

Regional Delivery Partnership

South East Delivery Integration Partners

M27 Southampton Junction **8**

Flood Compensation Areas Technical Note

Document No: HE551514-BAM-EGN-ZZ-RP-LE-0001

P01

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M27 Southampton Junction 8

Document No: HE551514-BAM-EGN-ZZ-RP-LE-0001

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1. Introduction

- 1.1.1. Following a review of the PCF Stage 3 design and the PCF Stage 3 Environmental Assessment Report (HE551514-JAC-EGN-PCF3_SS1-RP-LE-0002) completed by Jacobs, it has been noted by Linkconnex that the proposed flood compensation areas (FCA) in the EAR do not provide a realistic layout. The Linkconnex design team is reconfiguring these FCAs to incorporate them into the Preliminary Design ready for SGAR3.
- 1.1.2. Preliminary layouts for the revised FCAs have been developed during PCF Stage 3 as described in Section 2.
- 1.1.3. This Technical Note presents a review of these changes to the FCAs, and how these changes may affect the environmental PCF products, which have already been approved prior to the Interim SGAR3.
- 1.1.4. The headings in this note are based on the Evaluation of Change Register.

2. Confirmation of the design assumption / change

- 2.1.1. The PCF Stage 3 design provided by Jacobs includes provision for two FCAs as shown on the Environmental Masterplan (HE551514-JAC-ELS-PCF3_SS1-DR-LE-0009 and HE551514-JAC-ELS-PCF3_SS1-DR-LE-0010). One is located to the north east of the M27 Junction 8 roundabout (hereafter referred to as 'the NE FCA') and another is located to the north west of the M27 Junction 8 roundabout (hereafter referred to as 'the NW FCA'). Excavations will be shallower in the NE FCA as shown on the Environmental Masterplan, but will be deeper than assumed in the EAR across the remainder of the construction compound area.
- 2.1.2. Figure 1 shows the layouts assessed in the Jacobs PCF Stage 3 products, which is taken from sheet 2 of the Environmental Masterplan (HE551514-JAC-ELS-PCF3_SS1-DR-LE-0010).



Figure 1 – Flood compensation area layouts for northern half of M27 Junction 8 roundabout as proposed in Jacobs PCF Stage 3 products (reproduced not to scale)

2.1.3. Figure 2 and 3 show the layouts of the revised FCAs developed by the Linkconnex design team.

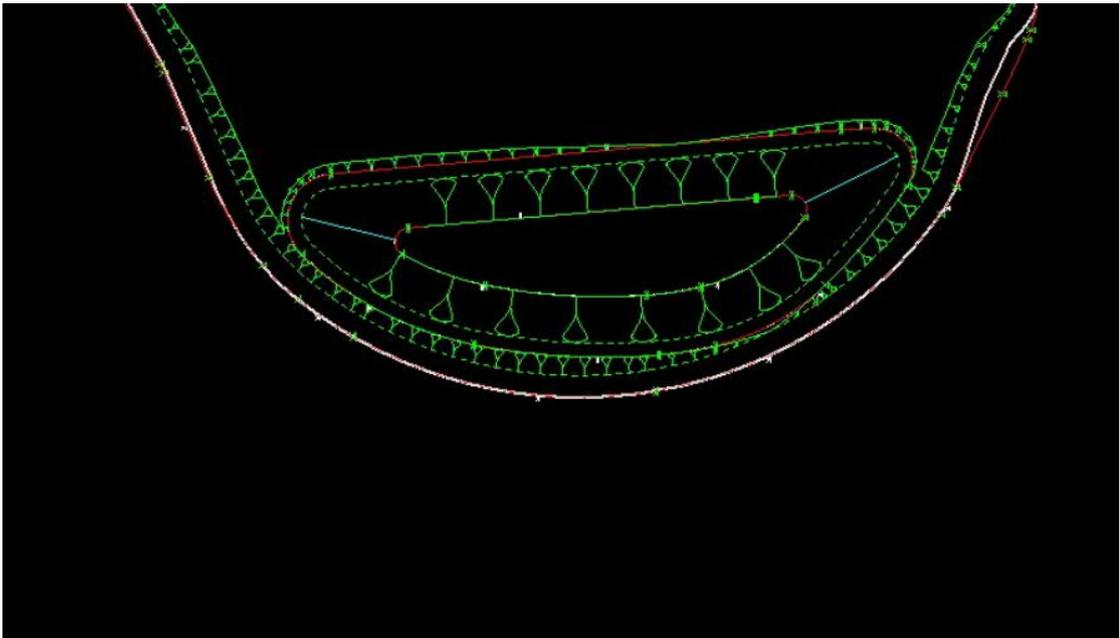


Figure 2 – Revised layout for NE FCA (not to scale)

