

The lake marginal planting will comprise:

Species:	Percentage Cover:	Number:	Spacing:
Phragmites australis	80	270	2.0m c/s
Phalaris arundinacea	19	255	1.0m c/s
Sparganium erectum	10	35	2.0m c/s
Iris psuedacorus	1	15	1.0m c/s

Around the smaller pond and scrape areas, the following marginal plug plants will be planted at 50cm c/s (numbers given per planting station, 2 planting stations per pond, 10 planting stations total):

Species:	Number:	Total:
Alisma plantago-aquatica	10	100
Butomus umbellatus	10	100
Caltha palustris	10	100
Eleocharis palustris	10	100
Eupatorium cannabinum	10	100
Filipendula ulmaria	10	100
Mentha aquatica	10	100
Myosotis scorpiodes	10	100
Lycopus europaeus	10	100
Lythrum salicaria	10	100

Application Boundary  
Ref L.20/03/867 M

**Western Lake:**  
Detailed Margins Shaping -  
Clifflets, Shallows, Scallopings -  
small bays and promontories  
Refer to Detail Plan 20-02-  
ALREW-P1-1222-REST\_DET

**Western Boundary:**  
Additional 500 linear metres Hedgerow Planting to  
field side to reinforce existing hedge;  
New Oak tree planting within hedgerows to  
provide future hedgerow standards.

**Central Northern Plant Site Area:**  
Operational Area - Plant Site restored to  
agriculture;  
Creation of an arable area (to maintain  
Best and Most Versatile land)

**Woodland Planting Extended:**  
New broadleaved woodland and  
shrub wood edge to existing  
plantation planted to extend  
existing features;  
Planting in proximity to pipeline  
in accordance with Pipeline  
Guidelines  
Turtle Dove Mix seeded to south  
side of existing plantation

**Western area:**  
Lake created with in-situ soils and  
clays.  
Slopes 1:3 minimum - for grassland  
creation - potential to retain shallow  
south-facing clifflets for invertebrate  
interest.  
Northern boundary to have new  
hedgerow planting - 315 linear  
metres, with 6.0m wide nectar buffer  
strip to north

**Advance Woodland Planting  
Screen:**  
Planted at 2.1m c/s for more  
rapid screen  
New broadleaved woodland and  
wood edge south of existing  
hedgerow planted to link  
existing features  
Restoration - 6.0m Nectar Buffer  
Strip to south

**Eastern area:**  
Lake created with in-situ  
soils and clays. Slopes 1:3  
minimum - for grassland  
creation - potential to retain  
shallow south-facing  
clifflets for invertebrate  
interest;  
Farm access track along  
route of former haul road.

**H7 Hedgerow Translocation:**  
Hedgerow from within proposed  
excavation area relocated along  
northern boundary south of  
proposed tree protection fence, to  
create "Green Lane" landscape  
feature. Refer to Landscaping,  
Restoration and Aftercare Scheme

**Eastern Lake:**  
Detailed Margins Shaping -  
Clifflets, Shallows, Scallopings -  
small bays and promontories  
Refer to Detail Plan 20-02-  
ALREW-P1-1222-REST\_DET

**Eastern Boundary:**  
Additional 275 linear metres Hedgerow Planting to  
field side to reinforce existing hedge;  
New Oak tree planting within hedgerows to provide  
future hedgerow standards.

**Waterside tree species  
along Pyford Brook:**  
New Alder and Willow planted  
to link existing features and  
create additional scrub  
habitat;  
Headlands extended to create  
6.0m buffer strips to be sown  
with Turtle Dove Mix

**Drainline Creation Linked to  
Lake Only:**  
Potential for Kingfisher Bank and  
Water Vole Habitat

**Central Southern Lagoons Area:**  
Operational Area - Silt lagoons  
restored to original ground levels  
with field corner pond to south  
adjacent to Pyford Brook;  
Creation of an area of Species Rich  
Grassland (using subsoils only)

**Pyford Brook - At Site Commencement:**  
Low Gravel Bars or Riffles created at western point nearest site, and off  
culvert between Ponds 2 and 3 (or other location to be agreed). Height  
of new gravel features no more than 0.3m above normal high water  
level in non-flood conditions. Oversize cobbles to be added where  
available to create a range of substrate sizes

**Pyford Brook - At Final Restoration:**  
Restoration will include re-naturalisation of the Pyford Brook in the western  
section south of Lake 1 and eastern section south of Lake 2. Scheme to be  
agreed prior to removal of temporary soil mounds at final restoration. Re-  
naturalisation will include features such as meanders, braided sections and  
off line pools, together with planting reinforcement to protect sensitive areas.

