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5080D – Planting Specification

King's Pond – Planting Specification
Prepared for

ALTON Town Council

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Executive Summary

This planting schedule was designed to provide guidance to assist with the river and wetland restoration plans on King's Pond. The planting schedule is a guide that can be adjusted to accommodate each site, based on availability of plants, and the requirements of landowners, stakeholders, and existing vegetation.

All species are suited to acidic and loamy soils which characterise the project area. If additional species are requested it should be checked that they are appropriate for this soil type, in order to prevent plug plants from dying, and to allow seeds to establish.

Planting for the restoration scheme consists of:

- Wetland trees;
- Supplementary Willow scrub;
- Marginal plug planting along marginal areas (open / partial shade);
- Marginal plug planting along marginal areas (shaded);
- Wet meadow seeding in the lowered floodplain;
- Marginal pond seed mix;
- Woodland seeding;
- Reedbed planting;

Natural England provides a definition of a UK native seed as "*a seed originally collected from wild populations in Great Britain (from sites with no known history of sowing amenity or agricultural varieties) and either sown directly, or grown as a field crop to provide further seed. It includes seed collected in 'green hay', it excludes certified amenity or agricultural varieties of native species*." All available seed mixes include species that are considered non-native to the UK by the Royal Horticultural Society, but are acceptably naturalised according to Natural England. The decision to use the listed seed mix has been made accounting for the different definitions from these professional bodies.

Similar seed mixes may be locally available and preferable to the EM mixes proposed; if there is any doubt that these alternative seed mixes have the same – or almost identical – native species then a suitably certified ecologist should be consulted before commencing planting.

Tree and Scrub Planting

1. Wet woodland

The species detailed in Table 2 are recommend woodland trees that can withstand poorly drained or seasonally wet soils. Mix should be dominated by Alder, Burch, and Willow. The area can additionally be seeded to help create a diverse understory formed of species from Table 3. The recommending planting density is a tree every 2 to 3 metres in wavy lines, equalling around 1,100 to 2,500 trees per hectare. Planting small groups of the same species together helps reduce competition between species.

Table 2: Suggested tree species for wet woodland planting.

Latin name	Common name
Alnus glutinosa	**Alder**
Betula spp.	**Birch**
Salix spp.	**Willows**
Fraxinus excelsior	Ash
Quercus spp	Oak
Pinus sylvestris	Scots Pine
Fagus sylvatica	Beech

Table 3: Understory species typical of wet woodlands.

Latin name	Common name
Juncus effusus	Soft-rush
Mentha aquatica	Water Mint
Filipendula ulmaria	Meadowsweet
Cardamine pratensis	Cuckooflower
Caltha palustris	Marsh Marigold
Equisetum fluviatile	Water Horsetail
Valeriana officinalis	Common Valerian
Comarum palustre	Marsh Cinquefoil
Lysimachia nemorum.	Yellow Pimpernel

2. Willow Scrub Planting

The species suggested for scrub planting are detailed in Table 4 with a dominance (~45%) of Willow. Suggested planting spacing is between 1 and 2 m between plants and to plant small groups (2 or 3 whips) of the same species together to reduce competition.

Table 4: Scrub species

Latin name	Common name
Salix spp	**Willow**
Prunus spinosa	Blackthorn
Corylus avellana	Hazel
Hippophae rhamnoides	Sea-buckthorn
Rubus fruticosus agg	Bramble
Ulex spp	Gorse
Crataegus monogyna	Hawthorn

Plug Planting

3. Open Wetland Planting

The species specified in Table 1 have been selected for marginal plug planting in open and semi-shaded sections. These species prefer damp ground, but are tolerant of drier periods and seasonal inundation, and are appropriate for the natural Hampshire environment. All species chosen are native UK species as identified by the Royal Horticultural Society.

The planting for these areas is proposed at a mix of 6-8 plants per m2, this will allow for natural succession and prevent overcrowding leading to plant death. Plants should be mixed with 2-3 species per m2 ensuring one species does not dominate.

Table 1: Species specification for marginal plug planting in open/semi-shaded locations

Latin name	Common name
Angelica sylvestris	Wild angelica
Butomus umbellatus	Flowering rush
Carex acutiformis	Lesser pond sedge
Carex hirta	Hairy sedge
Carex paniclata	Greater tussock-sedge
Carex pendula	Pendulous sedge
Carex pseudocyperus	Cyperus sedge
Eupatorium cannabinum	Hemp agrimony
Filipendula ulmaria	Meadowsweet
Iris pseudacorus	Yellow flag iris
Juncus articulatus	Jointed rush
Juncus effusus	Soft rush
Lythrum salicaria	Purple loosestrife
Mentha aquatica	Water-mint
Myosotis scorpioides	Water forget-me-not
Stachys palustris	Marsh woundwort

Note: *Carex paniclata* should be planted in low numbers due to the aggressive nature of the plant.

4. Shaded Wetland Planting

The species specified in Table 2 have been selected for marginal plug planting in shaded sections where daylighting isn't possible or preferred. Shaded areas are classified where there is less than 30% light availability. They prefer damp ground, but are tolerant of drier periods and seasonal inundation, and are appropriate for the natural Hampshire environment. All species selected are UK native species as identified by the Royal Horticultural Society.

Table 2: Species specification for marginal planting in shaded locations

Latin name	Common name
Angelica sylvestris	Wild angelica
Caltha palustris	Marsh marigold
Carex acutiformis	Lesser pond sedge
Carex hirta	Hairy sedge
Carex pseudocyperus	Cyperus sedge
Filipendula ulmaria	Meadowsweet
Iris pseudacorus	Yellow flag iris
Lythrum salicaria	Purple loosestrife
Mentha aquatica	Water-mint
Myosotis scorpioides	Water forget-me-not
Veronica beccabunga	Brooklime

Seed Mixtures

5. Meadow Mixture for Wetlands

Areas of lowered floodplain not immediately adjacent to the channel or water feature will consist of freshly exposed subsoils with an assumed low level of nutrients optimum for establishment of wildflowers. The sowing mix recommended is Emorsgate EM8 – "Meadow Mixture for Wetlands" This is composed of native wildflower (herb) and grass species that are suitable for seasonally wet soils and is based on the vegetation of traditionally managed floodplains and water meadows; the specification is provided in Table 4 and Table 5 respectively. These species will tolerate periodic flooding in winter and thrive in well drained summer conditions, characteristic of the sandy soils in the area.

The recommended sowing rate is 16 kg/acre or 4 g/m^2.

Table 4: Wild flower species contained in EM8 mix (Total 20% by weight)

%	Latin name	Common name
0.1	*Achillea millefolium*	Yarrow
1.5	*Betonica officinalis - (Stachys officinalis)*	Betony
4	*Centaurea nigra*	Common knapweed
1.5	*Filipendula ulmaria*	Meadowsweet
0.5	*Galium verum*	Lady's bedstraw
0.1	*Leontodon hispidus*	Rough hawkbit
0.5	*Leucanthemum vulgare*	Oxeye daisy
2	*Lotus corniculatus*	Bird's-foot-trefoil
2.5	*Plantago lanceolata*	Ribwort plantain
0.5	*Primula veris*	Cowslip
0.2	*Prunella vulgaris*	Selfheal
0.9	*Ranunculus acris*	Meadow buttercup
0.1	*Rumex acetosa*	Common sorrel
0.2	*Silaum silaus*	Pepper saxifrage
0.2	*Succisa pratensis*	Devil's-bit scabious
0.1	*Taraxacum officinale*	Dandelion
0.1	*Tragopogon pratensis*	Goat's-beard
5	*Vicia cracca*	Tufted vetch

Table 5: Grass species contained in EM8 mix (Total 80% by weight)

%	Latin name	Common name
10	*Agrostis capillaris*	Common bent
3	*Alopecurus pratensis*	Meadow foxtail
3	*Anthoxanthum odoratum*	Sweet vernal-grass
3	*Briza media*	Quaking grass
24	*Cynosurus cristatus*	Crested dog's-tail
2	*Deschampsia cespitosa*	Tufted hair-grass
32	*Festuca rubra*	Red fescue
3	*Hordeum secalinum*	Meadow barley

6. Pond Edge Mixture

Pond Edge Mixture EP1 is a seed mix of wildflowers and grasses specifically suited for sowing along the wet margins of ponds, streams, and ditches. This seed mix is appropriate for a wide range of soil types.

For best results, choose ground that is low in fertility and free from persistent perennial weeds. Successful establishment depends on thorough site preparation—aim to suppress weeds and create a fine, well-structured seedbed before sowing.

To prepare the site, begin by removing weeds through repeated cultivation. Then cultivate the soil to bury any remaining surface vegetation, and finish by harrowing or raking to achieve a medium tilth. Creating a diverse habitat is key to enhancing the ecological value of pond-edge plantings. Aim for a mix of vegetation structures, from dense tussocks to patches of bare or newly colonized mud. Ongoing management should promote this variation while minimizing disturbance to local wildlife. Structural diversity can be maintained by cutting and removing small areas of vegetation on a 2–3 year rotation. In ditches, clear alternating sections or work from just one bank each year. Around ponds, remove vegetation in a wedge shape—similar to taking a slice of cake. Where single species (like yellow iris) dominate, selective thinning can improve plant diversity.

To reduce disruption to wildlife, vegetation removal is best done between September and November. On larger sites, light grazing by cattle or horses in late summer can help manage growth with less impact than mechanical methods. When machinery is necessary, use it cautiously to prevent damage to wet soils and existing vegetation.

Table 6: Wild flower species contained in EP1 mix (Total 20% by weight)

%	Latin name	Common name
1.0	*Achillea millefolium*	Yarrow
2.40	*Centaurea nigra*	Common knapweed
0.60	*Dipsacus fullonum*	Wild teasel
0.20	*Eupatorium cannabinum*	Hemp agrimony
2.00	*Filipendula ulmaria*	Meadowsweet
1.00	*Galium album*	Hedge bedstraw
0.60	*Geum rivale*	Water avens
4.40	*Iris pseudacorus*	Yellow iris
0.80	*Lathyrus pratensis*	Meadow vetchling
0.30	*Lythrum salicaria*	Purple loosestrife
0.10	*Lycopus europaeus*	Gypsywort
0.20	*Oenanthe pimpinelloides*	Corky-fruited water-dropwort
0.60	*Plantago lanceolata*	Ribwort plantain
0.80	*Prunella vulgaris*	Selfheal
1.00	*Ranunculus dcris*	Meadow buttercup
2.80	*Silene dioica*	Red campion
1.20	*Silene flos-cuculi*	Ragged Robin

Table 7: Grass species contained in EP1 mix (Total 80% by weight)

%	Latin name	Common name
8	*Agrostis capillaris*	Common bent
0.80	*Anthoxanthum odoratum*	Sweet vernal-grass
30.40	*Cynosurus cristatus*	Crested dog's-tail
17.60	*Festuca rubra*	Red fescue
6.40	*Poa pratensis*	Smooth-stalked meadow grass
8.00	*Carex echinata*	Star Sedge
8.00	*Phleum bertolonii*	Smaller cat's-tail
0.80	*Hordeum secalinum*	Meadow barley

7. Woodland Seed Mix

EW1 is a carefully selected mixture of woodland wildflowers and grasses, designed to flower mainly in spring and early summer. These species are adapted to thrive under partial shade, making EW1 ideal for sowing in established woodlands or in younger plantations where the tree canopy is beginning to close.

Woodland environments vary widely, with differing levels of shade and competition from tree roots. As a result, the success of sowing can be quite variable. Ground cover may establish slowly and patchily, particularly under deeper shade, where full coverage might never be achieved. In contrast, open or recently planted woodland with higher light levels will support more vigorous growth, and grasses may become more dominant. In lighter areas, or during the early years of woodland establishment, a mid-summer cut may help maintain a tidier appearance and suppress more aggressive semi-shade species like nettles and brambles.

Newly planted woodland will take around 10–15 years for the canopy to close and reduce light levels significantly. During this phase, the sown mixture should be managed as grassland—cutting or grazing as needed. As shade increases and ground cover from grasses begins to thin, woodland wildflowers will find better conditions to establish and flourish. At this point—typically when about 50% shade is reached—it can be beneficial to sow additional woodland wildflower seed (EW1F) to enhance diversity and help woodland flora take hold.

Table 20: Wild flower species contained in EW1 mix (Total 20% by weight)

%	Latin name	Common name
1.00	*Allium ursinum*	Ramsons
2.00	*Alliaria petiolata*	Garlic mustard
0.50	*Angelica sylvestris*	Wild angelica
1.40	*Anthriscus syvestris*	Cow parsley
0.20	*Arum maculatum*	Lords-and-ladies
4.00	*Digitalis purpurea*	Foxglove
0.10	*Eupatorium cannabinum*	Hemp-agrimony
0.90	*Filipendula ulmaria*	Meadowsweet
1.50	*Galium album*	Hedge bedstraw
0.10	*Geum rivale*	Water avens
2.00	*Geum urbanum*	Wood avens
1.60	*Hyacinthoides non-scripta*	Bluebell
0.10	*Primula vulgaris*	Primrose
1.00	*Pruella vulgaris*	Selfheal
0.40	*Raninculus acris*	Meadow buttercup
3.00	*Silene dioica*	Red campion
0.20	*Teucrium scorodonia*	Wood sage

Table 21: Grass species contained in EW1 mix (Total 80% by weight)

%	Latin name	Common name
2.40	*Agrostis capillaris*	Common bent
1.60	*Anthoxanthum odoratum*	Sweet vernal-grass
0.80	*Brachypodium sylvaticum*	False brome
48.00	*Cynosurus cristatus*	Crested dogstail
1.60	*Deschampsia cespitosa*	Tufted hair-grass
19.20	*Festuca rubra*	Red Fescue
6.40	*Poa nemoralis*	Wood meadow-grass

Reedbed Plug Planting

The species specified in Table 22 have been selected to establish a beneficial reed bed system. The common reed, making up 70% of the mix, is a dominant species. If not managed correctly, this reed will take over, smothering any other species. A management cycle of 3-5 years is recommended to maintain the reed beds and keep them in optimal condition. The other three species included in the mix are to be planted in small pockets throughout the area, increasing plant diversity.

Plugs should be planted at 8 per m2 and consist of 110cc or 230cc root trainer.

Table 22: Species specification for reedbed plug planting.

%	Latin name	Common name
10	*Iris pseudacorus*	Yellow flag iris
70	*Phragmites australis*	Common reed*
10	*Eupatorium cannabinum*	Hemp agrimony
10	*Typha latifolia*	Bull rush

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Buildability Statement
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1. Envisaged Construction Sequence of Both Options

The detailed designs envisage the following potential construction sequence.

1.1. Setting-up of site

Access was assessed by representatives from FiveRivers. Access to the works area is via a junction off of Ashdell Road (NGR SU 72374 39436). As the access route is within a residential area, the maximum speed is 30 mph, as such although a Temporary Traffic Regulation Order (TTRO) wouldn't be required, mitigation measures to noise and air quality should be considered in relation to plant equipment and other machinery accessing the site via this route. South East water pipes do run beneath Ashdell road which connects the main roads to the primary access route; therefore a weight limit assessment may be required ahead of construction to determine the suitability of the access route for vehicles, plant and materials.

The main compound is assumed to then be established within the car park of King's Pond, Ashdell Road, Ashdell, Alton, Holybourne, East Hampshire, Hampshire, England, GU34 2TA, United Kingdom (NGR SU 72315 39404). Access to this area is possible via the main access route, following the track approximately ~ 26 m north and then turning right to the car park. Approximately 1 km of trackway and a 20 x 20 m compound will be required, upon which site welfare and parking will be available. Welfare Facilities which consist of a 10-person groundhog unit, which will provide adequate sanitary conveniences and washing facilities for all staff and visitors attending the site. Fencing will also be erected around the compound.

Site team to undertake pre-construction services check and all services on site to be marked out with all staff alerted to their presence. Where appropriate, the area is to be CAT®4 scanned prior to any breaking ground to ensure no remaining services are present within works area prior to starting. All ground penetration activities will be carried out in accordance with HSG47 'Avoiding danger from underground services' and a permit to dig completed by the Site Manager on site before work commences.

South East Water has one live distribution main asset and several fire hydrant assets within the surrounding area of site boundary. Within the site extent, one surface water outfall pipe connects the downstream end of the pond to the river which flows through a connecting culvert pipe system.

SGN has one medium pressure gas main utility running along the upstream section of King's Pond. One Openreach split coupling utility is located over the surface water outfall pipe utility at the downstream end of King's Pond.

1.2. Site Preparation

1.2.1. Public Access

Public access will be maintained to the through footpath on the west side of the pond but the rest of the site will be barriered. There are currently no Public Rights of Way (PRoW) located within the site extent, no PRoW currently give direct access to the site extent. Several PRoW are present within the vicinity of the site, to the north – east of the site a public footpath runs parallel to the site running alongside the opposite side of watercress railway line. To the south of the site a public footpath is present located on the opposite side of Ashdell Road. Another public footpath may be located at the junction of the Lamports ono Paper Mill Lane to the north of the site. Public access will therefore not be affected by temporary Heras fencing which will be erected adjacent to trackways and around the compound and material storage areas

Two cottages located in the north western corner of the site (SU 72202 39468) are accessed via a road extending along the northern perimeter of the King's Pond from Ashdell Road. Access to these properties will be maintained during the duration of and following completion of the works.

1.2.2. Ecological Constraints

Several walkover and field survey ecological studies were conducted by Dr June Chatfield between October 2024 and August 2025. These surveys concluded the major ecological pressures facing King's Pond, along with the history and present declining biodiversity and species assemblages of King's Pond's ecosystem. These reports also begin to outline potential management measures relating to sensitive ecological receptors found within the site.

The Ecology Partnership conducted a Preliminary Ecological Appraisal (PEA) of King's Pond in November 2025. Additional species-specific surveys were completed throughout 2025, including Wintering Birds in April, Great Crested Newts in May, and Bats, Breeding Birds, and Reptiles in November. The PEA concluded the mitigation and avoidance actions relating to sensitive ecological receptors such as habitats and species which are associated with the works area as follows:

1.2.2.1 Mammals;

Hazel Dormice (*Muscardinus avellanarius*):

The woodland on site did not contain the interconnectivity both within the understorey, and between the understorey and canopy, required by dormice to move easily between foraging areas and their arboreal or ground-based nests. A large proportion of the pond margin woody vegetation did not contain the required structure needed for Dormice to use, additionally there are significant gaps in the woody vegetation structure limiting dormice abundance. Along the north-eastern pond margin, there is a dense and interconnected area of hazel scrub, with potential to provide optimal dormice food sources. However, the isolated nature of this area caused by the lack of adequate surrounding vegetation, may limit Dormice suitability. Dormouse hibernation along the ground is highly disturbed within the site by visitors to King's Pond including dog walkers. Another key factor is the abundant population of wildfowl and Brown Rats (*Rattus norvegicus*).

There is a limited record of dormice within 2 km of site with the closest being found almost 1 km from site, suggesting a local population. However, with small isolated woodland blocks or areas of semi-natural or ancient woodland on site, as well as the isolated nature of the site in the centre of Alton, the continuation of a remnant population is unlikely. Therefore, it is considered highly unlikely that Dormice are present at King's Pond.

Precautionary measures should be implemented to avoid disturbance to any Dormice potentially present on site, and a pre-works check should be undertaken by an appropriately qualified ecologist. Further surveys include searches for nests and gnawed nuts (if Hazel is present) in suitable on-site habitats, during the active season April – November. A general Hazel Dormouse survey should also be conducted in accordance with the guidance provided by the Dormouse Conservation Handbook. This involves using a minimum fifty nest tubes implemented across suitable site habitat, ideally at 20 m intervals. All surveys and walkovers to be conducted in conjunction with a licenced ecologist.

