

Cambridge Waste Water Treatment Plant Relocation Project
Anglian Water Services Limited

Appendix 8.10: NVC Baseline Technical Appendix

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1 Introduction

1.1 Overview

- 1.1.1 The National Vegetation Classification (NVC) surveys were carried out to inform the biodiversity assessment completed for the Proposed Development as reported in Chapter 8: Biodiversity (Document Application Reference 5.2.8). These habitats could be potential constraints to the Proposed Development or influence the design and implementation.
- 1.1.2 Figures 8.77 and 8.78, which are associated with this document, can be found in the Book of Figures – Biodiversity (App Doc Ref 5.3.8).

1.2 Aims and Objectives

- 1.2.1 This report presents a summary of the ecological baseline data relating to NVC and rare plant surveys undertaken in 2021. Surveys were undertaken within a larger buffer zone than the Scheme Order Limits as outlined in Section 1.3.4.
- 1.2.2 NVC and rare plant baseline data has been collected for the assessment of the Cambridge Waste Water Treatment Relocation (CWWTPR) Project (including the new Waterbeach pipeline).
- 1.2.3 This report should be read in conjunction with the Environmental Statement (Application Document Ref 5.2) to which it is appended.

1.3 Project Description

- 1.3.1 The Proposed Development involves the construction of a new integrated waste water treatment plant (hereafter proposed WWTP) together with the associated waste water transfer infrastructure, comprising waste water transfer tunnel (underground tunnel), sewer rising main diversions and a treated effluent discharge outfall to the River Cam (the Outfall). The Proposed Development also includes a transfer pipeline corridor, the Waterbeach pipeline, from the Waterbeach Water Recycling Centre (WRC) to the existing Cambridge WWTP. The proposed WWTP will incorporate an integrated Sludge Treatment Centre (STC) which would treat sludge imported from other treatment plants in the Cambridge catchment.
- 1.3.2 A detailed project description is included in Chapter 2: Project Description (App Doc Ref 5.2.2) of the Environmental Statement.
- 1.3.3 The Proposed Development is located north-east of Cambridge and is mostly comprised of arable land. The A14 and Low Fen Drove Way Country Wildlife Site (CWS) are dominant features of the landscape lying to the south and east respectively of the Proposed Development. Other habitats within the Scheme Order Limits include grasslands, woodlands, and ditches. The B1047 Horningsea Road borders the proposed WWTP site to the west. The River Cam is west of the WWTP site and is where discharges of treated effluent will occur.

- 1.3.4 The Scheme Order Limit covers an area of approximately 211ha. Surveys were undertaken within a larger buffer zone than the Scheme Order Limits (Figure 8.78, Book of Figures – Biodiversity (App Doc Ref 5.8.3)).
- 1.3.5 Figure 1.1 below details the location of the Proposed Development and shows the Scheme Order Limits.

