

Green infrastructure thinking – a lifeline for liveable cities



5th Healthy Cities: Working Together to Achieve Liveable Cities Conference

6 - 8 June 2012

Robert Cooper



Themes



- ‘Health’
- ‘Working together’
- ‘Liveable cities’

knowledge into value

Question?



‘The Rise and Fall of Melbourne?’

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Birkenhead Park 1847 (58ha)



Werribee



Wyndham City Council submission to State Government 2011



- ‘an epidemic of obesity and diabetes’
- ‘previous generations of poor environmental design for public health outcomes’

knowledge into value

Statistics

- Diabetes rose from 2% to 3.1% of residents 2001 - 2008
- Obesity rate significantly higher than Victoria average (23.9% ~ 17.3%)
- Residents not meeting fruit/veg guidelines (57.1% ~ 47.7% metro Melbourne)

Previous generation.....



- Limits to Growth | 1973
- Vienna Convention | 1985
- Montreal Protocol | 1987
- Rio Earth Summit | 1992
- Building Better Cities | 1992

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Wyndham North Concept Plan (1996)

(1860ha)



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Wyndham North Concept Plan – Cowie's Hill LSP Area (2001)



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Cowie's Hill LSP (2001)



Wyndham North Concept Plan – Reflections Development Plan Area (2003)(129 ha)



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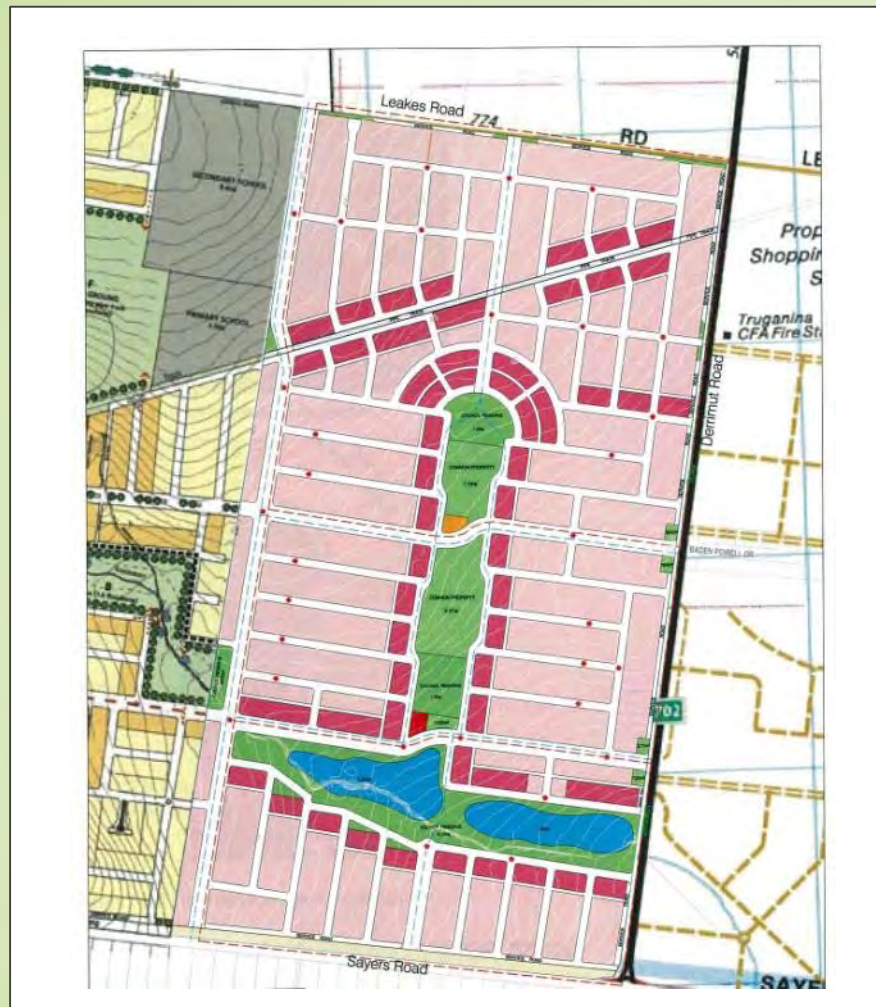
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Reflections Development Plan (2003)



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Reflections Estate (51ha)



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Reflections Estate – Landscape Master Plan (2007) – Site Movement



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Reflections Estate – Landscape Master Plan (2007) – Street Tree Master Plan



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Reflections Estate – Landscape Master Plan (2007) – Park Concept



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Multi-functional open space (?)