**Pyford Brook - At Site Commencement**  
Installation of two kingfisher nest boxes (tunnels to be positioned in a vertical bank adjacent to the watercourse,  
at least 1m above the maximum water level and completely buried so that only the nest entrance is visible), and  
installation of three kingfisher perches, which will be placed in proximity to the kingfisher nest boxes (tunnels) and  
in view of one another to encourage kingfishers to use the entire stretch of Pyford Brook adjacent to the site  
boundary. Locations of all kingfisher features to be confirmed following more detailed analysis of suitable areas

## Terrace Alluvial Farmland:

(older river terraces, more remote from the floodplain)

### Visual character

Flat landscape, predominantly of intensive arable and improved pastoral farming.  
Field pattern mainly large scale and regularly shaped although there are  
pockets of ancient, irregularly shaped fields.  
Throughout the arable areas the loss of stock control function has led to sculpted, gappy and  
overgrown thorn hedges. Scattered hedgerow oaks partially filter views through the  
landscape, with distant views becoming an important feature. In the few places where small  
woodlands are present their edges coalesce with hedgerow trees to give a strong sense of  
enclosure. Streams and ditches also reinforce this enclosure with lines of willows and alders.  
A widely spaced network of straight roads and lanes services the scattered farmsteads and  
act as commuter runs for extended rural villages which still retain much of their original  
character. Adjacent busy roads intrude into the quietness of the area.

### Characteristic landscape features

Small broadleaved woodland; hedged fields and hedgerow trees; waterside tree species  
along ditches; flat landform; intensive mixed pasture and arable farming; large fields; lush  
improved pasture; scattered farmsteads; straight roads and small winding lanes; traditional  
village character; canal.

### Potential Value of New Woodland Planting:

Moderate to very high: this is a National Forest Preferred Area. Hedgerows,  
hedgerow trees and small copses will contribute to the enclosed small scale and  
respond to the strong landscape pattern without subverting it. Occasional farm  
woodlands and spinneys would be appropriate to reflect the small-scale landscape  
of ancient hedged fields.

### Potential Value of Other Habitat Types:

Habitat type	Objective or target	Priority
Ancient/ semi-natural broadleaved woodland	maintain and enhance restore degraded sites recreate/ regenerate	lower medium medium
Ancient/ diverse hedgerows	maintain and manage maintain trees	high high
Hedgerows	plant species-rich hedges	medium
Arable field margins	maintain, improve and restore	high
Canals, lakes and ponds	maintain and enhance water bodies and catchments	medium
Reedbeds	increase the number of such features maintain and create	high medium
Rivers and streams	maintain and improve the quality and quantity of water	medium
	maintain the quality of all natural existing channel features	medium
Wet woodland	maintain, enhance and restore prevent further loss increase the number of such woodlands	lower lower lower

### Restoration Landscape and Biodiversity Potential:

Wetland mosaics are the priority for the Staffordshire Ecosystem Action Plan (EAP) with **Open Water**  
and **Grasslands** being the main focus. The site would contribute to the creation of lowland meadows  
from arable or improved grassland.

In addition, the two larger areas of open water east and west of the site have the potential to meet the  
growing demand for agricultural reservoirs within the wider locality.

Other wetland features such as ponds and reedbeds need to be expanded, especially in networks of  
different successional ages. The site would contribute 5 or more ponds of varying sizes and to the  
creation of reedbed habitats (> 2 ha where possible) from land of low nature conservation interest.

The table below sets out the areas of habitat created within the restoration scheme for the site.

UK BIODIVERSITY ACTION PLAN HABITAT:		ALREWS		Total New Area created within		Contribution to EAP:	
				Site (ha):			
Ponds (Seasonal or Perched)				0.10		17% (of 6 Pond Sites)	
Aquifer Fed Naturally Fluctuating Water Bodies				10.60		n/a	
Reedbed and Margins				1.50		11% (of 14 hectares)	
Lowland Mixed Deciduous Woodland (including Wood Edge)				0.38		2% (of 20 hectares)	
Lowland Meadows				7.00		117% (of 6 hectares)	
(Including Nectar Buffer Strip and Turtle Dove Mix)				1.90		3% (of 60 hectares)	
<b>TOTAL</b>				<b>21.48</b>			
Hedgerows				1090		18% (of 6 kilometres)	

