

# ARUP

## Biodiversity Net Gain: Putting theory into practice

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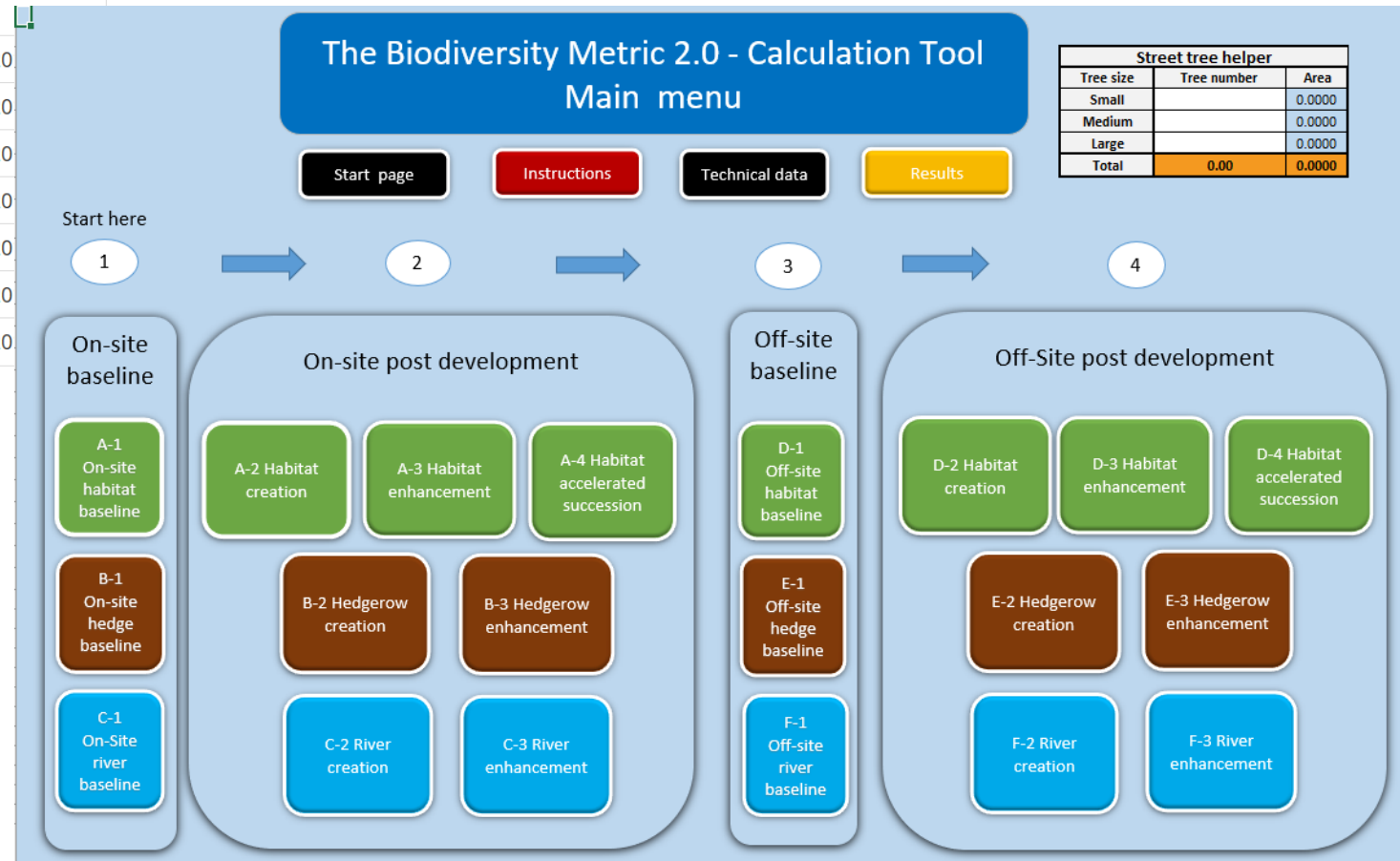
1. The DEFRA Metric
2. Supporting the standard
3. Case studies
4. Opportunities and challenges
5. Next steps