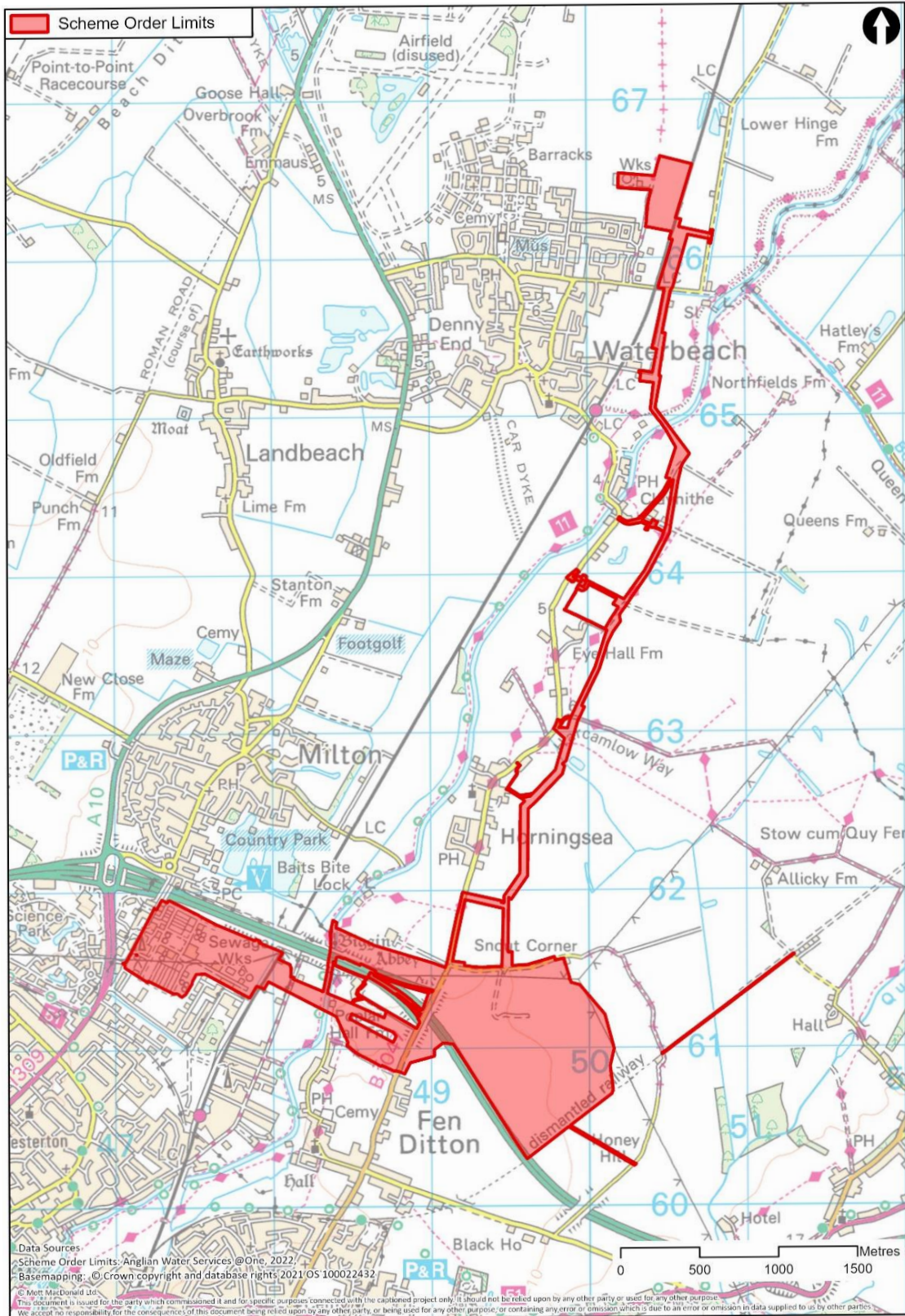


Figure 1.1: Scheme Order Limits

1.4 Legislation

- 1.4.1 The Wildlife and Countryside Act 1981 (as amended) (WCA) and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 form the cornerstone for species and habitat protection in England and Wales. Schedule 8 of the WCA lists plant species legally protected from acts such as intentional picking, uprooting or destruction. A Conservation Licence approved by Natural England is required to undertake work affecting these plants which would otherwise be unlawful. European protected species of plants are listed in Schedule 5 of the Conservation of Habitats and Species Regulations 2017 (to which the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 are an amendment that does not alter the Schedule).
- 1.4.2 Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006) (as amended by the Environment Act 2021) lists Species of Principal Importance (SPI) and Habitats of Principal Importance (HPI) for conserving biodiversity in England. This supersedes the UK Biodiversity Action Plan (BAP) lists. Section 40 of the NERC Act (2006) requires public bodies, including local authorities 'to have regard to the conservation and enhancement of biodiversity in England' when carrying out their normal functions. Section 41, the list of species and habitats of 'principal importance for the conservation of biodiversity in England' guides public bodies in implementing their duty.

1.5 Great Britain Red List for Vascular Plants

- 1.5.1 The Great Britain (GB) Red List for Vascular Plants uses the International Union for Conservation of Nature criteria to assess the status of vascular plants based on population trends in GB (for example, a species can be assessed as endangered if it has decreased by 50% in population size since 1930). A species can also be assessed as endangered if its geographic range has contracted or if it is located in fewer than five locations. This means that a species that is 'endangered' is considered to be at a very high risk of national extinction in the wild in the near future, and one that is 'vulnerable' is considered to be facing a high risk of national extinction in the wild in the medium-term future.

2 Method

2.1 Desk study

- 2.1.1 The aim of the desk study was to collate and review existing ecological information for land within the Scheme Order Limits and its surroundings to inform the ecological survey requirements, including the NVC and rare plant surveys.
- 2.1.2 Cambridgeshire and Peterborough Environmental Records Centre (CPERC) provided records of protected or notable species within a 5km radius of a central point (grid reference: TL 49740 61214) within the Proposed Development.

