Cambridge Waste Water Treatment Plant Relocation Project
Anglian Water Services Limited

Appendix 8.14: Landscape, Ecological and Recreational Management Plan

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Version History

Version	Date	Author	Description of change
01	30.01.23	-	DCO Submission
02	19.09.23	-	Updated Table 4.2, Figure 3.7 and Figure 3.13
03	22.01.24	-	Section 4 and Appendix A updated to reflect actions from ISH3
04	15.02.24	-	Updates following ExQ 2, and inclusion of Figure 3.1b
05	21.03.24	-	Updates following ISH4 and Action Points 57-59

Contents

1 Introduction

1.1 Background

1.1.1 The Proposed Development comprises the relocation of the Cambridge Waste Water Treatment Plant (WWTP) from its existing site on land adjoining the north-eastern side of the city of Cambridge, to a new location. The relocation will enable South Cambridgeshire District Council and Cambridge City Council's long held ambition to develop a new low-carbon city district on Cambridge's last major brownfield site, known as North East Cambridge. The site is an important component of the First Proposals (preferred options) for the new Greater Cambridge Local Plan that were subject to public consultation late last year. The North East Cambridge Area Action Plan has also recently been agreed by the Councils in its Proposed Submission form and will be subject to public consultation prior to submission, once the Development Consent Order is determined. The relocation of the existing waste water treatment facility will enable this new district to come forward and deliver 8,350 homes, 15,000 new jobs and a wide range of community, cultural and open space facilities in North East Cambridge.

1.1.2 This document is the Landscape, Ecological and Recreational Management Plan (LERMP) for the Cambridge Waste Water Treatment Plant Relocation (CWWTPR) project, the Proposed Development.

1.1.3 A multi-functional approach has been adopted to deliver landscape enhancement, visual screening, ecological habitat creation and recreational opportunities for local communities. This approach provides both mitigation for potential environmental impacts we have identified through the Environmental Impact Assessment (EIA) process and enhancement of the local environment.

1.1.4 An Outline LERMP was published for consultation during Phase Three Consultation in Spring 2022. Following consideration of consultation responses, and through further discussion with stakeholders, this document presents a refined and updated indicative LERMP and is submitted as part of the Development Consent Order (DCO) application.

1.1.5 The central element of the LERMP is the Landscape Masterplan, which provides the vision for the project and will be used later to inform the detailed design. Both the Landscape Masterplan and LERMP are indicative plans.

1.1.6 Anglian Water Service Limited's commitments to deliver and maintain the Landscape Masterplan is secured through the DCO. The DCO requires the LERMP to be implemented in line with the principles outlined in this document which also provides for maintenance and monitoring.

1.1.7 This LERMP should be read alongside the DCO application Environmental Statement (Volume 5), Design and Access Statement (App Doc Ref 7.6) incorporating the Landscape Masterplan and Biodiversity Net Gain (BNG) report (Appendix 8.13, App Doc Ref 5.4.8.13).

1.1.8 The LERMP forms the outline Implementation Plan (IP) and Management and Maintenance Plan (MMP) for BNG by specifying responsibilities, demonstrating how the design concepts can be delivered on the ground and presenting planting schedules, management proposals and interaction with construction phasing.

1.1.9 The geographical focus of the LERMP is on the immediate area around the Proposed Waste Water Treatment Plant (WWTP). The Landscape Masterplan contained in the LERMP does not include the areas of the tunnel or pipeline structures or the outfall to the River Cam. The landscape, recreational and biodiversity contexts of these elements of the Proposed Development, together with potential environmental effects and mitigation, are outlined in the Environmental Statement. Commitments to reinstate land after construction are set out in the Code of Construction Practice Parts A & B (Appendix 2.1 & 2.2, App Doc Ref 5.4.2.1 & 5.4.2.2).

1.2 Our approach to landscape design

1.2.1 Our approach to the landscape design has been guided by our core corporate principles. Our commitment to protecting and enhancing our environment is enshrined in Anglian Water Services Limited's company constitution, our Articles of Association[1], which commits our directors to consider the needs of the environment and the communities we serve when they are making decisions.

1.2.2 We have followed the National Infrastructure Commission's Design Principles for National Infrastructure[2] to develop design principles for the project, as follows:

- to create a modern, low carbon water recycling centre of the future;
- to reduce the footprint of the plant to 22 hectares, which is about half the size of the existing plant;
- to create a strong identity for the site while screening the facility and reducing visual impacts on the surrounding community and landscape;
- to re-use excavated material on site which can be used to screen the facility and also reduce the carbon and traffic impact from construction;
- to minimise odour by incorporating solutions to address it at source and using best operational practices;
- to reduce harmful carbon emissions through sustainable design, helping address climate change;
- to increase biodiversity by creating new wildlife habitats;
- to improve access to the countryside with new paths and accessible open spaces; and

[1] [redacted]

- to connect the site into the wider landscape and establish new wildlife corridors.

1.2.3 Subsequently, guided by advice from architects, landscape architects, ecologists and other design professionals, further environmental objectives for the project design were developed, as shown in Figure 1.1 below. We then developed a design narrative from these principles and objectives to guide the development of the detailed Landscape Masterplan, discussed at Section 3 below.

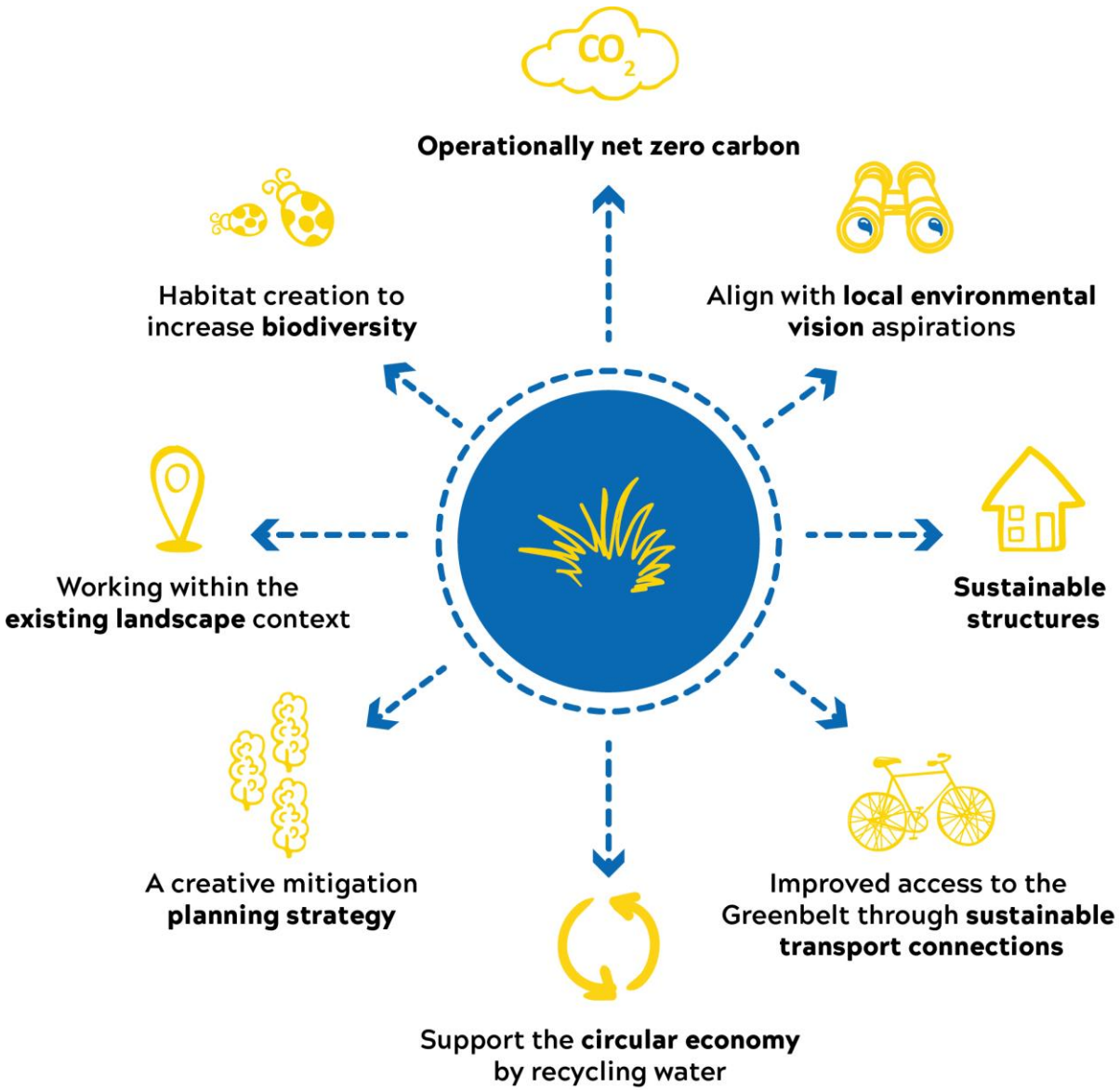


Figure 1.1 Objectives for the Cambridge Waste Water Treatment Plant Project

1.3 Stakeholder engagement and evolution of the Landscape Masterplan

1.3.1 Stakeholder input and consultation feedback has played an important role in the development of this LERMP. During our first phase of consultation in July 2020, ecology, landscape, and recreation were all identified as important issues by the community. Addressing these concerns through a multi-functional landscape design was identified as an important outcome of the design process.

1.3.2 Prior to the second phase of consultation in June 2021, we built upon the design narrative and environmental objectives discussed above and, supported by the Design Council, developed three concept designs, as follows:

- A functional initial concept with a location and layout optimised for odour, supported by a landscape plan aligned with existing field patterns, as set out in Figure 1.2 below.

Figure 1.2 Initial Concept

- A “rotunda” design, utilising retained excavation spoil to construct a landscaped feature in the local environment, inspired by ideas of the circular economy, water and fluidity as, well as past and present landscape features including local dykes and hillforts (Figure 1.3). The circular layout also presented an opportunity to develop a consistent approach to landscape impacts, regardless of vantage point.

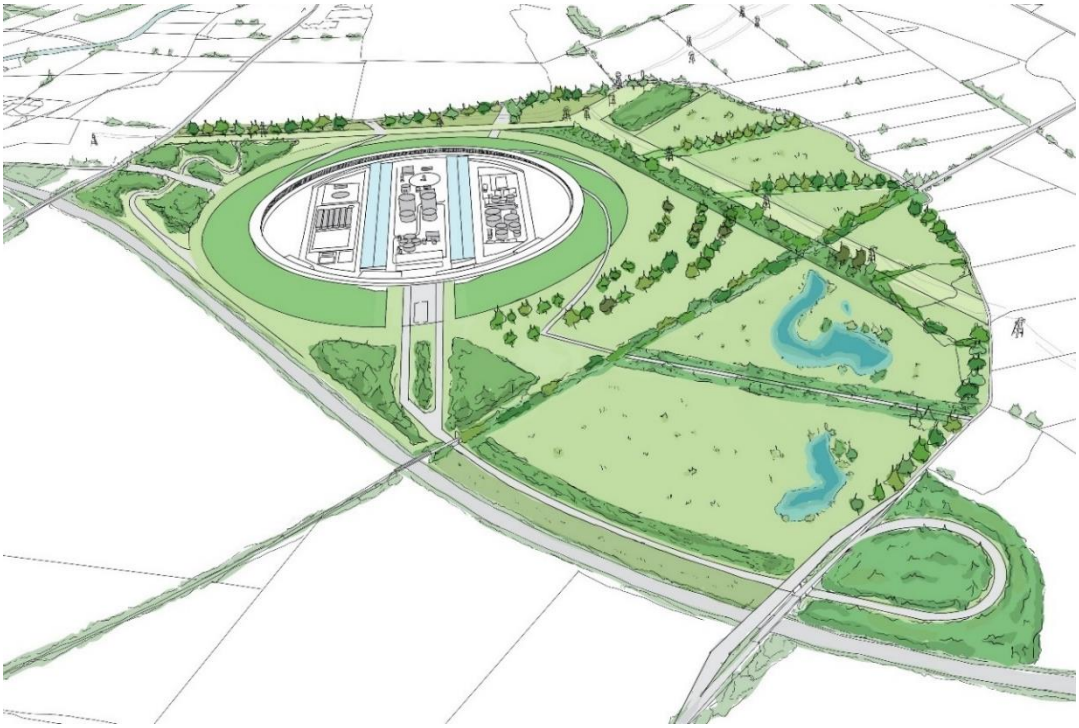


Figure 1.3 Rotunda Design

- A design utilising linear “green fingers”, with a sculptural landscape of retained spoil delineating a fragmented treatment plant, as set out in Figure 1.4, below.

Figure 1.4 Linear 'green fingers' design

1.3.3 Following further advice from the Design Council, including formal design panel review from independent built-environment experts of the three design concepts, and engagement with stakeholders, the "Earth Bank" concept design was selected for further consideration.

1.3.4 The functional design with its supporting linear landscape plan resulted in a triangular layout which was not suited to the process flows within a WWTP and was considered to offer a lower level of screening than the other two designs. The "green fingers" design was assessed as being too expensive and operationally challenging, particularly because of its fragmented, partial sunken design. It also presented a more alien form in the landscape than the "rotunda" design which offered a more naturalistic screening.

1.3.5 As discussed below, preliminary consultation on these three emerging design concepts took place with environmental stakeholder groups including Natural England, National Trust, RSPB, Wildlife Trust, Cambridge Past Present and Future (CPPF), Cam Valley Forum, Quy Fen Trustees and the Greater Cambridge Shared Planning Service (GCSP) representing South Cambridgeshire District Council and Cambridge City Council.

1.3.6 The "Earth Bank" design was included within our second phase of consultation. Feedback received strongly indicated a preference for a planted rather than an engineered screen on the top of the earth bank. Consultees felt that an engineered screen would present a more alien form in the landscape, compared to a more organic screen. This preference has been recognised and the Landscape Masterplan presented below provides details on our proposals for a planted screen.

1.3.7 We also engaged on landscape design with stakeholder organisations through technical working groups and with the project's local community working group. In addition to the landscape design these groups also considered recreational mitigation and enhancement, including improving recreational connectivity, promoting Biodiversity Net Gain (BNG) and improving ecological networks.

1.3.8 The evolution of the LERMP has been influenced by suggestions made through the project's Biodiversity and Ecology Technical Working Group, the Landscape and Heritage Technical Working Group, the Public Rights of Way working group, and one to one meetings with stakeholders, with particular input from Natural England, The Environment Agency, Greater Cambridge Planning, the National Trust, The Wildlife Trust, The RSPB, The British Horse Society, Camcycle, Cambridge Past Present and Future and The Ramblers.

1.3.9 We held two collaborative workshops in 2021 where members of the community, Parish Councillors and the Save Honey Hill group provided input into the emerging landscape design.

1.3.10 In January 2022, the Greater Cambridge Shared Planning Service (GCSPS) provided landscape comments in response to the second stage of consultation.

1.3.11 We have also discussed the Landscape Masterplan with local landowners, both as part of our second phase of consultation and subsequently.

1.3.12 An Outline LERMP was presented as part of Phase Three Consultation. This LERMP responds to the comments made on the Outline LERMP, as discussed in the Consultation Report.

2 Overview – a Multi-Functional Approach

2.1.1 The Proposed Development is intended to solve multiple problems and deliver multiple benefits. It will treat waste water and produce green energy and nutrients. It will deliver educational experiences of the circular economy and wider sustainability issues, through the Discovery Centre, part of the Gateway Building. Through the implementation of the LERMP it will deliver recreation, biodiversity, and landscape benefits.

2.1.2 The Gateway Building does not form part of this LERMP. Its architectural and operational details are discussed in the Design and Access Statement (App Doc Ref 7.6).

2.1.3 The circular Earth Bank, which will enclose the treatment plant, is central to the delivery of many of these benefits and is designed to be the focus of the design, not a passive landscape feature. Access onto part of the earth bank would be via the paths provided or through the Gateway Building. Invited visitors will be able to experience the surrounding sculpted features and wider landscape and to gain from the educational experience of views into an operational works from above. This use of the earth bank will be guided by interpretative material and appropriate signage.

2.1.4 Taking its inspiration from the existing and past rural landscape character, the project will seek to make a dramatic landscape statement, sculpting the landscape and ground levels in a manner which is both striking and sensitive to the surrounding communities it will neighbour. As it matures, it will soften and blend into the wider landscape, establishing new habitats for wildlife. Cues for the landscaped form have been drawn from local archaeological and historical features, including dykes, and from a wider perspective hillforts, and ridge-and-furrow field patterns. Woodland planting also takes cues from the local character with angular blocks of woodland proposed as advised through consultation, Technical Working Groups and Greater Cambridge Shared Planning.

2.1.5 This landscape sculpting will screen most of the structures of the Proposed Development and serve multiple purposes including:

- The mitigation of adverse visual impacts by creating a flowing form involving natural materials to draw attention away from the tallest elements of the facility;
- the provision of new landscape features of interest, connecting to the surrounding landscape and proposed nature networks;
- delivering significant biodiversity net gain: a minimum of 20% by providing new habitats and hedgerows in place of intensively managed farmland;
- improved recreational opportunities and connectivity; and
- reduction of vehicle movements and carbon emissions by removing the need to remove spoil from the site.

2.1.6 The UK is facing both a biodiversity crisis and an urgent need for green open space for public enjoyment and well-being. The design responds to this by providing places for both people and nature. Areas proposed for habitats sensitive to disturbance will not be available for open access by people whilst other areas will be open for all to enjoy.

2.1.7 Landscape proposals have been designed to deliver a minimum of 20% biodiversity net gain (BNG) on the site of the Proposed WWTP, with the potential to connect to the Cambridge Nature Network, enhancing ecological connectivity.

2.1.8 Recreational connectivity is also central to the design; Cambridgeshire has one of the lowest levels of natural green space available for public access in the UK[3]. The project's paths will be connected to the wider network of public rights of way, and a new bridleway will improve access to Quy Fen and Anglesey Abbey.

[3] The Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire (2021) *The Cambridge Nature Network, A Nature Recovery Network for Cambridge and its Surrounds. Summary Report.*

3 The Landscape Masterplan

3.1 Introducing the Landscape Masterplan

3.1.1 The Landscape Masterplan is presented at Figure 3.1 below, showing the areas of landscape planting, habitat creation and recreational mitigation and enhancement immediately surrounding the proposed WWTP.

3.1.2 During the evolution of the Landscape Masterplan and the associated environmental studies, the landscape design for the proposed WWTP has emerged through an iterative process, informed by the landscape and visual constraints and opportunities which are apparent on site and in the surrounding context. The resulting design is therefore landscape and visually led.

