

The Network Rail (Cambridge South Infrastructure
Enhancements) Order



Rebuttal Evidence

NRE-REB-06-01

Appendices - Rebuttal Evidence to OBJ-23 (Cambridge City Council)

**The Transport and Works (Inquiries Procedure)
Rules 2004**

January 2022

The Network Rail (Cambridge South Infrastructure
Enhancements) Order



Rebuttal Evidence

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The Network Rail (Cambridge South Infrastructure
Enhancements) Order



Rebuttal Evidence

Appendix A



Legend

Site Boundary

Area removed from TWAO limits

Hedgerow

line of trees

Habitat Reinstated

New Habitat Type

Permanant Loss

Retained

Existing Pond

Grassland habitat retained (not enhanced)

Existing woodland retained

Maintenance Track

Existing Trees

Vegetation Removed

Buildings

Fence

Marginal planting

Native Mix

Parking Bays

Station Planting

Trees

Waterbody

West forecourt

Wildflower grassland

Asphalt (vehicular access)

Existing Woodland

Track

Notes

Compensatory planting relating to AstraZeneca not shown

GB Background: Contains OS data © Crown Copyright and database right 2020
Contains data from OS Zoomstack

01	13/01/22	INITIAL ISSUE	RM	EP	GS
Rev	Date	Description	Drawn	Check	Approv

Client:

PROJECT:
**CAMBRIDGE SOUTH
INFRASTRUCTURE
ENHANCEMENTS**

Site
Cambridge South

Client
Network Rail

ARCADIS Design & Consultancy
for natural and
built assets

Registered office:
80 Fenchurch Street
Tower
London
EC3M 4BT

Coordinating Office:
80 Fenchurch Street
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Title:

**Retained Enhanced and
Created Habitat within Site Boundary**

Designed	E. Proudlove	Date 13 JAN 22	Signed
Drawn	R. Millman	Date 13 JAN 22	Signed
Checked	E. Proudlove	Date 13 JAN 22	Signed
Approved	G. Stone	Date 13 JAN 22	Signed
Scale:	1:5,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	S2	Project Number:	158454

Suitability Description:

For Information

Drawing Number:
158454-ARC-00-ZZ-DRG-EEN-000674

Revision:
P01

The Network Rail (Cambridge South Infrastructure
Enhancements) Order



Rebuttal Evidence

Appendix B

The Biodiversity Metric 2.0 - Calculation Tool

Start page

Project details

Planning authority:	
Project name:	
Applicant:	
Application type:	
Planning application reference:	
Assessor:	
Reviewer:	
Revision:	
Assessment date:	
Planning authority reviewer:	

Cell style conventions

	Enter data
	Automatic lookup
	Result

Instructions

Main menu

Results

View all

Reset view

The Biodiversity Metric 2.0 - Calculation Tool

Main menu

Street tree helper		
Tree size	Tree number	Area
Small		0.0000
Medium		0.0000
Large		0.0000
Total	0.00	0.0000

Start page

Instructions

Technical data

Results

Start here

1

2

3

4

On-site
baseline

A-1
On-site
habitat

B-1
On-site
hedge
baseline

C-1
On-Site
river
baseline

On-site post development

A-2 Habitat
creation

A-3 Habitat
enhancement

A-4 Habitat
accelerated
succession

B-2 Hedgerow
creation

B-3 Hedgerow
enhancement

C-2 River
creation

C-3 River
enhancement

Off-site
baseline

D-1
Off-site
habitat

E-1
Off-site
hedge
baseline

F-1
Off-site
river
baseline

Off-Site post development

D-2 Habitat
creation

D-3 Habitat
enhancement

D-4 Habitat
accelerated
succession

E-2 Hedgerow
creation

E-3 Hedgerow
enhancement

F-2 River
creation

F-3 River
enhancement

The Biodiversity Metric 2.0 - Calculation Tool

Return to start
page

Headline results

Detailed results

Habitat trading
summary

On-site baseline	Habitat units	179.82
	Hedgerow units	4.83
	River units	6.07
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	Habitat units	169.09
	Hedgerow units	5.36
	River units	6.69
Off-site baseline	Habitat units	8.80
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation, enhancement & succession)	Habitat units	37.56
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention/creation)	Habitat units	18.04
	Hedgerow units	0.53
	River units	0.61
Total net % change (including all on-site & off-site habitat creation + retained habitats)	Habitat units	10.03%
	Hedgerow units	10.91%
	River units	10.11%

