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IWUN
Improving wellbeing through urban nature

Northumbria University
NEWCASTLE

Measuring the Health of Planning Policies for Green Infrastructure

Prof Alister Scott BA PhD MRTPI

National Planning Policy Framework

Presented to Parliament
by the Secretary of State for Ministry of Housing, Communities and Local Government
by Command of Her Majesty

July 2018

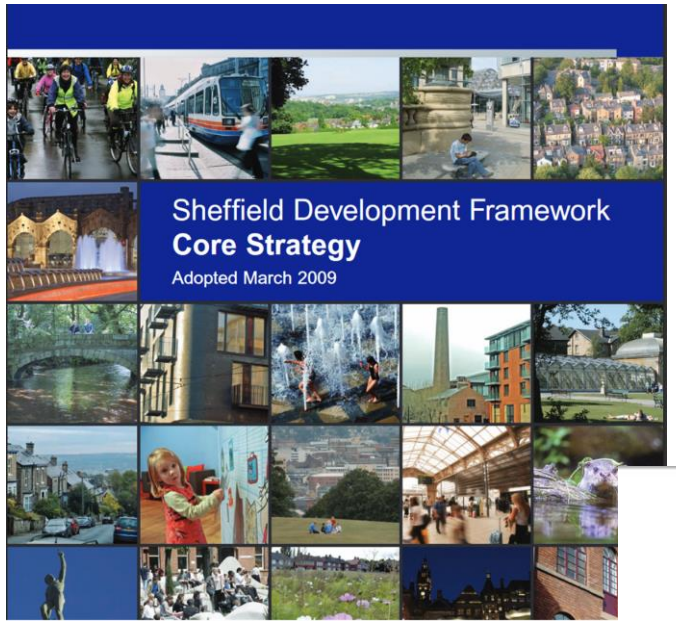
A Green Future: Our 25 Year Plan to Improve the Environment

Plan

- Are built environment policies currently delivering: **what is the problem?**
- Placemaking and Living /Green infrastructure: **can they be the solution?**
- The opportunity spaces of new national policies : **how well is new policy performing**?
- The opportunity spaces of local plans**: how well is Sheffield currently doing**
- How to improve mainstreaming : **exploring new NERC tools**
- Future challenges for **research and practice**

Key role of planning policies in a plan led system

- Neglected component of research and environment practice
- Yet provides the statutory basis for key decisions about future land use
- NPPF sets the “framework” within which local plans operate
- Research can often neglect key importance of planning policies and decision making machinery.



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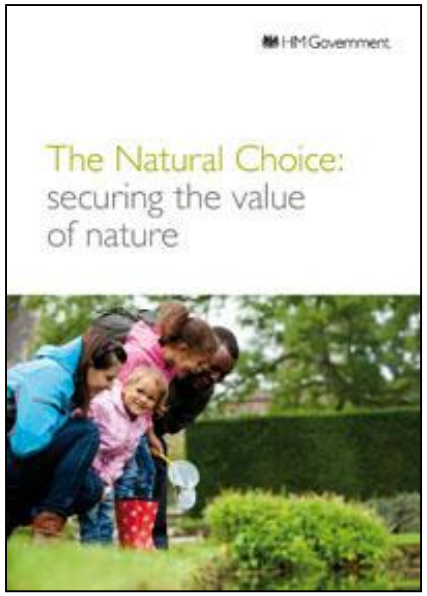
Why we need to improve planning policy and decision making?



The Natural Choice: securing the value of nature (Natural Environment White Paper)
HM Government, 2010

"The Government expects the planning system to deliver the homes, business, infrastructure and thriving local places that the country needs, while protecting and enhancing the natural and historic environment. Planning has a key role in securing a sustainable future. ***However, the current system […] is failing to achieve the kind of integrated and informed decision-making that is needed to support sustainable land use."***

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Raynsford Review 2018

- Planning system not fit for purpose.
- '*We believe that* ***planning should be a visionary, creative and inclusive process****, enabling the delivery of high-quality architecture and great places for people to live, work and play.* ***However, in recent decades the system has become increasingly reactive, devalued and under-resourced.***

RIBA submission to the Review

Working in our silos

Dominated by metrics

Metric fallacies: delivering unhealthy outcomes

- Tick box metrics
- Metrics based on quantity (300,000 11 million) not quality
- Metrics based on acceptability not excellence (planning permissions)
- Metrics that are imposed rather than coproduced
- Target driven metrics in silos
- Re-Invent new metrics rather than build on good practice

“Breaking the silos: searching for more integrative concepts

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An integrated and managed: living, grey, green and blue network

Figure 12 Strategic Green Infrastructure Network and Opportunity Areas

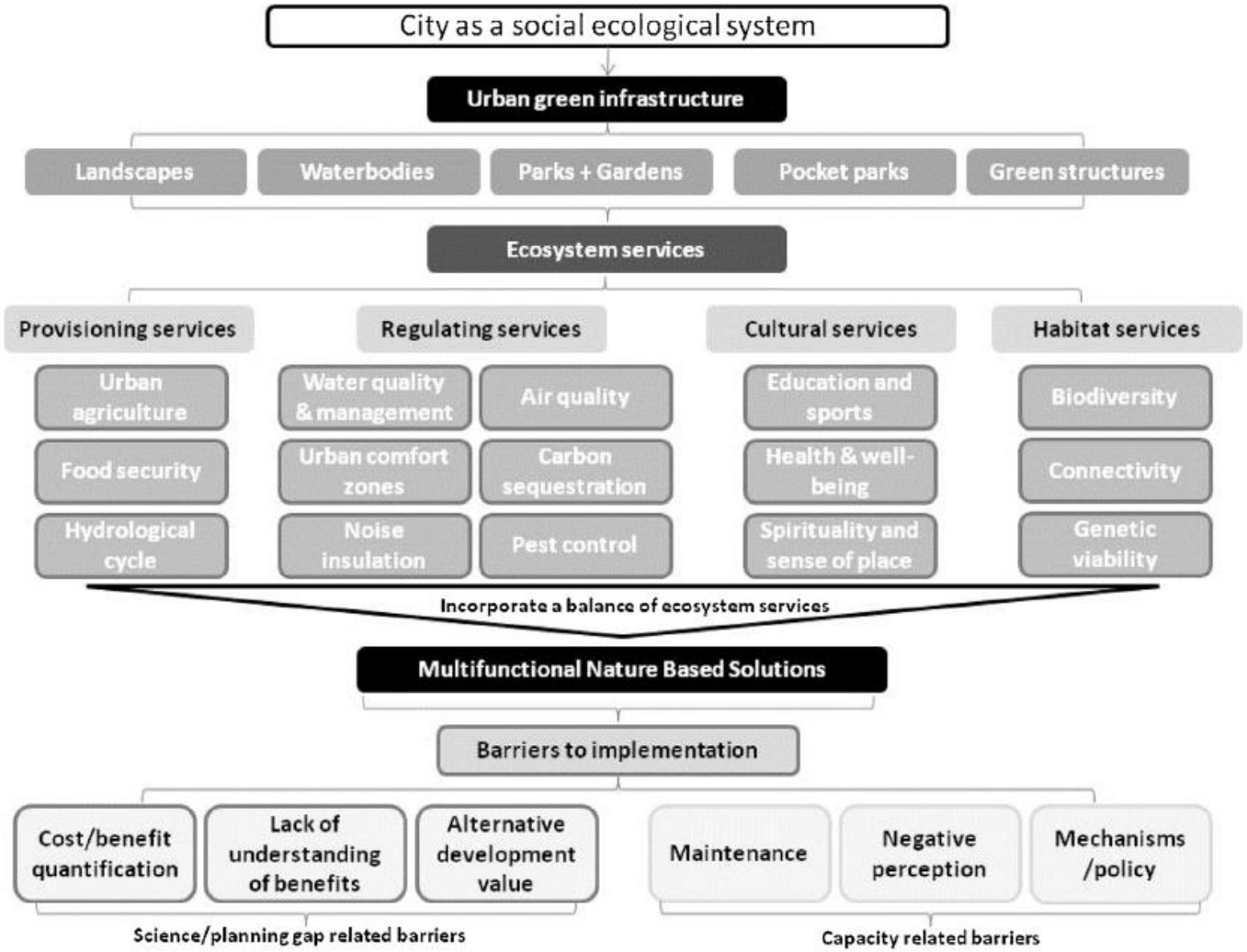
Green Infrastructure demystified

- "Green infrastructure is a **strategically planned network (multiple scales)** of natural and semi-natural areas with other environmental features **designed and managed to deliver a wide range of ecosystem services** such as water purification, air quality, space for recreation and climate mitigation and adaptation.

- This network of **green (land) and blue (water) spaces** can improve environmental conditions and therefore citizens' health and quality of life. **It also supports a green economy, creates job opportunities and enhances biodiversity**".

Source: http://ec.europa.eu/environment/nature/ecosystems/index_en.htm

Multifunctional Green Infrastructure
(Connop et al 2016)



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What is the Green Infrastructure Problem/Opportunity ?

- GI is not readily understood within a wider ecosystem science and natural capital vocabulary
- GI is often bolted on to development
- GI is the first casualty of budget overspends and cuts
- GI is readily trumped by economic considerations
- Research has shown benefits of GI through multiple tools but not effectively translated into delivery mechanisms
- Lack of current statutory and regulatory policy context for GI

(New) National Policy Guidance

HM Government

A Green Future: Our 25 Year Plan to Improve the Environment

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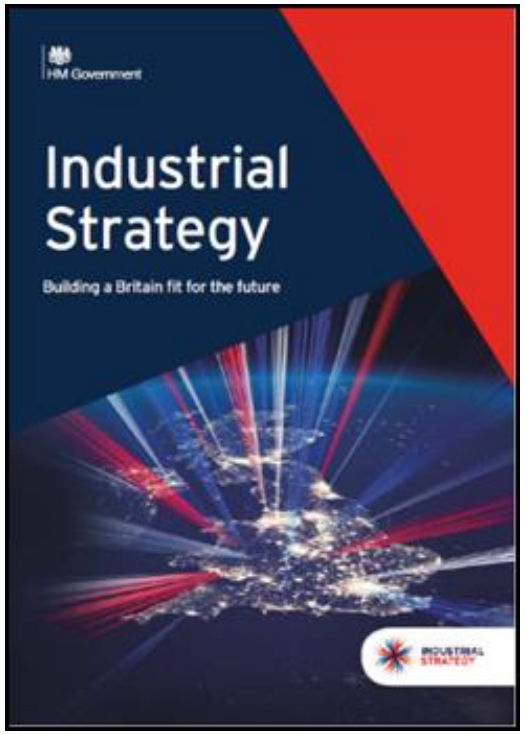

25YEP

- 25YEP Page 16 “**A healthier environment also helps deliver social justice** and a country that works for everyone. For example, pollution affects us all but it is the most disadvantaged in society who suffer more. … We want to ensure an **equal distribution of environmental benefits, resources and opportunities**”.

- “develop a **Nature Recovery Network** providing 500,000 hectares of additional wildlife habitat, more effectively **linking** existing protected sites and landscapes, as well as **urban green and blue infrastructure**”.

