LIVERPOOL

GREEN INFRASTRUCTURE STRATEGY

EXECUTIVE SUMMARY

INTRODUCTION

The Liverpool Green Infrastructure Strategy has been developed to maximise the benefits that the city can gain from the sustainable management of its natural environment. Green infrastructure is a critical infrastructure for the economy and health of the city.

Green infrastructure is simply a term that is used to cover all the vegetation and open water in and around the city, whether it is rare or common, private or public, in the city centre or the city suburbs - Croxteth Park or a single street tree. However, green infrastructure planning is a new approach, going beyond business as usual, focused on the benefits that can be delivered.

The Strategy has been commissioned by Liverpool City Council Planning Service, funded through an Area Based Grant that was applied for by Liverpool. City Council in partnership with Liverpool Primary Care Trust (PCT) to Liverpool First.

The outcome from this work includes:

- Joint working between Liverpool City Council and the health sector in the development of policies that support improved public health through the planning of green infrastructure.

- Development of a robust evidence base for the Local Development Framework and other strategic plans for the city, in particular in the areas identified for housing growth.

- Development of a city-wide Green Infrastructure Strategy identifying interventions that can help address environmental and socio-economic needs and capitalise on opportunities.

The purpose of the strategy is to support the aspirations for the future sustainable development of Liverpool to ensure that it is:

"..one of the best places to live, work, invest and enjoy life"[1]

1 Liverpool Vision (2009). People Place and Prosperity: An economic prospectus.

KEY FINDINGS

- **62% of the city is green infrastructure**. Liverpool is a green city and should use this fact for marketing and competitive advantage.

- **The largest individual type is private domestic gardens** at 16% of the area of the city. These represent a real asset for the city, and which local residents and communities have a direct responsibility for and influence over.

- **The City Centre and Inner Areas have low levels of green infrastructure** and that which is available is of low functionality.

- **Green infrastructure is not equally distributed across the city**. 22% of the areas has 80% of the total accessible green infrastructure and some areas have no accessible green infrastructure.

- **The most affluent areas of the city have 18% more green infrastructure** than the most deprived.

- **Green infrastructure is an £8bn asset for the city** that is often overlooked, but which can continue to contribute significantly to the delivery of Liverpool's plans for sustainable growth.

- **Low levels of green infrastructure occur in areas of the city with a higher incidence of:**

    - Coronary heart disease
    - Poor mental health
    - Poor air quality

- **Green infrastructure interventions will help tackle some of Liverpool's most pressing problems.**

- **The most effective actions will be those that concentrate on making the best use of the existing green infrastructure resource through appropriate management.**

PRIORITIES

The vision for Liverpool's Green Infrastructure is that:

Green infrastructure is planned in Liverpool to support a safe, more inclusive, sustainable and enjoyable city; to provide essential life support functions for a world class city, that is adapted to climate change and where healthy living is a natural choice.

Five priorities have been identified in order to deliver this vision. A series of actions are recommended with each priority.

A sustainable city

supporting business, regeneration and housing growth within environmental limits.

A city providing natural choices for health

supporting improved physical and mental health.

A cool city

adapted to projected climate change and mitigating impacts.

A green and biodiverse city

supporting good quality of life for all.

A city where green infrastructure is well-planned

treating green infrastructure as a critical infrastructure designed into development and change from the start.

WHAT IS GREEN INFRASTRUCTURE?

The strategy defines green infrastructure as:

The city's life support system – the network of natural environmental components and green and blue spaces that lies within and around Liverpool and provides multiple social, economic and environmental benefits.

Green infrastructure planning is a holistic approach that seeks to identify the functions that are being provided by the parks, trees, gardens, waterways and grassland across the whole of the city. In particular, how these functions, such as public recreation, water interception and reducing air pollution, provide benefits to address local need and key issues for the city.

Green infrastructure planning is not a traditional approach to planning the natural environment. For the first time, all areas of vegetation and water have been assessed collectively, treating them as a system, and in light of the plans for growth and a range of socio-economic considerations; revealing a critical infrastructure for the city.

ISSUES

Table 1 shows the issues identified based on data from a range of sources for the four spatial priorities of the Green Infrastructure Strategy. The evidence provided in the Technical Document demonstrates that green infrastructure can help address these issues.

Table 1. Issues

PRIORITY	ISSUE
A sustainable city	Improving quality of place for projected housing growth and major regeneration programmes in order to attract investment, encouraging people to live and work in the city as well as increase the number of visitors to Liverpool. Increasing levels of productivity across the city. Developing a low carbon economy, including improving the opportunities for walking and cycling as part of everyday life in the city.
A city providing natural choices for health	Tackling health deprivation and health inequality across the city and in particular help tackle the issues of coronary heart disease, obesity, and diabetes to help to reduce numbers of premature deaths. Increase levels of physical activity. Reduce the high levels of poor mental health across the city. Reduce levels of air pollution.
A cool city	Use of green infrastructure to manage urban heat island effect particularly as it affects vulnerable communities. Managing water to provide irrigation for drought susceptible areas of green infrastructure to sustain their cooling function for the city. Incorporating SUDS into new developments to manage surface water. Retrofitting green infrastructure to adapt to high temperatures in the city centre, providing shade and passive cooling. The provision of corridors for species movement as climate changes.
A green and biodiverse city	Protecting core biodiversity areas Creating expansion areas and wildlife corridors Ensuring that green infrastructure delivery programmes contribute to the delivery of biodiversity action plan habitat targets