## Biodiversity Net Gain: Putting theory into practice

### The DEFRA Metric

#### Downloads available for this record

File	Uploaded
The Biodiversity Metric 2.0 - Intertidal Habitats - Beta Test, PDF, 1.2 MB	2020/01/22
Biodiversity Metric 2.0: Technical Guidance for Intertidal Habitats, PDF, 1019.4 KB	2020/01/22
Biodiversity Metric Connectivity Tool - Reference Habitat Folder - Beta Test (download with connectivity tool), ZIP, 9.5 MB	2019/12/19
Biodiversity Metric Connectivity Tool Manual Installer - Beta Test, ZIP, 19.2 MB	20
Biodiversity Metric Connectivity Tool Auto Installer - Beta Test, ZIP, 10.1 MB	20
The Biodiversity Metric 2.0 Connectivity Tool Guidance - Beta Test, PDF, 796.6 KB	20
The Biodiversity Metric 2.0 - Calculation Tool - Beta Test December 2019 Update, XLSM, 4.9 MB	20
The Biodiversity Metric 2.0 - User Guide - Beta Test, PDF, 3.3 MB	20
The Biodiversity Metric 2.0 - Technical Supplement - Beta Test, PDF, 2.2 MB	20
The Biodiversity Metric 2.0 - Calculation Tool: User Guide - Beta Test, PDF, 1.2 MB	20



## Biodiversity Net Gain: Putting theory into practice

### The DEFRA Metric

#### A-1 Site Habitat Baseline

Condense / Show Columns

Condense / Show Rows

Main Menu

Instructions

Habitats and areas				Habitat distinctiveness	Habitat condition	Ecological connectivity	Strategic significance	Suggested action to address habitat losses	Ecological baseline
Ref	Broad Habitat	Habitat type	Area (hectares)	Distinctiveness	Condition	Ecological connectivity	Strategic significance		Total habitat units
1	Urban	Urban - Vacant/derelict land/ bareground	2.6273	Low	Poor	Low	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required	5.25
2	Woodland and forest	Woodland and forest - Other woodland; broadleaved	0.17358	Medium	Moderate	Medium	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	1.53
3	Grassland	Grassland - Other neutral grassland	0.7274	Medium	Moderate	Medium	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	6.40
4	Urban	Urban - Amenity grassland	0.44556	Low	Poor	Medium	Area/compensation not in local strategy/ no local	Same distinctiveness or better habitat required	0.98
5	Sparsely vegetated land	Sparsely vegetated land - Ruderal/Ephemeral	0.05354	Low	Moderate	Medium	Area/compensation not in local strategy/ no local	Same distinctiveness or better habitat required	0.24
6	Sparsely vegetated land	Sparsely vegetated land - Ruderal/Ephemeral	0.02962	Low	Moderate	Medium	Area/compensation not in local strategy/ no local	Same distinctiveness or better habitat required	0.13
7	Urban	Urban - Street Tree	0.1356	Low	Moderate	Medium	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required	0.60
8	Urban	Urban - Developed land; sealed surface	0.9306	V.Low	N/A - Other	N/A	Area/compensation not in local strategy/ no local	Compensation Not Required	0.00
9	Intertidal sediment	Intertidal sediment - Littoral mud	0.007	High	Moderate	High	Location ecologically desirable but not in local strategy	Same habitat required	0.11
10									
11									
Total site area ha			4.99					Total Site baseline	15.23

