

Technical Assistance for Cadastre Integration, Natural Resources Valuation and Resilient Planning in Cities

International Workshop
Oct 2024

Natural Capital and the Greater Manchester Experience

自然资本与大曼切斯特地区的经验

Krista Patrick

Natural Capital Coordinator 自然资本协调员

Greater Manchester Combined Authority

大曼彻斯特联合管理局

International Workshop 基于综合地籍的城市自然资源评价与韧性评估国际研讨会

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Environmental Challenges & Ambitions

环境挑战和五年计划的雄心

Threats facing GM's natural environment...

Land	Unsustainable land management; GM accounts for 3.6% of the UK's annual CO ₂ emissions
Water	Over 90% of GM's waterbodies fail to meet quality standards; over 50,000 properties at risk of flooding
Biodiversity	Biodiversity net gain approach not yet adopted across districts; lack of green space and ecological networks
Investment	Insufficient funding available to protect nature; lack of business models to attract alternative sources
Environment engagement	Lack of public recognition of the wide range of benefits that nature delivers for the economy and society

...5YEP ambitions

- Plant 1m trees by 2024, 3m by 2035
Restore 50-75% of GM's peatlands by 2040
Carbon neutral city region by 2038
- Improve GM waterbodies to achieve standards by 2027; shift to more nature-based solutions for flood alleviation schemes
- Embed biodiversity net gain for developments and accelerate the delivery of a GM Nature Recovery Network
- Develop GMEF to broaden the range of funding sources; deliver investment readiness support and proof-of-concepts
- Widen engagement via volunteering and employment opportunities; build on evidence base to promote benefits

The Covid-19 pandemic has increased the importance of delivering on these ambitions to boost the local economy, create jobs, increase climate resilience and enhance the wellbeing of GM's residents.

Greater Manchester Policies & Strategies 大曼切斯特的政策与战略



- **GM Strategy 曼切斯特的战略**

“Greener, fairer, more prosperous city-region”

“更加绿色、更公平、更繁荣的城市区域”

- **GM Environment Plan 曼切斯特的环境计划**

“Protect, maintain and enhance, and take steps to achieve environmental net gain”

“保护、维护和加强，并采取措施以实现环境净收益”

- **Places for Everyone 人人共享地场所**

“Achieving a measurable net gain in biodiversity of no less than 10%”

“实现可衡量的生物多样性净增长，并达到增幅不低于 10”

- **Greater Manchester Local Nature Recovery Strategy 大曼彻斯特地区自然恢复战略**

“Supporting nature recovery across Greater Manchester”

“支持大曼彻斯特地区的自然恢复”