25YEP

- 25YEP Page 33 “We will seek to **embed a ‘net environmental gain**’ principle for development to deliver environmental improvements locally and nationally. 25YEP Page 34 “Making sure that existing requirements for **net gain for biodiversity in national planning policy are strengthened**, including consulting on whether they should be mandated”

- 25YEP Page 20 “Over the next 25 years, our policy choices will be better-informed with a **natural capital approach”.**

The NPPF lens

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Contents

NPPF Chapter 15

170 Planning policies and decisions should contribute to and enhance the natural and local environment by:

- b) recognising the intrinsic character and beauty of the countryside, and the **wider benefits from natural capital and ecosystem services**

171. Plans should:

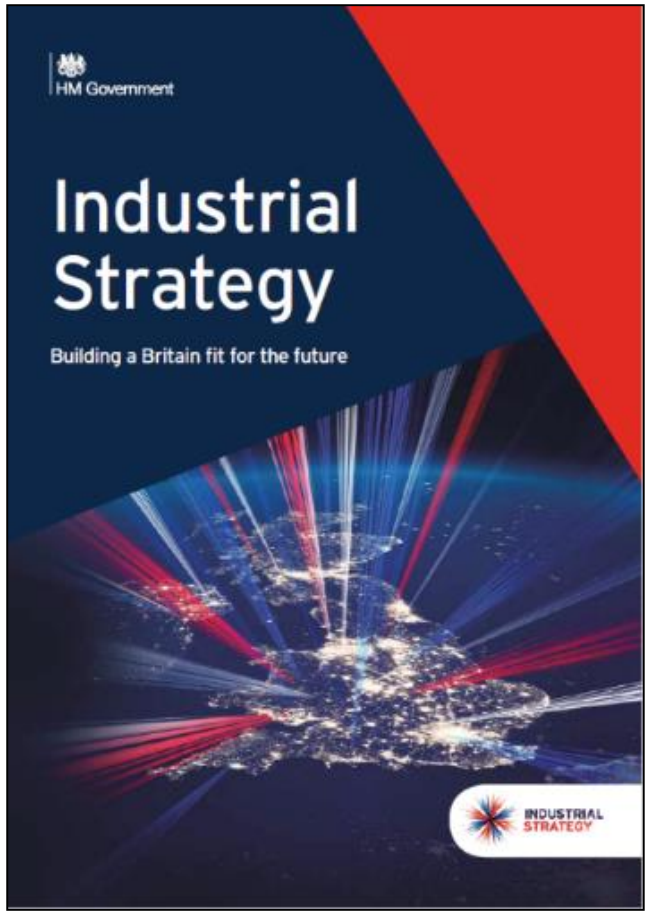
- **take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.**

- 118. Planning policies and decisions should:
- a) **encourage multiple benefits from both urban and rural land**, ….taking opportunities to achieve **net environmental gains**;
- b) recognise that some **undeveloped land can perform many functions**, such as for wildlife, recreation, flood risk mitigation, cooling/shading, carbon storage or food production;

National Planning Policy Framework

Presented to Parliament

BEIS Industrial Strategy



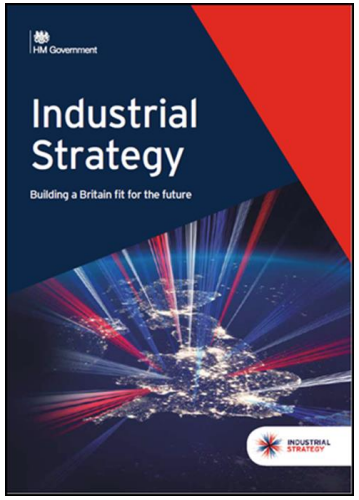
Industrial Strategy: building a Britain fit for the future (HM Government 2017)

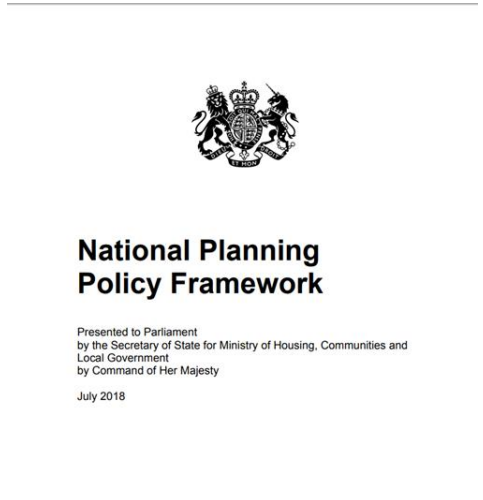
*"**We will work not just to preserve, but to enhance our natural capital** – the air, water, soil and ecosystems that support all forms of life – since this is an essential basis for economic growth and productivity over the long term."*

*"**Our measures to achieve this** [moving towards a more circular economy] **will include: an approach to infrastructure investment that aims to regenerate natural capital…**"*

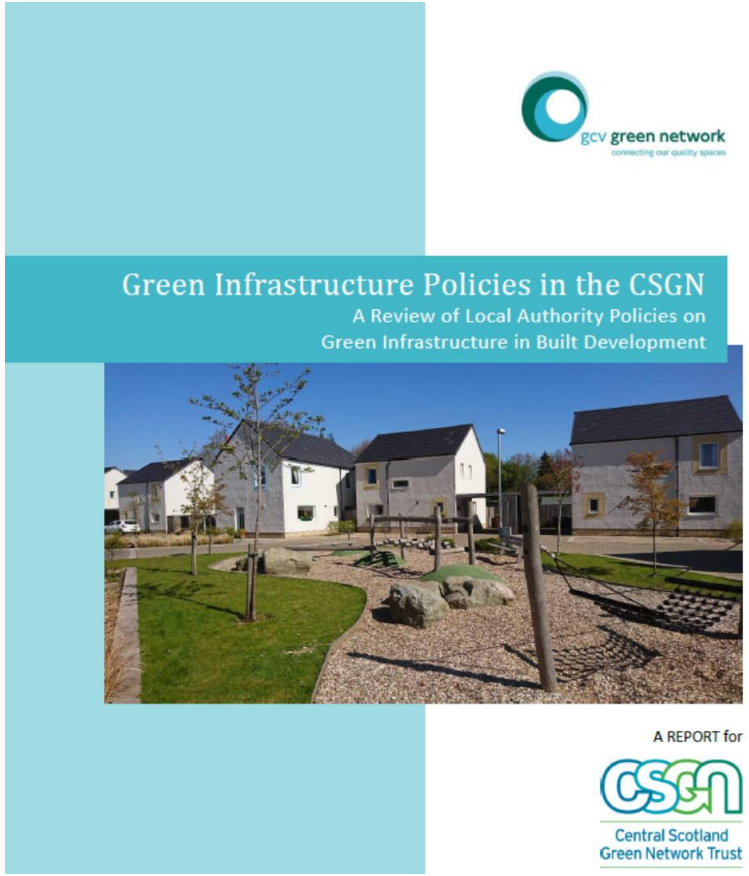
NPPF vs 25 YEP vs Industrial Strategy
A disintegrating policy landscape?

- HM Government Environment plan
- Role of industrial strategy and clean growth strategy mentioned in 25 YEP but only mention of NPPF is for SuDs and net gain.
- **Lowest common denominator in all plans = natural capital (key hook)**

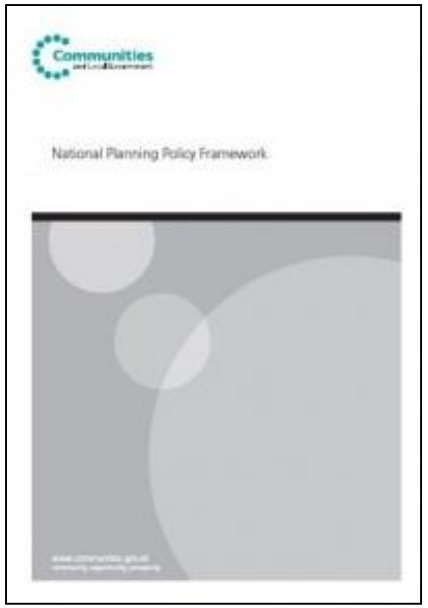




What does good GI policy look like? Creating a GI evaluation framework



NPPF 2012 and 2018

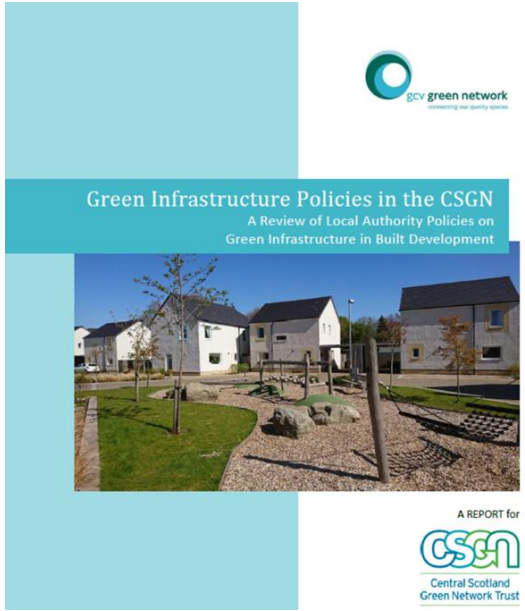


National Planning Policy Framework (NPPF)
Department for Communities and Local Government (MHCLG), 2018

How well does the NPPF cover green infrastructure?

Creating the A-Z policy tool (Hislop and Scott)

- Built to address **definitional** and **functional** components of GI
- Drawing on several different strands of GI research and practice work
  - Building with nature NERC GI project (Gerome et al 2017)
  - IGI GCVGN project (Hislop et al 2015: 2018)
  - Mainstreaming GI work NERC (AJ Scott)



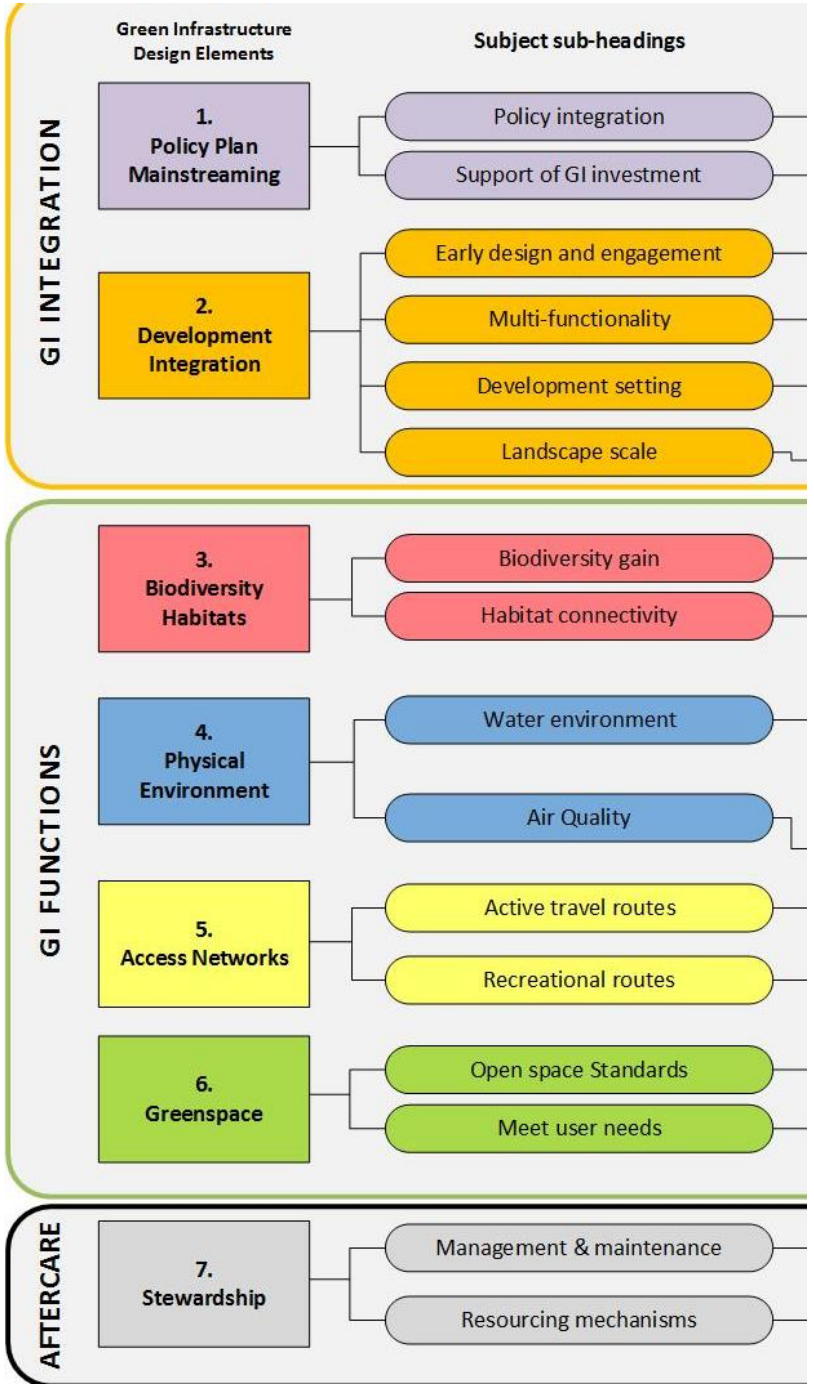
Methodology

- Read whole document to capture GI narrative(s)
- Word searches across NPPF on GI terms and concepts.
  - Eg GI, GI network Greenspace, SuDs, Net gains, natural capital
- Paragraph(s) are analysed with respect to criteria A-Z with scores given for
  - GI Coverage A-Z
  - Policy wording strength