Summary Figures

Net project biodiversity units (including all on-site & off-site habitat retention/creation)	Habitat units	18.04
	Hedgerow units	0.53
	River units	0.61
Total project biodiversity % change (including all On-site & Off-site Habitat Creation + Retained Habitats)	Habitat units	10.03%
	Hedgerow units	10.91%
	River units	10.11%

On-site habitat retention and enhancement

	Habitats	Hedgerows	Rivers
Total site area / length	38.93	1.13	0.44
Total site units	179.82	4.83	6.07

Area / length retained	23.17	0.44	0.24
Units Retained	108.35	2.06	3.31

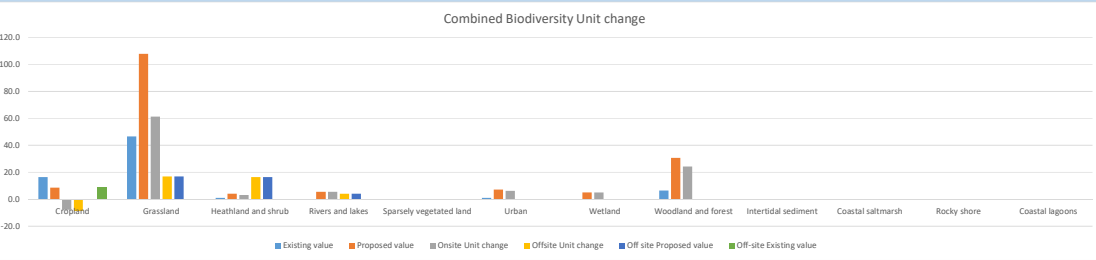
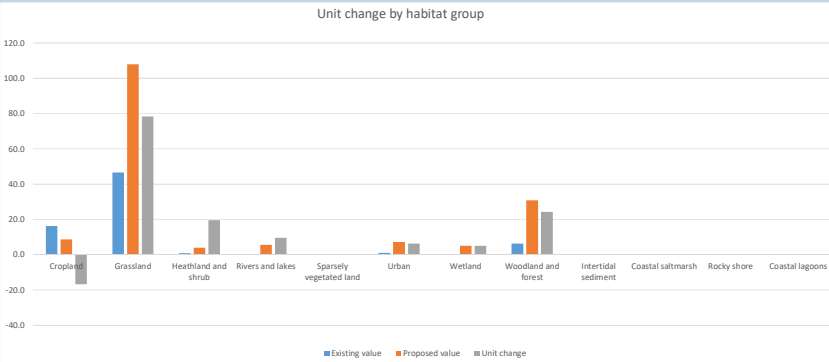
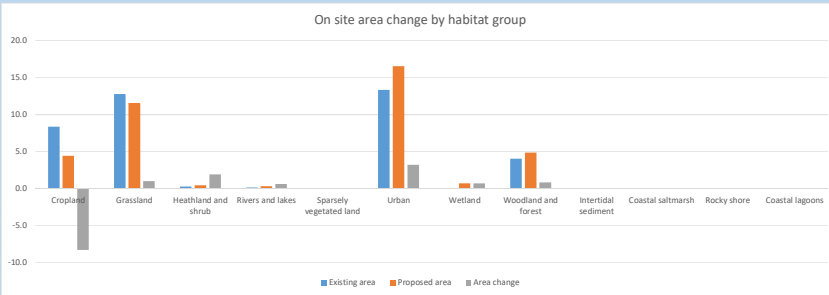
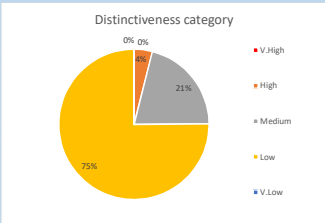
Area / length enhanced	0.00	0.00	0.19
Baseline units enhanced	0.00	0.00	2.62

Area / length succession	0.00
Units succession	0.00

Area / length lost	15.76	0.69	0.01
Units lost	71.47	2.77	0.14

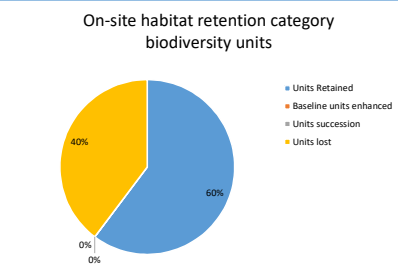
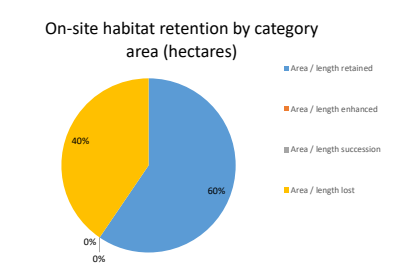
Area lost by distinctiveness