Tarneit 2000 (Melway)



Tarneit 2010 (Melway)



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Parameters

- 5% open space
- linkage / co-location
- Proximity parameters (500 m)
- The footy field yardstick – 1 per 5,000
- Good governance ?

“Value”



- ‘In the years to 2040, Council and the State will need to build basic infrastructure in Wyndham valued at ...\$1.3 to \$1.6bn’

knowledge into value

How do we “value” our city?



\$/ha value	item
25,000	unzoned growth area farm land (GAA)
365,000	growth area farmland rezoned for urban development (GAA)
3,250,000	new houses and lots in growth areas
83,250	new street, local park / open space landscape works
1,180,000	New Regional' sporting facility
19,200	Regional' sporting facility over the catchment it serves
178,000	Recurrent annual health goods and services costs for residents

knowledge into value

Water, habitat and cost / benefit



\$/tN	
80	Cost of urban storm water discharge above Best Practice targets
\$/ha value	
Variable	Cost of offsetting native vegetation removed for urban development ('Habitat Hectare')
\$ Cost /benefit	
1 : 1.9	Provision of suburban road / rail grade separation

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A Big New Tax !



Nitrogen as 'currency'

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Pavan Sukhdev – ecosystem services



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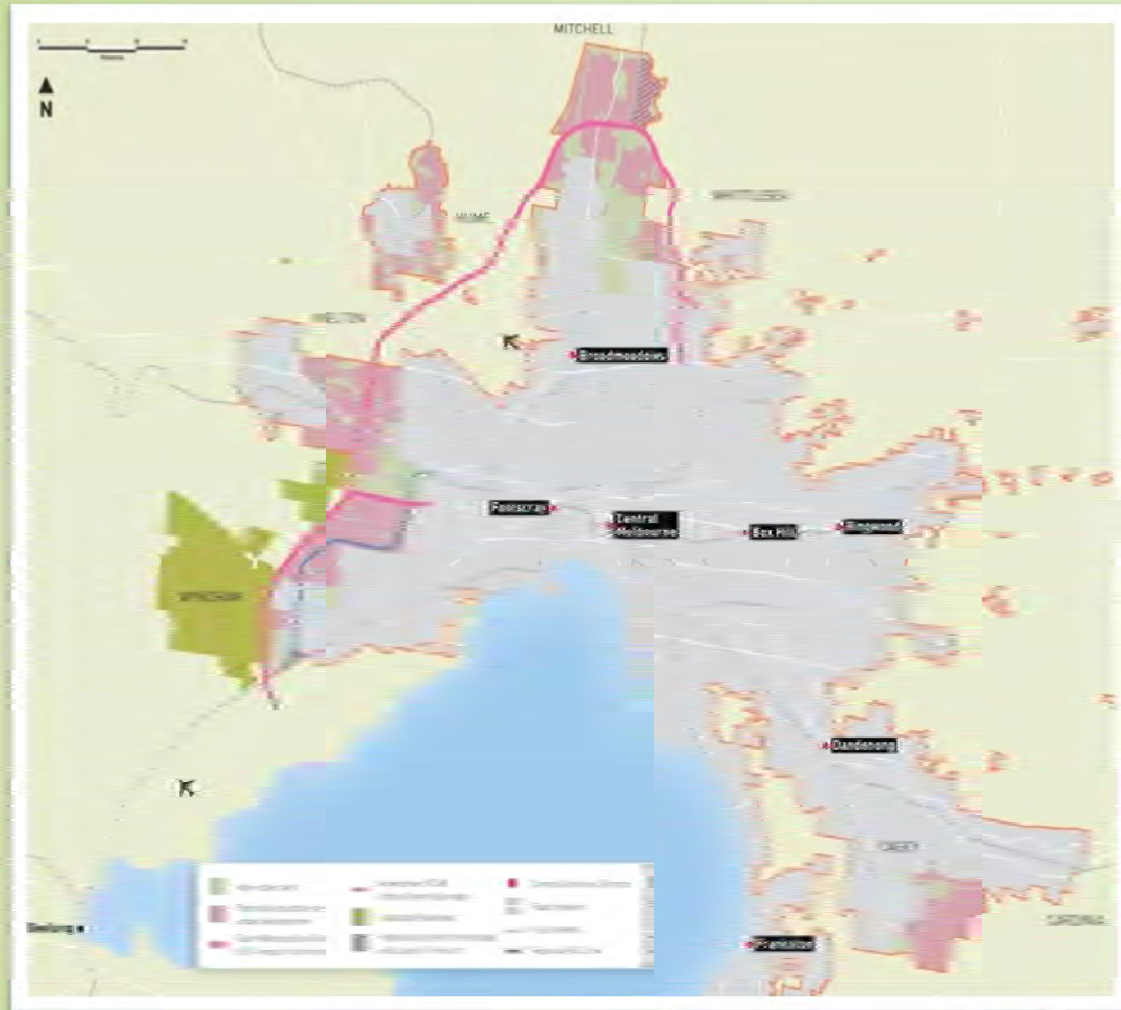
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- **TEEB – The Economics of Ecosystems and Biodiversity**
- **Ecosystems services**
- **Outlay - \$45 million p.a.**
- **Return - \$4 to \$5 trillion p.a.**