3.1.3 The design of the Landscape Masterplan aims to meet the following objectives:

- To mitigate the visual effects of the plant infrastructure, through a combination of extensive new woodland and hedgerow planting and tree planting on the earth bank, 5m high, which will surround the proposed WWTP. The combination of these measures will, in time, screen views of the proposed WWTP from Horningsea Road, the River Cam, Fen Ditton, Biggin Abbey, Horningsea and the public rights of way north and west of the proposed WWTP.
- To create a green and informal setting to the proposed WWTP that contributes positively to the local landscape context, at this transitional area of semi-rural and edge-of-settlement character;
- To make effective use of parcels of land severed by the location of the Proposed Development and, where possible, to maintain existing field boundaries to clearly define the extent of the land required to deliver the Landscape Masterplan;
- To conserve and enhance the local landscape character informed by guidance in the Cambridge Inner Green Belt Boundary Study (2015) and the Greater Cambridge Landscape Character Assessment (2021). The Proposed WWTP will be situated in the Eastern Fen Edge Landscape Character Area (LCA). Key features of the Eastern Fen Edge LCA include low lying farmland separated by linear drainage ditches, hawthorn hedges, tree-lined farm tracks and woodland belts. The villages have defined, well-vegetated settlement edges and there is a network of public rights of way (PRoW) in the area. The A14 severs Cambridge from the landscape to the north and east and pylons are prominent vertical features in the landscape.
- To respond to the landscape guidelines in the Greater Cambridge Landscape Character Assessment. These include: conserving and enhancing the regular small-scale pastoral fields, shelter belts and hedges at village edges, managing drains and ditches to maintain historic features and enhance ecological value of the farmed landscape and ensuring development is in keeping with the

open, rural character of the landscape. The new landscape around the proposed WWTP will respond to these guidelines with new hedgerows, woodland and tree belts, new linear sustainable drainage features and substantial new areas of grassland. These will enhance the landscape pattern and provide substantial new areas of wildlife habitat. The openness of the landscape immediately around the proposed WWTP will be reduced as the landscape will become more wooded, more closely resembling the landscape of the River Cam corridor and around Stow cum Quy.

- To achieve a biodiversity net gain through the creation of a mosaic of habitats, with both ecological and landscape character benefits.
- To ensure that the habitat created sits within a wider context of "landscape ecology", aligned with initiatives such as the Wicken Fen Vision (which aims to "*create a diverse landscape for wildlife and people stretching from Wicken Fen to the edge of Cambridge*") and the Cambridge Nature Network and, providing "stepping stones" for species in a changing environment; and
- To mitigate impacts on existing recreational facilities identified in the Environmental Statement by provision of an improved and wider path network and creating positive experiences for recreational users of this area within the wider landscape.

3.1.4 Overall, the new landscape provides a new and substantial feature of green infrastructure, designed to mitigate the effects of the proposed WWTP, to create an aesthetically pleasing and user-friendly green space, and to provide exemplary wildlife benefits through a mosaic of new habitats. The features and elements of the plan are further described in the sections below.

Tree planting set between existing trees and native transplants added to existing strip of young transplants to screen views from Horningsea

Native tree planting set between existing trees to filter views from Horningsea, on edge of existing ditch

New hedgerow and hedgerow tree planting to Low Fen Drove Way

Existing car park retained, post and rail fence added between car park and pedestrian footpath

Easements for outfall and Waterbeach routes

Cycle route

Proposed open glades and rides in woodland

Trees to earthwork bank top to contribute to long term screening and visual mitigation

Proposed vechicular route

Proposed car park and cycle parking enclosure

Sculpted circular earthwork bank 5m ht. with species rich grassland slopes

Drainage 'scrapes' to base of earthwork bank perimeter with clustered tree planting

Proposed southern landscape buffer of woodland blocks

Seasonal pond

Retained arable field

Ventilation 'slices'

Photovoltaic (PV) Solar Panels

Gentle undulations with peaks and troughs to increase habitat variation

Propoposed new bridlway

Native hedgerow and trees atop earthwork bank to form 3m depth thicket, to be allowed to grow to 5-6m height over time

Calcareous Loam/Neutral Meadow Grassland

Grassland buffer between woodland and County Wildlife Site

HORNINGSEA ROAD

LOW FEN DROVE WAY

P-1 Landscape Masterplan - Plan

Scale 1:7500 @ A3 / 1: 3750 @ A1

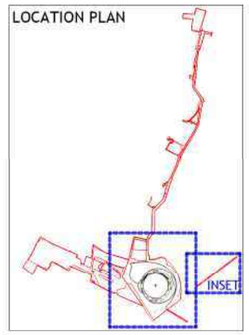
0 100 200 300 400 500 m

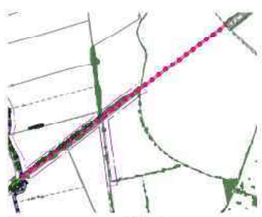
N

LEGEND

- Existing intermittent tree groups and hedgerow trees
- Existing retained hedgerow vegetation
- Proposed areas of woodland
- Proposed trees and tree groups
- Proposed native hedgerow and hedgerow tree
- Proposed 'thicket' of earthwork bank vegetation comprising trees (semi-mature, heavy standard, standard and transplants) and hedgerow transplants.
- Undulating Ridge and furrow
- Proposed areas of Calcareous Loam Meadow Grassland (Refer to drawing 775_01(MP)004 Proposed habitat areas, for all grassland types.
- Proposed new pedestrian paths
- Proposed native whip planting to supplement existing young whip planting; infill and replace any existing that have failed
- Photovoltaic (PV) Solar Panels
- Existing line of pylons
- Low Fen Drove Way Grasslands and Hedges County Wildlife Site (20m buffer shown dashed)
- Drainage 'scrapes' to base of earth bank perimeter
- Easements for outfall and Waterbeach routes
- Existing PROW: Byway open to all traffic
- Proposed PROW: new bridleway (refer to Inset)
- Scheme order limits

LOCATION PLAN





P-2 INSET Proposed Bridleway - Plan

Scale 1:25000@A3 /1:12500@A1

REVISIONS Scale 1:125000 @ A3

Rev:	Date:	Description:
I2	14.05.21	Added arable and offsite options
I3	19.05.21	Woodland links amended
I4	27.05.21	Hedge added to redline
I5/I6	06.12.21	Updated layout
I7	21.12.21	Updates to bund, hedgerows and woodland
I8	14.01.22	Vent reversed
I9	18.01.22	Visitor centre update
I10	08.02.22	Amendments to path, ponds and bank trees
I11	15.06.22	Design responses to Con3 feedback
I12	11.07.22	Amendments to car park, hedge, woodland
I13	04.08.22	PV Solar panels added, Red line updated
I14	22.08.22	Key corrected
I15	08.11.22	Amendments to Earthwork bank trees

WWTP, CAMBRIDGE

Client: Anglian Water

Drawing: Landscape Masterplan

Project No: 775_01

Drawing No: 775_01(MP)003

Scale: Scale: 1:7500@A3 Rev: I15

Date: April 2021 Drawn: JB

Checked: PM Checked:

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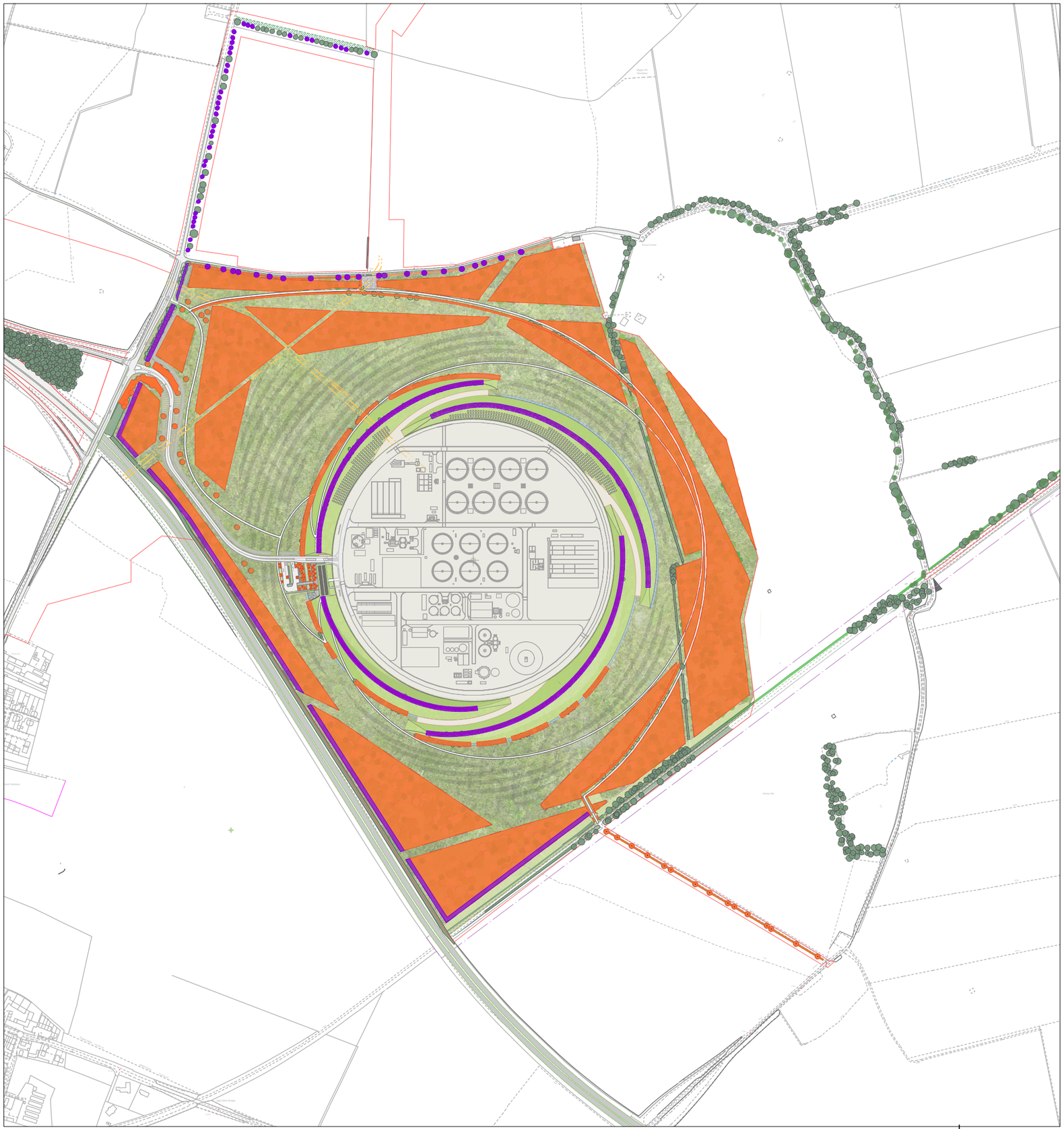
Figure 3.1 Landscape Masterplan



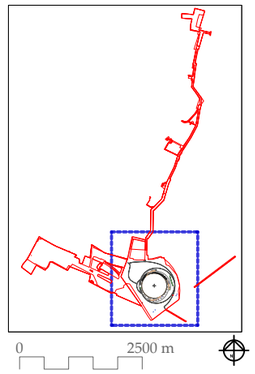
P-1 Landscape masterplan - Plan

Figure 3.1b Landscape Masterplan identifying screen planting

LEGEND

- Screen planting, intended to provide immediate filtering of views at installation
- Other planting, intended to provide screening in the long term
- Existing vegetation to be retained

LOCATION PLAN



REVISIONS

I1	16.02.24	Response to Examination query

WWTP, CAMBRIDGE

Client: Anglian Water

Drawing: Landscape Masterplan identifying screen planting

Project No: 775_01

Drawing No: 775_01(MP)014

Scale: Scale: 1:7500@A3 Rev: I1

Date: April 2024 Drawn: JB

Checked: JB PM Checked: RM

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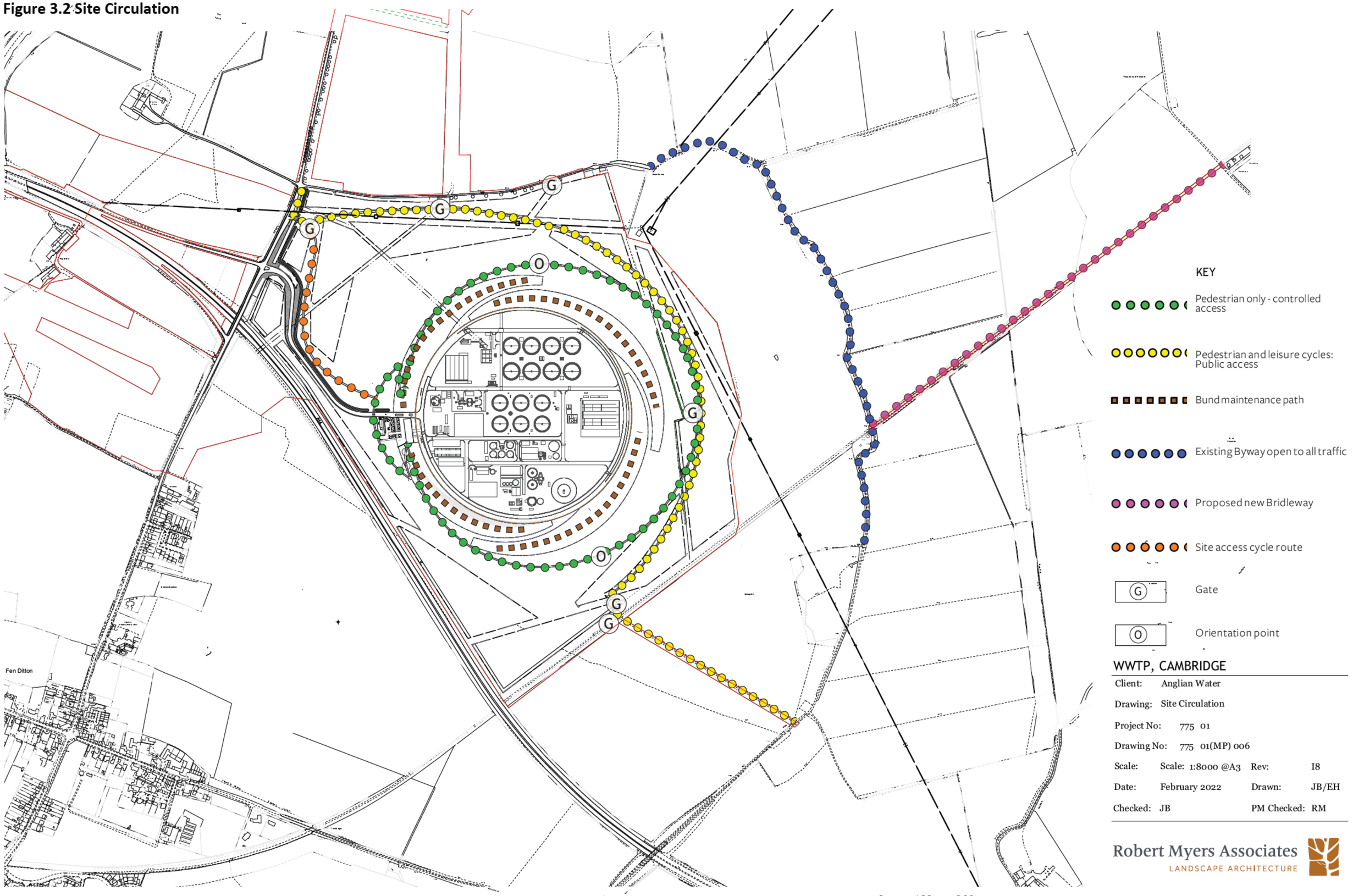
3.1.5 The Proposed Development creates a series of new recreational connections, on site and linking to the wider network. A wider extent is shown in Figure 3.2 to demonstrate the connectivity to the existing public rights of way network. On the site itself, new links will be created. A publicly accessible path will traverse the eastern part of the site, set between a hedgerow with hedgerow trees, and the edge of the eastern woodland. The path surface is of a suitable width to be shared by pedestrians and recreational cyclists. Internal paths lead around the slopes of part of the earth bank and through the open ridge and furrow grassland. Where paths are in open areas these will be delineated by low level post and rail features designed to promote the use of the paths, but not prohibit access to the open green spaces accessible to people.

3.1.6 Interpretation boards, finger posts and scattered informal bench seating will contribute to the visitor experience.

3.1.7 A new bridleway will be established to the east of the site, using the existing surface along the former railway line to link Low Fen Drove Way with Station Road.

3.1.8 The wider recreational context is discussed further in Section 3.5 below.

Figure 3.2 Site Circulation



P-1 Site Circulation - Plan
Scale 1:8000 @ A3

WWTP, CAMBRIDGE

Client:	Anglian Water		
Drawing:	Site Circulation		
Project No:	775 01		
Drawing No:	775 01(MP) 006		
Scale:	Scale: 1:8000 @A3	Rev:	I8
Date:	February 2022	Drawn:	JB/EH
Checked:	JB	PM Checked:	RM

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3.2 Landscape Masterplan phasing

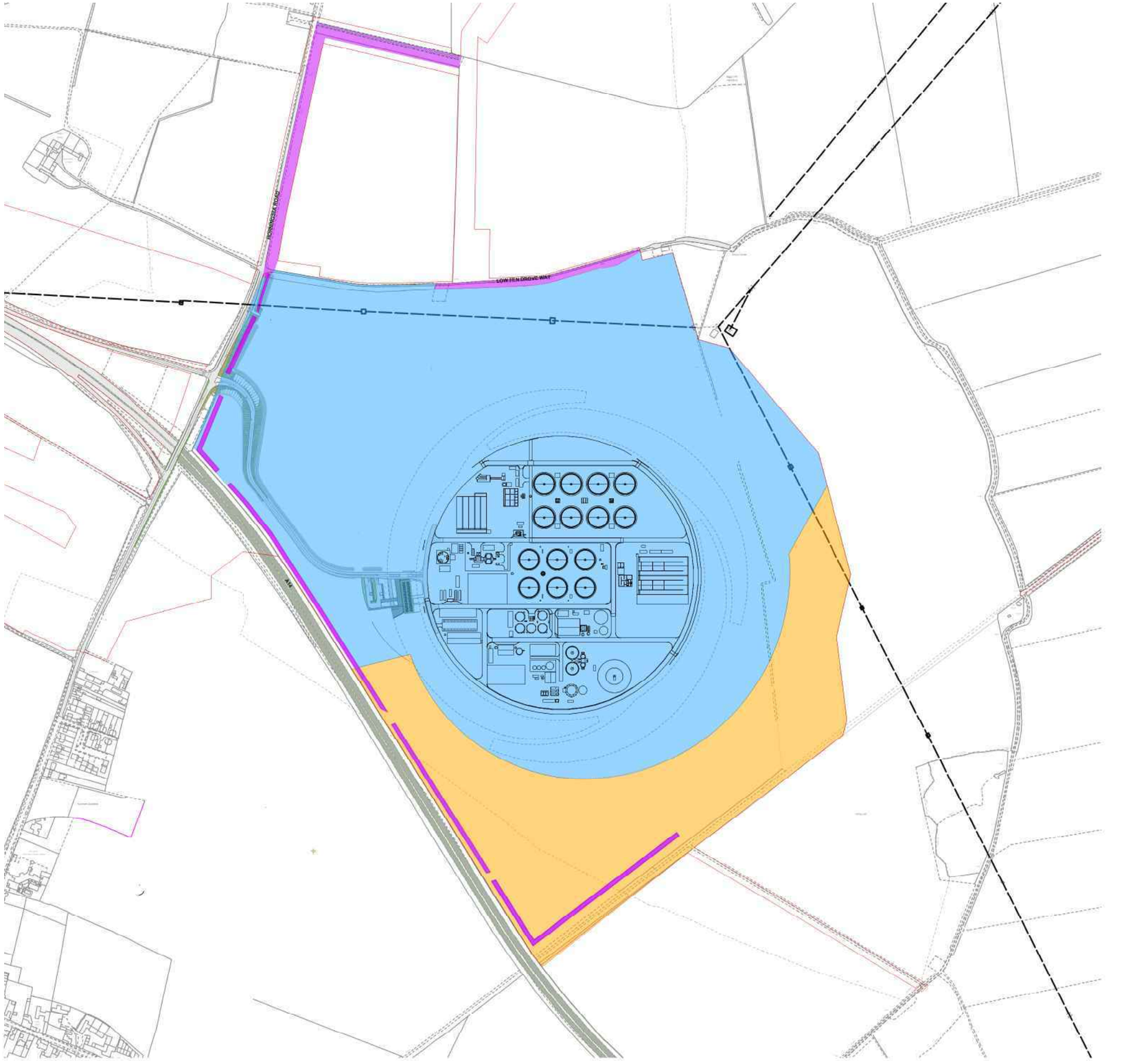
3.2.1 The Landscape Masterplan will be phased to maximise the opportunity for the planting to become established as early as possible. Three phases are proposed, as shown in Figure 3.3 below.