Coverage	None	Some	Most or dispersed	Full
Strength	None	Weak	Mid	Strong
Score	0	1	2	3

- Present in a summary matrix revealing highest scores.

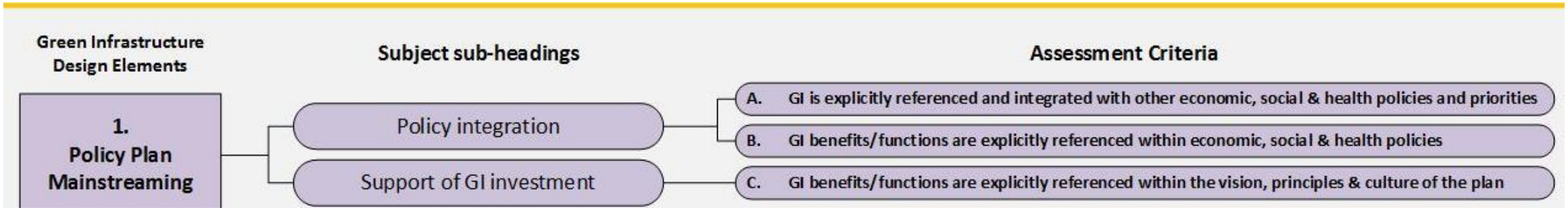
GI Coverage


Green Infrastructure Design Elements
Subject sub-headings
GI INTEGRATION
1. Policy Plan Mainstreaming
Policy integration
Support of GI investment
2. Development Integration
Early design and engagement
Multi-functionality
Development setting
Landscape scale
GI FUNCTIONS
3. Biodiversity Habitats
Biodiversity gain
Habitat connectivity
4. Physical Environment
Water environment
Air Quality
5. Access Networks
Active travel routes
Recreational routes
6. Greenspace
Open space Standards
Meet user needs
AFTERCARE
7. Stewardship
Management & maintenance
Resourcing mechanisms

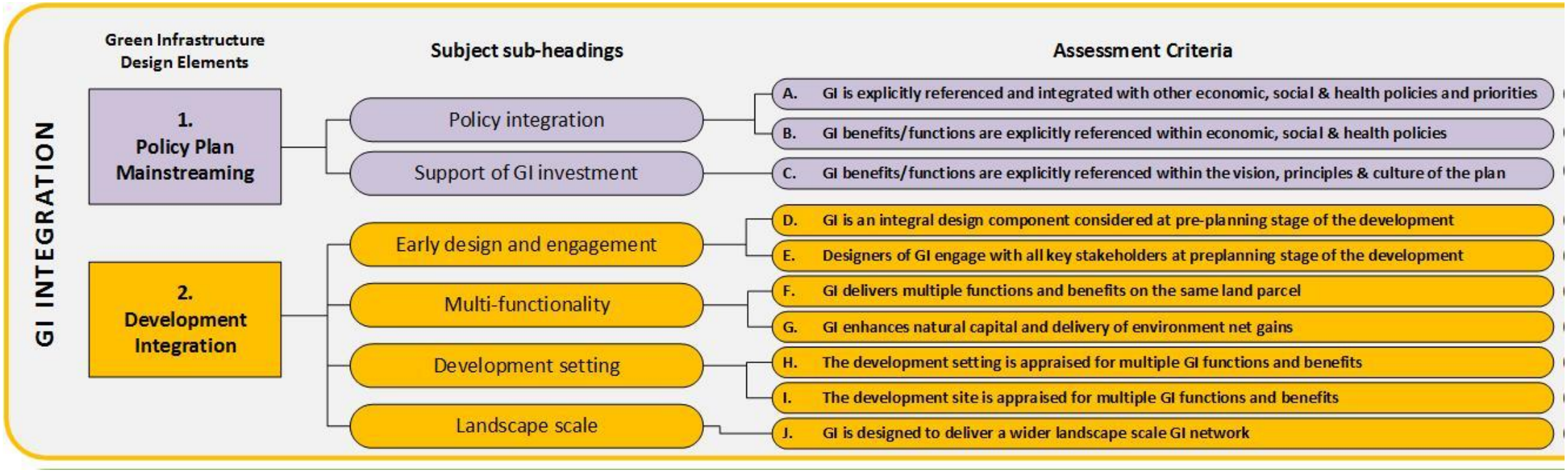
Policy wording

Strong phrases	Weak phrases
• "all new developments will provide" • "meet the needs of" • "must be designed to meet ____ needs" • "the Council will not accept" • "proposals must demonstrate" • "any new development must protect" • "proposals will be expected to demonstrate compatibility with" • "planning conditions will be applied and, where necessary, legal agreements sought" • "all new development must comply with the Council's standards" • "the Council will expect" • "the Council expects that all development proposals shall be"	• "should incorporate" • "when appropriate" • "where appropriate" • "the Council will negotiate provision" • "should be well designed" • "the Council will encourage" • "the Council will expect development proposals to have regard to" • "the council does not favour the use of" • "development that helps ____ will be supported" • "the Council will seek to develop"

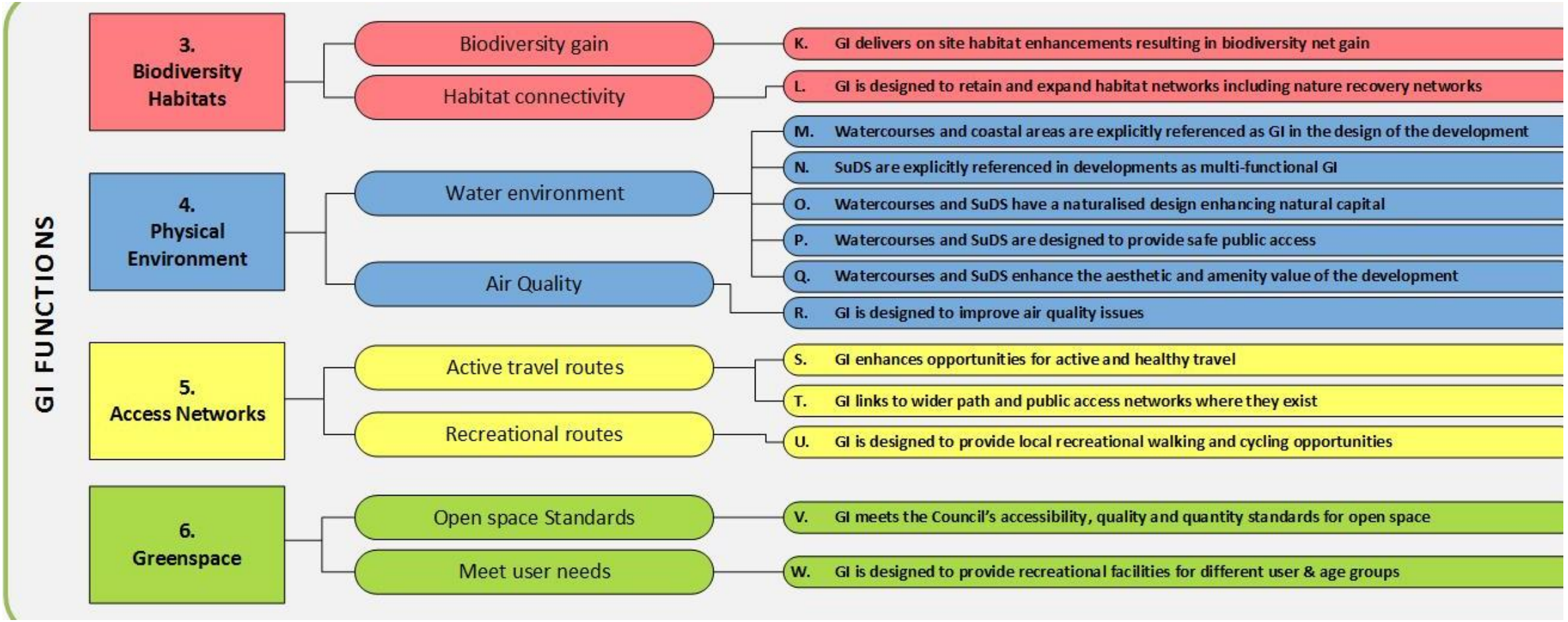
Integration: Mainstreaming



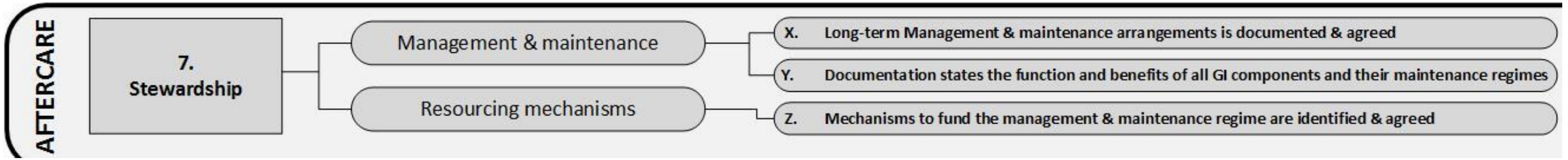
Integration: Development



Functions

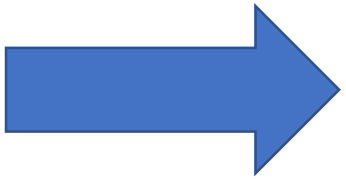

GI FUNCTIONS
3. Biodiversity Habitats
Biodiversity gain
Habitat connectivity
K. GI delivers on site habitat enhancements resulting in biodiversity net gain
L. GI is designed to retain and expand habitat networks including nature recovery networks
4. Physical Environment
Water environment
Air Quality
M. Watercourses and coastal areas are explicitly referenced as GI in the design of the development
N. SuDS are explicitly referenced in developments as multi-functional GI
O. Watercourses and SuDS have a naturalised design enhancing natural capital
P. Watercourses and SuDS are designed to provide safe public access
Q. Watercourses and SuDS enhance the aesthetic and amenity value of the development
R. GI is designed to improve air quality issues
5. Access Networks
Active travel routes
Recreational routes
S. GI enhances opportunities for active and healthy travel
T. GI links to wider path and public access networks where they exist
U. GI is designed to provide local recreational walking and cycling opportunities
6. Greenspace
Open space Standards
Meet user needs
V. GI meets the Council's accessibility, quality and quantity standards for open space
W. GI is designed to provide recreational facilities for different user & age groups

