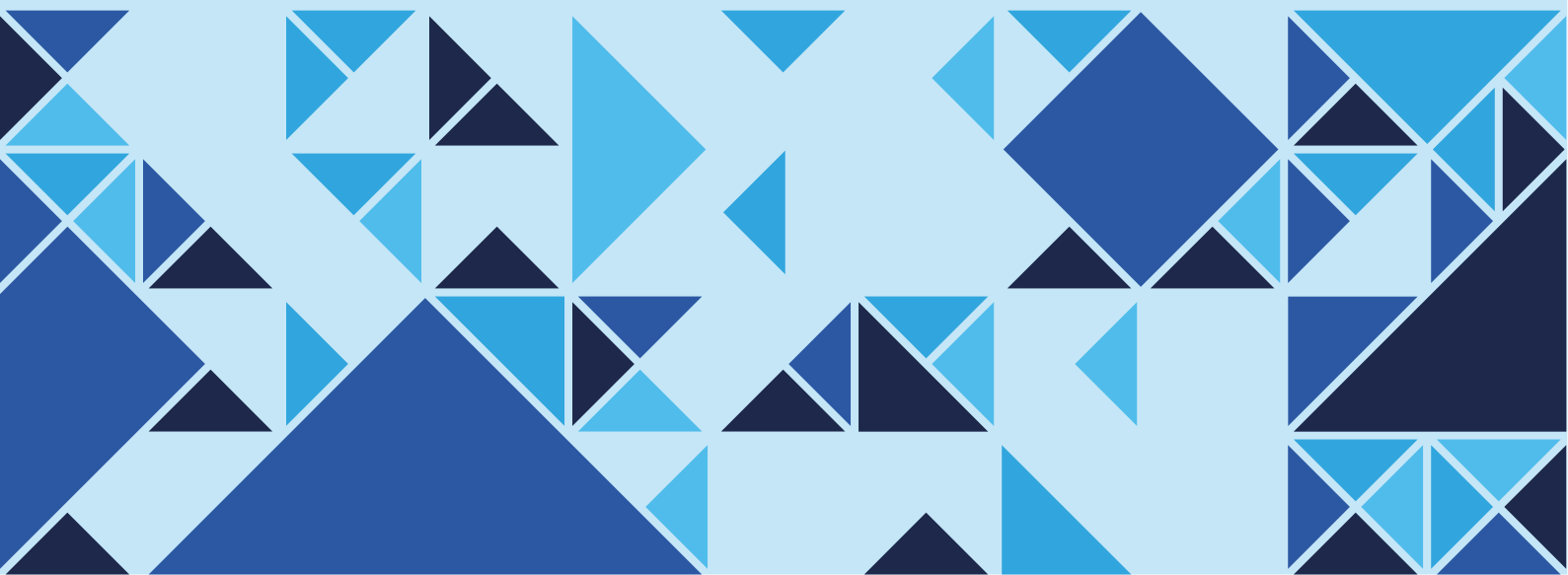




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Pleasley Vale Scoping Document

By Beaumont Rivers Ltd.
On Behalf of Bolsover District Council and
Dragonfly Management



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Introduction

Beaumont Rivers were commissioned to attend Pleasley Vale Business Park to assess a number of environmental and amenity enhancements and provide a roadmap to their delivery. The ambition and scale of the undertakings are significant, but they are commensurate with the outcomes, which present a wide range of environmental, social and economic benefits to the area.

In addition to these works, Beaumont Rivers also supplied immediate health and safety checks, through water quality testing and the provision of specialist Reservoir Engineer Dr Andy Hughes to ensure the embankment between Mill Pond 1 and the River Meden was safe and stable.

This report collates the available information to identify and prioritise the opportunities, emergencies, costs and benefits of restoring the site, and sets a roadmap to safe, efficient, and effective delivery.