Category	Area lost (hectares)	Area lost (%)
V.High	0	
High	0.59	4
Medium	3.12	21
Low	11.18	75
V.Low	0	



On-site	Baseline		Post development on site		Onsite Change	
	Existing area	Existing value	Proposed area	Proposed value	Area change	Onsite Unit change
Cropland	8.4	16.4	4.4	8.6	-3.9	-7.8
Grassland	12.8	46.6	11.6	107.9	-1.2	61.3
Heathland and shrub	0.3	1.0	0.5	4.0	0.2	3.0
Rivers and lakes	0.1	0.1	0.3	5.6	0.2	5.5
Sparsely vegetated land	0.0	0.0	0.0	0.0	0.0	0.0
Urban	13.4	1.0	16.6	7.3	3.2	6.3
Wetland	0.0	0.0	0.7	5.0	0.7	5.0
Woodland and forest	4.1	6.4	4.9	30.7	0.8	24.3
Intertidal sediment	0.0	0.0	0.0	0.0	0.0	0.0
Coastal saltmarsh	0.0	0.0	0.0	0.0	0.0	0.0
Rocky shore	0.0	0.0	0.0	0.0	0.0	0.0
Coastal lagoons	0.0	0.0	0.0	0.0	0.0	0.0

Overall Change	
Area change	Unit change
-8.3	-16.6
1.0	78.3
1.9	19.5
0.6	9.6
0.0	0.0
3.2	6.3
0.7	5.0
0.8	24.3
0.0	0.0
0.0	0.0
0.0	0.0
0.0	0.0



Off-site	Baseline		Post development Off-site		Off-site Change	
	Existing area	Off-site Existing value	Proposed area	Off site Proposed value	Area change	Offsite Unit change
Cropland	4.4	8.8	0.0	0.0	-4.4	-8.8
Grassland	0.0	0.0	2.2	17.0	2.2	17.0
Heathland and shrub	0.0	0.0	1.8	16.5	1.8	16.5
Rivers and lakes	0.0	0.0	0.4	4.1	0.4	4.1
Sparsely vegetated land	0.0	0.0	0.0	0.0	0.0	0.0
Urban	0.0	0.0	0.0	0.0	0.0	0.0
Wetland	0.0	0.0	0.0	0.0	0.0	0.0
Woodland and forest	0.0	0.0	0.0	0.0	0.0	0.0
Intertidal sediment	0.0	0.0	0.0	0.0	0.0	0.0
Coastal saltmarsh	0.0	0.0	0.0	0.0	0.0	0.0
Rocky shore	0.0	0.0	0.0	0.0	0.0	0.0
Coastal lagoons	0.0	0.0	0.0	0.0	0.0	0.0

Combined	Baseline		Combined Post development		Combined change	
	Existing area	Existing value	Proposed area	Proposed value	Proposed area	Proposed value
Cropland	12.8	25.2	4.4	8.6	-8.3	-16.6
Grassland	12.8	46.6	13.8	124.9	1.0	78.3
Heathland and shrub	0.3	1.0	2.2	20.5	1.9	19.5
Rivers and lakes	0.1	0.1	0.8	9.7	0.6	9.6
Sparsely vegetated land	0.0	0.0	0.0	0.0	0.0	0.0
Urban	13.4	1.0	16.6	7.3	3.2	6.3
Wetland	0.0	0.0	0.7	5.0	0.7	5.0
Woodland and forest	4.1	6.4	4.9	30.7	0.8	24.3
Intertidal sediment	0.0	0.0	0.0	0.0	0.0	0.0
Coastal saltmarsh	0.0	0.0	0.0	0.0	0.0	0.0
Rocky shore	0.0	0.0	0.0	0.0	0.0	0.0
Coastal lagoons	0.0	0.0	0.0	0.0	0.0	0.0

[illegible]

