks found that the key priorities and opportunities that are relevant for natural capital are:

- **Improved health outcomes**, including an opportunity to address spatial health inequalities;
- **Improving place**, making the Greater Manchester region a more attractive place to live and work, which in turn will play an important role in attracting inward investment, skills and tourism. This also supports an uplift in property values;
- **Building resilience**, principally through addressing climate change and flood risks;
- **Supporting the local economy**, through investments that support new local development (e.g. various regeneration schemes) and business improvement. There is also potential to improve the local green economy by building capacity to supply environmental goods and services; and
- **Conserving and enhancing habitat and wildlife**, valued for its own sake and to increase the resilience and quality of ecosystem services supporting other priorities. Funded via targeted investors.

The links between priorities need to be recognised in developing the plan. For example, enhancing wildlife also contributes to building resilience of ecosystem services to climate risks. The ecosystem services and benefits related to the above natural capital opportunities that emerged as priorities for investment include:

- Physical and mental health and wellbeing derived from exposure and access (i.e. recreation and aesthetics);
- Sustainable travel (e.g. cycle paths where natural capital is enhanced);
- Water quality and flood management (surface water and fluvial);
- Climate regulation - carbon storage and sequestration, urban cooling and building sheltering;
- Air quality improvements; and
- Habitat and wildlife conservation and enhancement (including through potential biodiversity net gain from developments and major infrastructure projects).

These opportunities are described in more detail in Annex 1. In considering these priorities for Greater Manchester, it should be noted that:

- There are other ecosystem services that play an important role in the economy of Greater Manchester, such as minerals, some agricultural production, and,
- Benefits are delivered to Greater Manchester from natural capital assets that are outside its boundary. The plan is not restricted to investments inside the boundary of Greater Manchester. However, any investment that goes outside this boundary must have a clear rationale (e.g. being directly linked to services in Greater Manchester, such as along river corridors) and must recognise that this will mean there are further factors to consider (e.g. being outside the land use planning powers of the 10 local authorities).

2.2.3 Project and Spending Baseline

The baseline review also compiled a list of over 40 projects and initiatives within the Greater Manchester City Region that fall into the following key themes:

- Avoided water treatment and flood damage costs from many different types of natural capital projects;
- Avoided health care costs such as from physical and mental health initiatives and conservation activities that provide recreation opportunities and air quality improvements;
- Carbon capture and storage by vegetation in Greater Manchester is relatively low on an annual basis, but the opportunity for lowland and upland peatlands in Greater Manchester's natural capital asset base is much greater. These habitats store significant quantities of carbon, and reversing their degradation can avoid significant emissions, resulting in carbon credits; and
- Improved attractiveness of area (e.g. for residents, businesses and visitors) with consequent economic benefits.

The list of current projects has been used to:

- Develop the priority investment opportunities;
- Map the spatial location of projects across Greater Manchester, and
- Map potential opportunities for natural capital investments across Greater Manchester.

2.3 Opportunity Mapping

As part of the baseline review, spatial data for Greater Manchester was compiled in a Geographic Information System (GIS) for comparison and analysis. The data was gathered through the MappingGM⁵ portal and requests to organisations working within Greater Manchester (e.g. Greater Manchester Ecology Unit, Natural England, Environment Agency and City of Trees). The data has been sourced to cover the boundary of the 10 local authorities which make up the GMCA.

The aim of the GIS analysis was to identify where spatial data could provide support for the priorities and themes emerging from the review, but also to explore whether the various data layers could provide an additional perspective on opportunities within Greater Manchester. The data is used to help identify the different socio-economic and environmental priorities that could be covered by investment in the different projects.

The analysis combined data from assets, quality indicators, social indicators, ecosystem services and development areas.

Assets:

- Priority Green and Blue Infrastructure Areas, (Greater Manchester Ecology Unit, GMEU)
- Greater Manchester Strategic Opportunity Areas for Improvement of Green and Blue Infrastructure, GMEU

⁵ <https://mappinggm.org.uk/>

Quality Indicators:

- Air Quality Management Areas (AQMAs), Defra
- Water body Classifications, Environment Agency
- Provisional Agricultural Land Classification (ALC), Natural England

Social Indicators

- Index of Multiple Deprivation (IMD) at Lower Super Output Area (LSOA) level, Office for National Statistics (ONS)
- Active Lives Survey Small Area Estimates at Middle Super Output Area (MSOA) level, Sport England

Ecosystem Services:

- Flood Areas - areas of land which are hydraulically independent of each other - as defined by Phase 1 of the State of the Nation project, Environment Agency
- Green Infrastructure for Water (GI4W)⁶, produced by City of Trees, has been calculated from multiple datasets to assesses the opportunities to use green infrastructure to reduce water pollution and flood volumes
- Natural England data showing the extent to which communities meet Accessible Natural Greenspace Standards (ANGSt) criteria.

Development areas:

- Strategic Housing and Employment Land Availability Assessment (SHELAA) - interim GIS data supplied to project team July 2018. Development area is the combined total extent of identified development land for housing, offices, and industry in GMCA.

Each opportunity layer was assigned a score of between 0-1 to express the natural capital investment opportunity across a 1km square grid. For example, all land shown as development land in the SHELAA was assigned a score of 1. This data was summarised at the 1km level to provide a broad overview of planned development intensity – so a 1km square with a score of 0.5 would comprise 50% land that is included in the SHELAA. Maps of the results of scoring for each layer are presented in the baseline review.

The scores for each layer were combined to give a heatmap across Greater Manchester. This analysis provides a useful summary of different priorities at a broad scale – it is not intended to replace the source datasets, which should be referred to when working at the site level or on business plans. Figure 2.2 shows the final output of the spatial analysis. Highest scoring (darker) areas represent those that aligned most with the criteria within other data layers.

The projects identified during the baseline review were added to the project GIS by defining an outline of the geographical extent of the project. In some cases, this was defined by an existing dataset, for example

⁶ The GI4W dataset has been calculated from multiple datasets to assess the opportunities to use green infrastructure to reduce water pollution and flood volumes. A higher score on the targeting layer equals shows a greater number of local opportunities to use green infrastructure to break pathways for water pollution/volumes. The analysis includes a surface water flood risk layer that may introduce a level of undue bias (of no more than 1) around the Medlock Valley and Ormskirk areas. For further information refer to the project report: City of Trees (2017) Green Infrastructure for Water Project Report. During the production of the Plan, a mean score of the GI4W targeting layer has been calculated for each 1km square in Greater Manchester to give a broad-scale representation of the opportunities. However, the GI4W model is designed to be used to examine local scale opportunities to use existing GI, or to introduce GI interventions, to alleviate problems of water pollution/volumes.

the Irwell catchment or the outline of the Northern Gateway boundary. In other cases, an approximate area was defined based on the description of the project. The dataset is intended to give a broad spatial overview of the distribution of potential projects.

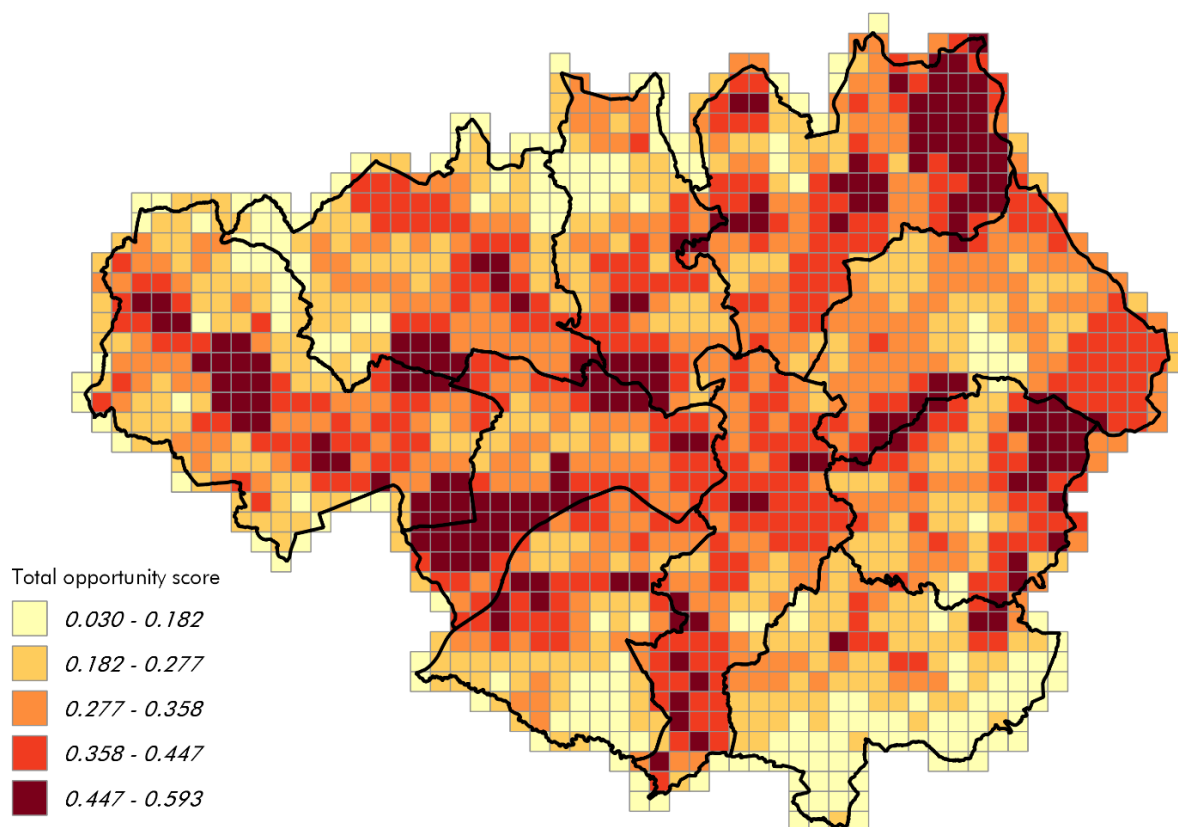


Figure 2.2: Indicative natural capital priorities and opportunity map

2.3.1 Uses of Spatial Evidence

The mapping shown in Figure 2.2 provides high-level guidance to inform the plan. It confirms some areas of natural capital investment opportunities suggested by stakeholders (e.g. upland on the eastern side of the city region). The datasets used can also inform specific investment opportunities. For example, data on neighbourhoods that do not have sufficient parks and greenspaces to meet ANGSt suggest areas where health interventions that use green space could give greatest returns. This could also be a factor in designing a habitat banking model, as it could inform local planning authorities on preferred areas for biodiversity enhancements to deliver wider value to society.

The spatial analysis has also helped identify current project and research information gaps, including:

1. Understanding the need and opportunities for natural capital investment within major development and infrastructure projects. This partly depends on the approach connecting natural capital to developments that are still being devised (e.g. on biodiversity net gain).

However, they can also be informed by analysis of the natural capital assets in/around major ongoing and proposed developments, and the key services/benefits that the developers and surrounding communities demand.

2. The evidence base on the valuation of project benefits - while the value of the current flow of benefits from natural capital assets has been estimated (eftec et al, 2018), in general projects to maintain or enhance natural capital assets do not quantify their added benefit (return on investment). Furthermore, the measurement and valuation of some key ecosystem services, such as regulation of water quality and quantity, and the mental health benefits of contact with natural green space, are lacking or uncertain.
3. The Spatial Opportunity Map is of limited utility on its own. It is important when interpreting it to consider the factors that raise the opportunity score. The scale of the map analysis is coarse so gives an overview of broad patterns but obscures local variation. 1km squares do not relate to landscape features on the ground, so floodplains or slopes may sit neatly in one square, or can be divided across several squares, and this will influence the resulting maps.

One potentially informative dataset is Natural England's and Ordnance Survey's maps and analyses of parks and greenspaces in Greater Manchester. Natural England's ANGSt mapping relies on having a full picture of accessible green space in a local area. It indicates which communities lack access to green space, which can be an important factor in designing investments to achieve financial returns. The mapping undertaken for Greater Manchester shows a pattern of upland areas where there is good access to the large greenspaces in the moors, but there is very low access to small, nearby spaces. These areas which are an easy walking distance are especially important for people with long term health issues and /or disabilities.

4. Further work can interpret the mapped evidence for investment decision-making. For example, to what extent investment should be required to meet wider social needs (such as areas failing to meet ANGSt standards) or allowed to follow market returns.

3. Natural Capital Investment Plan

This Section provides an overview of the current position on:

- The priorities for natural capital investment within Greater Manchester, and how these are used to formulate selection criteria for investment opportunities within the plan (Section 3.1.1);
- The short list of investment opportunities that form the Greater Manchester Natural Capital Investment Plan pipeline (Section 3.1.2);
- Potential sources of funding, covering type of investor, expected terms and readiness to invest in natural capital (Section 3.2);
- Potential finance models which could be used to fund investment opportunities (Section 3.3);
- The capacity and capabilities needed to develop and deliver investment projects at the required scale and timescales envisaged by the plan, including an investment readiness find (Section 3.4), and
- A roadmap for the Natural Capital Investment Plan (Section 3.5).

Where opportunities are not considered ready for successful implementation, they are potentially part of a pipeline of projects. The barriers they face and factors that will dictate their investability are identified to inform their development.

3.1 Investable Opportunities

A range of potential investment opportunities have been identified based on the priority benefits arising from natural capital that emerged from the baseline review, and an assessment of the natural capital assets and initiatives delivering these priorities in Greater Manchester (see Section 2.2). The focus is on the kind of investments that could generate benefits from natural capital and provide a financial return.

Through identifying where revenues or cost savings could be delivered through improving the natural environment, additional sources of repayable finance from social and private investors could be secured alongside traditional forms of funding (e.g. government or local authority budget allocations, philanthropic grants, corporate and private donations etc.). This, in turn, will support a long-term sustainable funding base for natural capital.

The critical factor to attract private investment into natural capital projects is the availability of long-term predictable and recurring revenue streams. An initial assessment of potential investment opportunities has been carried out by considering revenue generating capacity and near term investability. The most investable opportunities have the potential to generate sufficient revenue streams under current policy conditions, and so could attract repayable capital from the private sector for investments to start within 1-3 years.

Figure 3.1 presents the screening of potential investment opportunities according to the scale and predictability of revenue streams and how quickly investments can start.

The highest priority, i.e. the most investable, opportunities in the top left-hand quadrant of the figure provide higher returns and higher certainty and investments in them could start within three years. Those that deliver lower returns with more uncertainty will take longer to be investable, and so are lower priorities. The lower priority opportunities still face significant market failures in the provision of natural capital benefits. This means that they are currently difficult to generate revenues from, for example, delivering sustainable travel infrastructure, positive health outcomes and air quality improvements. Drawing in repayable investment is not the solution for financing all of Greater Manchester’s natural capital priorities, and these outcomes may require continued public and philanthropic funding (see Table 3.3).