3.2.2 Phase 1 (initial planting) will take place at an early stage in the areas not needed for construction activities. This planting will be protected during the construction period to allow its early establishment so that it provides screening of the Proposed Development in the later stages of construction and operation.

3.2.3 Phase 2 of the planting scheme would take place in areas where construction activity is scheduled to finish earliest or where there is less construction activity and therefore planting could be potentially implemented before all construction activities on site have ceased.

3.2.4 Phase 3 could not be implemented until construction activities, such as plant and machinery moving over the area, has ceased. Where practicable, planting on the top of the earth bank will be established at the earliest opportunity. Phase 3 would involve re-instatement of land and the remaining elements of the planting scheme.

Figure 3.3 Phasing Plan



LEGEND

- Phase 1 planting area
- Phase 2 planting area
- Phase 3 planting area
- Scheme order limits

0 250 m

P-1 Phasing - Plan

Scale 1:7500 @ A3

PURPOSE OF ISSUE

Rev:	Date:	Drawing Status:
I1	19.01.22	For Information
I2	27.01.22	For Information
I3	10.02.22	For Information
I4	01.07.22	For Information
I5	22.08.22	For Information

REVISIONS

Rev:	Date:	Description:
I1	19.01.22	First Issue
I2	27.01.22	Phase 1 area amended
I3	10.02.22	Phase 1 area amended
I4	01.07.22	Site boundary updated
I5	22.08.22	Key corrected

WWTP, CAMBRIDGE

Client: Anglian Water

Drawing: Phasing Plan

Project No: 775_01

Drawing No: 775_01(MP)009

Scale: Scale: 1:7500@A3 Rev: I5

Date: February 2022 Drawn: JB/EH

Checked: JB PM Checked: RM

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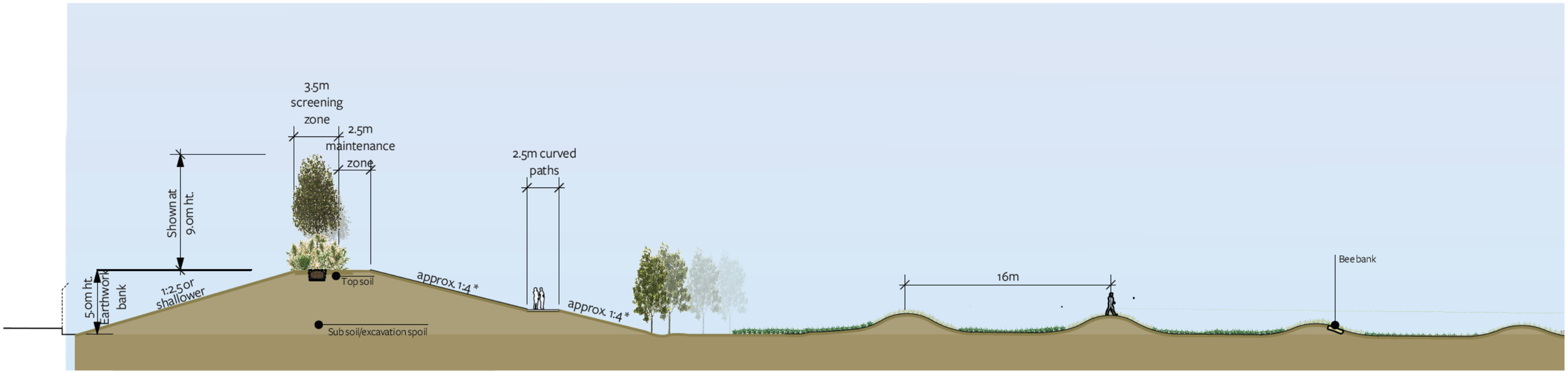
3.3 The landscape design

3.3.1 The earth bank will comprise four curved landforms, organic in shape, which will encircle the proposed WWTP and will screen or partially screen the structures and buildings within the proposed WWTP from the first day of operation of the Proposed Development. The earth bank profile is asymmetric, with a steeper 1:2.5 (maximum) interior slope and an outer slope between 1:2.5 and 1:5 where the landforms are at their widest. The gentler gradient of the outer slopes will soften the bank profile, enabling better integration with the surrounding landscape. There will be a 2.5m wide area of level land all the way round the top of the bank to facilitate maintenance.

3.3.2 A typical cross section of the bank is set out below in Figure 3.4. Inset A shows the flat area on the top of the bank designed to accommodate planting and maintenance.

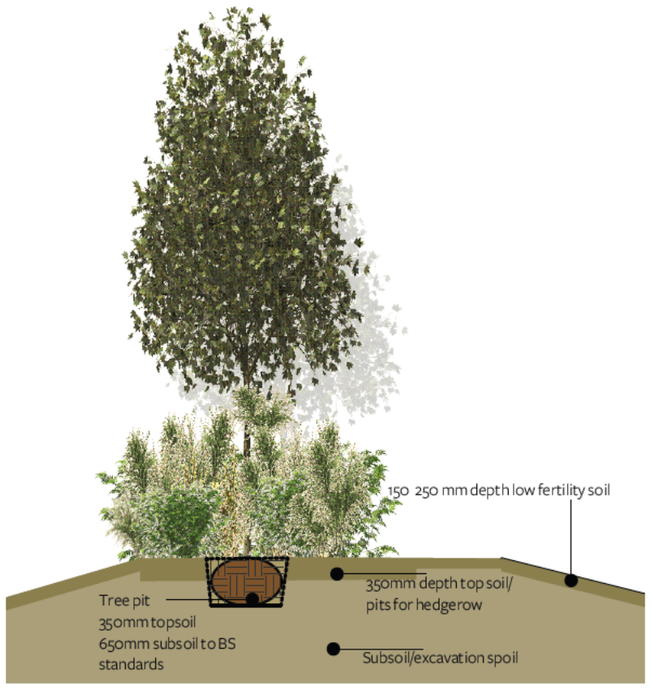
Figure 3.4 Earth Bank Section



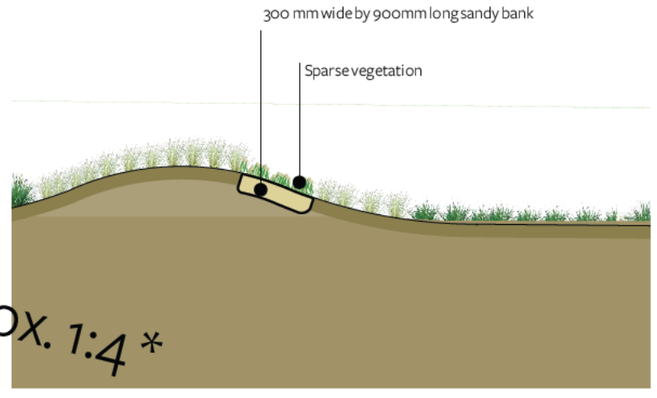
S-1 Earthwork bank - Typical Section
Scale 1:300 @ A3

*Slope will increase to 2.5 maximum at tapered end and decrease at the Earthwork bank's widest curve to 1:6

0 10 20 M



S-2 Inset A
Scale 1:100 @ A3



S-3 Inset B - Bee bank
Scale 1:100 @ A3

ALL MEASUREMENTS ARE INDICATIVE

PURPOSE OF ISSUE

Rev:	Date:	Drawing Status:
I1	16.04.21	For Information
I2	16.11.21	For Information
I3	08.01.22	For Information
I4	18.01.22	For Public Consultation
I5	28.01.22	For Public Consultation
I6	01.07.22	For Information
I7	12.07.22	For Information
I8	22.11.22	For Information

REVISIONS

Rev:	Date:	Description:
I2	16.11.21	For Informaiton
I3	08.01.22	Earthwork bank slope ratio amended
I4	18.01.22	Details amended for public consultation
I5	28.01.22	Earthwork bank height amended
I6	01.07.22	Earthwork bank height amended, title change
I7	12.07.22	Earthwork bank height amended
I8	22.11.22	Earthwork bank slope ratio amended, trees omitted

WWTP, CAMBRIDGE

Client: Anglian Water
Drawing: Earthwork bank section
Project No: 775 01
Drawing No: 775 01(SC)001
Scale: 1:100/300@A3 Rev: I8
Date: October 2021 Drawn: JB/EH
Checked: JB PM Checked:

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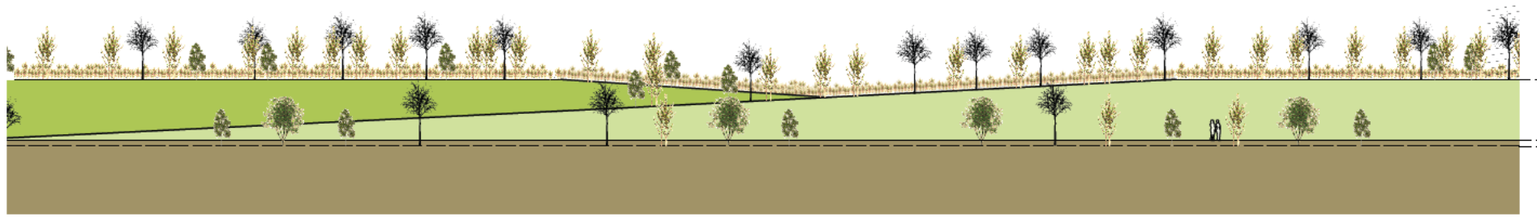
3.3.3 Once established, vegetation on the earth bank will start to further screen the proposed WWTP, in line with the design principles at paragraph 1.2.2. The top of the Earth Bank will be planted with a 3m width native hedgerow with clusters of trees planted within the hedgerow. Native tree species will include Field Maple, Birch, Hornbeam, Oak and Rowan, planted at varying sizes (up to approximately 5m height when installed). The top of the Earth Bank will be managed so that the hedgerow grows to form a thicket, reaching a height of approximately 3m in 15 years. The trees will emerge from this as taller forms, potentially reaching 8-10m high after 15 years. At the base of the Earth Bank, trees are planted in clusters within a slight depression that benefits from water runoff. These species include tall-growing Black Poplars. Overall trees and hedgerows at both top and base give the earth bank an informal appearance with green 'layering' that helps to connect it to the landscape. By year 15, all but the tallest elements of the structures within the proposed WWTP, including the digesters (20m high), the boiler stack (24m high) and the nutrient recovery stacks (18m high) will be screened from most viewpoints.

3.3.4 Figure 3.5 below shows predicted and indicative elevations of the Earth Bank at year 1, year 5 and year 15.

3.3.5 The Earth Bank will be seeded with a mix of grassland and wildflower species that will create a species-rich neutral grassland meadow. Between the Earth Bank and the perimeter woodland, there will be open grassland, also seeded with grassland and wildflower species. The open grassland will include areas of gently undulating landforms, resembling ridge and furrow farmland. These will have both landscape and ecological benefits, with the ridges softening the transition between the Earth Bank and the low-lying landscape of the surrounding area. The ridges will also provide different grassland habitats depending on whether they are largely in the sun or the shade. The sunnier sides of the earth bank and ridges will create opportunities for bee banks and reptile basking areas. Indicative figures are provided on Figure 3.4 above.

3.3.6 As shown in Figure 3.6, below, woodland will enclose the open grassland, with a mosaic of different woodland habitat types including traditional woodland, lighter and more informal woodland, woodland edge planting and open glades and rides. Understorey shrubs, vines and native forbs (herbaceous flowering plants) are included in appropriate proportions. The variety fosters a subtle range of habitats.

Figure 3.5 Vegetation Growth Rate - Earth Bank Elevation



E-1a Earthworks bank- Elevation - Vegetation Growth Rate Year 1
Scale 1:500 @ A3

E-1b Earthworks bank- Elevation - Vegetation Growth Rate Year 5
Scale 1:500 @ A3

E-1c Earthworks bank - Elevation - Vegetation Growth Rate Year 15
Scale 1:500 @ A3

Key Plan
Not to Scale @ A3

PURPOSE OF ISSUE

Rev:	Date:	Drawing Status:
I1	20.01.22	For Information
I2	28.01.22	For Information
I3	01.07.22	For Information
I4	08.11.22	For Information

REVISIONS

Rev:	Date:	Description:
I1	20.01.22	First issue
I2	28.01.22	Earthworks bank height amended
I3	01.07.22	Key Plan updated
I4	08.11.22	Amendments to Earthwork bank trees

WWTP, CAMBRIDGE

Client: Anglian Water

Drawing: Earthworks bank Elevations Vegetation Growth Rates

Project No: 775 01

Drawing No: 775 01(SC)102

Scale: 1:500@A3 Rev: I4

Date: December 2021 Drawn: RL/EH

Checked: JB PM Checked: RM

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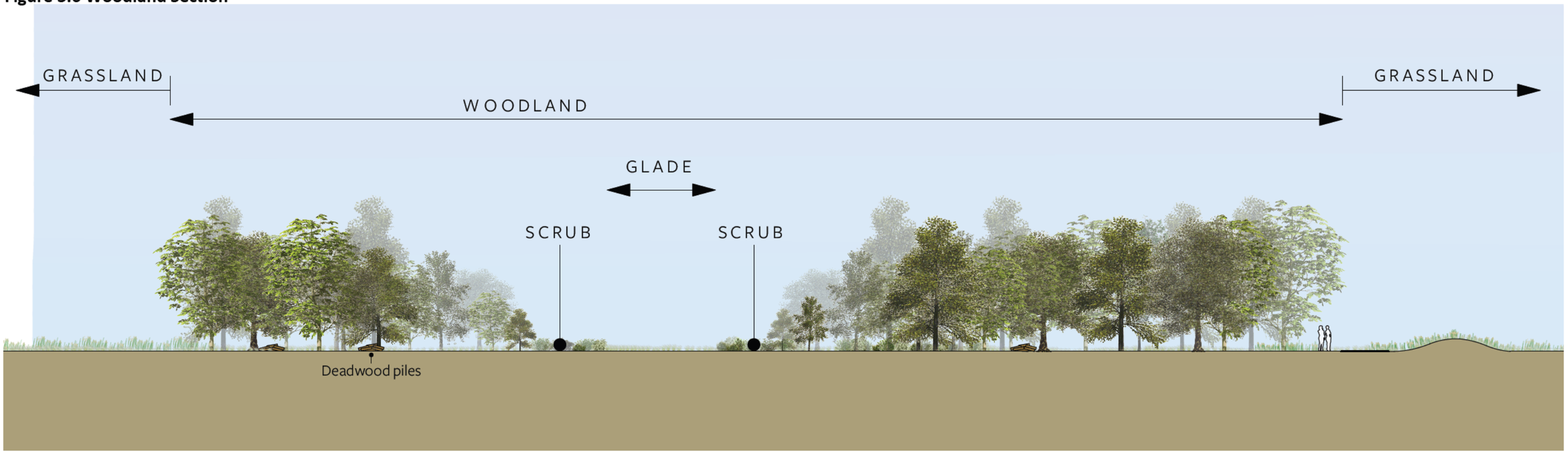
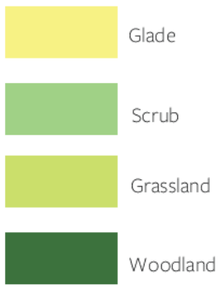
Figure 3.6 Woodland Section



S-1 Woodland Typical Section
Scale 1:250 @ A3

0 10 20 M



P-1 Typical Woodland Diagram
N.T.S

PURPOSE OF ISSUE

Rev:	Date:	Drawing Status:
I1	12.01.22	For Information
I2	28.01.22	For Information
I3	17.02.22	For Information
I4	01.07.22	For Information

REVISIONS

Rev:	Date:	Description:
I1	12.01.22	First Issue
I2	28.01.22	Woodland schematic diagram added
I3	17.02.22	Labels Added
I4	01.07.22	Layout amended

WWTP, CAMBRIDGE

Client: Anglian Water
Drawing: Woodland section
Project No: 775 01
Drawing No: 775 01(SC)006
Scale: 1:250@A3 Rev: I4
Date: January 2022 Drawn: EL/EH
Checked: JB PM Checked:

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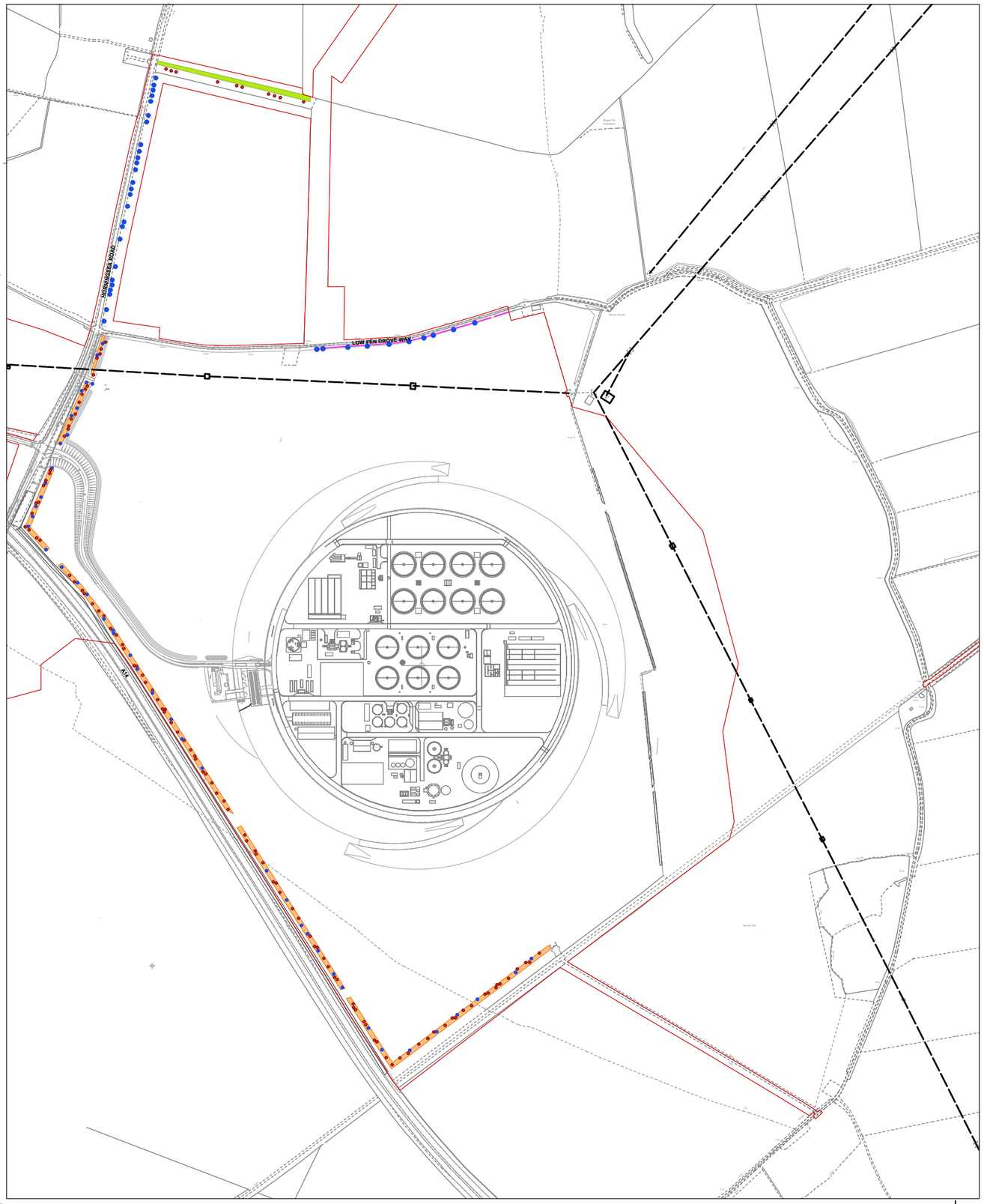
3.3.7 Other proposed planting includes standard trees to be planted in gaps in the existing tree line along Horningsea Road, which would provide screening while retaining open views across the landscape to the east and south from the road. Many of the existing trees along Horningsea Road are ash and are likely to be lost in the next few years due to ash die-back.