B-1 Site Hedge Baseline

Condense / Show Columns

Condense / Show Rows

Main Menu

Instructions

UK Habitats - existing habitats				Habitat distinctiveness		Habitat condition		Ecological connectivity			Strategic significance					Ecological baseline Total hedgerow units	Retention category biodiversity value						Comments	
Baseline ref	Hedge number	Hedgerow type	length KM	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Suggested action to address habitat losses		Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost	Assessor comments	Reviewer comments	
1		Line of Trees	0.26	Low	2	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	1.04	0.24	0	0.96	0	0.02	0.08	Site assigned 'Moderate' condition due to young, immature trees.		
2		Line of Trees	0.28	Low	2	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	1.12	0	0	0	0	0.28	1.12	Site assigned 'Moderate' condition due to young, immature trees.		
3		Line of Trees	0.14	Low	2	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	0.56	0	0	0	0	0.14	0.56	Site assigned 'Moderate' condition due to young, immature trees.		
4		Native Hedgerow	0.12	Low	2	Moderate	2	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	Same distinctiveness band or better	0.528	0.07	0	0.308	0	0.05	0.22	Site assigned 'Moderate' condition due to failing several criteria. Site assigned 'Medium' strategic significance as hedgerows are BAP Habitats for Cambridgeshire and Peterborough.		
5		Native Hedgerow	0.05	Low	2	Poor	1	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	Same distinctiveness band or better	0.11	0.01	0	0.022	0	0.04	0.088	Site assigned 'Poor' condition due to failing four criteria. Site assigned 'Medium' strategic significance as hedgerows are BAP Habitats for Cambridgeshire and Peterborough.		
6		Native Hedgerow	0.11	Low	2	Moderate	2	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	Same distinctiveness band or better	0.484	0	0	0	0	0.11	0.484	Site assigned 'Moderate' condition due to failing several criteria. Site assigned 'Medium' strategic significance as hedgerows are BAP Habitats for Cambridgeshire and Peterborough.		
7		Native Hedgerow	0.06	Low	2	Moderate	2	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	Same distinctiveness band or better	0.264	0.01	0	0.044	0	0.05	0.22	Site assigned 'Moderate' condition due to failing several criteria. Site assigned 'Medium' strategic significance as hedgerows are BAP Habitats for Cambridgeshire and Peterborough.		
8		Native Hedgerow	0.11	Low	2	Good	3	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	Same distinctiveness band or better	0.726	0.11	0	0.726	0	0	0	Site assigned 'Medium' strategic significance as hedgerows are BAP Habitats for Cambridgeshire and Peterborough.		
		Total Site length/KM	1.13											Total Site baseline	4.83	0.44	0.00	2.06	0.00	0.69	2.77			

B-2 Site Hedge Creation

Condense / Show Columns

Condense / Show Rows

Main Menu

Instructions

Main Menu		Instructions						Multipliers													
								Spatial quality						Temporal multiplier		Difficulty of creation multiplier					
		Proposed habitats		Habitat distinctiveness		Habitat condition		Ecological connectivity			Strategic significance								Hedge units delivered	Comments	
Baseline ref	New hedge number	Habitat type	Length km	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Time to target condition/years	Time to target multiplier		Assessor comments	Reviewer comments			
1		Line of Trees	0.26	Low	2	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	20	0.490	1	0.51	Assigned 'Moderate' condition as it is assumed the management will remain the same as before development.			
2		Line of Trees	0.28	Low	2	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	20	0.490	1	0.55	Assigned 'Moderate' condition as it is assumed the management will remain the same as before development.			
3		Native Species Rich Hedgerow	0.04	Medium	4	Good	3	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	10	0.700	0.67	0.25	It is anticipated this habitat will be managed to achieve a "Good" condition			
4		Line of Trees	0.1	Low	2	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	20	0.490	1	0.20	Assigned 'Moderate' condition as it is assumed the management will remain the same as before development.			
5		Native Species Rich Hedgerow	0.1	Medium	4	Good	3	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	10	0.700	0.67	0.62	It is anticipated this habitat will be managed to achieve a "Good" condition			
6		Native Species Rich Hedgerow	0.19	Medium	4	Good	3	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	10	0.700	0.67	1.18	It is anticipated this habitat will be managed to achieve a "Good" condition			
		Creation Length/KM		0.97															3.30		

C-1 Site River Baseline

Condense / Show Columns

Condense / Show Rows

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Instructions

Existing river type			Habitat distinctiveness		Habitat condition		Strategic significance			Suggested action	Ecological baseline	Retention category biodiversity value						Comments	
Baseline ref	River type	length KM	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier		Total river units	Length retained	Length enhanced	Units retained	Units enhanced	Length impacted	Units Lost	Assessor Comments	Reviewer comments
1	Rivers & Streams (Other)	0.44	Medium	4	Moderate	3	Within Local Plans	High strategic significance	1.15	Avoid	6.072	0.24	0.19	3.312	2.622	0.01	0.138	Site assigned 'Moderate' condition due to being largely enroached with scrub and dominated by Common Reed. Site assigned 'High' strategic significance due to presence in the local plans.	
Total site length KM		0.44								Total Site	6.07	0.24	0.19	3.31	2.62	0.01	0.14		