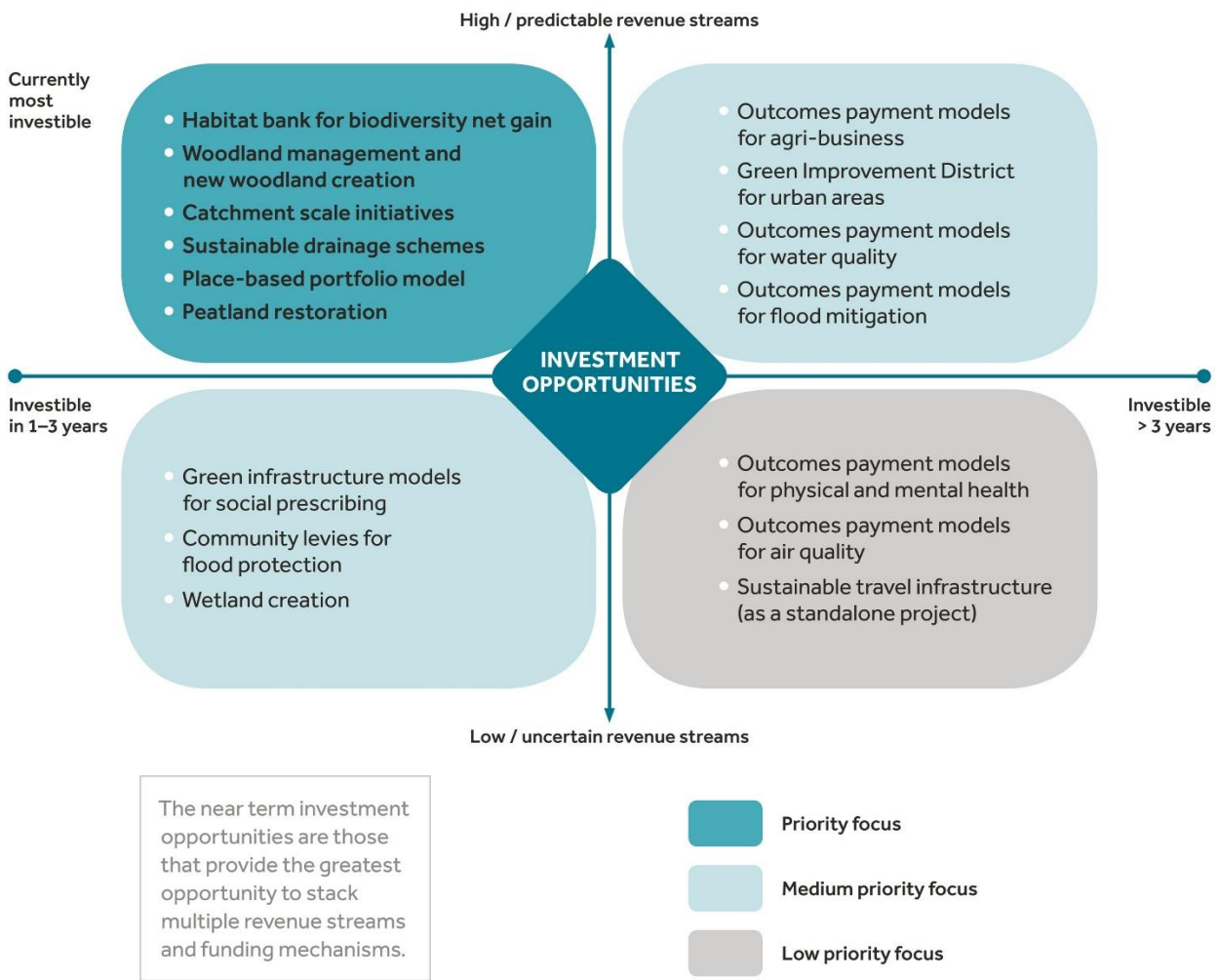


Figure 3.1: Investability assessment of a pipeline of potential natural capital project types




3.1.1 Priority Investment Opportunities

The priority investment opportunities identified in Greater Manchester are those that have the greatest potential to provide multiple revenue streams and deliver financial returns against different ecosystem services. For example, new woodland creation is supported by revenues from timber, carbon credits and recreation, with potential for additional investment from beneficiaries of water quality improvements and through biodiversity net gain.

Another type of priority investment is 'place-based' which involves investing in more strategic management of a network of natural capital assets. These individual assets, such as city parks and urban green and blue infrastructure, may not be investable on their own. However, they can be grouped into a portfolio and leased to a Trust which must maintain them but can also undertake activities to realise multiple revenue streams. This structure could give access to funds that the Council may be unable to bid for (e.g. corporate investments) thus making them potentially investable and able to cross-subsidise management of natural assets that may not currently generate a revenue stream.

Projects in Greater Manchester associated with these priority investment opportunities are still at relatively early stages of development, generally operating as grant funded pilot initiatives with relatively low levels of income generation, despite the broad range of benefits generated. Further project preparation and development, scientific research and policy support are required to attract private investment. A description of the priority opportunities is provided in Table 3.1 with linkages to projects in development in Greater Manchester, and with an assessment of their robustness, track record, scale of the opportunity and policy change required to deliver investment in the near term.

Table 3.1. Priority investment opportunities in Greater Manchester

Investment opportunity	Description	Examples of potential GM projects	Model robustness	Track record	Scale of potential investment	Policy change required	Overall assessment*
Habitat bank for biodiversity net gain	A system of conservation credits which are pooled into a habitat bank for purchase by developers to offset the environmental loss from development schemes	Funding from infrastructure development projects e.g. HS2, Atlantic Gateway, housing developments; the habitat bank could invest in multiple projects	High – considerable size of opportunity but requires policy change in Greater Manchester and certainty in local planning	Well-established in the US, at an early stage in the UK (e.g. Warwickshire)	Ecosystem Markets Taskforce (2013) estimated market potential at £500m per year	Net gain (agreed in principle) to be embedded by GMCA and local authorities in the planning system for housing and infrastructure developments	
Woodland management and new woodland creation	Large scale woodland planting supported by carbon and timber sales from mature woodland	Northern Forest	Medium – supported by multiple revenue streams but long project timescales and payback periods mismatch investor requirements	Relatively well-established – size of UK forestry investment market is £112m (Savills, 2018)	Large (Northern Forest expected to cost £500m)	Domestic carbon price support, net gain to be embedded in planning system	
Catchment scale initiatives	A more coordinated approach to deliver a range of nature-based solutions to achieve water quality and flood prevention benefit	Natural Course, EA flood mitigation programme, MoorLife 2020, facilitation infrastructure e.g. nutrient trading platform	High - funding sources from EA, water companies, and potentially other beneficiaries	Successful pilots e.g. Entrade, Green Alliance & National Trust Riverlands project, LENS pilots ⁷	Large (e.g. £6bn EA flood defence programme in UK over 5 years, AMP7 investment round)	Emerging agri-environment policy to support farming providing public goods	

⁷ Landscape Enterprise Networks <https://iale.uk/landscape-enterprise-networks-lens-creating-business-value-healthy-landscapes>

Greater Manchester Natural Capital Investment Plan

Peatland restoration	Restoring degraded peatland to prevent carbon release, supported by carbon credits	Greater Manchester Wetlands, MoorLife 2020	Medium – UK Peatland Carbon Code in place to facilitate investment, but requires policy support for carbon prices	Grant funded projects e.g. MoorLife, Dove Stone, GM Wetlands	Low – Medium, depending on extension beyond boundaries of Greater Manchester	Domestic carbon price support, net gain to be embedded in planning system	
Sustainable drainage systems	Retrofitting green and blue infrastructure to manage surface water, delivering cost savings through a reduction in water company drainage charges	Water resilient cities	High – returns on investment relatively short but uncertainty over long term maintenance costs and contractual liabilities between funders and site owners	Trial site in Trafford but not deployed at scale	Medium – applies to all non-domestic customers including schools, hospitals and prisons across GM	Regulation to support longer term contractual commitment from water companies for charging rates on non-domestic customers	
Place-based portfolio investment	Transfer network of urban green (and blue) spaces into a dedicated management vehicle e.g. Charitable Trust to achieve greater public benefit	Apply Newcastle Parks Trust model to network of Greater Manchester assets e.g. parks, canals, travel networks	Medium – requires endowment and transitional funding but supports long term sustainable funding and management	Successful examples include Newcastle Parks Trust, Milton Keynes Parks Trust	Medium (based on Newcastle Parks Trust)	n/a	

Key

Feasibility of Opportunity

High		
Medium		
Low		

Scale of potential investment

Large	>£50m
Medium	£10m-£50m
Small	<£10m

3.1.2 Most Promising Financing Opportunities

Based on the analysis of all the priority investment opportunities in Table 3.1, finance models for three investment opportunities are recommended for further work as they are the most advanced in terms of being able to mobilise investment. They are considered to have the best opportunities to develop returns (often through more than one revenue source) that can motivate investment and can be supported by actions that are largely within the powers of GMCA and its partners, and in line with current policy commitments. The three most promising opportunities, and the reasons for their selection are:

- **Place based Models.** An investment opportunity can be created by the GMCA and the local authorities leasing a portfolio of green and blue infrastructure assets to a Trust⁸, which can then exploit new revenue opportunities, such as through prescribed health activities and/or outcomes. This model has an existing track record in the UK (e.g. Newcastle Parks Trust) and is potentially suitable to Greater Manchester's assets and priorities but is not widely known amongst stakeholders. In addition to working with existing assets, this model may be used to create and manage new green and blue infrastructure.
- **Habitat /Carbon Banking.** These models enable selling credits from increasing biodiversity or stored carbon to organisations that need to compensate for their unavoidable impacts. Many projects can generate habitat and carbon benefits, so they can be stacked as credits, i.e. giving dual revenue sources for projects. A requirement for net biodiversity gain from land use developments is being developed for GMCA, which will result in a regulatory driver for habitat banking. Carbon credit markets remain voluntary, but they can support carbon reduction objectives that have strong political backing by the City-region Mayor.
- **Sustainable Drainage Systems (SuDS).** This opportunity has the potential for an established revenue mechanism: investments in SuDS can be financed through a reduced water company drainage connection charge for developments. A special purpose vehicle could deploy appropriate capital to the cashflows at different project stages, allowing SuDS investment to be scaled-up.

The finance models for these three opportunities are described in more detail in Section 3.3, based on available financing options discussed in Section 3.2.

3.1.3 Project Pipeline

There is a desire to understand the 'pipeline' of potential project types that could attract investments to Greater Manchester. Examples of such projects are given in this report, but the pipeline of projects suitable for third parties cannot be defined by an investment plan: the role of the plan is to create the right conditions for innovative investments to take place. Innovative projects and/or investors may or may not want close involvement from GMCA as a partner/facilitator.

Therefore, consideration of the pipeline is not on a project by project basis. The recommended finance models for the three priority investment opportunities are not the only ones available. They are selected because there are considered to be sufficient opportunities to undertake the types of projects required

⁸ There may be single District Trusts for one or more assets, or several Trusts for particular assets. Also existing Trusts may be well positioned to hold and manage funds in restricted pots if suitable level of resources could be pulled together to deliver the desired outputs of a Trust mechanism. This has the advantages of rapid start up and potentially reducing overheads.

under these models (e.g. areas of peatlands to restore/ other land that can be enhanced for biodiversity; the scale of development that can exploit the drainage connection charge reduction through SuDS).

Further detailed discussion of finance models is beyond the scope of this report, but this Section discusses the opportunities that form a pipeline of future potential investments in Greater Manchester. The items in the following list cover one or more opportunities from Figure 3.1, or other opportunities suggested by stakeholders. Many of these opportunities are connected to the three recommended finance models, for example they could potentially develop as an additional revenue stream within those finance models.

Catchments

Catchments were identified as a top priority at the project stakeholder workshop on the 1st October 2018 in Manchester. This was due to the significant potential value-added from better spatial management of catchments to achieve synergies in flood mitigation and water quality benefits. This has the potential to combine existing (e.g. EA, Water Company, Agri-environment) and new (e.g. biodiversity offsets, SuDS charges reductions) funding sources into payments to landowners. However, a lack of joined up approaches means new collaborations/ networks are needed to obtain revenue streams to make this investment financially viable.

Green Roofs

Several stakeholders have suggested there is significant potential for green roofs in Greater Manchester, both as retro-fit or new build. In the retro-fit case, engineering knowledge of buildings is required to evaluate whether buildings are suitable for green roofs. As with SuDS, this opportunity would benefit from a lower-cost and more automated process for identifying suitable opportunities. There could be an economy of scale in doing this collectively for urban areas. However, unlike SuDS there is no established financial returns – although retro-fit green roofs provide benefits (e.g. cooling buildings, more pleasant working environment) these are not always realised by developers or building managers or owners, who would bear the costs of installing them. Green roofs on new build can benefit from a reduced surface water drainage charge (as per SuDS model).

Payments for Results Models in Agri-businesses

This opportunity includes the landowner payments discussed under Catchments above. Currently agricultural land use opportunities face significant uncertainty over the shape of England's post-Brexit Environmental Land Management policy and payment regime. There can also be high measurement and transactions costs in managing multiple SMEs (Small and Medium Enterprises) within the agricultural sector. However, owners of agricultural land are a significant potential source of additional habitat enhancement projects (i.e. not already funded by agri-environment schemes) to provide multiple benefits such as generate biodiversity credits under the habitat banking model.

Green Improvement Districts

These are a green approach within existing business improvement districts. Such improvement districts are considered unlikely to be exclusively environmental in their objectives, but the actions these could put in place could be part of the services and income streams developed under the place-based finance model.

Social Prescribing

Social prescribing models have potential to use health funds to manage green infrastructure. The evidence base of impacts and most effective interventions for achieving them are still being developed. They are an important potential revenue stream under the place-based finance model. However, questions remain over whether payments will be for activities (i.e. people taking part in prescribed activities) or outcomes (i.e. actual changes in health or wellbeing).

One specific prescribing model is the concept of “care farming”, which utilises public parks and green spaces to build a revenue model from commissioning of health activities and/or social prescribing that provide cost savings to the NHS and other public services. It provides a mechanism for parks to generate an income, but it should be noted that using green space in this way precludes access for other uses. This opportunity could be an income source under the place-based finance model.

Outcome Models

A number of potential investment opportunities relate to ‘outcome models’, where beneficiaries of natural capital interventions pay for the outcomes. An example of this is in catchment management. Many water companies pay for catchment-based interventions for water quality improvements (under ‘payments for ecosystem service’ arrangements). However, some water companies have now started to pay an ‘outcome bonus’ as part of these contracts⁹.

Some of these opportunities are at a relatively early stage of development and are yet to demonstrate feasibility. For example, whilst there is evidence¹⁰ linking specific natural capital assets to improvements in air quality, final air quality outcomes can be influenced by other solutions (such as reducing pollution at source), and the identification of a clear payee is still some way off. For the market to develop better evidence is needed linking specific natural capital investments with air quality improvements resulting in specific outcomes for identified beneficiaries. These ‘avoided cost’ types of opportunities may become more feasible models for generating revenues from natural capital in future.

Sustainable Travel

There are significant transport initiatives ongoing in Greater Manchester (e.g. Beelines¹¹). However, these are primarily grey infrastructure investments, for which green infrastructure is a strong complementary factor increasing the functions of the grey infrastructure. This opportunity could provide income for management of green infrastructure as part of the delivery of sustainable travel infrastructure, so could be a revenue source under the place-based finance model.

⁹ Such approaches have been in use in the UK for over a decade (Schwarz, G., et al (2008) An analysis of the potential effectiveness of a Payment-by-Results approach to the delivery of environmental public goods and services supplied by Agri-Environment Schemes. Report by Macaulay Institute and partners to the Land Use Policy Group, UK) and recently used by water companies in England.

¹⁰ See: <http://www.tdag.org.uk/first-steps-in-urban-air-quality.html>

¹¹ <https://www.tfgm.com/press-release/beelines>

3.2 Potential Financing Options

This Section considers the structures that could shape the appropriate natural capital finance models for Greater Manchester: the financing mechanisms (Section 3.2.1), scale of different investment sources (3.2.2), different sources of capital (3.2.3) and capacity needed to develop and deliver the investments (3.2.4).