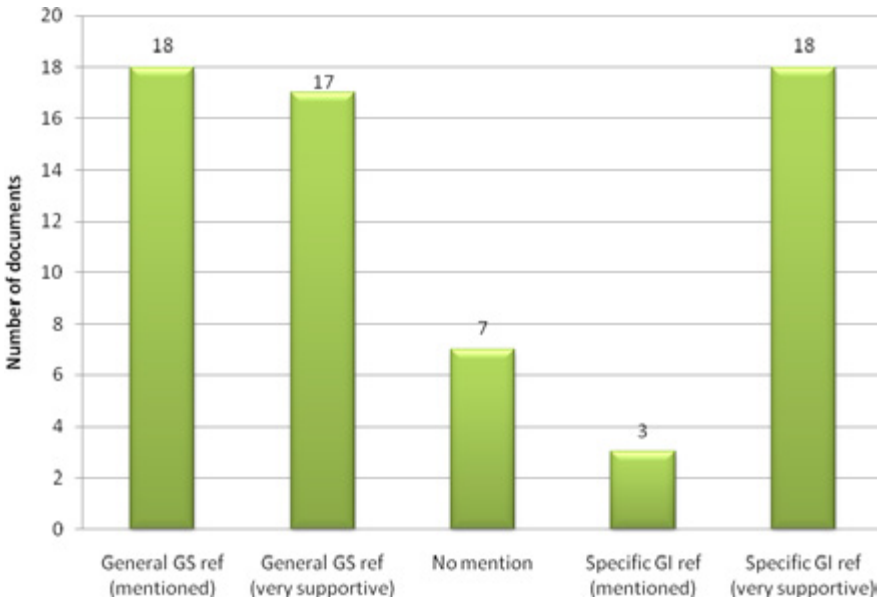
POLICY CONTEXT

This strategy has been developed to support the Core Strategy for Liverpool. The Core Strategy identifies three sub areas that have differing characteristics; City Centre, the Inner Areas and the Outer Areas. Within these are a number of sub areas including those that are likely to undergo greatest change due to housing growth or strategic investment for economic growth (Map 1).

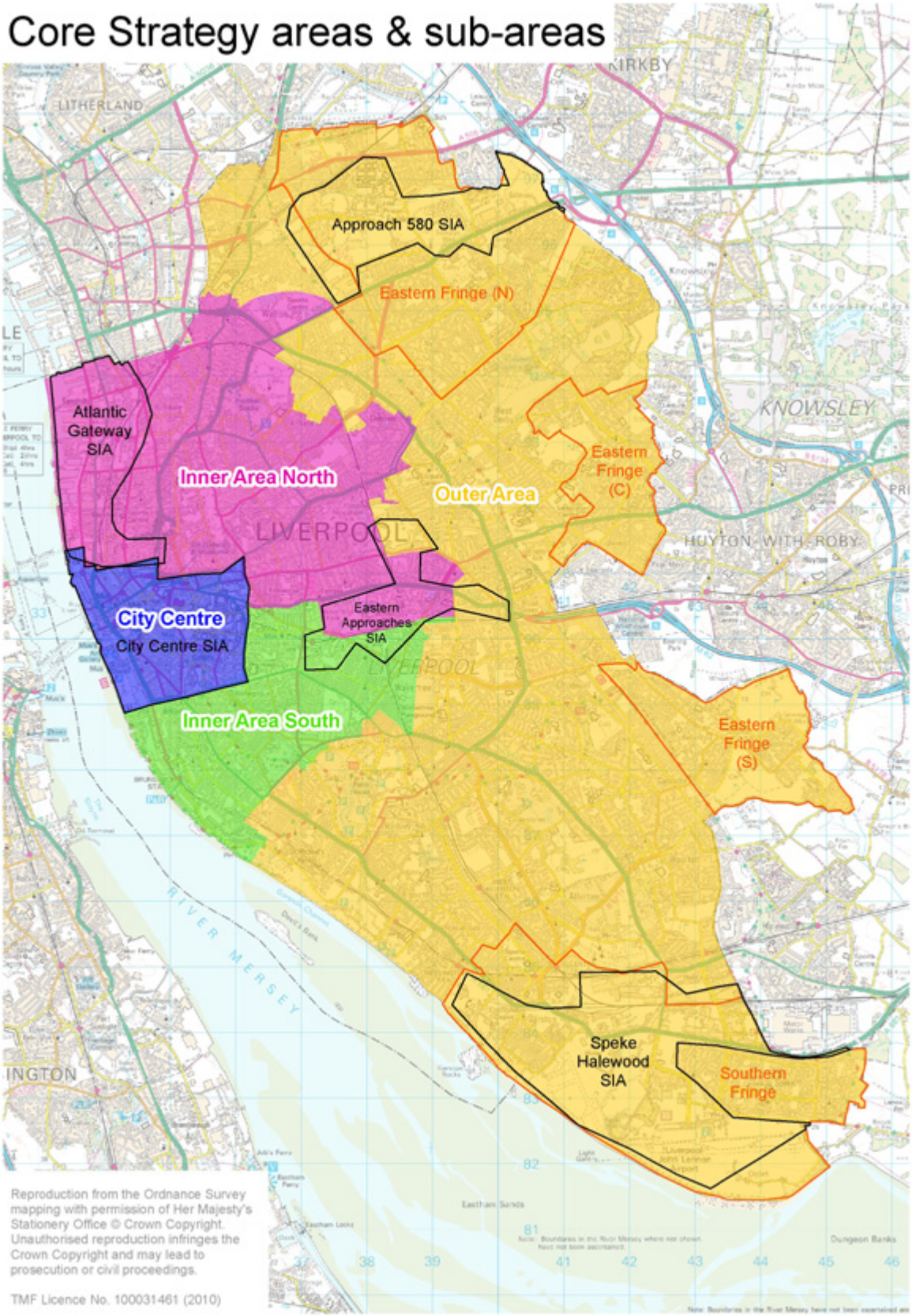
This Green Infrastructure Strategy also supports many of the city's other key strategies, including the Sustainable Community Strategy demonstrating how this approach can add value. Assessment has shown that there is good policy support at all levels for the types of action that are being recommended in this strategy.

Figure 1 sets out the number of documents in the policy evidence base at www.ginw.co.uk/liverpool that are supportive of green infrastructure (GI) and green space (GS).