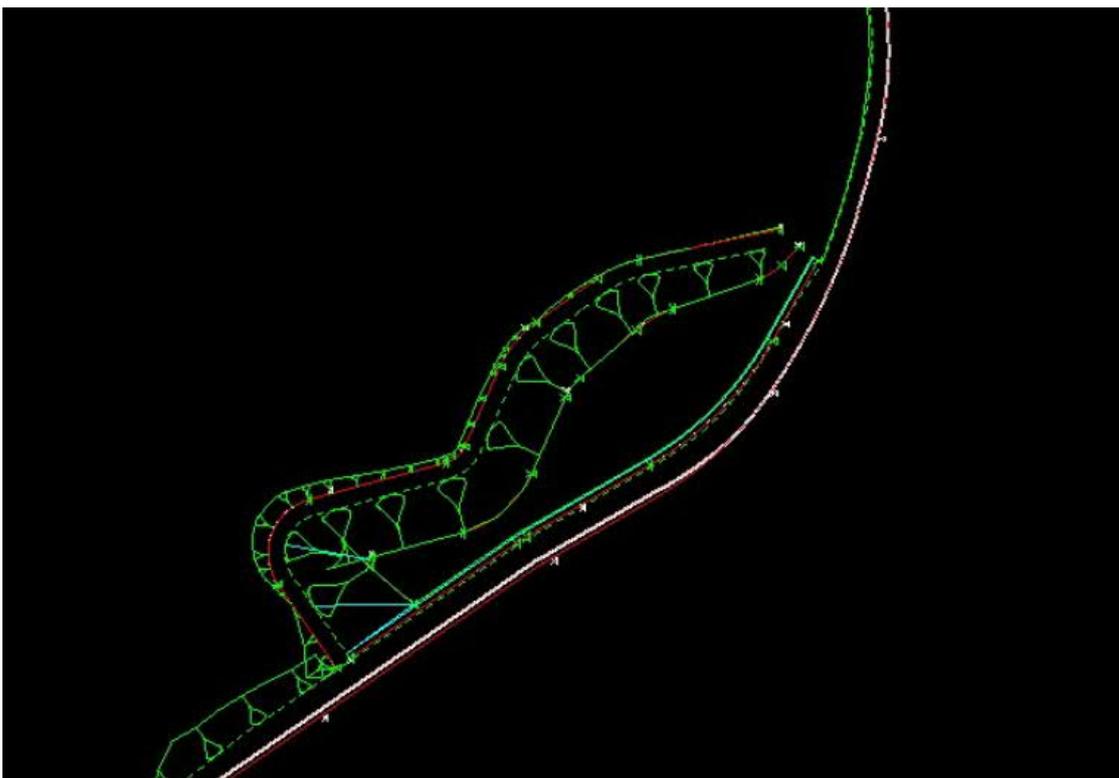


Figure 3 – Revised layout for NW FCA (not to scale)

3. Assessing actions affected

3.1.1. Table 1 presents a review of the implications of the revised flood compensation area layouts by discipline.

Table 1 – Review of the environmental implications of the revised flood compensation area layouts

List of Actions affected	Evaluation of the change	Nature of change (material / non-material)
Air quality	The revised flood compensation areas involve changes to the layout only, with the proposed volume of excavation remaining the same. This would not affect the operational emissions to air, nor would it affect the amount of vehicle movements or programme for construction. Therefore there is not anticipated to be a material change in terms of air quality.	Non-material
Cultural heritage	<p>The revised flood compensation areas involve changes to the layout only, with the proposed volume of excavation remaining the same.</p> <p>Excavations will be shallower in the NE FCA as shown on the Environmental Masterplan, but will be deeper than assumed in the EAR across the remainder of the construction compound area.</p> <p>It was previously agreed (via Jacobs) with the Hampshire County Council (HCC) County Archaeologist that an archaeological watching brief would be required during excavations for the flood compensation areas and temporary site compounds.</p> <p>The revised flood compensation area layouts would not materially affect the potential to find buried archaeology, or mitigation via archaeological watching brief.</p>	Non-material
Landscape	<p>The revised flood compensation areas involve changes to the layout, which has the potential to affect the assessment of operational landscape and visual effects by making the FCAs a more obvious feature. This has the potential to change the conclusions of the assessment contained within the EAR.</p> <p>The change in layout of both FCAs will require a change to the Environmental Masterplan, ensuring the design can offer the same screening and landscape integration functions as proposed in the EAR.</p>	Potentially Material
Biodiversity	<p>The revised FCAs involve changes to the layout, which would permanently change the landform and remove habitats which were previously retained, potentially affecting the conclusions of the biodiversity assessment reported in the EAR.</p> <p>In particular, an additional area of suitable reptile habitat would be lost for NE FCA permanently. This has the potential to change the assessment reported within the</p>	Potentially Material