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### The DEFRA Metric

A-2 Site Habitat Creation								
Condense / Show Columns		Condense / Show Rows						
Main Menu		Instructions						
Post development/ post intervention habitats								
Proposed habitat	Area (hectares)	Distinctiveness	Condition	Ecological	Strategic significance	Temporal	Difficulty	Habitat units delivered
				Ecological connectivity	Strategic significance	Time to target condition/years	Difficulty of creation category	
Urban - Developed land; sealed surface	4.5934	V.Low	N/A - Other	N/A	Area/compensation not in local strategy/ no local strategy	0	Low	0.00
Urban - Brown roof	0.1492	Medium	Good	Medium	Area/compensation not in local strategy/ no local strategy	10	Medium	0.92
Urban - Rain garden	0.097	Low	Good	Medium	Area/compensation not in local strategy/ no local strategy	1	Low	0.62
Urban - Amenity grassland	0.033	Low	Poor	Medium	Area/compensation not in local strategy/ no local strategy	1	Low	0.07
Urban - Introduced shrub	0.06	Low	Moderate	Medium	Area/compensation not in local strategy/ no local strategy	1	Low	0.25
Grassland - Other neutral grassland	0.075	Medium	Moderate	Medium	Area/compensation not in local strategy/ no local strategy	10	Low	0.46
Urban - Street Tree	0.3011	Low	Moderate	Medium	Area/compensation not in local strategy/ no local strategy	27	Low	0.51
Rocky shore - Artificial features of littoral rock	0.007	low	Poor	High	Location ecologically desirable but not in local strategy	1	High	0.01
<b>Totals</b>	<b>5.01</b>							<b>2.84</b>

**Check Areas- Area of development and habitat creation must match the area of habitats lost**

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The DEFRA Metric

On-site baseline	<i>Habitat units</i>	15.23
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	<i>Habitat units</i>	2.84
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site baseline	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement & succession)	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	<i>Habitat units</i>	-12.39
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total net % change (including all on-site & off-site habitat creation + retained habitats)	<i>Habitat units</i>	-81.35%
	<i>Hedgerow units</i>	0.00%
	<i>River units</i>	0.00%

1. Apply the mitigation hierarchy
2. Avoid losing biodiversity that cannot be offset
3. Be inclusive and equitable
4. Address risks
5. Make a measurable Net Gain contribution
6. Achieve the best outcomes for biodiversity
7. Be additional
8. Create a Net Gain legacy
9. Optimise sustainability
10. Be transparent

# Biodiversity Net Gain

Good practice principles for development

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### Total size of mitigation area