Figure 1. Assessment of policy support for green infrastructure



Map 1. Core Strategy areas and sub-areas

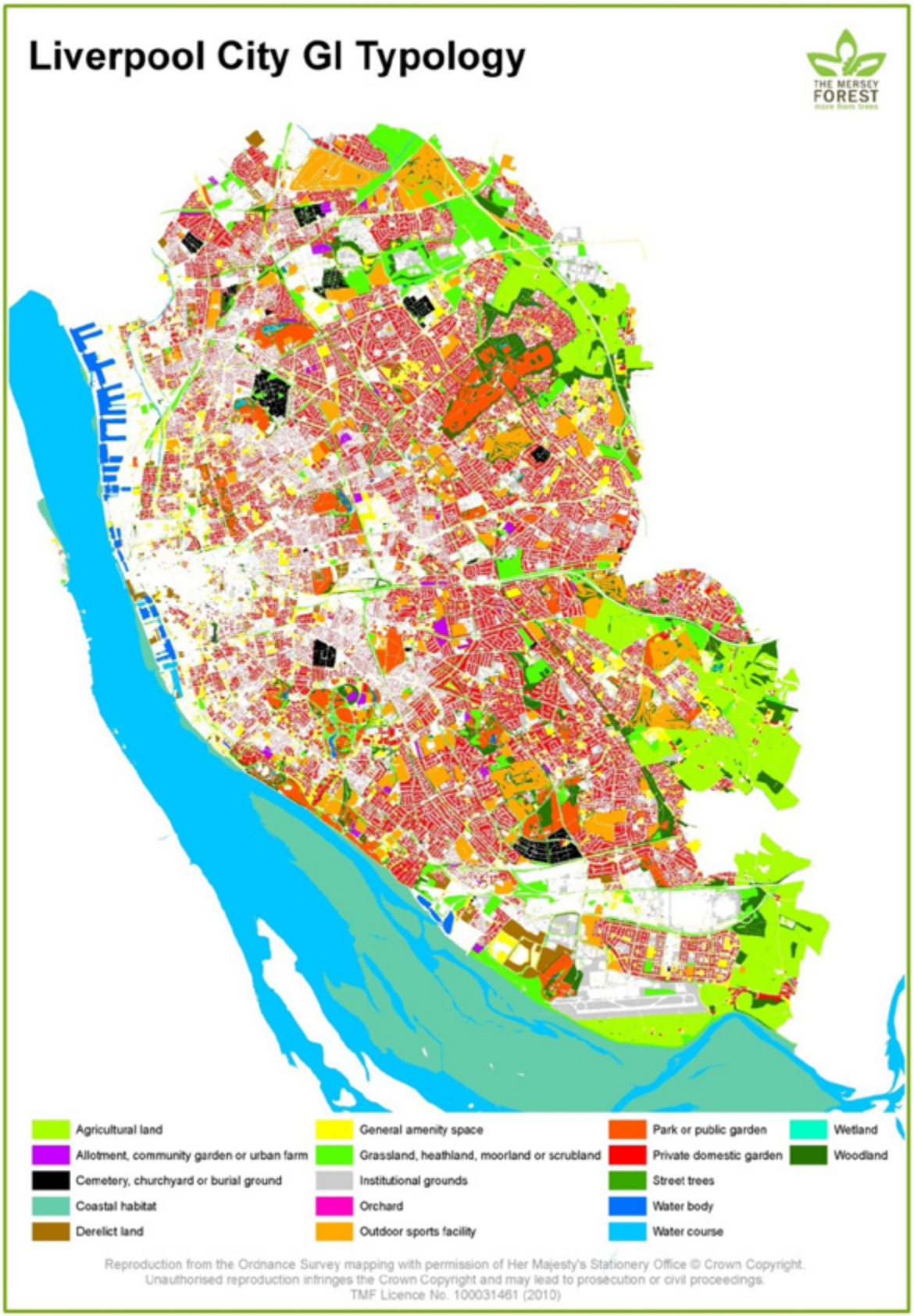


GREEN INFRASTRUCTURE RESOURCE IN LIVERPOOL

Map 2 shows green infrastructure comprises 62% of Liverpool's area, with private gardens (16%) constituting the largest single component. The influence of the river Mersey is reflected in coastal habitats being the second most extensive green infrastructure type (9.7%). Outdoor sports facilities, parks and woodlands total 1,545 hectares or 11.5% of the city area.