	EAR and may require a change to the mitigation design currently shown on the Environmental Masterplan.	
Geology and soils	<p>The revised flood compensation areas involve changes to the layout only, with the proposed volume of excavation remaining the same, therefore there will be no material change to any risks associated with potential sources of contamination or additional loss of soils.</p> <p>The NE FCA will involve slightly more loss of Grade 4 (poor quality) agricultural land, however, this is not considered a material change.</p>	Non-material
Material assets and waste	The revised FCAs involve changes to the layout only, with the proposed volume of excavation remaining the same. Therefore, there is not anticipated to be any change to the reported impact on material assets or waste.	Non-material
Noise and vibration	The revised FCAs involve changes to the layout only, with the proposed volume of excavation remaining the same. This would not affect operational noise, nor would it affect the amount of vehicle movements or programme for construction. Therefore, there is not anticipated to be a material change in terms of construction noise.	Non-material
Population and health	<p>The revised FCAs involve changes to the layout and may involve slightly more loss of agricultural land in the NE FCA.</p> <p>This slight increase is not anticipated to affect the viability of the farm. It is assumed that the landowner would be compensated if land cannot be handed back for reuse.</p>	Non-material
Road drainage and the water environment	The revised FCAs involve changes to the layout only, with the proposed amount of flood storage and assumed level of water treatment remaining the same as the EAR. Therefore, no material changes are anticipated.	Non-material
Climate change	The revised FCAs involve changes to the layout only, with the proposed volume of excavation and flood storage remaining the same. Therefore, there is not anticipated to be a material change in terms of vulnerability to climate change or carbon footprint.	Non-material
Cumulative effects	<p>The revised FCAs involve changes to the layout only, with the proposed volume of excavation remaining the same.</p> <p>On the assumption that the design can be adjusted to ensure there are no changes to the significant landscape and biodiversity effects as reported in the EAR, this is likely to be a non-material change.</p>	Non-material

4. Actions required and persons responsible

- 4.1.1. Following a review of the implications of the revised flood compensation area layouts, it is considered that there is potential for material changes to the assessment findings in respect of landscape and biodiversity as currently presented in the EAR.
- 4.1.2. The following actions are required:
 - Linkconnex landscape team to revise the Environmental Masterplan to ensure sufficient screening and replacement planting can be incorporated around the revised FCAs as was the intent of the Environmental Masterplan design. This will require an iterative design approach to the layout of the FCAs.
 - Linkconnex landscape team to propose amendments to the assessment in the EAR (captured below in Section 5).
 - Linkconnex ecology team to propose amendments to the biodiversity assessment in the EAR (captured below in Section 5).
 - Linkconnex ecology team to prepare the Collaborative Performance Framework biodiversity net gain metric based on the updated Environmental Masterplan to establish whether Highways England targets for biodiversity net gain (assumed to be minus 40%) can still be achieved (Appendix B).

5. Amendments to the EAR

5.1. Landscape

- 5.1.1. The Environmental Masterplan presented on HE551514-JAC-ELS-PCF3_SS1-DR-LE-0010 has been updated to show the footprint of the revised FCAs. Through an iterative design process, it has been possible to accommodate the revised FCAs whilst retaining the required environmental mitigation shown on the Environmental Masterplan submitted with the EAR.
- 5.1.2. For the NE FCA, the proposed woodland belt between the M27 J8 roundabout and the FCA can be retained in approximately the same position. In addition, an extra hedgerow and row of individual trees are proposed to the north of the revised FCA to better integrate it with the adjacent field, and to provide additional screening for visual receptors to the north and north east. Overall, there would be no change to the landscape and visual impacts and effects reported in the EAR as a result of the revised NE FCA layout.
- 5.1.3. For the NW FCA, the design of the revised FCA has allowed the proposed woodland belt around the northern edge of the FCA to be retained, such that there would still be visual screening between the properties at Visual Receptor 6 and Bert Betts Way. There would therefore be no change to the landscape and visual impacts and resultant effects reported in the EAR.

5.2. Biodiversity

- 5.2.1. The existing biodiversity assessment within the EAR made reference to ecological surveys undertaken by WSP in April 2016, CH2M Hill in February 2017 and Jacobs between May 2018 and September 2019.
- 5.2.2. An updated extended Phase 1 habitat survey was undertaken by AECOM in June 2020. However, during this survey not all areas of the site could be accessed. At the time of writing, an area of the site containing trees to the north west of the M27 Junction 8 roundabout has not been accessed. The conclusions of this assessment may therefore change following surveys of this area. Based on the June 2020 survey

undertaken by AECOM and making reference to the ecological surveys undertaken by Jacobs in 2018 and 2019, amendments to the EAR are proposed below in red text.