3.3.8 The initial planting described in the phasing section above will be carried out at the start of construction. This planting will include a woodland belt 7.5 m wide along the southern boundary of the site and along part of the western and eastern boundaries. Other planting will include a hedgerow with trees along the southern side of Low Fen Drove Way and planting to strengthen an existing immature belt of vegetation opposite the entrance to the cemetery on Horningsea Road. These initial activities, shown in Figure 3.7, will allow screen planting to become established during the multi-year construction period, shortening the time before it becomes effective as a visual screen.



P-1 Initial Planting Proposals

Scale 1:7500 @ A3

LEGEND

- Initial woodland margin planting: 1.11ha
  Depth: 7m
- Semi-mature tree planting
  79 no. Native tree species
- Heavy standard tree planting
  114 no. Native tree species
- Initial native hedgerow planting on Low Fen Drove Way: 321 l.m.
- Proposed native whip planting to supplement existing young whip planting ; infill and replace any existing that have failed
  1790 sqm
- Scheme order limits

NOTES

W8 - Community of tree species abundant within southern and eastern Britain, warm, dry, lowland environments with calcareous soils.
National Vegetation Classification JNCC

PURPOSE OF ISSUE

Rev:	Date:	Drawing Status:
I1	11.01.21	For Information
I2	02.02.22	For Information
I3	10.02.22	For Information
I4	24.06.22	For Information
I5	01.07.22	For Information
I6	11.07.22	For Information
I7	22.08.22	For Information
I8	18.09.22	For Information

REVISIONS

Rev:	Date:	Description:
I1	11.01.21	First issue
I2	02.02.22	Tree species updated to council comments
I3	10.02.22	Update to layout
I4	24.06.22	Update in response to highway layout
I6	11.07.22	Tree planting amended
I7	22.08.22	Key corrected
I8	18.09.22	Graphic updated

WWTP, CAMBRIDGE

Client: Anglian Water

Drawing: Initial planting

Project No: 775_01

Drawing No: 775_01(MP) 008

Scale: Scale: 1:7500@A3 Rev: I8

Date: December 2021 Drawn: JB/EH

Checked: JB PM Checked:

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Figure 3.7 Initial Planting

3.3.9 The proposed WWTP permanent access road from the public highway, visitor car park and paths will be integrated into the landscape through the use of surface materials appropriate to their landscape setting. The entrance to the proposed WWTP will be via the Gateway Building. This will provide the interface between the newly created landscape and the functional areas of the proposed WWTP. It will be a welcoming arrival point for visitors to the Discovery Centre and people working at the WWTP. As described in the Design and Access Statement (App Doc Ref 7.6), the building will be constructed and finished in natural materials to align with the design aspiration of integrating the Proposed Development into the landscape, rather than making an urban architectural 'statement'.

3.3.10 As discussed in the following section, the landscape proposals create a range of new ecological habitats, including a mosaic of grassland types, woodland, hedgerow and tree planting. Bee banks, bare areas for reptile basking, and edge-of-woodland features, such a deadwood piles and understory planting, extend the range of variation within the habitats.

3.3.11 A regular programme of landscape maintenance will ensure the establishment and continued growth of the planted and seed areas. This establishment programme will include:

- Maintenance of a weed free area 1m in diameter around the stems of all new planting until the canopy closes and weed growth no longer competes with the woodland planting.
- Checking stakes, shelters and tree ties on woodland, trees and hedgerow plants to ensure they remain effective in protecting young planting and are not rubbing on bark.
- Removal of stakes, shelters and tree ties when new planting is fully established and able to withstand grazing by deer, rabbits and hares.
- Lightly trimming new hedgerow in the first three years after planting to encourage lateral growth and create bushy plants.
- Cutting existing and fully established hedgerows every three years to maintain a height of between 2-4m.
- Mowing the new areas of grassland twice in the first two growing seasons in spring and autumn. Mowing the established grassland annually in autumn, collecting and removing the cuttings.

3.3.12 Further details on the approach to long-term maintenance are set out in Section 4.

3.4 Biodiversity

3.4.1 As detailed in the section above, the landscape design proposals create a range of new ecological habitats, including a mosaic of grassland types, woodland, hedgerows, and tree planting. This is shown in the Landscape Masterplan (Figure 3.1) and Proposed Habitat Areas plan (Figure 3.9).

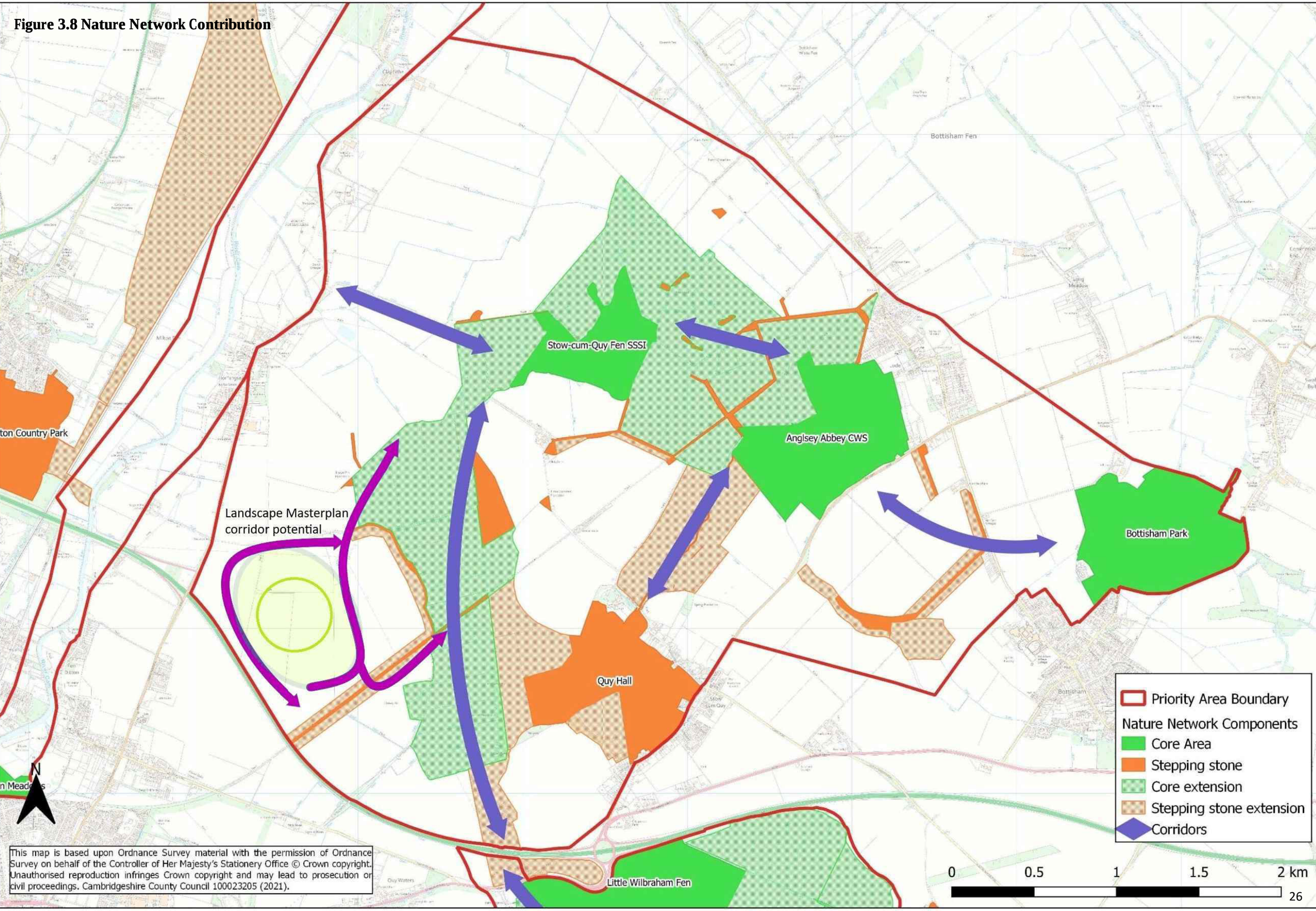
3.4.2 The landscape proposals have been designed to deliver a minimum of 20% biodiversity net gain (BNG) on the site of the proposed WWTP.

3.4.3 The BNG has been calculated according to the Biodiversity Defra metric 3.0[4]; the metric uses habitat as a proxy for wider biodiversity with different habitat types scored according to their relative biodiversity value. A BNG Report (Appendix 8.13, App Doc Ref 5.4.8.13) detailing the BNG calculation for the area covered by the Landscape Masterplan, as well as other areas such as those along the pipeline route, is submitted with the DCO application for the Proposed Development.

3.4.4 The new landscape and ecology habitat creation has been designed in line with the design principles at 1.2.2 and to complement the Cambridge Nature Network opportunity areas for nature recovery[5], providing a new component and potential extension to the stepping stones, corridors and core areas such as Quy Hall, Little Wilbraham Fen, Stow-cum-Quy Fen SSSI. [These new linkages are shown in purple in Figure 3.8].

[4] Stephen Panks *et al* (2021). *Biodiversity metric 3.0: Auditing and accounting for biodiversity – User Guide.* Natural England.
[5] The Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire (2021) *The Cambridge Nature Network, A Nature Recovery Network for Cambridge and its Surrounds. Summary Report.*

Figure 3.8 Nature Network Contribution



3.4.5 Compatibility and alignment with the National Trust's Wicken Fen Vision[6] has also been considered when selecting the new habitats, particularly in respect of grassland types.

3.4.6 The Proposed Development falls within the southern area of the Wicken Fen Vision. The landscape plan aims to create a diverse range of habitats for a large number of species, shaped by the differing soils and topography of the area. The Proposed Development sits within the drier areas of the Vision, which proposes more rough grassland and coppice belts. The Proposed Development, although featuring extensive areas of tree planting, will include grassland with the proposal to create a calcareous loam meadow community.

3.4.7 Woodland habitat creation will include woodland features such as edges, rides and glades, creating open areas of woodland divided into different pockets of woodland. These will provide ecological benefits for insects, birds, and bats, which have been recorded on and adjacent to the site. Rides will provide new wildlife corridors through the site to connect species to the wider landscape. The woodland design will follow a scheme and design similar to that shown in Figure 3.7, the rides and glades are also visible in the Landscape Masterplan (Figure 3.1) and the Proposed Ecology Features Plan (Figure 3.10 on page 31).

3.4.8 It is proposed that the woodland species mix will include species characteristic of a National Vegetation Classification (NVC) community W8 ash (*Fraxinus excelsior*) – field maple (*Acer campestre*) – dog's-mercury (*Mercurialis perennis*) woodland[7]. Most semi-natural woodland in Cambridgeshire is W8. However, due to ash dieback, ash will not be included in the mix and it is proposed that the percentage of oak and field maple within the planting palette is increased at the expense of rowan and wild cherry, which are less common in native woodlands in Cambridgeshire. There will be planting variation in which tree species are planted in groups of varying clump/block size and spacing between trees creating gradients of different planting densities across the site. The aim will be to create priority habitat woodland such as lowland mixed deciduous woodland[8].

3.4.9 The design will encourage natural colonisation where possible adjacent to the Low Fen Drove Way Grasslands and Hedges County Wildlife Site (CWS). Enhancement and potential extension of the CWS by the creation of a new area of semi-improved neutral grassland buffering (minimum 15-20m wide) the northern boundary of the CWS has also been designed to ensure no shading or encroachment on the existing habitats associated with the CWS. It is also proposed to improve the condition of the CWS through habitat management proposals, which could include clearing scrub in areas to restore semi-improved neutral grassland and unimproved calcareous grassland. The aim is to buffer, enhance, and improve the resilience of the CWS, keeping tree planting away from the margins of the CWS to maintain the grassland, which is used by a diverse invertebrate assemblage. The buffer will in time become a ride type habitat between the CWS and new planting within the site, this is visible in both the Landscape Masterplan (Figure 3.1, above) and the Proposed Ecology Features Plan (Figure 3.10).

3.4.10 Species-rich hedgerows will be planted with a minimum of five woody species in the planting mix, characteristic of NVC community W21[9] hawthorn (*Crataegus monogyna*) – ivy (*Hedera helix*) scrub. Hedgerow management will vary depending on its purpose[10] from clipping annually to layering every 7-10 years for example, with adjacent lengths cut in different years. Hedgerow planting with fencing, where required will also be used in places to deter visitors from accessing ecological sensitive areas such as the CWS to maintain reserved areas for wildlife and prevent trampling of the grassland.

3.4.11 Path layout and boundary treatment as well as signage and interpretation boards will be used to divert footfall pressure away from the Low Fen Drove Way Grasslands and Hedges CWS.

3.4.12 Habitat creation will aim to benefit several species of principal importance (Section 41 species, NERC Act 2006), amongst others, such as turtle dove (*Streptopelia turtur*), barbastelle bat (*Barbastella barbastellus*), white-letter hairstreak butterfly (*Satyrium w-album*) and common lizard (*Zootoca vivipara*).

3.4.13 For turtle dove this will include:

- Areas of bare soil will be created along field margins in the east of the site around the proposed areas of calcareous loam meadow grassland (as shown in the Landscape Masterplan (Figure 3.1) and Habitat Areas plan (Figure 3.9) and presented in Section 3.1 above), with the management of these areas involving annual cultivation in spring. This type of management will also benefit invertebrates.
- Sow flowering seed mixes developed to provide food for turtle doves throughout the breeding season.
- Maintain areas of mature scrub and hedgerow by managing on a three-year rotation. The creation of new scrub areas and woodland edges will be designed close to suitable areas for foraging.

[6] National Trust https://www.nationaltrust.org.uk/wicken-fen-nature-reserve/features/wicken-fen-vision.
[7] Design prescriptions have been taken from Forestry Commission (1995) *Creating New Native Woodlands, Bulletin 112*. Available online at: Forestry Commission Bulletin: Creating new native woodlands (forestresearch.gov.uk)
[8] Lowland mixed deciduous woodland (UK BAP Priority Habitat description) (jncc.gov.uk)
[9] Hawthorn is dominant, often accompanied by blackthorn, elder, dog rose, bramble, honeysuckle with rowan, ash or hazel as trees.
[10] For example, to be good for invertebrates a hedge should be over 1m thick, at least 2m tall, and merge with surrounding field margin via scrub and tall herbs. Kirby, P. (1992) *Habitat management for invertebrates: a practical handbook.* Joint Nature Conservation Committee, Peterborough.

3.4.14 For barbastelle bat, the Proposed Development includes woodland expansion and hedgerow linkages, an action to directly benefit the species. The new woodland habitat creation adjacent to the Low Fen Drove Way Grasslands and Hedges CWS will over time provide new areas for dispersal and foraging. Options will also be explored for installing bat boxes in the Low Fen Drove Way Grasslands and Hedges CWS.

3.4.15 For the white-letter hairstreak butterfly we have included elm in the proposed hedgerows, scrub and woodland clumps.

3.4.16 For common lizard this will include:

- The installation of log piles and hibernaculum (see Figure 3.11 below) to provide more resources for reptiles, which were recorded in Low Fen Drove Way Grasslands and Hedges CWS. These will be positioned in areas adjacent to the CWS (see the Proposed Ecology Features Plan (Figure 3.10) on page 31), whilst ensuring no loss in the grassland habitats the CWS has been designated for.
- Explore opportunities to include the removal of scrub within the CWS to provide enhanced areas for basking.
- The maintenance of existing grasslands and the creation of new grassland on the earth banks (with varying aspects, including south facing) to ensure a high invertebrate abundance and provide new basking areas.
- Increased connectivity between the CWS and new grassland to increase the habitat resource for reptile.