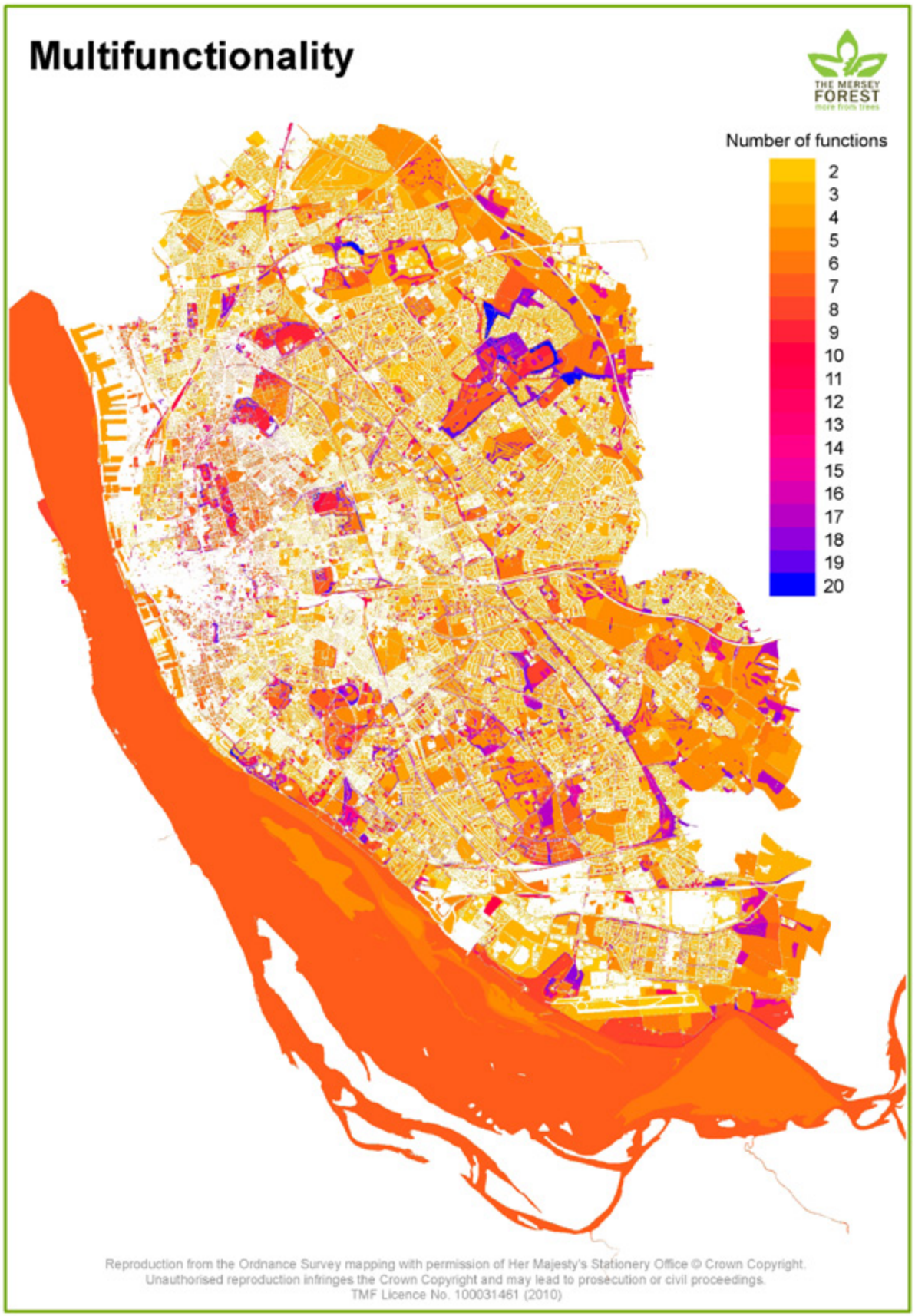
This resource fulfils a wide range of functions. Twenty eight of these functions have been analysed for each green infrastructure parcel. A composite map (Map 3) indicates that green infrastructure functions tend to increase toward the periphery of the city, but with notable exceptions such as the Inner Area parks.

Map 2. Liverpool City green infrastructure typology[2]



2 Anything with no colour assigned is not green infrastructure and represents the built surfaces of the city.

Map 3. Multifunctionality



ASSETS

The green infrastructure functions in Liverpool have been evaluated in relation to greatest needs, resulting in the identification of green infrastructure assets. These are areas that have the potential to address the greatest needs identified for each of the priorities.

For example, Croxteth Park, in providing for opportunities for recreation, will help increase physical activity levels and reduce levels of obesity; the Leeds-Liverpool Canal and the Loop Line provide green travel routes, thus helping to reduce the need for car travel contributing to a low carbon economy; and trees along Speke Boulevard and other main transport routes can improve the image of the city whilst absorbing pollutants and reducing noise, helping to improve the quality of place and attract investment and visitors.

Map 4 shows the green infrastructure assets of Liverpool meeting a range of needs and Map 5 shows those areas where identified needs are not currently met by existing green infrastructure functionality. Recognising that these are an amalgamation of needs, some broad conclusions can be drawn:

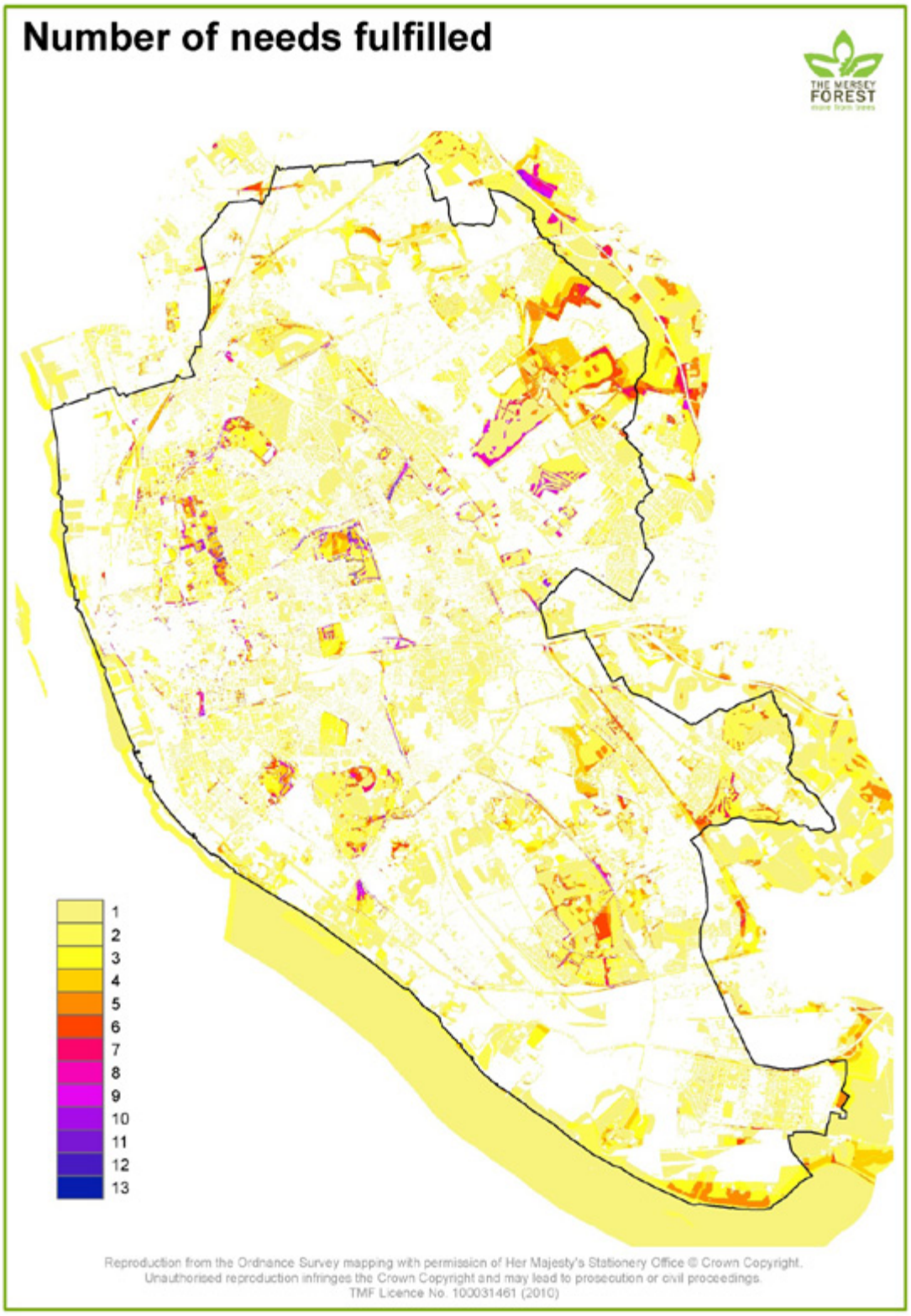
- The importance of parks such as Sefton, Calderstones and Croxteth as major assets for the city.