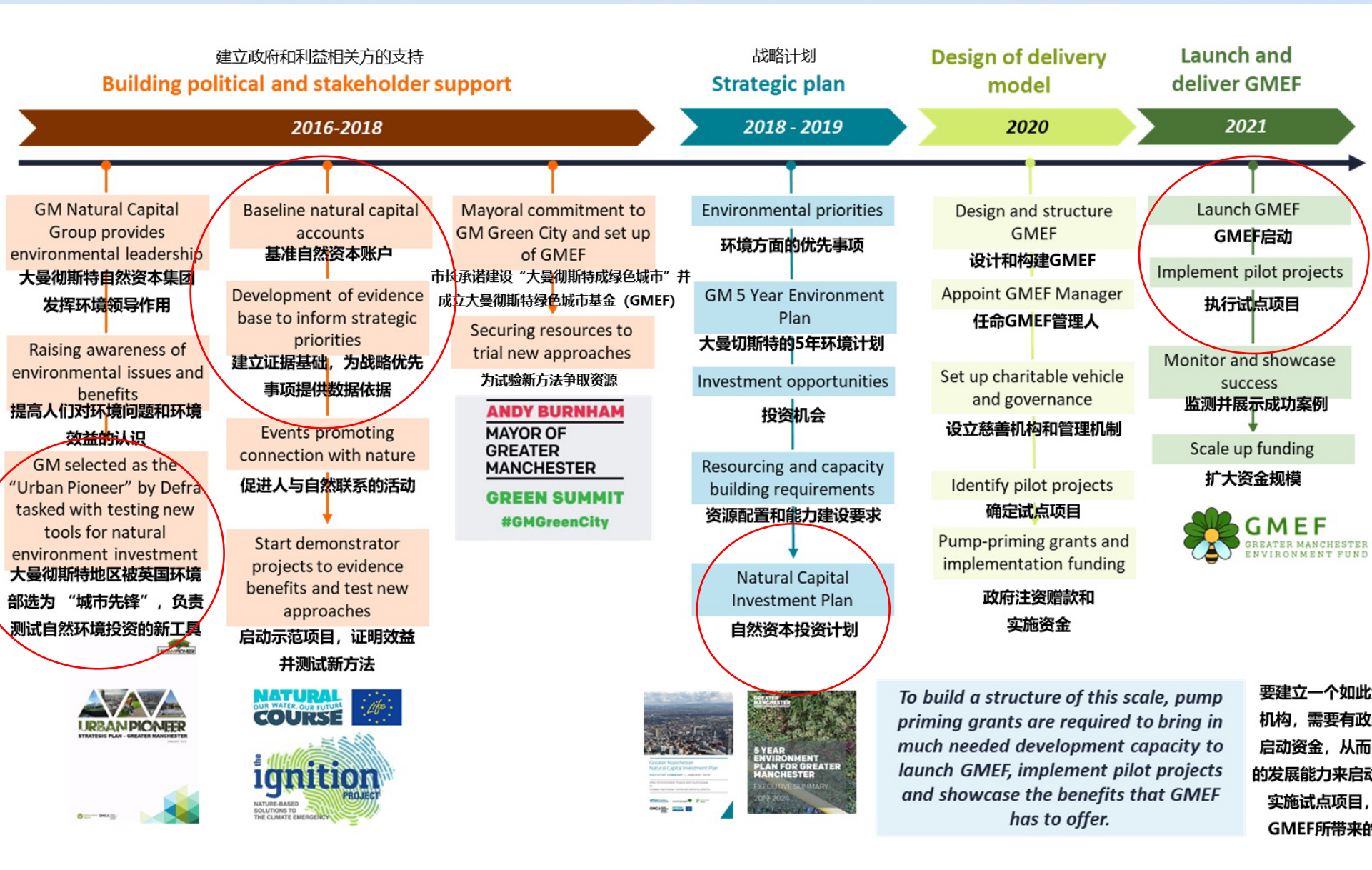
- **Local Plans 地方计划**

There are 10 districts in Greater Manchester each producing their own local plan.