Stewardship



Relevant NPPF Chapter Bundles

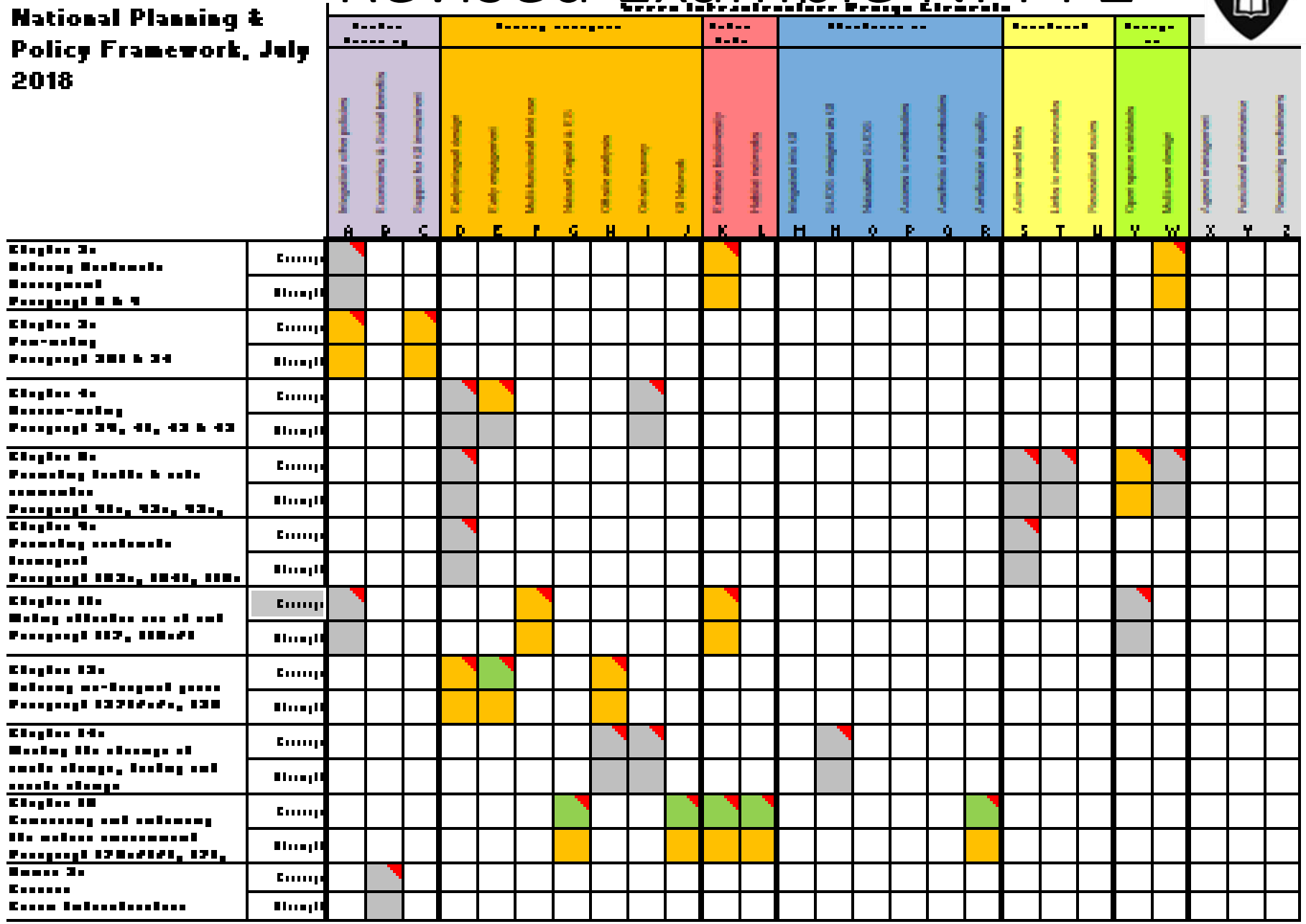
Chapter 2: **Achieving Sustainable Development** **Paragraph 8 & 9**
Chapter 3: **Plan-making** **Paragraph 20d & 34**
Chapter 4: **Decision-making** **Paragraph 39, 41, 42 & 43**
Chapter 8: **Promoting healthy & safe communities** **Paragraph 91a, 92a, 92e, 96, 98**
Chapter 9: **Promoting sustainable transport** **Paragraph 102c, 104d, 110c**
Chapter 11: **Making effective use of land** **Paragraph 117, 118a/b**



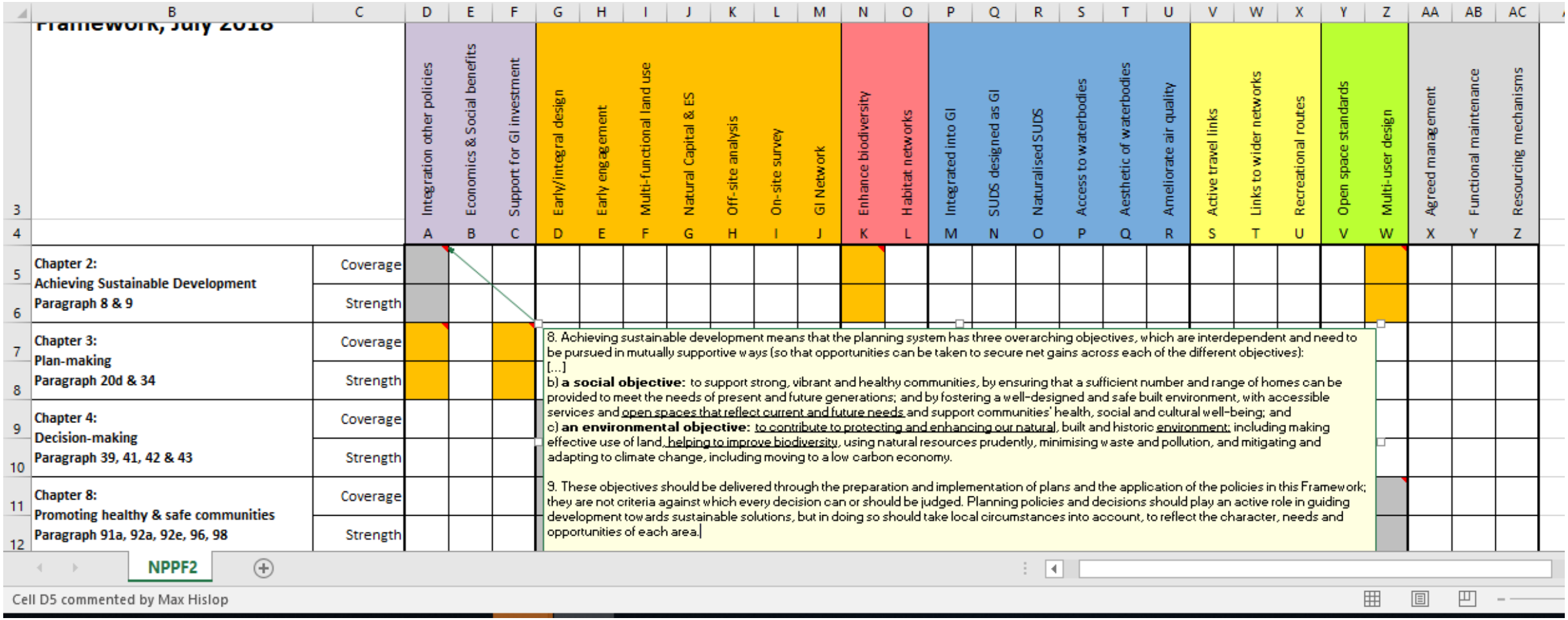
Chapter 12: **Achieving well-designed places** **Paragraph 127b/c/e, 128**
Chapter 14: **Meeting the challenge of climate change, flooding and coastal change** **Paragraph 150a, 163, 165d**
Chapter 15 **Conserving and enhancing the natural environment** **Paragraph 170a/b/d, 171, 174a/b, 175b, 181**
Annex 2: **Glossary** **Green Infrastructure**

Revised Example NPPF2

National Planning & Policy Framework, July 2018



Assessment Traceability



	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
3	Framework, July 2018		Integration other policies	Economics & Social benefits	Support for GI investment	Early/integral design	Early engagement	Multi-functional land use	Natural Capital & ES	Off-site analysis	On-site survey	GI Network	Enhance biodiversity	Habitat networks	Integrated into GI	SUDS designed as GI	Naturalised SUDS	Access to waterbodies	Aesthetic of waterbodies	Ameliorate air quality	Active travel links	Links to wider networks	Recreational routes	Open space standards	Multi-user design	Agreed management	Functional maintenance	Resourcing mechanisms
4			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
5	Chapter 2: Achieving Sustainable Development Paragraph 8 & 9	Coverage																										
6		Strength																										
7	Chapter 3: Plan-making Paragraph 20d & 34	Coverage																										
8		Strength																										
9	Chapter 4: Decision-making Paragraph 39, 41, 42 & 43	Coverage																										
10		Strength																										
11	Chapter 8: Promoting healthy & safe communities Paragraph 91a, 92a, 92e, 96, 98	Coverage																										
12		Strength																										

8. Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):
[...]
b) **a social objective:** to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
c) **an environmental objective:** to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

9. These objectives should be delivered through the preparation and implementation of plans and the application of the policies in this Framework; they are not criteria against which every decision can or should be judged. Planning policies and decisions should play an active role in guiding development towards sustainable solutions, but in doing so should take local circumstances into account, to reflect the character, needs and opportunities of each area.

NPPF2

Cell D5 commented by Max Hislop

Overall draft scores NPPF.

National Planning & Policy Framework, July 2018		Green Infrastructure Design Elements																								
		Policy Plan Mainstreaming			Development integration							Biodiversity/ Habitats		Physical Environment						Access Networks			Greenspace		Stewardship		
		Integration other policies	Economics & Social benefits	Support for GI investment	Early/integral design	Early engagement	Multi-functional land use	Natural Capital & ES	Off-site analysis	On-site survey	GI Network	Enhance biodiversity	Habitat networks	Integrated into GI	SUDS designed as GI	Naturalised SUDS	Access to waterbodies	Aesthetic of waterbodies	Ameliorate air quality	Active travel links	Links to wider networks	Recreational routes	Open space standards	Multi-user design	Agreed management	Functional maintenance	Resourcing mechanisms
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Highest Scores	Coverage																										
	Strength																										

A Cheesy Evaluation

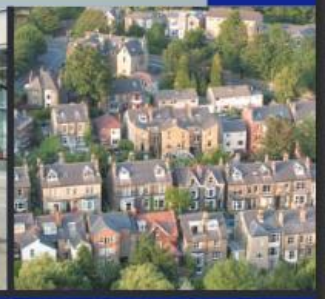
- GI Coverage (Emmenthal) holey and a little mouldy

Policy wording (Lancashire)

- **No green scores at all creates vulnerability when set against other planning priorities**.
- Mainstreaming challenge.