If a Dormouse is observed within or near the working area once works have commenced, all activity should cease immediately, and an ecologist should be contacted for further advice. Night-time working and lighting should be avoided.

Water Voles (*Arvicola amphibius*):

No water voles were observed on site, and there were no definitive indications of their presence. A search was conducted for holes tracks, droppings or indicatively grazed vegetation during the January visit. The only possible sign of potential species presence was a hole on the southern banks of the channel which flows into King's Pond. Following further inspection, this hole was found to be shallow. Multiple Brown Rats (*Rattus norvegicus)* were seen during the site visit close to the bank edge, this is likely foraging around the site, particularly in relation to the abundant bird feed readily sown to the wildfowl present on the lake. Brown Rats often burrow into embankments, although they are typically higher above the water line than a water vole burrow. The banks of King's Pond and the small section of river channel provided opportunities for water voles to create nest burrows. Although opportunities for water vole foraging is limited, there is evidence enough to suggest potential Water Voles. There were small areas of pendulous sedge around the site, however much of the bordering grassland was already heavily grazed by waterfowl and so failed to offer the lush grassland that required for water voles foraging.

Precautionary measures should be implemented to avoid disturbance to Water Voles, and a pre-works check should be undertaken by an appropriately qualified ecologist. If any active burrows are identified, a minimum 5 m buffer should be established around these features, and works should be avoided in these areas. If a Water Vole is observed within or near the working area once works have commenced, all activity should cease immediately, and an ecologist should be contacted for further advice. Night-time working and lighting should be avoided.

Eurasian Otter (*Lutra lutra*):

No signs of Otter activity such as spraints, tracks, or signs of foraging behaviour, or holt entrances were identified either on or directly adjacent to site. The connecting River Wey and King's Pond would likely provide foraging opportunities for Otters; however the fish assemblage of King's Pond and resultant species yields within the pond remain unclear. The wider surrounding landscape of King's Pond would provide uninhibited access to Otters. In 2019, one dead Otter was recorded on the adjacent road, providing uncertain evidence of species presence at King's Pond. Although the surrounding area of King's Pond is urbanised, this is likely low density enough for Otters to migrate in and around the terrestrial landscape and may still enter the waterbody along the existing river channel at either end of the waterbody as long as they are able to navigate culverts.

Due to the potential presence of Otters in the site, night-time works should be avoided where possible.

Bats (*Chiroptera spp.*):

On-site habitat diversity provides suitable opportunities for Bats to hunt invertebrate prey species. The woodland and pond (including marginal vegetation) are considered likely to support an abundant assemblage of invertebrate prey. The pond itself may provide an adequate source of drinking water, as well as the wider foraging potential of lentic invertebrate prey species. As a result of the habitat diversity of King's Pond, within the relatively urbanised habitat context, it is considered that the site has the potential to be a significant local foraging resource. The site was moderately well connected to the surrounding environment. The railway embankment which borders the site provides the optimal linear connectivity to other suitable habitat within the wider landscape. Moderate levels of street lighting within the local area are reported, with the areas along Ashdell Road to the eastern boundary of site highlighted in particular. This could potentially reduce site accessibility for more light sensitive species. However, the western edge of the site was found to be darker and therefore would still provide suitable access opportunities for light sensitive Bat species.

All mature/veteran Oak pedunculate Oak trees are to be retained as part of designs with a minimum 15 m root protection zone forming an exclusion zone. Works within vicinity of the mature/veteran pedunculate Oak trees should be avoided during sensitive times to Bats, ideally to occur in the months of either March or early November.

Badger (*Meles meles*):

No signs of Badger activity were reported on site or in the adjacent surrounding area, this would include snuffle holes, latrines, sett entrances, tracks, or hairs. The site offers suitable foraging opportunities for badgers, in particular to the eastern portion of the site, in the open grassland areas. The lack of boundary enclosure around the majority of the site would also mean that any badger populations using or living within the site extent would easily enter, traverse, and exit the site from the surrounding area. Although the local area is relatively urbanised, it could not be described as high density. Although no Badgers were recorded as part of this survey, badger populations could potentially exist in the wider local landscape either along the railway, within local parks or gardens, or small areas of woodland/scrub in the local landscape.

Pre-works checks for Badgers should be carried out, no more than three weeks before works commence.

Other Species:

The terrestrial areas of King's Pond provide suitable Hedgehog (*Erinaceus europaeus*) habitat, in relation to foraging and refuge. Due to the open site boundaries and low-density urban context of King's Pond, the presence of Hedgehogs on site and within the immediate surroundings is deemed likely.

1.2.2.2 Great Crested Newt (*Triturus cristatus*):

King's Pond is the only suitable waterbody present within the red line boundary of the site, with no further ponds identified within 250 m. The water was relatively turbid, although the bottom could be seen in areas where water depth was less than *c*. 6 - 8 inches. Water was clearer towards the inflow point of the River Wey. The pond had a high density of Waterfowl using it, with *c*. 100 individuals noted at the time of the survey. Plant coverage was extremely low, to the point of almost non-existence at any point during the survey visits. It is considered that both native and potentially ornamental fish are likely to be in the pond and carp have been sighted, given the connection to the River Wey, and the urbanised setting of the pond. Great Crested Newt Habitat Suitability Index was assessed and was found to score Poor in King's Pond.

Greater Crested Newt terrestrial habitat was largely good across the site extent. The woodland to the south of the site as well as scrub areas surrounding the pond provide extensive invertebrate foraging opportunities and potential refuge amongst the leaf litter and tree root systems. Similarly, to the west the off-site railway embankment offers additional refuge and foraging opportunities within the ballast and leaf litter. This also provides a potential commuting corridor for Greater Crested Newt between potential local resources and on site habitats. However, the grassland areas are less suitable for the species. The open area provides limited commuting opportunities and lacks suitable vegetation or structural variation to encourage refuge or foraging to take place. Additionally, there was an extensive footpath network around the site which provides inadequate habitat. Following negative survey results for Great Crested Newts in 2025, alongside an assessment of limited habitat suitability, the species is deemed likely absent from the site. Accordingly, no further recommendations are made, and the proposed pond works may proceed without GCN-related constraints.

1.2.2.3 Reptiles

The marginal pond areas, especially on the western and southern sides, provide variable habitat suitable for refuge and sheltered basking. The woodland and pond also provide potential foraging habitats, particularly for species such as Grass Snakes (*Natrix helvetica*). Grass Snake are a semi-aquatic species. The lack of vegetation which would provide shelter to amphibian prey, so limiting Grass Snake foraging potential at King's Pond. The grassland on the eastern side of site lacked any significant habitat complexity and was likely of negligible value to reptiles. The pond margin experiences a high degree of disturbance from both local residents and visitors, as well as from Waterfowl. While no reptiles were recorded during the specific reptile survey, a single adult slow worm was encountered during a separate site visit on 25 June 2025.

1.2.2.4 Invertebrates

The abundance of Waterfowl at King's Pond appears to have a significantly detrimental effect upon the invertebrate assemblage of the pond. The only recent on-site record of invertebrates was a Leaf Beetle (*Chrysomelidae spp*.) not directly associated with the river channel. Within the last 10 years there have no records of species directly associated with river communities locally. However, older records of invertebrate species associated with river communities and

wetlands were recorded, this included Mayfly (*Baetis fuscatus*), two-tone Reed Beetle (*Donacia bicolorata*), Caddisfly (*Limnephilus binotatus*), Water Boatman (*Sigara striata*), and Common Darter (*Sympetrum striolatum*).

The dearth of contemporary records may potentially relate to the lack of survey effort locally for aquatic invertebrates; however, it is also noted that site water quality is likely sub-optimal for supporting significant sensitive aquatic invertebrate assemblages. Notable amongst local invertebrate records was the presence of the Stag Beetle (*Lucanus cervus*), the closest of these was *c*. 120m north of site in 2019. There was suitable habitat for Stag Beetles on site, amongst the mature trees in the woodland areas and spread as individuals across site. Also, the presence of deadwood in the woodlands provides further habitat and food material for the species larval stage. The remainder of site, particularly the open grassland and pond/river were not found to provide valuable habitat for Stag Beetles.

1.2.2.5 Birds

The vegetation structure of King's Pond provides a complex assemblage of canopy, scrub and marginal vegetation – providing diverse habitat for a variety of nesting bird species. Species identified included Mallard (*Anas platyrhynchos*), Tufted Duck (*Aythya fuligula*), Little Grebe (*Tachybaptus ruficollis*), Canada Goose (*Branta canadensis*), Cormorant (*Phalacrocorax carbo*), Grey Heron (*Ardea cinerea*), various Gull species (*Larus spp.*), Mute Swan (*Cygnus olor*), Eurasian Coot (*Fulica atra*) and Moorhen (*Gallinula chloropus*). A heronry was identified in a mature tree on the existing island in the middle of King's Pond, this island was also deemed ideal for Waterfowl to create undisturbed ground nests as well. Evidence of ground nesting from water birds, including a likely Swan nest, and un-hatched Goose eggs was also recorded in later site visits.

Significant assemblages of invasive non-native Canada Geese (*Branta canadensis*) are present on the site and have had negative effects upon the wider ecosystem structure.

To minimise the effect to bird species present within the site extent, all site work should be conducted outside of the bird nesting season, March to August – inclusive. Prior to works taking place, pre-works check should be undertaken by an appropriately qualified ecologist

1.2.2.6 Fish

There are several recent records of Brown Trout (*Salmo trutta*) and Bullhead (*Cottus gobio*) locally, the nearest to the site being Bullhead approximately 105 m north, along the River Wey. Siltation of the bed and general turbidity would impede salmonid life processes, the lack of flow and oxygenation caused by the lentic nature of the pond would also reduce fish population viability and likely further reduce the potential for salmonid migration beyond the pond to the upper reaches of the River Wey. This issue is emphasised by the chalk stream nature of the River Wey and therefore the importance of these river systems to salmonid spawning and subsequent life stages. Although the weir at the northern end of King's Pond inhibits fish passage upstream into King's Pond, potential Bullhead have been observed at the upstream inflow end of the waterbody. Invasive Common Carp (*Cyprinus carpio*), which will be removed prior to the works, have been observed in the main body of the pond.

1.2.2.7 Invasive Species

Prior to the commencement of the project activities, areas affected by invasive species will be identified and marked within the working area to prevent its spread during construction. Removal of invasive species will be undertaken as part of the site clearance and environmental works procedure, using an appropriate method based on the extent and location of infestation. This may include manual removal and/or herbicide treatment where suitable and permitted. Any treatment or removal works will be conducted by trained and competent personnel, and where herbicides are used this will be undertaken by an appropriately qualified operative, in accordance with the manufacturer's instructions and relevant environmental controls.

All invasive species will be removed carefully to minimise disturbance to the surrounding vegetation, soils, water, and wider ecosystem, as well as to prevent seed spread or the accidental movement of contaminated plant material around the site. Any removed material will be handled, stored, and disposed of in accordance with the agreed invasive species control measures and site environmental requirements. Material will not be re-used elsewhere on site unless confirmed as appropriate under the management strategy.

Biosecurity measures will be implemented throughout the works to prevent the spread of invasive species on and off.

site. This will include cleaning down plant, tools, PPE and footwear to remove mud, seeds and plant fragments before leaving the affected area or site. The treated or cleared areas will be monitored as required during the works, and any. regrowth or previously unidentified areas of Himalayan balsam (*Impatiens glandulifera*) will be subject to further treatment as necessary.

1.2.2.8 Bamboo (*Bambusoideae spp*.)

There were two patches of Bamboo were identified within the site extent. The first is located within the strip of 'other broadleaved woodland' on the eastern side of site, clearly introduced from the adjacent off-site garden. Whilst the exact species of bamboo was unknown it is non-native and highly likely to be invasive. The second was on the north-western edge of King's Pond, between the ponds edge forb vegetation and the area of mixed scrub.

1.2.2.9 Japanese Knotweed (*Reynoutria japonica*)

A remnant stand of Japanese knotweed was identified adjacent to the footpath in the southern area of woodland, on the western side between the footpath and the waterbody bank. A second stand of Japanese knotweed was identified, on the north-western border of site, within the more open canopy woodland adjacent to the railway embankment.

1.2.2.10 Buddleia (*Buddleja davidii*)

Buddleia was identified throughout the pond's edge forb vegetation on the western side of site.

1.2.2.11 Ground Elder (*Aegopodium podagraria*)

Two patches of ground elder were identified along the north-western edge of King's Pond.

1.2.2.12 Common Carp (*Cyprinus carpio*)

Several sightings of common Carp have been reported in King's Pond. Carp will be removed from King's Pond prior to the commencement of works.

1.2.3. Utility Protection

The Principal Contractor should acquire utility searches prior to work commencement, and communication with the utility provider should be established to ascertain the necessary utility protection measures required on site. The asset owner will determine type of protection required.

Protection measures will need to be planned and actioned to cross the live utilities, notably the sewage outfall which connects to the downstream mouth of the pond, and the medium pressure mains located beneath the upstream extent of the source of the pond. The gas pressure mains will be protected by track matting and will be located along designated points within the site area, as determined by the principal contractor and asset owner. In relation to the outfall pipe assets, a two tonne weight limit will be in place above the pipes, with 150 mm bog matting to be implemented in order to enable crossing of the track located above the pipes.

2. Dredging Option (2A)

2.1 Design Assumptions

Outline designs have been developed for the 2A dredging option at King's Pond, Ashdell Rd, Alton GU34 2SZ (U/S Extent: SU 72124 39263, D/S Extent: SU 72353 39518).

Option 2A consists of dredging the pond, reprofiling the banks, constructing silt traps along the upstream source and downstream mouth of the pond, as well as the construction of berm features along some of the banks. This option will increase the silt trapping potential of the pond which will reduce future maintenance dredging costs, whilst improving pond biodiversity and ecosystem resilience by reducing invasive species habitat and their associated necessary pond conditions.

The scope of this work primarily concerns improvements to the pond regarding blockages and water level fluctuations, reinstating and strengthening the banks of the existing islands, silt capture, and ecological improvements to the pond ecosystem. The designs are displayed in the following drawings:

- 5R-5080D_101_Kings-Pond_Dredging_Overview_V4
- 5R-5080D_102_Kings-Pond_Dredging_CS1_V4
- 5R-5080D_103_Kings-Pond_Dredging_CS2_V4
- 5R-5080D_104_Kings-Pond_Dredging_CS3_V4
- 5R-5080D_105_Kings-Pond_Dredging_CS4_V4
- 5R-5080D_106_Kings-Pond_Dredging_Silt-Trap_V4
- 5R-5080D_160_Kings-Pond_Dregding - Planting plan V2
- 5R_5080D - Planting Specification V2
-

Project Activities Include:

- Tree works
- Excavation of bed material (dredging)
- Bank reprofiling
- Re-use of excavated spoil (on-site)
- Channel infilling
- Large wood installation
- Island creation
- Marginal ledge creation
- Willow spilling installation
- Dead hedge installation
- Wet woodland creation
- In-channel sediment trap installation
- Reedbed planting
- Hibernacula creation
- Bat box installation
- Native Marginal planting
- Bench installation
- Hardstanding area installation

The designs have been developed based on the following key assumptions:

- Design assumes appropriate access rights will be granted by the local authority, including where the controlled crossing of public footpaths is required.
- Design assumes that the acquired utilities service search data is accurate, and that further higher accuracy wastewater asset surveys will not show assets impeding on the specified locations for interventions.

- Design assumes access paths above the outfall pipes can be safely crossed with 1.5 tonne equipment but cannot be crossed by plant equipment.
- Design assumes there are no hidden hard structures within the banks.
- Design assumes site won spoil from excavation is suitable for use in channel and for bed raising and that no contamination testing is required.
- Design assumes site compound may be constructed within the car park located on site (NGR SU 72413 39477)
- Design assumes excavated spoil materials from dredging activities may be stored on site on the True Right Hand Bank (TRHB) of the pond (NGR SU 72315 39404).
- Design assumes there are no protected species currently located on site.
- Design assumes there is no negative impact on flood risk.
- Design assumes that the Defra LiDAR data is accurate and fit for purpose.

2.2 Proposed Build

2.2.1 Tree Works

Throughout the site there may be a requirement for tree works to be undertaken by a trained and qualified professional. Selected ornamental and non-native trees near channel re-meandering and backwater are to be removed and processed into deflectors. Any tree with bat roost potential should be retained. Diseased trees such as those with ash dieback, or trees which easily coppice, should be preferentially selected for felling. Large, established specimens of any native species should be retained where possible. Tree works locations to be considerate of feature locations and corresponding machinery access to reduce the need of excessive tree works where it is required already for access.

2.2.2 Excavation of Bed material (Dredging)

Prior to excavation of sediment from the pond, there is a requirement to prepare the storage area for newly dredge material on the eastern bank of the pond. The Eastern bank of the pond has historically been used to dry and store dredge materials. Previously placed materials can be excavated and disposed of as non-hazardous waste if needed to create capacity for newly dredged materials. Testing of placed materials will be required prior to muckaway. The storage areas also require a bund to be constructed to retain the dredged the materials.

A 15T amphibious excavator to access King's Pond at designated access/egress point, ensuring utilities are only tracked over at the temporary crossing points. Excavator to dredge sediment from the bed of the pond, as much as is required for the proposed features. The excavator will remove silt from the pond bed and place it into barges; silt will then be transported to the storage point on the eastern bank of the pond by the barge and removed from the barge by a long-reach digger sat on the bank top. Spoil generated from the dredging of the pond is to be stockpiled in the east of the site area (NGR SU 72311 39392), which is still within close proximity to the western extent of the pond area, which will be infilled following bank reprofiling.

Upon completion of the site preparation, the pond area (excluding the area of pond running along the western portion of the site between the island and pond edge, NGR SU 72181 39350) will be dredged leaving 200-250 mm of silt in most areas to retain habitat for invertebrates, as well as suitable areas for planting. This is being done to increase storage capacity, reduce potential eutrophication and algal blooms, and maintain the pond feature. Additional benefits of the dredging may potentially include; increase habitat diversity, increase climate resilience, and management of pollutants deposited in the silt layer.

2.2.3 Bank Reprofiling

In specific locations in both reaches, the banks are to be regraded back to create a shallower gradient. The banks are. to be regraded to a 1:3 slope at the steepest, with a preference for 1:4 which will increase stability and prevent undercutting. An extended slope may also be implemented if this is deemed more appropriate in relation to the surrounding landform. The excess spoil created by regrading can be used throughout the reach in the proposed channel infilling, spoil re-use areas, and hibernacula.

Mark out the regrading extent on the top of bank, and then use an excavator, positioned safely away from the bank edge. Pull the bank face material back from 0.1 m above the existing bed to the marked new top of bank location. Regrading should have additional variation in the gradient on the bank face to imitate natural formations, these variations should not exceed a 1:3 slope to prevent slumping.

The regrading extent is also dictated by the location of tarmacked footpaths running along the top of pond banks and, although the footpath around the pond is not a PRoW, there is the aim to not see the path moved away from its current extent in order to maintain current site character and use of the footpaths by the public.

These works may result in the removal of trees currently growing along the bank to be regraded. Where appropriate, new native trees should be planted to replace those lost, ensuring this will not cause the channel to become overshaded in the future. Native tree species appropriate to the habitat should be selected for planting.

2.2.4 Re-use of Excavated Spoil (on-site)

A 370 m^2 area of spoil re-use will be constructed along the western bank of King's Pond. Berms are to be installed along the TLHB to create the perimeter of the spoil re-use area for which benches will be installed on top of. The berms should be brash, made ideally from site won material that allows for daylighting. The berms should primarily be infilled from site won spoil. This material has been classified as non-hazardous within the silt analysis report (Contamination Assessment Report), material reuse on site in line with the D1 permit guidance. The berms created for the spoil re-use area at King's Pond will provide benefits and create marginal habitat as well as stable banks to enable a public seating area to be created.