大曼彻斯特共有 10 个区，每个区都制定了自己的地方计划



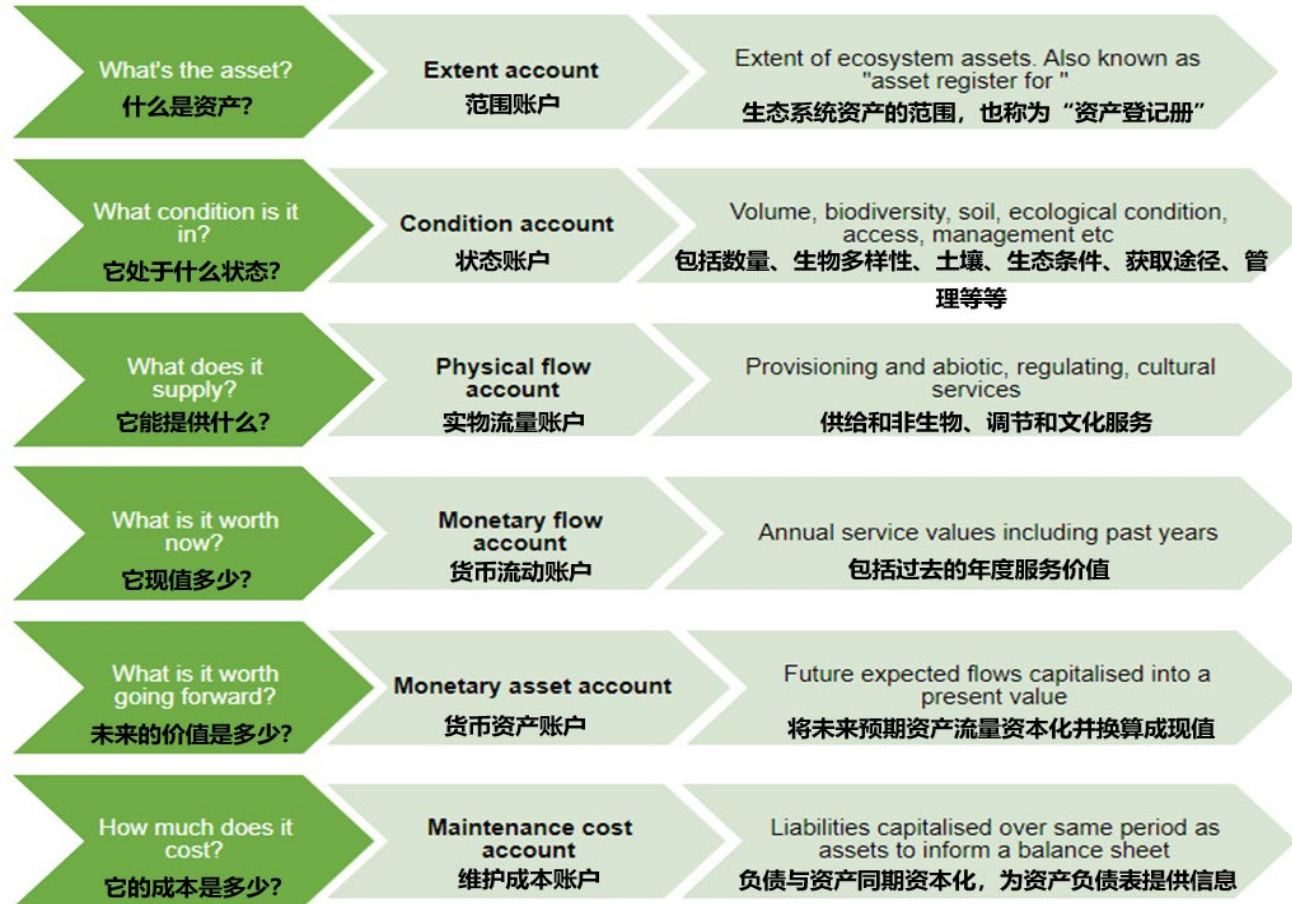
Our Natural Capital Journey 我们的自然资本之旅



To build a structure of this scale, pump priming grants are required to bring in much needed development capacity to launch GMEF, implement pilot projects and showcase the benefits that GMEF has to offer.

要建立一个如此大规模的机构，需要有政府投资的启动资金，从而引进急需的发展能力来启动GMEF、实施试点项目，并展示GMEF所带来的效益。

Natural Capital Assessments 自然资本评估



- Air quality 空气质量
- Recreation 休闲娱乐
- Physical health 生理健康
- Mental health 心理健康
- Noise mitigation 减少噪音
- Local climate (heat) regulation 本地气候 (热浪) 调节
- Carbon sequestration 碳固存
- Food 食物
- Minerals 矿物

Source: Defra 'Enabling a Natural Capital Approach Guidance'