Sheffield Development Framework
Core Strategy

Adopted March 2009















Policy CS 67

Flood Risk Management

The extent and impact of flooding will be reduced by:

a. requiring that all developments significantly limit surface water run-off;

b. requiring the use of Sustainable Drainage Systems or sustainable drainage techniques on all sites where feasible and practicable;

c. promoting sustainable drainage management, particularly in rural areas;

d. not culverting and not building over watercourses wherever practicable;

e. encouraging the removal of existing culverting;

Policy CS 73

The Strategic Green Network

Within and close to the urban areas, a Strategic Green Network will be maintained and where possible enhanced , which will follow the rivers and streams of the main valleys:

a. Upper Don

b. Loxley

c. Rivelin

d. Porter

e. Sheaf

f. Rother

g. Lower Don/Canal;

and include other strategic corridors through:

h. Oakes Park to the Limb Valley

i. Gleadless Valley

j. Ochre Dike Valley

k. Shire Brook Valley

l. Shirtcliffe Brook Valley

m. Blackburn Brook Valley and its tributaries

n. Birley Edge.

These Green Corridors will be complemented by a network of more local Green Links and Desired Green Links.

Policy CS 74

Design Principles

High-quality development will be expected, which would respect, take advantage of and enhance the distinctive features of the city, its districts and neighbourhoods, including:

a. the topography, landforms, river corridors, Green Network, important habitats, waterways, woodlands, other natural features and open spaces;

b. views and vistas to landmarks and skylines into and out of the City Centre and across the city to the surrounding countryside;

c. the townscape and landscape character of the city's districts, neighbourhoods and quarters, with their associated scale, layout and built form, building styles and materials;

d. the distinctive heritage of the city, particularly the buildings and settlement forms associated with:

   i. the metal trades (including workshops, mills and board schools)

   ii. the City Centre

   iii. Victorian, Edwardian and Garden City suburbs

   iv. historic village centres and the city's rural setting.

Development should also:

e. contribute to place-making, be of a high quality, that contributes to a healthy, safe and sustainable environment, that promotes the city's transformation;

Sheffield Core Strategy 2009

Green Infrastructure Design Elements

		Policy Plan Mainstreaming			Developmental integration							Biodiversity / Habitats		Physical Environment						Access Networks			Greenspace		Stewardship		
		Integration other policies	Economics & Social benefit	Support for GI investment	Early/integral design	Early engagement	Multi-functional land use	Natural Capital & ES	Off-site analysis	On-site survey	GI Network	Enhance biodiversity	Habitat networks	Integrated into GI	SUDS designed as GI	Naturalised SUDS	Access to waterbodies	Aesthetic of waterbodies	Ameliorate air quality	Active travel links	Links to wider networks	Recreational routes	Open space standards	Multi-user design	Agreed management	Functional maintenance	Resourcing mechanisms
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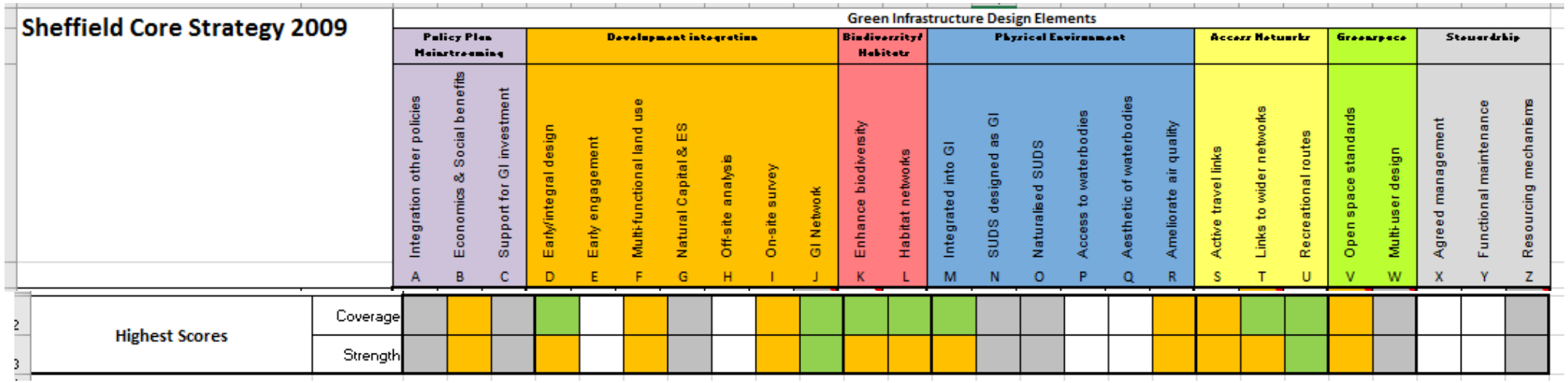
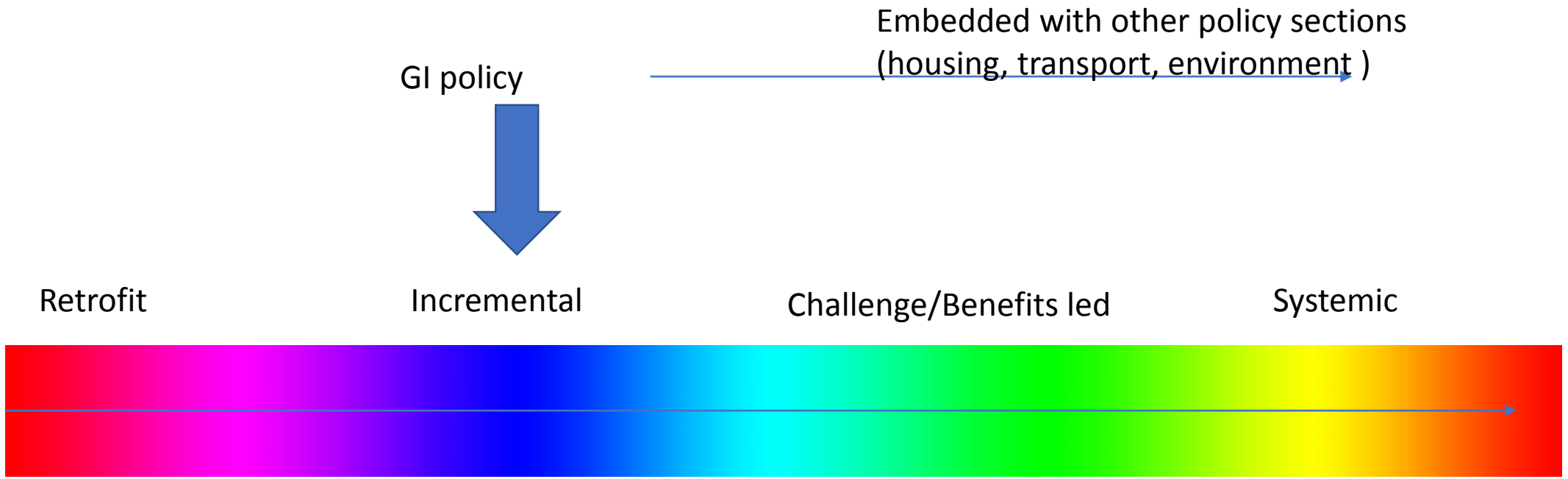
Open space .CS45 CS46 CS48	Coverage																										
	Strength																										
Transport CS54 CS55	Coverage																										
	Strength																										
Global environment and natural resources C11 CS63 CS67	Coverage																										
	Strength																										
Design (C11) CS64	Coverage																										
	Strength																										
Natural Environment C12 CS73 CS74	Coverage																										
	Strength																										
	Coverage																										
	Strength																										
challenges MISSED OPPORTUNITY	Coverage																										
	Strength																										
Vision and objectives s13.1 13.2 13.3	Coverage																										
	Strength																										
spatial strategy 4.28	Coverage																										
	Strength																										
Appendix	Coverage																										
	Strength																										
Spatial policies Cs12	Coverage																										
	Strength																										


Sheffield Core Strategy 2009
Green Infrastructure Design Elements
Policy Plan Mainstreaming
Development integration
Biodiversity/ Habitats
Physical Environment
Access Networks
Greenspace
Stewardship
Integration other policies
Economics & Social benefits
Support for GI investment
Early/integral design
Early engagement
Multi-functional land use
Natural Capital & ES
Off-site analysis
On-site survey
GI Network
Enhance biodiversity
Habitat networks
Integrated into GI
SUDS designed as GI
Naturalised SUDS
Access to waterbodies
Aesthetic of waterbodies
Ameliorate air quality
Active travel links
Links to wider networks
Recreational routes
Open space standards
Multi-user design
Agreed management
Functional maintenance
Resourcing mechanisms
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Highest Scores
Coverage
Strength