A row of posts at 0.5 m intervals should be secured into the bed by 0.5 - 1 m depth, with at least 0.35 m left above ground. The shape should follow a gentle arc as shown on the Planview drawings. The apex of any berm should not extend to more than 50 % of the channel, and should have a shallow leading edge angle, no greater than 20 degrees. A hazel bundle should then be pushed against the post at ground level; a second post should then be levered against the bundle and hammered into the bed to the same extent as the previous post. Any excess post above the hazel bundle should be sawn off. Rope or medium tensile wire should then be looped over the top of the posts in a figure of eight and then secured with fencing staples. The bank can then be re-graded by pushing the site won material into the channel to backfill the front. Berm fronting will be completed using coir rolls to encourage vegetation uptake and establishment.

2.2.5 Channel Infilling

A row of posts should be secured into the bed by 0.5 - 0.75 m leaving at least 0.35 m above the ground, the posts should outline the front edge of the intended infill area. A hazel bundle should then be pushed against the post at ground level; a second post should then be levered against the bundle and hammered into the bed to the same extent as the previous post. Any excess post above the hazel bundle should be sawn off. Rope or medium tensile wire should then be looped over the top of the posts in a figure of eight and then secured with fencing staples. This process should be repeated for each bundle, so they are secured by four posts total each.

Silt dredged from within the channel can then be used to backfill the new front. This can be lifted in using a long-reach digger sat on the left bank and/or the aquatic excavator, then transported across the pond by a barge. Additional material from regrading could be used alongside the silt to fill these marginal zones. The bank-side material should be used towards the back of the wetland shelf, reprofiling smoothly into the bank, with the silt closest to the middle of the channel.

2.2.6 Large Wood Installation

In locations where large wood is to be installed, site-won large woody debris (LWD) is to be secured using 1.8 m chestnut posts at 0.5 m intervals and jute rope. LWD to be 0.2 - 0.5 m diameter, and 1.2 - 2 m in length generated from tree works on site. the LWD used will sit a maximum of 150 mm above low-flow water level, and to be keyed into the bank by a minimum of 0.5 m to ensure stability and minimise it becoming dislodged. Movement of the timber to be undertaken by machine with timber grapple under lift plan procedures. Site won brash should be densely pinned in areas between LWD. The LWD is intended to front the channel infill area between the large existing island and the western bank of the pond.

2.2.7 Island Creation

Exact location of berm features to be determined on site in accordance with the volume of silt identified and in consultation with client during each phase of works. Berms to be marked out on 1st day of works with client in accordance with design. Operatives to position 6' chestnut posts (3 - 4" dia.) at 500 mm centres along proposed outer edge and loosely push into bed. Excavator to drive posts two thirds into bed or to point of refusal using a hydraulic post pounder attachment. When working around post pounder, the safe system of work is as follows – operatives to position post as required underneath the post pounder. Excavator operator to gently rest post pounder attached to top of post and give operative thumbs up so they can let go of the post and move away. Operative to move to safe distance from excavator (2 m) and give thumbs up to excavator driver who can then commencing post pounding. All operatives within 10 m of post pounding activities are to wear appropriate ear defenders. Geocoir/Verdamat 900 to be unrolled over berm footprint and stapled to chestnut posts with at least double the width of the berm overhanging the posts. High tensile

wire to be secured along the top of the posts using a fencing stapler and tensioned to create a straight edge. This is to be done on the larger berms that require greater capacity of silt to be held back. This will be determined onsite. (Berms over 3 m in width). Geocoir/Verdamat 400 to be unrolled on top of the Geocoir/Verdamat 900 and stapled to the chestnut posts in the same way with at least the width of the berm overhanging the posts.

Berm to be backfilled by the excavator using site won excavated silt up to bank top height with a gentle gradient down to water level – overfill by *approx*.200 mm to allow for further settlement. Silt to be installed in layers and compacted as practicably possible to ensure a consolidated structure. Both layers of Verdamat to be pulled back over berm (but remain secured in place by wire) to cover exposed surface and provide erosion protection whilst vegetation establishes. Finished profile of berms to undulate along their length to ensure the new structures look natural and provide variation for micro habitats. Posts to be cut off at desired height by suitability qualified chainsaw operative using petrol chainsaw. Berm to be plug planted with marginal plants on completion and hydroseeded in the Spring to encourage quick vegetation with strong root structure to provide long term stability.

2.2.8 Marginal Ledge Creation

Marginal ledges are to be created using site won spoil. Banks of the ledges should not exceed 1:3 gradients in order to maintain stability and avoid slumping. Ledges are to be topped with biodegradable matting, such as C125BN biodegradable erosion control blankets to prevent erosion. Matting should be pegged into place using 150 mm hardwood pegs in a 0.5 m grid. Plug planting is then to occur after matting.

2.2.9 Willow Spilling Installation

Live willow rods to be woven between hardwood chestnut posts, 1.8 m x 75 mm, installed at 0.5 m intervals. The chestnut posts shall be driven into the ground by approximately one third of length, or to the point of resistance where ground conditions prevent this, providing a stable framework. The willow shall be progressively woven to 30 cm height, with rod ends tucked into the structure or trimmed neatly as necessary. Jute rope shall be used to secure the willow to the chestnut posts where required, ensuring the woven structure remains stable during establishment.

2.2.10 Dead Hedge Installation

Brashy material generated from works around site to be used to create dead hedges. Brash material to be pinned by hardwood chestnut stakes, 1.8 m long x 75 mm diameter, installed at 0.5 m intervals. Woody material shall then be placed horizontally between the two rows of stakes, with larger and heavier branches forming the base and smaller branches and brash used to fill voids and build the hedge progressively to the required height and density. Where practicable, branches shall be interwoven around the stakes to improve stability and prevent excessive movement.

2.2.11 Wet Woodland Creation

Construction of the wet woodland will initially follow the channel infilling specification laid out in 2.2.5, then woodland planting would then be required. Tree planting has been proposed within the design to increase the shade along the watercourse, as its currently overly exposed likely subjecting the water to seasonal temperature influxes, reducing its climate resilience. Incorporating native tree planting will provide a future source of woody debris to the system, and additional habitat and nesting opportunities. The removal non-native and ornamental trees may provide brash material for berm features, whilst enabling a new native tree to be planted in its place, providing greater ecological resilience and functionality.

Trees should be planted in small groups of 3 – 5, with spacing of approximately 1 – 3 m between. Each tree should be securely planted, staked, and fitted with a spiral guard to protect it from grazing mammals, such as rabbits and muntjac deer. Spiral guards should be removed after 5 years once the trees are established and large enough to withstand occasional grazing. Trees are to be planted at least 1.5 m away from the banks of the river in accordance with FRAP consenting.

2.2.12 In-channel Sediment Trap Installation

New gravel and Purbeck stone silt traps to be installed as per designs. Area to be CAT scanned and permit to dig issued before any excavations (including installing posts) take place. Area upstream of silt trap installation to be excavated as per design depth. This will become the area for silt deposition. 16 ton excavator to sit adjacent to the channel and excavate the material from the channel to form the desired depth and shape. Material arisings to be

deposited adjacent to machine on Right Hand Bank in designated silt deposit locations agreed with client. Purbeck stones to be transported to work area via telehandler from compound location following the correct lift plan with banksman. Gravel ton bags to also be transported from site compound to works area via telehandler following site lift plan with banksman. Purbeck stones of *approx*. 1000 mm x 500 mm to be installed in design locations with smaller Purbeck stones filling in any gaps, this will be completed using 16ton Excavator following lift plan methods of practise.

Excavator to sit on Right Hand Bank adjacent to silt trap structure, using the engcon grab the machine will pick up each. A temporary access ramp may be required to access the channel. Purbeck rock and place them in the specified location. Care taken to not have any personnel within unsafe working distance of the excavator. Exact dimensions of Purbeck rockery to be determined on site based on available sizing's of stones. A Steep gravel ramp will be installed downstream of Purbeck rockery edging to the proposed silt trap. Excavator will install gravel using a bucket or similar behind the Purbeck rockery as designed. This will increase flow speed to improve deposition of sediment that is not settled in the trap. Gravel extent to not impede the existing culvert or other structures present in the watercourse. Banks to be reinstated after install before moving onto the next area of works. Repeat all the above for the silt trap construction at the designated installation points.

2.2.13 Reedbed Planting

It is recommended the reedbeds are plug planted primarily with Common Reed (*Phragmites australis)*. This species will quickly colonise, establishing a thick habitat for riparian species. Reedbeds to be planted to a density of 4-5 plants per square metre. These will provide nutrient trapping along the outfall point.

2.2.14 Hibernacula Creation

Excess material generated from tree and ground works to create hibernacula. Hibernacula should be approximately 50 cm deep and 1.5 m across. Hibernacula soils should be stable and level with the ground, to avoid slumping and adding material to flood flows which may then block culverts and pipe networks downstream. areas where the soil is free draining or easily waterlogged should be avoided.

The hibernacula should be filled loosely, with site won rocks and woody material to create a spacious environment. Access routes should then be implemented to enable movement between the hibernacula and terrestrial environment; these are typically pipes but may also be hollow wood or aerated bricks. spaced Approximately 50 cm of soil should then be piled on top of the hibernacula.

2.2.15 Bat Box Installation

Bat boxes are most likely to be used in areas where bats are known to feed. Boxes should ideally be placed 4 m above the ground, sheltered from strong winds and artificial light sources, but exposed to sunlight for periods of the day – typically south, south-west, south-east facing. Surrounding foliage should be dense enough to provide good cover and shelter from predation; whilst being light enough to enable easy navigation to and from the boxes.

To be undertaken by trained personnel with climbing qualifications in order to place the bat boxes at the required heights.

During the operational phase of the bat boxes, opening of the boxes for survey and maintenance activities must be solely conducted by a licenced bat worker due to UK legal protection. Boxes should be secured using Aluminium or stainless steel screws which will not damage the trees. Bat box arrangement within the wooded area should aim to cluster 2 or 3 boxes closely together, on the same tree, which would allow bats to easily move between roosts depending on temperature changes.

2.2.16 Native Marginal Planting

Marginal planting shall be undertaken to increase plant diversity. All plants used shall be native water tolerant species in accordance with the planting specification. Plugs to be planted at a density of 8 per square metre, in diverse arrangements.

2.2.17 Bench Construction

Lastly, benches will be erected to the west of the site on top of the spoil re-use area. This will provide outdoor seating for the local community and a place to enjoy nature and outdoor space. Five benches will be built in this area using

sustainably sourced materials. The materials used for the benches should be as locally sourced as possible to reduce transport cost and associated emissions.

2.3 Demobilisation

Reinstate working site and access routes to suitable condition. Final site walkover to be conducted with project management and client/ stakeholders to determine completion of the works and if snagging or additional works are required. If all is good and completed, works can be signed off to initiate demobilisation of the works.

All on site machinery/equipment to have all soil/mud/materials scraped or dug out of tracks and off body as best as possible adhering to biosecurity procedures prior to pressure washing and Virkon decontamination spray. The site compound will then be removed and all plant and machinery off hired and collected from site.

Reinstate site compound area and demobilise from site.

Following the demobilisation a return visit may be required to undertake reinstatement of sediment drying area including cultivation and seeding.

2.4 Maintenance

The design has been created with the intention of requiring as little maintenance as possible. Whilst this is true, there will still be suggested maintenance that should be carried out to enable the best functioning of the restoration. Features installed into the watercourse should be checked within a year of installation or following storm events within this time to check for damage. The inspection for damage can be carried out via a site walkover and does not require action if there has been no damage.

Areas that have been planted should be inspected after a year to assess whether the planting has been successful in establishing. If there are excessive bare spots these should be re-planted at an appropriate time of year. Establishment, Maintenance, and aftercare of planted vegetation should be undertaken in accordance with the Planting Specification (5080D - Planting Specification_V1) including replacement of failures and general maintenance for the duration set out within the specification.

Where invasive species have been removed the area should be checked for re-growth in the following spring. If there is signs of regrowth then the new growths should be treated, removed, and disposed of responsibly.

Clearing of silt trap should be undertaken as required with either the use of a Vacuum excavator from the right hand bank or with use of an excavator accessing the channel from the left hand bank through the wet woodland. If accessing via the wet woodland silt clearance should be undertake during dry summer months.

3. River and Pond Option (3C)

3.1 Design Assumptions

Detailed designs have been developed for the 3C pond dredging and channel restoration option at King's Pond, Ashdell Rd, Alton GU34 2SZ (U/S Extent: SU 72124 39263, D/S Extent: SU 72353 39518).

Option 3C includes dredging of the pond and the restoration of the channel of the River Wey through the site extent, here the pond will be maintained in a smaller connected state with walkways provided across the site for public accessibility. Option 3C also details sediment traps located at the upstream end of the pond, as well as the downstream sewer outfall and culvert connecting the downstream extent of the River Wey. This option will significantly improve the sediment transport across the site and reduce the necessary maintenance of the pond long term. Due to the reduction in siltation along the bed, Option 3C will also serve to reduce invasive species presence, whilst improving habitat conditions for desired species such as Trout and Bullhead.

The designs are displayed in the following drawings:

- 5R-5080D_201_Kings-Pond_River_Overview_V4
- 5R-5080D_202_Kings-Pond_River_CS1-3_V4
- 5R-5080D_203_Kings-Pond_River_CS4_V4
- 5R-5080D_204_Kings-Pond_River_Q-Water_V4
- 5R-5080D_205_Kings-Pond_River_Silt-Trap_V4
- 5R-5080D_260_Kings-Pond_River - Planting plan V2

Project Activities Include:

- Tree works
- Tree planting
- Excavation of bed material (dredging)
- Main channel reinstatement
- Secondary channel creation
- Culvert construction
- Backwater creation
- Bank reprofiling
- Re-use of excavated spoil (on-site)
- Brash Berm construction
- Marginal Shelf Creation
- Willow Spilling Installation
- Wet Woodland Enhancement
- In-channel sediment trap installation
- Marginal Reedbed planting
- Hibernacula Creation
- Bat Box Installation
- Bird Box Installation
- Log pile construction
- Native Marginal Planting
- Bench construction
- Bridge Construction

The designs have been developed based on the following key assumptions:

- Design assumes appropriate access rights will be granted by the local authority, including where the controlled crossing of public footpaths is required.
- Design assumes that the acquired utilities service search data is accurate, and that further higher accuracy wastewater asset surveys will not show assets impeding on the specified locations for interventions.

- Design assumes access paths above the outfall pipes can be safely crossed with 1.5 tonne equipment but cannot be crossed by plant equipment.
- Design assumes there are no hidden hard structures within the banks.
- Design assumes site won spoil from excavation is suitable for use in channel and for bed raising and that no contamination testing is required.
- Design assumes site compound may be constructed within the car park located on site (NGR SU 72413 39477)
- Design assumes excavated spoil materials from dredging activities may be stored on site on the True Right Hand Bank (TRHB) of the pond (NGR SU 72315 39404).
- Design assumes there are no protected species currently located on site.
- Design assumes there is no negative impact on flood risk.
- Design assumes that the Defra LiDAR data is accurate and fit for purpose.

3.2 Proposed Build

3.2.1 Tree Works

Throughout the site there may be a requirement for tree works to be undertaken by a trained and qualified professional. Selected ornamental and non-native trees near channel re-meandering and backwater are to be removed and processed into deflectors. Any tree with bat roost potential should be retained. Diseased trees such as those with ash dieback, or trees which easily coppice, should be preferentially selected for felling. Large, established specimens of any native species should be retained where possible. Tree works locations to be considerate of feature locations and corresponding machinery access to reduce the need of excessive tree works where it is required already for access.

3.2.2 Tree Planting

Individual trees are to be planted at points along the True Right Hand Bank of the Mill Tributary channel. Native species should be selected for planting, with the surrounding environment being considered key to determining the most appropriate species. Trees should be planted between November and March during their dormant period trees should be planted at least 2 metres away from existing and new trees on site to allow for the roots to develop unobstructed. Tree guards may be required if there is significant deer activity on site, tree guards should be removed approximately 5 years after the planting or when the tree is established.

3.2.3 Excavation of bed material (dredging)

Prior to excavation of sediment from the pond, there is a requirement to prepare the storage area for newly dredge material on the eastern bank of the pond. The Eastern bank of the pond has historically been used to dry and store dredge materials. Previously placed materials can be excavated and disposed of as non-hazardous waste if needed to create capacity for newly dredged materials. Testing of placed materials will be required prior to muckaway. The storage areas also require a bund to be constructed to retain the dredged the materials.

A 15T amphibious excavator to access King's Pond at designated access/egress point, ensuring utilities are only tracked over at the temporary crossing points. Excavator to dredge sediment from the bed of the pond, as much as is required for the proposed features. The excavator will remove silt from the pond bed and place it into barges; silt will then be transported to the storage point on the eastern bank of the pond by the barge and removed from the barge by a long-reach digger sat on the bank top. Spoil generated from the dredging of the pond is to be stockpiled in the east of the site area (NGR SU 72311 39392), which is still within close proximity to the western extent of the pond area, which will be infilled following bank reprofiling.

Upon completion of the site preparation, the pond area (excluding the area of pond running along the western portion of the site between the island and pond edge, NGR SU 72181 39350) will be dredged leaving 200-250 mm of silt in most areas to retain habitat for invertebrates, as well as suitable areas for planting. This is being done to increase storage capacity, reduce potential eutrophication and algal blooms, and maintain the pond feature. Additional benefits of the dredging may potentially include; increase habitat diversity, increase climate resilience, and management of pollutants deposited in the silt layer.

3.2.4 Main channel reinstatement and walkway installation

The River Wey currently flows into King's Pond via a culvert at the upstream extent of the pond before flowing out at the downstream end via another culvert. The River and Pond option involves reinstating the River Wey main channel through the centre of the pond area to alleviate siltation pressures and reduce future maintenance requirements. The depth of the reinstated main channel allows for a wide low flow channel designed to overtop into the second stage of main channel during high flow events. The pond extent will be reduced and will be limited to the northeastern area of the existing King's Pond, and will be connected via a culvert to the reinstated main channel.

The channel reinstatement procedure begins with temporary dewatering. Principal Contractor to produce Temporary Works Design for any temporary dams used. Before any physical work starts, a comprehensive fish rescue must be conducted to protect local aquatic life. The pond level should then be lowered by pumping water from the pond, ensuring

the pumping setup maintains a functional water level for construction while allowing safe downstream flow. Throughout this drainage phase, contractors must implement sediment control and pollution prevention measures to safeguard the surrounding environment.

The construction protocol pivots from channel reinstatement to an engineered trapezoidal boulder-packed pathway, which can only be constructed once all required weirs and overflow structures are fully built. First, field engineers must conduct a soil assessment; if the subsoils below the pond exhibit a good bearing capacity, the typical pathway construction framework can proceed. A ground investigation scope to be produced by and may require local dewatering if ground investigation can not be undertaken adjacent to the pond

Plastic sheet piling to be installed to retain the water level balance between the main channel and ponds. The contractor will begin by clearing the installation line of all debris and digging a shallow pilot trench along. Next, the contractor will position the first sheet vertically into the trench and drive it into the ground, using a mallet or backhoe bucket for soft soil, or a mechanical vibratory hammer and steel mandrel for harder ground to prevent the flexible plastic from buckling. The contractor will then slide the interlock of each subsequent sheet into the previous one, ensuring they face the correct direction, and drive them down evenly until they reach a uniform target depth. Once all panels are secured, the contractor will attach horizontal waling beams and tie rods to provide structural anchoring against soil pressure, and they will finish the top with a protective capping rail. Finally, the contractor will backfill the area behind the completed wall in gradual, controlled layers using free-draining granular material to avoid overloading the new structure..