- The areas having the greatest number of needs requiring action to improve green infrastructure functionality are concentrated in the City Centre and Inner Areas. It is here that a co-ordinated approach to protecting and enhancing green infrastructure could make the greatest contribution to the city's needs and aspirations, such as assisting in securing improvements to health and preparing the city to ameliorate the anticipated impacts of climate change.

- These Inner Areas coincide with the most significant proposed regeneration activity such as the Housing Market Renewal Area, Growth Point and Atlantic Gateway Strategic Investment Area. Supported by design guidance, this provides an opportunity to improve green infrastructure functions, for example and not exclusively, by introducing green roofs, private gardens, street trees and well designed access routes and public realm.

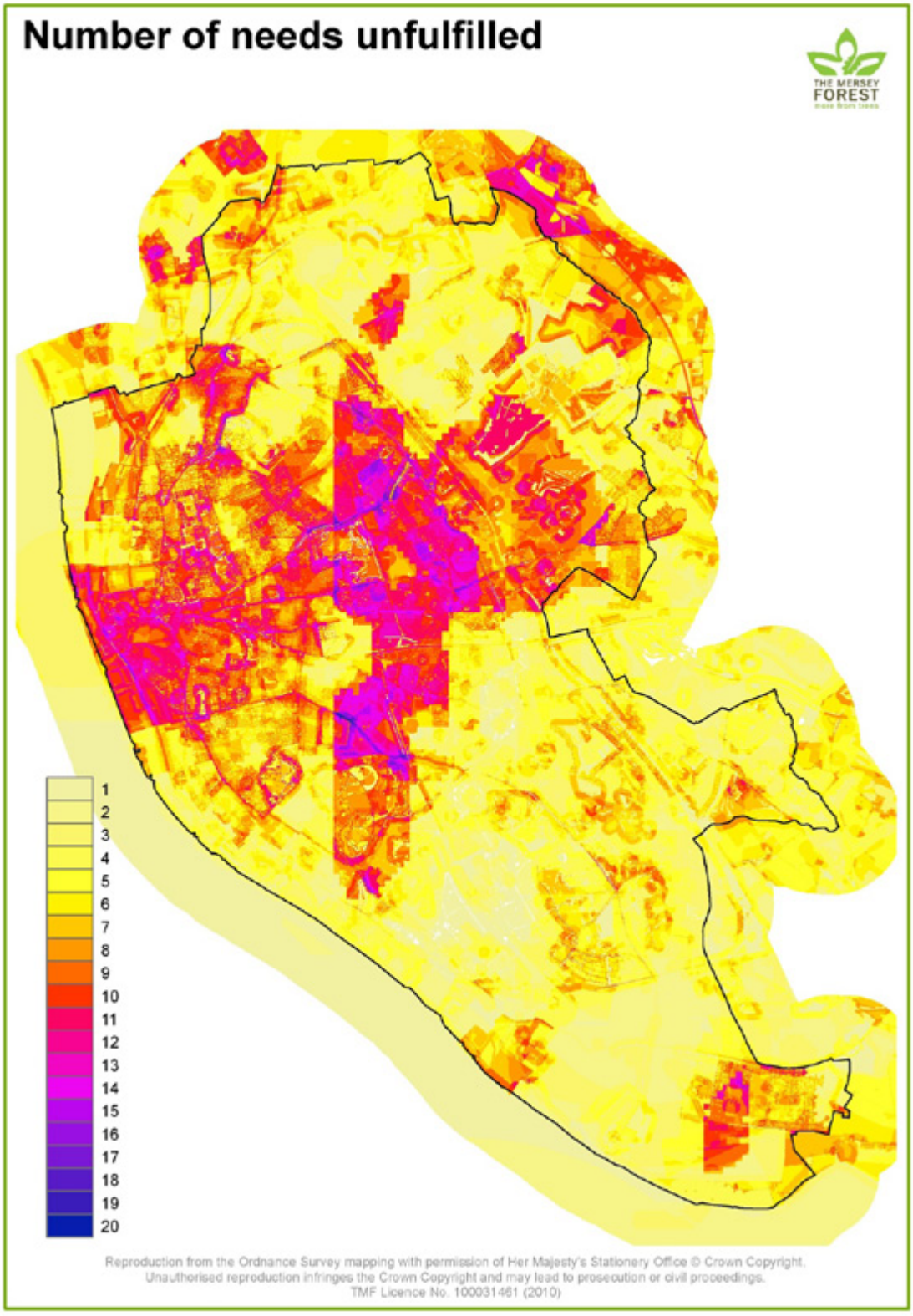
- The maps illustrate the need for increased green infrastructure functionality in the city centre, but potentially understate two important factors. Firstly, the importance of the River Mersey, raising the issue of how the impressive improvements in accessibility can be extended to other waterfront area outside the city centre; and secondly, the importance of well designed public realm including small scale and attractive spaces which in combination with green infrastructure can make an enormous contribution to the quality of place.