Table 2: Amendments to “Table 8.7: Activities which could potentially impact biodiversity features (prior to mitigation)” included within EAR

Pathway to effect from activities	Construction	Operation	Biodiversity features which may be impacted	Description
Vegetation clearance	✓	x	<i>Semi-natural broadleaved and mixed woodland, plantation broadleaved woodland</i>	<i>Minor permanent loss of approximately 0.4 ha of mature and semi-mature woodland habitats around the proposed Scheme as a result of vegetation clearance for Scheme footprint. Minor temporary loss of small areas of habitat around proposed Scheme as a result of vegetation clearance for construction activities.</i>
			<i>Species-poor hedgerow, dense / continuous scrub and scattered scrub, woodland, amenity grassland</i>	<i>Minor permanent loss of vegetation along carriageway edges and surrounds as a result of vegetation clearance for Scheme footprint. Minor temporary loss of vegetation along carriageway edges and surrounds as a result of vegetation clearance for construction activities.</i>
			<i>Hedgehog, reptiles, badgers</i>	<i>Minor permanent loss of vegetation along carriageway edges and surrounds as a result of vegetation clearance for Scheme footprint. Minor temporary loss of vegetation along carriageway edges and surrounds as a result of vegetation clearance for construction activities.</i> <i>Potential to kill / injure common reptile species as a result of vegetation clearance.</i> <i>Potential to disturb badger setts as a result of vegetation clearance, included as a precaution</i>

				<i>based on the discovery of a dead badger during the June 2020 survey.</i>
			Bats	Minor permanent loss of trees which have low suitability to support roosting bats and loss of foraging / commuting bat habitat, risk of killing, injury and disturbance of roosting bats as a result of vegetation clearance. <i>Potential permanent loss of trees with a moderate or high suitability to support roosting bats, to be determined by additional surveys.</i>
			Breeding bird assemblage, wintering bird assemblage	Minor permanent loss of habitat and potential to kill / injure and disturb birds and their nests as a result of vegetation clearance.
			Invertebrates	Minor permanent loss of potential habitat, risk of injury / killing as a result of vegetation clearance.
			Non-native invasive species	Potential to spread invasive species.
Noise and vibration	✓	x	Hedgehog, bats, breeding bird assemblage, wintering bird assemblage.	Minor disturbance due to noise and vibration from construction activities.
Changes in traffic levels / speeds	x	✓	Hedgehogs, bats, breeding bird assemblage, wintering bird assemblage, reptiles, <i>badgers</i>	Minor disturbance due to increased traffic levels, increased mortality due to collisions.
Temporary lighting	✓	x	Hedgehog, bats, breeding bird assemblage, wintering bird assemblage, <i>badgers</i>	Minor temporary increased disturbance to foraging and commuting habitats.
Permanent lighting	x	✓	Hedgehog, bats, <i>badgers</i>	Minor disturbance to foraging and commuting habitats

<i>Release of pollutants to air and water</i>	✓	✓	<i>All designated sites, habitats, and protected and notable species</i>	<i>Minor increased exposure to pollutants.</i>
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5.2.3. The following amendments are proposed to *Section 8.8.1 Good Practice Measures* included within the EAR.