Contractors will use clean, quarry-sourced boulders and rocks with a minimum size of ø300 mm, ensuring they are not extracted from sea-based areas to prevent chemical contamination of the pond water.

To achieve a 2-metre-wide walkway above the waterline, the initial base of the pathway must be set sufficiently wide, scaling appropriately with the local water depth. Workers will continuously place the rocks to build up the structure until it breaks the water surface line. To reach the targeted walkway width above the surface, the rocks must be built up with 45-degree sloping sides, creating a stable, trapezoidal cross-section.

Once the core rock structure rises above the waterline, the packed boulders must be mechanically compacted into the pond's base to firmly seat the foundation. If any localised areas sag or settle following this compaction phase, additional rocks must be integrated to level the surface. Following the successful seating of the core rocks, a mix of fines measuring a maximum of 10 mm will be placed and vibrated directly into the remaining structural voids. This filling process must be executed incrementally in 50 mm layers of fines at a time, using the same compaction method to eliminate gaps, with the entire sequence repeated sequentially for the full length of the walkway.

Once the area is sufficiently dry, infilling will begin on the right-hand side of the pond using 6F5, a coarse, crush-and-run granular aggregate graded from 75 mm or 80 mm down to dust, which will be sourced from quarried stone material for this project. This infill must strictly follow the engineering design and must not extend into the retained pond area. The 6F5 material will be transported along the true right-hand bank from the spoil re-use storage area to be placed and compacted in layers where required. Finally, a suitable layer of topsoil will be provided over the completed 6F5 fill to properly support the proposed surface finish and vegetation.

A 5T excavator will be used to over-excavate the channel according to the specified design dimensions. The main channel is estimated to be 3.9 m wide at bank-full width and 1 m deep, which includes a 1.4 m wide low-flow channel within it that is 0.5 m wide at the base and designed to overtop into the main channel at Q50. To construct the banks, a row of posts will be installed at 0.5 m intervals, secured 0.5 to 1 m deep into the bed, and left with at least 0.35 m protruding above ground. The shape must follow a gentle arc as detailed in the Planview drawings, ensuring the apex of any berm does not extend across more than 50% of the channel and maintains a shallow leading-edge angle no greater than 20 degrees. A hazel bundle will then be pushed against the post at ground level, and a second post will be levered against the bundle and hammered into the bed to the same depth as the first. Any excess post height above the hazel bundle must be sawn off, and the posts must be wrapped in a figure-of-eight loop using rope or medium tensile wire and secured with fencing staples. Following this, the bank can be re-graded by pushing site-won material into the channel to backfill the front, and coir rolls will be installed for berm fronting to encourage vegetation uptake and establishment. Throughout this process, suitable excavated material should be reused to supplement the infilling where possible.

To form the new gravel bed, the required gravel must be placed and spread evenly at a depth of 200 mm into the newly excavated channel. Subject to final confirmation, downstream erosion control measures, such as a silt curtain, should be deployed to manage any potential erosion risks around the refilled areas.

Pumping operations will continue to lower the pond level sufficiently to allow work to begin on the left-hand side. The left-hand pond area will be infilled with 6F5 material and compacted in layers where required, utilizing a 2,400–5,700 kg non-vibrating roller for 4 passes. Once the fill is complete, a suitable topsoil layer will be applied over the 6F5. To optimize material efficiency and reduce the overall volume of imported 6F5 required, consideration should be given to whether specific areas, such as the backwater, should remain unfilled or be excavated.

To conclude the project, all required filling, topsoiling, and compaction must be fully finalized. Once the new works are deemed stable and complete, the temporary pumping equipment will be gradually stopped to allow the pond to return to its normal water level naturally. After the water levels stabilize, all temporary pumping equipment and their associated controls will be completely removed from the site.

3.2.5 Secondary channel creation

A secondary channel will be constructed off the reinstated main channel to flow around the western perimeter of the retained island feature in the southern section of the King's Pond (as seen in section 1 and 2). This channel will provide additional capacity during high flows events and will be constructed using the same method used to reinstate the main channel.

The backwater wetland will be constructed with secured silt and then topped with a 100 – 200 mm layer of new material. The wetland silt layers will not be compacted as permeability is to be maintained enabling infiltration through the soil and the therefore the cycling of nutrients in the silt.

3.2.6 Culvert construction

To maintain access across the site for maintenance works, culverts are needed between the channel and pond area maintaining flow between the two waterbodies. A 600 mm twin wall pipe seated on gravel along with pre-cast concrete headwall (Althon or similar) of flex MSE headwall. This will be backfilled with engineered granular fill and compacted to specified requirements as per pending design. The detailed design of the culverts are subject to engineer design specification.

3.2.7 Backwater Creation

Proposed backwater to be created along the western portion of the downstream section of the site extent. The backwater shall be approximately 1 m deep and formed with gently sloping banks at a gradient of 1:3. Material to be removed from area using wheeled/tracked dumper.

3.2.8 Bank Reprofiling

In specific locations in both reaches, the banks are to be regraded to create a shallower gradient. The banks are to be regraded to a 1:3 slope at the steepest, with a preference for 1:4 which will increase stability and prevent undercutting. The excess spoil created by regrading can be used throughout the reach in the proposed channel infilling, spoil re-use areas, and hibernacula.

Mark out the regrading extent on the top of bank, and then use an excavator, positioned safely away from the bank edge. Pull the bank face material back from 0.1 m above the existing bed to the marked new top of bank location. Regrading should have additional variation in the gradient on the bank face to imitate natural formations; these variations should not exceed a 1:3 slope to prevent slumping.

The regrading extent is also dictated by the location of footpaths running along the top of pond banks and, although the footpath around the pond is not a PRoW, there is the aim to not see the path moved away from its current extent in order to maintain current site character and use of the footpaths by the public. Ground protect will be required for footpaths.

These works may result in the removal of trees currently growing along the bank to be regraded. Where appropriate, new trees should be planted to replace those lost, ensuring this will not cause the channel to become overshaded in the future. Native tree species appropriate to the habitat should be selected for planting.

3.2.9 Re-use of Excavated Spoil (on-site)

A 370 m^2 area of spoil re-use will be constructed along the western bank of King's Pond. Berms are to be installed along the True Left Hand Bank to create the perimeter of the spoil re-use area for which benches will be installed on top of. The material has been classified as non-hazardous within the silt analysis report (Contamination Assessment Report), material reuse on site in line with the D1 permit guidance. The berms should be brash, made from site won material that allows for daylighting. The berms downstream of the pond should primarily be made from site won spoil, in order to lose the majority of material on site.

The berms created for the spoil re-use area at King's Pond will provide benefits and create marginal habitat as well as stable banks to enable a public seating area to be created.

A row of posts at 0.5 m intervals should be secured into the bed by 0.5 - 1 m depth, with at least 0.35 m left above ground. The shape should follow a gentle arc as shown on the Planview drawings. The apex of any berm should not extend to more than 50 % of the channel, and should have a shallow leading edge angle, no greater than 20 degrees. A hazel bundle should then be pushed against the post at ground level; a second post should then be levered against the bundle and hammered into the bed to the same extent as the previous post. Any excess post above the hazel bundle should be sawn off. Rope or medium tensile wire should then be looped over the top of the posts in a figure of eight and then secured with fencing staples. The bank can then be re-graded by pushing the site won material into the channel to backfill the front. Berm fronting will be completed using coir rolls to encourage vegetation uptake and establishment.

3.2.10 Brash Berm Construction

Where berms are to be installed the toe of the berm should be delineated with 0.3 m diameter brash bundles stacked two high, held in place by chestnut stakes and tied down with natural rope, before being backfilled with spoil from bank. regrading works and channel excavation. The shape should follow a gentle arc as shown on the Planview drawings. The apex of any berm should not extend to more than 1/3 of the channel width, and should have a shallow leading edge angle, no greater than 20 degrees. The chestnut stakes should be mechanically driven into the bed to a minimum depth of 0.5 – 0.75 m or to the point of resistance and the brash bundles secured to the stakes using jute rope (or similar).

Tops of posts to be cut off at berm top level. The area behind the brash bundles will be backfilled and compacted by re-grading the bank behind the berms to a slope no steeper than a 1:3 gradient. The bank should be reprofiled to rise gently to reach the existing ground height. 400 gsm coir geotextile should then be installed over the top of the berms and fixed in place with wooden pegs. These berms will be fronted with willow spilling.

3.2.11 Marginal Shelf Creation

Marginal ledges are to be created using site won spoil. Banks of the ledges should not exceed 1:3 gradients in order to maintain stability and avoid slumping. Ledges are to be topped with biodegradable matting, such as C125BN biodegradable erosion control blankets to prevent erosion. Matting should be pegged into place using 150 mm hardwood pegs in a 0.5 m grid. Plug planting is then to occur after matting.

3.2.12 Willow Spilling Installation

Live willow rods to be woven between hardwood chestnut posts, 1.8 m x 75 mm, installed at 0.5 m intervals. The chestnut posts shall be driven into the ground by approximately one third of length, or to the point of resistance where ground conditions prevent this, providing a stable framework. The willow shall be progressively woven to 30 cm height, with rod ends tucked into the structure or trimmed neatly as necessary. Jute rope shall be used to secure the willow to the chestnut posts where required, ensuring the woven structure remains stable during establishment.

3.2.13 Wet Woodland Enhancement

Tree planting has been proposed within the design to increase the shade along the watercourse, as its currently overly exposed likely subjecting the water to seasonal temperature influxes, reducing its climate resilience. Incorporating native tree planting will provide a future source of woody debris to the system, and additional habitat and nesting opportunities. The removal non-native and ornamental trees may provide brash material for berm features, whilst enabling a new native tree to be planted in its place, providing greater ecological resilience and functionality.

Trees should be planted in small groups of 3 – 5, with spacing of approximately 1 – 3 m between. Each tree should be securely planted, staked, and fitted with a spiral guard to protect it from grazing mammals, such as rabbits and muntjac deer. Spiral guards should be removed after 5 years once the trees are established and large enough to withstand occasional grazing. Trees are to be planted at least 1.5 m away from the banks of the river in accordance with FRAP consenting.

3.2.14 In-channel Sediment Trap Installation

New gravel and Purbeck stone silt traps to be installed as per designs. Area to be CAT scanned and permit to dig issued before any excavations (including installing posts) take place. Area upstream of silt trap installation to be excavated as per design depth. This will become the area for silt deposition. 16 ton excavator to sit adjacent to the channel and excavate the material from the channel to form the desired depth and shape. Material arisings to be deposited adjacent to machine on Right Hand Bank in designated silt deposit locations agreed with client. Purbeck stones to be transported to work area via telehandler from compound location following the correct lift plan with banksman. Gravel ton bags to also be transported from site compound to works area via telehandler following site lift plan with banksman. Purbeck stones of approx. 1000 mm x 500 mm to be installed in design locations with smaller Purbeck stones filling in any gaps, this will be completed using 16ton Excavator following lift plan methods of practise.

Excavator to sit on Right Hand Bank adjacent to silt trap structure, using the engcon grab the machine will pick up each. A temporary access ramp may be required to access the channel. Purbeck rock and place them in the specified location. Care taken to not have any personnel within unsafe working distance of the excavator. Exact dimensions of Purbeck rockery to be determined on site based on available sizing's of stones. A Steep gravel ramp will be installed downstream of Purbeck rockery edging to the proposed silt trap. Excavator will install gravel using a bucket or similar behind the Purbeck rockery as designed. This will increase flow speed to improve deposition of sediment that is not settled in the trap. Gravel extent to not impede the existing culvert or other structures present in the watercourse. Banks to be reinstated after install before moving onto the next area of works. Repeat all the above for the silt trap construction at the designated installation points.

3.2.15 Marginal reedbed planting

It is recommended the reedbeds are plug planted primarily with Phragmites australis (Common Reed). This species will quickly colonise, establishing a thick habitat for riparian species. Reedbeds to be planted to a density of 4-5 plants per square metre. These will provide nutrient trapping along the outfall point.

3.2.16 Hibernacula Creation

Excess material generated from tree and ground works to create hibernacula. Hibernacula should be approximately 50 cm deep and 1.5 m across. Hibernacula soils should be stable and level with the ground, to avoid slumping and adding material to flood flows which may then block culverts and pipe networks downstream. areas where the soil is free draining or easily waterlogged should be avoided.

The hibernacula should be filled loosely, with site won rocks and woody material to create a spacious environment. Access routes should then be implemented to enable movement between the hibernacula and terrestrial environment; these are typically pipes but may also be hollow wood or aerated bricks. spaced Approximately 50 cm of soil should then be piled on top of the hibernacula.

3.2.17 Bat Box Installation

Bat boxes are most likely to be used in areas where bats are known to feed. Boxes should ideally be placed 4 m above the ground, sheltered from strong winds and artificial light sources, but exposed to sunlight for periods of the day – typically south, south-west, south-east facing. Surrounding foliage should be dense enough to provide good cover and shelter from predation; whilst being light enough to enable easy navigation to and from the boxes.

Bat boxes to be installed by trained and competent individuals with appropriate climbing tickets and equipment.

During the operational phase of the bat boxes, opening of the boxes for survey and maintenance activities must be solely conducted by a licenced bat worker due to UK legal protection. Boxes should be secured using Aluminium or stainless steel screws which will not damage the trees. Bat box arrangement within the wooded area should aim to

cluster 2 or 3 boxes closely together, on the same tree, which would allow bats to easily move between roosts depending on temperature changes.

3.2.18 Bird Box Installation

Bird boxes are most likely to be used in areas where bird species are already known to be present. Ecological surveys should be conducted and referenced in relation to the selection of the most appropriate bird boxes to install on site. Nest boxes should be placed approximately 2 – 5 metres high and be between north and east facing. Nest boxes should be cleaned annually, and should occur outside of the breeding season, September – January, this work should be conducted by a qualified individual. Old nest material, unhatched eggs, or deceased chicks should be removed by a qualified individual.

3.2.19 Log Pile Construction

Excess and dead logs generated from build activities can be used to create log piles within the site. The location of the log piles will be determined by identifying intended species, as different locations will encourage different species to occur.

3.2.20 Native Marginal Planting

Marginal planting shall be undertaken to increase plant diversity. All plants used shall be native water tolerant species in accordance with the planting specification. Plugs to be planted at a density of 8 per square metre, in diverse arrangements.

3.2.21 Bench Construction

Lastly, benches will be erected to the west of the site on top of the spoil re-use area. This will provide outdoor seating for the local community and a place to enjoy nature and outdoor space. Benches to be assembled as per design specification or manufacturer specification. Five benches will be built in this area using sustainably sourced materials. The materials used for the benches should be as locally sourced as possible to reduce transport cost and associated emissions.

3.2.22 Bridge Construction

Bridges or railed boardwalk is to be used to cross the new channels and so connect the footpath across the site. The bridges will be constructed out of wood, using a 100 mm x 200 m Type-1 concrete pad. The bannisters will be constructed with 2100 mm upright posts (75 mm x 125 mm), and 4000 mm handrails (38 mmx 100 mm). The bridge platform will be constructed out of wood using 100 mm x 1200 mm x 50 mm decking boards, and a 100 mm x 4000 mm cross-brace. Oak 75 mm x 125 mm upright posts sawn off to level with the decking will be secured into the ground to approximately 750 mm.

A competent contractor will be required to install the bridge. The supporting beams should be driven into the ground by 750 mm or to the point of resistance. The bearers should then be installed across the width of the bridge using appropriate length wood screws. Once the supporting structures are in place the remainder of the bridge can be built in a methodical manner, installing the footboards from one end to the other ensuring that it is built level.

Timber decking should have a shelf life of 15 – 30 years. Routine maintenance is key to achieving this. Yearly inspection for damage and cleaning of decking boards is advised. Inspections should pick up any structural damage such as splits in the timber or rot. Deformities should either be repaired or replaced depending on the severity. Routine cleaning of decking boards will increase the longevity of the structure and reduce the risk of slips, trips, and falls. Cleaning using a pressure washer is advised over chemicals due to nature of the site.

3.3 Demobilisation

Reinstate working site and access routes to suitable condition. Final site walkover to be conducted with project management and client/ stakeholders to determine completion of the works and if snagging or additional works are required. If all is good and completed, works can be signed off to initiate demobilisation of the works.

All onsite machinery/equipment to have all soil/mud/materials scraped or dug out of tracks and off body as best as possible adhering to biosecurity procedures prior to pressure washing and Virkon decontamination spray. The site compound will then be removed and all plant and machinery off hired and collected from site.

Reinstate site compound area and demobilise from site.

Following the demobilisation a return visit may be required to undertake reinstatement of sediment drying area including cultivation and seeding.

3.4 Maintenance

The design has been created with the intention of requiring as little maintenance as possible. Whilst this is true, there will still be suggested maintenance that should be carried out to enable the best functioning of the restoration. Features installed into the watercourse should be checked within a year of installation or following storm events within this time to check for damage. The inspection for damage can be carried out via a site walkover and does not require action if there has been no damage.

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5080D – King’s Pond

Flood Risk Statement

Prepared for Alton Town Council

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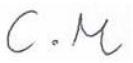
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Project Description

The King's Pond project is a multi-benefit pond restoration and enhancement project commissioned by Alton Town Council. The project aims to transform a sediment-impacted urban pond into a more resilient and ecologically valuable space. The scheme seeks to improve water quality, manage sediment accumulation, control non-native species, enhance biodiversity, and remain a valuable asset and space for the local community. The site is within Water Framework Directive (WFD) waterbody North Wey at Alton (ID: GB106039017800) and is currently rated as a Heavily Modified Waterbody with a 'Moderate' ecological status. Immediately upstream of the site the watercourse is culverted underneath the existing railway track, whilst the downstream River Wey is culverted away from the weir, emerging in open channels flowing through Waterside Court, before being re-culverted beneath Paper Mill Lane, re-surfacing again at The Lamports (SU 72368 39621) as the River Wey. The North Wey at Alton is failing to reach 'Good' ecological status due to physical modifications as a result of urbanisation, flow changes resulting from groundwater abstractions, and point source pollution from intermittent sewage discharges. However, it is acknowledged that the sewage discharges are known to take place downstream of King's Pond.

The project goals are to increase biodiversity, improve water quality, reduce habitat for invasive species of waterfowl, and improve bank stability to reduce sedimentation of the pond. Flood reduction through the design of an improved outlet structure is also a consideration of the project.

This report details the likely flood risk impact of the scheme. A full hydraulic modelling exercise has not been carried out to date, due to the expected increase in channel capacity through the proposed works, and the low existing flood risk extent.

Details of the project can be found within the following supplied documents:

Document Name	Creator
Design Drawings: • 5R-5080D_101_Kings-Pond_Dredging_Overview_V3 • 5R-5080D_102_Kings-Pond_Dredging_CS1_V3 • 5R-5080D_103_Kings-Pond_Dredging_CS2_V3 • 5R-5080D_104_Kings-Pond_Dredging_CS3_V3 • 5R-5080D_105_Kings-Pond_Dredging_CS4_V3 • 5R-5080D_106_Kings-Pond_Dredging_Silt-Trap_V3 • 5R-5080D_107_Kings-Pond_Dredging_Engagement_V3 • 5R-5080D_160_Kings-Pond_Dredging_Planting_Plan_V1 • 5R-5080D_201_Kings-Pond_River_Overview_V3 • 5R-5080D_202_Kings-Pond_River_CS1-3_V3 • 5R-5080D_203_Kings-Pond_River_CS4_V3 • 5R-5080D_204_Kings-Pond_River_Q-Water_V3 • 5R-5080D_205_Kings-Pond_River_Silt-Trap_V3 • 5R-5080D_206_Kings-Pond_River_Engagement_V3 • 5R-5080D_260_Kings-Pond_River_Planting_Plan_V1	Five Rivers Environmental Contracting Ltd
5080D - Designers Risk Assessment	Five Rivers Environmental Contracting Ltd
5080D - Buildability Statement	Five Rivers Environmental Contracting Ltd
5080D - Flood Risk Statement	Five Rivers Environmental Contracting Ltd

Proposed Works Techniques

A full description of the works methodology and proposed machinery for both proposed options at King's Pond can be found in 5080D – Buildability Statement. The proposed works techniques required for each design option are summarised in Table 1.

