Tree Replanting Scheme

P/12553 Slaithwaite Reservoir Spillway Project

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Background

To facilitate the replacement of the spillway at Slaithwaite Reservoir a number of trees needed to be removed (see Slaithwaite Spillway Arboricultural Impact Assessment).

To mitigate this loss, replacement planting needs to be undertaken following the defect period of the scheme. Only trees removed with a diameter of 75mm or greater (measured at 1.5m from ground level) were included in calculating replacement numbers.

The following ratios should be followed as these have been agreed with the Local Planning Authority and Project Manager.

- 5:1 ratio for any trees removed from the TPO area
- 3:1 ratio for any trees removed from the rest of the site

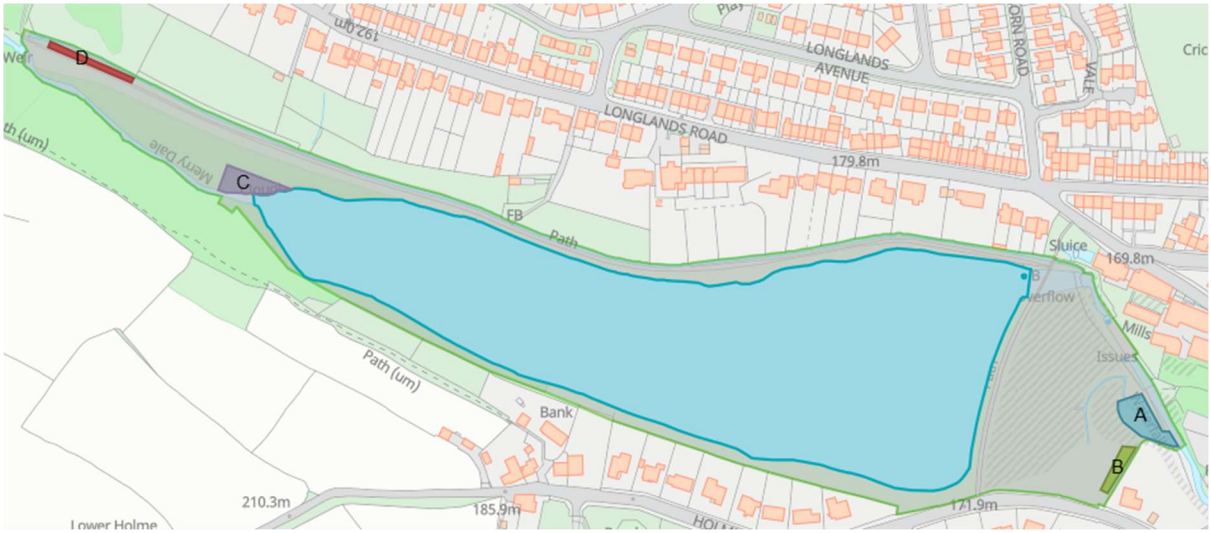
12 trees to be removed from TPO area – 60 replacement trees needed

44 removed from rest of site – 132 replacement trees needed

Total: 192 replacement trees required.

Planting Locations

There are 4 areas (A-D) which have been identified to undertake the replacement tree planting at Slaithwaite Reservoir (see map below).



Tree planting schedule

Location	Species	Size/Stock Type	Quantity	Total number of trees per area
Area A	*Betula pubescens*	Standard, 8-10cm girth Usually, container grown	6	52
	Ilex aquifolium	60-90cm bare root whip	10	
	Crataegus monogyna	60-90cm bare root whip	10	
	Salix cinerea	60-90cm bare root whip	10	
		Standard, 8-10cm girth Usually, container grown	1	
	Alnus glutinosa	Standard, 8-10cm girth Usually, container grown	5	
	Sambucus nigra	60-90cm bare root whip	10	
Area B	*Sorbus aria*	60-90cm bare root whip	8	44
	Quercus robur	60-90cm bare root whip	10	
		Standard, 8-10cm girth Usually, container grown	1	
	Corylus avellana	60-90cm bare root whip	14	
	Ilex aquifolium	60-90cm bare root whip	8	
	Fagus sylvatica	Standard, 8-10cm girth Usually, container grown	3	
Area C	*Salix caprea*	60-90cm bare root whip	15	30
	Alnus glutinosa	60-90cm bare root whip	15	
Area D	*Ilex aquifolium*	60-90cm bare root whip	5	15
	Corylus avellana	60-90cm bare root whip	5	

