

What can Natural Capital do for our urban environments?

Greater Manchester Natural Capital Group
Annual Conference

Wednesday 1st Feb 2017

The Lowry

9.30 – 16.30



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GMCA GREATER
MANCHESTER
COMBINED
AUTHORITY

NATURAL
OUR WATER. OUR FUTURE
COURSE

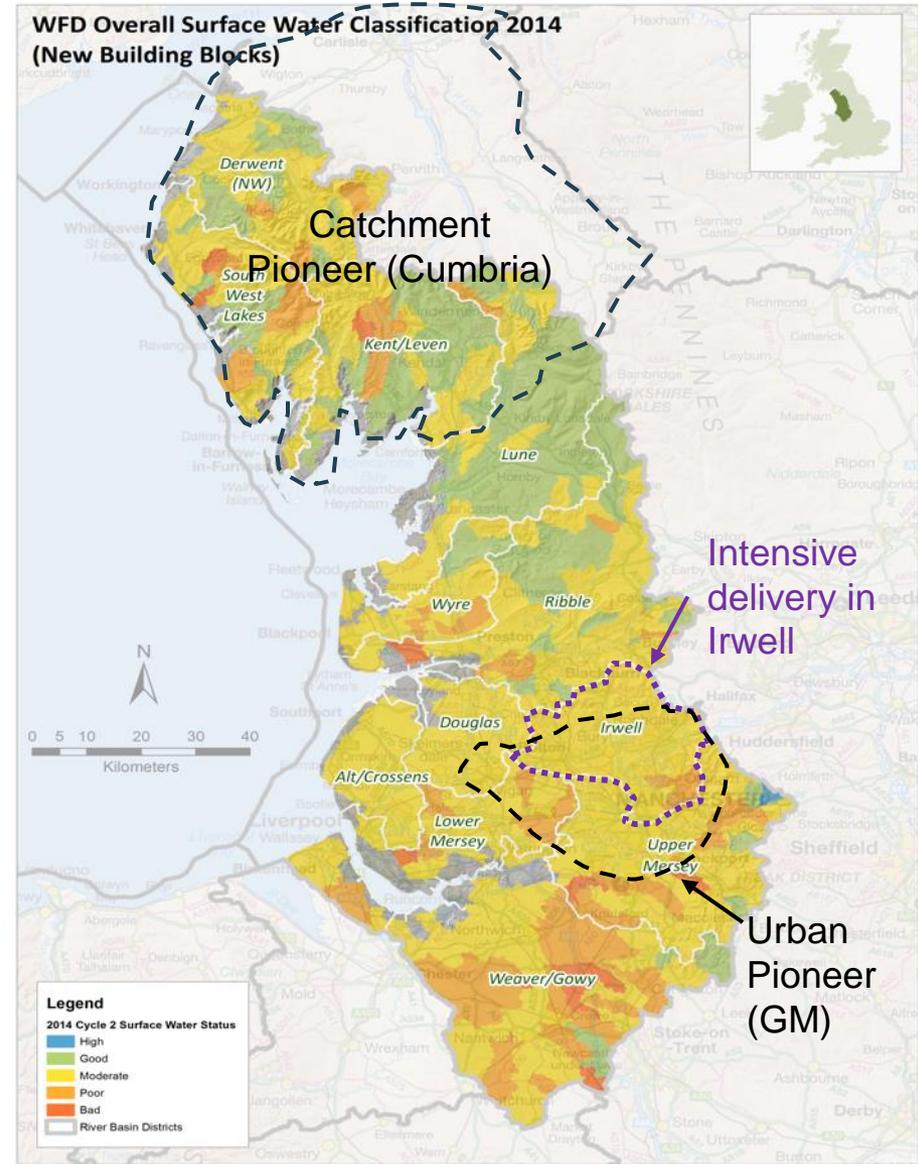


Natural Course

Delivering multiple benefits for the water environment

1st February 2017

NW England River Basin District



Project objectives

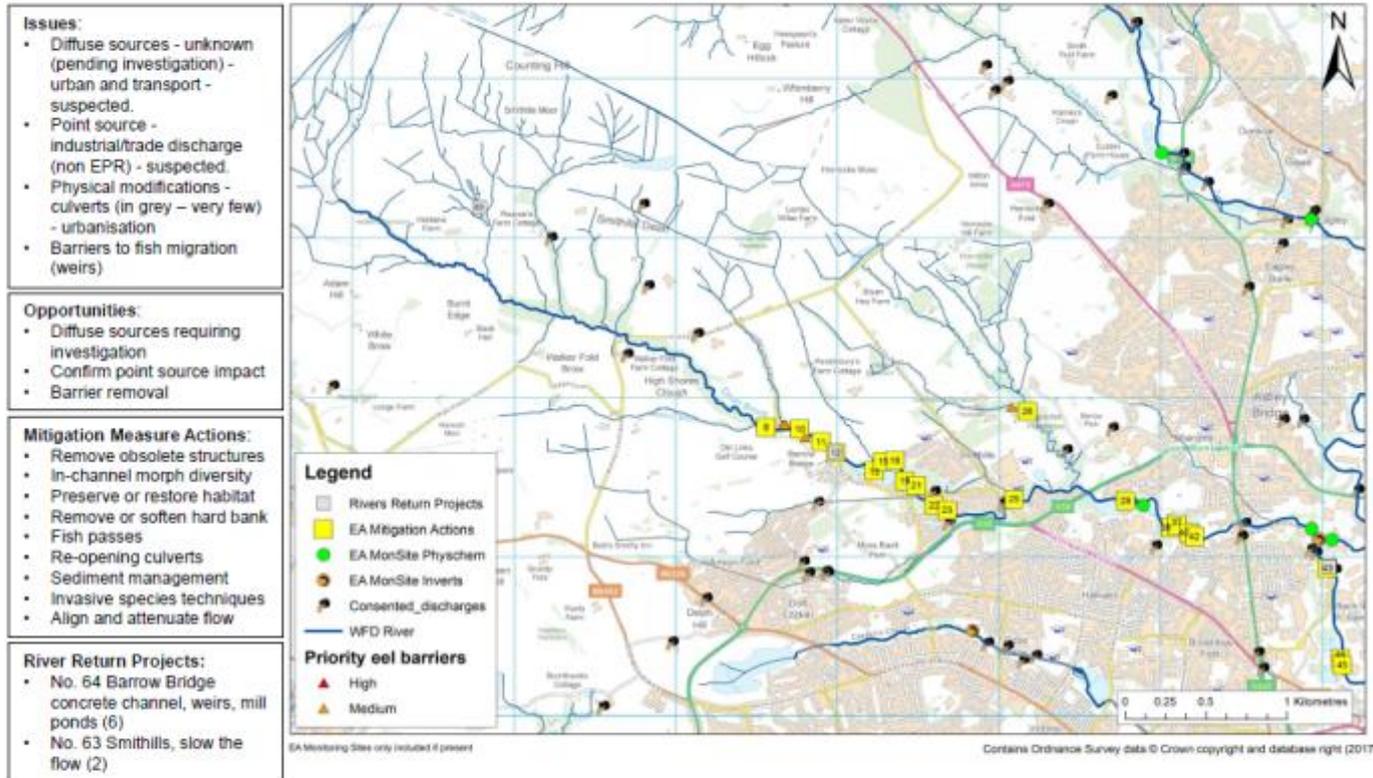


Irwell catchment ecology project



Evidence & Measures study

Astley Brook (Irwell)