KEY

Woodland zones

Initial planting: Woodland transplants
Refer to 775_01(MP)008 for further information

Proposed woodland blocks

Trees

Initial Planting: Woodland tree heavy standard
14-16cm girth/425-600cm height + 16-18cm girth/450-625cm ht

Initial Planting: Woodland planting semi mature
20+cm girth, 500+cm height

Tree - Whip transplant 1+1
60-90cm height; set within triple-staggered hedgerow planting

Tree - Standard
10-12cm girth, 300-350cm height

Proposed tree: heavy standard
14-16cm girth/425-600cm height + 16-18cm girth/450-625cm ht

Proposed tree - Semi mature
20+cm girth, 500+cm height

Hedgerows and 'thicket' infill

Proposed native hedgerow

Proposed native whip planting to supplement existing young whip planting ; infill and replace any existing that have failed

Grassland Zones

All ready-made seed mixes to be supplemented with additional species as per ecologists' recommendations

Grassland zone A: Calcareous/neutral loam grassland
EM5 Meadow mixture for loamy soils,

Grassland Zone B: Woodland ground flora
EM10 Tussock mixture

Grassland Zone C: Lawn, low maintenance amenity
EL1 Flowering lawn

Grassland Zone D: Moisture tolerant mix
EP1 Pond edge mixture

Grassland Zone E: Wetland mix
EM8 Meadow mixture for wetlands

Permanent water at base of proposed swale

Existing Hedgerow to be retained

Existing Hedgerow to be removed

Existing Tree to be retained

Existing vegetation in wider context

County Wildlife site
with 20m setback buffer

Proposed paths with self-binding gravel

Proposed ridge and furrow

Proposed Treatment Plant

Proposed Infrastructure and car park

Scheme order limits

PURPOSE OF ISSUE

Rev:	Date:	Drawing Status:
I1	10.12.21	For Information
I2	15.12.21	For Information
I3	12.01.22	For Information
I4	18.01.22	For Information
I5	10.02.22	For Information
I6	17.02.22	For Information
I7	27.06.22	For Information
I8	30.06.22	For Information
I9	11.07.22	For Information
I10	22.08.22	For Information
I11	06.10.22	For Information
I12	08.11.22	For Information

REVISIONS

Rev:	Date:	Description:
I1	10.12.21	First Issue
I2	15.12.21	Grassland and hedgerow figures corrected
I3	12.01.22	Road access and site boundary updated
I4	18.01.22	Bund, SUDs feature, proposed paths updated
I5	10.02.22	Pond location change
I6	17.02.22	Title change
I7	27.06.22	Update in response to highway layout
I8	30.06.22	Update to car park to the north
I9	11.07.22	Gate relocated, hedge adjusted along LFDW
I10	22.08.22	Key corrected
I11	06.10.22	Key corrected
I12	08.11.22	Amendments to Earthwork bank trees

WWTP, CAMBRIDGE

Client: Anglian Water

Drawing: Proposed Habitat Areas

Project No: 775_01

Drawing No: 775_01(MP)004

Scale: Scale: 1:7500@A3 Rev: I12

Date: February 2022 Drawn: JB/EH

Checked: JB PM Checked:

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Figure 3.9 Proposed Habitat Areas

KEY

- Proposed Bee banks and bare soil scrapes
- Proposed Deadwood and Brash piles
- Proposed Hibernacula
- Proposed seasonal ponds
- Proposed people and dog free areas for wildlife
- Bat roost tree to be retained
- Proposed Infrastructure and Treatment Plant
- County Wildlife site and 20m set back
- Scheme order limits

PURPOSE OF ISSUE

Rev:	Date:	Drawing Status:
I1	11.01.22	For Information
I2	20.01.22	For Information
I3	10.02.22	For Information
I4	28.06.22	For Information
I5	11.07.22	For Information
I6	02.08.22	For Information
I7	22.08.22	For Information
I8	08.11.22	For Information

REVISIONS

Rev:	Date:	Description:
I1	11.01.22	First Issue
I2	20.01.22	Bare scrapes added
I3	10.02.22	Ponds relocated, hibernacula added
I4	28.06.22	Layout updated, bat roost noted, wildlife areas
I5	11.07.22	Gate relocated, hedge adjusted along LFDW
I6	02.08.22	PV Solar Panels added
I7	22.08.22	Key corrected
I8	08.11.22	Amendments to Earthwork bank trees

WWTP, CAMBRIDGE

Client: Anglian Water

Drawing: Ecology Features

Project No: 775 01

Drawing No: 775 01(MP)005

Scale: Scale: 1:7500@A3 Rev: I8

Date: January 2022 Drawn: JB/EH

Checked: JB PM Checked:

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Figure 3.10 Ecology Features

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Typical Hibernaculum

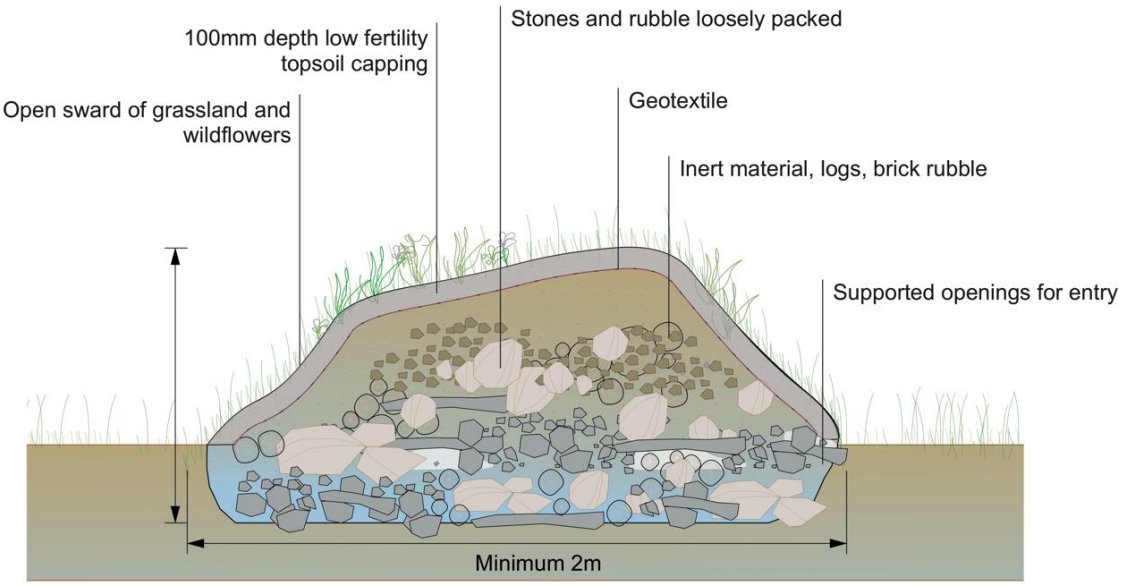


Figure 3.11 Example of a Typical Hibernaculum

3.4.17 Habitats will also be created to benefit invertebrates, including small seasonal ponds[11], formed from scrapes or swales, and bee banks[12] (see Figure 3.10: Proposed Ecology Features, above) in strategic areas within the Landscape Masterplan. The seasonal ponds will be positioned in the glade/open areas of the woodland in the southern corners of the Proposed Development adjacent to the CWS (as shown in the Landscape Masterplan (Figure 3.1) and Habitat Areas plan (Figure 3.9).

3.4.18 A sampler of the proposed planting mix, listing indicative species for the zones presented on the Proposed Habitat Areas plan, is presented at Appendix A at the end of this document. The plant species list has been developed through discussions with the Landscape Officer at GCSPS. The species lists would be finalised in discussion with key stakeholders.

[11] Freshwater Habitats Trust (2013), *Creating Ponds for Amphibians and Reptiles* https://freshwaterhabitats.org.uk/wp-content/uploads/2013/09/Amphibians-_Common-Toad-Great-Crested-Newt-and-Grass-Snake_-new-logo.pdf.
[12] Buglife (2004), *How to Create a Bee Bank*. https://cdn.buglife.org.uk/2020/04/Bee-bank-booklet-4.pdf

3.5 Recreation

3.5.1 The green space around the proposed WWTP is not intended as a recreational destination in its own right. New vehicle parking provision for visiting members of the public to the area is therefore not proposed. Visitors to the Discovery Centre will be by invitation only and will utilise designated parking spaces at the building. The recreational features in the Landscape Masterplan are intended to mitigate impacts on existing recreational facilities identified in the Environmental Statement by provision of an improved and wider path network and creating positive experiences for recreational users of this area within the wider landscape.

3.5.2 The key recreational components of the design are:

- A Discovery Centre, forming part of the Gateway Building, a multi-use space which will provide awareness and educational opportunities for groups on scheduled visits on topics such as the circular economy, the water life cycle, and wider environmental and sustainability issues. This is described in more detailed in the Design and Access Statement.

3.5.3 Permissive paths within the masterplan area, including a link between the northerly and south-eastern ends of Low Fen Drove Way, running through the landscaped area to the north and east of the proposed WWTP, providing the opportunity for new circular routes for pedestrians and leisure cyclists.

- A new bridleway to the east of the site, linking Low Fen Drove Way with Station Road, providing increased recreational connectivity and access through the existing Public Right of Way (PRoW) network to Quy Fen and Anglesey Abbey.
- Interpretation boards, finger posts and scattered informal bench seating to increase enjoyment and understanding of the new setting, which will include a range of new ecological habitats for people to see.

3.5.4 The Gateway Building serves multiple functions. It is the point at which invited visitors (such as groups arriving for scheduled educational visits) and workers will first interact with the project and will provide a welcoming arrival point for them. It provides access to the proposed paths and into the secure works site.

3.5.5 The Discovery Centre contained within the Gateway Bilding will deliver access for scheduled educational visits for students and interest groups across the region, improving understanding of the importance of the circular economy; it will facilitate views into the plant works, as well as exploration of the landscaping bank and through the surrounding landscape via the network of paths.

3.5.6 Visitors to the Discovery Centre will have the opportunity to access the earth bank, providing recreational enjoyment, as well as education about the water life cycle as well as wider environment and sustainability issues. The design of the Proposed Development has connected the Discovery Centre to the wider landscaped area via paths, so invited visitors are able to use and enjoy this area. The walking, cycling and horse-riding routes will be promoted within the Discovery Centre, promoting physical activity and wellbeing.

3.5.7 It is envisaged that the LERMP area will create connectivity to and from the wider network of nearby PRoW for people to enjoy the surrounding countryside in line with the design principles at paragraph 1.2.2. Figures provided in the following pages show how the proposed routes connect within the wider network of PRoW for walkers, cyclists and horse riders.

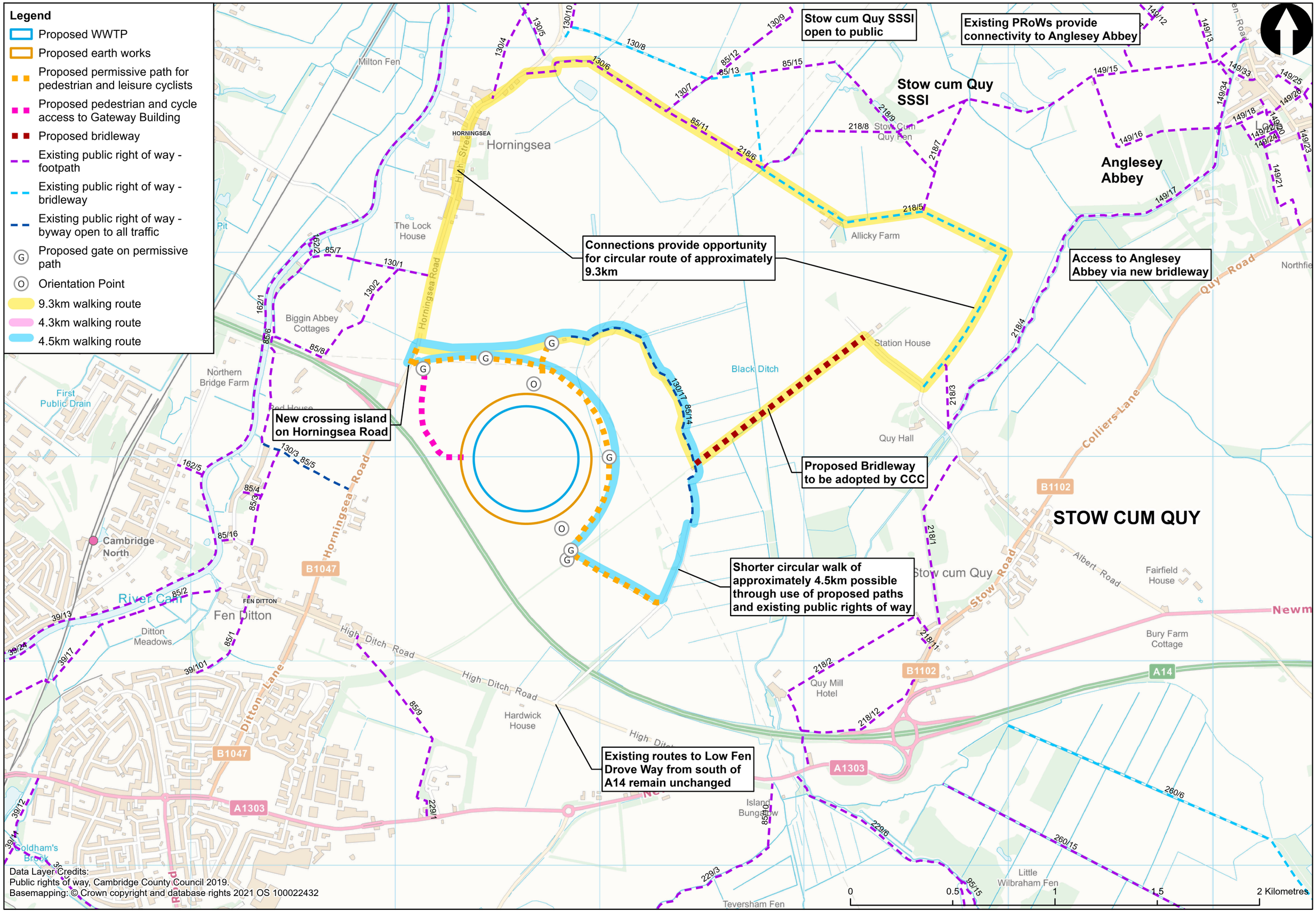
Walking Routes

3.5.8 The new walking routes have been developed following stakeholder feedback including through technical working groups. During engagement, stakeholders highlighted a gap in the network to the north-east of the proposed WWTP location and the lack of connectivity between Low Fen Drove Way and Anglesey Abbey. Stakeholders also supported proposals for improving connectivity through the creation of the shorter circular walking routes.

3.5.9 As shown on page 36 below, two new connections to the existing PRoW are proposed. A new bridleway from Low Fen Drove Way to existing network of PRoW in the north-east and a permissive path from the proposed WWTP to Low Fen Drove Way.

3.5.10 The proposed new pedestrian route creates a walking loop between Horningsea and communities to the east. As shown in Figure 3.12 below, a new circular route of approximately 9.3km will be created from Horningsea, which connects into the existing PRoW network, which is also shown on the figure. A shorter circular walk of approximately 4.5km is also created through the proposed permissive path internal to the Proposed Development and Low Fen Drove Way. More informal permissive paths are also provided within the masterplan area, as shown in Figure 3.12. These connections provide additional recreational routes for nearby communities, better connect Horningsea to Stow-cum-Quy and promote outdoor physical activity, for local people and those visiting the area.

Figure 3.12 Recreation - Walking Routes



Data Layer Credits:
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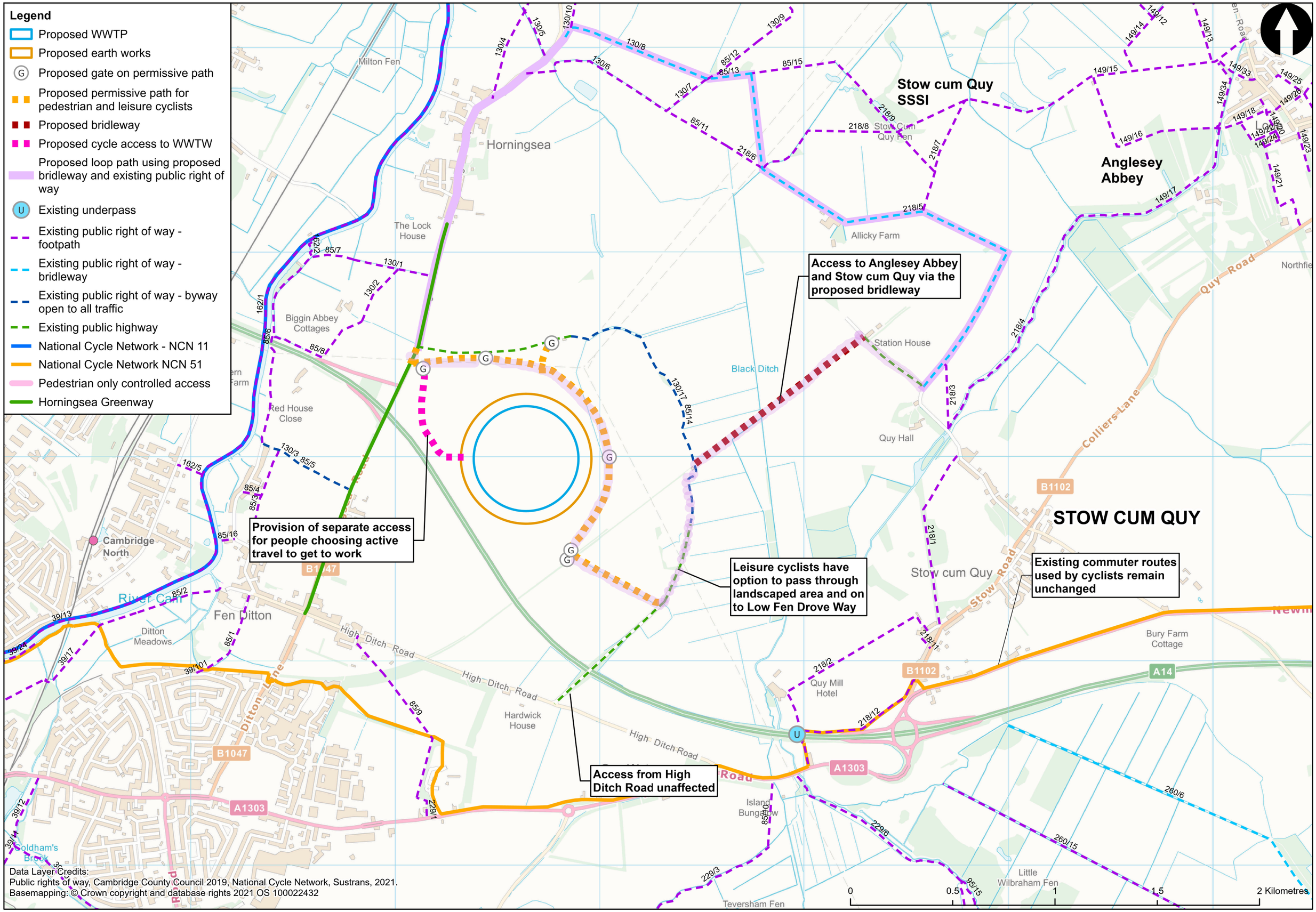
Cycling Routes

3.5.11 As shown in Figure 3.13 below, the Proposed Development provides a new permissive path option for leisure cyclists to travel from the cycleway on Horningsea Road (part of the proposed Horningsea Greenway), through the landscaped area and on to Low Fen Drove Way. From here, existing routes to access High Ditch Road can be used to travel south. The proposed new bridleway also provides connectivity for cyclists from Low Fen Drove Way to the existing network of PRoW to the north-east. This enhances the existing connections to areas such as Stow-cum-Quy and Anglesey Abbey. Figure 3.13 below shows these the new cycling route options, including the permissive path within the masterplan area. Cyclists would not be able to use the shorter looped permissive path shown in figure 3.12, which would be dedicated for pedestrian use

Figure 3.13 Recreation Cycling - Routes



Horse Riding Routes

3.5.12 As shown in Figure 3.14 below, a new connection to the existing PRoW for use by horse-riders is proposed. A new bridleway from Low Fen Drove Way to existing network of PRoW in the north-east provides connection for horse riders to travel to eastern routes and access areas such as Anglesey Abbey and Stow-cum-Quy. There is also the potential to travel to the B1047 Horningsea Road via Low Fen Drove Way. The permissive paths within the masterplan area are not designed to accommodate horses and will be designated for pedestrian or recreational cycling uses only.

Design and Approach to Recreational Facilities

3.5.13 The location of the publicly accessible path across the landscaped area has been informed by odour modelling. The new path, and Low Fen Drove Way, are both within areas where the modelling indicates a "negligible" effect. Recreational amenity will therefore not be adversely affected by odour.

3.5.14 Signage will be provided at main path junctions including at the start of each circular route. The visitor car parking area is clearly demarcated, and the Discovery Centre will be clearly signed. Route maps will be displayed in conjunction with interpretation boards and within the Discovery Centre. Route signage will include details of destination, length of trail, difficulty and if there are any accessibility constraints. On the site of the Proposed Development distance markers will be provided and clearly visible.

3.5.15 It is important that the recreational facilities are inclusive and accessible for all. Visitor parking for invited visitors for the Discovery Centre will have 5% blue badge parking numbers in line with inclusive design standards. Any changes in level from the parking to the paths will be via accessible ramps. Signage, such as maps, fingerposts, trailheads will be legible by containing simple font types and font sizes large enough to be read by people who are visually impaired. Where appropriate, braille characters will be incorporated, particularly into key information signs.

3.5.16 Interpretation boards will include engaging content on the character and history of the local landscape and communities such as explaining the history of the Horningsea/Fen Ditton public byway and the history of the former railway.

3.5.17 The permissive paths within the LERMP area, including the permissive spur to the southern part of Low Fen Drove Way, will be designed in accordance with inclusive design standards[13], and be a minimum of 3.5 metres wide for shared pedestrian and leisure cyclist use. This width may need to be narrowed in certain locations to protect ecological and other features or for operational reasons, where this would give rise to potential conflicts between users this narrowing will be signed appropriately. These paths will be surfaced with material which is firm, stable and slip resistant, for example self-binding gravel.