Natural Capital Accounts 自然资产账户

Benefits 收益	Flow/ye	Measure 计算单位	Value/yr	Measure 应对
Air Quality 空气质量	54.6	Parts per billion of PM2.4 PM2.4 的十亿分率	£41m	Avoided healthcare costs 减少医疗成本
Recreation 休闲娱乐	95.8	Million visits to open spaces 每百万人次游览开放空间	£372m	Welfare 福利
Physical Health 生理健康	4,600	QALYs saved due to physical activity 因体育锻炼而增加的生活品质调整后存活年数 (QALYs)	£92m* £56m	Welfare of QALYs gained Avoided healthcare costs 生活品质调整后存活年数增加后的福利 减少医疗成本
Mental Health 心理健康	124,000	Point reductions on GHQ index 总体健康问卷指数中降低的分数	£264m	Avoided healthcare costs 减少医疗成本
Noise 噪音	430,000	Number of buildings with noise mitigated 噪音得到缓解的建筑物数量	£58m	Avoided healthcare costs 减少医疗成本
Local Climate 本地气候	0.5	Cooling from green space 利用绿地降温	£10m	Avoided healthcare costs 减少医疗成本
Carbon 碳	38,000	Tonnes of CO2 二氧化碳吨数	£2m	Non-traded cost of carbon 非交易碳成本
Food 食物	56,000	Hectares of land farmed 耕种土地公顷数	£50m	Estimate gross margins 估计毛利率
Minerals 矿物	1.40	Million tonnes of aggregates 百万吨集料	£74m	Market value 市场价值
Regulation of flood risk and water quality 洪水风险和水质监管		Not measured 未测量		Not measured 未测量
Maintaining biodiversity 维护生态多样性		Not measured 未测量		Not measured 未测量
Total 总数		* Not summed - may double count recreation welfare 未总和 - 可能重复计算娱乐福利	£930m	Mix of measures 多种结果的组合

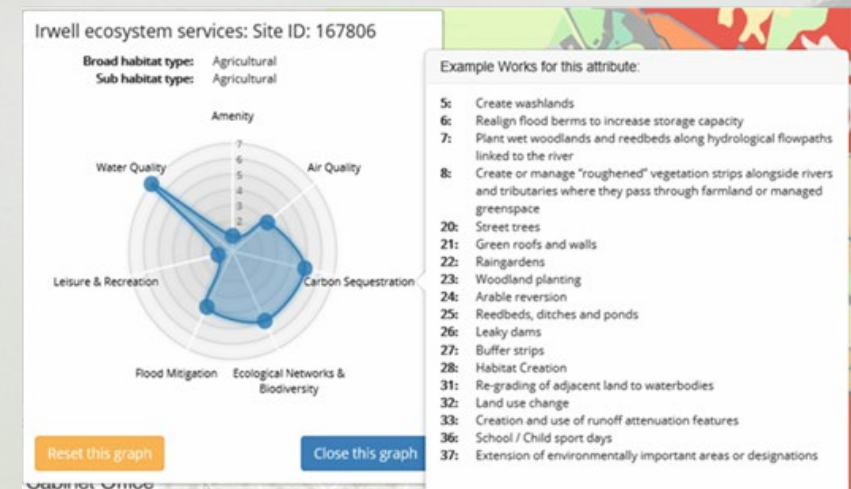
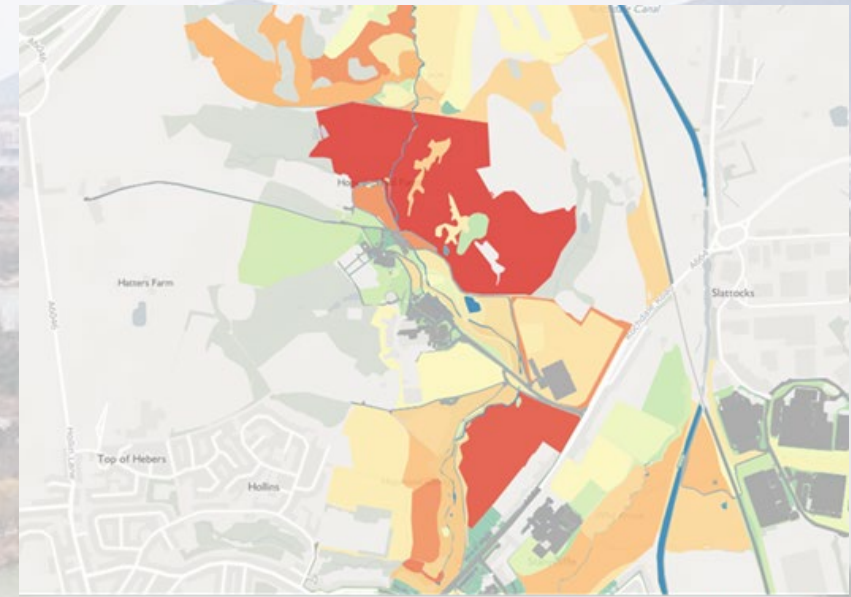
Opportunity Mapping Tool 绘制机遇图工具

