



## Natural Capital in Birmingham

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### Executive Summary

A significant finding from the Liveable Cities research and its global examination of cities was that in order for them to truly address their 21st century challenges, they must seek to integrate municipal finance, planning and governance.

Systems Thinking Mapping greatly aids this process. However, when you include the city's green living infrastructure - its natural capital - into this exercise, a whole host of innovative and new possibilities arise as synergistic nature-based solutions are made visible. On a global scale this process is in its infancy. Our study clearly shows that now is the perfect time for all cities to undertake this exercise and try to understand the value of nature in their city. That is the ambition of Birmingham, the UK's second city, and the only UK city in the Biophilic Cities Network.

### Success Metrics

- Birmingham City and the University of Birmingham are two of the key partners in a national trial of the Natural Capital Planning Tool after a totally new site based assessment tool.
- Birmingham has undertaken a comprehensive ecosystem services assessment of its living infrastructure and matched its supply to the population demand, generating a multiple challenge map.
- Birmingham and its partners are working with HS2 on a new set of natural capital criteria to move HS2, from No Net Loss for Biodiversity to Net Gain for Natural Capital.

- Birmingham is working with its regional partners to create a 25 Year Natural Capital Plan for the West Midlands, integrated with the growth agenda and applying value capture tools.

### About

At the mid-point of the Liveable Cities research programme it became clear that natural capital was an under considered element in global cities. The research team then addressed the question of what an Ecosystem Serviced City would look like? There are many layers to those findings (see 'The Little Book of Ecosystem Services in the city'). The key over-riding conclusion was that natural capital was not seen as an essential part of key decision-making in cities, at great societal and planetary costs. This undermines its huge transformational potential.



Birmingham skyline - a city with evident natural capital

### Challenges

Birmingham's first challenge is one of densification. The population is predicted to grow by 150,000 people in the next 20 years. This is equivalent of a city the size of Oxford moving into Birmingham, whose outer boundaries are fixed.

The projected additional housing numbers required over this period is in excess of 51,000. In a four-year trial 8 acres of public open space is to be released each year for housing, with a percentage of capital receipts paying for park improvements and budget savings.

Birmingham's second challenge is that of its reputation: a city under government review for adult and social care services; and for education and schools. The Kerslake Review found the authority wanting in many areas including effective community engagement and firm budgetary responsibility. Why would a city – its key politicians and executive – when faced with those external and internal pressures be concerned about the future

of the city's natural capital?

Birmingham's third challenge is achieving a Sustainable, Inclusive and Connected City in the UK's youngest and most culturally diverse city. Birmingham's Carbon Roadmap commits it to a 60% carbon reduction by 2027, via better connected low carbon transport, and digital infrastructure that connects communities with low carbon jobs and skills. By employing District Energy and adopting a natural capital approach to building a better future it seeks to implement total place-making.

## Goals

The first goal was to better understand the connections or the disconnects between people and wildlife. Physically, how accessible was high quality nature? To whom is it available? How active were people in engaging with it and what were the barriers to use? Where were the disconnects? Were they physical linked to spatial distribution & provision or matters of governance?

The second goal was to examine value-capture, in all its forms. Were any of these disconnects due to the lack of integration across municipal planning, governance or especially-finance? Could systems thinking mapping identify previously invisible Core Strategic Beneficiaries of natural capital? Could value capture techniques help draw these new stakeholders into future metric and policy setting?

## How has this research helped?

**Governance:** Extensive global research was undertaken exploring the many facets of the governance of natural capital in cities. Key learning points were compiled from the interface between communities and their local land. Further reviews were made of different governance models, response mechanisms and bottom-up solutions, with the underlying finding being the deep-seated passion people held for the land they considered 'theirs'. This was explored via Birmingham's Highbury Summit.

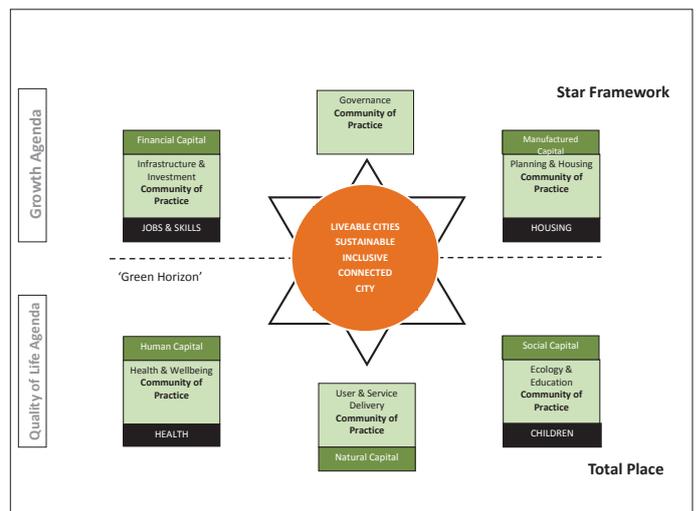
**Geographical Information Systems:** were to accurately map a number of the city's natural assets, understand the flow of ecosystem services and then match that with usage and demand. This provided an excellent baseline from which the future demands and needs could be extrapolated with greater confidence.

**Systems Thinking and Modelling:** the causal loop diagrams of Joe Hsueh, Academy of Systemic Change, that re-mapped a sustainable solution to the complexity of failing fishing grounds in the Gulf of Mexico, were an inspiration. A systems thinking mind map of Birmingham's natural capital, which made visible for the first time the Core Strategic Beneficiaries.

## Results

The findings from this work were articulated into a new man-

agement and governance framework:



The Star Framework – identifies the 6 Communities of Practice that encompass the Core Strategic Beneficiaries for natural capital in cities. A set of co-designed metrics provide the value-capture mechanism to enable the future integration of planning, governance and finance of natural capital in Birmingham potentially all cities.

Its first application has been to help generate a new set of HS2 Natural Capital Metrics to the HS2 programme. This means that HS2 have moved away from No Net Loss Biodiversity (the status quo) to Net Gain for Natural Capital ambition for the whole programme.

**“Part of the great pleasure of living in a city is discovering the many forms of nature in unexpected places. Some of this nature is designed, of course, but much of it is simply extant, and resiliently co-adapting to urban conditions... Over the course of a day there are typically numerous opportunities to be surprised (pleasantly) by the nature around us, as it appears and disappears from view (a bird, a mushroom, a flower), and appears again, depending on season, weather, and on the pathways and routes we choose to travel. Discovery and surprise, the possibility of epiphanous moments of delight, are part of what makes living in a biophilic city so much fun.”** Professor Timothy Beatley, PhD and Teresa Heinz, Professor of Sustainable Communities, School of Architecture. University of Virginia