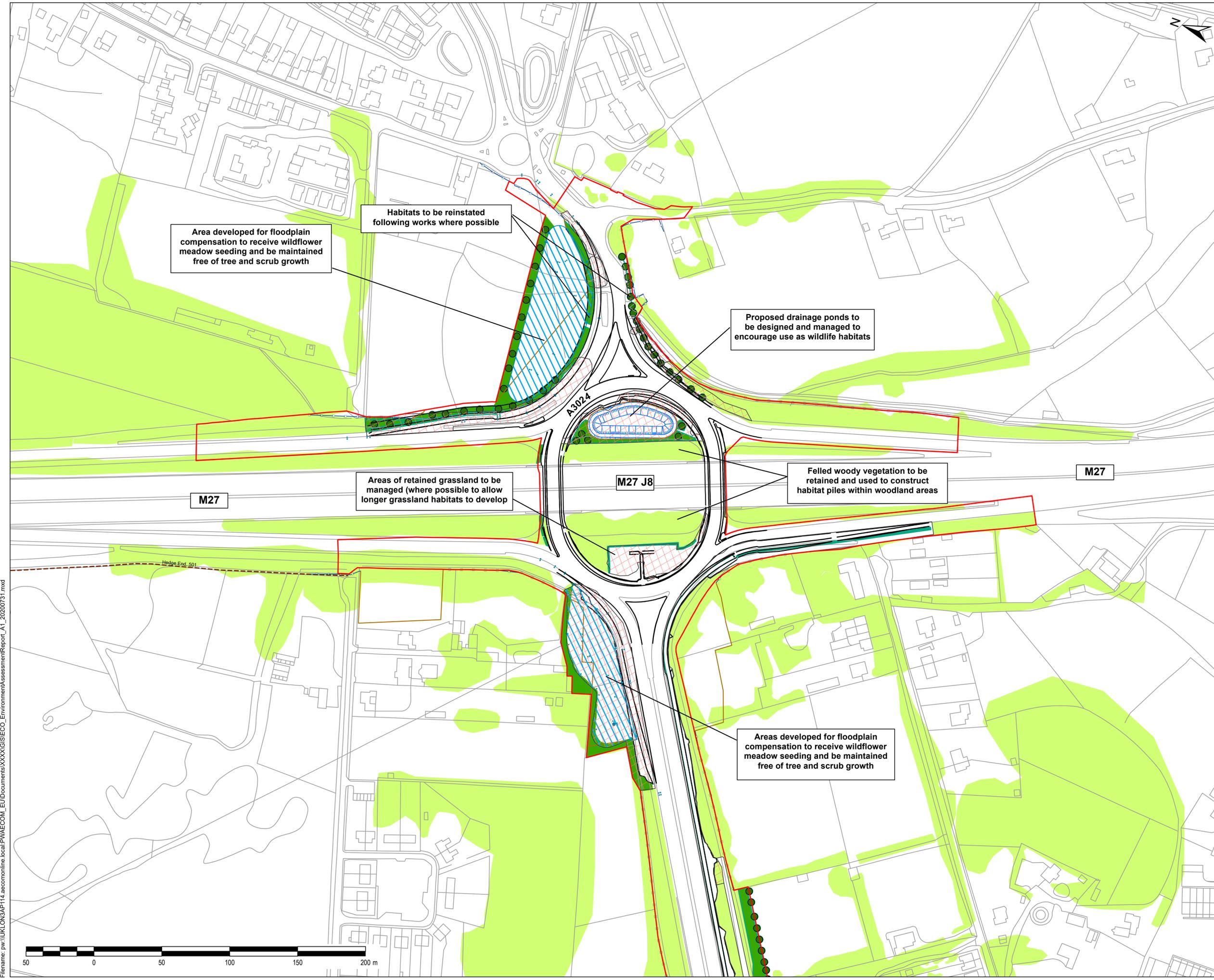
The following good practice measures will be implemented where necessary to avoid adverse effects on ecological receptors during construction of the proposed Scheme:

- Removal of vegetation will be minimised, and existing vegetation will be retained in situ where possible. Any proposed vegetation clearance should be shown on appropriate plans and agreed prior to works.
- Where possible, habitats will be reinstated to a similar or better standard after completion of the works.
- Screening and best practice methods will be utilised during works as required to minimise the spread of noise, dust and lighting.
- Various construction activities will take place in habitats with the potential to support protected species such as badgers, bats, breeding birds and reptiles. These will be protected by the supervision of works by a suitably experienced and qualified ecologist acting as an Environmental Clerk of Works (ECoW). Proposed measures and working practices to prevent non-compliance with relevant species legislation are included in the Biodiversity Baseline Report (Appendix K). **A pre-construction badger survey will be undertaken.**
- Appropriate lighting design will be used to minimise impacts on bats and other light sensitive species in accordance with best practice e.g. Interim Guidance: Recommendations to help minimise the impact of artificial lighting on wildlife (Bat Conservation Trust, 2014) and Guidance note 08/18: Bats and artificial lighting in the UK (Institution of Lighting Professionals, 2018).
- General pollution prevention measures will be implemented.
- Habitat protection measures, such as fencing and signage, will be used to restrict movements and prevent accidental incursion into nearby habitats during works.
- **Covering of any excavations left open overnight, or installation of suitable escape measures (such as ramps) to prevent killing / injury of animals in excavations.**

5.2.4. No amendments are proposed to *Section 8.8.2 Mitigation and enhancement measures* in the EAR.

5.2.5. At the time of writing, no changes to *Table 8.8 Likely significant effects on biodiversity features* are proposed. However, AECOM ecologists have determined that additional surveys of trees that were not accessible during the June 2020 updated Phase 1 habitat survey is required to determine their suitability for use by roosting bats. Changes to Table 8.8, and additional changes to Table 8.7 and Section 8.8.1, may be required based on the results of this survey and any subsequent bat emergence surveys deemed necessary.