GI mainstreaming continuum

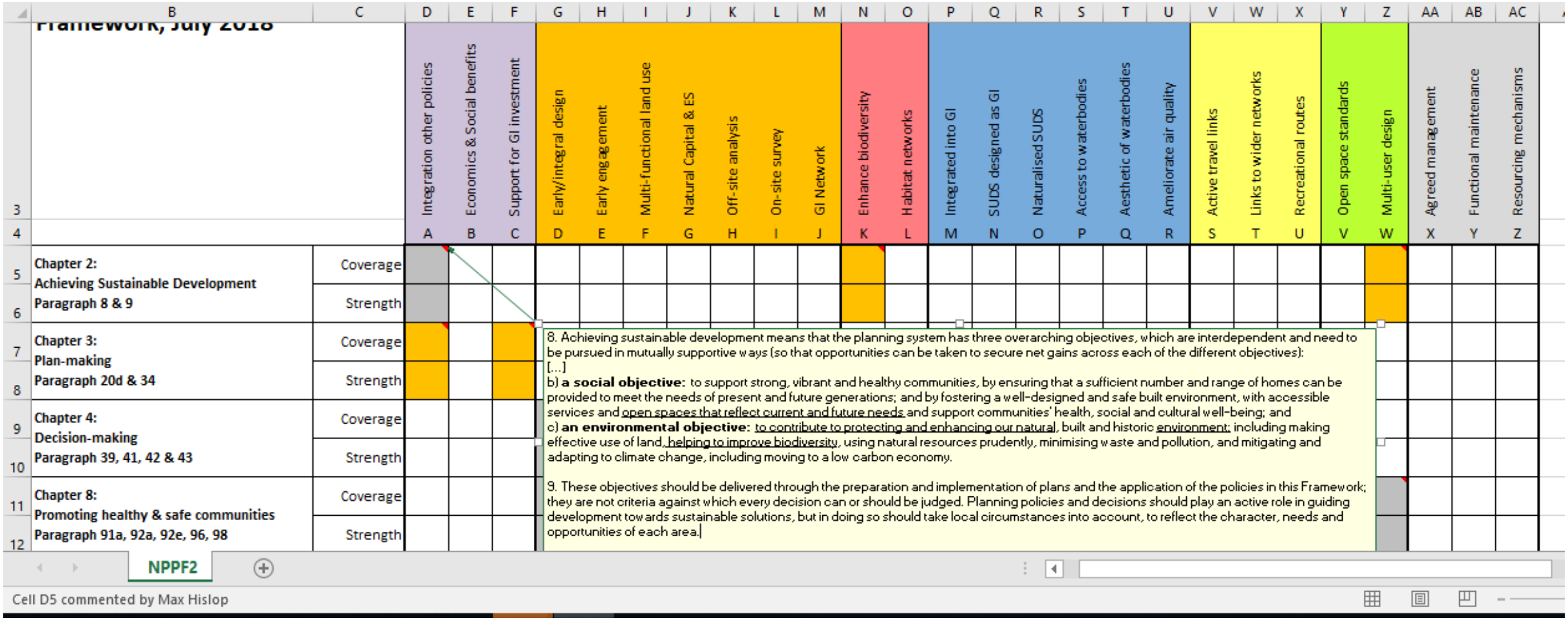


How: Using the hooks of NPPF

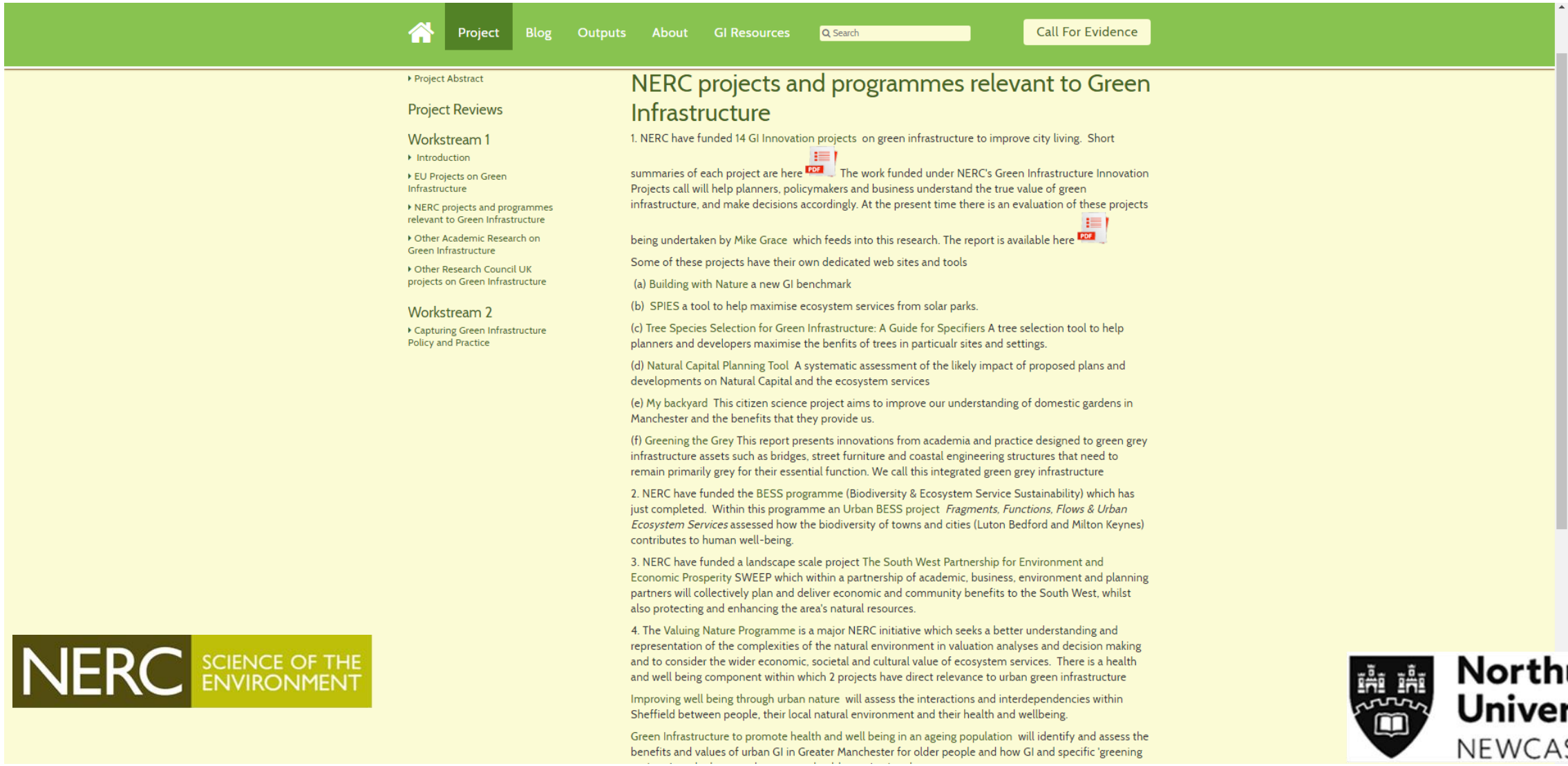
Chapter 2: **Achieving Sustainable Development** **Paragraph 8 & 9**
Chapter 3: **Plan-making** **Paragraph 20d & 34**
Chapter 4: **Decision-making** **Paragraph 39, 41, 42 & 43**
Chapter 8: **Promoting healthy & safe communities** **Paragraph 91a, 92a, 92e, 96, 98**
Chapter 9: **Promoting sustainable transport** **Paragraph 102c, 104d, 110c**
Chapter 11: **Making effective use of land** **Paragraph 117, 118a/b**

Chapter 12: **Achieving well-designed places** **Paragraph 127b/c/e, 128**
Chapter 14: **Meeting the challenge of climate change, flooding and coastal change** **Paragraph 150a, 163, 165d**
Chapter 15 **Conserving and enhancing the natural environment** **Paragraph 170a/b/d, 171, 174a/b, 175b, 181**
Annex 2: **Glossary** **Green Infrastructure**

How : Using hooks of NPPF



How using NERC science research



NERC SCIENCE OF THE ENVIRONMENT

Northumbria University NEWCASTLE

Building with Nature

Core standards

Distinguish green infrastructure from a more conventional approach to provision for open and green space .

1. **Multi-functional network**
2. **Contextual**
3. **Policy-responsive**
4. **Climate-resilient**
5. **Future-proof**

Wellbeing standards

Secure health and wellbeing benefits through the delivery of green infrastructure features close to where people live.

1. **Accessible**
2. **Inclusive**
3. **Seasonal enjoyment**
4. **Locally relevant**
5. **Socially sustainable**
6. **Distinctive**

Candidate Status

Candidate status recognises that a development or document has met the Building with Nature standards, subject to sign off post-completion/publication.

Achieved

Building with Nature Achieved recognises that your development or document has met all of the core standards and nine standards across the three themes.

Excellent

Building with Nature Excellent recognises that your development or document has met all Achieved standards, plus six additional standards across the three themes.

RICS project of the year 2017
BREEAM excellent.
Building with Nature Achieved

*subject to post-construction sign-off

Gloucester Services

Developers
Gloucestershire Gateway Trust and Westmorland Limited

Scheme
A north and south bound motorway service area on the M5 motorway, incorporating café and amenity buildings, a tourist information point, and green infrastructure including an outdoor picnic area, play facilities and habitat provision

Location
M5, Gloucester

Building with Nature award

BUILDING WITH NATURE
ACHIEVED

Why has Gloucester Services been certified with Building with Nature?

Gloucester Services has been the subject of numerous building and design awards. Completed in 2014, it was designed to achieve BREEAM 'excellent' and was endorsed by the South West Design Review Panel. The overarching ambition of the scheme is to have minimal impact on its surrounds, reflecting the sensitivity of the wider environment and proximity to the Cotswold Area of Outstanding Natural Beauty.

The development has been awarded Building with Nature 'achieved' to highlight successful implementation of ambitious design credentials. In situ, Gloucester Services is sensitive to the landscape character and green infrastructure is utilised to maximum effect to contribute a unique sense of place. Individual features are linked to improve ecological connectivity, and SuDS features provide wildlife habitat and manage surface water within the boundary of the scheme.

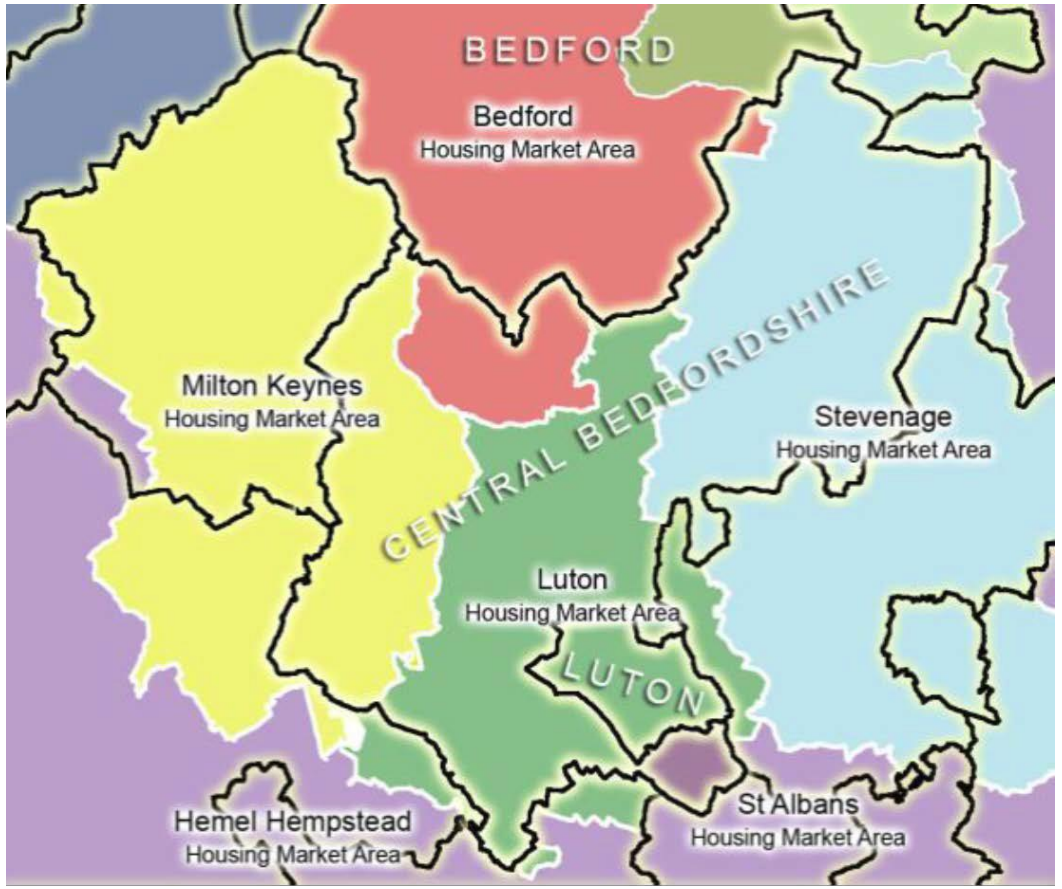
The applicant found the process of Building with Nature certification helpful in refining plans for enhancing the wetland habitat, and identifying improvements to the long term management and maintenance of green infrastructure features.