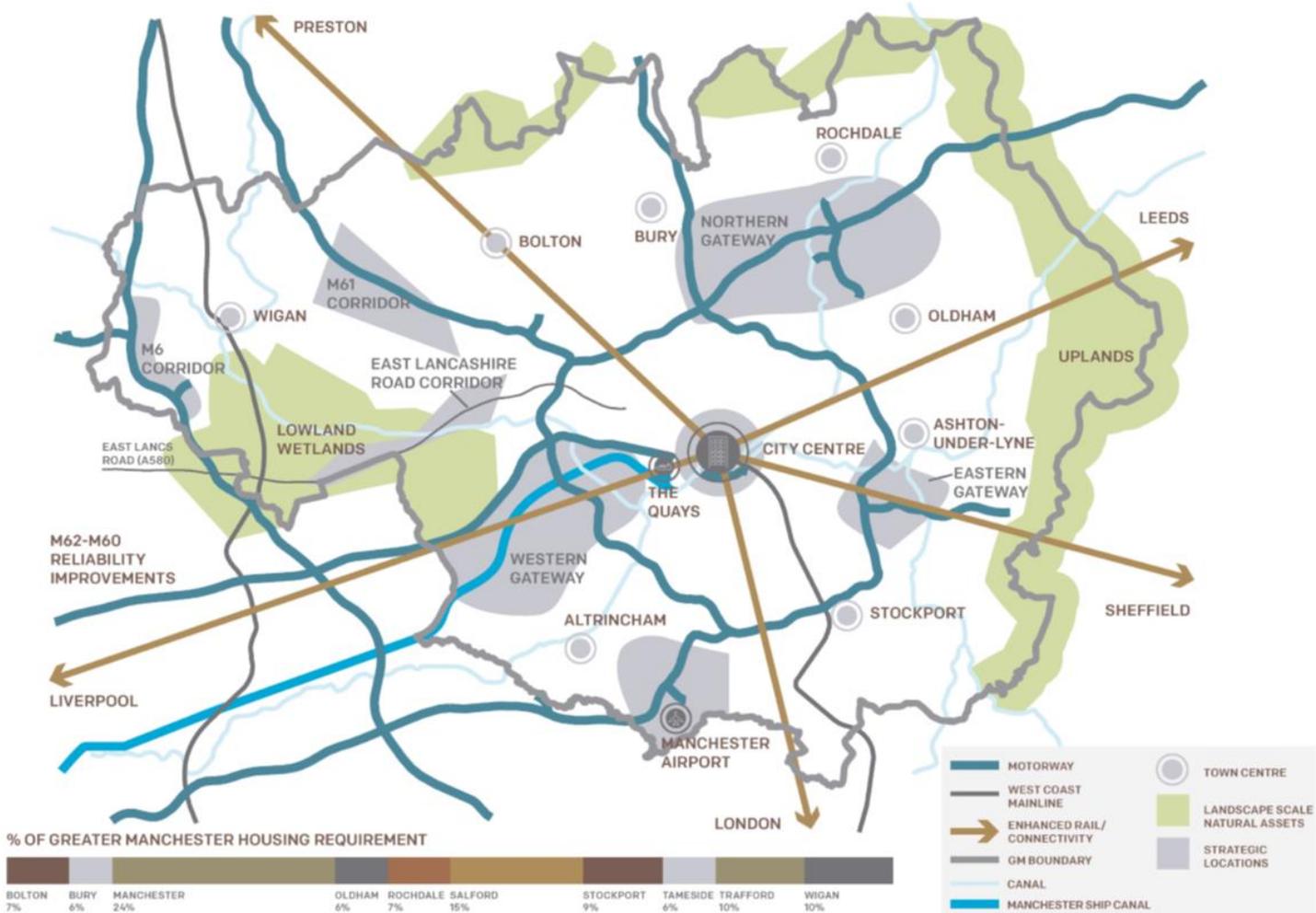
Comments: Water quality good (pH only failing element). Fish are a failing element yet no monitoring site present? Potentially a lot of habitat upstream of the town but no understanding of the suitability of this or current use by ecology. May be more benefit working in the nearby Eagle and Bradshaw Brooks which have bigger catchments? The EA have commented that fisheries benefits may be difficult to predict and attain without good understanding of trout status and distribution in the Brook.