3.2.1 Financing Mechanisms

A financing mechanism is a method or source through which funding is made available. Finance models require one or more financing mechanisms to mobilise a diverse range of funding and financing sources to channel large scale investment into the investable projects identified across Greater Manchester.

The most common financing mechanisms used in the natural capital investment market are debt and equity funds, as they facilitate pooling investment raised from multiple investors and directing it to finance projects within one centralised vehicle. Equity investment is likely to be more suitable than debt at an early stage of project development due to the lack of proven or stable financial returns that are needed to pay a set interest rate on debt.

Direct investments by a corporate investor, through raising a green bond without any financial intermediary, has also been used in the market to finance natural capital projects. An alternative opportunity is to create an 'aggregator vehicle', which could consist of investment in new infrastructure or the creation of a dedicated operational structure, such as a Charitable Trust or a Green Improvement District, which can be used to raise investment from multiple sources and facilitate the efficient flow of capital. Potential financing mechanisms that may be suitable in the context of Greater Manchester are described in Table 3.2.

3.2.2 Potential Scale of Investment

Table 3.1 identifies the potential scale of resource involved in the priority opportunities. Some of the markets are potentially very large at a UK scale, and could be influential in relation to Greater Manchester's natural capital.

From an investment perspective, a typical size for an environmental fund in a City Region that covers a broad range of topics (see GMEF in Table 3.2) would be £5 million or more. The timescales over which this fund is invested, and revenues received could vary according to investor requirements. Investments below £5 million (down to around £2 million) can be feasible but face greater barriers (such as covering transactions costs) so may need a greater element of public financing (e.g. to de-risk returns) to be viable. A much more focused fund, like Investment Readiness Fund (IRF) on preparing projects for investment, can be much smaller and hence the recommended figure of £1 million, as the transaction costs would be much less compared to a fund like the Greater Manchester Environment Fund (GMEF)¹².

If several of the priority opportunities were able to bring forward investments, their total scale would be expected to be of the order of tens of millions of pounds.

¹² A key action from the Greater Manchester Green Summit was to explore the creation of a Greater Manchester Environment Fund, funded by public and private investment, to support our environment strategy and carbon-neutral ambitions.

Table 3.2: Potential natural capital financing mechanisms for Greater Manchester

Model	Description	Examples	Potential GM projects
Financial Vehicles			
Environmental Impact Bond	Beneficiaries of natural capital interventions (e.g. water or insurance companies) could be contracted to become payers for a positive outcome arising from specific interventions. Investment is raised from private investors to carry out a series of interventions (e.g. woodland and wetland creation, peatland and river restoration, green infrastructure etc.) to achieve financial savings delivered through improvements in water quality and greater flood resilience. Investors' returns are linked to the performance of the interventions. This could be used to draw in substantial upfront capital to scale up projects in Greater Manchester.	<ul style="list-style-type: none"> • DC Water Bond (US) • Zoological Society of London Rhino Impact Bond (UK) • Salford homeless social impact bond (UK) 	<ul style="list-style-type: none"> • Natural Course • EA flood defence programmes • Greater Manchester Wetlands and MoorLife 2020 • Northern Forest • SUDS
Greater Manchester Environment Fund (GMEF)	The proposed GMEF that is currently being explored could be used as a vehicle to raise a blend of philanthropic and private capital to provide grant/patient equity and debt investment into a broad range of investable or near-investable project opportunities within GM, catalysing further investment into the sector over time. Alternatively, the GMEF could be used to provide strategic seed funding into projects before they are revenue generating to transition opportunities to cashflow generating natural capital projects over the long-term.	<ul style="list-style-type: none"> • Defra Natural Capital Impact Fund • Social Investment Funds (e.g. Access¹³) 	<ul style="list-style-type: none"> • All priority projects in Greater Manchester, prioritising those with greatest potential for financial return. • Project infrastructure (e.g. habitat bank or nutrient trading platform) to streamline funding for biodiversity gain and catchment scale initiatives
Model	Description	Examples	Potential GM projects
Financial Vehicles (continued)			
Woodland	As part of the 25-Year Environment Plan, the government committed to	<ul style="list-style-type: none"> • Gresham House 	<ul style="list-style-type: none"> • City of Trees as the Greater Manchester

¹³ The Social Investment Foundation <https://access-socialinvestment.org.uk/>

Model	Description	Examples	Potential GM projects
Equity Fund	<p>creating the Northern Forest with an estimated overall cost of £500m. The scale of this opportunity and the nature of the long investment horizons of woodland projects warrant the creation of a specific woodland fund. This could be structured as an equity fund through drawing in a blend of philanthropic capital alongside repayable finance to invest in woodland projects before they are revenue generating. Modest investor returns earlier could be generated through agri-forestry schemes and cross-subsidisation from mature woodland and increase to commercial returns in the long-term. This model is potentially suitable for financing the entire Northern Forest. If the Northern Forest in GM is funded in isolation predominantly through urban tree planting, a place-based portfolio model would be more suitable.</p>	<p>Forestry Investments</p> <ul style="list-style-type: none"> • Community Forests e.g., the National Forest Company • Inheritance tax planning products 	<p>element of the Northern Forest – working with other initiatives across the Northern Forest as required</p>
Direct Investments			
Green Bond	<p>There has been strong growth in the global market for green bonds since 2014, driven predominantly by the issuers’ ability to enhance their reputation and attract a new investor base, while some studies point to a price advantage for green bonds compared to regular bonds. Infrastructure developers, water companies and other public bodies could explore the raising of a green bond through the municipal bond market to invest in green and blue infrastructure. By integrating their grey and green investment plans, corporates could potentially obtain a lower cost of capital as well as other benefits from raising a green bond compared to regular financing for grey infrastructure. Alternatively, companies could raise a green bond with Charitable Trusts and Foundations and aligned pension funds and insurance companies, to invest the proceeds in green and blue infrastructure to reduce water treatment costs. Standards for defining ‘green’ bonds can help ensure positive outcomes for natural capital.</p>	<ul style="list-style-type: none"> • Anglian Water Green Bond • Paris Green Bond 	<ul style="list-style-type: none"> • Catchment scale initiatives (Natural Course, EA flood risk, AMP7) • Woodland creation (Northern Forest) • Peatland restoration (MoorLife 2020) • Green infrastructure projects • SuDS (Water Resilient Cities)

Model	Description	Examples	Potential GM projects
Aggregator Vehicles			
Place based portfolio investment	A network of green and blue assets across Greater Manchester would be transferred outside of local authority's control via a long-term lease to be managed by dedicated Charitable Trusts. A Trust is able to develop a long-term strategy focused on improving the financial sustainability of these assets and enhancing the benefits they deliver. Funds are generated through an endowment raised within the Trust, predominantly from the local authority with additional funding from grant/ philanthropic sources and income generated from assets within the portfolio is used to cross-subsidise assets that cannot generate a financial income.	<ul style="list-style-type: none"> Newcastle Parks Trust 	<ul style="list-style-type: none"> A network of blue and green assets in Greater Manchester such as parks, footpaths, cycleways and canals Northern Forest
Green Improvement District (GID)	A GID is based on, and may be a subset of, the Business Improvement District (BID) concept (and may be incorporated within an existing BID), whereby a voluntary levy would be secured from businesses operating in the local area that derive benefit from high quality greenspace. This would be invested to enhance urban greenspaces such as parks, canals and sustainable travel networks. The GID would take responsibility for managing a pre-determined area and leverage the levy with other forms of investment to achieve wider impact.	<ul style="list-style-type: none"> >290 Business Improvement Districts in local authorities across the UK No examples supporting natural capital specifically 	<ul style="list-style-type: none"> A network of blue and green assets in Greater Manchester such as parks, footpaths, cycleways and canals
Habitat Bank	Conservation credits are pooled into a habitat bank for purchase by developers to offset the environmental loss from development schemes. This provides a cost-effective consolidation of smaller mitigation projects to cost-effectively achieve larger and more environmentally beneficial biodiversity enhancement projects. The habitat bank can also leverage the funds received through selling credits to raise money from private investors, who receive returns from surpluses generated.	<ul style="list-style-type: none"> The Environment Bank 	<ul style="list-style-type: none"> Multiple projects across GM delivering biodiversity enhancement

3.2.3 Potential Sources of Capital

An increasing number and types of investors are interested in providing finance for projects that deliver both a financial and non-financial return. Public and philanthropic capital could be used to develop financially viable business plans in Greater Manchester or as part of a blended financial structure to encourage investment from social investors and aligned corporates. More risk averse institutional or retail investors will require projects to demonstrate a track record of success and robust rates of return before being drawn into the market. Initial engagement with potential investors is important to determine interest in the sector and their expectations around risk, return and impact.

The key characteristics of different investor requirements are described in Table 3.3. It considers 3rd party investors, so does not include landowners who may invest in natural capital in their own landholding to achieve returns under the opportunities described. Such investments are more likely to be part of bilateral transactions than structured investments of the type considered in this investment plan. Nevertheless, landowners are an important stakeholder and potential source of capital.

Before approaching potential investors to obtain finance, it is important that a full business plan of each project seeking capital is developed to evidence its financial and operational feasibility. The business plan requires a detailed financial plan to prove project viability (see Section 3.5). Monitoring and evaluation of project delivery, operational management and mitigation of key risks are required to convince investors, who may require third party assurance, of the long-term sustainability of the project. Once a comprehensive business plan is developed behind each project, the specific financing needs can be determined.

3.2.4 Development and Delivery Capacity

Project execution, delivery and operational management are the key to ensuring robust investment cases. The ability to strategically plan and develop viable investable projects and financial vehicles to support investment hinges upon the execution team's experience and skill set. A key question for the GMCA to consider is whether financial, legal and project management competencies can be sought internally or brought in externally. An internal discussion on the level of expertise and current capacity within the GMCA could determine how to grow GMCA's and its stakeholders' capacity to develop and deliver models.

Project Development Team

A broad variety of skills is required to develop business plans, structure financial vehicles, identify financially viable project opportunities, deliver investment and evaluate the outcomes. Establishment of appropriate governance structures responsible for financial decisions, project timelines, and external communications related to development are fundamental to increase the speed of execution. Accessing external investment may require the project development team to hone their skills in financial structuring, commercial acumen and stakeholder management.

Table 3.3: Types of potential investors in Natural Capital in Greater Manchester

Investor Type	Investors	Form of investment	Typical size	Expected returns	Term	Readiness to invest
Public	<ul style="list-style-type: none"> Government/ local authority budgets National Govt - Environment Agency (EA)/ Forestry Commission (FC)/ Natural England (NE) Health budgets 	<ul style="list-style-type: none"> Funding technical assistance/ capacity building De-risking other investors 	n/a	<ul style="list-style-type: none"> Nil financial returns/ patient equity Capital value appreciation? Cost savings Public goods 	n/a or long-term	<ul style="list-style-type: none"> Limited outside of current funding
Philanthropy	<ul style="list-style-type: none"> Trusts and Foundations Non-Government Organisations (NGOs) Lottery Funds 	<ul style="list-style-type: none"> Funding technical assistance/ capacity building De-risking investment 	£10k-£2m	<ul style="list-style-type: none"> No principal repayment or returns expected Potentially provide repayable grants/patient equity 	n/a or long-term	<ul style="list-style-type: none"> High level of interest in exploring repayable models and impact investment Reduction in grant funding available
Impact investors	<ul style="list-style-type: none"> Social investors 	<ul style="list-style-type: none"> Debt investment or can operate with equity style risk 	£150k-£2m	<ul style="list-style-type: none"> Principal repayment 2%-10% returns 	3 to 5 years	<ul style="list-style-type: none"> Most do not invest in environmental projects - may be restricted to social impact led projects
Corporates	<ul style="list-style-type: none"> Water companies Insurance companies Infrastructure developers Other commercial companies 	<ul style="list-style-type: none"> CSR (Corporate Social Responsibility) Initiatives Debt or equity investment Mitigation payments 	£100k-£20m	<ul style="list-style-type: none"> Principal repayment 2%-10% returns Cost savings/ complement grey infrastructure Offsets 	3 to 5 years	<ul style="list-style-type: none"> Projects must meet investor return criteria
Institutional Investors	<ul style="list-style-type: none"> Pension funds Financial sector Green bonds 	<ul style="list-style-type: none"> Debt or equity investment 	£20m+	<ul style="list-style-type: none"> Principal repayment Commercial returns 	5-25 years	<ul style="list-style-type: none"> Enter when projects are commercially viable, or de-risked by other investors
Retail Investors	<ul style="list-style-type: none"> Individual investors inc. High Net Worth Individuals (HNWI) Retail bonds Charity bonds Crowdfunding 	<ul style="list-style-type: none"> Debt or equity investment 	£500k-£2m	<ul style="list-style-type: none"> Principal repayment 2%-7% returns 	5-25 years	<ul style="list-style-type: none"> Limited track record Suitable for asset backed or branded projects

A dedicated single team coordinating activities (such as that which could potentially be established for green infrastructure through the UIA project) is likely to be most effective to manage an investment readiness fund. This is because a single team can provide the skills, knowledge and experience needed to improve and refine the development process of new projects. Equally, taking into account swiftly changing market conditions, internal project development teams need to be nimble enough to respond to and take advantage of opportunities. Key expertise in a project development team includes fundraising, business development, investment due diligence and portfolio management, and outcomes monitoring and evaluation.

To build a pipeline of investable opportunities, project preparation and development assistance is essential. The capacity and expertise of external project developers will need to be engaged as part of further stakeholder engagement and business planning for investments.

External Stakeholder Management

Many of the investment opportunities require syndication of a range of third-party stakeholders. Accessing external finance requires coordination between stakeholders across the community, public, private and corporate spheres. External financial advisors, legal counsel, and technical experts typically engage in raising investments. These capabilities can be engaged under an Investment Readiness Fund.

Workstreams are required around financial decision making, drafting of legal documents and investor relations, with the internal project development team inputting where required. Connecting with external stakeholders exposes the internal development project team to field experts, while building financial competence. Delivering the plan could provide an invaluable opportunity to grow internal skills.

3.3 Recommended Finance Models: an initial assessment

To illustrate how different types of finance could be applied to the investment opportunities, outline finance models are laid out below for the place-based portfolio, habitat/carbon bank and SuDS opportunities identified as the most promising in Section 3.1.2. These models are described individually, but it is worth considering the possibility of using them in combination for any given site (e.g. a place-based model could be used alongside a banking scheme). They have better developed business cases, enabling the structure of potential finance models to be described at this stage. However, even these models are at a relatively immature stage, and further business case development is required across all the opportunities.

The following considerations need to be resolved to develop suitable finance models:

1. The long-term revenue streams and cost savings that can be stacked together to create a robust cashflow that can be financed against.
2. Key risks during the contracting, project development, implementation and long-term operational stages, and the options for mitigating these.
3. The design requirements for a finance model including the appropriate financial structure and financial vehicle, capital structure, optimum financing route and investor risk appetite.
4. The practical support and strategic partnerships required to achieve successful project delivery.

5. Identification of the key beneficiaries and establishment of the business case for each stakeholder to support the project.
6. The stakeholders and project partners required to deliver the programme.
7. The governance and legal frameworks, and project contracting arrangements required to facilitate collaboration of multiple stakeholders.

The following sections begin to address these points for the recommended finance models. However, further analysis and refinement will be needed, including through the 'investment readiness' work and or business planning, for each of these models.