Appendix A. Revised Environmental Masterplan



- KEY**
- M27 JUNCTION 8 PROPOSED SCHEME BOUNDARY
 - PROPOSED INDIVIDUAL TREES - LE5.1
 - FOOTPATH
 - EXISTING HIGHWAY FENCE
 - PROPOSED HIGHWAY FENCE
 - PROPOSED STORAGE PONDS
 - PROPOSED NATIVE SPECIES HEDGEROWS LE4.3
 - EXISTING VEGETATION TO BE RETAINED
 - FLOODPLAIN COMPENSATION
 - PROPOSED NATIVE WOODLAND - LE2.1
 - TREE, SHRUB AND HEDGE REMOVED

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Working on behalf of
highways england

Project Title
M27 SOUTHAMPTON JUNCTIONS

Drawing Title
ENVIRONMENTAL MASTERPLAN

Designed AW	Drawn AW	Checked BB	Approved TR	Date 04/09/2020
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Appendix B. Updated CPF biodiversity net gain metric

	key to inputs
	Enter value - input either text or number value into these cells
	Drop down - select a pre-determined value from the list provided on either habitat type, habitat condition or distinctiveness
	Auto lookup - these values will be auto populated from sheets within the workbook
	Calculation - these values will be auto populated by the workbook

Rules

Each tab has been completed with sample data to aid understanding, remember to delete any of this sample data before adding project data.

Do not alter any of the habitat types or values provided in the LOOK UP sheet (hidden)

Distinctiveness values for each habitat type can be found in CHE422/18

Do not alter condition values in post-works sheets (these are all set to 'poor')

Complete EITHER the biodiversity metrics by Plot ID (BROWN TABS) or by habitat type (GREEN TABS) - there is no requirement to complete both. These two methods for supplying data have been included for ease of use.

The post-work tab should be populated using predictions in the pre-construction PCF stages and then as-built data in the later PCF stages.

This proforma should be submitted alongside a map showing habitats before and after project.

KEY TO INPUTS	
	Enter value
	Drop down
	Auto lookup
	Calculation

HABITAT TYPE	AREA (ha)	DISTINCTIVENESS	SCORE	CONDITION	SCORE	BASELINE UNITS
A1.1.1 Woodland- Broadleaved - Semi natural	3.45	High	6.00	Moderate	2.00	41.4
A1.1.2 Woodland- Broadleaved - Plantation	0.66	High	6.00	Poor	1.00	3.96
A1.1.2 Woodland- Broadleaved - Plantation	0	High	6.00	Poor	1.00	0
A1.2.1 Woodland - Coniferous - Semi natural	0	High	6.00	Good	3.00	0
A1.2.2 Woodland - Coniferous - Plantation	0	High	6.00	Good	3.00	0
A1.3.1 Woodland - Mixed - Semi natural	0	High	6.00	Good	3.00	0
A1.3.2 Woodland - Mixed - Plantation	0	High	6.00	Good	3.00	0
A2.1 Scrub - Dense/ continuous	0.85	medium	4.00	poor	1.00	3.4
A2.2 Scrub- Scattered	0	High	6.00	Good	3.00	0
A3.1 Parkland and scattered trees - Broadleaved	0.7	High	6.00	moderate	2.00	8.4
A3.2 Parkland and scattered trees - Coniferous	0	High	6.00	Good	3.00	0
A3.3 Parkland and scattered trees - Mixed	0.26	High	6.00	poor	1.00	1.56
B1.1 Acid grassland - Unimproved	0	High	6.00	Good	3.00	0
B1.2 Acid grassland - Semi- improved	0	High	6.00	Good	3.00	0
B2.1 Neutral grassland - Unimproved	0	High	6.00	Good	3.00	0
B2.2 Neutral grassland - Semi- improved	0.02	medium	4.00	Poor	1.00	0.08
B2.2 Neutral grassland - Semi- improved	0	medium	4.00	Poor	1.00	0
B3.1 Calcareous grassland - Unimproved	0	High	6.00	Good	3.00	0
B3.2 Calcareous grassland - Semi- improved	0	High	6.00	Good	3.00	0
B4 Improved grassland	1.12	low	2.00	poor	1.00	2.24
B5 Marsh/ marshy grassland	0	High	6.00	Good	3.00	0
B6 Poor Semi-improved grassland	0.92	medium	4.00	Poor	1.00	3.68
C1.1 Bracken – Continuous	0	High	6.00	Good	3.00	0
C1.2 Bracken - Scattered	0	High	6.00	Good	3.00	0
D1 Dry dwarf shrub heath (in lowlands)	0	High	6.00	Good	3.00	0
D1 Dry dwarf shrub heath (in uplands)	0	High	6.00	Good	3.00	0
D2 Wet dwarf shrub heath (in lowlands)	0	High	6.00	Good	3.00	0
D2 Wet dwarf shrub heath (in uplands)	0	High	6.00	Good	3.00	0
E1.6.1 Bog - Blanket bog	0	High	6.00	Good	3.00	0
E1.6.2 Bog - Raised bog	0	High	6.00	Good	3.00	0
E2 Flush and Spring	0	High	6.00	Good	3.00	0
E3 Fen	0	High	6.00	Good	3.00	0
F1 Swamp (F02 High env value)	0	High	6.00	Good	3.00	0
F1 Swamp (W08 Reedbeds)	0	High	6.00	Good	3.00	0
G1 Standing water (F02 High env value)	0	High	6.00	Good	3.00	0
G1 Standing water (W07 Ponds)	0	High	6.00	Good	3.00	0
I1 Natural exposures	0	High	6.00	Good	3.00	0
J1 Cultivated/ disturbed land	1.24	low	2.00	poor	1.00	2.48
J2.1 Boundaries - Hedges - Intact	0	High	6.00	Good	3.00	0
J2.2 Boundaries - Hedges - Defunct	0.04	High	6.00	Poor	1.00	0.24
J2.3 Boundaries - Hedges - With trees	0.02	High	6.00	Good	3.00	0.36
Hardstanding	4.45					0
Tall ruderal	0.03	low	2.00	poor	1.00	0.06
Bare ground	0	low	2.00	poor	1.00	0
Totals	13.76					67.86