- ‘Future research needs to address the issue of causality to convince policy makers of the health benefits derived from connectedness to nature’
- physiological and questionnaire
- Body Mass Index, Waist / Hip Ratio, Blood Pressure, Cortisol

Green Infrastructure – a lifeline

(State Government Victoria 2030)



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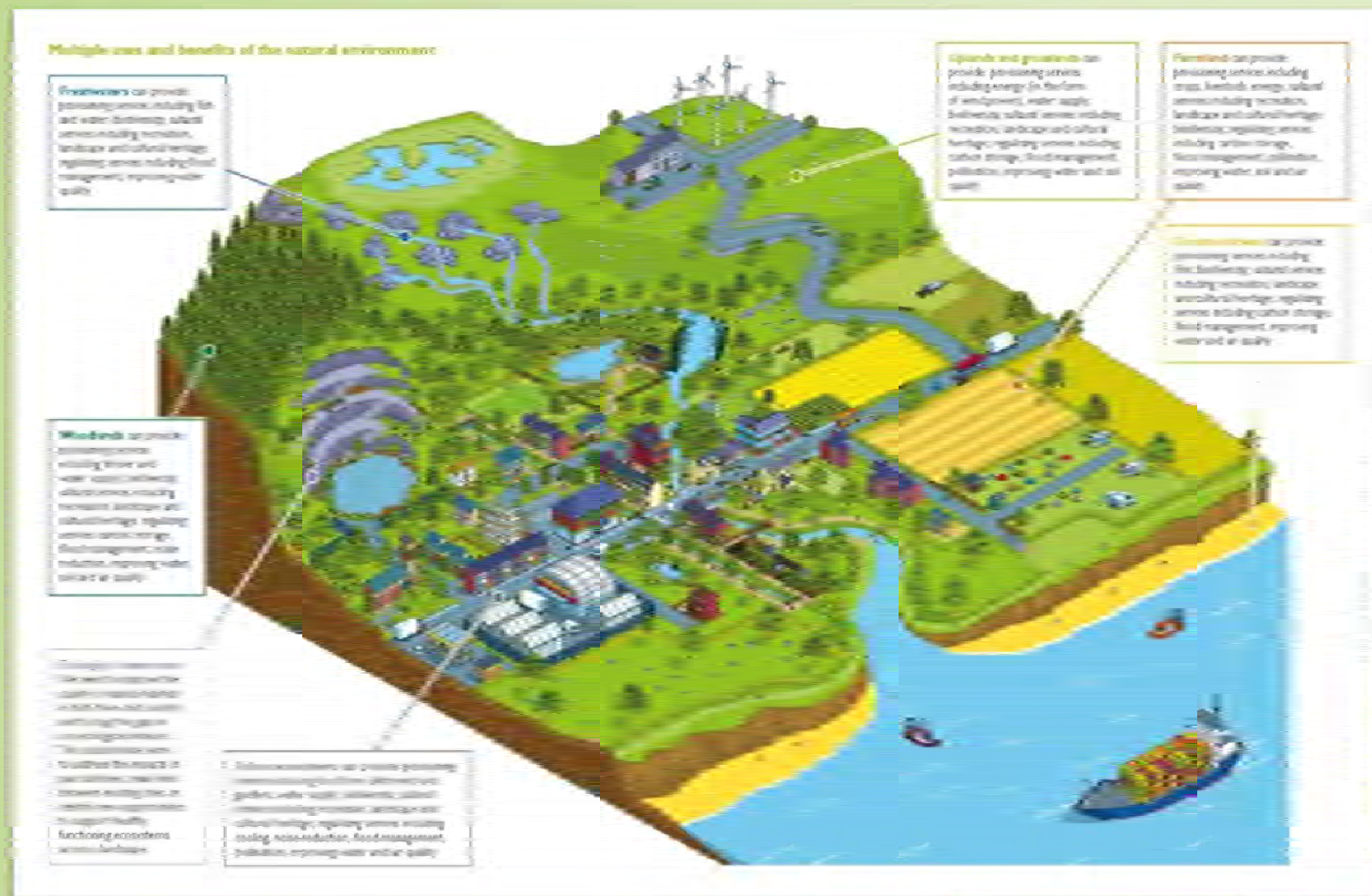
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The Natural Choice, UK Government 2011