3.3.1 Place Based Portfolio Model

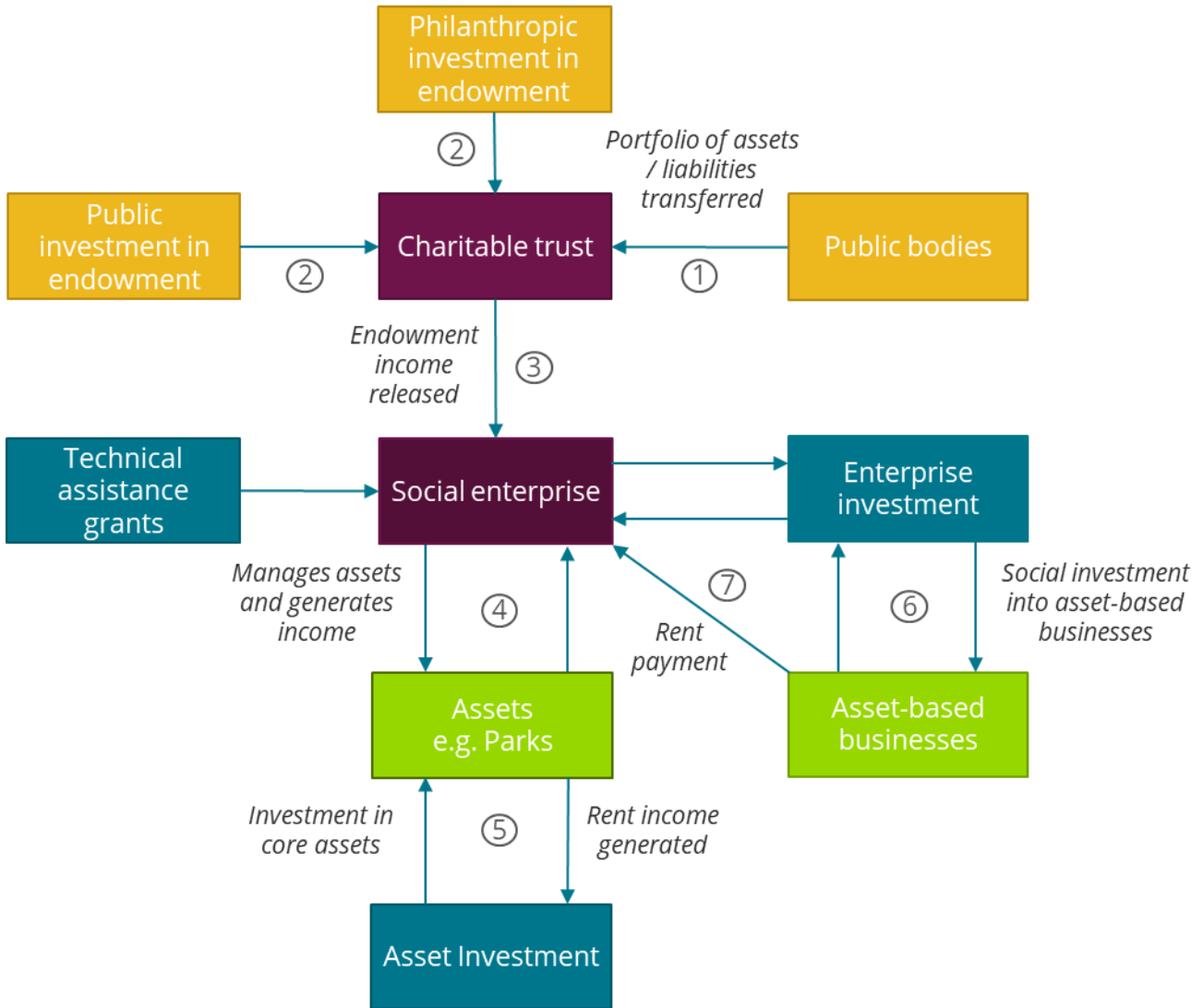
Under the place-based portfolio model, the leasehold for a network of natural assets such as parks, greenspaces, and green and blue infrastructure could be transferred from local authority management via a long-term lease into a new vehicle, likely to be a Charitable Trust. There may be single District Trusts for one or more assets, or several Trusts for particular assets. This new vehicle could be managed by a not-for-profit social enterprise dedicated to unlocking additional funding opportunities to improve and protect the assets. The freehold for the assets remains with the original public-sector owners, but a long-term lease (i.e. several decades) allows time for business models to be implemented and generate returns.

Legal conditions could be placed on the Trust to protect and ensure sustainable management of assets (e.g. requirement to maintain the extent and condition of the natural assets). These prevent risks such as built development on the natural assets, or sports facilities taking priority over natural green space. The Trust structure protects the underlying natural capital asset, allows public funding/ support for them to continue, but provides opportunities to lever/blend other funds with that public support to increase benefits from the assets to society.

The Trust would require capital and funding to be contributed into an endowment, with income generated providing a baseline revenue to support the maintenance of the portfolio. The new operating model could provide the commercial governance and financial conditions for parks to benefit from more innovative external funding sources. These include funds that the Council may be unable to bid for (e.g. corporate sponsorship, social investment etc.), and more opportunities to generate revenues from the assets through both existing and new activities (e.g. through revenues from innovative health-care activities, such as prescribing outdoor exercise or social activities).

The proposed finance model is illustrated in Figure 3.2. The model is a flexible structure with enhanced governance, offering the ability for more community participation and delivery of additional services, while opening up blended funding solutions for long-term management of greenspaces.

To be sustainable, the Trust would require transitional funding to cover initial maintenance costs and capital investment into the assets to provide improvements to enable future revenue generation. Despite costs incurred to initially establish and run the Trust, more strategic management could lead to cost savings and greater community involvement in the long-term.



Key: ① Indicates order for commencing actions to implement model. Note actions will have varying duration and can overlap

Figure 3.2. Potential place-based portfolio finance model

Similar models have been implemented successfully to achieve long-term sustainable funding for parks management at city-scale, for example Milton Keynes Parks Trust and the Royal Parks in London. Newcastle Council are launching this model in Spring 2019 to protect their parks from further budget cuts and ensure public benefits are protected. The Newcastle model indicates the potential for significant council savings and it is expected that the new parks model will become self-funding over a period of time. It is noted that Parks Trusts have been in existence for decades (e.g. in Milton Keynes). However, conditions have changed recently (e.g. pressures on public finances, slow degradation of public parks and other assets, political rationale, new blended finance concepts) which in combination now make them a more viable proposition.

It is noted that a number of natural assets in Greater Manchester are already managed through third party agreements with existing Trusts such as Lancashire Wildlife Trust, Woodland Trust and the Canal and Rivers Trust. The Smithills Estate¹⁴ is the largest site ever acquired in England by the Woodland Trust, and to

¹⁴ <https://www.woodlandtrust.org.uk/visiting-woods/wood/?woodId=5669&woodName=smithills-estate>

encourage the local economy to grow and prosper, they are looking to establish several new social enterprises on site. Examples of other third-party agreements include Trafford Council who already outsource the management of Sale Water Park to City of Trees, and Manchester City Council work in partnership with RSPB to manage the land around Chorlton Water Park.

Existing Trusts provide another way this model could be implemented, and future business planning would need to consider factors such as scale, overhead costs and financial powers/capabilities to make this work. The main challenge is in securing funding to enable the set-up of suitable trust arrangements and to enact the passing over of assets to the Trust.

This place-based portfolio model has links to several other models. For example, sites that contain important habitat may be able to secure additional funding via Habitat Banking under a Biodiversity Net Gain model. Land placed in the Trust may be able to obtain revenue from:

- SuDS (see Section 3.3.3) or catchment interventions;
- Biodiversity Net Gain, which could provide an important funding stream to enhance the biodiversity and ecosystems services in parks and greenspaces. In some locations, for parks and greenspaces to deliver higher public value they need to include more natural habitats and trees, alongside other facilities needed to offer recreational opportunities.
- Green business improvement district actions;
- Physical and mental health outcomes, which are expected to develop as understanding of impacts and approaches continue to improve, and
- Flood prevention services and biodiversity credits where habitat can be enhanced (see habitat banking in Section 3.3.2) even though these depend on the type and state of assets (e.g. a degraded flood plain area) included in the portfolio.

If the place-based portfolio model was to be taken forward as a potentially new operating model, a project team is required to carry out further stakeholder engagement to explore the feasibility of the new structure and develop the business case for it in Greater Manchester. The model would likely require cooperation between different public-sector owners of parks and other natural capital assets in Greater Manchester. For example, it could be initiated through a partnership of two or three local authorities.

Advice can be taken from organisations with experience of implementing these models, such as the Newcastle Parks Trust. GMCA could consider applying for the Future Parks Accelerator, which was launched in late October 2018¹⁵. This will provide grant funding and advice to enable cities in England to consider and deliver a new strategy and business plan for managing and funding their greenspaces.

¹⁵ See: <https://www.landscapeinstitute.org/news/heritage-lottery-fund-national-trust-initiative/> Expressions of interest closed on 19 November 2018.

3.3.2 Habitat/Carbon Banking

This model combines potential revenue streams for carbon and biodiversity credits. There is a large synergy in delivery of these credits through additional project activities to enhance natural capital (e.g. through habitat creation and restoration)¹⁶. They are complimentary revenue streams, because habitat banking is a one-off asset purchase (compensating for a lost biodiversity (habitat) asset), but carbon revenue is an ongoing purchase, buying credits from the flow of sequestration (or avoided emissions) to offset emissions from operations over time.

The revenue models for both are currently reliant on voluntary markets. Carbon is anticipated to stay that way at least in the medium term. This is likely to limit market growth and reduces long-term confidence. For biodiversity, Greater Manchester is looking to introduce a requirement for net gain within the land use planning system. National policy frameworks for biodiversity net gain are also under development.

Both the carbon and biodiversity credit markets can potentially increase in scale. There are significant levels of ongoing carbon emissions from activities with Greater Manchester. Some growth in the voluntary carbon market is expected due to political leadership (e.g. through the Mayoral initiative towards a carbon neutral region), sectoral initiatives (e.g. in aviation) and the allocation of £50 million to the Woodland Carbon Guarantee¹⁷ and £10m to the Urban Trees Challenge Fund¹⁸ in the 2018 budget statement. For biodiversity, unavoidable residual negative impacts are expected to continue, due to the amount of ongoing and planned land use development in Greater Manchester, including major infrastructure projects which could be a significant source of demand. In 2013, the Ecosystem Markets Taskforce advised government that the potential market for biodiversity offsets and intermediary services could be £500m per year¹⁹.

There is significant potential supply within Greater Manchester of credits for carbon (e.g. through peatland restoration, and tree planting), and for biodiversity (including through habitat enhancement initiatives such as GM Wetlands and the Northern Forest). However, increasing the scale of these markets could bring challenges in terms of geographical zones/ boundaries around Greater Manchester. For example, in habitat terms it could be logical to extend habitat banking along the Cheshire-GM growth corridor (an area with wetland resources and a future economic growth zone). This will create a coordination challenge for public authorities running the land use planning system.

With increasing scale of these markets, economies of scale could be achieved in project delivery, reducing unit costs. These economies of scale are one source of returns for investors in biodiversity and carbon credits. A second source of returns is in the specialist skills required to deliver these credits, which are often unfamiliar to those needing to buy the credits (for example, infrastructure developers are not usually experts in enhancing habitats for wildlife). A third source of returns for biodiversity credits is that if they are already created (and therefore 'banked'), they will be treated more favourably in the land use planning

¹⁶ There are exceptions to this on some habitats (e.g. lowland heath, where trees are good for carbon but bad for biodiversity). It should be noted that the relationship between Natural Capital and Biodiversity Net Gain policies remains under development in England.

¹⁷ The Woodland Carbon Guarantee will help tackle climate change and expand England's forests and woodlands by offering woodland creators a guaranteed price for woodland carbon units they produce, as verified through the Woodland Carbon Code.

¹⁸ Government has announced that £10m will be made available for the planting of new trees in streets and urban areas. This will operate as a challenge fund, requiring matched effort from applicants which could include Local Authorities, community groups, charities, or private enterprise.

¹⁹ Ecosystem Markets Task Force (2013) Final Report.

system than those being generated by ongoing projects²⁰. These factors can allow the carbon and habitat banks to sell credits for more than the costs of their delivery but less than it would cost private developers to undertake projects to generate credits on their own.

Creating a market structure so that a habitat enhancement project could sell both carbon and biodiversity credits (called 'stacking'²¹) is important to increase potential revenues and market viability. To be credible, stacking needs to be planned, and relevant baselines measured, ex-ante. Systems of measurement are important in both markets, as defined by the Defra biodiversity metric²². For carbon credits, the Peatland and Woodland Carbon Codes²³ provide a recognised process for measuring carbon credits from management of these habitats. These can be used to generate a cashflow, which can be financed against.

A potential finance model is shown in Figure 3.3. It has a relatively complex structure due to the dual revenue sources. There is a need for regulatory and political support to drive the markets. As the carbon market is expected to remain voluntary, the transactions are bilateral. If the intended regulatory driver has sufficient force, the biodiversity credit market can develop with a project commissioner who also banks and sells biodiversity credits. If the carbon credit market volume and certainty increase, which is most likely to occur as a result of regulatory drivers, it could develop a similar banking structure to that shown for biodiversity.

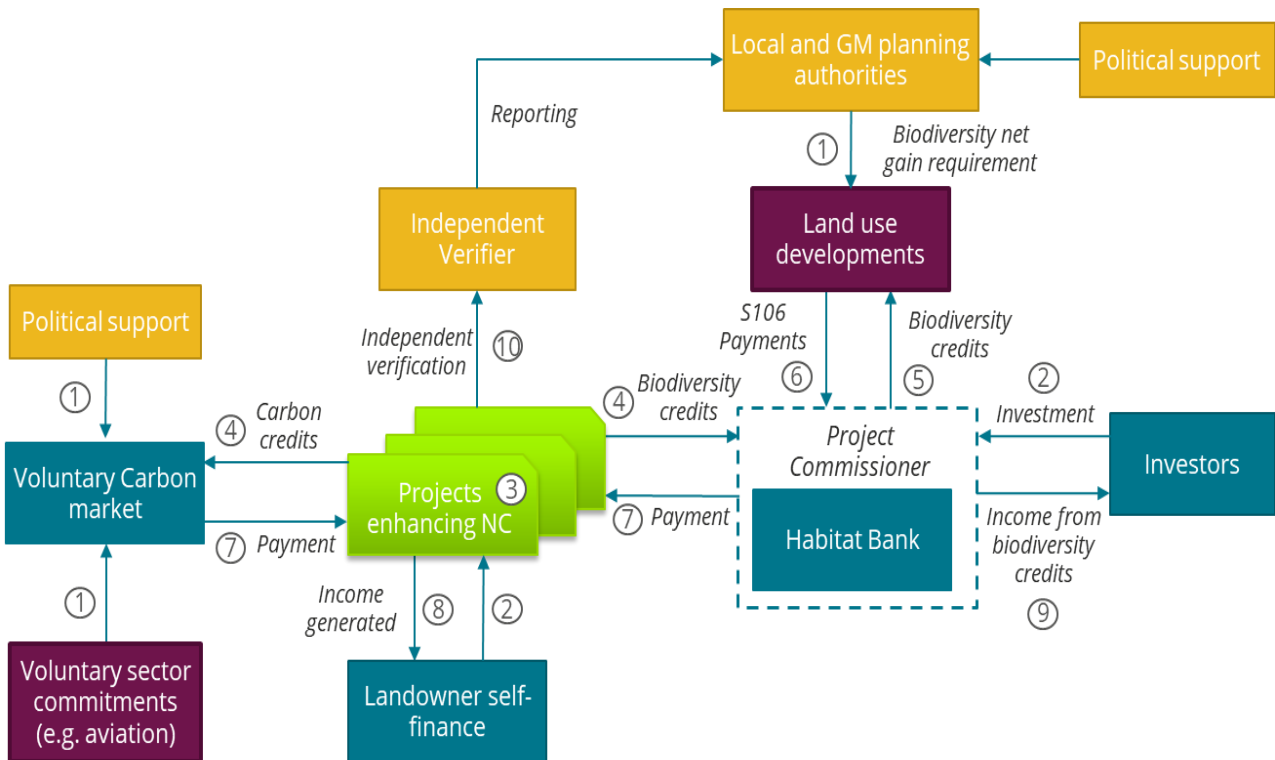


Figure 3.3. Potential habitat and carbon banking finance model

²⁰ This is due to the risks associated with delivery of the habitat creation or enhancement are avoided if the improvement in the habitat is already delivered (banked). Tom Butterworth, WSP, pers comm 8/10/18.