Map 4. Green Infrastructure assets – green infrastructure that fulfils identified greatest needs[3]



3 This analysis compares where there is greatest need for each function with provision; the functions considered are: recreation – public, recreation – private, recreation – public with restrictions, green travel route, aesthetic, shading from the sun, evaporative cooling, trapping air pollutants, noise absorption, habitat for wildlife, corridor for wildlife, soil stabilisation, heritage, cultural asset, carbon storage, food production, timber production, biofuels production, wind shelter, learning, inaccessible water storage, accessible water storage, water interception, water infiltration, coastal storm protection, water conveyance, pollutant removal from soil/water, flow reduction through surface roughness.

Map 5. Number of needs unfulfilled at present[4]

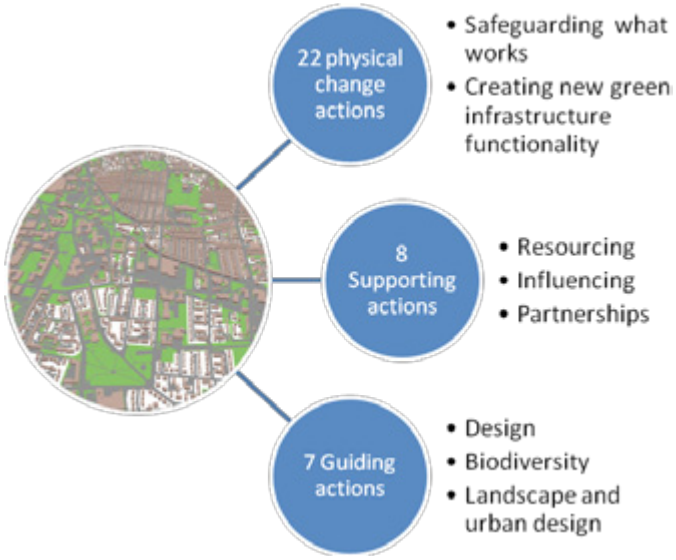


4 This analysis compares where there is greatest need for each function with provision; the functions considered are: recreation – public, recreation – private, recreation – public with restrictions, green travel route, aesthetic, shading from the sun, evaporative cooling, trapping air pollutants, noise absorption, habitat for wildlife, corridor for wildlife, soil stabilisation, heritage, cultural asset, carbon storage, food production, timber production, biofuels production, wind shelter, learning, inaccessible water storage, accessible water storage, water interception, water infiltration, coastal storm protection, water conveyance, pollutant removal from soil/water, flow reduction through surface roughness.

ACTIONS

An action plan sets out specific actions to increase the benefits that Liverpool gains from its green infrastructure. Some actions are targeted at achieving increased levels or improved management of green infrastructure, others at supporting delivery and a third set that can provide guidance on how to create the change.

Figure 2. Actions overview



As may be expected, some of the actions are straightforward in principle; others are more challenging. The actions can help to ensure that the city maximises the value of its green infrastructure and uses it to adapt to future challenges, whilst meeting today's needs. The need to look at new ways to resource implementation of the actions are also considered. The actions are supported by more specific guidelines on priority actions within three sub areas and five Neighbourhood Management Areas.

The following section provides a summary of the "storylines" written for the three Core Strategy sub areas.

STORYLINES

City Centre

(Comprising Central ward and sizable parts of Riverside and Princes Park wards in the south of the area)

The green infrastructure resource

- Low levels of green infrastructure in comparison to the rest of the city
- Dominated by The Mersey, with associated high quality access
- Higher levels of general amenity space and derelict land than any other type of greenspace some of which is of low quality and functionality
- Low percentage of parks, outdoor sports, woodland and private gardens compared to other areas; highest percentage of street trees
- High value as a heritage asset but low functionality for other functions
- The green infrastructure is scattered, with few large areas

- Key assets are St. James Gardens (pictured) in the cathedral grounds, St. John's Gardens, the docks and elements of the incidental greenspace

Issues

- Protecting and enhancing the best of the green infrastructure that exists
- Restricted opportunities for creating new green spaces
- Importance of waterfront and public realm generally
- Area most likely to suffer from urban heat island effect
- Opportunity provided by new development to improve and/or increase green infrastructure functionality

Priority actions:

- Safeguard existing green infrastructure assets
- Take advantage of regeneration and development opportunities to secure the use of street trees and green roofs (Action 1.1)
- Use street trees and planting schemes at strategic gateways and entry routes (Action 1.2)
- Encourage walking and cycling through the provision of attractive and safe walkways and cycle lanes (Action 1.3)
- Improve accessibility to green space such as gardens, orchards and allotments (Action 1.4)
- Support the temporary use of vacant or derelict land for food and fuel growing (Action 2.1)
- Increase the quality and quantity of green infrastructure for tranquillity to reduce poor mental health (Action 2.2)
- Improve green infrastructure around hospitals and health centres (Action 2.5)
- Increase opportunity for physical activity by providing attractive public realm and green environments (Action 2.7)
- Protect areas of existing ecological value throughout the city centre (Action 4.1)

Inner Area

(Contains wards: Riverside, Princes Park and Picton, County, Kirkdale, Anfield, Everton and Kensington & Fairfield, Half of Tuebrook & Stoneyfield, and small parts of Old Swan, Clubmoor, Childwall, St Michael's, Greenbank, Wavertree and Central wards)

The green infrastructure resource

- Moderate to low levels of green infrastructure provision, most of which is private domestic gardens and parklands. High levels of general amenity space