2.2 Preliminary surveys

- 2.2.1 A Preliminary Ecological Appraisal (PEA) was undertaken between July and September 2020 to establish the broad ecological baseline within the Scheme Order Limits and surrounding areas. Based on the findings of the PEA, further habitat and species surveys were undertaken from 2020 to 2022 to assess the ecological baseline in more detail.
- 2.2.2 Phase 1 Habitat Survey data collected in 2021 were used to scope in habitats for more detailed habitat survey. This included habitat highlighted as possible HPI or ancient woodlands, as well as habitat with the potential to support protected or notable plant populations (i.e. populations of plants that are scarce or declining at a national or county level). Some of the habitats included in the NVC survey lie outside the Scheme Order Limits, including Honey Hill and Low Fen Drove Way located 193m and 300m, respectively, to the east of the proposed WWTP.

2.3 National Vegetation Classification surveys

- 2.3.1 The NVC surveys were undertaken between April and September 2021 and followed standard methodology based on Rodwell et al. (2006) as follows:
- areas scoped in for NVC survey were split into land parcels based on physical connectedness and vegetation homogeneity; lists of plant species were compiled for each of these land parcels and the relative abundances and frequencies of the plant species were recorded using the DAFOR scale (Table 2-1);
 - the habitats within each land parcel were also sampled using randomly placed vegetation quadrats, following the NVC methodology; in each 2m² x 2m² quadrat, a Domin score for each plant species was recorded (Table 2-2);
 - vegetation height, cover, slope and aspect were recorded;
 - each vegetation community was described in terms of key species, vegetation structure, management and relationship with neighbouring vegetation;

- data gathered during this survey enabled stands of vegetation to be assigned a community and subcommunity type using the NVC British Plant Communities volumes; and
- the nomenclature for the vascular plants in this chapter follows Stace (2019) for both scientific and English names, while the bryophyte nomenclature follows Atherton et al. (2010) for scientific and English names.

2.3.2 During these surveys a search was also made for rare, protected and red-listed higher plants and bryophytes covered under:

- Schedule 8 of the WCA;
- Section 41 of the NERC Act 2006;
- GB Plant Red List;
- England Plant Red List;
- GB Bryophyte Red List;
- Nationally Scarce/Rare Plant List;
- List of Nationally Rare/Scarce Bryophytes; and
- Register of Plants of Conservation Concern (RPCC) found in Cambridgeshire.

2.3.3 The number of individual plants (where appropriate) and the extent of each population were also recorded.

2.3.4 The NVC surveys were undertaken by an experienced Mott MacDonald botanical specialist (Botanical Society of Britain and Ireland Field Identification Skills Certificate Level 6).

2.3.5 Table 2-1 and Table 2-2 below illustrate the assessment criteria when using percentage cover or species abundance during NVC surveys.

Table 2-1: Assessment of species abundance using the DAFOR scale

DAFOR score	Meaning
D	Dominant
A	Abundant
F	Frequent
O	Occasional
R	Rare

Source: NVC Users Handbook: Rodwell, J.S. (2006) NVC Users' Handbook, JNCC, Peterborough

Table 2-2: Assessment of percentage cover using Domin scale

Domin scale	Percentage cover
10	91 – 100%
9	76 – 90%
8	51 – 75%

Domin scale	Percentage cover
7	34 – 50%
6	26 – 33%
5	11 – 25%
4	4 – 10%
3	<4% (many individuals)
2	<4% (several individuals)
1	<4% (few individuals)

Source: *Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring*, Hill et al. 2005

2.4 Rare Arable Plants Walkover Survey

- 2.4.1 This survey involved walking a transect that covered all arable field margins within and surrounding the proposed WWTP construction and landscaped areas as well as the treated effluent transfer pipelines. Notable plant species (as defined in the NVC survey section above) were recorded along the transect using a handheld Global Positioning System (GPS) or GPS-enabled tablet. The number of individual plants (where appropriate) and the extent of each population were also recorded.
- 2.4.2 The arable plant surveys were undertaken by an experienced Mott MacDonald botanical specialist (Botanical Society of Britain and Ireland Field Identification Skills Certificate Level 6).
- 2.4.3 The arable margins on the Waterbeach section of the Proposed Development were not included in this survey, as construction impacts to habitats resulting from the Proposed Development in this area are likely to be temporary. For this reason, they are unlikely to adversely impact arable plants, which are adapted to and dependent on intermittent heavy disturbance.
- 2.4.4 A red-listed plant, dwarf spurge *Euphorbia exigua*, was identified during the Phase 1 Habitat Survey growing on arable margins within the land required for the landscape planting and to the east of the proposed WWTP. As a result, a detailed arable plant survey was undertaken in July 2021 to identify populations of this species and other notable arable plants within the Scheme Order Limits.