Aims and Objectives

The works identified focus on maintaining and enhancing the natural environment from the current baseline to present a holistic range of environmental, social and economic benefits. These include:

- Reduce flood risk to Pleasley Vale Business Park and downstream communities.
- Improve the amenity value of the site for all members of the community.
- Improve health and safety for site users.
- Improve biodiversity on site.
- Improve water quality within the catchment.
- Improve compliance with the Water Framework Directive.
- Fulfil outstanding maintenance requirements.
- Implement infrastructure solutions to reduce future maintenance requirements.
- Maintain trees around the site to ensure public safety, improve accessibility and reduce nutrient/silt loading within the ponds.
- Develop an invasive non-native species (INNS) control programme, aiming to eradicate INNS, including mink.
- Trace and develop a greater understanding of the extant drainage network.

The Site

Pleasley Vale is a naturally occurring limestone gorge situated along the channel of the River Meden, roughly 3 miles north of Mansfield. The works centre on Mill Pond 1 of the historic Pleasley Mill complex (see map 1). Since the decline of the British textile manufacturing industry, the three mills and surrounding area were bought by Bolsover District Council, who have converted the site into a business park and outdoor education centre.

Although historically there was a system to divert the river into Mill Pond 1 at the upstream (western) extent, the pond (see photograph 1) is offline and fed by springs, groundwater and local drainage. During high rainfall events, the throughflow of the pond is substantial and drains directly into the Meden via an outfall at the southeast corner.

The River Meden is a main river that flows from west to east across the site (see map 1). Upstream of the mills, the river flows through a wooded floodplain. As it approaches the mills, the channel becomes progressively more modified for industry, but much of the redundant infrastructure, such as control structures, leats and ponds, has been removed or taken offline. Remaining modifications include culverting of the main channel underneath the mills, a weir at the culvert entrance, extensive hard engineered banks on either side, and the impoundment of Mill Pond 2 (see photograph 2), which is online. Both ponds are significantly silted up, resulting in high nutrient levels, eutrophication, a reduction in flood storage capacity and reduced amenity value.

Downstream of site, the historic industrial modifications are no longer required or maintained, so the geomorphology of the Meden is starting to recover. As can be seen on the mapping, the watercourse follows a more naturalised planform and progressively develops a more complex geomorphology within a more open floodplain, albeit not always within its original (natural) course. Although the river utilises this floodplain in high flows, in some locations, floodplain connectivity is disconnected by levees of sediment deposits left by the historic excavation and dredging of the channel.

Toward the downstream extent of the site is the paleochannel of the pre-industrialised watercourse (see map 1), which still delineates the county border of Derbyshire and Nottinghamshire. This curves north of the modern watercourse, defining the extent of a meadow used for grazing horses, before meeting the present channel near Church Lane Bridge. There are two disused flow control structures here (see map 1) that are identified as barriers to migration in the Environment Agency Fish and Eel Migration Barriers Database (Environment Agency, 2019).

North of the site is an ordinary watercourse known as the Forge Lane Drain (see photograph 3). This flows north to south towards Mill Pond 1 through a wooded valley, before being culverted beneath a local industrial area. The culvert surfaces briefly above the northern tip of Mill Pond 1 and is immediately directed into a new culvert that circumnavigates the pond and drains directly into the Meden.



Photograph 1 - Mill Pond 1, looking west



Photograph 2 - Mill Pond 2, looking east

Identifying the Scope of Works

Due to the range of environments and opportunities on site, there is a huge scope of work to be considered. The final scope collates over 65 separate options from:

- The site visit,
- The Reservoir Engineer Inspection,
- The water quality testing,
- The Natural Flood Management Scheme,
- The client's Biodiversity Net Gain ambitions,
- Subsequent discussions following the site visit.

These disparate works and their scopes are listed separately according to context, and then collated, prioritised, organised for efficiency, and priced below. Due to the breadth of scope and vast quantity of information associated with each individual point, this report avoids going into granular detail for the sake of clarity and brevity, but further information can be provided on any points requested.