Table 1. Proposed work by option

Proposed Work	Dredging option – Dredging	River and pond option – River and Pond
Tree works	Yes	Yes
Excavation of bed material	Yes	Yes
Large wood installation	Yes	No
Island creation	Yes	No
Channel excavation	No	Yes
Marginal shelf creation	No	Yes
Backwater	No	Yes
Bank re-profiling	Yes	Yes
Re-use of excavated spoil	Yes	Yes
Willow spiling installation	Yes	Yes
Dead hedge installation	Yes	No
Wet woodland creation/ enhancement	Yes	Yes
In channel silt trap	Yes	Yes
Reed beds	Yes	Yes
Hibernacula	Yes	Yes
Bat box installation	Yes	Yes
Native marginal planting	Yes	Yes
Bench construction and installation	Yes	Yes
Bridge installation	No	Yes
New path creation	No	Yes
New pond culvert inlet and outlet creation	No	Yes

Flood Risk Assessment

1. Flood zones

The flood map (Figure 1) visualises flood zone data provided by the Environment Agency. The map shows flood zone 2 and 3 which refer to areas that have medium to high risk of annual flooding. Flood zone 2 is classified as medium risk and covers areas that has a 0.1%-1% (or 1 in 100 to 1 in 1000) annual probability of flooding. Flood zone 3 is split into 3a and 3b; 3a is high risk, and 3b is the functional floodplain. High risk is anything greater than 1% annual probability of flooding, which can still be as infrequent as 1 in 100 years. The functional floodplain is land that actively stores floodwater. The site flood map is split into three discreet reaches, upstream of King's Pond, King's Pond, and the surrounding parkland and downstream of King's Pond. The upper reach is differentiated by a section of open river channel which is then culverted underneath the railway track before outfalling to King's Pond. The open channel area is surrounded by Copper Lane and Harp Avenue, which are residential streets. The watercourse appears to be lined with established trees and vegetation. Small areas of Flood Zone 2 and 3 are shown in this upper reach affecting properties on Harp Avenue, however the flood zones are mostly confined to the channel extent.

The King's Pond area shows Flood Zone 2 covering parts of the southern island in the pond and a small area of flooding to the pathway on the western bank of the pond. Flood Zone 3 envelopes the extent of the pond and some parts of the path on the western bank.

Downstream of King's Pond, Flood Zone 3 is shown in the Waterside Court area, the watercourse is culverted here, and this outline is assumed to illustrate the effect of the pond overtopping for example due to a blockage at the culvert

or a lack of capacity. Downstream of Paper Mill Lane, the River Wey returns to open channel, and the flood zones are largely contained within the channel extent.



Figure 1. Flood Zones at King's Pond - © Environment Agency copyright and/or database right 2025. All rights reserved

There is a potential opportunity to relieve flood risk to the Waterside Court area through culvert/sluice outlet modifications on King's Pond, to reduce blockage and improve downstream conveyance, reducing backing up and flooding of water. However, this could result in an unacceptable increase in flood risk downstream by passing forward increased flows. Therefore, any culvert/sluice modifications would need to be included within hydraulic modelling, which is recommended to take place at the next stage of the design process.

The water level in the pond is known to fluctuate. According to the information provided in the ecological assessment in 2025, the seasonal variation in level due to changes in through flow is around 100/150mm. However, there are more frequent fluctuations due to blockages at the outlet screen. These can be up to 450mm.

An Environment Agency gauging station (ID 39119 – Wey at King's Pond)[1] is located on a rectangular thin-plate weir at the outfall from the pond. The description of the gauge notes that debris obstructing upstream of the grill can cause minor fluctuations in level. The flow regime is described as baseflow-dominated, with some local urban runoff. The gauge has been operation since 1991, with a mean flow of 0.116m3/s. The Q5 flow, a flow which is exceeded only 5% of the time is 0.339m3/s, and the Q95 exceedance flow is very low at 0.002m3/s. The concrete chamber of the weir contains both a weir and a sluice gate. According to Alton Town Council, water normally flows only through the half of the screen that is in front of the weir. However, it may flow out across the full width of the screen when the water level is high enough to over-top the sluice gate, meaning both the weir and sluice will be in use under especially high flow conditions, providing additional conveyance capacity.

[1] NRFA station mean flow data for 39119 - Wey at King's Pond (Alton)

2. Existing Infrastructure

There are two footbridges within the project area, the first is at the upstream end of site, of where the River Wey emerges from a culvert under the path and (*Figure 2*). The bridge is formed from a path overtop a culvert. No changes are proposed to this upstream culvert structure in order to not affect the flow direction and velocity beneath the path. The culvert is 0.5m high, and the highest water level recorded at the upstream gauging station is 0.44m. There are likely to be road and surface water drainage pipes that feed into the Wey between the Alton gauging station and the inlet to site, however this highest recorded flood level gives some level of assurance when estimating impacts on existing infrastructure.



Figure 2: Image taken from path showing the River Wey entering King's Pond emerging from the culvert under the railway track and path

The downstream outlet sluice structure on the pond is shown in Figure 3. At the time the photograph was taken (5th August 2026), only the weir side of the outfall was flowing, as the water level was not high enough to exit over the top of the sluice. According to Alton Town Council, blockages of this structure are common, resulting in large fluctuations in the water level of the pond. If a blockage coincides with a large rainfall event, the flood risk in the area could be exacerbated. The proposal for the site is to replace the current flat trash screen with an extended screen that will allow for water to enter the sides if the front gets blocked by debris build up, thus ensuring there is a reduced chance of backing up flow.

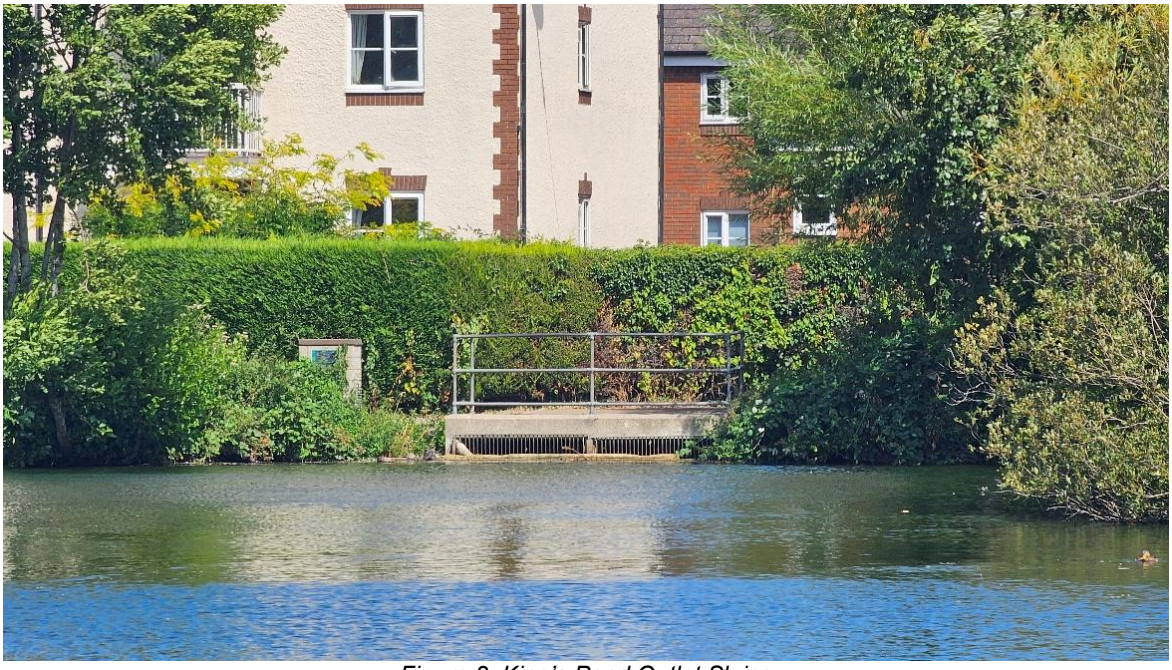


Figure 3. King's Pond Outlet Sluice

The other key infrastructure within and around the site are the paths. The proposals plan to enhance the path network and amenity space within King's Pond, by providing additional access routes through the site and areas of seating e.g. benches.

3. Flow and Function Analysis

Currently the discharge of water from King's Pond is controlled by the height of the weir and sluice, and limited by the roof of the sluice chamber, creating a 0.5m high, 1.5m wide opening over the former, and 0.2m high, 1.5m wide opening over the latter. The weir is the primary outlet from the site, and allows approximately 0.286m3/s maximum flow, while the sluice is more rarely flowing, and allows approximately 0.08m3/s flow, for a total of 0.366m3/s. Top of typical range at Q5 (values exceeded 5% of the year) is 0.339m3/s, however there have been peak flow events recorded above this value, notably in December 2000, and December 2013. The highest flow value in the past 10 years was February 2026 at 0.475m3/s which correlated to the pond water levels being approximately 99.58mAOD, or 0.33m above the weir sill.

Flow values from the upstream gauging station at Alton High Street have also been used to calibrate data and levels as the gauge is approximately 400m upstream of the King's Pond site area, and therefore still a relevant data set to understand flow entering the site. Peak flows from upstream are lower than at King's Pond, likely due to King's Pond also receiving inputs from surface runoff and natural springs, with a Q5 rate of 0.254m3/s. In the lowest flow conditions outside of droughts the flow rate at Alton High Street drops to 0m3/s, which is in character with the ephemeral upper reaches of the Wey beyond Alton.

The design proposal for the dredging option would not see any amendments to the weir or sluice, however the river and pond option would alter how these features function to ensure that the newly reinstated river would flow as often as possible. There are two options, one is to leave the sluice as it

is, only allowing flow to exit once the water level reaches over 99.5mAOD, and to remove the weir and install a top plate that will retain the outfall structure as 1.5m wide and 0.5m high, but low flows will be unimpeded. The other option would be to leave the weir at 99.25mAOD, and to lift the sluice to allow for low flow passage. The level that the sluice is lifted to can be adjusted to suit the desired discharge rate from the King's Pond area, thereby controlling the risk of downstream flooding. The level to which the sluice is set will not allow for flow to exceed current maximum flow out of the site.

Upstream flood risk is mitigated through the proposed wetland area functioning as a backwater that will take flow that is above the level of the outfall "roof" at 99.75mAOD. In December 2013 the water level reached 99.83mAOD, which is the highest level recorded since the gauge began collecting level data in 1991. At this level the wetland would be taking the additional flow through the backwater effect, with a small channel being set up the bank to allow the overflow from the new main Wey.

4. Flood Risk Management

Proposed Works	Potential Flood Risk	Risk Mitigation	RAG
Tree Works	Dislodgement of terrestrial hibernacula created from the leftover woody material. Reduction in floodplain roughness	Any hibernacula created on site will be placed further than 10m from the bank top to reduce risk of washout. Smaller and lighter materials should be pinned down with larger limbs that will be harder to mobilise in flood flows. The addition of coarse material will act as a flood mitigation measure. In the event of an extreme flood scenario where flood flow runs across the land the additional woody material will slow flow. If it was required, the material could be pinned using posts and rope or pegs. This has not been initially proposed due to the desire to make hibernacula as natural as possible. Any removal of trees will initially reduce the roughness of the terrain, but new trees will be planted that will eventually provide greater resilience and support.	
Excavation of bed material	Changing the pond capacity and planform.	Volume calculations to be undertaken following acceptance of design option to confirm the final volume of the pond pre and post construction. Current estimates indicate the dredging option will increase capacity by 4,970m3, and there will be a net neutral change in capacity in the river and pond option, but the storage areas are separated by areas of raised land.	
Island creation	Changing the pond capacity and planform.	Minor reduction in capacity from the fronting brought in for the island, otherwise will offset the removed silt, leading to a net neutral change.	
Channel excavation	Changing the pond / channel capacity and planform.	The new proposed channel will provide low flow and high flow channel conveyance and therefore is not anticipated to pose any flood risk. Dimensions have been created by utilising existing flow values to ensure capacity for high flow conditions as well as peak flow.	
Marginal shelf creation	Changing the pond capacity and planform.	Marginal ledges are to be created using site won spoil. Banks of the ledges should not exceed 1:3 gradients in order to maintain stability and avoid slumping. Ledges are to be topped with biodegradable matting, such as C125BN biodegradable erosion control blankets to prevent erosion. Matting should be pegged into place using 150 mm hardwood pegs in a 0.5 m grid. Plug planting is then to occur after matting. While the ledges alone would result in a reduction in the pond volume, given the excavation/dredging works to create additional capacity in the pond, this impact is not anticipated to make flooding worse.	

Proposed Works	Potential Flood Risk	Risk Mitigation	RAG
Backwater	Changing the pond capacity and planform.	A backwater has been proposed on the downstream left hand bank in river and pond option. The backwater has been designed to provide additional attenuation space within the backwater channel itself and surrounding wetland area for high flows or if the downstream pond outlet is at capacity. The backwater has been designed with banks no steeper than 1:3 to reduce the risk of slumping over time. It is anticipated the backwater and wetland area will be ephemerally wet, but is well connected to the channel to prevent fish entrapment.	
Bank re-profiling	Changing the capacity of the pond.	Alone, bank reprofiling is likely to have a minor impact on the overall pond capacity, and is being undertaken to prevent slumping and future sediment build up in pond to futureproof the capacity. On balance with the excavation works of the pond it is expected to be net neutral.	
Re-use of excavated spoil	Reduction of floodplain storage.	The re-use of excavated spoil around some margins of the pond and on some areas of the banks will result in areas of raised elevation compared to present. These raised areas will be less susceptible to inundation, however, are not generally seen to reducing floodplain storage as they are not within the identified flood zones.	
Willow spiling installation	Structure dislodgement and downstream blockage risk; debris entrapment and flow impediment risk.	Natural deflectors to be secured in place by driving chestnut stakes either side of the structure and secured with rope and fencing staples. The shallow angle and placement of the wood close to the bed should reduce the risk of impeding flow as medium and high flows will be able to pass over the top smoothly. Wire could be used instead of rope if required to achieve the FRAP permit, however natural fibre ropes are preferred to reduce the non-natural material being added to the channel. Yearly checks, or checks following Amber weather warning events, and EA flood warning events, should be undertaken to the site to establish whether any woody structures have become, or are at risk of being dislodged. This will be detailed in the maintenance plan.	
Large wood installation			
Dead hedge installation			
Wet woodland creation/ enhancement	Increased roughness and infiltration.	Enhancing areas of wet woodland will be beneficial to flood risk, allowing for improved bank stability, increased evapotranspiration and infiltration. Additional trees will also increase the roughness of the bank areas, slowing the flow of overland runoff into the pond and channel.	
In channel silt trap	Structure dislodgement and downstream blockage risk; debris entrapment and flow impediment risk.	The proposed silt trap location has been placed more than 20m downstream of the existing culvert to not cause any backwater, and the material is to be sized appropriately to allow for reduced but not blocked flow across, enabling settlement of suspended sediment. The feature will sit similarly to a pool – riffle sequence, with a greater depositional focus. The size and height of the rocks will be based on the incoming flow values relative to the size of the	

Proposed Works	Potential Flood Risk	Risk Mitigation	RAG
		culvert. The existing culvert is approximately 0.5m in height, and the gauging station upstream of the project records a maximum fluctuation of 0.37m in water level, which gives additional clearance for the depositional feature.	
Reed beds	Changing the pond capacity and planform.	The proposed reedbed features would be raised up using site won material, and then secured in place using brash bundles and biodegradable geotextile. This area would be set below the high flow levels of the pond, so that in flood conditions the area can provide additional storage space. The raised brash will slow flow through these areas, reducing downstream flood risk, as well as enhance sediment deposition. This technique mimics saltmarsh restoration techniques, so is suited for fluctuating water levels and retaining sediment.	
Bat box installation	N/A	Not expected to impact flood risk.	
Native marginal planting	N/A	Not expected to impact flood risk.	
Bench construction and installation	N/A	Not expected to impact flood risk.	
Bridge installation	Blockage risk.	The soffit level of the new footbridge is expected to sit above the known maximum water level of the pond to reduce the risk of it causing a blockage or exacerbate flooding. The bridge will be a clear spanning structure, with no footings in the river channel to ensure conveyance is not impeded.	
New path creation	Changing floodplain planform	A new path alongside the true right-hand bank is proposed in river and pond option, to link up to the existing path network to the north and south of the pond. The path will create a flat area on the right-hand bank. Under flood conditions this path is expected to flood, however alternative access will be available using the existing perimeter path network. This new path has been designed to cope with becoming wet under flood conditions.	
New pond culvert inlet and outlet creation	Blockage risk.	The pond inlet and outlet between the new river channel and retained pond area are to be designed at an appropriate level and size to allow water from the channel to flow into the pond and out of the pond back into the channel without becoming blocked. This will retain flow in the new proposed channel at low flow conditions, while ensuring a flood overflow route, and reducing stagnation in the pond.	

5. Recommendations for future assessment

If the preferred option taken forward to detailed design is the river and pond option, then a detailed Flood Risk Assessment including hydraulic modelling using a range of flow scenarios (including an uplift for climate change) should be undertaken in line with Environment Agency requirements. This detailed assessment would ascertain with confidence that the risk of flooding to the area around King's Pond and changes in pass forward flow downstream do not cause an increase in flood risk. It must however be noted that if the modelling does show an increase in flood risk, alterations to the design are likely to be required to mitigate this risk.

The alterations that would be undertaken through design would be in amending levels within storage features and the outfall structure, and would not fundamentally change the overall feel or appearance of either option.

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5080D – King’s Pond

King’s Pond Design Report

Prepared for

ALTON Town Council

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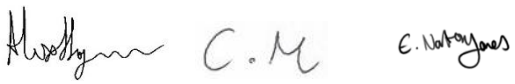
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Introduction

The King's Pond project is a multi-benefit pond restoration and enhancement project commissioned by Alton Town Council. The overall aim of the project is to transform a sediment-impacted urban pond into a more resilient and sustainable, ecologically valuable environment. The scheme seeks to improve water quality, manage sediment accumulation, control of non-native species, enhance biodiversity, and remain a valuable asset and space for the local community.

The site is within Water Framework Directive (WFD) waterbody North Wey at Alton (ID: GB106039017800) and is currently rated as a Heavily Modified Waterbody with a 'Moderate' ecological status. King's Pond forms part of the River Wey and the North Wey at Alton Water Body catchment (Figure 1, Site Location within the WFD waterbody: North Wey at Alton Water Body) within the Wey and Trib management catchment. Immediately upstream of the site the watercourse is culverted underneath the existing railway track, whilst the downstream River Wey is culverted away from the weir, emerging in open channels flowing through Waterside Court, before being re-culverted beneath Paper Mill Lane, re-surfacing again at The Lamports (SU 72368 39621) as the River Wey. The North Wey at Alton is failing to reach 'Good' ecological status due to physical modifications as a result of urbanisation, flow changes resulting from groundwater abstractions, and point source pollution from intermittent sewage discharges. However, it is acknowledged that the sewage discharges are known to take place downstream of King's Pond.