2.5 Limitations of survey methods

- 2.5.1 Botanical surveys are limited by factors such as time of year, which affect the ability to detect plants. Optimal survey times vary between species and species groups and therefore a single survey visit may overlook or under-record certain species. All surveys were undertaken between April and September at a time of year suitable for undertaking NVC survey. Seasonality was not considered a constraint to assigning an NVC community to any of the vegetation stands assessed during the survey.

2.5.2 Surveys were also undertaken at an appropriate season to record most notable and rare plants, including the arable plant survey which was undertaken prior to arable fields being harvested and ploughed. There were no access limitations to any of the areas scoped in for survey.

3 Results

3.1 Desk study results

- 3.1.1 The desk study returned 563 vascular plant records of 76 notable plant species from within 5km of a central grid reference (grid reference: TL 49740 61214) within the Proposed Development.
- 3.1.2 Most of these records are from designated sites in the Cambridge area, such as Fulbourn Fen and the Cherry Hinton Chalk Pits. Only three appear to be from within the Scheme Order Limits:
- two records of corn cleavers *Galium tricornutum* (Section 41, GB Red List Critically Endangered, England Red List Critically Endangered, Nationally Rare) from the existing Cambridge WWTP, recorded in 1977; this species was not identified during the surveys and may be extinct in Cambridgeshire as it has not been recorded for over two decades (Leslie, 2019); and
 - a single record from 2004 of strawberry clover *Trifolium fragiferum* in a field south of the A14 between the River Cam and Poplar Hall. This species was found in the same area during the 2021 rare plant survey (see Figure 8.77, Book of Figures – Biodiversity (App Doc Ref 5.8.3).

National Vegetation Classification survey

- 3.1.3 The findings of the NVC surveys completed in 2021 are presented below. In summary the surveyed habitats consisted of three NVC community types. The grassland primarily consisted of the mesotrophic (neutral) grassland NVC communities, MG1 and MG11, while the woodland all corresponded to the W8 NVC woodland community.
- 3.1.4 Two subcommunities of MG1 grassland (MG1a and MG1b) were identified. A map of the NVC communities/subcommunities present in the surveyed areas is displayed in Figure 8.78, Book of Figures – Biodiversity (App Doc Ref 5.8.3).
- 3.1.5 Floristic tables for each vegetation community/subcommunity are provided in Appendix A.

NVC Community: W8 *Fraxinus excelsior* - *Acer campestre* - *Mercurialis perennis* woodland

- 3.1.6 All the surveyed semi-natural woodland consisted of W8 *Fraxinus excelsior* - *Acer campestre* - *Mercurialis perennis* woodland. Field maple *Acer campestre* was the most frequent and abundant tree species overall, but invasive (native) elms (*Ulmus* spp) were dominant in some of the woodland blocks. Invasion by suckering elms is a frequent occurrence in W8 woodlands and is characteristic of the community type.
- 3.1.7 The ground flora was poor across all woodland blocks, and most of the frequent species were indicators of nutrient enrichment, such as cow parsley *Anthriscus sylvestris* and common nettle *Urtica dioica*. None of the ground flora species present

are indicators of ancient woodland as listed in the County Wildlife Site Selection Guidelines for Cambridgeshire. In addition, none of the plant species found in the W8 woodlands were rare, protected or red-listed as defined under Section 2.1 of this report.

- 3.1.8 The W8 woodlands most closely corresponded to the W8d *Hedera helix* subcommunity due to their unmanaged, species-poor composition. Ivy *Hedera helix* also occurred at high frequency in some woodland blocks but was not a constant species.

NVC Community: MG1 *Arrhenatherum elatius* grassland

- 3.1.9 MG1 *Arrhenatherum elatius* grassland was present along the disused railway line, in grassland to the west of the River Cam and on verges to the west of the proposed WWTP. This grassland was categorised as either the *Festuca rubra* subcommunity (MG1a) or the *Urtica dioica* subcommunity (MG1b), depending on whether common nettle was constant or not.
- 3.1.10 The MG1a grassland was present along the disused railway line. It comprised a sward that was mostly species-poor with only very scattered calcareous grassland indicators such as wild basil *Clinopodium vulgare* and greater knapweed *Centaurea scabiosa*, which were too thinly distributed to be represented in the quadrat data. Frequent associates present included ruderal species such as cleavers *Galium aparine* and field bindweed *Convolvulus arvensis*.
- 3.1.11 The MG1b grassland was even more dominated by ruderal species. Common nettle, common couch *Elymus repens*, perennial rye-grass *Lolium perenne* and creeping bent *Agrostis stolonifera* were all constant.
- 3.1.12 No plant species found in any of the MG1 grasslands was rare, protected or red-listed as defined under Section 2.1 of this report, other than field scabious *Knautia arvensis*, which was locally frequent.