Scope of Works Identified During the Site Visit

From the site visit and subsequent consultation, the following works are proposed:

- Dredge Mill Pond 1 to increase depth and area.
- Create easily maintainable silt trap adjacent to the Lodge car park and set reed beds.
- Reduce the size of the central island to original proportions, keeping the kingfisher nesting area and ensuring volume of pond does not exceed 10,000 cubic metres in case the Reservoirs Act (1975) reduces to that level (from 25,000 cubic metres) in 2027 (Hughes, 2023).
- Either restore the original island, currently in dry land in the silted-up area to be reclaimed to open water, or remove it entirely, depending on volume and possible future Reservoirs Act (1975) implications.
- Remove trees from area to be reclaimed along the north edge and face-off trees around the entire extent of the pond.
- Restore sluice mechanism where the canal meets the pond to ensure it is sealed, safe and clear with an interpretation board explaining the industrial heritage.
- Clear embankment of trees to enable inspection and maintenance of the asset (specified in the Reservoir Engineer Report, details below).
- Engineer new stoplogs for culvert where Mill Pond 1 drains into the Meden.
- Improve footpath surface around the perimeter of Mill Pond 1.
- Supply and install mink trap.
- Create educational interpretation boards at: Dredged pond(s), new silt trap and canal exit.
- Undertake any remedial works identified in culvert inspections (carried out separately).
- Investigate the feasibility / benefits of adding a sweetening flow to the canal and installing reed beds for ecological uplift, improved water quality and reduced flood risk.
- Install Natural Flood Management solutions upstream of Forge Lane and along main river (Meden) upstream of pond to reduce flood risk on-site, and Natural Flood Management solutions downstream of the mills to protect downstream communities (depending on funding). *See Natural Flood Management sections below.*

Delivered works

Following the site visit, Beaumont Rivers delivered the following works:

- Develop a natural flood management scheme for the area and apply for Environment Agency Natural Flood Management Programme funding.
- Emergency inspection of the embankment and impoundment structures to identify any structural, safety or maintenance issues by reservoir panel engineer.
- Undertake silt and water quality testing.

All reports from delivered works are included in the appendix.

Works Identified by the Reservoir Engineer Inspection

Following damage from the floods and asset exceedance, the embankment and impoundment structures required an emergency inspection to identify any structural, safety or maintenance issues. Beaumont Rivers commissioned leading reservoir panel engineer Dr Andy Hughes to carry out the inspection. Dr Hughes' report identified that although the structure is currently safe, there are a number of maintenance requirements that need to be met, including emergency works to avoid the embankment becoming unsafe, or even collapsing, in a future flood event.

Immediate (Emergency) Works:

- All damaged areas need to be filled with compacted cohesive material and the area topsoiled and seeded to provide a smooth, grass covered slope with good protection against flowing water.
- Smaller holes need to be filled with compacted topsoil and seeded to provide a smooth, grass covered slope with good protection against flowing water.
- Clearance of coarse vegetation, trees and saplings from the embankment, and in particular close to structures, to allow examination and inspection, which should be done at frequent intervals to look for signs of distress.
- Existing trees should be lopped and pollarded to keep them in balance, reduce their canopy and let light onto the surface.
- The approach to the spillway and the culverted section should be kept clear of any debris which could cause an obstruction.
- Any equipment (pontoons, kayaks etc) should be securely tethered so that they cannot float off and block the spillway.

Short- and Medium-Term Recommendations

- Carry out a full topographic and bathymetric survey.
- Carry out a full 'inspection' of the pond and facilities by a dam engineer informed by the flood study report – the vegetation clearance must have taken place prior to the visit.
- Carry out a flood study and routing calculation to understand the potential flood inflows to the pond.
- Regulate the crest to provide sufficient freeboard as defined by the study above.
- Provide a water level board.
- Provide an auxiliary spillway to provide sufficient spillway capacity as defined by the study above.
- Write an onsite plan (actions to be carried out in an emergency) and a pumping plan, to be able to reduce the water level in an emergency.
- Produce a plan of all culverts taking water away from the pond with a report on their condition (culvert reports currently underway separately).
- Investigate all inlet and outlet structures and report on whether they could be made operational.

Long-Term Recommendations

- Modify the overflow to remove any restrictions.
- Modify any screen such that they can easily be cleared of debris in a flood event.
- Make the inlet structure operable.
- Make the outlet penstock operable.
- Consider actuating inlet and outlet mechanisms so that they can be operated remotely.
- Consider the installation of telemetry, real time monitoring and camera surveillance.

Works Identified by the Silt and Water Quality Testing

Following the floods in 2023, Beaumont Rivers supplied silt and water quality testing to check that any contaminants from the flood had broken down or settled out of solution in order to ensure the site is safe for amenity use.