Conclusion: not a priority for work

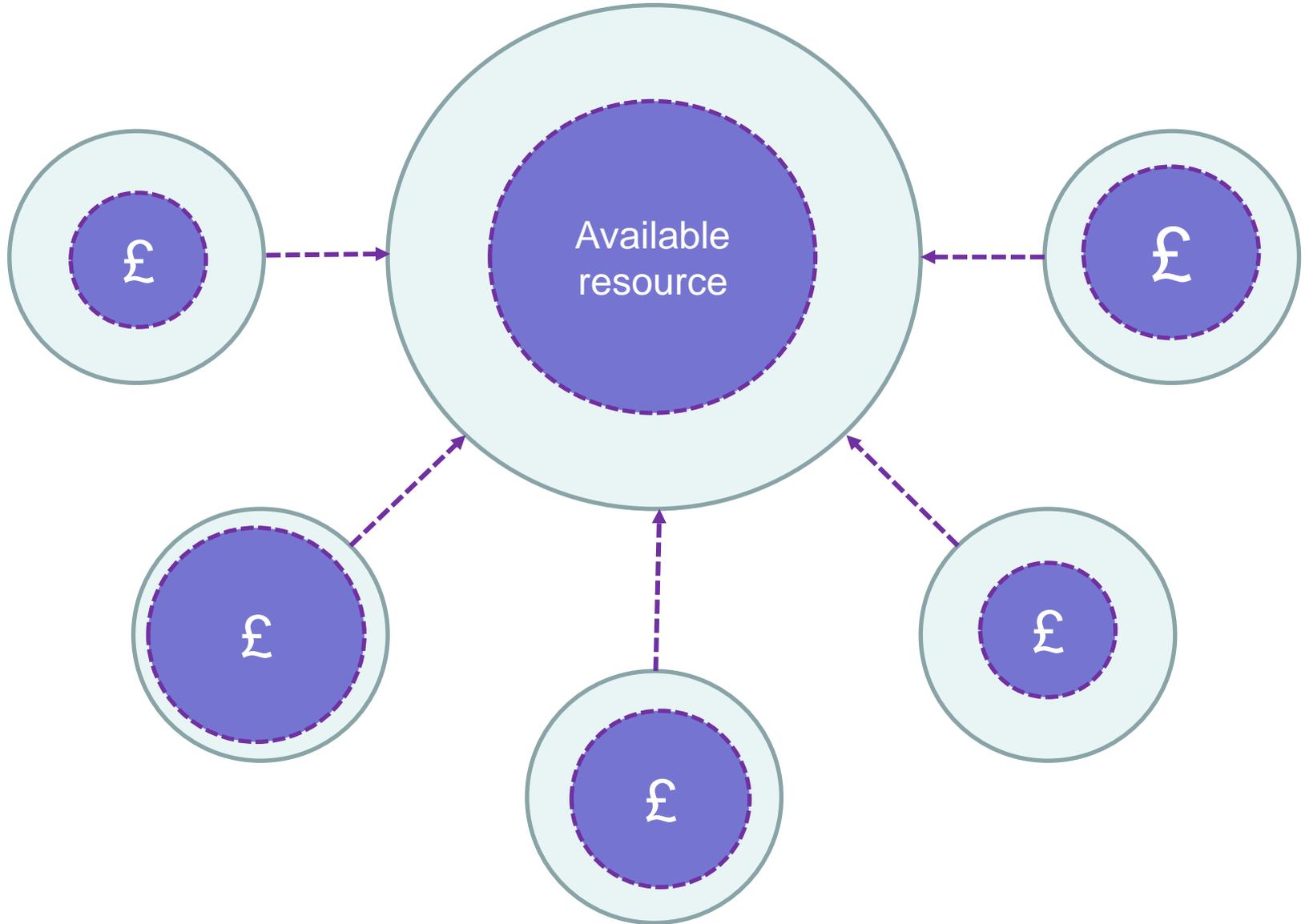


Collaborative working in GM

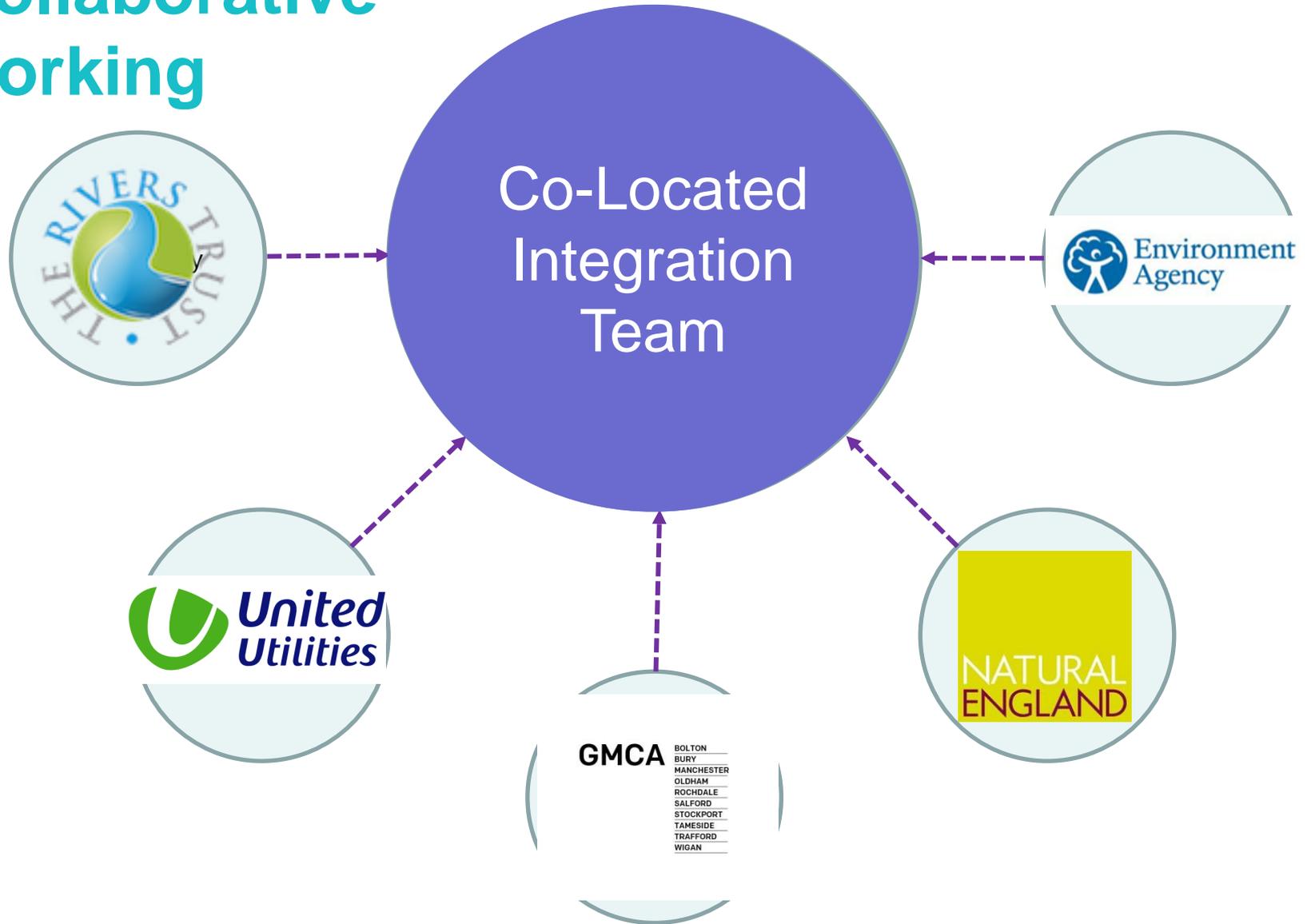
Key Diagram



Identifying synergies



Collaborative working



Catchment management plans

The screenshot shows a web browser window displaying the 'Healthy Rivers Trust CaBA Partnerships' website. The browser's address bar shows the URL 'http://hwt.maps.arcgis.com/apps/MapSeries/index.html?...' and the page title is 'Healthy Rivers Trust CaBA ...'. The website header includes a navigation menu with tabs: 'Overview', 'Ecological Quality', 'Characteristics', 'Tackling Pollution', 'Enhancing Biodiversity', 'Managing Flood Risk', 'Working with Others', 'Submit a Project', and 'Related Projects'. The main content area is titled 'Overview of Catchments' and lists three categories: 'Alt and Crossens', 'Lower Mersey', and 'Upper Mersey'. Below this list, there is a link to 'Scroll down to learn more about each of the individual catchments.' The right side of the page features a large interactive map of the Mersey catchment area, showing the river network and surrounding regions like Greater Manchester and High Peak. A 'BACK' button is visible on the map. The bottom of the browser window shows the Windows taskbar with various application icons and the system tray displaying the time '14:55' and date '23/01/2017'.

Healthy Rivers Trust CaBA Partnerships

A series of interactive maps presenting the data and evidence underpinning the partnerships' catchment management plans. The 'Working with Others' tab shows the actions which the catchment partnerships are undertaking to tackle pollution, enhance biodiversity, manage climate change and improve ecological quality.

Overview Ecological Quality Characteristics Tackling Pollution Enhancing Biodiversity Managing Flood Risk Working with Others Submit a Project Related Projects

Overview of Catchments

- [Alt and Crossens](#)
- [Lower Mersey](#)
- [Upper Mersey](#)

[Scroll down](#) to learn more about each of the individual catchments.

Alt / Crossens

The Alt/Crossens covers the two small water catchments of the Rivers Alt and Crossens that flow out to sea just north of the Mersey.

The River Alt rises in the urban area of Huyton, east of Liverpool and flows into the Irish Sea at Hightown, south of Formby. The estuaries of the Alt and the Crossens form part of an area designated for its conservation importance nationally and internationally. The coastline between Liverpool and the Ribble Estuary is a Ramsar site (Wetland site of international importance), Special Area of Conservation (SAC), Special Protection Area (SPA) and a Special Site of Scientific Interest (SSSI).