²¹ See discussion at: <https://www.greenbiz.com/article/how-credit-stacking-can-grow-money-trees> and http://bbop.forest-trends.org/documents/files/stacking_and_bundling_of_bes.pdf

²² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69531/pb13745-bio-technical-paper.pdf

²³ <https://www.forestry.gov.uk/carboncode> and <http://www.iucn-uk-peatlandprogramme.org/peatland-code>

It is unclear which of these two revenue sources (carbon or biodiversity) will develop more quickly. Irrespective of this, a finance model that can accommodate both will help them develop, exploit synergies and avoid future conflicts (e.g. through unclear property rights over credits).

A potential approach for Biodiversity Net Gain (BNG) in the planning system in Greater Manchester is currently being developed in more detail²⁴. How the BNG rules are defined will be important to the potential formation of the biodiversity credit market and whether it can support habitat banking. Thus, while the BNG approach will be based on ecological and other environmental and social criteria, those developing it should also bear in mind its influence on costs to developers and creation of a potential habitat banking market, for example through:

- Criterion on the proximity of where credits are created to the developments that caused the damage to be offset. This could be in areas where City Region and a local (District /Ward) planning authorities have different objectives. They need to collaborate and agree on the approach to create a clear system for delivery.
- Ensuring that the mitigation hierarchy is not weakened by BNG rules, maintaining a level playing field with developers and credibility with stakeholders.
- Providing independent verification of biodiversity credit delivery, to ensure BNG is achieved. Clear rules are important for investor confidence in market standards (i.e. that their investments will not be undercut by operators with lower standards), and to support a functioning market. Therefore, clear rules can also reduce costs to the built development sector.

A major source of risk on BNG is political risk, especially when credits may be banked for sale in future (which could be several years). As a result, strong commitments in the Greater Manchester Spatial Framework, that are robust to changes over political cycles, will help build investor confidence. Insufficient market confidence can lead to markets consisting of bilateral transactions, with one-off offsetting relying on individual land-owner/ developer 'investments', rather than third-party investment. There are also some risks around habitat and carbon banking on upland moorland, where there are uncertainties around habitat management and creation.

3.3.3 Sustainable Drainage Systems

Over the last four years, the Water Resilient Cities (WRC) initiative, a public, private and third sector partnership²⁵, has developed a model which demonstrates the potential to fund a programme of SuDS. This model has been demonstrated to be an effective means for non-domestic landlords to generate cost savings from reduced surface water charges through the creation of blue and green spaces. The WRC initiative aims to develop a multiple-benefits model for SuDS, through green and blue infrastructure.

This model shows that the capital cost of SuDS construction can be recouped through financial savings made and other returns generated should attract private sector investment to deploy SuDS at scale across the city region. The simulation undertaken as part of the WRC initiative has shown that a roll out of SuDS in schools and hospitals across Greater Manchester would see expected capital payback periods of

²⁴ Tom Butterworth, WSP, pers comm 8/10/18.

²⁵ Partners are: Arup, Atkins, British Geographic, Costain, CLASP, CIRIA, Defra, Environment Agency, GMCA, Groundworks, Marshalls, NHS Property Services, Stantec, United Utilities, Wildfowl & Wetland Trust.

between 3 and 10 years, and potential delivery of over £82million of social and environmental benefit from the proposed additional green and blue space²⁶. It is also more widely applicable outside of high-density urban areas and elsewhere in the North West. The benefits within this model would only be maximised through the use of green and blue infrastructure, or other Multiple Benefits SuDS that optimise social and environmental benefits including air quality, health benefits, carbon reduction and flood risk management.

The potential UIA funding²⁷ could support detailed work on investment readiness drawing on the positive investment case proven by the WRC initiative and further investigation on early investible pipelines of sites which the Manchester City Council RICE project²⁸ has been supporting. This could include working out the best approaches to engage public and private sector landlords. Public sector property is suitable due to longer-term management commitments, but there may also be potential for private sector initiatives (e.g. a rolling programme of car park surface replacement).

There are three key phases of SuDS project delivery: development, construction and operation. Different forms of capital are required at each phase to suit the associated level of risk. A single Special Purpose Vehicle (SPV) could be set up to raise and deploy the appropriate form of capital for each phase over the project lifetime. The key requirement is that financing delivered is aligned to project lifetime cashflows, enabling overall financing to be leveraged as efficiently as possible.

A potentially suitable finance model is illustrated in Figure 3.4. Initially, the SPV could raise development finance to establish feasible SuDS projects. Finance at this stage is likely to consist of a blend of grants and equity investment from aligned investors willing to take on high risk, with returns conditional on projects successfully moving through the development phase to operation. Using Multiple Benefits SuDS, which will motivate investors driven by such outcomes. After a suitable pipeline of construction-ready projects has been identified and risk levels are quantifiable, short-term project debt finance can be raised to construct the SuDS projects over a 12-24 month period.

Once projects have been installed and there is no longer development risk, this warrants the issue of a green bond or equivalent long-term debt to refinance the construction capital. The long-term finance aims to match project lifetime cash flows over the recoupment period. Capital could be raised from institutional and other private sector investors through a green bond or debt facility to deliver a lower cost of capital due to the green credentials and reduced level of risk. Cost savings generated from implementing a portfolio of SuDS projects through the life of the bond can be used to pay the coupon and principal of the bond and deliver returns to the investors from the development phase.

Despite the proven effectiveness of SuDS as a sustainable solution to reduce urban flooding and the business case supporting it, investment barriers remain covering each phase of project delivery. In particular, there is uncertainty regarding financing long-term maintenance costs and a lack of appropriate governance structures and contractual arrangements to coordinate multiple parties involved. Extending the current period of SuDS returns (the connection charge reduction) from its current five years to 10 or 15 years, and standardised contracting processes would reduce this risk. As with the other recommended

²⁶ <https://www.bitc.org.uk/sites/default/files/water-resilient-cities-report-july-2018.pdf>

²⁷ <https://www.uia-initiative.eu/en/news-events/discover-22-new-projects-3rd-ua-call-proposals> A potential project is at an advanced stage of development for Greater Manchester, but is not yet agreed.

²⁸ <https://www.london.gov.uk/decisions/md2062-revolving-investment-cities-rice-european-project>

finance models, this opportunity has vulnerability to policy change. However, these and other risks are known so can be addressed, particularly as the UIA project potentially provides the resources to do so. An efficient deployment model is needed to deliver an investable scale, with multiple schemes deployed collectively and their cashflows aggregated as a single investment. This could start with a desktop process (likely using GIS) to identify suitable locations for SuDS. A detailed assessment of the contracting and delivery models required to raise and deliver finance into SuDS across Greater Manchester is also required to progress the SuDS model.

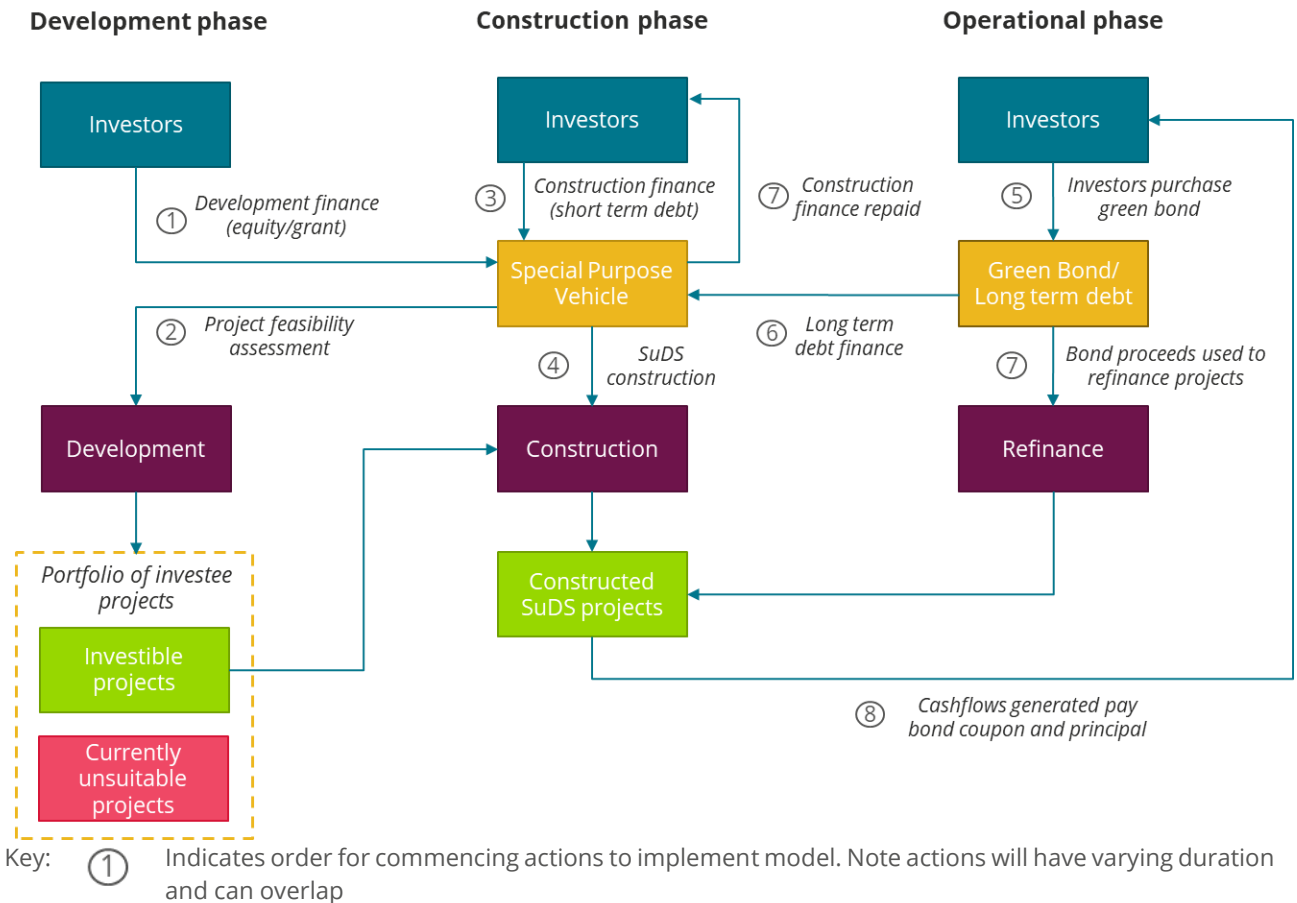


Figure 3.4. Potential SuDS finance model

3.4 An “Investment Readiness Fund”

To implement the natural capital investment plan, detailed business plans reflecting financial, legal and other expertise will be required for the investment structures (e.g. a Parks Trust or SuDS special purpose vehicle) and/or the projects (e.g. prescribed health activities) that could be invested in. Risk funding may also be required to progress the preparation of investor- or project-level business plans to evidence feasibility and provide more certainty of the ability to generate financial returns. An IRF could provide the required technical assistance and capacity funding to make a detailed case for these business plans and identify appropriate finance mechanisms through which to draw in investment.

3.4.1 Social Investment Market Example

The Social Investment Market is a good example that can assist in the development of an appropriate structure for the IRF. From a relatively small market at the beginning of the 2000s, the UK's Social Investment Market is now said to be worth nearly £2bn and growing at a rate of about 30% per annum²⁹. This market growth was stimulated by a variety of public interventions, including the launch of socially focused borrowing funds (e.g. Futurebuilders), policy incentives (e.g. Social Investment Tax Relief) and technical assistance funds (e.g. the Investment and Contract Readiness Fund (ICRF) and Big Potential). These market interventions have directly led, or significantly contributed, to the creation of over 60 specialist social investment funds and over 3,600 actual social investment deals³⁰.

Capacity building and technical assistance has had significant impact on the Social Investment Market, with the ICRF programme followed by the Big Potential programme seeing a £30m investment in capacity building and investment readiness for charities and social enterprises. ICRF was a grant fund that aimed to equip promising social ventures with the ability to secure repayable investment. It provided £13.2m in grants to 155 ventures to pay for investment and contract readiness support. This helped to unlock £233m in investments and contracts for charities and social enterprises to help them grow and increase their impact, meaning that every £1 spent on ICRF unlocked £18 in investment³¹.

3.4.2 Function of the Investment Readiness Fund

The IRF could aim to build a pipeline of investable opportunities, by providing external project developers with direct capacity building funding and third party technical assistance to strategically plan and develop viable investable projects that are ready to raise repayable investment. The Environment Fund currently being explored within Greater Manchester could act as a suitable vehicle to provide the appropriate governance and strategic support and raise and deliver funding into the opportunities identified.

As mentioned in Section 3.4.1, important lessons can be drawn from technical assistance funds in the social investment market to establish the Natural Capital IRF in Greater Manchester. Funds need to be flexible and tailored to the needs of projects, depending on how far away projects are from being investment ready. The majority of technical assistance funds have generally been grant funds. However, the ICRF programme identified that the impact of funds could be increased through leveraging grant funding with financial contributions from ventures. There is an opportunity to enhance the impact of the IRF to develop the market, by designing a fund that operates in a venture philanthropy style to provide repayable grants to enable the fund to be self-sustaining over the long-term. This form of fund could open up opportunities for additional funding from corporate or individual donors and operate as a pre-investment fund to better prepare projects for future repayable investment.

The potential functioning of the IRF is illustrated in Figure 3.5.

A key consideration is whether the design and operation of the fund could be delivered internally (subject to capacity) or through procurement from an external organisation. A broad variety of skills (including

²⁹ <https://www.bigsocietycapital.com/home/about-us/size-social-investment-market>

³⁰ <https://www.bigsocietycapital.com/latest/type/blog/size-and-composition-uk-social-investment-market-2016-update>

³¹ <https://www.sibgroup.org.uk/resources/in-pursuit-of-readiness>

finance advisory, fund management and technical assistance) are required to structure the fund, raise capital, identify suitable project opportunities, deliver funding, evaluate the outcomes, identify investee needs and provide the necessary technical assistance to prepare projects for investment (see Table 3.4).