NVC Community: MG11 *Festuca rubra* - *Agrostis stolonifera* - *Potentilla anserina* grassland

- 3.1.13 MG11 *Festuca rubra* - *Agrostis stolonifera* - *Potentilla anserina* grassland was present within the existing Cambridge WWTP and in horse-grazed grassland to the west of the River Cam. Creeping bent *Agrostis stolonifera* was constant and perennial rye-grass, hairy sedge *Carex hirta*, red bartsia *Odontites vernus*, creeping buttercup *Ranunculus repens* and silverweed *Potentilla anserina* were all frequent associates. All the MG11 grasslands correspond to the *Lolium perenne* subcommunity due to the presence of perennial rye-grass as a frequent species.
- 3.1.14 The horse grazed grassland between the River Cam and Fen Road (shown in Figure 8.78, Book of Figures – Biodiversity (App Doc Ref 5.8.3)) was the richest example of this community and supported several red-listed plant species such as marsh ragwort *Jacobaea aquatica*, corn mint *Mentha arvensis* and trifid bur-marigold *Bidens tripartita*. In wetter sections the vegetation in this area had elements of the *Bidens tripartita* - *Polygonum amphibium* open vegetation community (OV30)

though these areas were not distinct or extensive enough to map separately to the MG11 grassland.

- 3.1.15 The horse-grazed grassland is hydrologically connected to, and periodically flooded by, the River Cam and therefore qualifies as Coastal and Floodplain Grazing Marsh HPI. The other areas of MG11 surveyed did not correspond to this HPI.

3.2 Rare plant surveys

- 3.2.1 Populations of five rare or red-listed plant species were found during the rare arable plant survey: prickly poppy *Roemeria argemone*, dwarf spurge, cat-mint *Nepeta cataria*, hound's-tongue *Cynoglossum officinale* and field scabious. A further six rare or red-listed plant species were found during the rare plant searches undertaken as part of the NVC surveys and a summary of population size and geographic importance for each of the species is provided in Table 3-1 below.
- 3.2.2 Field scabious was frequent in grassland and on field margins across the proposed WWTP and was too abundant and widespread to be mapped. Other rare or red-listed species, such as marsh ragwort, were locally abundant therefore they were recorded as a DAFOR abundance score within a defined area rather than mapping out individual plants/populations.
- 3.2.3 The locations of rare/red-listed plant populations are shown in Figure 8.77, Book of Figures – Biodiversity (App Doc Ref 5.8.3). A summary of all rare, protected and red-listed plants found during the rare plant surveys is provided in Table 3-1 below. This includes details of conservation designations, population size and level of geographic importance for each species.

Table 3-1: Summary of rare and red-listed plant species

Plant Species	Conservation designation(s)	Population Size/Extent	Level of geographic importance	Reason for assigned level of geographic importance
Prickly poppy <i>Roemeria argemone</i>	GB Vulnerable, England Endangered, Cambridgeshire RPCC	A single population of four plants on the edge of a pylon compound in the proposed WWTP.	County	A small population but of a species that is locally and nationally endangered with few populations known in the county.
Dwarf spurge <i>Euphorbia exigua</i>	GB Vulnerable, England Vulnerable, Cambridgeshire RPCC	Two small populations on arable margins in the proposed WWTP.	Local	Red-listed but relatively widespread at the county level. The population does not comprise a significant proportion of the plants in the county.
Cat-mint <i>Nepeta cataria</i>	GB Vulnerable, England Vulnerable, Cambridgeshire RPCC	Two small populations on arable margins in the proposed WWTP area.	Local	Red-listed but relatively widespread at the county level. The population does not comprise a significant proportion of the plants in the county.
Marsh ragwort <i>Jacobaea aquatica</i>	England Near-threatened, Cambridgeshire RPCC	Frequent along the Floodplain Grazing Marsh HPI within the Final effluent pipeline.	Local	Red-listed but relatively widespread at the county level. The population does not comprise a significant proportion of the plants in the county.
Hound's-tongue <i>Cynoglossum officinale</i>	GB Near-threatened, Cambridgeshire RPCC	A single population on a margin between the disused railway and an arable field.	Local	Red-listed but relatively widespread at the county level. The population does not comprise a significant proportion of the plants in the county.