For context, it is common sense to avoid drinking water from rivers, ponds or the sea without treating it first. England has very poor water quality, with very few sites classified as having 'Bathing Water Quality'. There used to be two rivers where it was safe to swim (in Ilkley and Oxford), however, that figure is currently zero. At the time of writing (11.01.24) there are a total of seven stillwaters (lakes and ponds) in England where it is safe to swim. As a result, poor water quality is an inherent risk of water sports in the UK, and most inland centres operate with some form of contamination. The following statement is taken from British Canoeing's Paddlesafer safety information guidance document – version 6 (British Canoeing, 2022):

"All rivers, however clean they might appear will contain a level of natural contamination from things such as rotting vegetation, insects and animal activity. In addition to this there may be other types of contamination including algal blooms (blue green algae), sewerage or chemical contamination. Illnesses are normally caused by bacterial infection, viruses or toxins in the water."

The River Meaden at Pleasley Vale is part of the "Meden from Source to Sookholme Brook" Water Body. This water body has a poor ecological status and is not achieving good status due to pollution and its impacts, from sewage, transport and the agricultural sector. The catchment has also failed on chemical status due to levels of mercury (and its compounds) and polybrominated diphenyl ethers (PBDE) (Environment Agency, 2023). PBDE is the chemical that makes cloth fireproof and a key component in firefighting foam. Neither mercury or PBDE were identified in our samples, however some contamination was present from ammonia and oil & grease.

Ammonia is present to some level in all ponds and lakes. As alluded to by British Canoeing (2022), it's produced by natural decomposition processes and is usually metabolised by bacteria into nitrites and then different bacteria metabolise those into nitrates, and they get used up by plants and algae (generally in algal bloom). That ultimately dies and the chemicals get stored as silt/biomass or washed through. In a normal pond, levels of these chemicals would be balanced out through the bacterial populations that metabolise them. However, during a flood event these bacterial populations are flushed out of the lake, leading to elevated ammonia levels while they recover. Therefore, we can expect to see ammonia levels drop over time following floods and winter weather.

Oil and grease, however, are unexpected and indicate a local source of pollution. To identify the source of this pollution we will need to undertake further testing, including up and down-stream of Forge Lane and the landfill site, plus any significant drainage from engineering or food production facilities (cooking oils/grease) and roads (runoff). Once identified, polluters can be reported to the Environment Agency for enforcement if required.

Results from the silt were more positive, with no contamination identified. This supports the above hypotheses and shows that silt disposal for environmental benefit on surrounding farmland is a potentially feasible option for disposal during dredging works.

As part of the scope of works from the site visit, installing a silt trap with reed bed adjacent to the

Lodge car park would catch much of the biomass entering the pond, reducing the rate of infill and material to break-down and generate ammonia after flood events, as well as catching contaminants from the drainage network for storage and natural removal.

Recommendations

It is proposed that the water quality tests are repeated after the pond has had time to settle to see how the levels have changed. We also recommend undertaking tests along tributaries into the pond (upstream/downstream of potential pollution sources) to try and identify the source of the pollution. As this channel is upstream of the pond, this does not have to wait (though it will cost less if we do them all together). Ideally as a control it would also be useful to take a sample from the Meden, but this is not vital.

- A total of six tests are proposed at the following locations: Either end of the pond, up and down-stream extents of Forge Lane Drain, another between the landfill and engineering works on Forge Land Drain, one from the Meden and one more for any other significant tributary or drain leading to the pond.
- Depending on the result of testing, existing hazards to amenity users and the environment will be risk assessed with medical support, and a management procedure provided. It is likely that procedures will focus on minimising the ingestion of untreated water and washing hands before eating.

Environment Agency Natural Flood Management Scheme

Beaumont Rivers designed a Natural Flood Management scheme for the available area surrounding Pleasley Vale Business Park and applied for funding from the Environment Agency Natural Flood Management Programme. The scheme will cost between £182,000 and £302,000, depending on the extent of dredging. Successful projects are due to be announced in early 2024.