Sustainable design in the built environment: The Natural Capital Planning Tool (NCPT)

Central Bedfordshire Case Study

Context for the Local Plan:

- Local geography and location of CBC in relation to housing market areas



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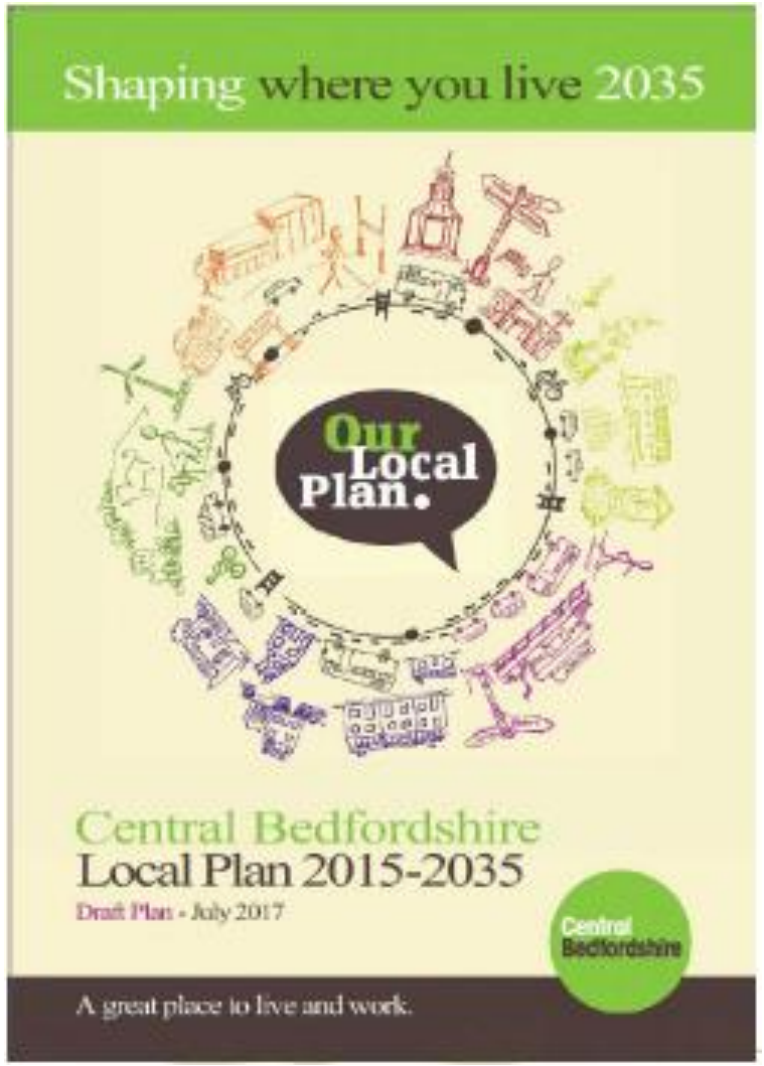
Central Bedfordshire Case Study



- Plan covers vision for development in general
  - Scale of growth
  - Location of growth
  - Policies relating to requirements for development
- Natural capital thinking has influenced the location of growth and the sections on environmental enhancement, climate change and sustainability
- **Key focus on environmental enhancement – looking for a net gain**

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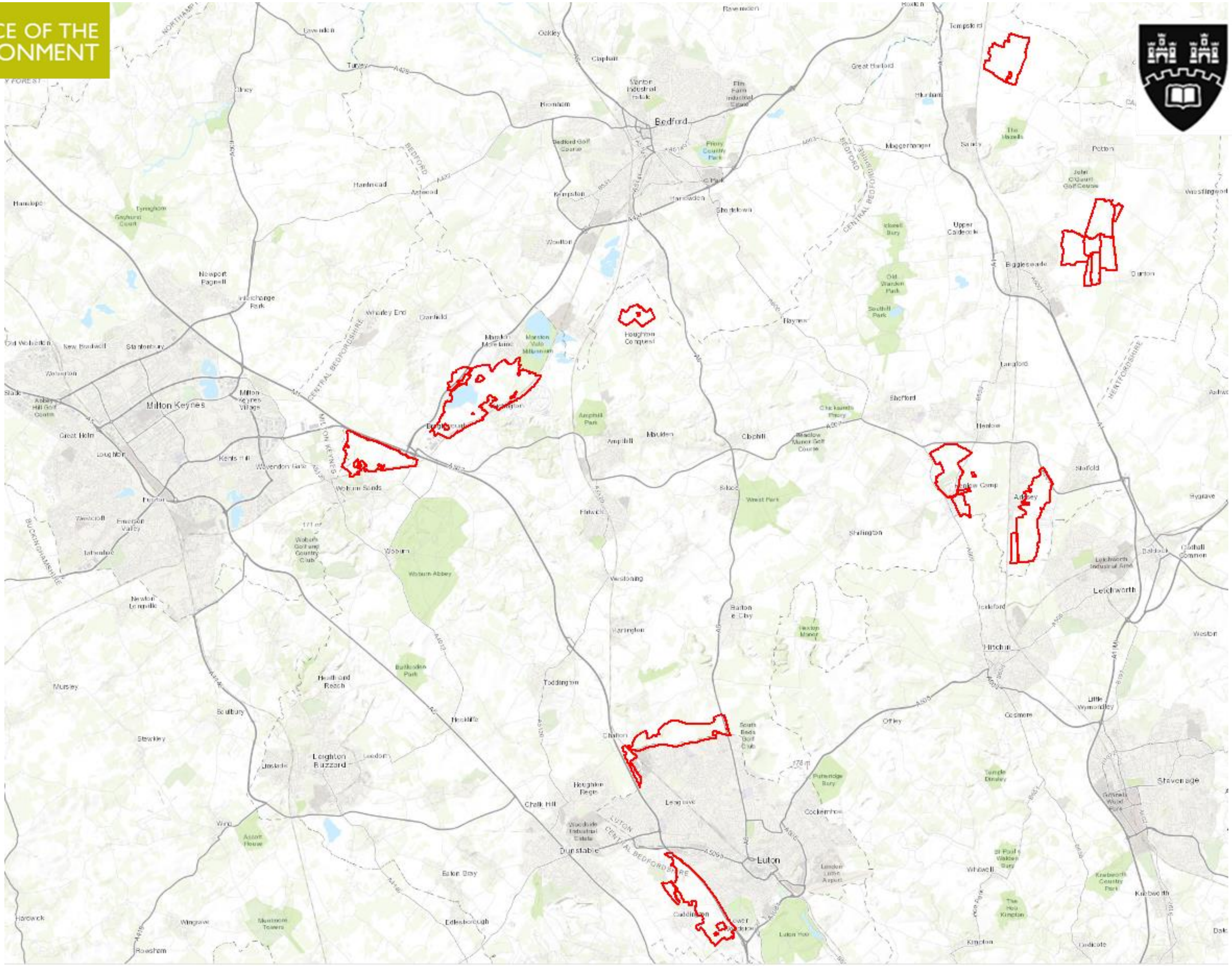
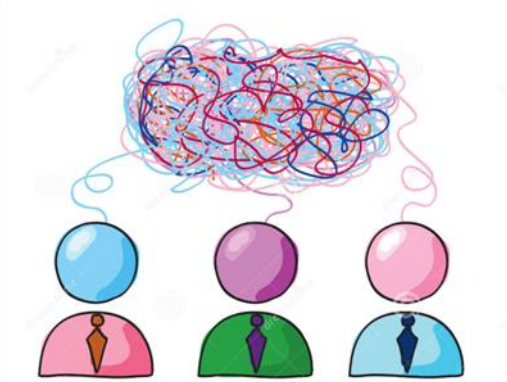
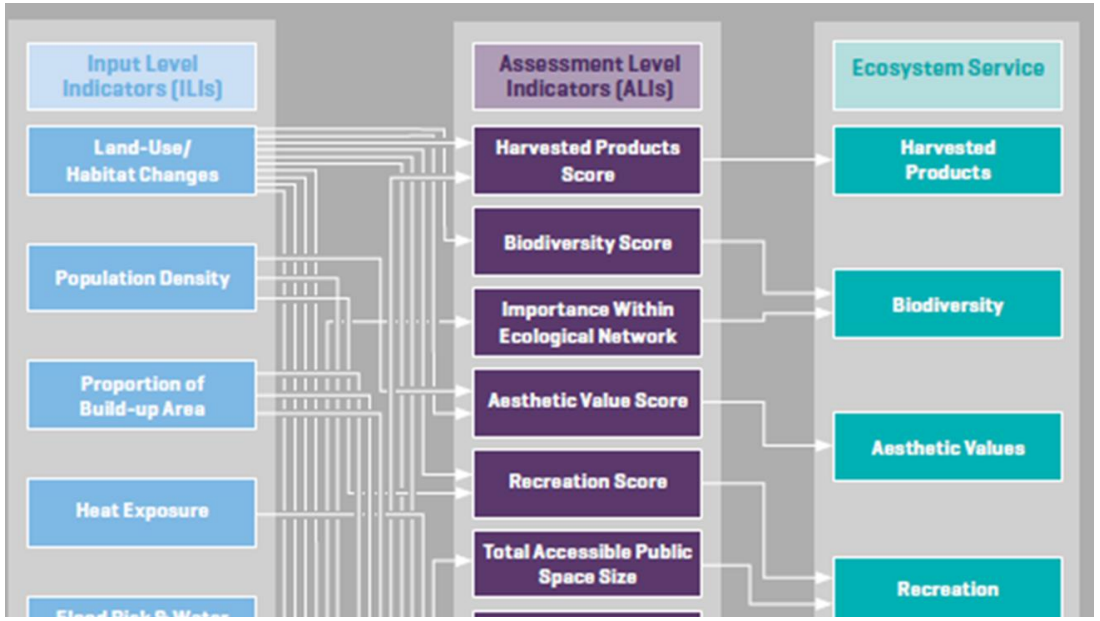


- Values assessed across a range of ecosystem services (before and after)
- Expert panels' assessments multi criteria analysis
- Tool only as dialogue to support decision making





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Central Bedfordshire Case Study

Development Impact Score

Average Per-Hectare

Ecosystem Service	Max Possible	Adjusted Scores	Min Possible
1. Harvested Products	+0.4	-1.95	-3.0
2. Biodiversity	+4.6	+0.22	-0.4
3. Aesthetic Values	+2.6	+0.11	-1.4
4. Recreation	+4.0	+1.48	+0.0
5. Water Quality Regulation	+2.0	-0.21	-2.1
6. Flood Risk Regulation	+6.0	+1.63	-0.0
7. Air Quality Regulation	+2.4	+0.45	-1.2
8. Local Climate Regulation	+3.6	+0.66	-1.8
9. Global Climate Regulation	+4.0	-0.37	-1.0
10. Soil Contamination		+0.00	
Development Impact Score		+2.02	

Test 1: Is it a good site?

- Could development significantly harm/benefit natural capital?
- Looking at theoretical min/max possible scores gives an indication of the potential of the site

Central Bedfordshire Case Study

Development Impact Score

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10. Soil Contamination		+0.00	
Development Impact Score		+2.02	

Test 2: Is it a good design?

- Is the masterplan working as hard as it could for natural capital?
- Look at the actual scores and where they fall within the range
- Case study: Net positive impact but could do a lot more for some ecosystem services

Central Bedfordshire Case Study

What CBC found from using the NCPT:

Design, design, design!

(Not ‘location, location, location!’ on which national policy direction is very focussed)

Mainstreaming

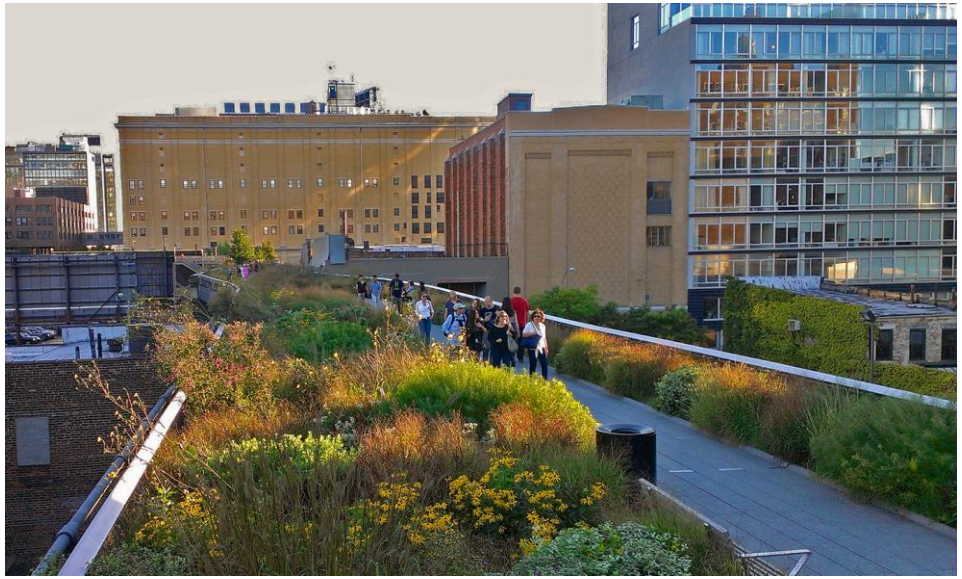
- GI recognised as a valuable asset across other policy areas
  - GI is identified as a mechanism for economic benefit (high streets/regeneration)
  - GI is explicitly identified in housing, transport and economic policies
  - Retrofit and New developments.