- High levels of cultural and heritage functionality

- High levels of derelict land providing opportunities for temporary use, including food growing

- Key assets are Princes Park, Newsham Park, Everton Park (pictured), Wavertree Park, Stanley Park and Cemetery and Walton Hall Park

Issues

- Tackling the low levels of green infrastructure and functionality while recognising the limited opportunities and resources available to create additional areas of traditional greenspace

- Area of proposed significant new development (HMRI and Growth Point), as well as economic opportunities particularly within the Atlantic SIA

- Despite the low level of green infrastructure there is a relatively high proportion of parks and general amenity space. Some of these are of low quality and the issue will be to enhance their quality and functionality

- There are high levels of vulnerable population with above average levels of health deprivation

- The River Mersey represents a key resource - how best to increase accessibility to it north and south of the city centre

- The area is bisected by major transport routes with implications for noise and air quality

- The inner areas will be at risk from the urban heat island effect

- Regeneration processes may provide opportunities to promote temporary green infrastructure uses

- Biodiversity is low in the inner areas

Priority actions:

- Safeguard existing green infrastructure assets

- Take advantage of regeneration and development opportunities to secure the use of street trees and green roofs (Action 1.1)

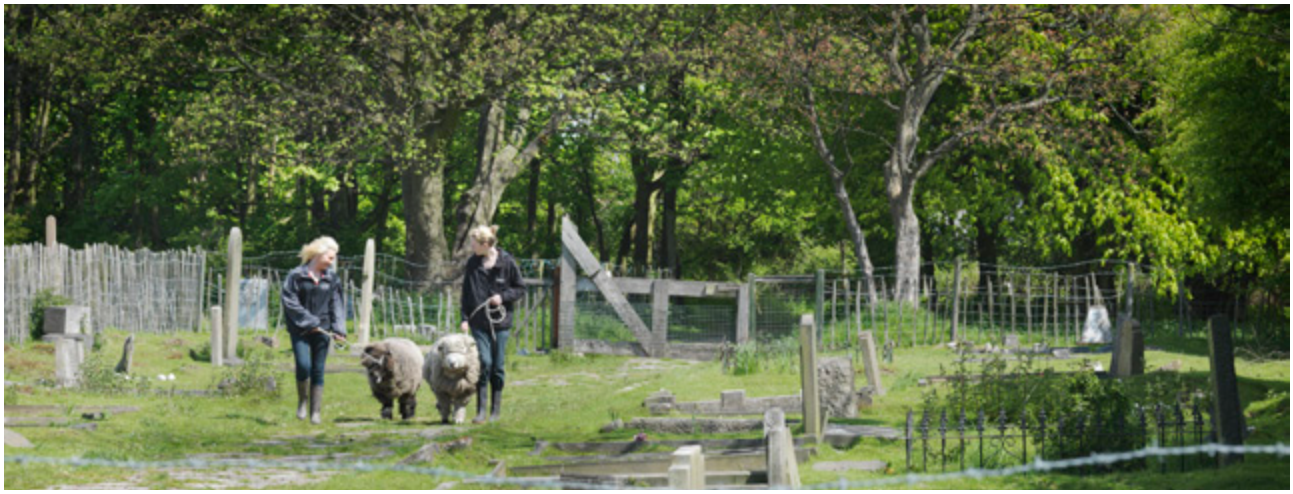
- Encourage walking and cycling through the provision of attractive and safe walkways and cycle lanes (Action 1.3)

- Increase the quality and quantity of green infrastructure for tranquillity to reduce poor mental health in Picton, Tuebrook, Old Swan, St. Michael's, Greenbank and Watertree. (Action 2.2)

- In all wards support increased physical activity by providing attractive green environments (Action 2.7)

Outer Area

(Contains wards Warbreck, Fazakerley, Clubmoor, Norris Green, Croxteth, West Derby, Yew Tree, Old Swan, Knotty Ash, Wavertree, Childwall, Belle Vale, St Michael's Greenbank, Church, Woolton, Mossley Hill, Cressington, Allerton and Hunts Cross, and Speke-Garston. There are also small parts of County, Anfield and Tuebrook and Stoneycroft)



The green infrastructure resource

- The Outer Area covers a large area, therefore the green infrastructure quantity, type and functionality varies greatly in this sub area

- Overall relatively high cover of green infrastructure (60% of the area), with an above average percentage cover of woodland, outdoor sports facilities, institutional grounds, grasslands, allotments and agricultural land

- Relatively low percentage of blue infrastructure cover

- Only area which contains orchards and coastal habitat

- Overall functionality is high. Carbon storage, evaporative cooling, wind shelter and aesthetics are notably high in comparison to the rest of the city

- Private recreation function is high here due to the large presence of private gardens

- Food production is relatively high

- Functions relating to water management are below average

- Key assets in this area are Craven Wood, Croxteth Country Park, Allerton, Childwall and Lee Park golf courses, Sefton Park and Rice Lane City Farm (pictured)

Issues

- The largest spatial area comprising 70% of the city and while predominantly residential in character there will be a need to respond to variations within

- Main emphasis will be the safeguarding and consideration of opportunities to increase the functionality of existing green infrastructure

- Private gardens represent the largest green infrastructure resource but are not subject to external management policy and control

- Employment areas at Speke and A580 Corridor are at important strategic gateways

- There are small areas for example around Fazakerley, Old Swan and Speke where opportunities to use green infrastructure to contribute to meeting health needs should be prioritised

- House building will be an important development issue particularly within the fringe regeneration areas where the opportunity should be considered to increase green infrastructure functionality through the design process

Priority actions:

- Safeguard existing green infrastructure assets

- Encourage the use of SUDS, using swales and de-culverting of water courses, particularly in Anfield. (Action 3.2)

- Create water bodies and water courses to provide water for irrigation in times of drought particularly in Greenbank (Action 3.5)

- Take opportunities to de-culvert watercourses and re-naturalise floodplains (Action 3.10)

DELIVERING THE STRATEGY

The Action Plan calls for a collaborative approach to delivering the strategy, with a forum created to bring together those who are best placed to resource and/or deliver the actions.