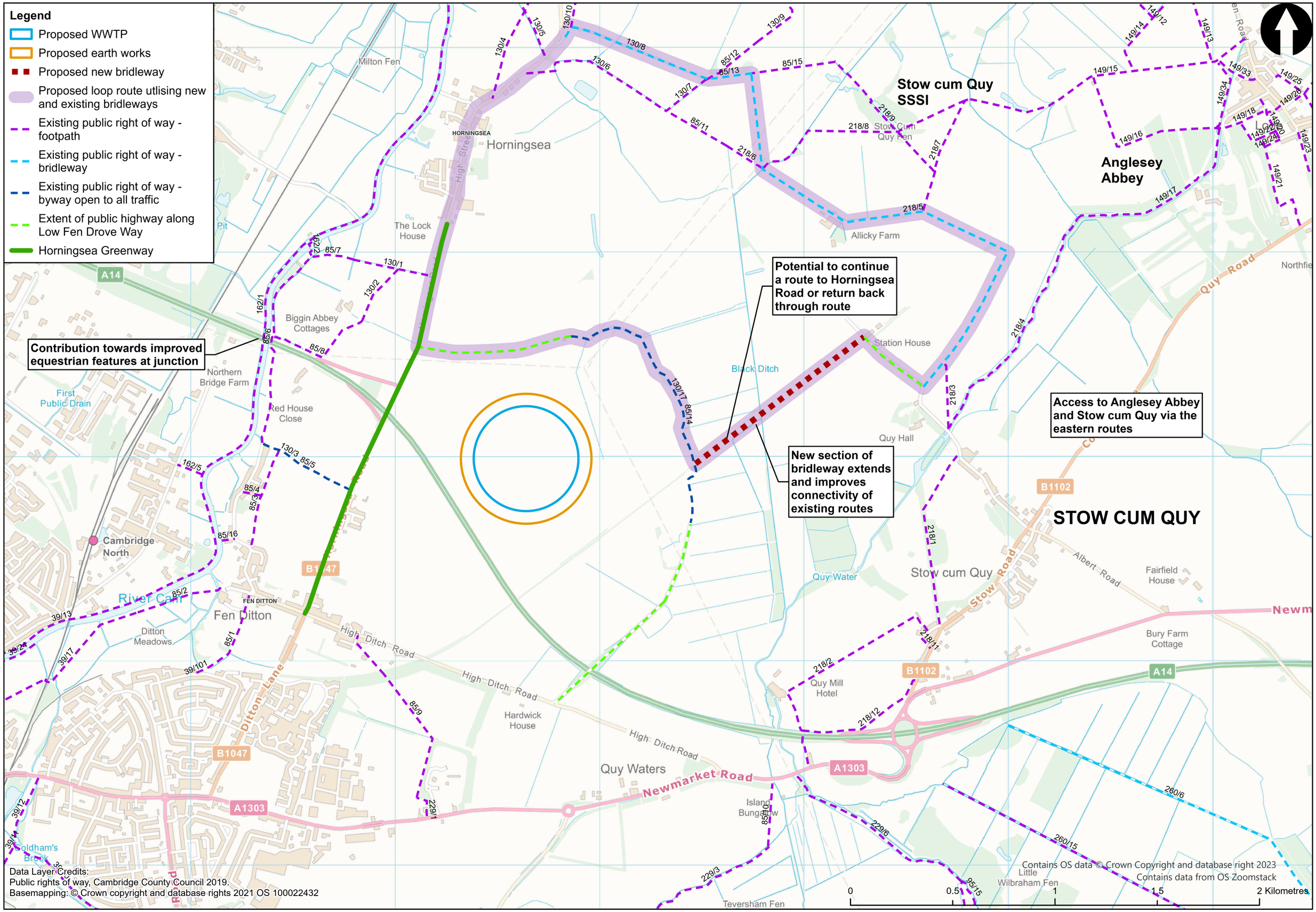
[13] BS8300-1 2018: Design of an accessible and inclusive built environment. External environment – Code of practice

3.5.18 The permissive paths within the masterplan area would be maintained for a period of 30 years, aligned with the ecological maintenance requirements, as described in Section 4 below. Following that period, public access to the facilities would be regulated under the provisions of the Water Industry Act 1991 and The Water and Sewerage (Conservation, Access and Recreation) (Code of Practice) Order 2000.

3.5.19 The proposed new bridleway to the north-east of the LERMP area will utilise the existing hard surface of the private access track. Additional work on the surface will not therefore be required, however access will need to be regulated through appropriate gating and signage.

3.5.20 To create safe and accessible crossings, the proposed pedestrian and cycle crossing point on Horningsea Road will have tactile paving and dropped kerbs. A central pedestrian island is proposed to allow pedestrians and cyclists to cross Horningsea Road in two stages, if necessary. The crossing to be a minimum of 3 meters wide and clearly demarcated.

Figure 3.14 Recreation - Horse Riding



Passive Surveillance to Reduce Antisocial Behaviour

3.5.21 Stakeholders, and particularly local residents and landowners, have expressed concern about current anti-social behaviour in the area.

3.5.22 While Anglian Water Services Limited has no reason to believe that the Proposed Development will contribute to an increase in anti-social activities it is working actively with the local police community support officer to understand more about current anti-social and criminal behaviour in the area.

3.5.23 In a natural environment, which does not have high levels of footfall, preventing anti-social behaviour can be difficult due to low levels of passive surveillance. Maintenance of the path and facilities can be mitigating factors. It will be important to provide rubbish bins at junction locations and near seating. A maintenance schedule will be created that includes the emptying of rubbish bins on a regular schedule and over peak periods. Landscape maintenance (discussed in the following section) will help create a tidy environment and avoid impacts on wildlife and habitats. Employees and ground maintenance staff will increase the levels of passive surveillance.

3.5.24 Seating areas will be designed to have good sight lines to pathways. Lighting and CCTV will be provided in the vicinity of the access road and the Gateway Building, but may not be appropriate in the wider, less developed, landscaped areas.

4 Indicative Creation, Management, and Maintenance Plan

4.1 Responsibilities and requirements

4.1.1 The overall responsibility for the creation, management and maintenance of the features of the Landscape Masterplan will be held by Anglian Water Services Limited. Anglian Water Services Limited carries out similar functions across the region it serves including at Rutland Water, Pitsford Water, Ravensthorpe Reservoir and Grafham Water.

4.1.2 A detailed management and maintenance plan based on the indicative principles set out in this section will be agreed with key stakeholders. An Advisory Group will be established prior to the landscape works commencing in order to advise on the detailed management and maintenance plan. Membership of this group will include the local planning authority, County Council, Natural England, the Wildlife Trust for Bedfordshire, Cambridgeshire & Northamptonshire, Horningsea and Fen Ditton Parish Councils and the National Trust. It should be expected that this group will merge into the Operational Management Group after completion of the landscape works. This process is enforced through the requirements of the DCO.

4.1.3 These requirements are secured by Schedule 2 of the Draft DCO relating to the detailed landscape scheme and LERMP which will be approved by Natural England and the Local Planning Authority.

4.1.4 Monitoring is set out in Section 5.

4.1.5 Section 4 and 5 of the LERMP present the BNG Management and Monitoring Plan (MMP) delivered through the LERMP area.

4.2 Objectives

4.2.1 The overall objectives for the management and maintenance plan are as follows:

- To align with the overall design vision and landscape strategy as set out in Section 3 above and in the Design and Access Statement; these underpin and guide the management of the landscape;
- To ensure the continued health and condition of existing retained landscape features across the site, such as boundary hedgerows and trees, field ditches where they have been retained, and tree and shrub belts associated with the pylon infrastructure;
- To ensure the continued health and condition of existing retained habitats such as bat roosting sites in the south-eastern area of the site, wildlife corridors that are part of the boundary hedgerow network on the A14 and Horningsea Road;
- To ensure the protection and retention of the adjacent County Wildlife Site;

- To ensure the successful planting operations, establishment and continued growth through to maturity of the trees, hedgerows, woodland and grassland areas for the benefits of users and wildlife;
- To establish an attractive and functional open space that contributes to the visual amenity of the site and enjoyment by users;
- To maintain the publicly accessible routes for their intended users;
- To manage the earth bank vegetation, woodland and boundary planting to establish and retain screening of the plant infrastructure;
- To ensure the landscape drainage solutions establish and function in line with the drainage strategy for the site as outlined in the Drainage Strategy (Appendix 20.10, App Doc Ref 5.4.20.12);
- To promote the mosaic of diverse and species rich habitats through appropriate management regimes that following timing schedules set out by ecologist;
- To employ sustainable best practice in regards to irrigation and drainage, use of pesticides and fertilisers, soil management, vegetation thinning and replacement, and cutting and pruning regimes;
- To ensure appropriate horticultural and health and safety practices at all times;
- To identify any defects in the landscape early and address them as per the monitoring plan; and
- To monitor, review and progress standards by thorough and flexible management procedures.

4.2.2 In general, sustainable maintenance practices shall include the following commitments:

- Horticultural peat shall not be used.
- Arisings from maintenance and management should be left on site wherever possible or, if not possible, deposited at a green compost facility.
- Irrigation shall be minimised and limited to the first year for all new planting and the second year for earth bank planting only. In the subsequent three years, trees and hedgerows on the earth bank will receive supplemental irrigation to ensure they establish. Trees shall be planted in early winter to gain maximum root establishment before the start of the growing season when vegetation needs to uptake more water for growth prior to the warmer, drier seasons. 'Gator' watering bags shall be used for heavy standard to semi-mature trees. Any irrigation activities shall take place at an appropriate time of day to ensure minimum water evaporation.
- Proposed seasonal ponds will be allowed to dry out and will only be filled by rainfall.

- Where appropriate, use shall be made of recycled components.
- All works are to be carried out strictly in accordance with the requirements of the relevant legislation, Codes of Practice, British Standards, rules, guidelines or directives that relate to the use of hazardous materials including pesticides and herbicides.
- Opportunities for the creation of additional micro-habitats should be taken whenever possible. Allow deadwood, water-filled cavities, jagged stumps, splits, fungal growths and holes in tree trunks to remain unless they are creating a safety hazard.
- Limit works activity to a minimum in areas identified as “people and dog free wildlife zones”.
- Maintain the openness of a 20 metre offset to the boundary of the County Wildlife Site.
- A minimal intervention and organic approach will seek biological or mechanical controls over the use of pesticides and herbicides.
- Strictly follow restricted schedules set out by ecologist to avoid damaging habitats during sensitive periods. Works should be taken outside these seasons unless and health and safety risk is presented. Prior to commencement of works all trees are to be inspected for nesting birds and suitability for roosting bats.

4.2.3 Maintenance operations are to be carried out in accordance with BS 4428: Code of Practice for General Landscape Operations. Maintenance of soft landscaping to be in accordance with BS 7370-4 Grounds Maintenance: Recommendations for Maintenance of Soft Landscape.

4.3 Management Regimes

4.3.1 Table 4.1 sets out the activities required to create the Landscape Masterplan proposals and protect existing landscape features within the LERMP area. Table 4.2 sets out how the areas and features of the Landscape Masterplan will then be managed.

Table 4.1 Landscape Masterplan Creation

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
Existing trees and hedgerows to be retained Native hedgerows along A14, Horningsea Road, in the eastern part of the site, and those associated with the pylon infrastructure on the eastern boundary.	**Aim:** To protect and retain existing hedgerow buffers and enhance their aesthetic, wildlife and ecological value. To protect and retain existing hedgerow trees and boundary trees to maximise habitat value, reinforce landscape character ensure their health and longevity.	During construction of CWWTPRP and implementation of the landscape masterplan
	Objectives: • To protect existing trees and hedgerows during construction and operations near hedgerows	During construction of CWWTPRP and implementation of the landscape masterplan
	Outline Specification and Activities: Watering: No supplemental irrigation should be required for established hedgerows.	Not required for established hedgerows – see also Table 5.1 Monitoring
	Protection: Existing hedgerows and trees to be retained and their root protection areas (RPAs) will be protected during construction or translocated where possible. Some lengths of protection may be removed after Initial planting in Phase 1, which provides a buffer offset.	Prior to commencement of construction and during construction
Proposed new tree, shrub and hedgerow planting generally	**Aim:** To successfully create new planting for best chances of longevity and screening.	Prior to and during planting and during year one (then see Table 4.2)
	Objectives: • To plant in a way that ensures good survival rate and establishment; • To maintain the health, visual amenity and screening properties of the trees;	Prior to and during planting and during year one (then see Table 4.2)

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	• To maintain appropriate forms of trees for future growth; and • To ensure trees do not pose a hazard to users.	
	Outline Specification and Activities: BS standards: All new tree planting shall conform to Section 10 of BS 8545: 2014 Trees: from nursery to independence in the landscape. All plants will conform to BS 3936 and be in accordance with the National Plant Specifications.	At procurement stage
	Specifications: New planting shall follow best practice in regards to soil specification and handling, time of year, soil ameliorants, planting method, support, irrigation and protection to be set out in the Soft Landscape Specification which will require a process of input and review from stakeholders including Natural England and the local authority, as well as the ecologist and soils consultant, etc. The detailed specification will be provided as part of the detailed matters submission.	At delivery and implementation of the landscape masterplan
	Phasing: New planting for each phase will be managed on a rolling basis, i.e., as each new area of planting is completed the post-creation management activities set out in Table 4.2 below are triggered, whilst subsequent phases of planting are still being implemented.	Following planting being completed within each planting phase area (Figure 3.3)
	Protection: Planting in each phase to be fully protected during continued construction of subsequent phases, through restriction of access using appropriate barriers.	Following planting being completed within each planting phase area (Figure 3.3)
	Herbicides and fertilisers: Compost and any fertilisers are to be incorporated into new planting as recommended by the Soils Management report.	At delivery and implementation of the landscape masterplan
	Watering: All trees, hedgerow and woodland transplants should be planted between November and early February for best chance of establishment without	Between November and early February and for the first year after planting.

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	supplemental watering. Some supplemental watering may be required in the first year during periods of prolonged drought and/or high temperatures.	
Proposed standard tree planting	Soil suitability: Topsoil depths to be confirmed prior to planting. Topsoil depth for all trees planted within hedgerows should fall between 300 to 450mm depth. For individual tree planting, backfilling of tree pits generally follows existing soil profile with topsoil limited to the top 350mm. Soil storage and handling shall adhere to the Code of Construction (CoCP) (Appendix 2.1, App Doc Ref 5.4.2.1) and Outline Soil Management Plan (SMP) (Appendix 6.3, App Doc Ref 5.4.6.3).	Prior to commencement of planting
	Stock types and densities. • Standard tree planting on Horningsea Road, consisting of heavy standard deciduous native trees planted between existing trees on Horningsea Road, and within the proposed hedgerow on the south side of Low Fen Drove Way. • Standard tree planting within the edges of the new woodland, as part of the band of initial woodland planting along the western and south-western boundaries, consisting of heavy standard and semi-mature deciduous native trees, at random spacings. • Standard tree planting on earth bank top within hedgerow, consisting of select, and heavy standard and semi-mature deciduous native trees planted within the proposed hedgerow at a random spacing of 5m to 11m on centre. • Standard tree planting on the slopes of the earthwork, consisting of select and heavy standard deciduous native trees planted in clusters at a random spacing of 5m to 7m on centre. • Standard tree planting at the base of the earthwork, set in 'scallops' or small depressions to take advantage of water run-off, consisting of heavy standard and semi-mature deciduous native trees, planted in clusters at a random spacing of 5 to 7m.	Planting period from November to early February

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	Watering: All trees should be planted in between November and early February for best chance of establishment without supplemental watering. Supplemental watering may be required in the first year during periods of prolonged drought and/or high temperatures.	At planting and during the first year
	Support and protection: Standard trees to be staked at a low height (600mm) to encourage successful anchor roots, using with 75mm diameter timber stakes, 1.5m length, securely fixed to tree using proprietary rubber ties with spacers. Tubex tree guards or similar to 700mm height for each transplant, with a preference for a biodegradable product, if possible. Any non-biodegradable guards will be removed once plantings are established. During construction, lengths of new planting to be protected as per the Proposed Waste Water Treatment Plant Arboricultural Impact Assessment (Appendix 8.17, App Doc Ref 5.4.8.17).	At time of planting
	Pruning: No formative pruning is required; prune only to remove dead or diseased wood.	In response to signs of dead wood or disease
Proposed hedgerow planting	Soil suitability: Topsoil depths to be confirmed prior to planting. Topsoil for hedgerow planting should be placed as a trench, with a depth between 300 to 450mm and a width of 1000mm. Soil storage and handling shall adhere to the Code of Construction (CoCP) (Appendix 2.1, App Doc Ref 5.4.2.1) and Outline Soil Management Plan (SMP) (Appendix 6.3, App Doc Ref 5.4.6.3).	Prior to commencement of planting
	Stock types and densities: • Native hedgerow planting on boundaries (including Low Fen Drove Way) consisting of Hawthorn (*Crataegus monogyna*, 55%) and 9 additional native	Planting period from November to early February

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	shrubs and climbers, planted in a double staggered row, 5 plants per linear metre. • Native hedgerow planting on earthwork top, consisting of Hawthorn (*Crataegus monogyna*, 45%), Holly (*Ilex aquifolium*, 5%) and 9 additional native shrubs and climbers, planted in a triple staggered row, 9 plants per linear metre. • Transplant tree species, 1+1 on earthwork top within hedgerow, planted at 2m on centre spacing to form a thicket.	
	Transplants (hedgerows and woodland trees and shrubs) will use biodegradable tree guards or similar to 700mm height for each transplant.	At time of planting
	Pruning: No formative pruning is required; prune only to removed dead or diseased wood.	In response to signs of dead wood or disease
Proposed new areas of woodland	Soil suitability: Topsoil depths to be confirmed prior to planting. Topsoil depth should fall between 300 to 450mm depth maximum areas across all woodland areas. Soil storage and handling shall adhere to the Code of Construction (CoCP) (Appendix 2.1, App Doc Ref 5.4.2.1) and Outline Soil Management Plan (SMP) (Appendix 6.3, App Doc Ref 5.4.6.3).	Prior to commencement of planting
	Stock types and densities: Phase 2 and 3 woodland planting comprises: • Deciduous woodland blocks of native tree (88%) and shrub species (12%), planted as 1+1 transplants. Spacing varies within defined zones: • Zone 1 Blocks: 2.1m on centre spacing • Zone 2 Interior glade edges: 3m on centre spacing. Refer to Appendix A of the LERMP for more details. Species should be clustered in random groups of	Planting period from November to late February

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	5 to 20. Localised depressions on site should be planted with *Salix*, *Carpinus* or *Populus* sp. • Deciduous native shrub planting in Zone 3 Scrub edges: random spacing from 3.5m on centre spacing near block edge up to 8m on centre spacing at outer ridge and furrows. • Species should be clustered in random groups of five to twenty. Localised depressions on site should be planted with *Salix*, *Carpinus* or *Betula* sp.	
	Protection: Large woodland blocks are to be enclosed by deer fencing, 1.8m height. Smaller blocks and individual trees within glades to be protected by biodegradable tree guards and canes or similar to 700mm height for each transplant.	At time of planting
	Pruning: Pruning shall be kept to a minimum to avoid the spread of disease. Pruning will be implemented only to removed dead or diseased wood or in the case of selected standard and heavy standard trees, to form a single leader.	In response to signs of dead wood or disease
Proposed areas of Meadow Grassland	**Aim:** Create areas of wildflower and species rich grassland, to meet a variety of aspects and habitats, but with a dominance of calcareous loam meadow grassland, to be maintained as features with high ecological value.	Prior to and during seeding and during year one (then see Table 4.2)
	Objective: To ensure grassland areas establish successfully, are setting seed for longevity and in order to reach a balance of successfully competing species; To ensure grassland is maintained in order to maximise ecological value; and To control weeds and unwanted (non-native or aggressive) woody scrub vegetation.	Prior to and during planting and during year one (then see Table 4.2)
	The topsoils present on site are categorised as low fertility calcareous loam soils (see Outline Soil Management Plan (SMP) Appendix 6.3, App Doc Ref 5.4.6.3). As such, these soils would be supportive of the habitat feature proposed. Topsoil is recommended to be 150-250mm depth.	During groundworks and topsoiling prior to commencement of seeding

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	If formation level is compacted, it should be ripped before topsoiling. Seeding through a biodegradable mesh may be required on slopes to increase success rates and prevent erosion	
	Seeds to be sown into a bare soil cleared of vegetation and perennial weeds, with a relatively fine to medium tilth and a firm surface. If the soil has been left fallow due to timing issues, a 'stale seedbed' technique may be used to eliminate annual weeds before sowing.	Prior to seeding
	Seed type and densities (refer also Appendix A of the LERMP): • New woodland areas and areas shaded by existing vegetation, proposed hedgerow or the proposed earthwork are to be seeded with Emorsgate EM10 Tussock Mixture; • New swale banks to be seeded with Emorsgate EM8 Meadow Mixture for Wetlands • New pond banks and swale bottoms to be seeded with Emorsgate EP1 Pond edge mixture; • The base of 'furrows' to be seeding with a mix of 50% EM5 Meadow Mixture for loamy soils and 50% EM8 Meadow Mixture for Wetlands; • All other grassland areas to be seeding with EM5 Meadow Mixture for loamy soils. • All commercial mixtures are to be supplemented by additional species of local provenance to target particular wildlife species as set out by the ecologist as per the planting schedule.	Sowing in autumn. Spring sowing may be acceptable if phasing constraints exist. Management may be required (such as weed removal) just prior to sowing to avoid erosion. Sequencing: Sowing to occur prior to tree planting.