**49.8ha**  
(100% ponds)

**Minimum  
for NNL  
= Realistic?**

**66ha**  
(45% grass  
30% scrub  
15% MG  
10% ponds)

**Ecologically  
viable min  
for NNL  
= Birds?**

**88ha**  
(50% grass  
15% MG  
20% scrub  
12% arable  
2% ponds  
1% wood)

**Min. incl.  
skylark = NNL**

**96.8ha**  
(50% grass  
15% MG  
20% scrub  
12% arable  
2% ponds  
1% wood)

**Min. incl. skylark  
= 10% Net Gain**

**127.3ha**  
(100% wood)

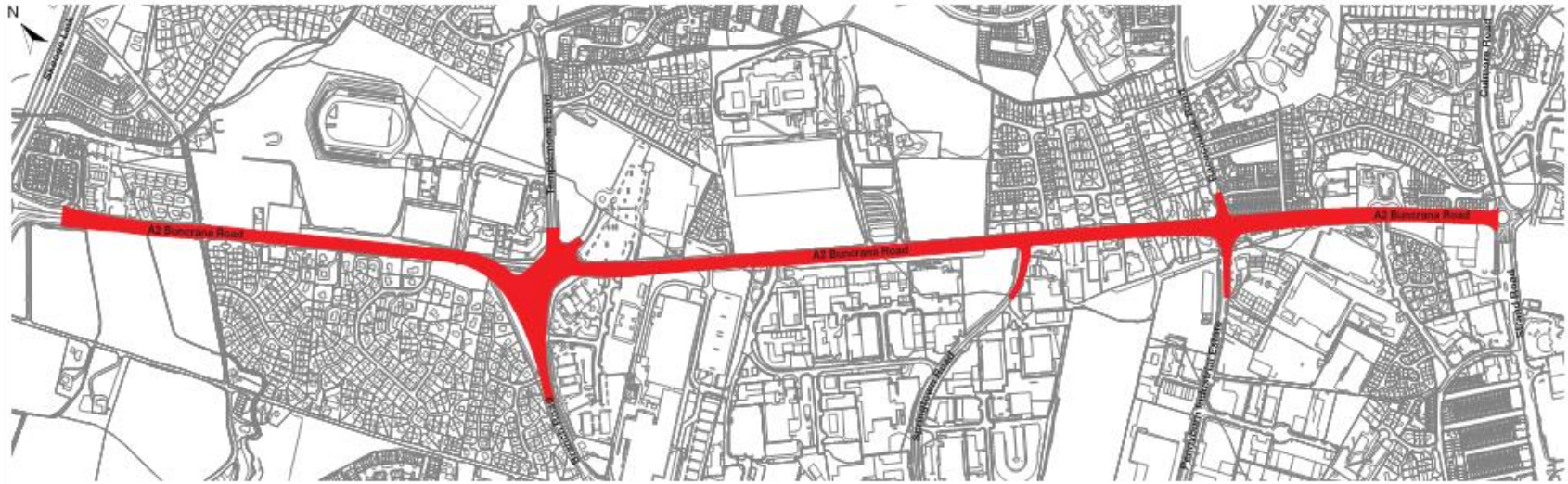
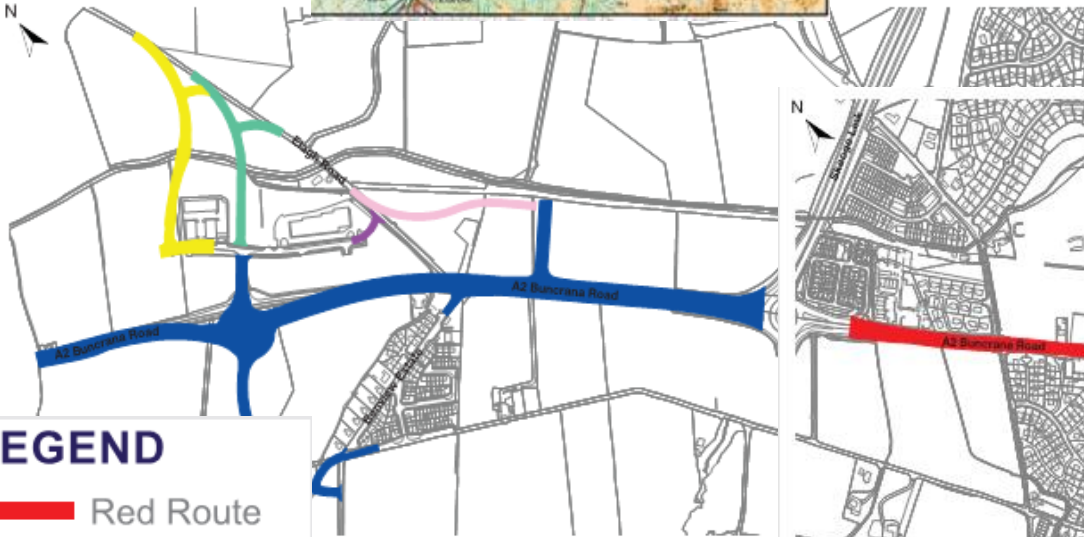


## Biodiversity Net Gain: Putting theory into practice

### Case Study 2



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Case Study 3



- LEGEND**
- Red Route
  - Navy Route
  - Sub Option 1
  - Sub Option 2
  - Sub Option 3
  - Sub Option 4

## Biodiversity Net Gain: Putting theory into practice

### Opportunities and challenges

- Innovation
- Masterplanning
- Local plans and strategies
- Manipulation
- Technical expertise
- Gaps/suitability



1. Further consultation and guidance
2. Application outside England
3. Feeding into broader environmental initiatives
  - Environmental net gain
  - Ecosystem services assessment
  - Nature based solutions



ARUP

Thank you

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