Amenity grassland

line of trees

KEY TO INPUTS	
	Enter value
	Drop down
	Auto lookup
	Calculation
	Do not change

HABITAT TYPE	AREA (ha)	DISTINCTIVENESS	SCORE	CONDITION	SCORE	BASELINE UNITS	
A1.1.1 Woodland- Broadleaved - Semi natural	1.74	high	6.00	Moderate	2.00	20.88	retained
A1.1.2 Woodland- Broadleaved - Plantation	0.56	High	6.00	Poor	1.00	3.36	retained
A1.1.2 Woodland- Broadleaved - Plantation	0.39	High	6.00	poor	1.00	2.34	created
A1.2.1 Woodland - Coniferous - Semi natural	0	High	6.00	Poor	1.00	0	
A1.2.2 Woodland - Coniferous - Plantation	0	High	6.00	Poor	1.00	0	
A1.3.1 Woodland - Mixed - Semi natural	0	High	6.00	Poor	1.00	0	
A1.3.2 Woodland - Mixed - Plantation	0	High	6.00	Poor	1.00	0	
A2.1 Scrub - Dense/ continuous	0.49	medium	4.00	Poor	1.00	1.96	retained
A2.2 Scrub- Scattered	0	High	6.00	Poor	1.00	0	
A3.1 Parkland and scattered trees - Broadleaved	0.5	High	6.00	Moderate	2.00	6	retained
A3.2 Parkland and scattered trees - Coniferous	0	High	6.00	Poor	1.00	0	
A3.3 Parkland and scattered trees - Mixed	0.18	High	6.00	Poor	1.00	1.08	retained
B1.1 Acid grassland - Unimproved	0	High	6.00	Poor	1.00	0	
B1.2 Acid grassland - Semi- improved	0	High	6.00	Poor	1.00	0	
B2.1 Neutral grassland - Unimproved	0	High	6.00	Poor	1.00	0	
B2.2 Neutral grassland - Semi- improved	0.01	Medium	4.00	Poor	1.00	0.04	retained
B2.2 Neutral grassland - Semi- improved	0.78	Medium	4.00	Poor	1.00	3.12	created - flood compensation
B3.1 Calcareous grassland - Unimproved	0	High	6.00	Poor	1.00	0	
B3.2 Calcareous grassland - Semi- improved	0	High	6.00	Poor	1.00	0	
B4 Improved grassland	0.59	low	2.00	Poor	1.00	1.18	retained
B5 Marsh/ marshy grassland	0	High	6.00	Poor	1.00	0	
B6 Poor Semi-improved grassland	0.35	Medium	4.00	Poor	1.00	1.4	retained
C1.1 Bracken – Continuous	0	High	6.00	Poor	1.00	0	
C1.2 Bracken - Scattered	0	High	6.00	Poor	1.00	0	
D1 Dry dwarf shrub heath (in lowlands)	0	High	6.00	Poor	1.00	0	
D1 Dry dwarf shrub heath (in uplands)	0	High	6.00	Poor	1.00	0	
D2 Wet dwarf shrub heath (in lowlands)	0	High	6.00	Poor	1.00	0	
D2 Wet dwarf shrub heath (in uplands)	0	High	6.00	Poor	1.00	0	
E1.6.1 Bog - Blanket bog	0	High	6.00	Poor	1.00	0	
E1.6.2 Bog - Raised bog	0	High	6.00	Poor	1.00	0	
E2 Flush and Spring	0	High	6.00	Poor	1.00	0	
E3 Fen	0	High	6.00	Poor	1.00	0	
F1 Swamp (F02 High env value)	0	High	6.00	Poor	1.00	0	
F1 Swamp (W08 Reedbeds)	0	High	6.00	Poor	1.00	0	
G1 Standing water (F02 High env value)	0	High	6.00	Poor	1.00	0	
G1 Standing water (W07 Ponds)	0	High	6.00	Poor	1.00	0	
I1 Natural exposures	0	High	6.00	Poor	1.00	0	
J1 Cultivated/ disturbed land	1.04	low	2.00	Poor	1.00	2.08	Amenity grassland retained
J2.1 Boundaries - Hedges - Intact	0	High	6.00	Poor	1.00	0	
J2.2 Boundaries - Hedges - Defunct	0.01	High	6.00	Poor	1.00	0.06	created
J2.3 Boundaries - Hedges - With trees	0.02	High	6.00	good	3.00	0.36	retained
Hardstanding	5.09		0.00		0.00	0	created
Tall ruderal	0.03	low	2.00	Poor	1.00	0.06	retained
Bare ground	1.96	low	2.00	Poor	1.00	3.92	scrub removal - assumed bare ground
Totals	13.74					47.84	