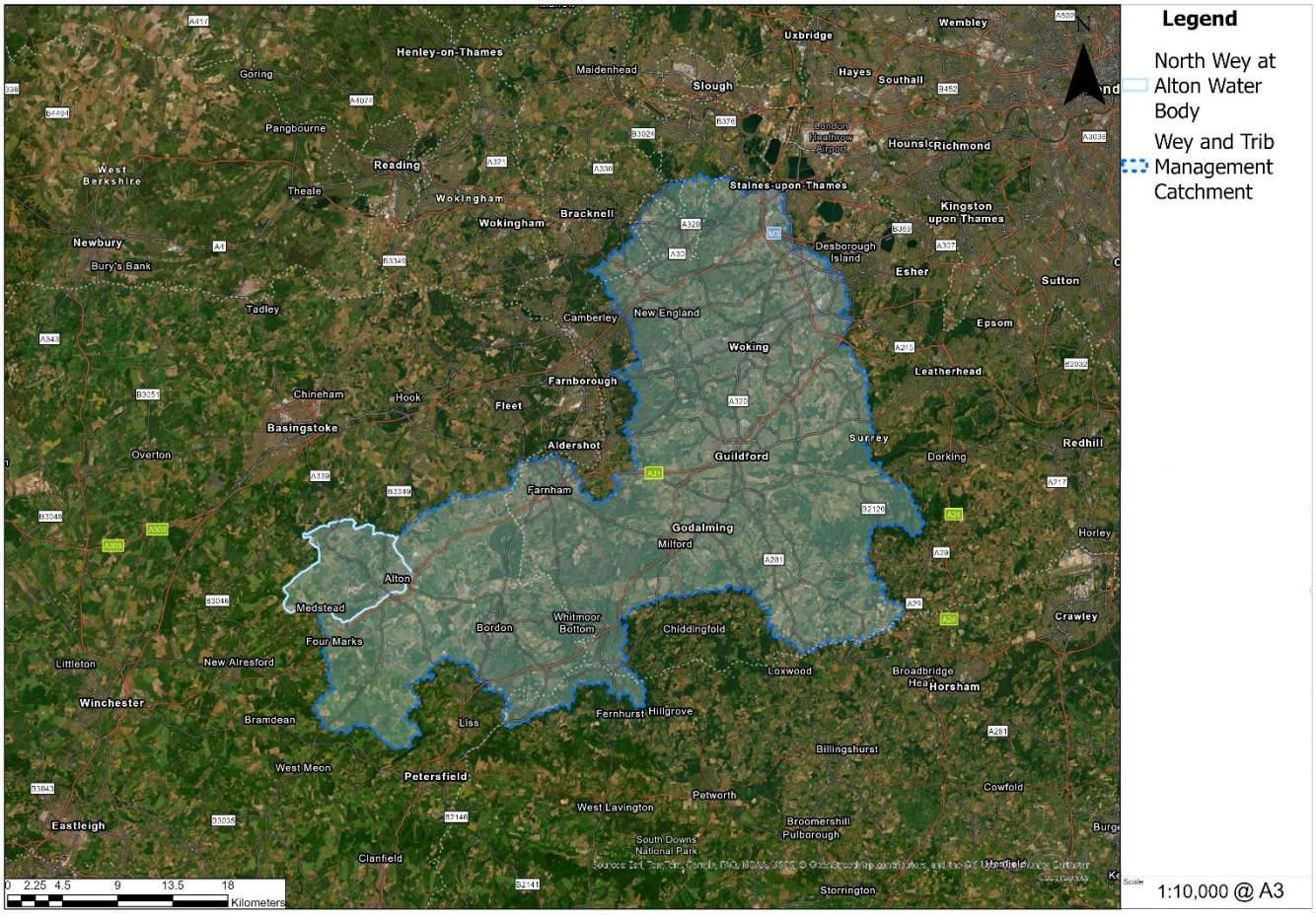


Figure 1: Catchment Map.

Alton Town Council have instructed FiveRivers to deliver outline designs for two options for the restoration of King's Pond in order to achieve the project aims given above. Initial concepts were produced by Water Environment and have since been given to FiveRivers to develop to the outline design stage. The "Dredging" option, consists of dredging the pond, reprofiling the banks, constructing silt traps along the upstream source and downstream mouth of the pond, as well as the construction of berm features along some of the banks. This option will increase the silt trapping potential of the pond which will reduce future maintenance dredging costs, whilst improving pond biodiversity and ecosystem resilience by reducing invasive species habitat and their associated necessary pond conditions. The "River and Pond" option includes dredging of the pond and the reinstatement of the channel of the River Wey through the site extent, here the pond will be maintained in a smaller connected state with walkways provided across the site for public accessibility. The river and pond option also details sediment traps located at the upstream end of the pond, as well as the downstream surface water drain outfall and culvert connecting the downstream extent of the River Wey. This option will significantly improve the sediment transport across the site and reduce the necessary maintenance of the pond long term. Due to the reduction in siltation along the bed, the river and pond will also serve to reduce invasive species presence, whilst improving habitat conditions for desired species such as Bullhead.

This summary report intends to evaluate the existing condition of the waterbody and surrounding environment with its associated ecology. This evaluation will be used to propose and assess potential improvement options for the project area
based on the scope provided by the client, Alton Town Council.

Site Location

The project area is located in the centre of Alton Town, Ashdell Rd, Alton GU34 2SZ (NGR SU 72315 39404) (Figure 2). The River Wey currently flows into King's Pond via a culvert at the upstream extent of the pond before flowing out at the downstream end of the pond via another culvert into the River Wey. The downstream River Wey is culverted away from the weir, emerging in open channels flowing through Waterside Court, before being re-culverted beneath Paper Mill Lane, re-surfacing again at The Lamports (SU 72368 39621) as the River Wey. King's Pond sits within a suburban area of Alton, the downstream extent of the Wey flows through increasingly commercial areas and industrial estates, before flowing further east into a more rural setting. The site is bordered by a railway line to the north west, Ashdell Road to the south and south east, while Paper Mill Lane runs along the north east. A public footpath is also currently located around the pond perimeter and connects Waterside Court with the pond area.



Figure 2: Site Map.

Option Development

1. Access and site set up

Site access was assessed by FiveRivers, and the junction off of Ashdell Road (NGR SU 72374 39436) connecting to the car park of King's Pond was deemed most appropriate for primary access. As the access route is within a residential area the maximum speed is 30 mph. Mitigation measures to noise and air quality should be considered when accessing and operating on site.

The main compound is assumed to then be established within the car park of King's Pond, Ashdell Road, Ashdell, Alton, Holybourne, East Hampshire, Hampshire, England, GU34 2TA, United Kingdom (NGR SU 72315 39404). Access to this area is possible via the main access route. The site team are to undertake pre-construction services check and all services on site are to be marked out, and all staff alerted to their presence.

South East Water has one live distribution main asset and several fire hydrant assets within the surrounding area of site boundary.

Within the site extent, one surface water outfall pipe connects the downstream end of the pond to the river which flows through a connecting culvert pipe system. The River Wey flows into the site via a culvert located at the upstream extent of King's Pond.A Hampshire County Council asset which drains King's View and Ashdell Road runs beneath the site, discharging to the north-east corner of King's Pond. A Thames Water drain is currently routed along Turk Street, beneath the railway bridge and through the site, outflow is located at a headwall adjacent to the inflow culvert. SGN has one medium pressure gas main utility running along the upstream section of King's Pond. One Openreach split coupling utility is located over the surface water outfall pipe utility at the downstream end of King's Pond.

2. Dredging Option

The overall scope of the dredging option primarily involves improvements to the pond to address outlet blockages and water level fluctuations, reinstating and strengthening the banks of the existing island and margins, silt capture, and ecological improvements to the pond ecosystem. These aims will be targeted through a variety of site activities. Silt capture will be achieved by installing an in-channel silt trap to the upstream end of the pond, with areas of marginal reed bed planting to act as naturalised sediment buffers capturing sediment prior to settling in the pond and leaving the site via the outfall culvert at the downstream end of the pond. The edges of the pond are to be reprofiled and vegetated by plug planting. The wetland to the north of the site will be planted with reeds, and will be located at the outfall unit of a surface water drain. Implementing a raised marginal wetland here aims to capture sediment, organic pollutants such as nitrates, and generally reduce the pollutant load flowing out of King's Pond into the receiving River Wey.

Significant sections of the pond bank area will be reprofiled to improve bank stability and connectivity. Re-profiling with berm features will help stabilise the banks of the islands and banks of the pond by reducing erosion and therefore reducing siltation to the bed. Sediment will be initially dredged from the bed of King's Pond to increase capacity and

reduce siltation in the pond – thus improving habitat for intended fish species such as Bullhead. This material will then be assessed for pollutants and invasive species to ensure it can be re-used on site for the construction of berms, and the spoil re-use area.

Bat boxes will be installed to the wooded areas on site, in particular the existing island at King's Pond. Hibernacula will also be created using excess woody material found on site, this is intended to support the invertebrate, amphibian, and reptile community of King's Pond. The creation of reed bed areas will also improve invertebrate and wetland species abundance at King's Pond further, along with the channel infilling area. Dead hedges will be implemented along sections of the perimeter of King's Pond to limit visitor access to the waterbody and marginal areas, this is intended to support ecological assemblage by reducing disturbance at King's Pond.

3. Dredging Option Spoil Calculation

There is estimated to be between 10,000-11,500 m^3 of silt within the pond due to accumulation from the 30 years since the last dredging was undertaken. It is proposed to leave between 200-250 mm of silt in most areas to retain habitat for invertebrates, as well as suitable areas for planting. With this layer of remaining silt taken into account it is estimated that there will be 7,100 m^3 for removal.

The marginal habitat features will be constructed partially from dredged material, this total of material is estimated at 1,900 m^3. These features will also require an additional import of spoil to cap the dredged material used on site. The additional material is estimated at 200 m^3 and will be laid 0.2 m deep on each marginal feature. The silt trap will also require being lined with 0.3 m of gravels, and the new area of path will require 17 m^3 of Breedon gravels.

The total capacity of the pond will therefore be increased by just under 5,000 m^3. This will result in an initial drop in water levels, but it is anticipated that the water levels will rise again over time. The outfall for the pond is a weir set at 99.25 mAOD, current water levels are approximately 99.26 mAOD. The bed will be lowered by up to 1 m in places, which would lower the water level to 98.26 mAOD, far below the level required for water to flow out of the pond. As flow continues to enter the pond but not leave over the weir the level will rise until it can once more flow over. The capacity increase will be maintained as the new wetland areas and silt trap are designed to capture incoming and suspended sediment.

River and Pond Option

The river and pond option involves a series of improvements to the pond including addressing blockages and water level fluctuations, reinstating and strengthening the banks of the existing island. The option will also create a new flow pathway through the centre of the area to alleviate siltation pressures and therefore reduce future maintenance costs. The option also includes silt capture mechanisms, and ecological improvements to the pond ecosystem.

The primary works of this option includes the dredging of much of the pond area, and then the subsequent creation of a channel through the site, connecting the downstream and downstream sections of the River Wey. A smaller pond extent will remain towards the upstream outfall point of King's Pond and will be connected to the channel to provide access to fish species, support water quality in the pond, and maintain the pond water level. The main channel is estimated to be 3.9 m at bank full width and 1 m deep. This depth includes a 1.4 m wide low flow channel within the channel, 0.5 m wide at the base, designed to overtop into the main channel at Q50. The smaller channel will concentrate flow to support fish passage, and also create higher velocities to flush sediment out of the system. This will keep the gravel bed clean, which is a characteristic of healthy chalk streams. Site won spoil from the pond works will then be re-used to enlarge the existing island and define the new narrow channel.

A secondary channel will be created along the existing island, this will flow through an area of wetland. The secondary channel is intended to provide additional capacity during high flow events. An additional backwater channel will also be created towards the downstream extent of the site, this is intended to divert high flows into an adjacent wetland area when the downstream culvert is at capacity. The edges of the pond are to be reprofiled and vegetated by plug planting. This is to reduce erosion along the banks of the pond. Marginal shelves are also included in the river and pond option, as these will provide shallow aquatic habitats which are important to several fish, invertebrate, and bird species at King's Pond, under normal water levels the shelf will not be visible and therefore will have minimal impact to the visual appearance of the pond. A raised area for a marginal wetland will front a small deeper section of pond to form a natural silt trap. The wetland will be planted with reeds, and will be located at the outfall unit of a surface water drain. The raised marginal wetland here is intended to capture sediment, organic pollutants such as nitrates, and generally reduce the pollutant load leaving King's Pond.

A deeper profiled section of the channel at the upstream river portion of the pond is to provide a silt trap to improve water quality. Large rocks are used as a natural partial impoundment to slow the water and allow the sediment to drop out of suspension. Proximity to the path network will enable maintenance access to the silt trap.

The area of existing wet woodland is proposed to be enhanced with additional willow planting. Tree works will be required across site to enable work activities, this will mean preferentially targeting invasive and diseased trees found on site. Site won trees will then be assessed and if possible, re-used on site. Native tree species will be planted across the site, including in the marginal and spoil re-use areas.

Bat boxes, as recommended within the ecological reports provided by Alton Town Council, will be installed to the wooded areas on site, in particular the existing island at King's Pond. Hibernacula and log piles will also be created using excess woody material found on site, this is intended to support the invertebrate, amphibian, reptile, and small

mammal community of King's Pond. The creation of reed bed areas will also improve invertebrate and wetland species abundance at King's Pond further, along with the channel infilling area. Bird boxes will also be constructed within the more densely vegetated areas of King's Pond, this will support the targeted bird species, whilst not benefitting invasive species assemblages at King's Pond. Dead hedges will be implemented along sections of the perimeter of King's Pond to limit visitor access to the waterbody and marginal areas, this is intended to support ecological assemblage by reducing disturbance at King's Pond.

Brash berms and Willow spilling will be made from site won material and will provide bank protection from the flow exiting the secondary channel during high flow events. Brash fronted berms will be constructed around the existing island to stabilise the banks, and to reduce sediment input. The existing Island is to be planted with trees to deter Canada geese.

Two clear span bridges are to be constructed, running over the created channel. These will provide public access across the site and enable visitors to interact with different elements of the site than previously possible, therefore providing greater amenity to the site. Additional pathways will also be created across the site once again improving access across the site and offering visitors additional viewing points and routes across King's Pond. Benches are also to be installed in this option, providing visitors an outdoor seating area to enjoy the pond from.

4. River and Pond Option Spoil Calculation

For the river and pond option there is a significant amount of material movement and processing required. The total volume of silt for removal from the existing pond configuration is estimated at 11,600 m^3; this is higher than the amount estimated based on the previous dredging, and is a guideline volume. There are many new features that are proposed to be created through reuse of dredged material. These primarily consist of new wetland areas, reedbeds, and new wet woodland extents. The total volume of dredged material that can be reused through this is approximately 7,200 m^3. This leaves an estimate of 4,400 m^3 to still be removed from site.

To create the new channel and raised walkway area there will need to be material imported, as the dredged material will not be stable enough to support these features. The volume of imported material required is estimated to be 4,500 m^3 of earth and soil, 60 m^3 of river gravels, and 110 m^3 of Breedon gravels for the new paths.

The total material balance of the site will be approximately - 60 m^3, however this is split between the different materials required for the different elements of the proposal.

Future Resilience

5. Climate Change

The full effects of climate change in the UK remain uncertain, however the frequency and magnitude of extreme weather is suggested to increase. This threatens the security of our natural environment and therefore supporting nature to create sustainable and resilient ecosystems is important.

Precipitation is vital to the ecological and social value of King's Pond. The upstream River Wey feeds into King's Pond and is dependent upon precipitation. However, climate change has led to UK winters and autumns being significantly wetter, with previous research suggesting 7 % increase in rainfall per 1°c of warming in the UK. Therefore, the River input to King's Pond may increase seasonally, resulting in more erosion and siltation of the pond.

As the climate warms, evaporation increases and the air holds more moisture. This means UK springs are increasingly humid, while the land and waterbodies such as King's Pond, have a greater potential evaporation. Evaporation is a major risk to King's Pond primarily from drying out, but drying out will subsequently cause the ecosystem of King's Pond to decline, and over time recovery will be increasingly difficult.

Decreasing water volume causes the specific heat capacity to change, and so temperature of the pond may become less stable. An increase in water temperature would cause an increase fish and other organism mortality in the pond, which can trigger further cycles of ecological decline. A declining ecosystem within a pond such as King's Pond, can cause a forward switch in ecosystem structure. This means the pond becomes stable in being dominated by algae and microbes, indicative of poor water quality and reduced biodiversity, this also tends to reduce the amenity value of pond features. This stability is then often expensive and difficult to reverse. Therefore, it is vital to prevent the initial change from occurring by developing a resilient pond ecosystem at King's Pond which can resist this process.

UK summer precipitation trends are also anticipated to change with longer periods of drought followed by flashy and intense rainfall events occurring. In suburban and urban settings such as Alton, the impermeable nature of road and paved surfaces combined with drought conditions, causes organic pollutants and inorganic pollutants to accumulate. Eventually the drought ends and a sudden and intense period of rainfall causes these deposits to re-mobilise and flow into the surrounding watercourses and waterbodies – here King's pond. These pollutants have a variety of negative effects on waterbodies. As summer droughts in the UK are anticipated to extend and summer rainfall expected to become more intense, it is likely that this process is an increasingly pressing issue for King's Pond in relation to the existing ecology.

Based on the above information on how a changing climate may impact the pond, it is vital that the chosen design for King's Pond mimics and works with natural processes to improve the overall resilience of the pond to reduce its susceptibility to climate change. It is felt that through bank erosion protection, reduction of invasive species, silt trapping and removal, and native planting that this can be achieved.

6. Sustainability

Sustainable development should be a driving principle in all ecological and sociological projects, it is the idea of meeting the needs of current generations, without compromising the ability of future generations to meet their own needs. This idea is represented within these works at King's Pond by aiming to produce a waterbody which provides the local community with urban shade and cool zones, outside public communal spaces, and the opportunity for the public to connect with nature into the future by creating a climate change resilient environment. The sustainable use of the King's Pond and the resilience of it under climate change is also represented in the Sustainable Development Goals; Goal 3: Good Health and Well-being – Ensure healthy lives and promote well-being for all ages, Goal 6: Clean Water and Sanitation – Ensure availability and sustainable management of water for all, and Goal 15: Life on Land – Protect and restore terrestrial ecosystems and halt biodiversity loss. It is therefore key that the work at King's Pond produces a resilient and sustainable environment in which both people and the environment can thrive.

6.1. Tree Cover

Tree cover and marginal planting provide shade to aquatic species within the pond shallows. Many aquatic species have a lethal temperature range in which if water temperatures pass, life sustaining processes of the species fail. However, shaded marginal areas, included in the designs for King's Pond offer an optimal nature-based solution, which reproduces natural pond processes.

6.2. Sediment Dynamics and Hydrology

As King's Pond is a generally low flow waterbody found along the natural flow path of the River Wey, this introduces a sediment depositional zone to the river in the upper reaches where deposition of medium – fine grain material would not naturally occur. By reducing the ponded extent in both the dredging option and river and pond option, the flow velocity through King's Pond is increased therefore reducing sedimentation to the bed. This method also intends to improve aeration of the water column and so maintain the desired ecosystem of King's Pond. Siltation is also intended to be controlled by the sediment traps utilised in both designs. Whilst the upstream in-channel sediment trap in both options offers a more engineered approach, the use of marginal wetland and reedbeds in both options provides a nature-based solution to sediment control, whilst also providing water quality control benefits to downstream receiving waters. Overall, this should enable King's Pond to remain in a healthy state for both options, characterised by clearer waters and greater biodiversity, requiring limited maintenance through continued management of the sediment traps.