What it is? 它是什么?

- Feasibility + Need = Opportunity 可行性+需求=机遇
- Scored Qualitatively. 定性评分
- OS MasterMap parcel based. 以 OS MasterMap 地块为基础
- 40+ data sources, 30+ individual scoring methods
- 40 多种数据源, 30 多种单独的评分方法
- Balanced in approach. 方法平衡
- Suited for Strategic applications 适合战略性应用

What it is not? 它不是什么?

- Assessment of land quality. 土地质量评估
- Replacement for local knowledge. 取代当地知识
- Definitive. ~ Aid decision making, not drive it.
- 确定性: 辅助决策, 而不是推动决策
- Standalone. ~ Supplements existing studies & flows.
- 独立性: 补充现有研究和流程
- Perfect or Complete. 完美的或者是完整的



Who can use the tools? 谁能使用这个工具?



Strategic Planner

Identify baseline Natural Capital values. Identify opportunities for environmental improvements that could deliver multiple benefits and can draw in new funding streams.



Land Manager

Use the habitat mapping and the list of practical actions when preparing management plans and biodiversity net gain schemes.



Fundraiser

Use the Natural Capital Accounts to produce headline figures on how environmental investments can boost Natural Capital and thus influence decision-makers.



Local Authority Planner

Produce evidence about which features of a site to protect and enhance in allocations, development frameworks, planning policy and decisions.



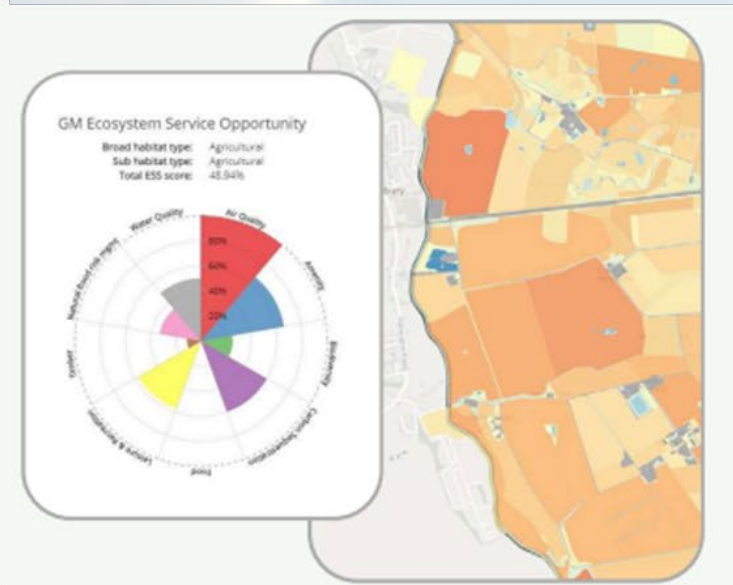
Friends Group

Use the Ecosystem Service Mapping Tool to identify multiple small scale opportunities and help to engage other third parties who would benefit from improving a specific Ecosystem Services.