AND/OR

- Mandatory requirement eg GI assessments PPW10 Wales

OR

- Mandatory net environmental gains



EU Perfect: West Carglaze demo project

- Show what good looks like on the ground
- Inclusive process by which masterplan is produced
- Use that exemplar to revise existing policies.

Health meets planning

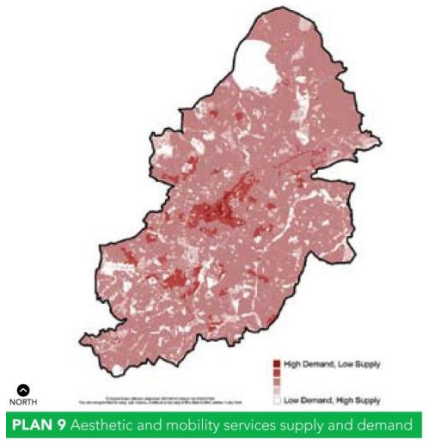
Ecosystem mapping
1 Aesthetics & mobility
2 Flood risk
3 Local climate
4 Education
5 Recreation
6 Biodiversity

MAKING BIRMINGHAM GREEN

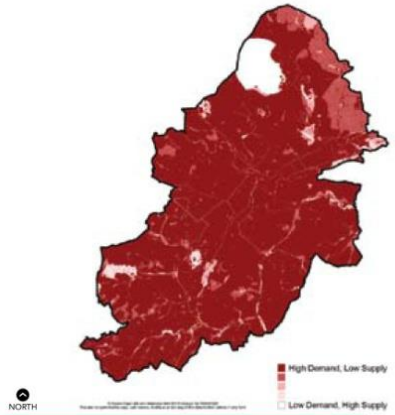
GREEN COMMISSION
Building a leading green city

http://neat.ecosystemsknowledge.net/birmingham2.html

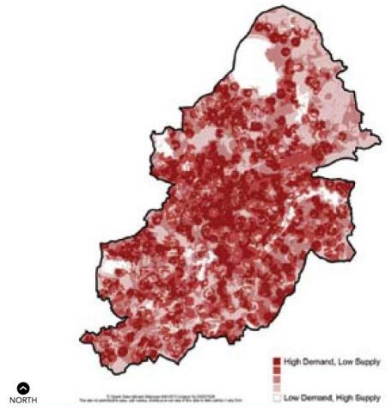
Green Living Spaces Plan



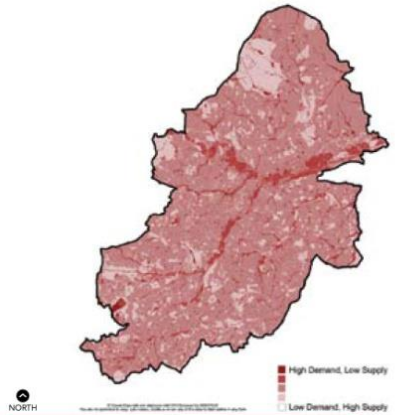
PLAN 9 Aesthetic and mobility services supply and demand



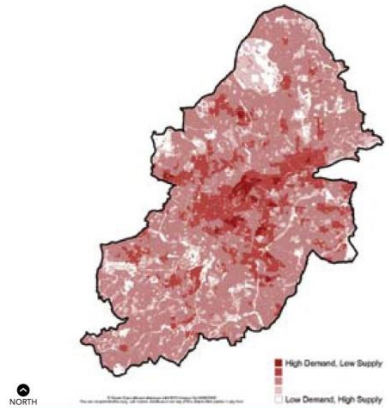
PLAN 10 Biodiversity services supply and demand



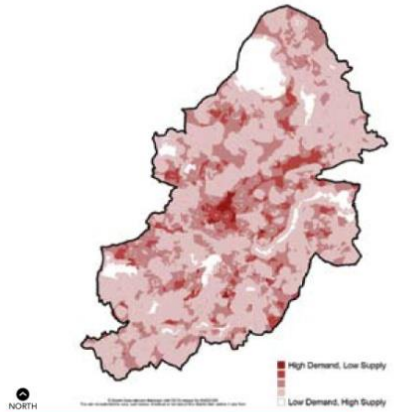
PLAN 11 Local climate services supply and demand



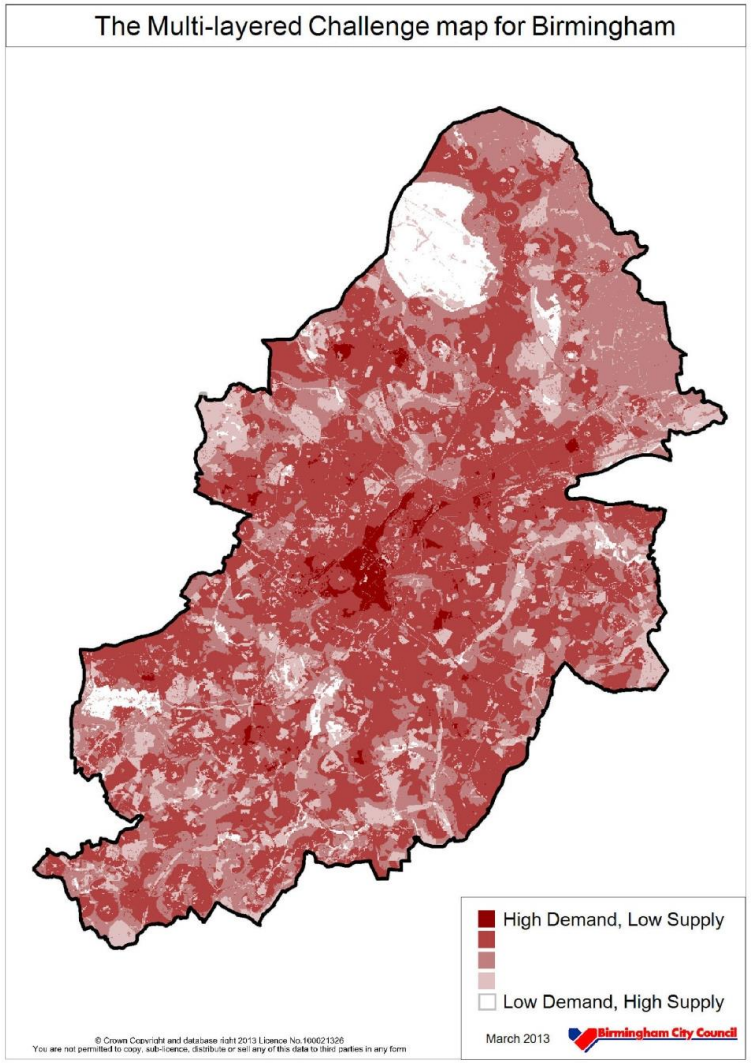
PLAN 12 Recreation services supply and demand



PLAN 13 Education services supply and demand



PLAN 14 Flood risk services supply and demand



ES demand & supply mapping

Challenges/Opportunities for Research and Practice

Research

- More Interdisciplinary projects fuelled by industry needs/challenges .
- Use research findings to influence revised national Planning Practice Guidance to support GI
- Feed into consultation on net environmental gains
- More research on design/use of policy in decisions; role of councillors and PINS.
- Role of how existing planning tools can help to deliver better policy outcomes.

Practice

- Use finalised policy matrix to support local plan production and reviews
- Use hooks of NPPF to help mainstream GI in other policy chapters
- Improve links between health and planning as strong political support (national and local)
- Working with universities on your challenges.

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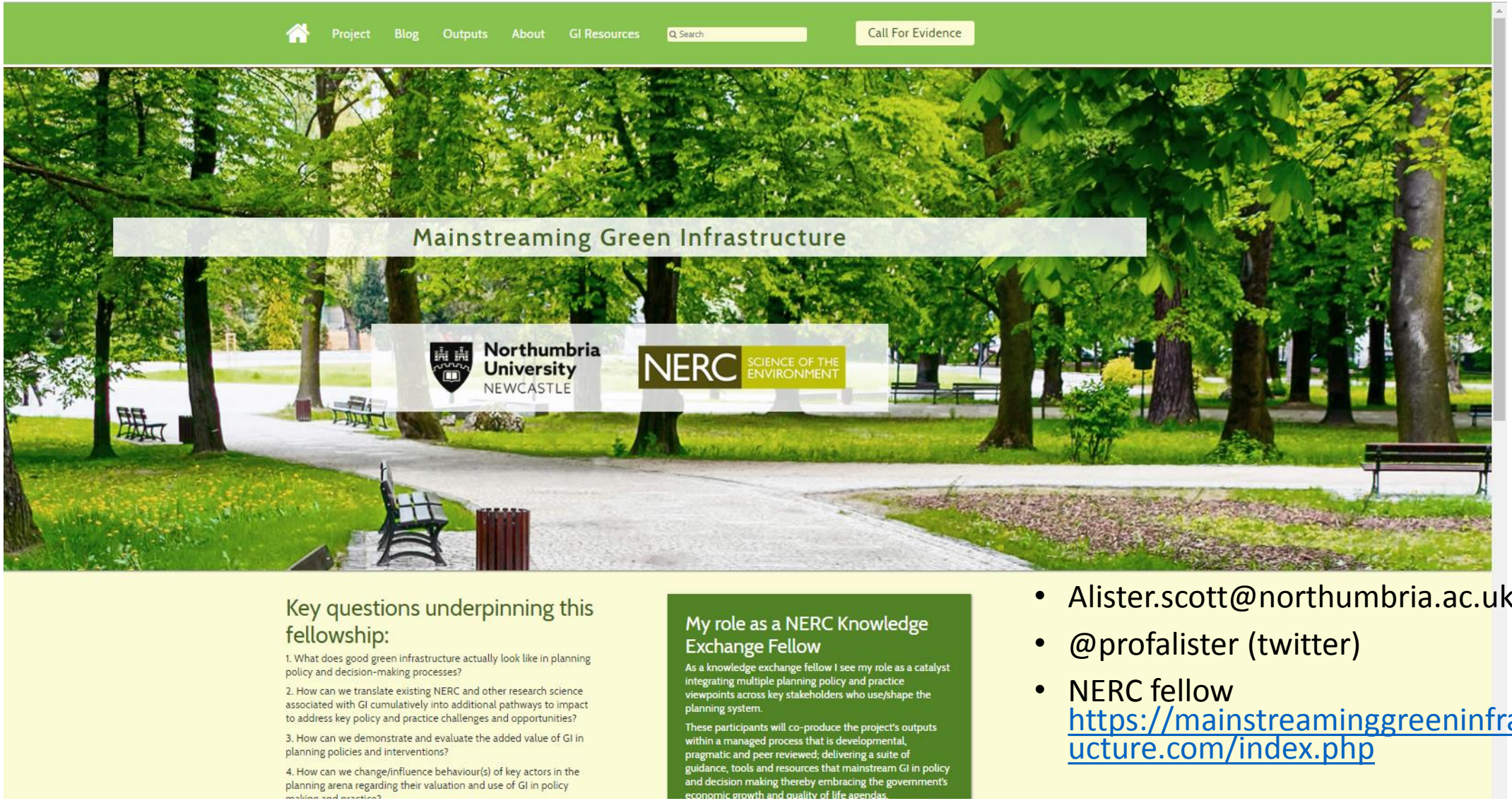
Thank you



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