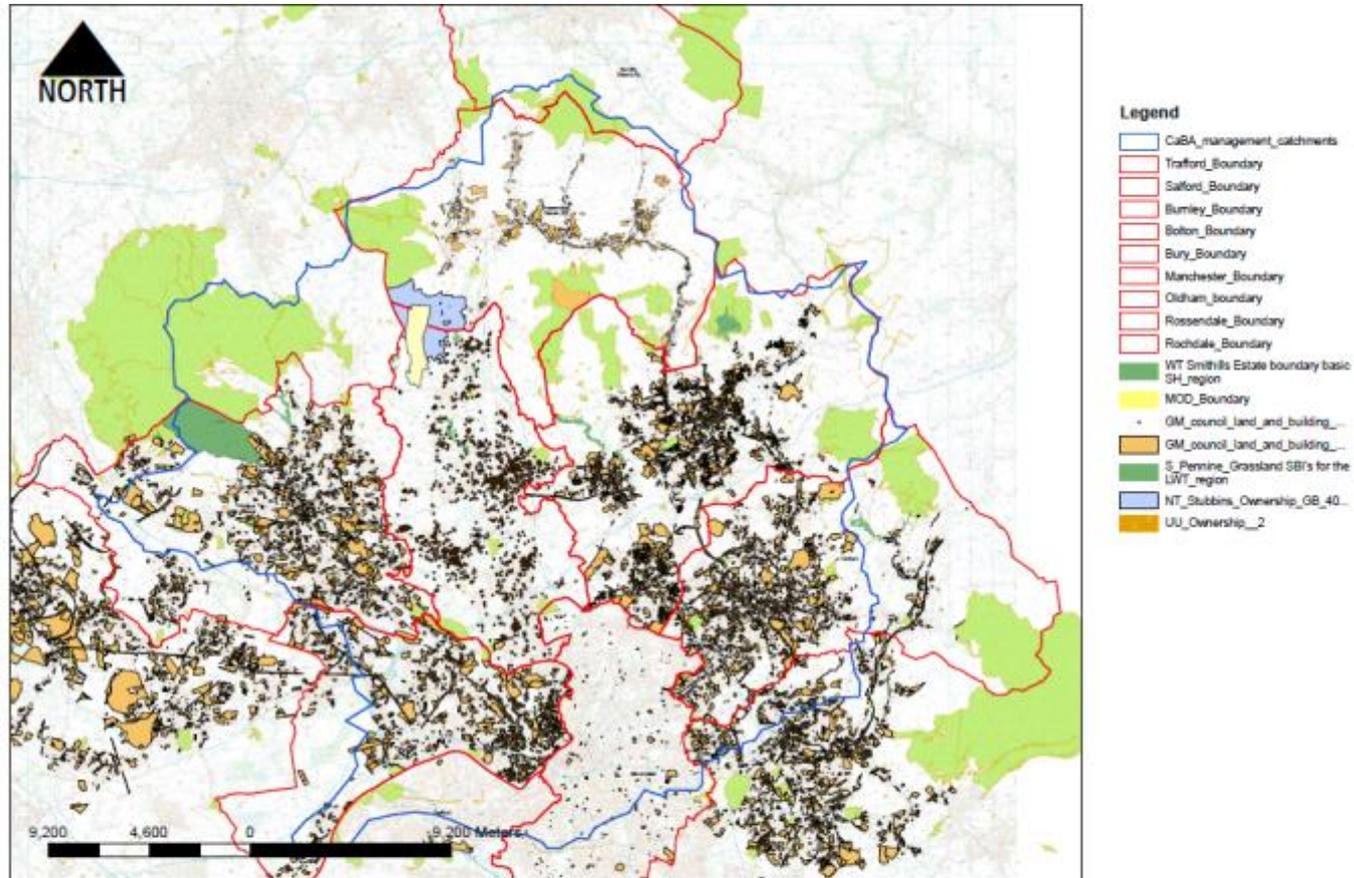
DoBH, OS, Esri, HERE, Garmin, USGS, NGA

14:55
23/01/2017

Physical modifications & urban diffuse pollution



Countryside Stewardship Facilitation Fund



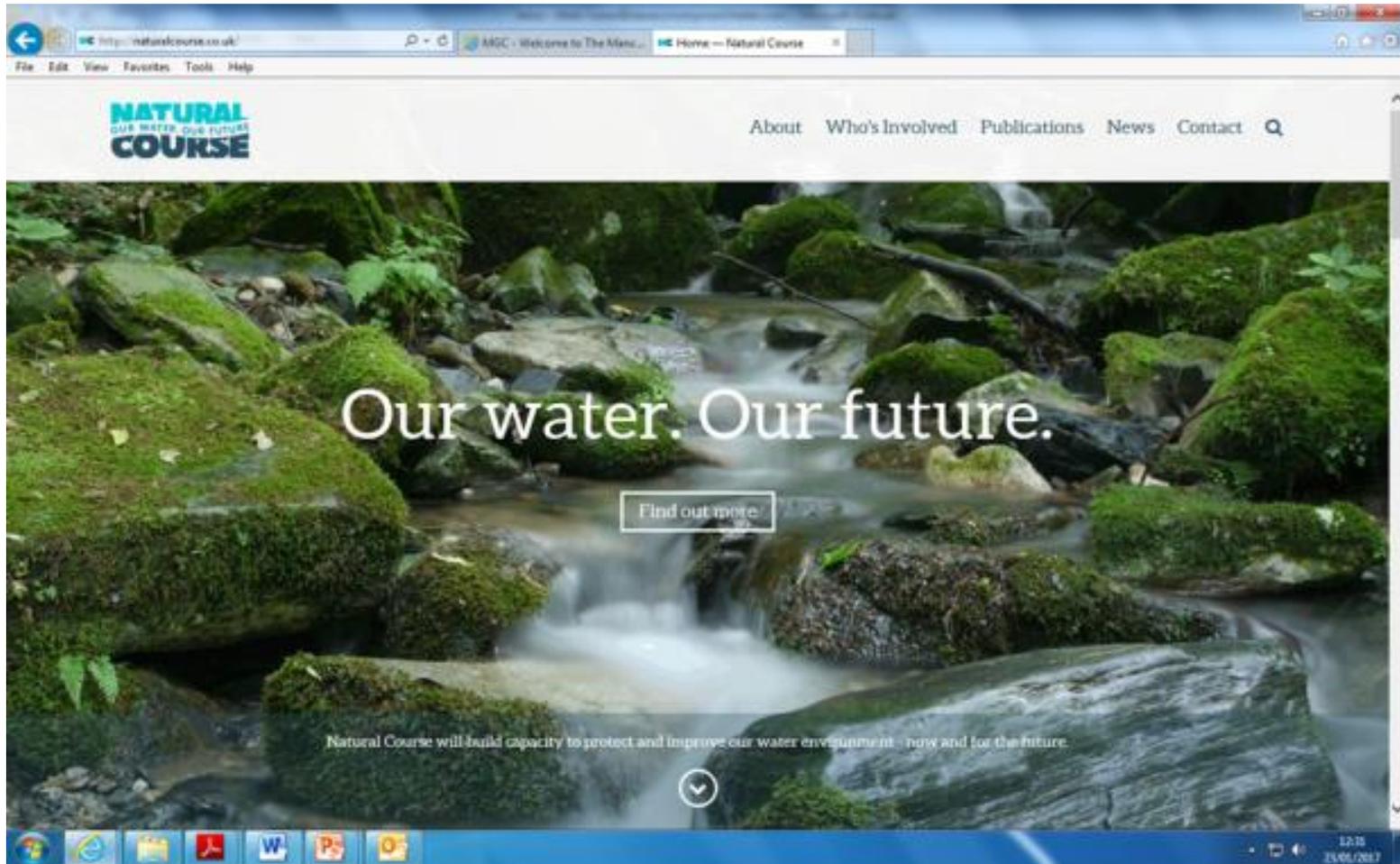
Countryside Stewardship Facilitation Fund

Land Ownership

Scale: NTS Date: Jan 2017 Drawn By: NL



Communications & Networking



Thank you

For more information:

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www.naturalcourse.co.uk

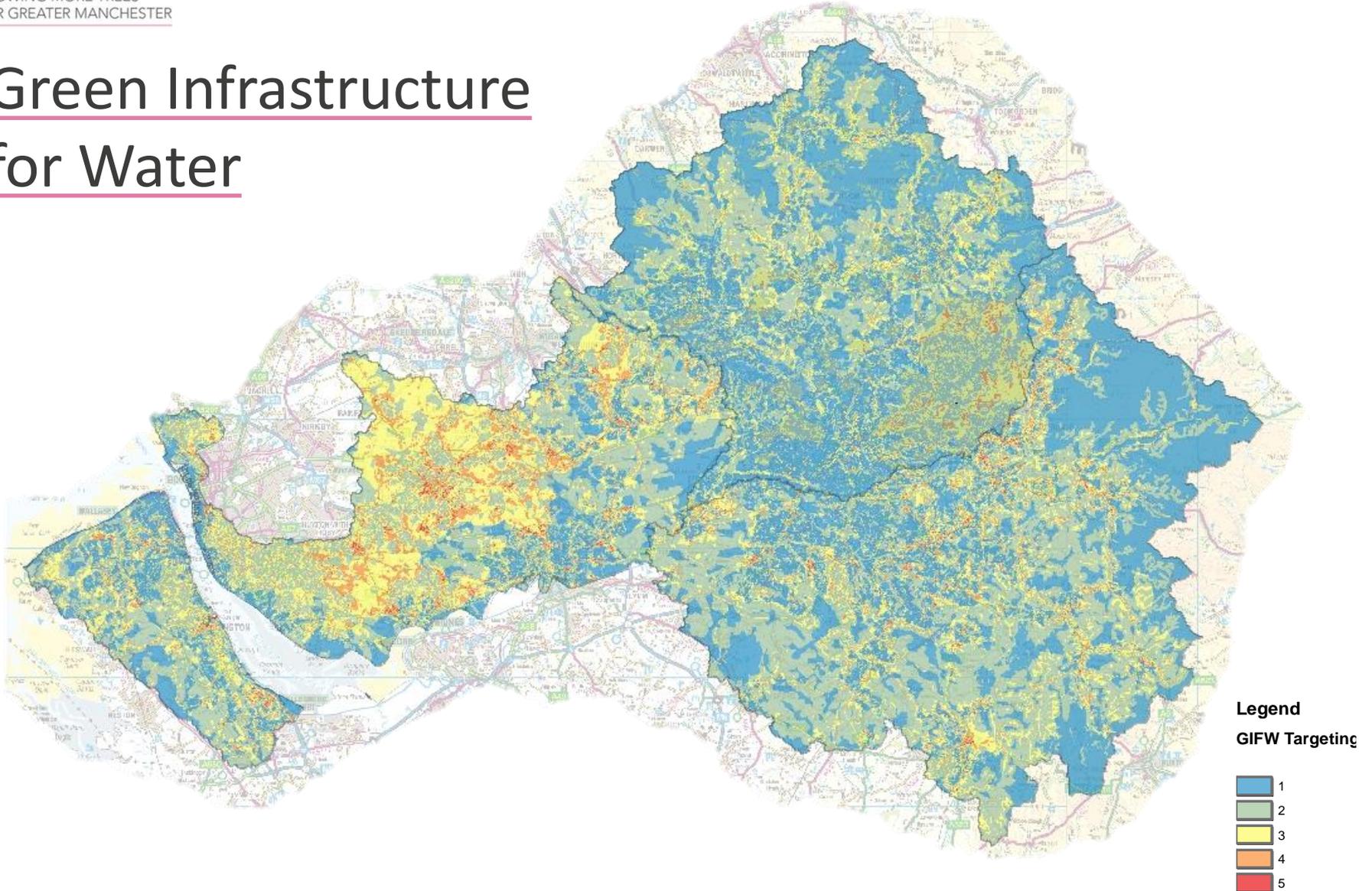


Urban Catchment Forestry

Multiple Partnerships for Multiple Benefits

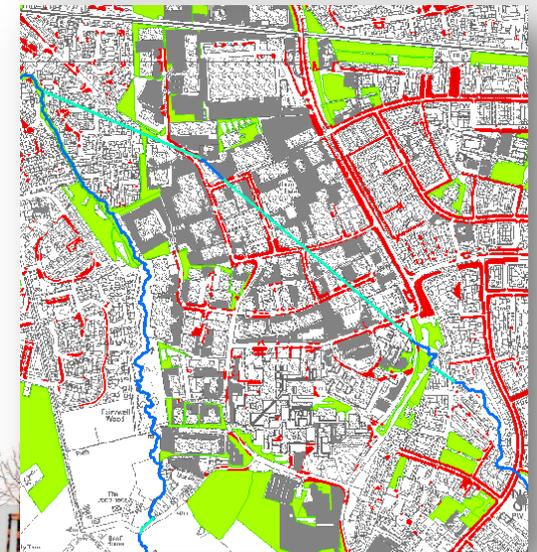
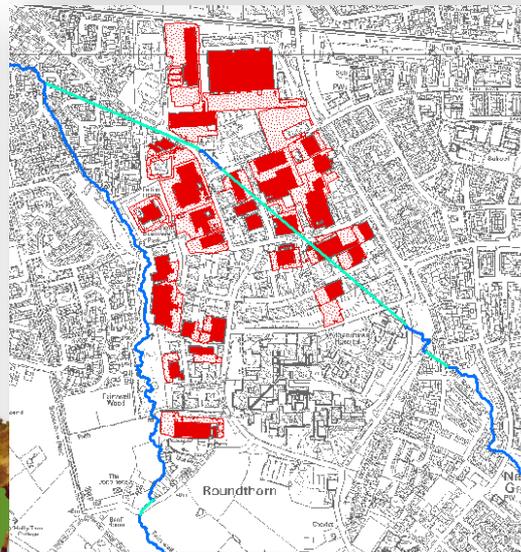
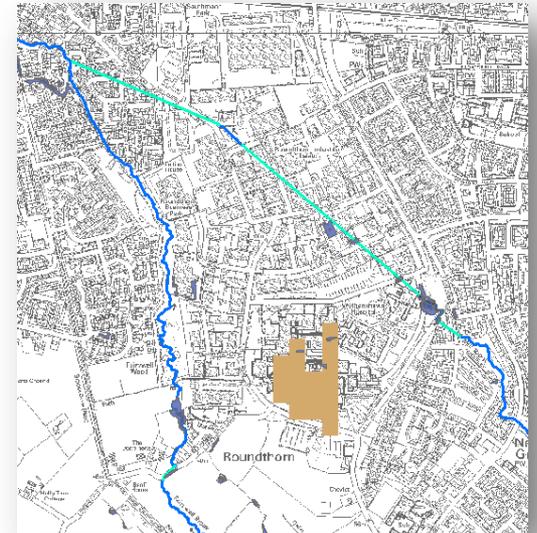
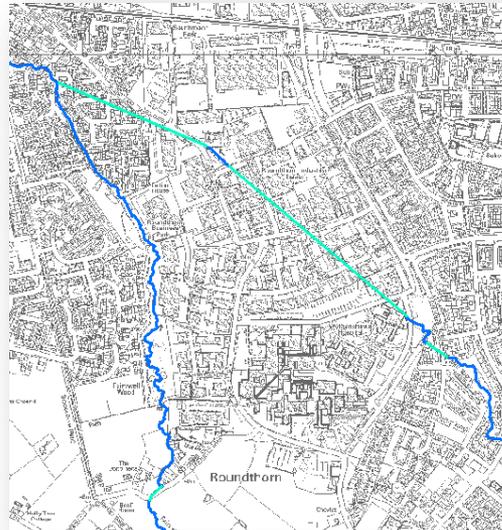
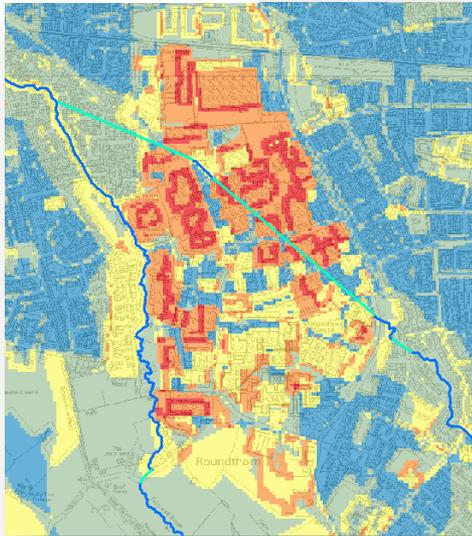


Green Infrastructure for Water



GIFW Site-level examination

GROWING MORE TREES
FOR GREATER MANCHESTER



Howard Street

Hydrology results for the period May-Sept 2016

- Average peak flow reduction by the system was 70%.
- Average volume reduction during storm events was 60%.
- Average delay of storm water peak flow was 90 minutes.



Howard Street

Multiple Partners

- Salford City Council
- Urban Vision
- Environment Agency
- United Utilities
- City of Trees
- University of Manchester
- Deep Root



Cleavleys Wet Woodland

Environment Agency monitoring of a tributary of the Worsley Brook in Salford, conducted in early 2014, identified contamination with ammonia, suspended solids, and poly-aromatic hydrocarbons.