The Natural Choice: securing the value of nature, Secretary of State for Environment, Food and Rural Affairs (UK), June 2011

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Grey to Green continuum



After Davies et al (2006)

Green Infrastructure



Draft AS 5334

*Climate change adaptation for settlements
and infrastructure*

includes 'green infrastructure'

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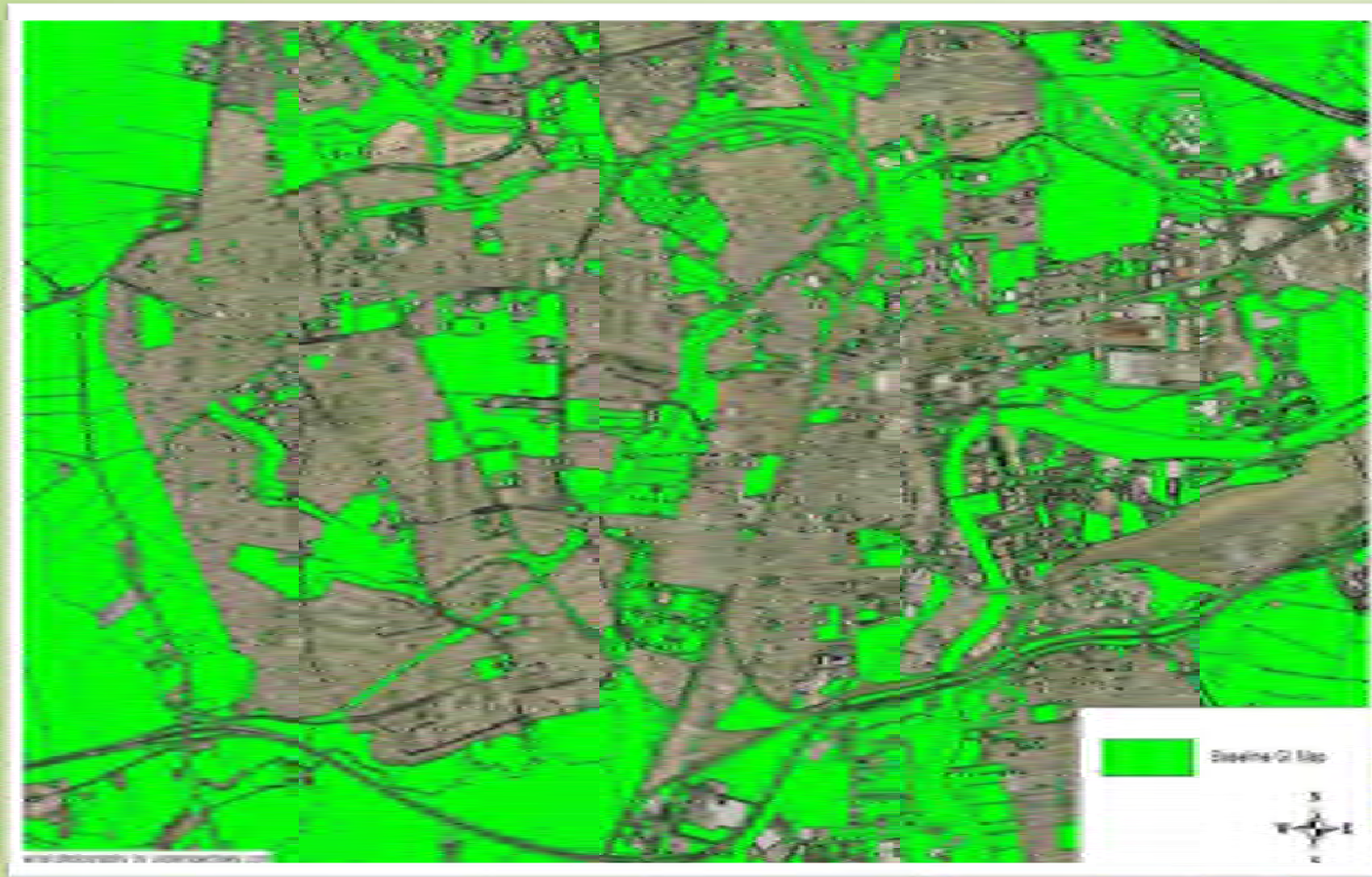
A spatial values and planning tool