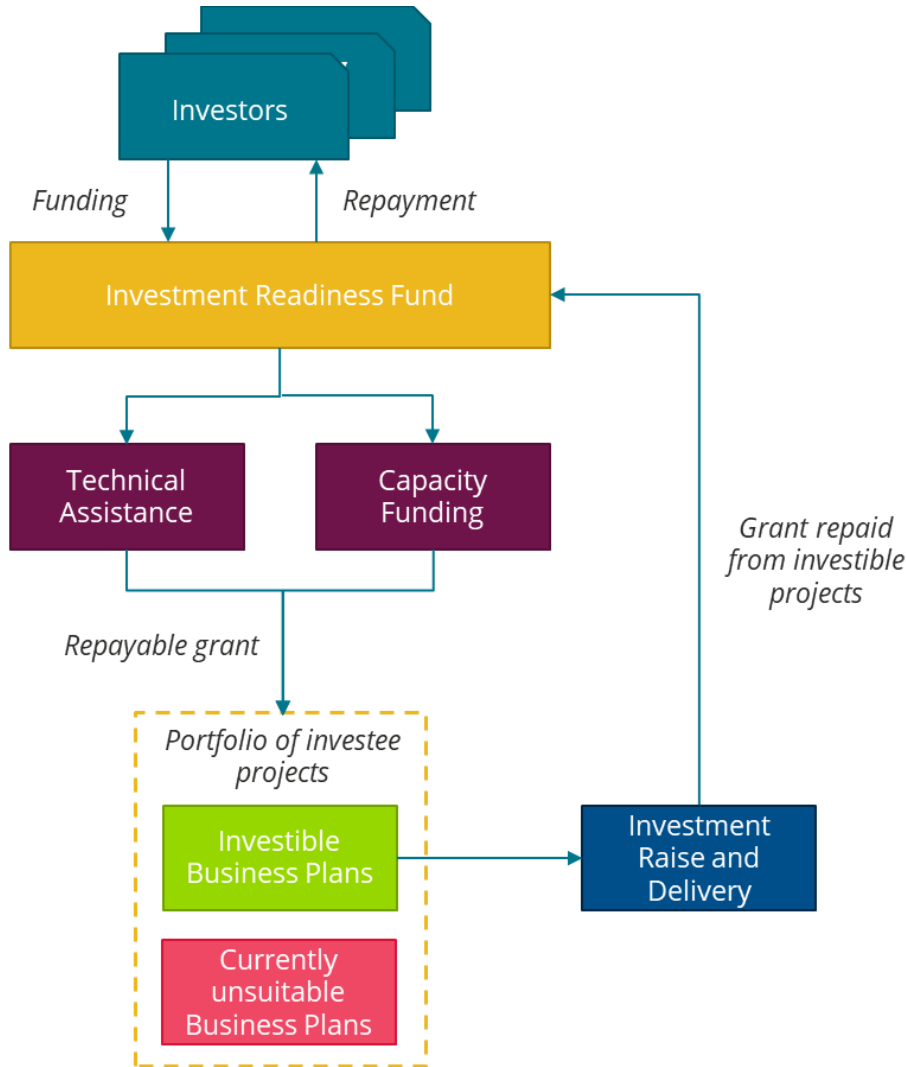


Figure 3.5. Potential structure of Investment Readiness Fund

3.4.3 Structure and Governance of Delivery Vehicle

The Environment Fund currently being explored in Greater Manchester (GMEF) could be a suitable governance vehicle to coordinate and oversee the strategic direction of the IRF. As shown in Figure 3.6, an internal coordinating body would be responsible for ensuring that the mandate of the IRF aligns with the investment priorities identified in the Natural Capital Investment Plan.

The capacity and expertise required to carry out capital raising and fund management could be procured through a third-party, and governance through the coordination team would ensure that investment is delivered in line with any mandate set out through the GMEF. Key performance indicators and targets could be designed from within the GMEF to assess the level of outcomes achieved by the IRF. This could be

evaluated by a third-party verification agent and results analysed to refine the investment programme over time.

Table 3.4: Skillsets required for the Investment Readiness Fund

Function	Skillsets	Considerations
Finance Advisory	<ol style="list-style-type: none"> 1. Design and structure fund 2. Build finance model and develop fund business plan 3. Determine governance and investment processes 4. Investor engagement 5. Manage fundraising 6. Stakeholder coordination 	<ol style="list-style-type: none"> 7. Structured within or external to the proposed GM Environment Fund 8. Form of investment to deliver (e.g. grants, repayable grants, debt or equity)
Fund Management	<ol style="list-style-type: none"> 9. Assess potential investee prospects 10. Decision making over potentially investable models 11. Contract structuring 12. Operational management of portfolio 13. Evaluate outcomes 14. Stakeholder management 	<ol style="list-style-type: none"> 15. Managed in house or through third party 16. Investor focused function rather than grant-making mindset
Technical Assistance	<ol style="list-style-type: none"> 17. Technical financial support 18. Financial modelling 19. Investment structuring and governance 20. Business plan preparation 21. Legal support and contract structuring 22. Impact measurement advice 	<ol style="list-style-type: none"> 23. Likely to be contracted through a third party 24. Flexible support required tailored to project needs

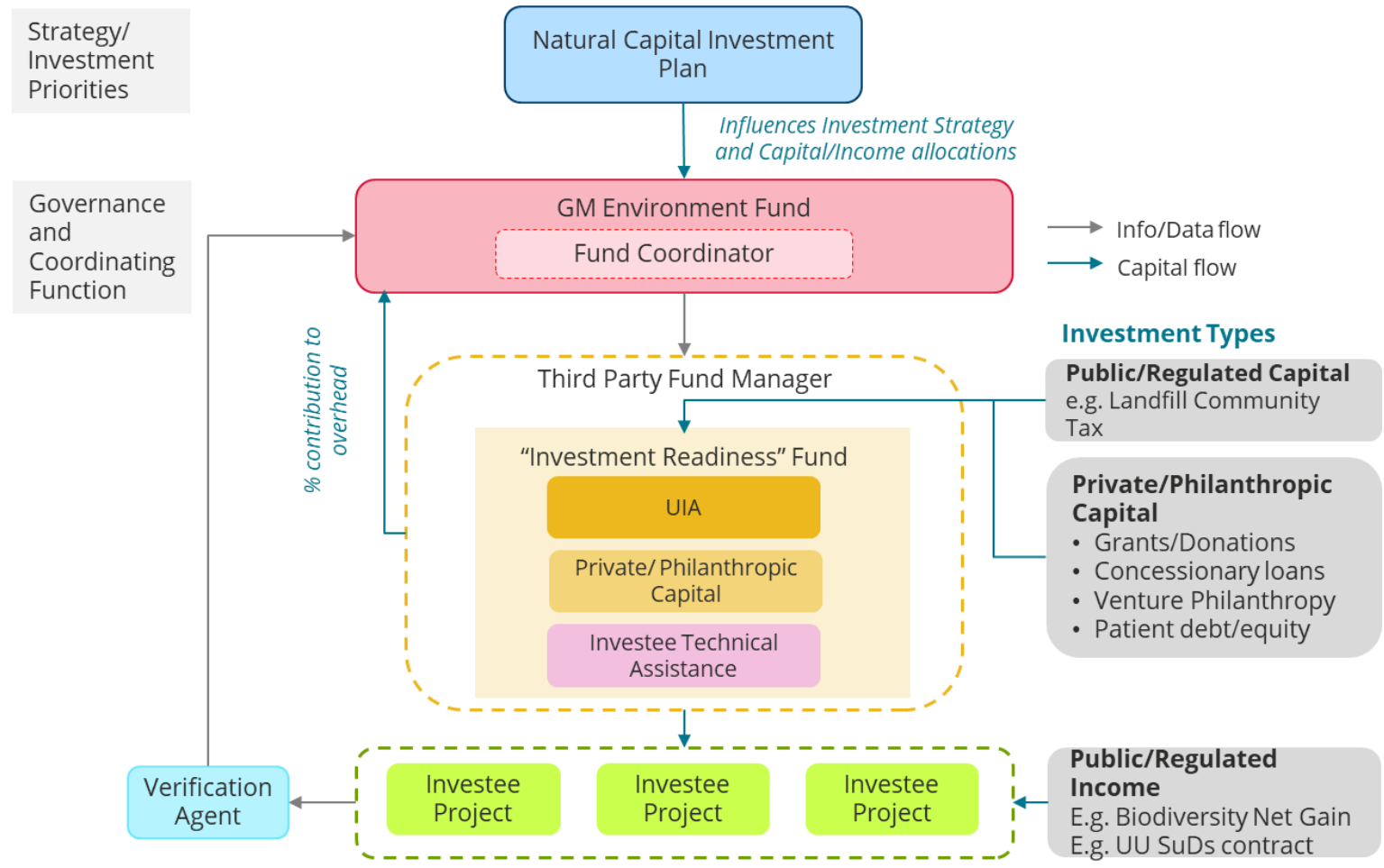


Figure 3.6. Potential investment delivery structure using the Greater Manchester Environment Fund

Table 3.5 sets out the key roles and functions required in the delivery structure.

Table 3.5. Roles within the potential delivery structure using the GMEF

Role	Function
GM Natural Capital Investment Plan	Strategic plan - assesses market options, sets strategy and investment priorities
GM Environment Fund (GMEF)	Delivers overall governance and investment committee oversight – sets programme mandate and strategic direction of funds
GMEF Coordinator	Coordinates investment programme with public/regulated capital and incomes. An internal team responsible for managing and procuring mandates via professional third-party fund managers and coordinating fund raising activities with fund managers
Fund Manager	Procured against programme mandate to leverage 'regulated capital' with third-party funders and deliver investment into investee projects
Investment Types	<ul style="list-style-type: none"> • First loss capital*: utilises the 'regulated capital' as a first loss contribution to leverage/crowd in additional investment from third-party funders • Investment capital: equity/debt/grants provided by third parties to implement investee project • Investee Technical Assistance: technical support to develop investment and business case of investee projects
Verification Agent	A third-party reviewer commissioned to analyse impact from projects. Reports to GMEF to iterate programme learning

Note (*): First loss capital refers to cashflow credit enhancement provided by an investor or grant-maker who agrees to bear first losses in an investment in order to encourage the participation of co-investors that otherwise would not have entered into the deal.

3.5 Natural Capital Investment Plan Roadmap of Actions

This Section provides a roadmap for GMCA consideration of key areas of action to enable the plan. Actions are summarised in a timeline, and specific recommendations are made on the role of the public sector and further research required.

3.5.1 Key Actions

The actions are broken down into three key areas:

- (a) Develop business plans for priority investments;
- (b) Take forward policy actions to incentivise investments, and
- (c) Define governance systems for investments.

The order in which actions are implemented depends on the context. For some, without policy actions, there will be no or insufficient investment (e.g. habitat banking). For others where there are local / national policy incentives already in place, other actions become more urgent. Implementing the roadmap is not a

linear process. For example, business plans may need to be drafted and adjusted to reflect developments with policy and governance requirements.

Similarly, different investment opportunities face different combinations of risks. However, some common sources of risk, (which the plan is designed to mitigate), include:

- Unconvincing business plans and/or wrong skills applied (business planning support through an Investment Readiness Fund, see Section 3.4.2);
- Public sector conflicts of interest (careful prioritisation of public sector roles, see Section 3.5.2);
- Lack of verification of investment outcomes (establish independent verification, see habitat and carbon banking model), and
- Insufficient grant/start-up funds (which could be addressed through external funding, such as the potential UIA funding).

A. Develop business plans for priority investments

The right capacity to develop plans needs to be identified and funded. A typical top-down approach is to create an Investment Readiness (technical assistance) Fund (IRF in Section 3.4). This fund might require a minimum of £1 million over 2-3 years to support some of the priority investment opportunities in developing investment ready business plans and engaging with potential investors. The cost to develop an investment ready business plan at city-scale is expected to be £150k-£250k per business plan depending on complexity, plus overall fund operating costs of £150k-£200k each year, based on other existing funds of this size. Irrespective of whether in-house to organisations or outsourced, it is essential that business planning skills are applied. An outline of the contents of a business plan to support investments is provided in Box 3.1.

Box 3.1: Outline of Business Plan for Natural Capital Investments

In this context, the purpose of the business plan is to gather evidence to persuade prospective investors and stakeholders on the opportunity of investing.

1. **Strategic Positioning** – Is the proposed opportunity supported by a compelling case for change that fits within the strategic context and meets public sector or business needs? This should be supported by description of the finance mechanism(s) used and the anticipated financial result.
2. **Economic Considerations** – Cost-benefit analysis showing whether, when both financial and non-financial returns are considered, society will be better off. The distribution of any changes in terms of who faces costs and who receives benefits should also be covered.
3. **Financial Considerations** – Is the proposed spend affordable and how can it be funded? Does the solution optimise value for money?
4. **Management Considerations** – Is the proposal achievable and can it be delivered successfully? Risks and contingency planning.
5. **Commercial Viability** – Is the proposed solution commercially viable? If not, what type of support from the public sector be required to make it viable? Projected financial returns, contingencies for risks and uncertainties and guarantees.

A more detailed outline of a business plan is provided in Annex 3.

There may be potential for some of the investment models in Table 3.2 to include an element of repayment to the IRF, in return for the investments enabled by the business plans it produces. Alternatively, a bottom-up approach would require those leading investment actions to pool funds or other resources to develop business plans.

- **Organisation:** An Investment Readiness Fund as described in Section 3.4 would need to be run by a small secretariat (e.g. 2-3 FTE personnel, possibly shared with other roles), overseen by a management board. The fund would invite bids for support to develop business plans. There could be a 2-stage committee process to scrutinise/ award bids.
- **Timescale:** Short-term, build capacity and identify responsibilities within 6-12 months. Form the IRF and start to disburse it within 1 year.

The near-term actions required are summarised in Figure 3.7.



Figure 3.7. Actions to develop the Investment Readiness Fund

B. Take forward policy actions to incentivise investments

Subject to approval, the GMCA's intention to use its available policy levers to stimulate investment in natural capital (i.e. take forward policy actions to enable/drive markets) could be announced with the final publication of this plan. This would help form stakeholder expectations. As described under specific investment opportunities and the recommended finance models, key policy levers are within the existing powers of either GMCA's or local authorities.

These actions are mainly investment specific. Some generic actions include processes for monitoring and verifying investment returns (e.g. biodiversity or carbon credits) and ensuring additionality of investments,

particularly where multiple benefits are stacked (e.g. in place-based investments). Best existing practice should be drawn on whenever possible (e.g. woodland and peatland carbon codes).

- **Organisation:** GMCA/local authority and Defra support.
- **Timescale:** varies by policy area, but immediate start.

C. Define governance systems for investments

There are a variety of different governance models, depending on the type and number of investment opportunities that make progress, and sources of capital. These should be outlined in business plans. Note that as a potential regulator of some market mechanisms (e.g. biodiversity credits), public bodies may have multiple roles, and this could result in conflicts of interest (see Section 3.5.2).

A key factor is to ensure bodies are correctly constituted and governed to be able to access different sources of capital – ranging from private investors, big lottery fund, etc.

- **Organisation:** collaboration effort amongst stakeholders to agree governance.
- **Timescale:** Short-term, understand current capacity and identify potential roles (including identifying any potential conflicts) within 6-12 months.

For the carbon banking and habitat banking for BNG investment opportunity, public policy drivers and enabling actions are an essential next step:

Policy requirements: Political leadership can be given on all areas of the plan, particularly in relation to carbon offsets, which remain voluntary. Policy leadership can also help organise suitable assets to lease to a Trust under the place-based model, and to standardise and lengthen the drainage connection charge reduction under the SuDS model.

For the habitat banking model, a BNG requirement needs to be introduced into the land use planning system. This needs to be supported by a framework for measuring and delivering BNG, and evidence to support for prioritisation factors within this (e.g. ecological networks). Key aims would be to attract investment to establish first biodiversity credits in bank. Processes are needed to sustain systems for brokering and regulation of credits, for example to ensure additional actions create credits.