Marsh dock <i>Rumex palustris</i>	Cambridgeshire RPCC	Frequent around the edges of a disused lagoon within the existing Cambridge WWTP.	Local	Red-listed but relatively widespread at the county level. The population does not comprise a significant proportion of the plants in the county.
Field scabious <i>Knautia arvensis</i>	England Near-threatened, Cambridgeshire RPCC	Frequent in grassland and on field margins within the proposed WWTP area.	Local	Red-listed but common and widespread at the county level. The population does not comprise a significant proportion of the plants in the county.
Strawberry clover <i>Trifolium fragiferum</i>	GB Vulnerable, Cambridgeshire RPCC	Frequent along the Floodplain Grazing Marsh HPI in the Final effluent pipeline.	Local	Red-listed but relatively widespread at the county level. The population does not comprise a significant proportion of the plants in the county.
Corn mint <i>Mentha arvensis</i>	England Near-threatened, Cambridgeshire RPCC	Frequent within the Floodplain Grazing Marsh HPI along the Final effluent pipeline.	Local	Red-listed but relatively widespread at the county level. The population does not comprise a significant proportion of the plants in the county.
Trifid bur-marigold <i>Bidens tripartita</i>	Cambridgeshire RPCC	Two small populations within Floodplain Grazing Marsh HPI to the south of the Final effluent pipeline.	Local	Red-listed but relatively widespread at the county level. The population does not comprise a significant proportion of the plants in the county.
Field pepperwort <i>Lepidium campestre</i>	England Near-threatened, Cambridgeshire RPCC	A single plant growing on stored topsoil within the existing Cambridge WWTP.	Less than local	A single plant present, likely a non-persistent casual.

4 References

- Atherton, I., Bosanquet, S., & Lawley, M. (2010). Mosses and Liverworts of Britain and Ireland: A Field Guide. *British Bryological Society*.
- Leslie, A. (2019). *Flora of Cambridgeshire*. Peterborough: Society, Royal Horticultural.
- Rodwell, J., & JNCC (GB). (2006). *National Vegetation Classification: Users' Handbook*. Peterborough: JNCC.
- Stace, C. (2019). *New Flora of the British Isles. 4th Edition*. Cambridge: Cambridge University Press.

5 Appendix A

5.1 Floristic Table: MG11

Plant Species	Quadrat Grid Reference / Domin Values					Frequency Percentage	Frequency Class	Range
	TL4812610 9	TL4809611 8	TL4828613 4	TL4746614 5	TL47566177			
Grasses, Sedges & Rushes								
<i>Agrostis stolonifera</i>	6	8	8	4	2	100	V	2-8
<i>Lolium perenne</i>	3	0	0	2	1	60	III	0-3
<i>Carex hirta</i>	4	1	3	0	0	60	III	0-4
<i>Elymus repens</i>	0	1	4	0	0	40	II	0-4
<i>Juncus articulatus</i>	2	2	0	0	0	40	II	0-2
<i>Festuca rubra</i>	0	0	0	6	8	40	II	0-8
<i>Holcus lanatus</i>	0	0	2	0	0	20	I	0-2
<i>Juncus bufonius</i>	3	0	0	0	0	20	I	0-3
<i>Carex otrubae</i>	2	0	0	0	0	20	I	0-2
<i>Alopecurus pratensis</i>	0	0	1	0	0	20	I	0-1
<i>Poa annua</i>	0	1	0	0	0	20	I	0-1
<i>Poa pratensis</i>	0	0	0	3	0	20	I	0-3
<i>Dactylis glomerata</i>	0	0	0	1	0	20	I	0-1
<i>Arrhenatherum elatius</i>	0	0	0	0	1	20	I	0-1
Forbs								
<i>Odontites vernus</i>	4	3	1	0	0	60	III	0-4
<i>Ranunculus repens</i>	5	4	4	0	0	60	III	0-5
<i>Potentilla anserina</i>	4	4	3	0	0	60	III	0-4