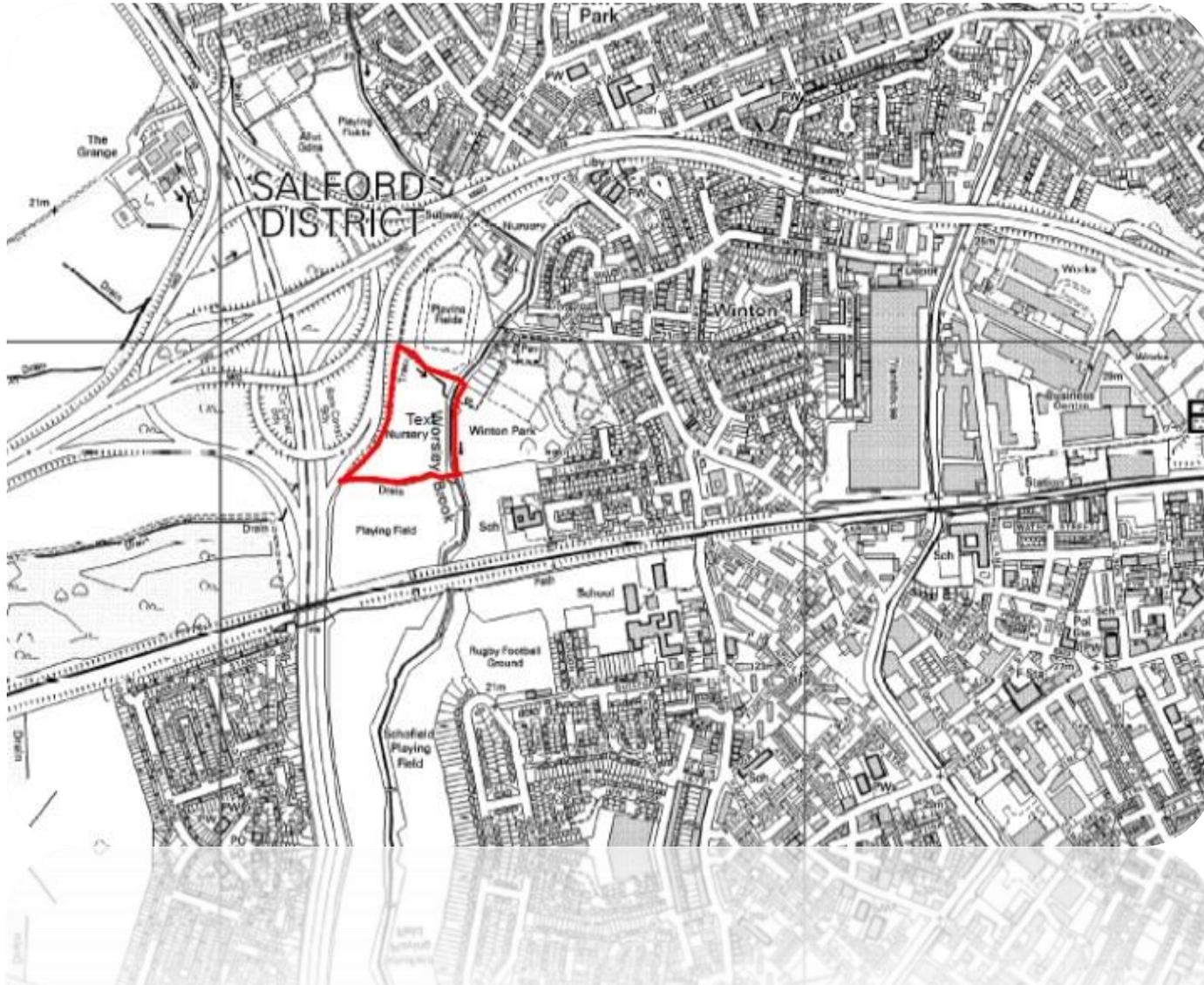
In partnership with the Environment Agency and Salford City Council City of Trees managed the delivery of channel naturalisation and the creation of wet woodland within the former Salford City Council Cleavleys Tree Nursery.

Water quality and ecology are being monitored by the University of Salford.

Benefits:

- Improved water quality
- Reducing the flow of the Worsley Brook tributary
- New habitat
- Interesting new recreational space

Cleavleys Wet Woodland



Cleavleys Wet Woodland



Cleavleys Wet Woodland



Prestwich High Street

2 million pound regeneration scheme for Prestwich High Street, Bury

Proposals;

- Increasing pavement widths and resurfacing with quality paving materials
- To help reduce traffic congestion on street (adopted) parking bays to be reduced in length. Parking bays to be subject to restrictions of 60 minutes with no return with 1 hour.
- Plant upto 30 street trees
- Timescale – works to commence February 2017

Prestwich High Street

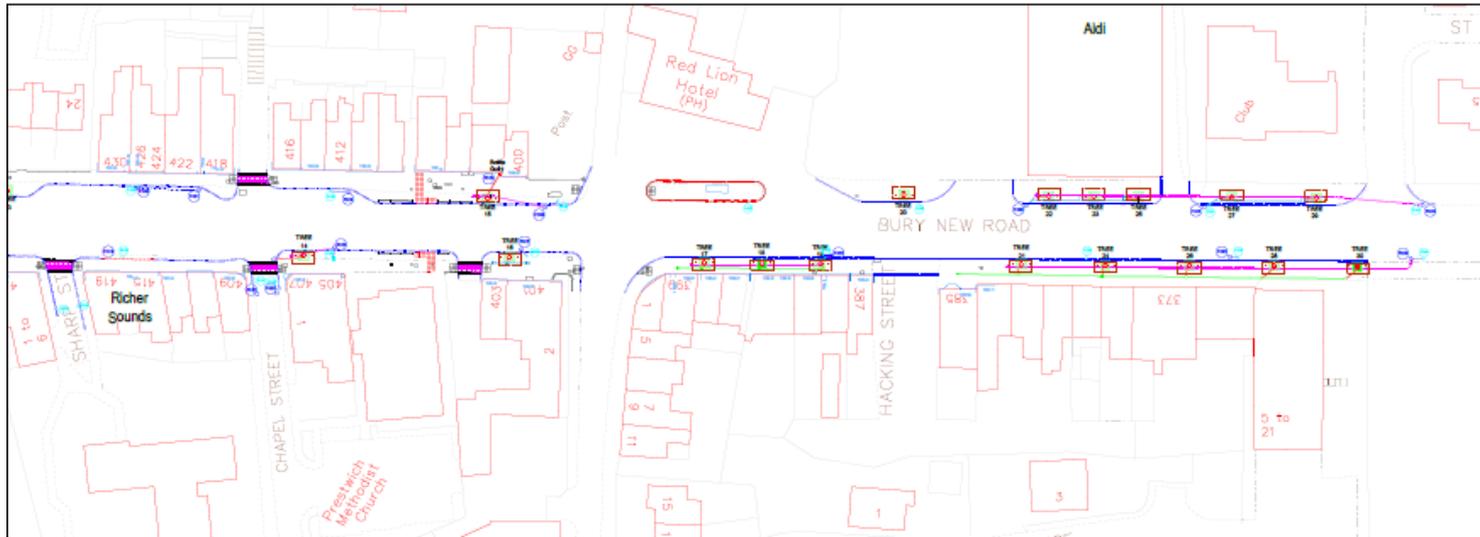
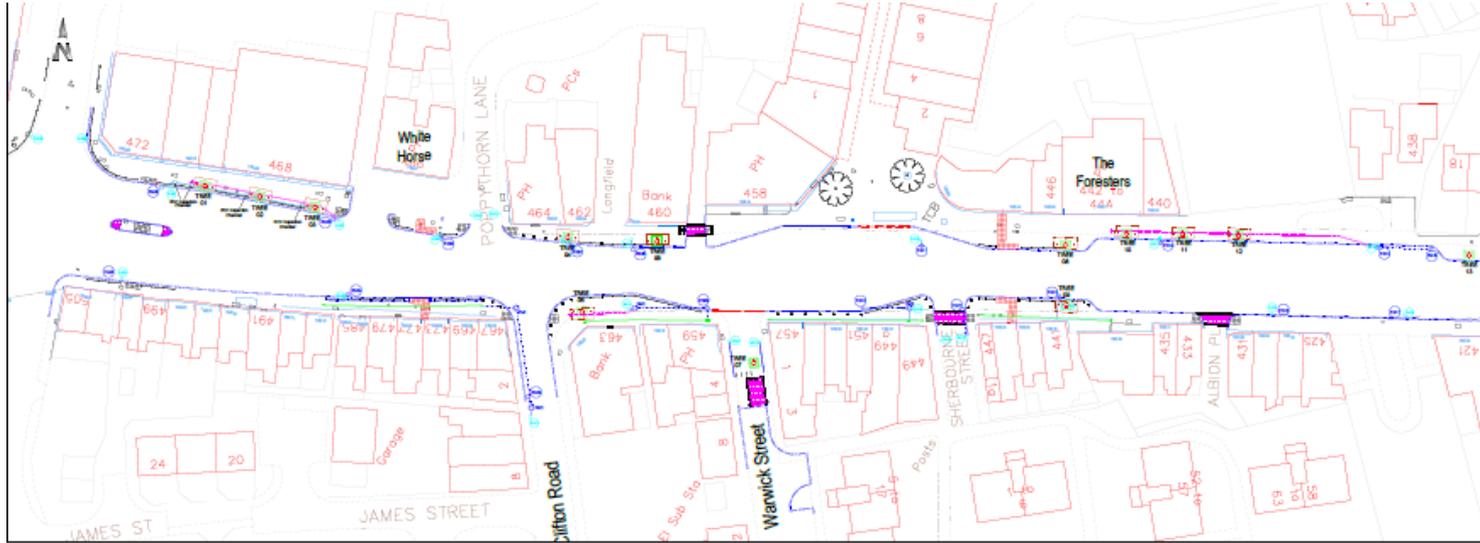
Proposal