C-2 Site River Creation

Condense / Show Columns

Condense / Show Rows

Main Menu

Instructions

	Proposed habitats		Habitat distinctiveness		Habitat condition		Strategic significance			Temporal multiplier		Difficulty of creation category	Difficulty of creation multiplier	Riparian encroachment		River units delivered	Comments	
Baseline ref	River type	Length km	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Time to target condition/years	Time to target multiplier			Extent of encroachment	Multiplier		Assessor comments	Reviewer comments
1	Rivers & Streams (Other)	0.01	Medium	4	Moderate	3	Delivery within Local Plans	High strategic significance	1.15	5	0.837	High	0.33	4.01 - 6 m	0.85	0.03	This area, which will be cleared to facilitate a new bridge crossing, will be allowed to revegetate following works. Due to increased shading, the area is assumed to achieve a moderate condition.	
	Creation Length/KM	0.01														0.03		

C-3 Site River Enhancement																															
Condense / Show Columns														Condense / Show Rows																	
Main Menu														Instructions																	
Baseline habitats											Post development/ post intervention habitats																				
Baseline ref	Baseline habitat	Length KM	Baseline distinctiveness band	Baseline distinctiveness score	Baseline condition category	Baseline condition score	Baseline strategic significance category	Strategic significance	Baseline strategic significance Score	Suggested action	Total units	Proposed (Pre-populated can be overridden)	Change in distinctiveness and condition		Length KM	Distinctiveness	Score	Condition	Score	Strategic significance			Temporal multiplier		Difficulty multipliers		Riparian encroachment		River units delivered	Comments	
													Distinctiveness movement	Condition movement						Strategic significance	Strategic significance	Strategic position multiplier	Time to target condition/years	Time to target multiplier	Difficulty of enhancement category	Difficulty of enhancement multiplier	Extent of encroachment	Multiplier		Assessor comments	Reviewer comments
1	Rivers & Streams (Other)	0.44	Medium	4	Moderate	3	Within Local Plans	High strategic significance	1.15	Avoid	6.072	Rivers & Streams (Other)	Medium - Medium	Moderate - Good	0.19	Medium	4	Good	5	Delivery within Local Plans	High strategic significance	1.15	2	0.931	Medium	0.67	2.01 - 4 m	0.9	1.34	Condition to improve from 'Moderate' to 'Good' due to enhancements along Hobson's Conduit, such as scrub clearance and plug planting to increase species diversity.	
															0.19											Enhancement total			3.34		

D-1 Off 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	Retention category biodiversity value								Bespoke compensation agreed for unacceptable losses	Comments	
Baseline ref	Broad habitat	Habitat type	Area (hectares)	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Total habitat units			Area retained	Area enhanced	Area succession	Baseline units retained	Baseline units enhanced	Baseline units succession	Area lost	Units lost		Assessor comments	Reviewer comments
1	Cropland	Cropland - Cereal crops	4.4	Low	2	N/A- Agricultural	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	8.80				0	0.00	0.00	4.40	8.80				
		Total site area ha	4.80											Total Site baseline	8.80	0.00	0.00	0.00	0.00	0.00	4.40	8.80					

D-2 Off Site Habitat Creation

Condense / Show Columns

Condense / Show Rows

Main Menu

Instructions

Post development/ post intervention habitats																					
Proposed habitat	Area ha	Distinctiveness	Score	Condition	Score	Ecological connectivity			Strategic significance			Temporal multiplier		Difficulty multipliers		Spatial risk multiplier		Habitat units delivered	Comments		
						Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Time to target condition/years	Time to target multiplier	Difficulty of creation category	Difficulty of creation multiplier	Spatial risk category	Spatial risk multiplier		Assessor comments	Reviewer comments	
Grassland - Other neutral grassland	2.2	Medium	4	Good	3	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	15	0.586	Low	1	Compensation inside LPA or NCA, or deemed to be sufficiently local, to site of biodiversity loss	1	17.02			
Heathland and shrub - Mixed scrub	1.76	Medium	4	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	7	0.779	Low	1	Compensation inside LPA or NCA, or deemed to be sufficiently local, to site of biodiversity loss	1	16.46			
Lakes - Ponds (Priority Habitat)	0.44	High	6	Good	3	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	10	0.700	Medium	0.67	Compensation inside LPA or NCA, or deemed to be sufficiently local, to site of biodiversity loss	1	4.09			
Totals	4.40																	Total Units	37.56		