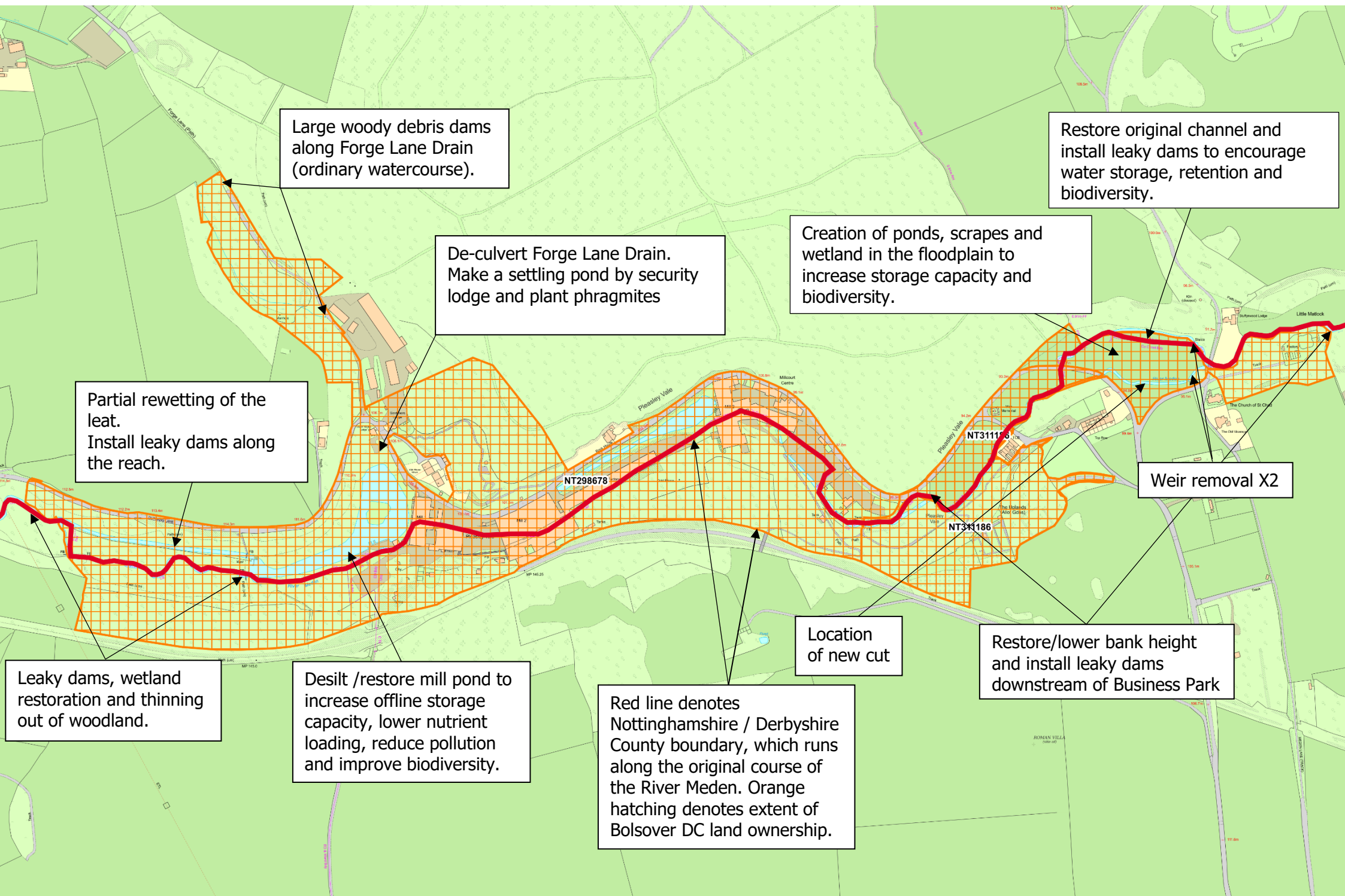
The works were designed to reduce flood risk to Pleasley Vale Business Park and downstream communities by improving the physical, chemical and ecological wellbeing of the river. By working with natural processes, the scheme will deliver a broad range of benefits, including:

- Reduced flood risk to Pleasley Vale Business Park and downstream communities.
- Restored channel geomorphology to improve resilience to extremes in flow rate.
- Improved wetland, riparian and terrestrial ecology of the area.
- Removed barriers to species migration.
- Improved WFD ecological status of the water body and encourage recovery to good (or high) status, with measurable Biodiversity Net Gain outcomes.
- Improved WFD chemical status of the water body and encourage recovery to good (or high) status.
- Improved WFD geomorphology status of the water body and encourage recovery to good (or high) status.
- New opportunities to educate a broad spectrum of the community, enhancing engagement with nature recovery.
- A contribution to our understanding of the benefits and mechanisms of natural flood management
- Promote Bolsover District Council and its partners as a flagship of best practise.