	Crataegus monogyna	60-90cm bare root whip	5	
				Total: 141

To account for the shortfall in required tree replanting at Slaithwaite Reservoir, the following is proposed on Canal and River Trust estate at land above Tunnel End Reservoir, Marsden (Indicative locations shown in Appendix A):

- 5 standard trees (*Quercus robur x2, Fagus sylvatica x2, Alnus glutinosa x1*);
- Plant up 66.5 m of dead hedgerow with approx. 207 willow whips; and
- 51 whips (*Corylus avellana, Crataegus monogyna, Sambucus nigra*)

This brings up the total number of trees to planted to 404.

The private residential garden of the property on Holme Lane will also be re-instated following construction to a specification agreed upon by the landowner. This will include tree and shrub planting of their choosing.

Biodegradable tree guards and wooden stakes/canes are also required for each tree whip.

Two large stakes and tree ties to be used to support standard trees.

General guidance

Procurement

- All trees and shrubs shall conform to the specification for nursery stock as set out in the National Plant Specification where it applies to trees, shrubs and plant handling and establishment: http://www.gohelios.co.uk/nps/nps.aspx and British Standard 3936 Parts 1 (1992) and 4 (1984). Advanced Nursery stock trees shall conform to BS 5236. Handling, planting and establishment of trees shall be in accordance with BS 8545:2014 Trees from nursery to independence in the landscape:Recommendations.

- Selected suppliers must be registered with the plant health authorities and be able to issue plant passports as required. Plant passporting documents must be supplied at time of delivery.

- Trees to be grown in the UK and be of local provenance.

- When transporting to site, all bare root tree stock should have their root systems covered and fully protected to prevent desiccation. Ideally transportation to site should be within a closed covered lorry to ensure trees always remain cool and moist.

- When stock arrives on site these should be checked that they are undamaged, free of defects, healthy and vigorous, free of pest and diseases and of the size/species that were ordered.

Pre-Planting

Prior to any planting taking place, a site visit is required with the Operations team, Reservoir Engineer and Ecologist to mark out exact planting locations within the area blocks.

No planting to take place in the following areas:

- Along the bywash embankment
- Along the newly established access route to the spillway
- Along the waste channel to the river

A risk assessment must be in place for the tree planting activity. Planting areas to be checked for underground services and a Cat Scan undertaken by an experienced operative to ensure no un-mapped services will be struct during the planting process.

It must be ensured that trees are planted in well aerated soil and areas are free from compaction prior to planting.

Planting

- Planting of the trees should be done in line with **BS 8545:2014** *Trees: from nursery to independence in the landscape – Recommendations.*

- Planting period for bare root stock should be carried out between Mid-November to Mid-March. Container grown trees can be planted outside of this season. Planting should only be carried out in suitable conditions. Do not plant in periods of wet weather or heavy frosts.

- Tree stakes to be driven in the ground before the tree is planted to prevent damage to the tree roots.

- Trees should not be planted too deep as this can lead to the death of the tree. Refer to standards/published guidelines.

Aftercare

A 5-year aftercare period is required; the aftercare of a tree is extremely important as it helps ensure the tree becomes fully established. The following aftercare should be carried out:

- Tree condition should be assessed annually and any dead, diseased or damaged trees should be replaced to the original specification.
- Weeding – keep the base of the tree clear of weeds
- Watering – Trees should be watered in prolonged dry periods for the first three years after planting (Young Tree Watering No5 Poster A4.indd)
- Stakes and Ties – Tree stakes should be removed 2 years after planting unless the tree can visibly be seen to not be supporting itself (leaning etc). Tree ties should be adjusted annually to allow for new growth.

- Mulch – It is advisable to put a layer of mulch around the base of the trees to supress weed growth particularly where planted in grassland areas. Mulch should be topped up annually. A layer of medium grade mulch should be applied around the tree, ensuring it does not cover the tree stem directly as this can lead to rot.
- Pruning – dead or diseased wood should be removed at the end of each growing season.

Appendix A: Proposed offsite replanting locations