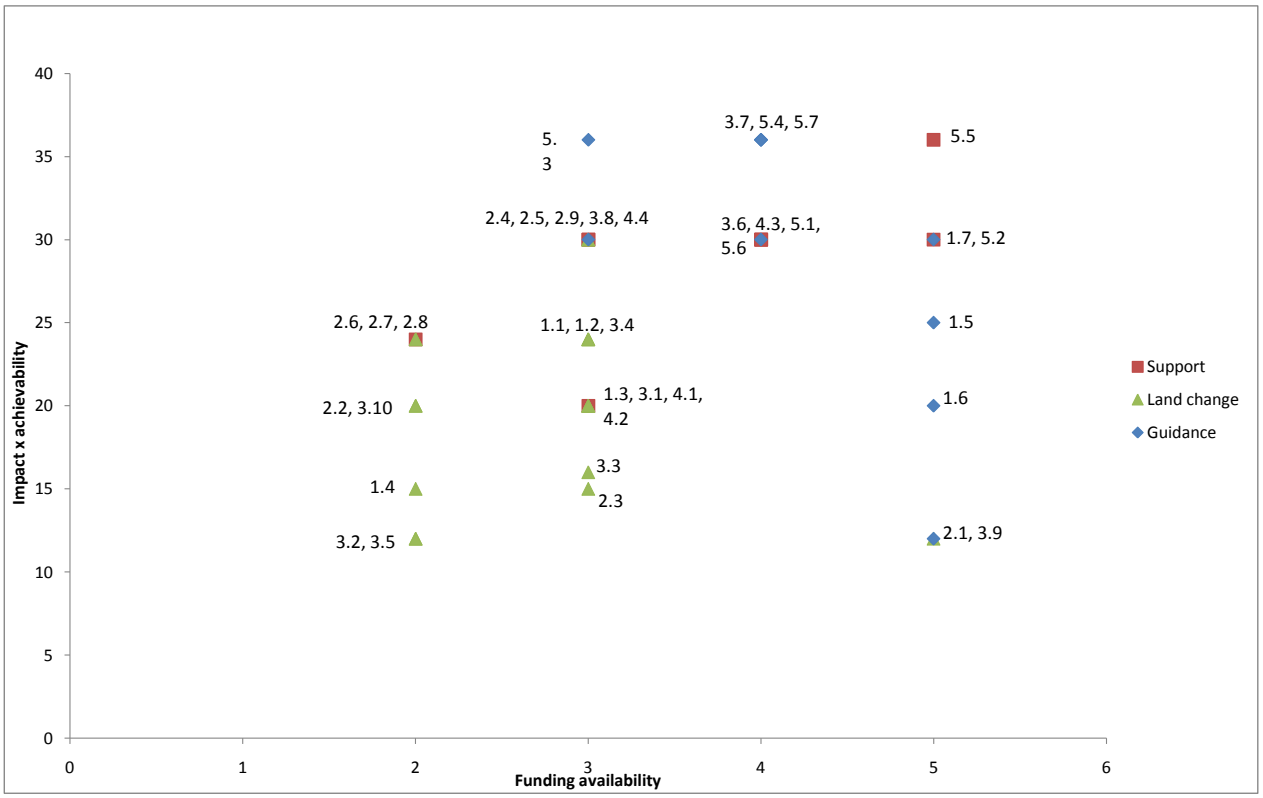
There is a need for high-level support for the delivery of the action plan, to embed it within existing structures and ensure that the actions are followed through into delivered programmes.

The action plan sets out the need for:

- **A strong green infrastructure policy and Supplementary Planning Document within the Local Development Framework.**
- **Health sector to promote green infrastructure planning as a key aspect of improving public health**
- **Support from the Local Strategic Partnership at board level**
- **Support from Liverpool City Council at cabinet level**
- **Support from Liverpool Vision**
- **Create a Liverpool Green Infrastructure Forum**

Actions to focus on could be seen to be those that are achievable, high impact actions that have some resources already, or potentially available. Figure 3 shows on the X axis the estimated availability of funding for the actions (on a scale of 1 to 6, where 6 indicates highest availability of funding), based on current known resources. The Y axis indicates "opportunity". This is the product of the Achievability and Impact score (again where both were rated from 1 to 6). Actions that are in the top right corner of the chart may be seen as priorities as they have resources and a high level of opportunity.

Figure 3. Assessment of the actions based on opportunity and funding availability



DOCUMENTS

The documents that together comprise the Liverpool Green Infrastructure Strategy are:

- **Promotional Leaflet**
(www.ginw.co.uk/liverpool/Leaflet.pdf)
– a leaflet seeking to gain support for and involvement in the delivery of the strategy

- **Executive Summary**
(www.ginw.co.uk/liverpool/Executive_Summary.pdf)
– this document - a high level overview of the strategy

- **Action Plan**
(www.ginw.co.uk/liverpool/Action_Plan.pdf)
– the key actions as agreed with the stakeholders and the commissioning organisations

- **Technical Document**
(www.ginw.co.uk/liverpool/Technical_Document.pdf)
– the full evidence base containing the background information and analysis

Executive Summary photos: McCoy Wynne (pages 1 and 4), Monty Rakusen (pages 6 and 22), Mike Roberts (page 6 butterfly) and The Mersey Forest Team (pages 18 and 20)

FURTHER READING

Read the other documents that make up the Liverpool Green Infrastructure Strategy at www.ginw.co.uk/liverpool

GET IN TOUCH

To discuss or find out more about this document or the Green Infrastructure Strategy as a whole, please contact: Liverpool City Council Planning Service on 0151 233 3000.

THE MERSEY FOREST
more from trees

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Liverpool City Council

Liverpool NHS
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2010 Year of Health & Wellbeing