- **Organisation:** Primarily under the Mayor/GMCA/local authority. For BNG, GMCA and district land use planning bodies can act unilaterally, with a third-party to lead a verification process.
- **Timescale:** Short-term, framework and policy action within 6 months. Attract habitat bank within 1 year.

3.5.2 Role of Public Sector

Given the uncertainty over the ability of natural capital projects to generate stable revenue streams, public support is critical to improve the risk-return profile of potential investments and incentivise capital supply from investors. Public funding could be used to provide direct concessionary investment into a fund or projects, guarantee a level of return for other investors, or provide third-party technical assistance to support project development. There are numerous roles the public sector can play in the different actions and three recommended finance models in this investment plan. These roles, which apply to different organisations / departments within the public sector, are described in Table 3.6.

It is also important to recognise the role of the voluntary sector in delivery including their valuable expertise and capacity to lead certain projects. However, this section is focused on articulating the role that the public sector is required to play.

Given the range of roles shown in Table 3.6, it is important GMCA's efforts are channelled to activities that will create the most impact and demonstrate accountability and build trust in the market. If GMCA adopts too many functions, this can dilute its activities and create (actual or perceived) conflicts of interest. It is advised to focus on doing fewer things really well. A key function it could undertake is as an investment commissioner. This role is to be an enabler of investment readiness, as per its role in the potential UIA project in producing SuDS plans that are investment-ready. However, there should not be multiple natural capital investment management units in Greater Manchester, so the potential readiness unit under the UIA needs to be carefully developed to allow it to consider a full range of potential natural capital investments.

Actual or perceived conflicts of interest in the public sector can deter investment. Therefore, the investment commissioner function potentially being developed under the UIA can be established with GMCA, but is recommended to have separate accountability and governance arrangements. This will increase trust with other parties in the investment market.

Some of the roles in Table 3.6 can be carried out by the private sector (e.g. a trading desk for carbon or biodiversity credits) or by different bodies within the public sector (e.g. purchasing of health outcomes). If further roles will not be undertaken within the market (e.g. ensuring verification of biodiversity credits takes place), they may need to be carried out by distinct public-sector bodies.

A key area to define GMCA activity is the interaction between the GMEF and the NCIP. The NCIP provides an overarching framework, whereas GMEF is a potential brand under which to organise different funding pots. The development of finance models and investment structures involving GMEF brings risks of actual or perceived conflict of interest within GMCA. On the other hand, having GMCA as a minor partner in investments can help reduce risks for other investors, including the risk that short-term availability of public sector grant funding means projects are funded on a non-commercial basis, displacing potential third party investment.

The GMCA should also consider having an aligned independent investment advisor. 'Aligned' means that the advisor's incentives match the priorities of GMCA, either because the advisor is a stakeholder, and/or

has its remuneration dependent on success of, the same investment outcomes that GMCA/local authorities are seeking.

Table 3.6. Potential roles of public sector in the investment plan

Role of public sector	Description
Political leadership	Provide leadership that gives confidence to investors in the actions being sought under this investment plan.
Policy action	Take specific policy actions in a consultative and timely manner and protect them from short-term political alteration. For example, agreeing a mandatory BNG requirement within the GM Spatial Framework gives is a more reliable basis.
Direct investor	Provide concessionary or risk absorbing capital to attract other investors. Development of a GMEF could provide a source of direct investment.
Revenue support	Provide revenue support subsidies / payments for ecosystem services to generate stable and predictable project cash flows.
Guarantor	Gives loss guarantee to assure investors that they will be returned a minimum floor investment return in the case of project financial underperformance to improve the risk-return profile of potential investments.
Technical assistance funder/ investment commissioner	Set up a grant fund to provide support and capacity to improve project quality and success rates through the provision of technical, legal and financial structuring assistance. This could include contract structuring, third party intermediation, scoping studies, consistent metrics, monitoring, investment support etc.
Regulator	Enforcer of regulations, such as in the land use planning system, which influences the SuDS and habitat/carbon banking finance models.
Land owner	Manager of publicly owned land (e.g. hospital and schools, which are a key location for SuDS project implementation). The leasehold for publicly owned assets (e.g. parks) would be transferred to a Trust under the place-based portfolio model. Public land could also be managed to generate biodiversity credits, or if developed with unavoidable residual impacts on biodiversity, would result in public authorities being a purchaser of biodiversity credits.
Verification of biodiversity (and possibly carbon) credits	Oversee the verification of biodiversity credits independently of the land use planning authorities and other public-sector functions. There also needs to be capacity to review and improve on the overall BNG system (as well as individual transactions within the market).
Trading desk for credits	Organise a 'trading desk' helping buyers find suitable credits for the impacts of their development. Public bodies have carried out this role in Australia.
Purchaser	Potentially purchase goods and services from natural capital investments, such as for health activities/ outcomes, or flood risk reduction.

3.5.3 Approximate Timeline of Actions

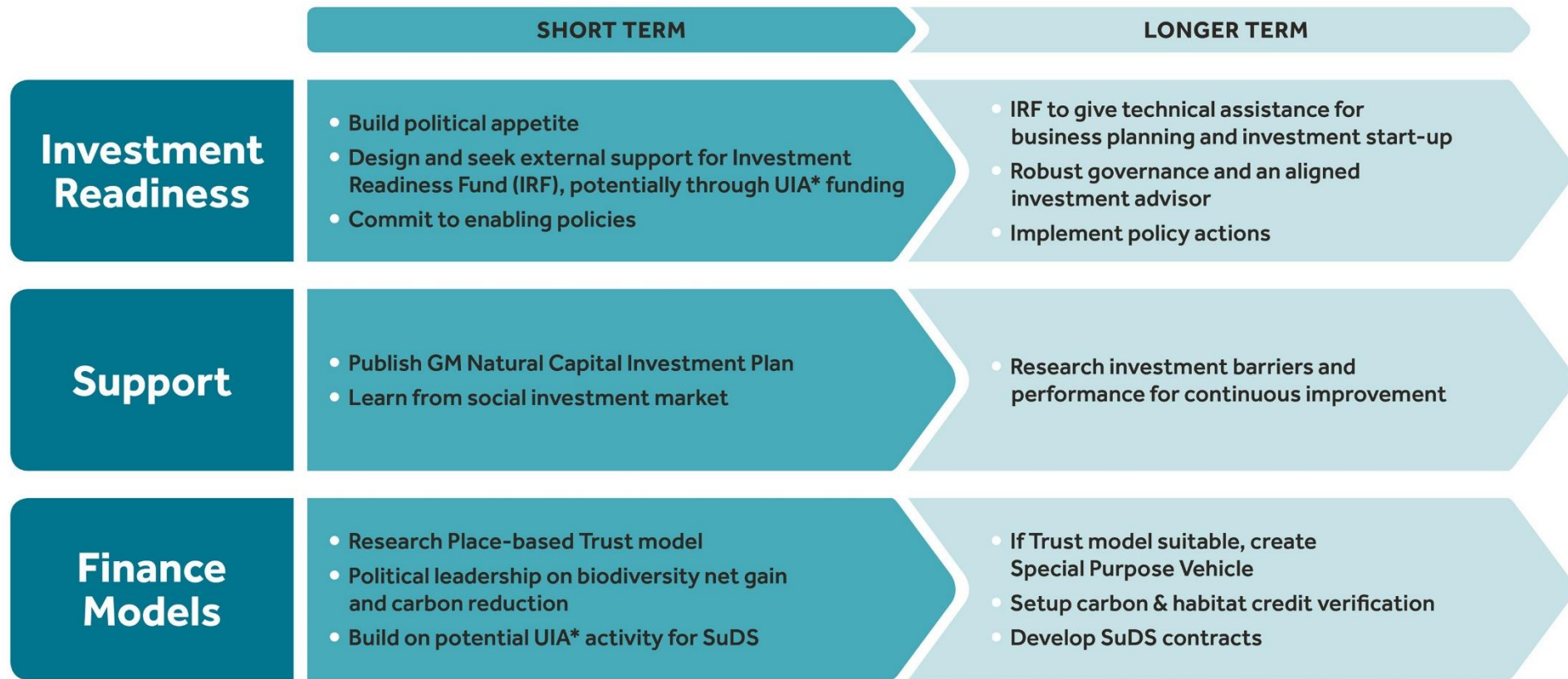
Figure 3.8 summarises the actions discussed throughout this report in an approximate time-frame over the short and long term. Figure 3.9. provides more detail on these actions, with the numbering reflecting approximate ordering/priority of actions within each time frame.

Table 3.7 summarises these actions (keeping the same numbering) into groups and indicates who is expected to undertake them and the scale of costs and likely timing involved. The aim is for these actions to motivate £10s of millions of investments in natural capital over time. As the table shows, in the short term, **low costs for several actions led by GMCA and public sector partners, some of which can be funded from current activities, including the existing Natural Course project.** There is also a need for external funding for higher cost actions in the medium term. Such funding is considered feasible from a variety of sources, including the potential UIA project for the IRF, and sources such as the Heritage Lottery Fund for the place-based Trust.

There are several key issues other than funding reflected in the actions. Firstly, there is a need to ensure the political appetite to source external funding, including for the IRF. This means political backing for a range of actions that will set the conditions to attract and lever funding, through a combination of repayable investment and grants. Secondly, GMCA and partners should seek an aligned investor - one who is motivated to invest and advise for the specific social and/or environmental outcomes, which are also targeted by the fund or product. The aligned investor can contribute a range of skills as an advisor on the creation, maybe initial operation, and governance of the IRF.

The costs of identifying and establishing the right incentives for such an advisor are low, requiring time and effort from existing staff managing the development of the natural capital investment plan. This action could receive external funding and support, such as from the potential UIA activity, or other initiatives (e.g. through the Urban Pioneer – natural capital finance is one of the areas the Pioneers seek to develop).

Types of partners and funders are identified (*in italics*) for many actions in Table 3.7, and examples are given. Further detail and identification of likely organisations is beyond the scope of this work but can be provided through the process of developing the IRF and producing business plans for specific finance models.



*Urban Innovation Action – Funding TBC

Figure 3.8: Summary of investment plan actions

<p>Immediate (6-12 months)</p>	<p>Short term (1-2 years)</p>	<p>Medium term (3-5 years)</p>
<ol style="list-style-type: none"> 1. Publish Natural Capital Investment Plan 2. Assess investment appetite for specific finance models 3. Commit to policy actions to drive investment (e.g. BNG requirement) 4. Design 'Investment Readiness Fund', building on potential UIA funds but retaining broader NC remit, to develop business plans against which investments can be made 5. Research and consult on a Trust model taking long-term leasehold of a portfolio of natural capital assets 6. Research approaches to identifying and implementing SuDS opportunities 7. Draw learning from the social investment market 	<ol style="list-style-type: none"> 8. Implement policy levers to drive or enable investments 9. Confirm governance choices and purpose of other public sector roles, such as on possible Greater Manchester specific investment vehicles (e.g. GMEF) 10. Appoint investment advisor to GMCA with aligned interests 11. Form Investment Readiness Fund: <ol style="list-style-type: none"> a. Create prospectus and carry out fund raising b. Provide technical assistance for writing business plans and preparing the appropriate governance structure. c. Manage the development of business plans. 12. Establish monitoring and verification of returns on different investments (e.g. carbon or biodiversity credits) 13. Manage project start-up and delivery 14. Research with stakeholders to overcome barriers for opportunities in pipeline, e.g: <ol style="list-style-type: none"> a. In health sector to define returns needed to justify investment in natural capital. b. Develop standardised contract form and longer charge reduction periods for SuDS 	<ol style="list-style-type: none"> 15. Manage project delivery 16. Monitor and verify returns to investors and society 17. Further investment readiness funding to develop business plans for opportunities in pipeline 18. Raise targeted funds to deliver and scale investment opportunities 19. Gather learning from research and improve approaches

Figure 3.9: Timeline of actions to start and manage the Greater Manchester Natural Capital Investment Plan

Table 3.7: Organisations taking actions to implement the Natural Capital Investment Plan and estimated costs

Actions*	Specific actions by timescale		
	Immediate (6 - 12 months)	Short (1 - 2 years)	Medium (3 - 5 years)
Supporting actions:			
Communications	1. Publish Plan Costs: low - internal <i>GMCA</i>	Further communications Costs: low - internal <i>GMCA</i>	
Research	7. Learn from Social Investment Market - research project to support Action 4 Costs: moderate £40,000 (drawing from the potential UIA activity and/or external research funding – see action 14) <i>Public sector partners and research bodies</i>	14. Research to overcome barriers Costs: TBC. <i>Mainly externally funded - connect to existing developments (e.g. Defra Urban Pioneer) and research programmes (e.g. Economic and Social Research Council)</i>	16 Monitor and verify returns 19 Gather learning & improve approach Costs: TBC <i>Wider society/ existing research community and funds</i>
Investment preparation actions:			
GMCA Policies	2. Assessment of investment appetite Costs: low - internal <i>GMCA</i>	8. Implement Policy levers, and 9. Confirm governance choices Costs: low - internal <i>GMCA, LAs and partner costs</i>	
	3. Commit to policy actions Costs: low – internal <i>GMCA, LA and partner costs</i>	10. Appoint aligned investment advisor Costs: TBC, ongoing <i>Public sector and partners costs/ incentives (e.g. could be supported by potential UIA activity, or Defra Urban Pioneer).</i>	

Actions*	Specific actions by timescale		
	Immediate (6 – 12 months)	Short (1 – 2 years)	Medium (3 – 5 years)
Supporting actions:			
Investment Readiness Fund (IRF)	<p>4. Design the IRF (includes potential UIA activity)</p> <p>Costs: moderate £50,000 - £80,000 to setup, and plan raising capital <i>Public sector, partners & external funders – e.g. drawing from existing Natural Course project and could be supported by potential UIA activity</i></p>	<p>11. (a) provides technical assistance and (b) manages development of business plans.</p> <p>Costs: significant for <i>IRF</i> – seek £1m + from a variety of external sources (e.g. potential UIA activity, philanthropic sources)</p> <p>13. Manage project start-up and delivery</p> <p>Costs: moderate for <i>IRF</i> – could be supported by potential UIA activity</p>	<p>17. Further investment readiness funding to pipeline</p> <p>Costs TBC. <i>IRF and a variety of external sources, building on 11 (b)</i></p> <p>15. Manage project delivery</p> <p>Costs: moderate for <i>projects</i></p>
Finance model actions:			
Place-based Portfolio Model	<p>5. Research and consult on Trust leasing natural capital assets</p> <p>Costs: moderate £40,000 for research – could be supported by 3rd party funding such as the Future Parks Accelerator, public sector health and environment policy research</p> <p>Internal consultation - low costs for <i>public sector and partners</i>.</p>	<p>Depending on (5), establish special purpose vehicle</p> <p>Costs: high (approx. £1m – <i>Public sector and partners</i> to seek 3rd party funding, e.g. from public health budgets, philanthropic sources)</p>	

Actions*	Specific actions by timescale		
	Immediate (6 – 12 months)	Short (1 – 2 years)	Medium (3 – 5 years)
Supporting actions:			
Habitat/Carbon Banking Model	<p>(Actions 2 & 3)</p> <p>Costs: low - internal <i>Public sector and partners</i> costs, drawing from existing workstreams</p>	<p>(8)</p> <p>Costs low – internal <i>Public sector and partners</i></p> <p>12. Establish independent monitoring and verification body</p> <p>Costs: moderate <i>Public sector and partners</i></p>	<p>16. Independent monitoring & verification of returns</p> <p>Cost: moderate <i>(potentially a new monitoring & verification body)</i></p>
SuD's Model	<p>Potential UIA activity under (Action 4)</p> <p>Costs: low - internal <i>Public sector and partners</i> costs, possible to fund within potential UIA activity</p>	<p>14. (b) Develop standard SuDS contract and longer period</p> <p>Costs: moderate potential funding from <i>RICE project or UIA activity</i></p>	

* Types of investors are described further in Table 3.3
Italics indicates lead organisations

3.5.4 Recommendations for Further Work

In parallel to taking forward the actions in the natural capital investment plan, the following are areas of work that could be undertaken to further develop natural capital investment opportunities in Greater Manchester:

- The recommended finance models can be tested in more detail with parties who will potentially be involved, including investors and purchasers who will pay for the benefits. In particular, engagement is needed with land owners and investors as critical partners in investments. For the proposed Trust within the place-based portfolio finance model, a project team is required to carry out further stakeholder engagement to explore the feasibility of the new structure and develop the business case for it in Greater Manchester.
- Integrate thinking on BNG rules in the land use planning system with the habitat and carbon banking finance model. These rules need to balance multiple issues (e.g. ecological objectives, biodiversity credit market certainty) and stakeholder interests (e.g. local planning authorities, economic development, investment readiness planning). If habitat banking is taken forward as a natural capital investment priority, encouraging the formation of a biodiversity credit market should be an explicit objective of future work on BNG.
- Fill key evidence gaps on the links between project benefits and potential revenue streams, building on the suggested stacking or bundling of revenue streams in the recommended finance models.
- Develop the use of spatial data in the business cases for specific investment opportunities. For example, the recently released ANGSt data has implications for understanding the need for health interventions and can be used to identify priority areas for creating biodiversity credits that will also provide wider benefits to communities.
- In rounds of future investment planning, the project list in the Baseline Review can be updated (see Annex 5 of the Baseline Review).