Plant Species	Quadrat Grid Reference / Domin Values					Frequency Percentage	Frequency Class	Range
	TL4812610	TL4809611	TL4828613	TL4746614	TL47566177			
	9	8	4	5				
Trifolium fragiferum	3	4	0	0	0	40	II	0-4
Pulicaria dysenterica	2	2	0	0	0	40	II	0-2
Cirsium arvense	0	1	3	0	0	40	II	0-3
Plantago major	3	0	1	0	0	40	II	0-3
Jacobaea aquatica	3	3	0	0	0	40	II	0-3
Persicaria maculosa	2	1	0	0	0	40	II	0-2
Lycopus europaeus	1	1	0	0	0	40	II	0-1
Rumex conglomeratus	0	1	1	0	0	40	II	0-1
Jacobaea vulgaris	2	0	0	1	0	40	II	0-2
Trifolium repens			1	0	2	40	II	0-2
Cerastium fontanum	0	0	0	4	2	40	II	0-4
Torilis nodosa	0	0	0	4	3	40	II	0-4
Sherardia arvensis	0	0	0	1	2	40	II	0-2
Geranium molle	0	0	0	2	3	40	II	0-3
Polygonum aviculare	0	1	0	0	0	20	I	0-1
Bellis perennis	0	0	0	2	0	20	I	0-2
Helminthotheca echioides	0	0	0	1	0	20	I	0-1
Sonchus oleraceus	0	0	0	1	0	20	I	0-1
Plantago lanceolata	0	0	0	1	0	20	I	0-1
Veronica arvensis	0	0	0	1	0	20	I	0-1
Geranium dissectum	0	0	0	1	0	20	I	0-1
Potentilla reptans	0	0	0	0	5	20	I	0-5
Crepis capillaris	0	0	0	0	2	20	I	0-2

Plant Species	Quadrat Grid Reference / Domin Values					Frequency Percentage	Frequency Class	Range
	TL4812610 9	TL4809611 8	TL4828613 4	TL4746614 5	TL47566177			
Persicaria amphibia	0	0	1	0	0	20	I	0-1
Trifolium dubium	0	0	0	0	2	20	I	0-2
Bryophytes & Lichens								
Oxyrrhynchium hians	3	0	0	0	0	20	I	0-3

Source: Mott Macdonald, 2021

5.2 Floristic Table: MG1a

Plant Species	Quadrat Grid Reference / Domin Values					Frequency Percentage	Frequency Class	Range
	TL5033616	TL5061617	TL5028614	TL5041611	TL5043610			
	2	1	2	7	5			
Grasses, Sedges & Rushes								
<i>Dactylis glomerata</i>	2	4	5	5	5	100	V	2-5
<i>Arrhenatherum elatius</i>	9	8	4	5	5	100	V	4-9
<i>Elymus repens</i>	2	0	7	7	7	80	IV	0-7
<i>Lolium perenne</i>	3	3	0	4	3	80	IV	0-4
<i>Agrostis stolonifera</i>	1	0	2	1	1	80	IV	0-2
<i>Anisantha sterilis</i>	0	0	0	1	1	40	II	0-1
<i>Bromus hordeaceus</i>	0	0	0	1	0	20	I	0-1
Forbs								
<i>Rubus caesius</i>	2	3	0	1	0	60	III	0-3
<i>Convolvulus arvensis</i>	3	3	0	0	3	60	III	0-3
<i>Galium aparine</i>	0	0	3	4	3	60	III	0-4
<i>Urtica dioica</i>		0	4	2	5	60	III	0-5
<i>Rumex obtusifolius</i>	0	0	1	0	1	40	II	0-1
<i>Heracleum sphondylium</i>	3	0	0	0	0	20	I	0-3
<i>Anthriscus sylvestris</i>	0	0	0	0	3	20	I	0-3
<i>Taraxacum sect.</i>	2	0	0	0	0	20	I	0-2
Ruderalia								
<i>Glechoma hederacea</i>	0	0	0	0	2	20	I	0-2
<i>Ranunculus repens</i>	0	0	0	0	2	20	I	0-2
<i>Potentilla reptans</i>	0	4	0	0	0	20	I	0-4
<i>Bryonia dioica</i>	0	0	3	0	0	20	I	0-3

Plant Species	Quadrat Grid Reference / Domin Values					Frequency Percentage	Frequency Class	Range
	TL5033616	TL5061617	TL5028614	TL5041611	TL5043610			
	2	1	2	7	5			
Geranium dissectum	0	0	2	0	0	20	I	0-2
Bryophytes & Lichens								
Oxyrrhynchium hians	0	0	4	0	0	20	I	0-4