PLANTING SCHEDULE			Percentage Mixes				
TREES		Size	Notes	Hedgerows	Pyford Brook - Tree Mix	Wood Edge Mix to Existing Plantation	Dry Woodland
<b>Natural Colonisation:</b>					(up to 10% of total plantation area - left as open ground to allow colonisation)	(up to 5% of total plantation area) - left as open ground to allow colonisation)	(up to 5% of total plantation area) - left as open ground to allow colonisation)
Fraxinus excelsior	(Ash)	Self Set	Not to be planted from stock unless disease free strain becomes available	To develop as standards			
<b>Stock planting:</b>							
Acer campestre	(Field Maple)	0.4-0.6m t/s					15
Alnus glutinosa	(Alder)	0.4-0.6m t/s	Woodland and Wood Edge		20		
Betula pubescens	(Downy Birch)	0.4-0.6m cell	to be planted at 2.5-4.0m c/s		5		10
Malus sylvestris	(Crab Apple)	0.4-0.6m t/s	variable spacing	1		5	5
Quercus robur	(Oak)	0.35-0.45m t/s		2			25
Quercus robur	(Oak)	0.9-1.2m fltd	Hedgerows to be planted at	1			
Salix fragilis	(White Willow)	0.4-0.6m t/s	5 plants per metre in a double staggered row		20		
Salix fragilis	(Crack Willow)	0.4-0.6m t/s			20		
Ulmus glabra	(Wych Elm)	0.4-0.6m t/s		5		2	5
<b>TOTAL TREES</b>				9	65	7	60
<b>SHRUBS</b>							
<b>Stock planting:</b>							
Acer campestre	(Field Maple)	0.4-0.6m t/s	All planting to be protected with "Tubex" ecostarts or similar	5		5	
Corylus avellana	(Hazel)	0.4-0.6m t/s		10	2	10	20
Crataegus monogyna	(Hawthorn)	0.4-0.6m t/s		60		18	10
Ilex aquifolium	(Holly)	0.4-0.6m cell		3		15	
Prunus spinosa	(Blackthorn)	0.4-0.6m t/s		7		15	5
Rosa canina	(Dog Rose)	0.4-0.6m t/s		3		15	
Salix aurita	(Eared Willow)	0.4-0.6m t/s	1.0m diameter woodee area to be maintained around each tree and shrub for five years after planting, or until canopy closes, whichever is sooner		5		
Salix caprea	(Goat Willow)	0.4-0.6m t/s			5		5
Salix cinerea	(Sallow)	0.4-0.6m t/s			10	5	
Salix purpurea	(Purple Willow)	0.4-0.6m t/s			5		
Salix viminalis	(Osier)	0.4-0.6m t/s			5		
Sambucus nigra	(Elder)	0.4-0.6m t/s			3	3	10
<b>TOTAL SHRUBS</b>				91	35	93	40
<b>TOTAL TREES AND SHRUBS</b>				100	100	100	100

### Programme of Implementation

To be carried out in November-March planting season for bare root stock.  
Prior to planting, any areas of compaction to be broken up to a depth of 450mm.  
Trees and shrubs to be notch planted.

Natural colonisation will be encouraged in all parts of the restored site, including grassland, aquatic margins, hedgerows, woodland and lakeside areas

### Maintenance

Where required, all planting to be maintained by use of glyphosate to create a 1.0m diameter circle around each tree and shrub during  
the five year aftercare period, or until canopies close. This will permit rapid establishment.

Two maintenance visits will be carried out per year during the aftercare period, one in spring and one in early summer.  
Visits will include weed control (including noxious weeds), litter removal and checking and firming up tree shelters.

Any plants dying during the five-year aftercare period will be replaced with a size and species to be agreed with the Mineral Planning  
Authority to maintain 90% stocking rate during the aftercare period.

Any plants loosened by frost or wind will be firmed up and any damaged branches will be removed using a sharp pruning knife.  
At the end of the aftercare period, or before, should growth warrant it, tree shelters will be removed from the planting.

### KEY :

	SITE BOUNDARY
	LIMIT OF EXTRACTION
	GAS PIPELINE (WITH PROTECTION ZONE FOR WORKING AREAS)
	EXISTING VEGETATION
	EXISTING HEDGEROWS
	UNWORKED LAND OR EXISTING LAND RESTORED TO AGRICULTURE Restored with topsoils (depth 0.3m) and subsoils (to a maximum depth of 0.9m)
	RESTORATION CONTOURS m.a.O.D.
	NEW PLANTING (Lowland Mixed Deciduous Woodland and Hedgerows) Restored with topsoil and subsoil
	LAND RESTORED TO GRASSLAND (Lowland Meadow) Restored with subsoils only - Seed Mix A - Emorsgate EM3
	OPEN WATER (Aquifer Fed, Perched or Eutrophic if sides seal over time)
	WET GRASSLAND AND REED EDGES - Removal of some topsoils to create scrapes over lower nutrient quality subsoils - Seed Mix B - Emorsgate EM8
	SPECIALIST SEED MIX - Turtle Dove Mix C
	SPECIALIST SEED MIX - Nectar Buffer Strip Mix D

SEED MIX "C" - Turtle Dove Mix		%
Sow at a rate of 7g/m2		
Early English Common Vetch		25
Birdfoot Trefoil		20
Early White Clover		20
Black Medick		20
Early Red Clover		20
Fumitory		5

SEED MIX "D" - Nectar Arable Buffer Strip		%
Sow at a rate of 1.5g/m2		
Lotus corniculatus	Bird's-foot Trefoil (Ag)	20
Onobrychis viciifolia	Sainfoin (Ag)	20
Trifolium hybridum	Alsike Clover (Ag)	15
Trifolium pratense	Red Clover (Ag)	25



Cemex UK Operations Limited. Proposed sand  
and gravel extraction, the erection of plant and  
infrastructure and creation of new access, in  
order to supply the HS2 project with ready mix  
concrete, with export of surplus sand and gravel,  
land south of the A513, Pyford Brook Quarry,  
Orgreave, Alrewas.

Date : 09/04/21	Scale : Not to Scale
O.S. Grid Ref : SK.148 150	Ref : L.20/03/867 M