6.3. Invasive Control

Several invasive species are currently present at King's Pond and threaten the local ecosystem through their impact to King's Pond ecosystem. Several mitigation steps will be taken during construction to stop the spread of invasives and maintain biosecurity of the site and surrounding ecosystem. Common Carp have previously been sighted in King's Pond. The main impact of common Carp is that feed on macrophytes along the bed of the waterbody. Because common Carp are non-native invasive species the wider ecological community is not evolved to balance the feeding demands of common Carp and therefore, common Carp have a disproportionately negative effect on UK waterbodies such as King's Pond. This then leads to less habitat, food, and other requirements of these resources for other native species within the ecosystem. Common Carp are also bioturbators, meaning their bed feeding re-mobilises deposited bed

materials generating a turbid and light depleted waterbody, which may then trigger a uninhibited negative cycle of ecosystem decline towards an algae-dominated waterbody and eutrophication. Part of the proposed works in both options is to actively tackle common Carp populations by capture and rescue to off-site location during pre-enabling works.

Invasive non-native Waterfowl namely Canada Goose (*Branta canadensis*) are also abundant at King's Pond. Canadian Geese also rework the soil and sediment (known as bioturbation) of the bed of the pond through their foraging activity, this has led to high algal concentrations in the water column. Both design options intend to manage the abundance of Canada Goose by planting trees creating more densely covered areas of the existing island. This reduces the terrestrial habitat available to the geese, which they use to incubate their eggs.

Several invasive plant species are found at King's Pond this includes Japanese Knotweed (*Reynoutria japonica)*, Bamboo (*Bambusoideae spp*.), Buddleia (*Buddleja davidii*), and Ground Elder (*Aegopodium podagraria*). These species present a number of detrimental impacts to King's Pond, Japanese Knotweed has no natural predators in the UK and can therefore grow unchallenged and outcompete many native species, its root structures also threaten underground assets such as sewerage pipes and cables whilst damaging pavements and roads too. Bamboo also has no natural predators in the UK, can break through pavements and roads and its root structure can be damaging to other plant species in the area. Buddleia is very adaptable and consequently extremely successful in the UK, it outcompetes many native floral species and whilst found to successfully support many pollinator species and may also distract pollinators away from other native species therefore reducing reproduction. Buddleia also fails to produce nectar which certain native species can consume. Ground Elder is also very successful in the UK and spreads easily, it's main threats to native wildlife are its ability to spread through its root layer, and that it may easily outcompete native species for light. The management of these invasive species has been considered for the project and is detailed within 5080D – Buildability Statement.

6.4. Pollution

The sediment traps located at the upstream and downstream extents of King's Pond in both design options aims to reduce siltation in the pond as well as downstream conveyance of sediment and associated pollutant particulate matter to receiving waterbodies.

7. Siltation Rate

King's Pond was dredged in 1996, producing approximately 9,400 m^3 of silt, it is not currently known how long this had been accumulating for, however the weir was only installed in 1991, so it is likely siltation was increased following this impoundment. In the 30 years since the previous dredging there has been an accumulation of material leading to a total silt volume of around 11,600 m^3. The previous dredging did not remove all the fine sediment, so a portion of this total silt volume will be a remnant from prior to 1996. As we do not have a precise measurement of the volume of silt left by the 1996 dredging, but the values of 1.75 m depth to the north, 1.25 m in the central pond, and 1m on either side of the island, we can estimate that there was a 0.3-0.4 m layer of silt left in the pond. With our proposal of removing all but 0.2-0.25 m of silt generating an estimated 7,000 m^3 it is likely that the height of the silt was greater in 1996.

In the past 10 years there has been significant change in the management of land to the upstream of the site. By 2018 a new housing estate was in construction along New Odiham road, to the north of the River Wey. The land use before construction was agricultural, which is often a significant input of fine sediment into rivers. The initial construction of the new estate will also have likely generated significant sediment runoff, even with sediment control measures, however following the completion of construction the volume of fine sediment runoff will likely have reduced, although the composition of the inputs from surface water will likely now contain higher concentrations of heavy metals and petroleum hydrocarbons.

Upstream of the railway culvert at the boundary of site there has also been recent construction, changing a business estate into a new housing estate on the northern side of Lower Turk Street. As the River Wey runs through this site it has likely also been subject to increased runoff from construction activities.

Following the calculations of silt level in 1996 and today, it is estimated that the silt build up from the past 30 years may be as low as 5,500 m^3. The Wey is a low flow and low gradient ephemeral chalk stream, so it is likely that the sediment loading comes from period flashes of inputs when flow levels exceed 0.1 m^3/s (Q25 annually, Q50 in winter). The other high input of sediment has come from bank erosion caused by excessive waterfowl activities, particularly Canada geese and recent growth in flocks of Egyptian geese, neither of which are native species.

Due to the uncertainties around changing upstream inputs, and the targeted management of geese at the site through displacement measures it is not currently possible to accurately estimate the rate of siltation within King's Pond in the future. Through the design proposals it is intended that siltation across the site will be significantly reduced, the silt trap at the upstream end of site will likely require dredging on a 3-5 year cycle depending on catchment conditions, if there is higher rainfall then there may be greater volumes of suspended sediment transported from upstream, particularly if heavy rainfall occurs following arable harvest prior to the growth of cover crops.

In the river and pond option the rate of siltation should be drastically reduced as there will be flow out of the site at all but the lowest flow conditions where the Wey can experience a complete lack of flow from upstream. This will ensure that there does not become a deposition area at the outflow from the site. Without the impoundment from the weir the river should be able to maintain 0.001 m^3/s flow required to retain mobilisation for 80 % of the year based on the flow duration curve presented by the Environment Agency.

Further investigation may be undertaken to more accurately assess continued sedimentation rates within the River Wey at King's Pond, however this would require additional data such as spot sampling upstream of site and within the site to assess current suspended sediment.

Flood Risk Summary

8. Flood Risk Assessment Summary

The flood map (Figure 3) is split into three discreet reaches, upstream of King's Pond, King's Pond, and the surrounding parkland and downstream of King's Pond.

The King's Pond area shows Flood Zone 2 covering parts of the southern island in the pond as well as a small area of flooding to the pathway on the western bank of the pond (Figure 3). Flood Zone 3 envelopes the extent of the pond and some parts of the path of the path on the western bank.

Downstream of King's Pond, Flood Zone 3 is shown in the Waterside Court area. The watercourse is culverted here, and this extent of flooding is assumed to illustrate the effect of King's Pond overtopping into the surrounding landscape. Causes of this may include a blockage at the culvert or a lack of capacity due to siltation. Downstream of Paper Mill Lane, the River Wey returns to open channel, and the flood zones are largely contained within the channel extent.

There is the opportunity to reduce flood risk to the Waterside Court area through culvert/sluice outlet modifications on King's Pond to reduce blockage and ensure appropriate downstream conveyance to reduce backing up and flooding.

The water level in the pond is known to fluctuate, the seasonal variation in level due to changes in through flow is around 100/150 mm. However, there are more frequent fluctuations due to blockages at the outlet screen, these can be up to 450 mm.

An Environment Agency gauging station (ID 39119 – Wey at King's Pond) is located at the outfall from the pond. The description of the gauge notes that debris obstructing upstream of the grill can cause minor fluctuations in level. The flow regime is described as baseflow-dominated, with some local urban runoff. Mean flow is 0.116 m^3/s. The Q5 flow is 0.339 m^3/s, and the Q95 exceedance flow is 0.002 m^3/s.

The impact of the potential designs upon flood risk are discussed within 5080D - Flood Risk Statement_V1.



Figure 3: Flood Zones.

Conclusion

Next steps

The next stage of the project will include a public consultation with the local community where the information gathered and developed during the concept design stage will be shared for both the river and pond option and dredging option. The local community will be presented with both options before a decision to proceed with the favoured option. Once the favoured option is determined, the detailed design stage of this can be undertaken and project details finalised.

FiveRivers













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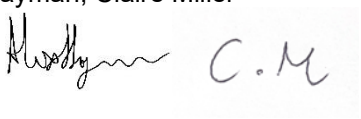
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Project No. 5080D
Project Name. Kings Pond

CDM (2015)

Pre-Construction Information

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Document title	5080 Kings Pond – PCI
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Project code	5080D
Client	Alton Town Council
Date of issue	09/10/2026
Author	Alex Hayman, Claire Miller
Signature	
QC reviewer	Stephen Pickett
Signature	
QC approver	Jennine Evans
Signature	

Preamble

These documents have been compiled pursuant to The Construction (Design and Management) Regulations 2015 (CDM 2015) which came into force on 6 April 2015, replacing CDM 2007.

They generally follow recommendations published in L153 (2015 HSE) which provides guidance on the legal requirements for CDM 2015 and is available to help anyone with duties under the Regulations.

KEY ELEMENTS TO SECURING CONSTRUCTION HEALTH AND SAFETY

The key elements, include:

(a) managing the risks by applying the **general principles of prevention**;

(b) **appointing** the right people and organisations at the right time;

(c) making sure everyone has the **information, instruction, training and supervision** they need to carry out their jobs in a way that secures health and safety;

(d) duty holders **cooperating and communicating** with each other and **coordinating** their work; and

(e) **consulting workers and engaging** with them to promote and develop effective measures to secure health, safety and welfare.

GENERAL PRINCIPLES OF PREVENTION

These set out the principle's duty holders should use in their approach to identifying the measures they should take to control the risks to health and safety in a particular project. The general principles of prevention are:

(a) avoid risks where possible;

(b) evaluate those risks that cannot be avoided; and

(c) put in place proportionate measures that control them at source.

CDM 2015 requires designers, principal designers, principal contractors and contractors to take account of the principles in carrying out their duties.

APPOINTING DESIGNERS AND CONTRACTORS

Anyone responsible for appointing designers (including principal designers) or contractors (including principal contractors) to work on a project must ensure that those appointed have the skills, knowledge and experience to carry out the work in a way that secures health and safety. If those appointed are an organisation, they must also have the appropriate organisational capability. Those making the appointments must establish that those they appoint have these qualities before appointing them. Similarly, any designers or contractors seeking appointment as individuals must ensure they have the necessary skills, knowledge and experience. Duty holders should be appointed at the right time. For example, clients must appoint principal designers and principal contractors as soon as practicable and before the start of the construction phase, so they have enough time to carry out their duties to plan and manage the pre-construction and construction phases respectively.

PRE-CONSTRUCTION INFORMATION

The main purposes of this information is to provide designers and contractors who may be bidding for the work (or who engage), with the project-specific health and safety information needed to identify hazards and risks associated with the design and construction work.

The information is provided as part of the early procurement or tendering process, and responses to the issues identified shall be used to help judge the competence of those tendering for the work. It therefore forms Appendix B of the Invitation to Tender for the Works, so that those who need it when preparing to bid or when preparing for the work can decide what resources (including time) will be needed to enable design, planning and construction work to be organised and carried out properly. Where design work continues during the construction phase, the pre-construction information will be provided to designers before work starts on each new element of the design. Similarly, where contractors are appointed during the construction phase, each contractor (or those who are bidding for the work) will be provided with the pre-construction information in time for them to take this into account when preparing their bid, or preparing for work in the site.

Sources for the Information include any Health and Safety File from earlier work and surveys, assessments or plans under the Control of Asbestos at Work Regulations 2002 or the Control of Asbestos Regulations 2006. Where there are gaps in the Information, the Client will ensure that these are filled by commissioning surveys or by making reasonable enquiries. General reference to hazards which might exist will not be made. Necessary surveys will be made by the client in advance and the necessary information will be provided to those who need it
.
The Pre-construction Information provided shall be sufficient to ensure that significant risks during the work can be anticipated and planned for. It will concentrate on those issues that designers and contractors could not reasonably be expected to anticipate or identify, and not on obvious hazards (such as the likelihood that the project would involve work at height).

The information will be in a convenient, clear, concise and easily understood form. It will include other documents as necessary to fully cover the relevant health and safety issues. As built drawings will be checked in case significant alterations have been carried out and annotated accordingly.

Reference L153 (2015 HSE)

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PCI

SECTION ONE: INTRODUCTION

1. Project Detail

Scheme Name:	King's Pond
Project Code:	5080D
Site location:	Ashdell Road, Ashdell, Alton, Holybourne, East Hampshire, Hampshire, England, United Kingdom GU34 2SZ
Description of work activity:	Two possible designs for the project **Dredging** The dredging option primarily concerns improvements to the pond regarding blockages and water level fluctuations, reinstating and strengthening the banks of the existing islands, silt capture, and ecological improvements to the pond ecosystem. **River and Pond** The River and pond option primarily concerns improvements to the pond regarding blockages and water level fluctuations, reinstating and strengthening the banks of the existing island, creating new flow pathways to alleviate siltation pressures and therefore reduce future maintenance costs, silt capture, and ecological improvements to the pond ecosystem.
Grid Reference:	U/S Extent: SU 72127 39268 D/S Extent: SU 72352 39523
Brief Work Justification:	This project aims to improve the biodiversity of King's Pond by improving current habitat features and creating new features within the site extent. Sediment trap features will also be implemented which intend to improve sediment capture, water quality and turbidity, along with reducing dredging requirements, creating a more sustainable and resilient ecosystem for the public to enjoy.
Estimated Cost:	£900,000 – £1,200,000
Will the work involve more than one contractor? If yes, PD details to be included in CDM roles and responsibilities	Yes

Detail of existing documents i.e. H&S file, PSRA records	5R-5080D_101_Kings-Pond_Dredging_Overview_V3 5R-5080D_102_Kings-Pond_Dredging_CS1_V3 5R-5080D_103_Kings-Pond_Dredging_CS2_V3 5R-5080D_104_Kings-Pond_Dredging_CS3_V3 5R-5080D_105_Kings-Pond_Dredging_CS4_V3 5R-5080D_106_Kings-Pond_Dredging_Silt-Trap_V3 5R-5080D_107_Kings-Pond_Dredging_Engagement_V3 5R-5080D_160_Kings-Pond_Dredging_Planting_Plan_V1 5R-5080D_201_Kings-Pond_River_Overview_V3 5R-5080D_202_Kings-Pond_River_CS1-3_V3 5R-5080D_203_Kings-Pond_River_CS4_V3 5R-5080D_204_Kings-Pond_River_Q-Water_V3 5R-5080D_205_Kings-Pond_River_Silt-Trap_V3 5R-5080D_206_Kings-Pond_River_Engagement_V3 5R-5080D_260_Kings-Pond_River_Planting_Plan_V1	
Is the work CDM Notifiable (see section 7)	Yes	
Outline Programme	**Start Date**	**Finish Date**
Scheme development period	June 2026	September 2027
Likely duration of works on site	August 2028	September 2028
	9 weeks	
The earliest and latest allowed construction dates	August 2028	October 2028
Consultees	**Details**	
Environment Agency	Local officers	
Landowner	Alton Town Council	
Others	Residents of Alton East Hants Planning department	

SECTION TWO: CDM ROLES

2. CDM Roles and Responsibilities

Information: Capabilities required for roles in construction work can be found here

CDM role definition	Project Team CDM roles and responsibilities	
	Name:	Appointed by :
Client	Alton Town Council	N/A
Principal Designer (where appointed)	FiveRivers	Alton Town Council
CDM Advisor (where appointed)		
Designer	Five Rivers	Alton Town Council
Principal Contractor	TBC	Alton Town Council
Contractor	TBC	TBC

Scheme contact arrangements	Name	Phone Number
Designer	Ellie Norton-Jones	07443 778497
Construction Project Manager		
Design and Build General Manager	Stephen Pickett	07436 125114
Client	Alton Town Council	01420 83986
CDM Advisor		
Pre-contracts Manager	Henry Baker	07425 313531

Name	Signature	Date
PCI completed by:		28/09/2026
PCI checked and approved by:	Stehen Pickett	02/10/2026
CDM Client approved:	Jennine Evans	02/10/2026
Principal Designer (where appointed) checked:	Jennine Evans	02/10/2026

Construction must not start on site until the construction phase plan has been sufficiently developed and approved.

ANAGEMENT

3. Control of Risk

What is known about the site and the work being undertaken:

Consideration	Details	DRA
Nearest A&E:	Basingstoke and North Hampshire Hospital, Aldermaston Road, Basingstoke, Hampshire, RG24 9NA	☐
Level of site mobile phone reception H,M,L (include service provider):	EE – Good O2 – Great Three – Great Vodaphone – Great Mobile Phone Coverage Checker - MoneySavingExpert (accessed 04/08/2026)	☐
Relevant previous learning (from lessons learnt register):	N/A	☐

Access Routes and Designated Working Areas:

Considerations		Comment	DRA
A	Have you consulted landowners on site, access routes and designated work area?	All relevant landowners will be consulted as part of a formal consultation period. Customer impact assessment to be undertaken by principal contractor. Customer communications plan to be produced by principal contractor. Communication with local residents and stakeholders will also be maintained throughout construction activities to mitigate disturbance and alleviate concerns.	☐
B	Are there any special arrangements required for using the access routes or working area?	The main access route to the site is through the vehicle entrance way to King's Pond car park at UK National Grid Reference (NGR) SU 72389 39431. Engagement will be required with residents of the cottages located north-west of the pond, who use this trackway as their primary access route. Ensuring access to these properties throughout construction is a key concern at this stage. The access route is located immediately off of Ashdell Road where the speed limit is 30 mph. The compound location is proposed within the extent of the car park at King's Pond at SU 72408 39474. Approximately 70 m of trackway will be required between the compound and the access point of Ashdell Road.	☐
C	Does the access require crossing or passing under bridges? If so, are there any weight, width or height restrictions?	If access is sought via Lower Turk Street, there is a railway bridge over the road at NGR SU 72070 39223. The bridge is arched in shape and demarked with a triangular warning sign stating that the maximum headroom is 4.8 m or 16'- 0".	☐
D	Are there any livestock or wildlife issues on the access routes?	There is no livestock or wildlife issues on the access routes onto site. No livestock will be located on site. Several species of wildfowl are present at King's Pond, but largely avoid the access routes as areas to nest – preferring islands within the pond extent. Pre-works check to be completed by suitably qualified ecologist. Dewatering of the Pond will required fish rescue.	☐

E	Does the access cross any railway, public footpath or right of way?	There are public footpaths (not designated as PRoW) around the perimeter of the site. Works in the pond will temporarily prevent access along these routes during the works, and diversion routes will need to be considered by Principal Contractor. Access to be maintained for residents of the cottages located to the north – west of the pond. Heras fencing and appropriate signage should be installed to prevent members of the public from accessing the works area and site compound.	☐
F	Are the ground conditions on the access route or working area currently or liable to become soft/unstable?	Construction should be undertaken in early autumn, so ground conditions should be stable. A conditions check should be undertaken prior to beginning works. Principal Contractor to monitor conditions during construction.	☐
G	Are there any recent reports of flooding that may have affected the working area? Will tidal working be required?	There are no recent flood reports and the long term flood risk regarding groundwater flooding, surface water, and rivers is very low and Tidal working will not be required. The yearly chance of flooding between 2036 and 2069 is classed as low. Site work is to be conducted during low flows, compound and site storage should be outside of flood zone areas, demarcated on the outline design drawings.	☐
H	If no compound is required are there adequate parking / storage areas?	There will be adequate parking made available and storage through a secure compound on site. Compound is proposed outside the flood zones at NGR: SU 72409 39477. Principal Contractor to manage requirements.	☐
I	Are designated delivery areas provided on site? If not where do you envisage the delivery area to be?	The delivery area will be within the secure storage compound on site. Compound is proposed outside the flood zones at NGR: SU 72408 39474. Principal Contractor to manage requirements.	☐
J	Are there any issues relating to work at height?	The proposed design does not require any working from height activities. If working at height is deemed required once the construction phase commences, it shall be planned and undertaken in accordance with the Work at Height Regulations 2005 using appropriate access equipment and fall protection measures.	☐
K	Are there any other issues relating to access routes and designated working area?	There are no other issues relating to access routes and designated working area.	☐