Source: Mott Macdonald, 2021

5.3 Floristic Table: MG1b

Plant Species	Quadrat Grid Reference / Domin Values							Frequency Percentage	Frequency Class	Range
	TL50336 162	TL50616 171	TL50286 142	TL50416 117	TL50436 105	TL48406 133	TL483436 1475			
Grasses, Sedges & Rushes										
Arrhenatherum elatius	9	8	4	5	5	8	6	100	V	4-9
Elymus repens	2	0	7	7	7	7	7	85.71429	V	0-7
Agrostis stolonifera	1	0	2	1	1	0	5	71.42857	IV	0-5
Dactylis glomerata	2	4	5	5	5	0	0	71.42857	IV	0-5
Lolium perenne	3	3	0	4	3	0	0	57.14286	III	0-4
Anisantha sterilis	0	0	0	1	1	0	0	28.57143	II	0-1
Bromus hordeaceus	0	0	0	1		0	0	14.28571	I	0-1
Alopecurus pratensis						0	1	14.28571	I	0-1
Forbs										
Urtica dioica	2	0	4	2	5	3	4	85.71429	V	0-5
Galium aparine	0	0	3	4	2	2	3	71.42857	IV	0-4
Rubus caesius	2	3	0	1	0	0	0	42.85714	III	0-3
Convolvulus arvensis	3	3	0	0	3	0	0	42.85714	III	0-3
Cirsium arvense	0	0	0	0	0	3	1	28.57143	II	0-3
Herculeum sphondylium	0	3	0	0	0	0	0	14.28571	I	0-3

Plant Species	Quadrat Grid Reference / Domin Values							Frequency Percentage	Frequency Class	Range
	TL50336	TL50616	TL50286	TL50416	TL50436	TL48406	TL483436			
	162	171	142	117	105	133	1475			
Anthriscus sylvestris	0	0	0	0	3	0	0	14.28571	I	0-3
Glechoma hederacea	0	0	0	0	2	0	0	14.28571	I	0-2
Ranunculus repens	0	0	0	0	2	0	0	14.28571	I	0-2
Bryophytes & Lichens										
Oxyrhynchium hians	0	0	4	0	0			14.28571	I	0-4

Source: Mott Macdonald, 2021

5.4 Floristic Table: W8d

Plant Species	Quadrat Grid Reference / Domin Values				Frequency Percentage	Frequency Class	Range
	TL5030 6149	TL50316049	TL48906132	TL50606466			
Grasses, Sedges & Rushes							
<i>Anisantha sterilis</i>	5	6	0	1	75	IV	0-6
<i>Brachypodium sylvaticum</i>	6	0	0	2	50	III	0-6
<i>Poa trivialis</i>	2	0	3	0	50	III	0-3
Forbs & Trees							
<i>Galium aparine</i>	2	7	3	0	75	IV	0-7
<i>Acer campestre</i>	7	6	0	3	75	IV	0-7
<i>Quercus robur</i>	2	2	0	3	75	IV	0-3
<i>Anthriscus sylvestris</i>	5	0	0	3	50	III	0-5
<i>Arum maculatum</i>	3	3	0	0	50	III	0-3
<i>Hedera helix</i>	2	0	0	10	50	III	0-10
<i>Urtica dioica</i>	0	6	4	0	50	III	0-6
<i>Sambucus nigra</i>	0	5	3	0	50	III	0-5
<i>Glechoma hederacea</i>	0	4	8	0	50	III	0-8
<i>Ballota nigra</i>	1	3	0	0	50	III	0-3
<i>Crataegus monogyna</i>	0	0	2	1	50	III	0-2
<i>Ulmus sp.</i>	0	8	0	10	50	III	0-10
<i>Prunus avium</i>	5	0	8	0	50	III	0-8
<i>Fraxinus excelsior</i>	5	5	0	0	50	III	0-5
<i>Tilia platyphyllos</i>	0	1	0	0	25	II	0-1
<i>Rumex sanguinea</i>	1	0	0	0	25	II	0-1
<i>Taraxacum sect. Ruderalia</i>	0	0	1	0	25	II	0-1
<i>Corylus avellana</i>	5	0	0	0	25	II	0-5

Ficaria verna ssp. verna	7	0	0	0	25	II	0-7
Geum urbanum	3	0	0	0	25	II	0-3
Fagus sylvatica	0	1	0	0	25	II	0-1
Prunus domestica	0	2	0	0	25	II	0-2
Aesculus hippocastanum	0	1	0	0	25	II	0-1
Crataegus x macrocarpa	0	2	0	0	25	II	0-2
Myosotis arvensis	0	0	3	0	25	II	0-3
Veronica arvensis	0	0	3	0	25	II	0-3
Cirsium vulgare	0	0	1	0	25	II	0-1
Pinus sylvestris	0	0	6	0	25	II	0-6
Acer pseudoplatanus	0	0	5	0	25	II	0-5
Bryophytes & Lichens							
Brachythecium rutabulum	0	1	0	0	25	II	0-1

Source: Mott Macdonald, 2022

Get in touch

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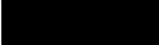


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