- Connected tree trenches
- Water diverted into tree pits from;
 1. Downpipes of buildings via cross drains
 2. Off the pavement via permeable tree pit surrounds
 3. Off the road by turning round gulley pots and connecting in to tree trench
- Water quantity and quality in and out of system to be monitored by University of Manchester

This will reduce the potential for surface water flooding on the High Street and reduce the volume of water entering the engineered drainage system which could reduce CSO discharge events into the neighbouring Prestwich Clough.

Prestwich High Street – Planting Locations

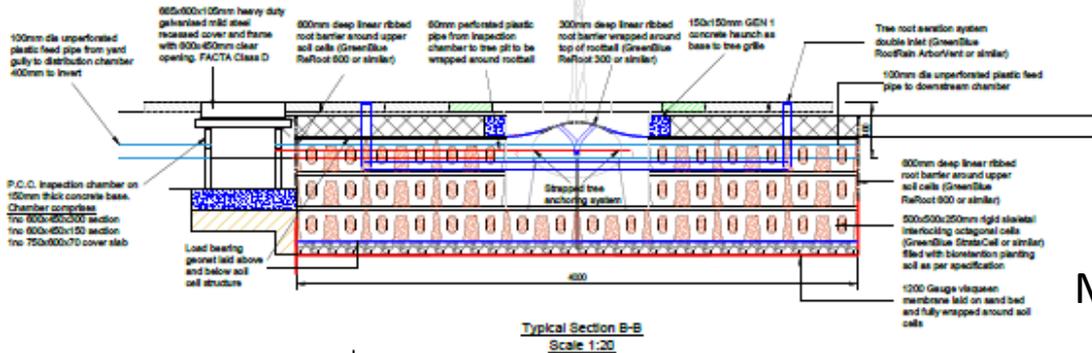
GROWING MORE TREES
FOR GREATER MANCHESTER



Prestwich High Street

Tree Pit Schedule - For each individual pit			
Item	Description	Quant	Unit
01	Excavation and disposal	10	m ³
02	1200 Gauge Viasqueen	6	m ²
03	100mm Drainage layer of clean non-calcareous stone	1	m ²
04	Load bearing Geonet (Green Blue Strata Cell)	18	m ²
05	Soil structure system (Green Blue Strata Cell 80 units)	66	no
06	High density ribbed root barrier (Green Blue ReRoot 600)	12	m
07	Specified substrate and growing media fill to cells	6.5	m ³
08	Install specified tree species	1	no
09	Tree anchor system (Green Blue Arborguy)	1	no
10	High density ribbed root barrier (Green Blue ReRoot 300)	2.5	m
11	Hydrogrip Irrigation system (Green Blue RR-IRIGA)	1	no
12	Air/water aeration system (Green Blue RR-ARNDIC)	2	no
13	MOT Type 1 Stone cover layer	2	m ³
14	Permeable Tarmax 3000 geotextile to underneath of tree grille	2	m ²
15	1200x1200mm tree frame for main bound aggregate (Menzel's 'Olefort')	1	no
16	75mm thick polyethylene resin bound porous aggregate surfacing	1	Item

N.B. Other manufacturers products may be substituted for any of the above if approval is granted by the employer.

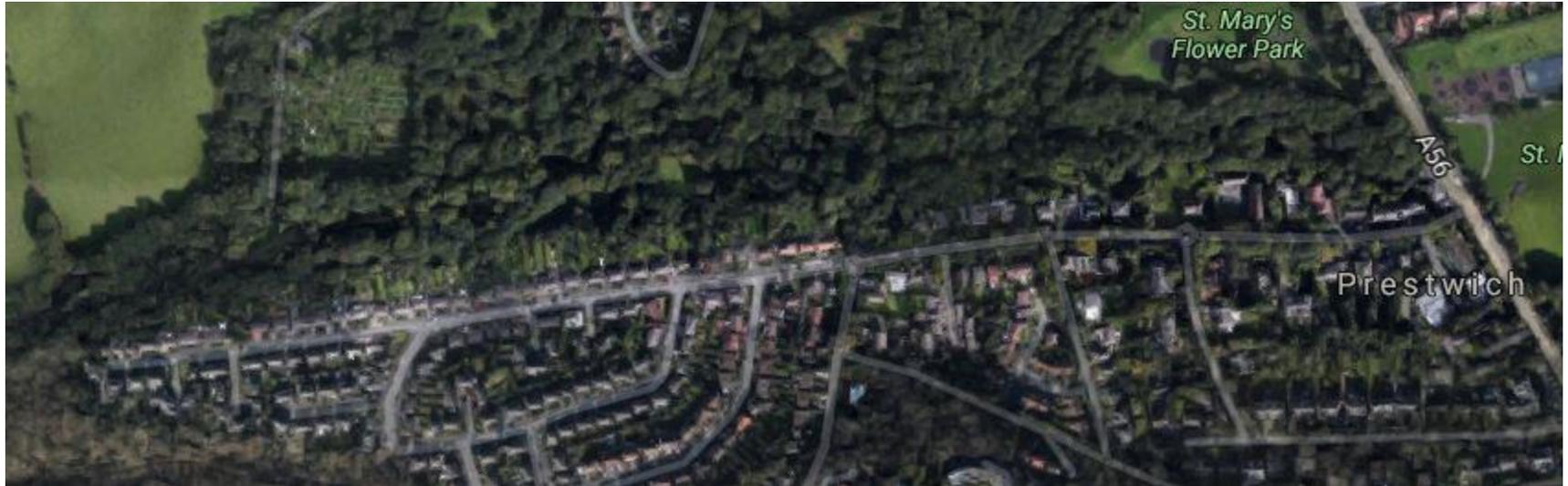


Multiple Partners

- Bury MBC
- City of Trees
- Environment Agency
- United Utilities
- Local Developer
- University of Manchester

Prestwich Clough – Deyne Brook

Natural Solutions for Improving Water Quality & Reducing Flooding



CSOs both inside the Clough and further upstream discharge into the brook. There is also evidence of ochre, ferric oxide from mining operations. At peak flow the brook frequently causes localised flooding and erosion of the footpaths.