Adjacent land use

Considerations		Comment	DRA
A	Does adjacent land form part of a footpath/right of way?	Around the perimeter extent of the site forms a public footpath, which is used by visitors to King's Pond. Temporary footpath closures will be required during the works. The nearest Public Right of Ways are located outside of the site boundary. To the north of the site along the River Wey beginning at the Lamports (NGR SU 72369 39618), to the south of the site on the opposite side of Ashdell Road (NGR SU 72135 39241), and across the railway line to the east of the site – running parallel to the site (NGR SU 72195 39452).	☐
B	Are there any properties that will be affected by the work?	Site works are in proximity to private properties along the north – western boundary of the site. Access to the main road (Ashdell Road) is via the site access and must remain open.	☐
C	Are there any schools or other vulnerable groups adjacent to the work?	Full customer impact assessment to be undertaken by principal contractor. There is a retirement home located on Austen Place, Lower Turk St, Alton GU34 1FZ which is approximately 150 m to the southwest of the site. Alton Infant school is located approximately 420 m to the East. Works are not expected to directly impact the school due to distance, although if the Public Right of Way is used as a commuting route for school children / staff, Temporary Traffic Regulation Orders will be implemented to ensure access.	☐
D	Are there any industrial premises adjacent to the work?	There are no industrial premises located adjacent to the site area.	☐
E	Could the current or historic adjacent land present a hazard?	Currently the site is located in a suburban residential setting and therefore heavy plant machinery and site activity presents potential hazards to the wider public, Heras fencing and suitable signage will be erected around site activities to minimise potential interaction with the general public. To the east of the site is a railway line, however this is beyond the site extent as such isn't considered a significant hazard to site operatives. The historic adjacent land use presents no apparent hazards to site activity.	☐

F	Have all adjacent landowners been informed of the work?	All adjacent and relevant landowners will need to be contacted prior to the works starting. This may be part of the public consultation. Suitable communication with local landowners and residents is required prior to start.	☐
G	Are there any other issues relating to adjacent land use?	Agreements will need to be made with the owners of the private residencies located to the north - east of the site, in relation to access.	☐

Nature of the watercourse

	Considerations	Comment	DRA
A	Will the normal flow of the watercourse cause a hazard to the proposed works?	The normal flow of the watercourse shouldn't cause undue hazard to the works. However, appropriate care and attention should be given to the water levels in channel and the safety of the workers. Principal Contractor to monitor conditions throughout construction and ensure best practice is followed.	☐
B	Is the flow of the watercourse likely to change during the duration of the works? *(Can it be controlled?)*	There will be some changes to the flow of the watercourse based on weather changes, however this can be managed through monitoring the weather. Workers should also sign up to EA flood warnings to receive automatic flood alerts to their phone. Principal Contractor to monitor flow changes and ensure best practice is followed. As the site is currently in a pond state, flow is minimal. The dredging option maintains the pond state therefore only minimally altering flow. Marginal reductions of the pond extent through bank re-profiling in the dredging option will modify flow however due to the scale of works the impact is likely minimal. The dredging option re-uses dredged sediment on site in bank re-profiling and berm installation activities. Therefore the overall balance of spoil influencing pond capacity will only be marginally altered, minimising impacts to flow. The pond and river option introduces new conveyance pathways to the site, reducing siltation by instigating significantly higher flow than is currently recorded at the site. Mitigation measures have been included in the outline designs to mitigate potential risks to the surrounding and downstream areas in relation to flow.	☐
C	Are there any weirs, sluices, outfalls or structures close to the works? *(Functional Isolation?)*	Yes, a culvert/sluice outlet modification currently reconnects with the River Wey at the downstream extent of King's Pond. A surface water outfall pipe system is also located towards the downstream extent of King's Pond.	☐
D	Are there any other issues relating to the nature of the watercourse?	King's Pond is an artificial waterbody which forms part of the River Wey waterbody, as such issues relating to sedimentation will always require management, so long as the pond is present.	☐

Overhead Services

Overhead service	Comment	DRA
Electric	One SSE low voltage power line enters the site from Waterside Court to the north of the site, the overhead cable covers approximately 70 m and terminates at the cottages located to the north –west of the site. As this powerline runs through the site extent it therefore requires mitigation measures. Principal contractor to liaise with SSE for suitable mitigations Several additional SSE service cables and Low Voltage power cables are present outside the site boundary, but are considered to be low risk due the distance from main routes to site.	☐
Telecoms	BT Openreach overhead cables run parallel to the site. No BT Openreach cables cross the site boundary or cross the primary access route. Several overhead lines are present along Wilsom Road to the north – east of the site, and could therefore be at risk of plant machinery accessing the site, mitigation measures to include Goal Posts at crossing points. All other overhead cable lines run along the side of the road and are therefore not considered an obstruction to plant machinery accessing the site.	☐
Private	No overhead private services.	☐
Other	No overhead other services.	☐

Underground Services

Underground service	Comment	DRA
Gas	A medium pressure mains SGN underground pipe runs beneath the pond extent at the upstream end of the pond. Several SGN Low Pressure Mains pipelines located to the north – east beyond the site extent and may be at risk of site access. Principal Contractor to contact utilities provider to establish appropriate mitigation measures to protect underground gas utilities.	☐
Electric	No underground electrical services.	☐
Water	The River Wey flows into the site via a culvert located at the upstream extent of King's Pond. Another outfall pipe/ culvert re-connects King's Pond, at the north-east end of the pond, to the downstream arm of the River Wey. A Hampshire County Council asset which drains King's View and Ashdell Road runs beneath the site, discharging to the north-east corner of King's Pond. A Thames Water drain is currently routed along Turk Street, beneath the railway bridge and through the site, outflow is located at a headwall adjacent to the inflow culvert. No other underground water utility is currently situated within the site boundary extent. A bridge weight assessment is required if crossing the culvert is required for the construction phase.	☐
Telecoms	Several AllPointsFibre cables and ducts are present within proximity to the site and can be located outside of the site boundary. No underground utilities are currently located within the site extent. An underground cable and duct utility lie underneath Ashdale Road and are therefore at risk of plant machinery accessing the site. Principal Contractor to confirm utility constraints and any abnormal loading requirements with the asset owner where applicable.	☐
Pipeline	No underground pipeline services on site.	☐
Private	No underground private utilities services on site.	☐
Other	No underground other services on site.	☐

SECTION FOUR: ENVIRONMENTAL

4. Environment and Sustainability

	Consideration	Details	DRA	Additional Information
A	Is there any recent environmental learning that specifically applies to this work?	N/A	☐	
B	Which documentation is relevant to this work? What issues have been raised from completing it? ☐ Environment Action Plan **OR** ☑ Environment Plan only	N/A	☐	E.g. Appendix 3 and an HRA (where applicable) Environment Plan – see section 2.1
C	Can the work impact on water quality, reduce oxygen levels or disturb silt in water?	Potential for mobilisation of fine sediment and contaminated silt throughout the works. Contractors should adhere to the sediment management plan requirements in the Construction Environmental Management Plan. The material has been classified as non-hazardous within the Contamination Assessment Report, in line with compliance with D1 waste exemption. Water quality and oxygen levels could be reduced by soil and concrete debris/dust entering the watercourse. Contractors should adhere to the sediment management plan requirements in the Construction Environmental Management Plan. Principal Contractor to mitigate for silt mobilisation with the use of cofferdams, dewatering, pond draining and/or silt curtains.	☐	
D	Is any waste to be created during construction and are there any issues which relate to this?	There should be minimal volumes of general waste created from site activities during the construction phase of the project, this will be managed and dealt with appropriately following waste	☐	

		management procedures. Site generated waste products such as excess spoil will be collected and transported off of site to designated sites. The work does not anticipate discovery and/or generation of hazardous, agricultural, industrial, biodegradable, or solid waste on site. If any of these waste varieties are found on site Principal Contractor to follow correct management procedure to appropriately remove from the site and be managed appropriately for the lifecycle of the waste. It is recommended further sampling is undertaken within the vicinity of TP05 to increase the dataset and provide further samples for delineation of the asbestos containing material, as per the Contamination Assessment Report.		
Efficiencies and improvements considered to reduce use of resources				
E	Can anything be re-used on site, can you avoid bringing in virgin materials e.g. soils?	Where possible virgin materials will not be used. Excavated spoil may be re-used on site in spoil re-use location to the south of the site. Removed invasive and ornamental tree species may be used on site to form parts of the large woody material needed to construct leaky dams and Large Woody Debris.	☐	
F	For works where aggregate will be used, can you use recycled aggregate?	Yes, but the aggregate must be appropriate to the local site context and be checked for contaminants, invasive species, pollutants.	☐	Recover, reuse or recycle more than 85% of recycled aggregates.

Consideration			Details	DRA	Additional Information
G	Can you achieve any savings related to carbon?		There will be savings made related to carbon in the form of using HVO fuel as opposed to diesel, as well as sourcing materials locally rather than importing to reduce transport costs.	☐	
H	Can any other efficiencies or improvements be achieved e.g. water reused, etc.?		Site-won materials will be used where possible to reduce carbon footprint of transporting materials. Site-won trees will reduce carbon footprint, invasive and ornamental trees will be preferentially selected for site works as this will also benefit local ecology.	☐	
I	Are there any other environmental issues? Have you checked if you need impoundment, abstraction licence, marine licence, flood risk activity permit?		Prior to mobilization, Principal Contractor to ensure relevant consents are in place as well as Planning Permissions. The activities on King's Pond will require draining or dewatering of sections of the pond at different points in order to carry out work. The River Wey is a statutory main river and therefore FRAP will be required.	☐	
Carbon Reduction Targets					
		Identify applicable targets for:-	HVO fuel will be used instead of diesel where possible to reduce the amount of carbon produced by the works. Excess spoil created through dredging activities will be reused on site and spread within the areas designated for spoil re-use. Any woody debris created through tree works will be installed on-site as berm features or left on site to construct hibernacula.	☐	
	☑	Reuse/recycling/recovery of waste* - Recover, reuse or recycle more than 90%			
	☐	Recycled aggregate - Use 85% in all construction projects			
	☑	Carbon in construction - 40% reduction			

Considerations Is a site within or could impact? Is the consideration applicable?		Applicable Yes/No	Details Risks/Hazards	Eliminate/ reduce by design / method statement Yes/No	Detail any specific control measures or actions that need to be communicated to the contractor or to address in method statement
1.1	Statutory designated sites e.g. SSSI, SPA, SAC, Ramsar, etc. (inc. potential permits, Appendix 4, 11)	No	The site extent does not cover any statutory designated sites.	N/A	N/A
1.2	Protected species (inc. potential licenses)	Yes	Herons, Geese, Swans, and Waterfowl were identified as nesting within the site extent as part of the Preliminary Ecological Appraisal (PEA). Although not sighted during the site walkover, varying degrees of potential for mammalian species including Badger, Otters, Water Voles, Dormice, and Bats was identified. A suitably qualified ecologist to undertake two surveys prior to construction, firstly in the spring/summer, followed by another in summer/autumn. The presence of reptiles and amphibian species was not	Yes	All site activity should occur during daylight hours, minimising noise and disturbance. Works to occur outside the breeding season of bird species. Attendance of a suitably qualified ecological clerk of works required during construction phase. Remain vigilant during construction, reporting any identified protected species found on site. Further monitoring will occur throughout the duration of the construction phase of the King's Pond project. Should protected species be subsequently identified as present within the site extent, mitigation measures will be implemented to minimise risk.

			identified during the Preliminary Ecological Appraisal site walkover, however the site does offer varying degrees of habitat availability and general suitability for amphibian species such as Greater Crested Newt, and reptiles species such as grass snakes.		
1.3	Priority Habitats and Species (fauna and flora) (inc. rare species, biodiversity action plan habitats)	Yes	The River Wey enters Kings Pond upstream and continues downstream. The River Wey naturally flows through the King's Pond sit, however the pond was created artificially, thus removing the chalk stream characteristic from the site extent. Areas of woodland are present on site, but contain non-native and ornamental tree species.	Yes	A suitably qualified Ecologist and Arboriculturist will be required to develop an appropriate methodology which will be used to select on-site trees for restoration activities such as berm creation and hinge trees. This will reduce impact to associated species such as birds and bats. Diseased trees will be preferentially selected over native healthy trees on site.
1.4	Invasive non-native species (weeds and animals)	Yes	Common Carp (*Cyprinus carpio*) is present within the existing pond extent. Canada geese (*Branta canadensis)* have been positively identified on-site.	Yes	Appropriate methodology of invasive species removal and disposal should be followed. Remain vigilant during construction and report any invasive species if encountered.

			Bamboo (*Bambusoideae spp*.) is present within the site extent. Japanese Knotweed (*Reynoutria japonica*) has been previously positively identified within the site extent. Ground Elder (*Aegopodium podagraria*) is present within the site extent. Buddleia (*Buddleja davidii*) has been positively identified within the site extent.		

	Considerations	Yes/No	Detail/Risks/Hazards	Action Yes/No	Action Details
1.5	Are there any enhancements that can be done to improve habitats (e.g. leaving woody debris on site, reusing gravels)?	Yes	Both options lay out a series of features and methods to enhance and support the existing ecosystem, whilst also creating habitats to increase site biodiversity and species abundance. The dredging option outlines the enhancement of the wet woodland area, improving wetland carr habitat. The installation of dead hedges along marginal areas will reduce access to dogs and visitors which will reduce disturbance of target species. The installation of silt traps will reduce sedimentation to the bed, maintaining water quality, and the removal of common Carp will also benefit target species by reducing turbidity and increasing macrophyte abundance. The river and pond option will provide a wider variety of flow dynamics within the site, benefitting a wider range of species. This will be achieved by creating the channel and backwater features to the site. Salmonids species benefit from a wider range of flow types at different times and points within their lifecycles. Marginal reed bed planting in both options will improve water quality and create wetland habitat for amphibians and reptiles.	N/A	N/A

			The removal of Non-native invasive species will also work to benefit native wildlife in both options.		
1.6	Have the requirements of WFD been considered?	Yes	The project aims to transform a sediment-impacted urban pond into a more resilient and ecologically valuable space. The scheme seeks to improve water quality, manage sediment accumulation, control non-native species, enhance biodiversity, and remain a valuable asset and space for the local community. The site is within Water Framework Directive (WFD) waterbody North Wey at Alton (ID: GB106039017800) and is currently rated as a Heavily Modified Waterbody with a 'Moderate' ecological status.	Yes	The river and pond option would re-introduce natural channel flow dynamics, more indicative of the normal flow regime of the river channel which would be naturally present on site. Both options provide mitigation to pollution of the watercourse, silt traps will be implemented at both upstream and downstream locations, in both options.

Note 1. Regardless of the quality and suitability these materials can still be classified as waste.					
2.1	Use of soils, recycled aggregate, river gravel or dredging spoil (including re-use on the site of production) *(See Note 1)*	Yes	There will be site-won spoil generated from site work.	Yes	All site-won soil, spoil, aggregates, and gravels on site will have appropriate management plans in place to ensure there is no land or water contamination. Principal Contractor to ensure best practice is followed.
2.2	Contaminated land (historic/ new)	No	All soil samples tested on-site were classified as non-hazardous.	Yes	Further testing for a asbestos required as per Contamination Assessment Report within the vicinity of TP05 to increase the dataset and provide further samples for delineation of the asbestos containing material.

2.3	Oil and chemicals management	Yes	There will be oils and chemicals on site through the use of machinery and tools.	Yes	All oils and chemicals on site will have appropriate management plans in place to ensure there is no land or water contamination. Principal Contractor to ensure best practice is followed.
2.4	Air or noise pollution and odour nuisance	Yes	This is a consideration due to the use of large machinery during the project.	Yes	Strict operating times will be implemented and when not in use the machines will be switched off and parked up to reduce the creation of all types of pollution. Principal Contractor to ensure best practice is followed.
2.5	Pollution prevention (including sediment control i.e. silt)	Yes	Silt disturbance and subsequent re-mobilisation will likely occur temporarily on-site due to site work activities.	Yes	Principal Contractor to utilise suitable and sufficient mitigations to manage mobilisation of silt during construction. These may include cofferdams and dewatering. Silt Curtains should also be utilised in addition to other mitigations.

3. Other Important Considerations					
3.1	Water abstractions, impoundment and discharge activities (including licences) Consult Water Resources/Water Quality	**NO**	Water abstraction and impoundment licences are not required.	N/A	N/A
3.2	Are there any other relevant environmental issues, e.g. heritage archaeology	**NO**	N/A	N/A	N/A

4. Extra / additional Information
N/A

Using materials on site

Considerations		Comment	DRA
A	Does the design require use of any hazardous materials not covered by standard COSHH assessments?	The design does not require the use of any hazardous materials not covered by standard COSHH assessments.	☐
B	Have you considered all means of removing or reducing the manual handling of materials in the design?	All manual handling tasks will be removed where possible and mechanical means will be employed instead. Principal Contractor to ensure best practice is followed.	☐
C	Are there any existing materials on site and have they been checked for possible contamination? i.e. Asbestos	The material has been classified as non-hazardous within the Contamination Assessment Report, we will be able to reuse on site in line with the D1 permit guidance. An Asbestos Management Strategy should be put in place so that any potentially asbestos containing materials are identified and removed from site in a suitable manner to prevent cross-contamination. It is recommended further sampling is undertaken within the vicinity of TP05 to increase the dataset and provide further samples for delineation of the asbestos containing material.	☐
D	Will any materials need to be cut or modified on site?	Wooden posts and large woody debris may be needed to be cut on site. There should be minimal other materials cut on site.	☐
E	Will any on-site welding be required?	No on-site welding will be required.	☐
F	Are there storage areas for materials on site?	There will be material storage areas designated on site within the designs.	☐
G	Are there means of loading and unloading materials on site?	Means of loading and unloading materials will be organised by the Principal Contractor prior to construction.	☐
H	Are there any other issues relating to materials being used?	No	☐

I	Are there opportunities to re-use materials on site?	Yes, spoil re-use at specific areas of the site. Ornamental and invasive tree species to be preferentially selected for large wood constructions. Where ornamental and invasive tree species is limited site-won material will again be used.	☐

Specialist Activities

Note: The following tasks have been identified as specialist activities and will require specific control measures

Considerations		Comment	DRA
A	Is tree work or chainsaw work required on site?	There will be a requirement for tree works and chainsaw works on site which will have its own risk assessment and method statement. These works should only be undertaken by an experienced and competent contractor and appropriate PPE relevant to the task should be worn. Principal Contractor to ensure best practice is followed.	☐
B	Confined space work	No confined space work has been identified within the current design information.	☐
C	Diving operations	No diving operations are anticipated as part of the proposed works.	☐
D	MEICA activities	No MEICA activities have been identified within the current design information.	☐
E	Are there any other issues relating to specialist activities?	No other specialist activities have been identified at the design stage. Any unforeseen specialist activities identified during construction shall be subject to appropriate risk assessment and control measures by the Principal Contractor.	☐

SECTION FIVE: CONSTRUCTION METHODOLOY

5. Buildability Statement

See attached buildability statement:

- 5080D – Buildability Statement_V2

SECTION SIX: DESIGN

6. Designers Risk Analysis

See attached designers risk assessment:

- 5080D – DRA_V3

SECTION SEVEN: PREVENTION

7. Hazard Plan

See attached hazard plan: (TBC)

SECTION EIGHT: THE PROJECT HEALTH AND SAFETY FILE

8. Health and Safety File

The Principal Contractor / Principal Designer shall **issue as final documents TWO paper copies and TWO electronic copies in MS Word (Docx format) and portable document format (pdf).**

The Project safety File (PSF) is reference xxxx (TBC)

Note that where an element or elements of the project works are returned to the client's control prior to the agreed practical completion date, a handover manual is required for the areas subject to early handover, and typically would contain Operating & Maintenance Information, relevant test and commissioning certificates and As-Built record Drawings.

The actual contents will depend on the nature of the works and residual risks associated with the works and would be agreed at the start of the project.