Annex 1: Priority Benefits, Assets and Opportunities

GM Priority Benefits	GM Natural capital asset type	Potential investment opportunities
Physical and / or mental health	<ul style="list-style-type: none"> • Parks and urban greenspaces • Canals • Woodland • Urban green infrastructure 	<ul style="list-style-type: none"> • Place based portfolio investment across a network of natural assets e.g. transfer of parks to a charitable trust • Avoided healthcare cost models • Green Improvement District
Sustainable travel	<ul style="list-style-type: none"> • Parks and urban greenspaces • Canals • Urban green infrastructure 	<ul style="list-style-type: none"> • Place based portfolio investment across a network of natural assets e.g. transfer of parks to a charitable trust • Avoided healthcare cost models • Green Improvement District
Water quality	<ul style="list-style-type: none"> • Catchment scale initiatives across woodland, wetland, peatland etc. • Urban green infrastructure, urban trees, (SUDS) 	<ul style="list-style-type: none"> • Catchment improvements for water quality • Woodland management and new woodland creation generating revenue from carbon credits, timber sales, woodland enterprises, recreation, agri-environment schemes, biodiversity enhancement for net gain • Peatland restoration generating revenue from carbon credits, recreation, biodiversity enhancement for net gain • SUDS water company savings / non-domestic bill savings
Flood management	<ul style="list-style-type: none"> • Catchment scale initiatives across woodland, wetland, peatland, river infrastructure • Urban green infrastructure, urban trees, SUDS 	<ul style="list-style-type: none"> • Insurance company resilience payments/ rebates • Environment Agency flood resilience payments/ outcomes payments • Community levies for flood protection • Catchment services across woodlands, wetlands, peatlands, rivers • Woodland management and new woodland creation generating revenue from carbon credits, timber sales, woodland enterprises, recreation, agri-environment schemes, biodiversity enhancement for net gain • Urban green infrastructure schemes for flood mitigation

GM Priority Benefits	GM Natural capital asset type	Potential investment opportunities
Climate regulation	<ul style="list-style-type: none"> • Woodland • Peatland • Parks and urban green spaces, canals and urban trees 	<ul style="list-style-type: none"> • Woodland management and new woodland creation generating revenue from carbon credits, timber sales, woodland enterprises, recreation, agri-environment schemes • Peatland restoration generating revenue from carbon credits, recreation • Place based portfolio investment across a network of natural assets e.g. transfer of parks to a charitable trust
Air Quality	<ul style="list-style-type: none"> • Parks and urban green spaces, urban trees • Woodland 	<ul style="list-style-type: none"> • Outcomes payments for air quality and health impact • Green Improvement District
Habitat and wildlife conservation	<ul style="list-style-type: none"> • Biodiversity enhancement across all natural capital assets 	<ul style="list-style-type: none"> • Habitat bank for biodiversity net gain

Annex 2: Glossary

Aligned Investor	An investor who is motivated to invest for specific social and/or environmental outcomes, which are also targeted by a given fund or investment product
Baseline	The baseline refers to a reference scenario, usually set at a point in time in the past or a target asset quality for the future. In accounting, it gives the starting time period of the account, including (the 'reporting year') the account is produced for
Beneficiary	A beneficiary is any person who gains an advantage (monetary or non-monetary) and/or profits from something
Bottom-up investing	An investment approach that focuses on the analysis of individual stocks (or investments) and de-emphasizes the significance of macroeconomic (and market) cycles
Business model	The mechanisms/structures and processes for operating a business in a specific marketplace
Business plan	Lays out a step-by-step plan of action for profitably operating the business model in a specific marketplace
Capital	A term for financial assets invested or their financial value, as well as the tangible factors of production and facilities within a business
Capital flows	The movement of money for the purpose of investment, trade, and/or business production
Capital goods	Tangible assets that a business uses to produce goods or services that are used as inputs for other businesses to produce consumer goods
Consumer goods	Consumer goods are the products purchased by the average consumer
Cost	An expenditure or opportunity cost
Debt	A sum of money that is borrowed by one party from another
Ecosystem services	The benefits provided by ecosystems to society and human activities, such as carbon sequestration, flood prevention, water purification, or the supply of goods such as timber
Engagement	To foster participation from stakeholders that are interested in an enterprise or project
Equity fund	An investment fund (i.e. a set of investments) that invests entirely in (publicly listed) shares of companies
Expenditure	The action of spending money, or the amount of money spent
Finance	The action of 'raising' money/funds (for expenditure), or the amount of money raised

Finance mechanisms	An instrument through which funding is made available (i.e. 'raised'), such as a grant, debt or equity
Finance model	Describes how money can flow between parties to deliver an investment and the expected return on the investment
Financial modelling	A process in which a financial representation is presented to accurately forecast the price or future earnings performance of a company/ investment
Financial vehicle	An organisation established to fulfil a specific financial purpose, such as to channel funding
Habitat banking	A market-based environmental offsetting solution to deliver ecosystem service benefits provided by land, by banking credits to address the historical loss of ecosystem service value elsewhere
Investment	<p>An investment is an asset or item acquired with the goal of generating income or (capital) appreciation. In an economic sense, an investment is the purchase of goods that are not consumed today but are used in the future to create wealth. In finance, an investment is a monetary asset purchased with the idea that the asset will provide income in the future or will later be sold at a higher price for a profit</p> <p>For the purposes of this project, the focus will be investments intended to return the principal (initial sum/amount invested) or generate profit while also resulting in a positive impact on natural capital. This includes the complementary use of public and private funds to mobilise additional capital into investable or near-investable opportunities (i.e. 'crowding in')</p>
Investment in natural capital	Funding that is intended to provide a return to the investor while also resulting in a positive impact on natural capital
'Investability'	Assessment made to determine which projects will likely attract investment. Criteria include revenue generation and attractiveness to investors
Market failure	A situation where the allocation of goods and services by a market is not efficient, often leading to a net social welfare loss
Natural capital	"The elements of nature that directly and indirectly produce value or benefits to people, including ecosystems, species, freshwater, land, minerals, the air and oceans, as well as natural processes and functions" ³²
Natural capital accounting	Using a framework to measure and value an organisation's natural capital impacts and/or dependencies in a systematic and repeatable manner
Natural capital assets	The capital assets that make up the stock of natural capital, including ecological communities, species, soils, land, freshwaters, minerals, sub-soil resources, oceans, the atmosphere, and the natural processes that underpin their functioning

³² NCC (2014) *Towards a Framework for Measuring and Defining changes in Natural Capital, Natural Capital Committee Working Paper, Number 1*

Natural capital benefits	The benefits provided by natural capital, including ecosystem services (see above) and from abiotic goods, such as minerals
Natural capital extent	A measure of the quantity of natural capital, usually the land area covered by a particular natural capital asset
Natural capital stock	The stock of natural capital comprises both biotic (living) and abiotic (physical conditions and non-living) elements of the natural environment, including non-renewable assets such as minerals and energy reserves
Net Gain	A specific policy goal of the planning process, which aims to achieve net improvement in environmental outcomes arising from the approval of development projects (e.g. Biodiversity Net Gain – BNG)
Northern Powerhouse Strategy	A vision for joining up the North’s great towns, cities and counties, pooling their strengths, and tackling major barriers to productivity to unleash the full economic potential of the North. For more information please visit https://www.gov.uk/government/publications/northern-powerhouse-strategy
Offsetting	A policy approach that seeks to minimize the environmental impacts of a development project by ensuring that any damage in one place is compensated for somewhere else
Patient equity	Equity held by investors with a long term perspective, whereby they are willing to forgo maximum short term returns in favour of longer term returns
Philanthropic capital	Capital that aims to obtain broader societal benefits, and has no or reduced expectation of any financial return
Private investment	Investment made by companies or financial organisations rather than government or third sector
Productivity	The ratio between the measure of output and the measure of inputs
Profit	Financial benefit that is realized when the amount of revenue gained from a business activity exceeds the expenses, costs and taxes needed to sustain the activity
Public capital	The aggregate body of government-owned assets that are used as a means for economic productivity
Revenue	The amount of money that a company receives during a specific period, including discounts and deductions for returned merchandise
Return	The profit or loss derived from an investment (or saving)
Risk	Risk takes on many forms but is broadly described as the chance an outcome or investment's actual return will differ from the expected outcome or return

Risk Funding	Funding that adopts a high level of project risk and may not result in a financial return
Special Purpose vehicle	An entity or mechanism established to fulfil a specific purpose, such as to raise or channel funding
Stakeholder	A party with an interest in an enterprise or project; stakeholders in a corporation include investors, employees, customers and suppliers
Top-down investment	An investment analysis approach that involves looking first at the macro picture of the economy, and then looking at the smaller factors in finer detail
Transaction costs	Cost incurred when buying/selling a good or service

Annex 3: Checklist of questions for business plans

Heading	Questions
Section 1: Strategic positioning	
Problem Statement	What challenges will the investment contribute to solving?
	On what inefficiencies, unmet market opportunities, under-performing markets and/or technical and operational challenges will it impact?
Justification	How is it linked to natural capital priority targets and strategies (e.g. NBSAP, etc.)?
Opportunities	What opportunities will it take advantage of (e.g. availability of capital, ease to implement technical solution, etc.)?
	Why is this solution especially appropriate now?
Relevance: Natural Capital	What natural capital assets will the investment protect or enhance?
	Does the business benefit directly from benefits provided by natural capital? For example, is it based on ecosystem services and if so, describe how this will function.
Relevance: Social	What social outcomes can be expected?
	How can social outcomes be improved [or safeguards established to reduce negative impact]?
	Are there inequality benefits or risks that can be mitigated?
Relevance: Political	Why is the investment important to Greater Manchester?
	Is there political support for implementation?
	How can political and social acceptability be enhanced with improved design or advocacy?


Heading	Questions
Section 2: Economic considerations	
Economic concept	What is the underlining economic concept (e.g. payment for ecosystem service, polluter pays principle, avoided costs model, addressing economic efficiency)?
	Does it result in a change in behaviour, prices, consumption patterns, etc.?
	What are the possible unintended systemic economic consequences?
Economic impact	What are the motivations behind different participants and how can they be leveraged and managed?
	What are the expected economic benefits (e.g. GDP, jobs, and poverty reduction)?
Cost benefit analysis	What are the opportunity costs? (Or what are the economic costs of inaction?)
	Will a cost benefit analysis result in a positive net present value?
Section 3: Financial considerations	
Financial result	Does the investment help to mobilize new revenues, realign expenditure, reduce future costs or achieve cost-savings by delivering better and how will this work?
	What is the expected monetary value of the above? [estimations will be required, but the bottom line is the provision of realistic financial figures]
	Which financial indicator should be used (e.g. ROI, ROE, NPV, IRR, etc.) to better measure the financial results?
Financial source	What are the principal financing sources?
	Are there financial assets already committed (e.g. start-up capital, guarantees, commitments for co-financing)?
	How are or how might potential investors/financiers be involved in the design and implementation?
	How will the investment respond to the target investor/financier priorities or requirements (e.g. minimum ROI)?

Heading	Questions
Financial structure	What financial instrument or instruments will it rely upon?
	How would the resources flow? [describe the financial structure]
	What are the additional/specific financial needs or requirements (e.g. credit enhancement)?
	What will be the initial start-up costs, grants or other initial investments required?
	What will be the estimated annual operational costs [versus expected returns when relevant]?
Financial intermediation	Is there a need for an intermediary such as a trust fund, bank, special vehicle, etc.?
	If yes, what is the most efficient option for financial intermediation?
	Are other/specific financial service providers required?
Use of proceeds	What will the financing be allocated for (if relevant)?
	Who will be determining the use of proceeds and how?
	How will the disbursement be monitored?
	What safeguards are needed to assure appropriate and effective use of funds?
Section 4: Management considerations	
Design features	Can a sound theory of change (or logical framework) be drawn by connecting the strategic positioning, economic and financial considerations?
	What unique design features must be included for successful implementation?
Implementation arrangements	What are the intended implementation arrangements?
	What institutional structures (e.g. governance, advisory, etc.) will be required?

Heading	Questions
Managerial and technical capacity	Who is the leading agency or sponsor and capacity?
	Does the leading agency or sponsor have sufficient leadership and technical capacity?
	What kind of external support will be required?
Stakeholders engagement	How are stakeholders being involved and how will they continue to be involved in implementation?
	What are the mechanisms to assure continued engagement and safeguards for all stakeholders?
Operational considerations	What are the critical technical/operational issues to be considered (e.g. hiring of qualified staff, etc.)?
	Has there been adequate consideration of the timing and administration of financial flows?
	Has there been adequate consideration of internal controls and safeguards?
Legal and regulatory	What are the necessary legal or regulatory requirements?
	What legal structures are required, and which are more cost-effective?
	Are changes in laws or regulations necessary?
Risk management	What are the major risks (endogenous, exogenous, financial, operational, social, environment-specific, etc.)?
	What is the likelihood and impact of each major risk?
	What is the response or mitigation strategy for each major risk?
	How will risks be monitored?

Heading	Questions
Section 5: Commercial Viability [for market driven investments]	
Business model	The business/ good/ service is able to compete effectively and to make a profit? (building on many of the considerations above)
	What is the expected profitability versus the risk profile?
	What are the key factors in producing the good/ service (e.g. labour, skills and material inputs), and what risks are associated with them?
	What is the expected size of the market?
	Are relationships with the investors, supply chain intermediaries and retailers in place or feasible to implement?
Market analysis	What is the scale of current or potential demand for the good/ service?
	Is the market segmented and understood? And what is the profile of target customer(s)?
	What are the marketing tools needed for successful penetration into the market?

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