Ochre Staining



Multiple Partners

- Bury MBC
- City of Trees
- Environment Agency
- United Utilities
- GMEU
- Groundwork MSSTT
- University of Salford
- Mersey Basin Rivers Trust
- Friends of Prestwich Forest Park

Combined Sewer Overflow



Proposals

- Berms (raised areas)
- Woody debris
- Wet woodlands
- Plant reed beds to provide a cleaning function
- Open up canopy to let light through to reed beds
- Monitor water quality entering a leaving holding area

City of Trees

Our goals are to;

- Plant 3 million trees, one for every man, woman and child across Greater Manchester
- Bring 2,000 hectares of unmanaged woodland back into a productive state
- Connect people to the trees and woods around them

To find out more visit - <http://www.cityoftrees.org.uk/>

Pete Stringer

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Embedding a Natural Capital approach for land management and development

Euan Hall

1st February 2017



The Land Trust



An independent charity that provides long term, sustainable management of green open spaces for the benefit of communities.

Our Vision

To improve the quality of people's lives by creating, improving and maintaining sustainable, high quality green spaces.

Objectives

Take land into our ownership and manage it in perpetuity to:

1. Enable social cohesion
2. Create economic uplift
3. Protect & improve the environment
4. Improve health and wellbeing
5. Provide educational opportunities



Our Green Spaces



Nearly 80ha
of lakes &
wetlands

1,000 households
contributing to green
space by service
charges

Nearly 300ha
of wildflower
meadows

Over 2,200ha
of land under
management

Managing 370ha
of woodland

140km of
paths & trails

- 60+ sustainably managed green spaces
- Nature reserves, country parks, public realm, urban fringe, play areas, playing fields....
- Marshland, grassland, woodland, wetland, 'wasteland' ...
- Flood defences, SUDS...
- Cycle routes, cut-throughs, dog walking / running routes, bridleways, kick about areas, places for adventure, quality time with family / friends...

Value of Green Spaces



We all know green spaces are good for us

The evidence is out there...

- A brisk walk every day in a local green space can reduce the risk of heart attacks, strokes & diabetes by 50% (Blue Sky Green Space 2011)
- Being in green spaces - shown to lower stress and have positive impacts on blood pressure (University of Leeds 2015)
- Having a well-managed green space nearby results in average increases property premiums from 2.6% to 11.3%. (Benefits of Green Infrastructure, Forest Research, 2010)
- Savings to the NHS could be £2.1bn p/a, if England's population had equitable access to green space. (Natural England, 2009)
- Around 83% more individuals engage in social activity in green spaces as opposed to concreted ones. (Forest Research, 2010)



Our belief



Well designed and well managed green spaces help create great places to live, work and play.

Our green spaces help...

- Contribute to **economic prosperity**
- Deliver significant **social benefits**
- **Relieve pressures** on public budgets (e.g. local authorities, health services)
- Help people feel **happier and healthier**
- Help improve **productivity** and reduce work absenteeism

And...long term investment and management enables this!



Different approaches to demonstrating...



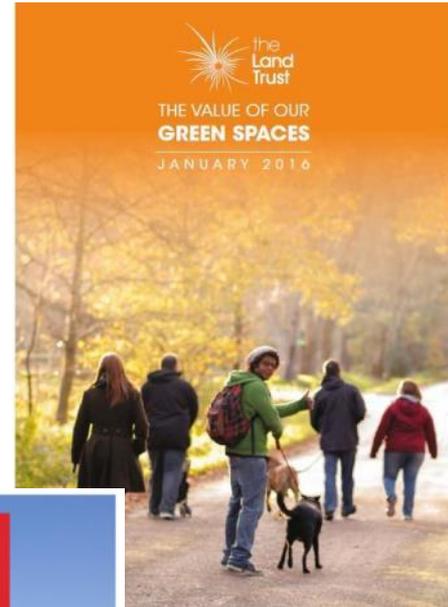
We've explored two different approaches to demonstrate how our green spaces help society, the economy and the environment...

1. The Value of our Green Spaces

- A social value study of our green spaces
- Focus on health and social benefits
- Translating this into monetary terms

2. The Hidden Value of our Green Spaces

- Using results from natural capital accounts of two of our parks
- Focus on the land, and habitats, how they function, how they are managed and used
- Translating this into monetary terms



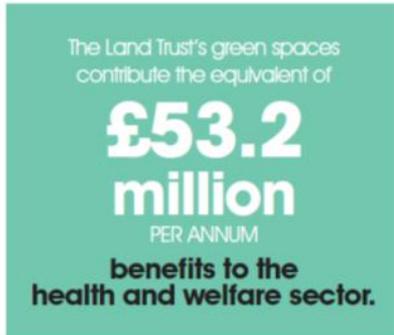
Our social value study told us...



By providing people with **free access to high quality, well maintained green spaces...**

Our activities contribute the equivalent of £94 million to society per year, to the health, welfare and social sectors.

Supporting communities and enhancing stakeholder reputations



The 'hidden' value of our green spaces



Exploring the value of our natural capital (land type, quality, management, functions, use)

These are often 'hidden' values.

Our aims:

- Highlight the social and economic benefits
- Inform the management of our spaces
- Improve and enhance their natural capital value
- Engage with landholders / developers to embed green spaces within developments
- Demonstrate how long term investment and management of green spaces can increase the asset value
- Investing in green spaces makes places great, healthy and vibrant.

Natural capital accounting is a recognised way of demonstrating this in physical and monetary terms



Silverdale Country Park - Natural Capital Account - Case Study



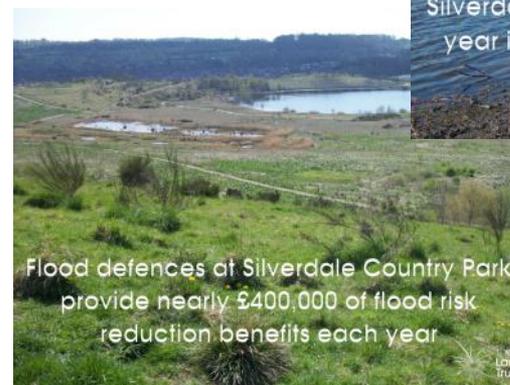
By managing a green space well over the long term, its natural capital value can increase significantly.

- **£600,000** - the estimated natural capital value of Silverdale in 2009 (pre Land Trust and delivery partner - Groundwork)
- Improved management and c. £70,000 annual maintenance budget
- Now valued at **£2.6 million**

Main perceived benefits:

- Carbon storage and sequestration
- Water retention, storage, purification
- Flood alleviation -
- Health and education

* Interserve Consulting undertook the natural capital account of Silverdale Country Park



So what?

Green spaces – generate benefits = have a value

- Our green spaces are worth **£94m** to society each year in health, welfare and social terms
- Silverdale is now worth **£2.6m** in natural capital terms alone
- Green spaces = reduce additional costs and help the wider economy.

Natural Capital accounting can help us...

- Improve the management of our green spaces
- Maximise the benefits our green spaces provide
- Demonstrate asset values can increase over time
- Communicate their value in monetary terms
- Champion the important role green spaces play



Other sectors, e.g. local authorities / developers starting to recognise this...

Green spaces within developments



Working with developers to:

- Create and embed green spaces in / around developments
- Help inform on place-making
- Secure investment and manage the green spaces / green infrastructure long term

Wellesley Woodlands

- Partnership with **Grainger plc**
- 4,000 new home urban extension
- 110 hectares of green space
- Improved and enhanced habitats

Beaulieu

- Partnership with **Countryside Properties**
- 3,000+ residential and commercial development
- Access to local green space



In summary



Well managed green spaces benefit society → they have a social and economic value

Natural Capital Accounting → Useful way of understanding this in monetary terms

Silverdale Country Park

- In **6 years**, we improved the value of the park by **£2 million**
- It is now valued at **£2.6 million**
- For **every £1** we invest, the park delivers **£35 in returns** to the wider economy
- This positively impacts other aspects of society and the economy

We now have evidence to demonstrate how long term investment in well managed green spaces really makes a difference!



The value to local people...



“I feel like my life is like swimming underwater – and drowning at times. These [Green Gym] sessions at Monkton Community Woodlands are my breathing holes and keep me going.”

Green Gym Participant, Monkton Community Woodlands



Thank you



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