Developer

Use the Ecosystem Services Mapping Tool to identify opportunities for delivering biodiversity and environmental net gain on site. Use both tools to consider how the development site's Natural Capital can be uplifted to advocate for the benefits of the scheme to the neighbourhood and to incoming residents.



Use cases 使用案例

Site, Neighbourhood, Region Analysis 场地、街区、区域分析

- Hot Spot Analysis. 热区分析
- Where is the greatest potential opportunity?
• 哪里有最大的潜在机会?
- Where should we protect or maintain?
• 哪些地方需要保护或维护?

Baselining and Evidence Building 基准和证据积累

- Valuable data and analysis for understand place and space.
• 了解地点和空间的宝贵数据和分析

Strategy and Policy 战略与政策

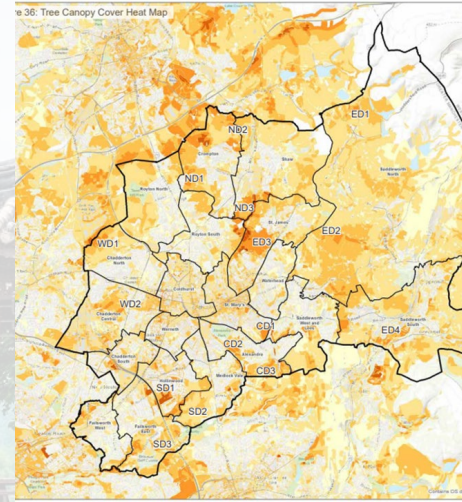
- Incorporation into vision documentation and policy.
• 纳入远景规划文件和政策

Stakeholder Engagement 利益相关者的参与

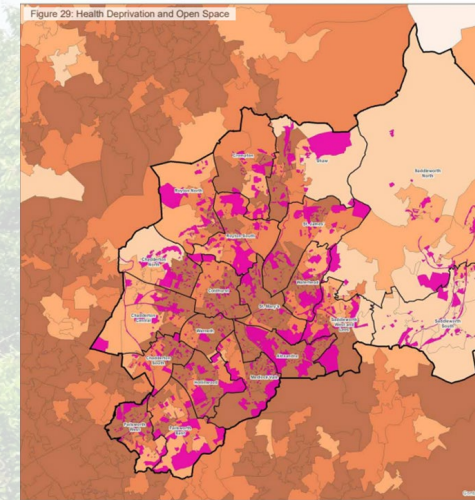
- Collaboration and interested parties.
• 合作与相关方

Delivering Nature's Recovery 实现自然复苏

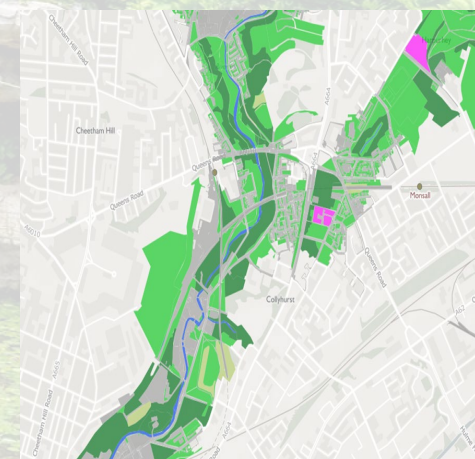
- Practical tool in project development.
• 项目开发的实用工具



Source: Oldham Council



Source: Manchester City Council



Source: TEP – The Environment Partnership



Conclusions 结论

The key learning points gained from our experience to date:

从我们迄今为止的经验中获得的关键学习要点:

- Tools for Decision Making 帮助决策制定的工具
- Project Commencement and Initial Development
- 项目启动和初期开发
- Stakeholder Engagement 利益相关方的参与
- Understanding Limitations 了解局限性
- Ecosystem Services Opportunities for all Assets
- 所有资产的生态系统服务机遇
- Funding Resources 资金来源
- Networking and Collaborative Approaches
- 以发展人脉和合作为方向