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	Sowing density to be as directed by seed supplier, with a range between 4g/m^2 and 2g/m^2. Slopes should be seeded at the higher rate.	
	Watering: Seed ideally to be sown at the optimal time of year under good conditions in order to avoid the need for supplemental watering in the first year of establishment. Should this not be possible, regular light irrigation will be required in periods of drought or low rainfall.	During the first year after seeding in periods of drought or low rainfall, if required
	Herbicides and fertilisers: there will be no use of fertilisers or herbicides, with any scrub encroachment or weeds present removed by cutting (removing arisings) and hand-pulling respectively.	During year one of growing season if required (then see Table 4.2)
Proposed low maintenance flowering lawn (at entrance and along access)	**Aim:** To create limited areas of amenity grassland requiring more regular cutting to maintain visibility splays or a tidy appearance, with some short, mowing-tolerant wildflowers included creating a higher (than standard amenity mixes) ecological value.	Prior to and during seeding and during year one (then see Table 4.2)
	Objective: To ensure grassland areas establish successfully; To ensure grassland is maintained in order to maximise ecological value; and To control weeds and unwanted (non-native or aggressive) woody scrub vegetation.	Prior to and during seeding and during year one (then see Table 4.2)
	Soil suitability: Use of existing topsoil present onsite is recommended, with this at a depth of 150mm-250mm to promote and support successful growth and a relatively thick sward.	During groundworks and topsoiling prior to commencement of seeding
	Stock type and densities: Emorsgate EL1 Flowering Lawn (or equivalent) mix is to be sown at a density of 4g/m^2.	Sowing in autumn

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	Watering: Seed shall be sown at the correct time of year under optimum conditions in order to avoid the need for supplemental watering in the first year of establishment.	During the first year after seeding in periods of drought or low rainfall, if required.
	Herbicides and fertilisers: there will be no use of fertilisers or herbicides, with any scrub encroachment or weeds present removed by cutting (removing arisings) and hand-pulling respectively.	During year one of growing season if required (then see Table 4.2)
LERMP area-wide proposed bee banks and bare soil scrapes	**Aim:** To create a series of areas suitable for use by a wide range of invertebrates including bees, as well as supporting basking reptiles.	Prior to and during implementation
	Objective: To provide bare areas of ground on the sunnier side of the earthwork banks and ridges which are able to be managed to prevent the bare areas becoming encroached by any vegetation over time.	To be created in early Spring and late Summer
	Specification: Twenty-four areas of 300mm x 900mm bare earth patches to be created through not seeding these areas (possible through covering these sections over during sowing), on the sunny side of the ridges and earthwork banks.	At implementation
LERMP area-wide proposed deadwood and brash piles	**Aim:** To provide a range of well-linked opportunities for reptile species to use for increased refuge and foraging resources.	Prior to and during implementation
	Objective: To create piles of brash and deadwood in a sustainable way, able to support reptiles and other species, and which are able to be supplemented over time through management of onsite habitats (i.e., addition of further brash).	During implementation

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	Specification: Approximately 41 discrete deadwood and brash piles will be created across the areas outside the rotunda within woodland planting areas using locally sourced material (preferably as arises from the proposed vegetation removal works).	During creation of woodland blocks
LERMP area-wide proposed hibernacula	**Aim:** To provide suitable features to support reptile hibernation within the site.	During implementation
	Objective: To create opportunities for reptiles to use during the winter period within the site, supporting the year-round use of the site by reptiles.	During implementation
	Specification: A total of 8 hibernacula are proposed measuring approximately 2m x 4m with 1m height. These features will be created as per the specification drawing within LERMP Section 3.4: Biodiversity.	Creation prior to tree planting
Proposed seasonal ponds	**Aim:** To provide seasonally wet habitat opportunities for a range of wildlife species, including turtle dove.	During implementation
	Objective: A series of scrapes which will hold water at wetter periods of the year, or after rainfall, and which will support the needs of a range of wildlife species, and support stepping stone linkages for wildlife.	During implementation
	Specification: A minimum of 4 seasonal ponds will be created in locations to be confirmed but as directed and in liaison with the ecologist. These will be shallow removals of soil to an	Creation prior to tree planting being completed.

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	appropriate depth to allow accumulation and holding of water during wetter periods of the year.	
Bat and bird boxes	**Aim:** To provide nesting and roosting opportunities for a range of bird and bat species across the site.	During implementation
	Objective: A series of nesting and roosting opportunities will be installed, maintained and monitored across the site, to support a range of bird and bat species.	During implementation
	Specification: NB. New installations of bird and bat boxes will be required to be on trees that are able to support their weight and are suitable in that the boxes would not block or impede access to any natural feature, and as directed by an ecologist. Installations on new trees will not be possible for several years post-planting. As such numbers of installations are not provided. Bird boxes are recommended to include those with 28mm hole, 32mm hole and open-fronted boxes for a range of species. Specialist boxes for barn owls may be installed in appropriate trees with the opening facing onto open land to the north-east, to maximise the chance of use and minimise the risk of road related barn owl losses. Baskets suitable for use by hobby and long-eared owl are also recommended to be installed. Bat boxes are to be “woodcrete” type in their composition, with these installed at between 3-4m height. A range of boxes to provide crevice and cavity dwelling bat species opportunities is recommended. All bird and bat boxes will be installed under the direction of the ecologist.	At procurement and during implementation

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
Furniture, signage, permissive paths and other recreational components within the area managed by Anglian Water Services Limited.	**Aim:** To create a safe and accessible green space that creates a positive experience for both visitors to the proposed WWTP and to recreational users of the wider landscape.	Prior to removing construction phase fencing and making the LERMP area available for recreational use.
	Objectives: • To provide features of interest that connect to the wider landscape as well as the proposed WWTP. • To provide connections with the wider network of Public Rights of Way and walking, cycling and horse-riding routes. • To create spaces which facilitate positive interactions and opportunities for passive as well as active recreation.	At procurement and during installation
	Outline Specification and Activities: The permissive paths within the LERMP area will connect to the entrance, Discovery Centre and recreational routes external to the site, including via the permissive path spur to the south-east connecting with Low Fen Drove Way. These paths will be designed in accordance with inclusive design standard (BS83000-1) and be a minimum of 3.5 metres for shared use spaces. This width may need to be narrowed in certain locations to protect ecological and other features or for operational reasons, where this would give rise to potential conflicts between users this narrowing will be signed appropriately. These paths will be surfaced with material which is firm, stable and slip resistant, for example self-binding gravel. Informal bench seating (or equivalent) is to be provided throughout the area and be accessible for all users. Benches should have good sight lines to pathways.	At procurement and during implementation

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	Signage will be provided at main path junctions including at the start of each circular route. This will include distance markers. Route maps will be displayed throughout the area. Rubbish bins will be provided at path junctions as well as near seating areas. Throughout site gates will be provided to demonstrate entry and exit points, prevent unauthorized access, as well as to demarcate between different areas. The design of the gates will integrate into the character and setting of the area. Lighting and CCTV will be provided in the vicinity of the access road and the Gateway Building but may not be appropriate in the wider, less developed, landscaped areas. Information and interpretation boards will be provided throughout the area to provide detail on the connections available for recreational users beyond the LERMP area, local communities, habitats and biodiversity as well as the Discovery Centre and wastewater treatment plant. The proposed new bridleway to the north-east of the LERMP area will utilise the existing hard surface of the private access track. Additional work on the surface will not therefore be required, however access will need to be regulated through appropriate gating and signage.	

4.3.2 Table 4.2 sets out how the areas and features of the Landscape Masterplan will be managed after the activities required to create the Landscape Masterplan proposals and protect existing landscape features set out in Table 4.1 are completed.

4.3.3 Typically, DCO Requirements (conditions) require aftercare commitments for planting to take place for five years.

4.3.4 Longer term maintenance would take place as part of Anglian Water Services Limited's wider environmental care initiatives and may involve community management groups or environmental non-governmental organisations.

4.3.5 Those biodiversity elements which contribute towards the 20% biodiversity net gain target set by Anglian Water Services Limited for the project will be maintained for a minimum of 30 years, in keeping with the provisions of the Environment Act 2021.

4.3.6 These requirements are secured by Schedule 2 of the Draft DCO relating to the detailed landscape scheme and LERMP which will be approved by Natural England and the Local Planning Authority.

Table 4.2 Proposed management post planting (following activities detailed in Table 4.1)

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
Existing trees and hedgerows to be retained Native hedgerows along A14, Horningsea Road, in the eastern part of the site, and those associated with the pylon infrastructure on the eastern boundary.	**Aim:** To manage retained hedgerow buffers to enhance their aesthetic, wildlife and ecological value for a minimum period of 30 years To manage the retained existing hedgerow trees and boundary trees to maximise habitat value, reinforce landscape character ensure their health and longevity for a minimum period of 30 years.	For a minimum period of 30 years
	Objectives: • To maintain dense, bushy, continuous hedge lines with a good species mix and no gaps; • To maintain the health, visual amenity and good diversity of species of the retained hedgerows; • To ensure access lengths and visibility splays are kept clear from hedgerow growth; • To protect existing hedgerows during construction and operations near hedgerows; and • To enhance their ecological value. • To maintain existing trees to foster healthy development into maturity; • To maintain the visual amenity contributed by existing trees; • To maintain a healthy tree structure suitable for foraging wildlife, nesting and transient habitats; • To main appropriate forms of trees for future growth; and • To ensure trees do not present a hazard to site users.	For a minimum period of 30 years
	Outline Specification and Activities:	For a minimum period of 30 years

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	Watering: No supplemental irrigation should be required for established hedgerows.	
	Tree works will be carried out under the following principles: • All tree works will be carried out in accordance with BS 3998: 'Recommendations for Tree Work', health and safety legislation and best practice; • Prior to commencement all trees are to be inspected for nesting birds and potential for roosting bats by an approved ecologist. If works are required during nesting season, appropriate measures are to be taken as advised by an ecologist; • Arisings from tree works should be left on site in woodland to contribute to new deadwood piles or in the creation of new hibernacula.	A minimum period of 30 years
	Cutting/Pruning: Existing hedgerows shall be managed under the following principles: • Except where road safety precludes it, existing hedgerows should be trimmed only every three years (or less frequently if possible) and maintained so that a height of 3m (maximum) is achieved. • One-third of hedgerows should be left to grow for 7-10 years; • Only 10-30% of hedgerows should be cut in any one year to ensure that heavily fruiting hedgerows are present on site; • Along roadsides, it may be feasible to only cut one side of the hedgerow, cutting the other side a year or two later, thus not removing all the food resource at once and allowing some re-growth before further cutting takes place. If possible, flails should not be used to manage hedgerows. • All cutting will be done outside bird nesting season (considered to be March to August, though some species may nest outside these months). An appropriately qualified ecologist should inspect hedgerows prior to commencement of works.	Every three years, on a rotational basis, with some partly cut one year and completed the following year.

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	A visual tree inspection to identify any obvious hazards/defects that may require remedial works or further arboricultural assessment.	
Proposed new tree, shrub and hedgerow planting	**Aim:** To ensure for a minimum period of 30 years that planting has the best chances of longevity and screening.	A minimum period of 30 years
	Objectives: • To manage in a way that ensures good survival rate and establishment; • To maintain the health, visual amenity and screening properties of the trees; • To maintain appropriate forms of trees for future growth; and • To ensure trees do not pose a hazard to users.	A minimum period of 30 years
	At each maintenance visit: All tree planting shall be checked at each maintenance visit for damage, security, firmness, fixing and support. Any tubes or tree guards that are broken, dislodged or otherwise ineffective are to be reinstated or replaced. Transplants in woodland and on earthwork top will undergo a visual check at each maintenance visit and random check for firmness.	Monthly after planting up to 1 year, then every six weeks in year two.
	Any trees that fail to thrive shall be replaced with the same species and variety at the size the plant would be expected to have achieved by that season. Species as specified on the original plant schedule.	Annually in the dormant season during years 1 – 5.
	Failures: All trees, shrubs and hedgerow plants should be checked in September and those that failed to thrive to be marked with paint or marked on a plan. Replacements to be installed the next planting season, i.e., the following late winter to early spring. If a particular species fails to thrive, a replacement species may be considered, under advice of the landscape architect.	Annually.
	Weed competition: A 900mm diameter circle will be kept 90% clear and free of weeds around each tree or shrub, through the use of mulch mats in the woodland, the application of 50mm depth bark mulch on the top of the earthwork, or through herbicide spraying.	Ongoing through the growing season.

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	Herbicides will not be used once grassland vegetation covers 75% of the surface, to avoid accidental damage.	
	In the event of tree death, the cause shall be investigated and addressed before planting a replacement. If the failure is a result of planting conditions, this shall be ameliorated before a replacement is installed. If due to disease, a suitable alternative shall be proposed by the landscape architect.	In response to tree deaths
	Litter: Litter and debris shall be cleared by hand and removed from site on a monthly basis, and also prior to any mowing or hay cutting operations.	Monthly
Proposed screen planting (see Figure 3.1 Landscape Masterplan identifying screen planting) These are supplementary to the provisions above for Proposed new tree, shrub and hedgerow planting and specific to the additional attention to screen planting due to its function	**Aim:** To ensure for a minimum period of 30 years that planting has the best chances of longevity and screening.	A minimum period of 30 years
	Objectives: • To manage in a way that ensures good survival rate and establishment; • To maintain the health, visual amenity and screening properties of the trees; • To maintain appropriate forms of trees for future growth; and • To ensure trees do not pose a hazard to users.	A minimum period of 30 years
	Watering: Irrigation shall be minimised and limited to the first year for all new planting and the second year for earth bank planting only. In the subsequent three years, trees and hedgerows on the earth bank will receive supplemental irrigation to ensure they establish. If prolonged periods of drought or high temperatures pose a threat to the plantings, their screening capacity or the habitats that have established, then a review of key mitigation planting and its irrigation will be held and responsive and targeted watering will be implemented to ensure best chances. One of the tasks for the Advisory Group (see 4.1.2) will be to review the watering response strategy prepared for the detailed management and maintenance plan which would aim to enable resilient, repeatable and rapid response watering of the trees on the earth bank.	Variable – first year for all new screen planting, years 2 to 5 for earth bank planting and then for earth bank planting in response to conditions

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	Pruning: Pruning shall be kept to a minimum and implemented only to removed dead or diseased wood.	If required only in response to disease or dead wood
Proposed new areas of woodland	**Aim:** To ensure that for a minimum period of 30 years that planting has the best chance of longevity, screening and habitat value.	A minimum period of 30 years
	Objectives: • To manage in a way that ensures good survival rate and establishment; • To maintain the health, visual amenity and screening properties of the trees; • To maintain densities as appropriate to ensure screening but allow the variety of shading over time to maximise the range of habitats; and • To ensure trees do not pose a hazard to users.	A minimum period of 30 years
	At each maintenance visit: At each maintenance visit, woodland transplants will undergo a visual check for damage and growth, and a random check for firmness. Any tubes or tree guards that are broken, dislodged or otherwise ineffective are to be reinstated. Any trees that fail to thrive in the first year shall be replaced with the same species and variety at the size specified on the original plant schedule.	At each maintenance visit
	Watering: No additional watering should be necessary after year 3. If prolonged periods of drought or high temperatures pose a threat to the woodland, its screening capacity or the habitats that have established, then a review of priority woodland and its irrigation may be required.	For the first year then in response to conditions
	Protection: Continuous large woodland blocks will be retained within deer fencing, 1.8m height during the first five years following planting. Smaller blocks and individual trees within glades to be continue to be protected by Tubex tree guards and canes or similar to 700mm height for each transplant. Transplants (hedgerows and woodland trees and	Assessed after 3 years and up to 7 years, when removal is most likely

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	shrubs) will use Tubex tree guards or similar to 700mm height for each transplant, with a preference for a biodegradable product, if possible. After three years, the area will be assessed for deer or rabbit browsing pressures and if appropriate, any non-biodegradable guards will be removed once plantings are established. Guards may be left on for up to 7 years if browser populations are significant. Fencing will need to be checked at each visit to ensure there are no gaps or holes for ingress. Any animal intruders on the wrong side of the fence should be driven out by a specialist ranger. Inspect straining posts every six months.	depending on browser populations At each maintenance visit
	Herbicides and fertilisers: Compost and any fertilisers are to be incorporated into new planting.	If required in response to conditions or/and invasive species
	Pruning: Pruning shall be kept to a minimum to avoid the spread of disease. Pruning will be implemented only to removed dead or diseased wood.	If required in response to disease
	Thinning: thinning may be desired after 10 or 15 years in order to increase the light reaching the woodland floor, to maintain a greater diversity of woodland habitats, or to remove species that are not succeeding due to climate change. Earlier selective removal of some species may be desired if there are risks due to increased disease susceptibility. Any thinning on a large scale must be done in sections, so that screening of the plant is not affected, and under the guidance of an ecologist so that habitats are not adversely affected.	After 10 years
	Coppicing: the 'scrub' vegetation at the edge of glades may be selectively coppiced after five to seven years on a rotational basis in order to maintain the openness of the glade and transitional spaces between dense woodland and the more open glade.	After five years