- Multifunctionality, connectivity and integration
- Aid to adaptation

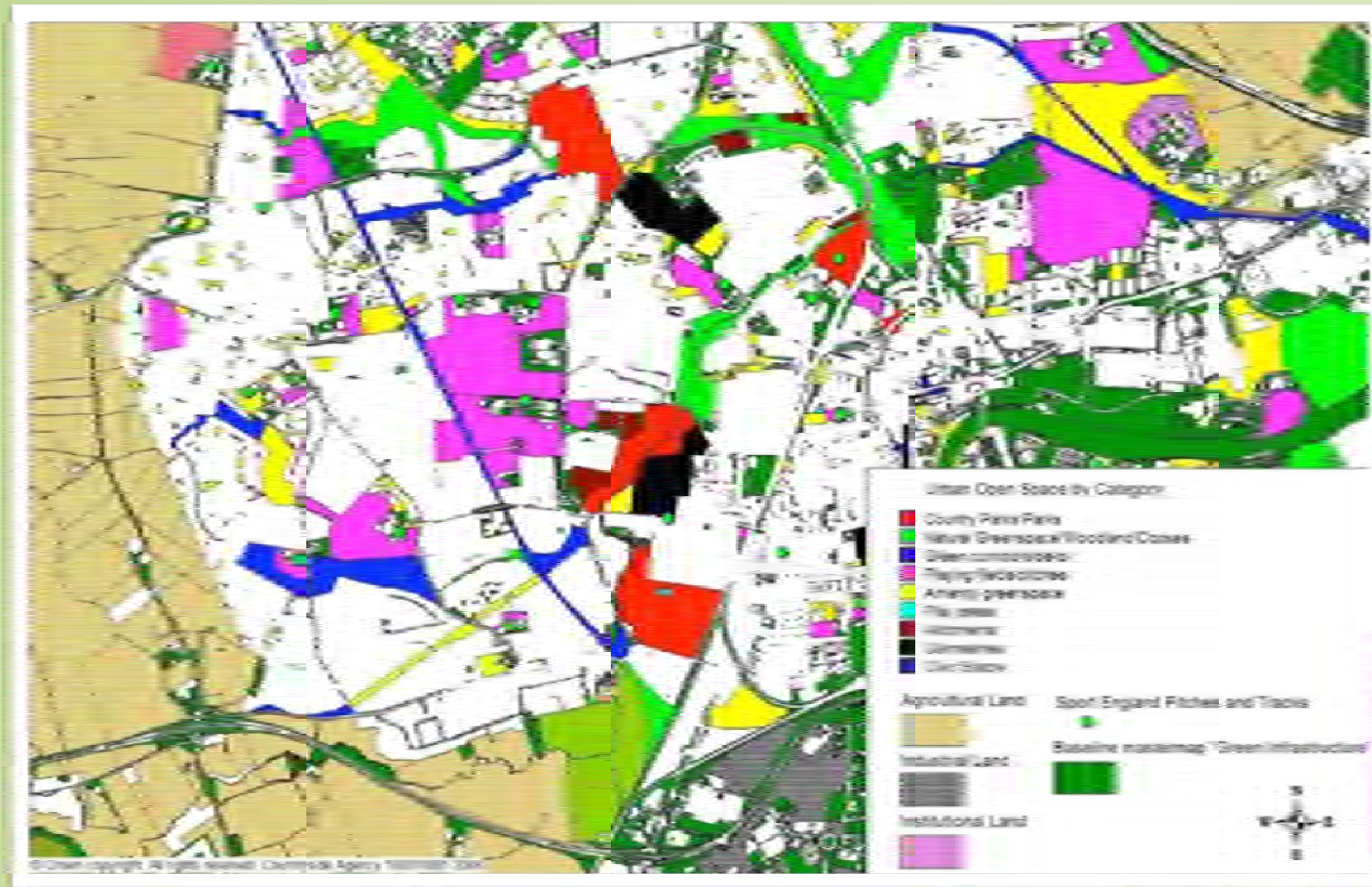
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Green Infrastructure Mapping



After Davies et al (2006)

Green Infrastructure Mapping



After Davies et al (2006)

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Conclusions



- We measure nitrogen in our water, flora / fauna in our habitats, carbon in our emissions and the temperature of the air with great precision in ways understood by *'the market'*.
- The same should apply to health.

knowledge into value

Conclusions

- More data and longitudinal studies
- Group data into a range of composite key indicators of urban health
- Express indicators alongside other environmental indicators in terms understood by the markets and the '*policy makers*' (cost, risk, yield) and the planners and designers (spatial and temporal relationships).

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