SUMMARY BIODIVERSITY METRICS REPORTING BY HABITAT TYPE

PROJECT NAME	
PROJECT MANAGER / PROJECT SPONSOR	
ASSESSOR	
PROJECT STAGE	
ASSESSMENT DATE	

KEY TO INPUTS

	Enter value
	Drop down
	Auto lookup
	Calculation

HABITAT TYPE	BASELINE UNITS	POST-WORKS UNITS	NET GAIN / LOSS
A1.1.1 Woodland- Broadleaved - Semi natural	41.4	20.88	-20.52
A1.1.2 Woodland- Broadleaved - Plantation	3.96	3.36	-0.6
A1.1.2 Woodland- Broadleaved - Plantation	0	2.34	2.34
A1.2.1 Woodland - Coniferous - Semi natural	0	0	0
A1.2.2 Woodland - Coniferous - Plantation	0	0	0
A1.3.1 Woodland - Mixed - Semi natural	0	0	0
A1.3.2 Woodland - Mixed - Plantation	0	0	0
A2.1 Scrub - Dense/ continuous	3.4	1.96	-1.44
A2.2 Scrub- Scattered	0	0	0
A3.1 Parkland and scattered trees - Broadleaved	8.4	6	-2.4
A3.2 Parkland and scattered trees - Coniferous	0	0	0
A3.3 Parkland and scattered trees - Mixed	1.56	1.08	-0.48
B1.1 Acid grassland - Unimproved	0	0	0
B1.2 Acid grassland - Semi- improved	0	0	0
B2.1 Neutral grassland - Unimproved	0	0	0
B2.2 Neutral grassland - Semi- improved	0.08	0.04	-0.04
B2.2 Neutral grassland - Semi- improved	0	3.12	3.12
B3.1 Calcareous grassland - Unimproved	0	0	0
B3.2 Calcareous grassland - Semi- improved	0	0	0
B4 Improved grassland	2.24	1.18	-1.06
B5 Marsh/ marshy grassland	0	0	0
B6 Poor Semi-improved grassland	3.68	1.4	-2.28
C1.1 Bracken – Continuous	0	0	0
C1.2 Bracken - Scattered	0	0	0
D1 Dry dwarf shrub heath (in lowlands)	0	0	0
D1 Dry dwarf shrub heath (in uplands)	0	0	0
D2 Wet dwarf shrub heath (in lowlands)	0	0	0
D2 Wet dwarf shrub heath (in uplands)	0	0	0
E1.6.1 Bog - Blanket bog	0	0	0
E1.6.2 Bog - Raised bog	0	0	0
E2 Flush and Spring	0	0	0
E3 Fen	0	0	0
F1 Swamp (F02 High env value)	0	0	0
F1 Swamp (W08 Reedbeds)	0	0	0
G1 Standing water (F02 High env value)	0	0	0
G1 Standing water (W07 Ponds)	0	0	0
I1 Natural exposures	0	0	0
J1 Cultivated/ disturbed land	2.48	2.08	-0.4
J2.1 Boundaries - Hedges - Intact	0	0	0
J2.2 Boundaries - Hedges - Defunct	0.24	0.06	-0.18
J2.3 Boundaries - Hedges - With trees	0.36	0.36	0
Hardstanding	0	0	0
Tall ruderal	0.06	0.06	0
Bare ground	0	3.92	3.92
Totals	67.86	47.84	-20.02

-29.50%