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
Proposed Grassland Areas in general	**Aim:** Areas of grassland to be maintained as features with high ecological and amenity value for a minimum period of 30 years	A minimum period of 30 years
	Objective: • To ensure grassland areas establish successfully, are setting seed for longevity and in order to reach a balance of successfully competing species; • To ensure grassland is maintained in order to maximise ecological value; and • To control weeds and unwanted (non-native or aggressive) woody scrub vegetation.	A minimum period of 30 years
	Proposed areas of meadow grassland (tending towards calcareous loam)including proposed undulating ridge and furrow Management: Summer "hay cut" taken to 50mm height, with additional cuts in autumn and early spring as required. Arisings to be left in situ, for 1 week, then removed. NB. Directional cuts towards longer vegetation may be appropriate to minimize risks to reptiles, as directed by the ecologist (and reptile mitigation strategy). Cuts taken on steep banks may be made using automated mowers to minimise risks to human health and safety.	Mid Summer, mid Autumn and early Spring (if needed)
	The date of cutting may be varied by several weeks from year to year to allow different species to flower and set seed. Areas of less common species or species difficult to establish may be identified by an ecologist, and the timing of the cut adjusted in selective areas to encourage establishment. Risk of fire due to drought may trigger cutting at a less than optimum time during some years.	In response to seeding and weather conditions
	Herbicides and fertilisers: Use of herbicides and fertilisers is not anticipated, however should there be a future growth of invasive species, herbicides may be appropriate to eradicate them. Their administration would be at the guidance of a specialist invasive species contractor and would take into consideration other species and habitats present in the local area.	If required in response to invasive species

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	Proposed areas of woodland tussock grassland: Manage as for meadow grassland in the first five years. Do not remove leaf litter from woodland trees. Cutting may be reduced in frequency once some shade is established.	Mid Summer, mid Autumn and early Spring (if needed)
	Once shade is established, new species may be introduced to create a shade-tolerant woodland floor. Success of the woodland is to be reviewed by a qualified ecologist after five years to determine potential additional species to be introduced, along with any thinning and coppicing of the woodland required.	At five year intervals
	Proposed wet and moisture tolerant grasslands: Manage as for meadow grassland in the first two years, then reduce cutting to an annual cut in summer, varying the date to allow different species to set seed.	Mid Summer, mid Autumn and early Spring (if needed) initially, then reduce to annual
	Proposed low maintenance flowering lawn (at entrance and along access): Management: Mowing regularly as a lawn to 40mm with no mowing in March (or when cowslips are to flower) and in summer (late May-July) to allow flowering and long term wildflower success. Arisings to be removed once cut. Mowing may be allowed during these periods to maintain safe visual splay as required.	Cuts not to be made in March or between late May and July.
LERMP area-wide proposed bee banks and bare soil scrapes	Management: For a minimum period of 30 years to retain open nature through removal of encroaching (not dense) vegetation in early Spring each year (this may not be required each year). Any dense vegetation may require removal outside of the bird breeding season.	Early Spring
LERMP area-wide proposed deadwood and brash piles	Management: For a minimum period of 30 years add arisings and brash (as directed by ecologist) during management operations to add to any material that has decomposed. Additions to be made once confirmed no breeding birds are nesting within the pile.	Outside nesting bird season (March to August) or as directed by ecologist

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
LERMP area-wide proposed hibernacula	Management: For a minimum period of 30 years yearly check to ensure that structure integrity is maintained, in September.	Annually in September
Proposed seasonal ponds	Management: For a minimum period of 30 years; any encroaching scrub/woody vegetation to be removed in October each year.	Vegetation removal (scrub) to be cut back in October each year.
Bat and bird boxes	Management: For a minimum period of 30 years, post-breeding bird nest box clearing may be necessary (if used) in September each year. Replacements to be in situ (like-for-like replacement) by start of nesting (bird) or active (bat season) each year, i.e. by March.	Cleaning out of bird (only) boxes in September each year.
Furniture, signage, permissive paths and other recreational components within the area managed by Anglian Water Services Limited.	**Aim:** To maintain a safe and accessible green space that creates a positive experience for both visitors to the proposed WWTP and to recreational users of the wider landscape.	All year round.
	Objectives: • To maintain features of interest that connect to the wider landscape as well as the proposed WWTP. • To maintain permissive connections with the wider network of Public Rights of Way and walking, cycling and horse-riding routes. • To maintain spaces which facilitate positive interactions and opportunities for passive as well as active recreation.	All year round
	Maintenance should be both reactive (which addresses problems when they manifest), as well as planned (carrying out routine tasks which prevent problems occurring).	In response to conditions, for a miminum period of 30 years

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframes and/or timings
	Regular inspection of features such as interpretation boards and furniture, including a mechanism to report if maintenance is required. Cleaning and repairs should be implemented as part of a maintenance schedule even if repairs are not required. Sight lines on the permissive paths and from resting spots should be maintained by keeping vegetation cut back. Rubbish bins should be emptied on a regular schedule, and this should increase over peak periods. The surface of the permissive paths within the LERMP area will be maintained for a minimum period of 30 years however, in common with other rural bridleways, the surface of the proposed new bridleway to the north-east of the LERMP area will not be maintained. Anglian Water Services Limited would continue to ensure that gates and signage in this location would be maintained as for the permissive paths in the LERMP area.	

5 Monitoring

5.1 Overview

5.1.1 During the short-term establishment period for the Landscape Masterplan areas and features, inspections shall take place by a suitably qualified specialist biannually in spring and late summer. After the first twelve months inspections would be carried out annually in late summer. These monitoring inspections will be used to measure the success of the management proposals and determine if interventions are required in order to deliver the landscape, ecological and recreational vision for the LERMP.

5.1.2 Monitoring proposals are detailed in Table 5.1. Monitoring would ensure that the landscape and ecological components would be appropriately delivered in the context of natural variability, including in climatic conditions. As such, the maintenance regime will need to respond to the monitoring and be agile to react and adapt.

5.1.3 The LERMP objectives and maintenance and management regimes are to be reviewed every five years for 30 years.

5.1.4 These monitoring obligations are secured by a requirement within Schedule 2 of the Draft DCO and will be approved by Natural England and the Local Planning Authority.

Table 5.1 Monitoring

Landscape Masterplan area or feature	Aims, objectives, outline indicative specification and activities	Timeframe and timings
LERMP wide	Check all areas for invasive species or excessive weed growth and remove. Check tree safety – identify hazards and carry out necessary maintenance works. A visual tree assessment is to be undertaken by a qualified arboriculturist of all new and existing tree planting. Any resulting tree works are to be carried out to BS 3998:2010. Keep records up to date including date of visits. Detailed condition survey for new trees – to be undertaken by a qualified arboriculturist at least once every 5 years, any recommendations to assist with establishment must be undertaken as soon as possible.	For a minimum period of 30 years, to commence at higher frequency and over time frequency would reduce.
LERMP wide	Monitor species success and ensure biodiversity is being achieved, noting where competitive species are succeeding at the expense of less successful species.	For a minimum period of 30 years, annually for the first five years and then every five years.
All new tree shrub and hedgerow planting	Monitor and record any plant losses. Remove dead materials and replace with the original species and size as specified in the planting schedule. Where a single species shows consistent losses, signs of disease, or planting method or location appear to be the cause, review the method or choice of species and consider an amendment to original proposals. Detailed condition survey for new trees - to be undertaken by a qualified arboriculturist at least once every 5 years, any recommendations to assist with establishment must be undertaken as soon as possible.	For a minimum period of 30 years, annually for the first five years and then every five years.
All new areas of woodland	Monitor and record any plant losses. Remove dead materials where this has the potential to hamper growth or condition.	For a minimum period of 30 years, annually for the first five years and then every five years.

	In the woodland blocks, tree and shrub species supplied as young transplants (1+1 and 'Feathered' specification) have been proposed at a density that takes into account some minor losses (up to 10%) in the first year as the plants establish. Trees and shrub transplant failures that exceed 10% will be replaced in the first five years, supplied as the original species, size and specification proposed. Thereafter, at five year intervals, tree and shrub species that fail will be replaced at a rate that takes into account a program of thinning, removing 25% of trees by year 10 across all blocks; thereafter on 5 - 10 year intervals removing 25% of the remaining trees, this proportion decreasing to 10-15 per cent after 5 or so thinnings. Where a single species shows consistent losses, signs of disease, or planting method or location appear to be the cause, review the method or choice of species and consider an amendment to original proposals. In the woodland blocks, those limited numbers of trees supplied as standard trees (12-14cm girth/heavy standard or larger) will fall under the replacement strategy set out under 'All new tree, shrub and hedgerow planting' above.	
All meadow grassland types	Monitoring of botanical species assemblages to be recorded to understand success of establishment	For a minimum period of 30 years. Mid Spring Annually for the first five years and then every five years.
Low maintenance flowering lawn (at entrance and along access)	Monitoring of botanical species assemblages to be recorded to understand success with remedial measures made.	Mid Spring Annually for the first five years and then every five years.
LERMP area-wide bee banks and bare soil scrapes	Check for use by bee species and habitat suitability. All results to be submitted to local records centre and AW.	Early Summer Annually for the first five years and then every five years.

LERMP area-wide deadwood and brash piles	Check for continued suitability and decomposition, to inform placement of additional cuttings/brash.	September – October Annually for the first five years and then every five years.
LERMP area-wide hibernacula	Monitoring is advised to understand success of combination of reptile features present by undertaking a reptile survey to check for reptiles, once site is operational. All results to be submitted to local records centre and AW.	Surveys to be carried out across the year with 2 visit in April, 2 in May and 2 in September Annually for the first five years and then every five years.
Seasonal ponds	Biannual check in summer (dry period) and winter (wet period) to check for success and growth of vegetation, and to inform remedial actions as required for example if water retention needs addressing.	Visits in July and December Annually for the first five years and then every five years.
Bat and bird boxes	Nest checks could be undertaken between April-June each year; and bat roost checks could be undertaken (once per season during active bat period) by a licenced bat ecologist in spring, summer and autumn. All results to be submitted to local records centre and AW. It may be possible to enter the bird nest boxes into a national recording scheme, such as the British Trust for Ornithology Nest Box Monitoring scheme.	Visits in April, May and June (multiple visits may be required if nest monitoring scheme entered) for nesting birds; single visit each in April, July and September for bats. Annually for the first five years and then every five years.
Furniture, permissive paths and other recreational components within the area managed	User surveys should be undertaken at least twice a year to understand how people are interacting with the recreational space and accessing the wider network of PRoW and permissive paths.	Twice a year Annually for the first five years and then every five

by Anglian Water Services Limited.	years for a minimum of 30 years.

5.1.5 As stated in the previous sections, this is an adaptive management plan showing indicative long-term care over a 30 year duration. New activities or adaptions to the management and maintenance regime will respond to the results of monitoring and changes as a result of climate change. Adaptive management will be reviewed every 5 years with the established Operational Management Group as presented at 4.1.2.

Appendix A – Species 'Sampler' for Proposed Habitat Areas

SEED MIXES		
Zone A grassland: CALCAREOUS LOAM MEADOW GRASSLAND		Area
	SEEDED WILDFLOWER GRASSLAND	EM5 - Meadow Mixture for Loamy Soils
	Calcareous Loam grassland mixture: 20% wildflowers and 80% grasses (subject to ecology)	
	WILDFLOWERS	
0.3%	Achillea millefolium	Yarrow
1.0%	Agrimonia eupatoria	Agrimony
0.6%	Betonica officinalis	Betony
5.0%	Centaurea nigra	Common Knapweed
1.0%	Galium album - (Galium mollugo)	Hedge Bedstraw
1%	Galium verum	Lady's Bedstraw
0%	Geranium pratense	Meadow Crane's-bill
0%	Knautia arvensis	Field Scabious
0%	Leontodon hispidus	Rough Hawkbit
3%	Leucanthemum vulgare	Oxeye Daisy
3%	Malva moschata	Musk Mallow
1%	Plantago lanceolata	Ribwort Plantain
1%	Poterium sanguisorba	Salad Burnet
2%	Ranunculus acris	Meadow Buttercup
1%	Rhinanthus minor	Yellow Rattle
1%	Rumex acetosa	Common sorrel
1%	Rumex acetosella	Sheep's Sorrel
1%	Silene vulgaris	Bladder Campion
20%	**Total**	
	GRASSES	
8.0%	Agrostis capillaris	Common Bent
2.0%	Anthoxanthum odoratum	Sweet Vernal-grass (w)
3.0%	Briza media	Quaking Grass (w)
20.0%	Cynosurus cristatus	Crested Dogstail
18.0%	Festuca ovina	Sheep's Fescue
20.0%	Schedonorus pratensis	Meadow Fescue
1.0%	Trisetum flavescens	Yellow Oat-grass (w)
4.0%	Poa spp.	Meadow-grasses
4.0%	Lolium perenne	Perennial Rye-grass
80	**Total**	
	TARGETING SPECIES (e.g. Turtle Dove)	
	Lotus corniculatus	Common Bird's-foot-trefoil
	Trifolium pratense	Red Clover
	Trifolium repens	Early White Clover
	Fumitory officinalis	Fumitory
	Medicago lupilina	Black Medick

Zone B Grassland:	WOODLAND GROUND FLORA	
	EM10 Tussock Mixture	supplied by Emorsgate
	Additional species:	
	Allaria petiolata	
	Arum maculatum	
	Borumus recmosus	
	Brachypodium sylvaticum	
	Digitalis purpurea	
	Galium mollugo	
	Geum urbanun	
	Hypericum hirsutum	
	Millium effusum	
	Silene dioica	
	Stachys sylvtica	
	Torillus japonica	
	Established shade:	
	Galium odoratum	Sweet Woodruff
	Primula vulgaris	Primrose
	Viola odorata	Wood violet
	Kindbergia praelonga	Common feather-moss
	Hedera helix	Ivy
	Hyacinthoides non-scripta	Bluebell
	Brachythecium rutabulum	Rough-stalked feather-moss
	Mnium undulatum	Hart's-tongue thyme-moss
	Circaea lutetiana	Enchanter's nightshade
	Lamiastrum galeobdolon	Yellow archangel
	Lysimachia nemorum	Yellow pimpernel
	Melica uniflora	Wood melick
	Carex sylvatica	Wood sedge
	Sanicula europaea	Sanicle
	Bromopsis ramosa	Hairy brome
	Oxalis acetosella	Wood sorrel
	Adoxa moschatellina	Moschatel
	Conopodium majus	Pignut
	Campanula trachelium	Nettle-leaved bellflower
	Milium effusum	Wood millet
	Veronica montana	Wood speedwell
	Carex remota	Remote sedge
	Allium ursinum	Ramsons
	Anemone nemerosa	Wood Anemone

EARTHWORKS BANK TOP

%	species	common name
	TREES	
	Size distribution: Semi mature 6%; Heavy Standard 16-18cm 26%; Heavy Standard 14-16cm 26%; Standard 10-12cm 52%)	
35.0%	Acer campestre	Field maple
10.0%	Tilia cordata	Small leaved Lime
5.0%	Quercus robur	English Oak
7.5%	Carpinus betulus	Hornbeam
7.5%	Acer psuedoplatanus	Sycamore
10.0%	Quercus petraea	Oak
5.0%	Betula pubescens	Silver birch
5.0%	Prunus domestica	Wild Plum
5.0%	Pyrus communis	Wild Pear
10%	Malus sylvestris	Apple
	HEDGEROW THICKET	
	(1+1 transplants, 80-120cm ht, planted on 300mm centres on a triple staggered row, 9 per l.m.	
45.0%	Crataegus monogyna	Hawthorn
13.5%	Prunus spinosa	Blackthorn
7.5%	Carpinus betulus	Hornbeam
5.0%	Cornus sanguinea	Dogwood
5.0%	Viburnum opulus	Guelder Rose
5.0%	Ilex aquifolium	Holly
5.0%	Ligustrum vulgare	Wild privet
5.0%	Viburnum lantana	Wayfaring tree
5.0%	Euonymus europaeus	Spindle
	CLIMBERS (P9 or BR if appropriate)	
2.0%	Hedera helix	Ivy
2.0%	Tamus communis	Black bryony
100.0%	total plants	

EARTHWORKS BANK BASE

%	species	common name
	TREES	
	Size distribution: Semi mature 6%; Heavy Standard 16-18cm 26%; Heavy Standard 14-16cm 26%; Standard 10-12cm 52%)	
15.0%	Carpinus betulus	Hornbeam
20.0%	Tilia cordata	Small leaved Lime
20.0%	Acer psuedoplatanus	Sycamore
15.0%	Populus nigra	Black Poplar
15.0%	Salix caprea	Goat Willow
15.0%	Quercus petraea	Pedunculate Oak
100.0%	**total trees**	

WOODLAND BLOCKS

%	species	common name	
	TREES		
	Zone 1: dense spacing 2.1 to 3m; Zone 2: 3m spacing		
	(1+1 transplants, 80-100cm ht, except Ilex aquifolium: 2L, 40-60cm)		
30.0%	Acer campestre	Field maple	
7.5%	Quercus petraea	Sessile oak	Wet areas alternate: Populus nigra
7.0%	Ulmus glabra	Wych Elm	Wet areas alternate: Populus nigra
5.0%	Carpinus betulus	Hornbeam	
5.0%	Malus sylvestris	Crab apple	Wet areas alternate: Salix cinerea
5.0%	Prunus domestica	Wild Plum	Wet areas alternate: Salix cinerea
5.0%	Pyrus communis	Wild Pear	Wet areas alternate: Salix cinerea
2.5%	Tilia cordata	Small leaved lime	
2.0%	Quercus robur	Pedunculate oak	Wet areas alternate: Populus nigra
2.0%	Betula pubescens	Downy birch	
2.0%	Betula pendula	Silver birch Holly	
2.0%	Ilex aquifolium		
	FEATHERED TREES (Ftd, 100-150 cm ht)		
2.0%	Acer campestre	Field maple	
1.0%	Quercus petraea	Sessile oak	
2.0%	Ulmus glabra	Wych Elm	
	SHRUBS (1+1 transplants 60-80cm ht)		
12.0%	Crataegus monogyna	Hawthorn	
2.0%	Corylus avellana	Hazel	Wet areas alternate: Cornus sanguin
1.0%	Prunus spinosa	Blackthorn	Wet areas alternate: Cornus sanguin
1.0%	Sambucus nigra	Elder	
1.0%	Viburnum opulus	Guelder rose	Wet areas alternate: Salix caprea
1.0%	Salix caprea	Goat willow	
1.0%	Viburnum lantana	Wayfaring tree	Wet areas alternate: Salix caprea
1.0%	Euonymus europaeus	Spindle	Wet areas alternate: Rhamnus catha
100%	**Total transplants**		
	STANDARD TREES		
	Scattered, irregular spacing		
	Size distribution: 25% 14-16cm girth, 50% 16-18cm girth.		
5.0%	Quercus robur	Pedunculate oak	
25.0%	Tilia cordata	Small leaved Lime	
35.0%	Acer campestre	Field Maple	
25.0%	Populus nigra	Black Poplar	
10.0%	Quercus petraea	Sessile oak	
100.0%	**Total trees**		

Get in touch

You can contact us by:

Emailing at **info@cwwtpr.com**

Calling our Freephone information line on **0808 196 1661**

Writing to us at **Freepost: CWWTPR**

You can view all our DCO application documents and updates on the application on The Planning Inspectorate website:

https://infrastructure.planninginspectorate.gov.uk/projects/eastern/cambridge-waste-water-treatment-plant-relocation/