To achieve the above aims and objectives, the following works were proposed:

- Install leaky dams throughout the River Meden in Bolsover DC land ownership.
- Install leaky dams along Forge Lane Drain.
- Install leaky dams along the mill leat.
- Restore the paleochannel of the (original) River Meden as a wetland and use leaky dams to retain water during all flow scenarios.
- Improve paleochannel connectivity with the existing channel.
- Create ponds and scrapes in the floodplain to increase storage capacity and biodiversity.
- Reduce artificially raised bank height along the new cut to improve floodplain connectivity.
- Restore ponds to maximise offline and online impoundment volume, improve biodiversity, and reduce pollution and nutrient loading.
- Remove redundant flow control structures to improve geomorphology, flow and species migration.
- De-culvert Forge Lane Drain at the downstream end to reduce flow directly into the Meden during flood events.
- Install an easily maintainable settlement pond to minimise siltation of the mill pond following Forge Lane Drain deculverting works, which will minimise the reduction of offline flood storage capacity over time.

Map 1, below, shows the locations of these works.



Large woody debris dams along Forge Lane Drain (ordinary watercourse).

Restore original channel and install leaky dams to encourage water storage, retention and biodiversity.

De-culvert Forge Lane Drain. Make a settling pond by security lodge and plant phragmites

Creation of ponds, scrapes and wetland in the floodplain to increase storage capacity and biodiversity.

Partial rewetting of the leat. Install leaky dams along the reach.

Weir removal X2

Leaky dams, wetland restoration and thinning out of woodland.

Desilt /restore mill pond to increase offline storage capacity, lower nutrient loading, reduce pollution and improve biodiversity.

Location of new cut

Restore/lower bank height and install leaky dams downstream of Business Park

Red line denotes Nottinghamshire / Derbyshire County boundary, which runs along the original course of the River Meden. Orange hatching denotes extent of Bolsover DC land ownership.

Map 1 - Proposed works and overview of site

Natural Flood Management *Without EA Funding*

As described in the Natural Flood Management report previously delivered (Beaumont Rivers, 2023), Pleasley Vale offers substantial opportunities for natural flood management, which would significantly improve flood risk to Pleasley Vale Business Park. The scheme would also result in substantial biodiversity uplift (or biodiversity net gain, depending on viewpoint) and improvements to physical, chemical and ecological WFD (Water Framework Directive) metrics, which are used to monitor the health of the aquatic environment.

If unsuccessful with the funding bid, it would be sensible to consider a smaller, more affordable version of the scheme that focusses on protecting the business park. This would include only the measures upstream, including:

- Install large woody debris dams along Forge Lane Drain.
- Install large woody debris dams along the Meden, upstream of Mill Pond 1.
- Wetland restoration and thinning the woodland along the Meden, upstream of Mill Pond 1.
- Potential partial rewetting of the leat, with potential large woody debris.
- De-culvert Forge Lane Drain and make a settling pond.

Although we have not modelled the impacts, these measures would have a measurable impact on the onset and severity of flooding on site. Combining NFM measures with the dredging of Mill Pond 1 would provide a substantial level of protection to the Business Park, and if delivered simultaneously would be an affordable option.



Photograph 3 - Forge Lane Drain, looking upstream

Biodiversity and BNG Improvements

The works identified focus on restoring or working with nature to provide the desired social, economic and environmental outcomes. This ensures a resilient design that delivers maximum value for money, and also delivers significant biodiversity net gain, which is compatible with local and national public sector targets, including the Bolsover District Council Local Nature Recovery Strategy and Action Plan 2022 (Derbyshire Wildlife Trust, 2022).

To assess the level of biodiversity net gain requires an Ecological Impact Assessment (EclA). This will highlight all existing ecological constraints and support the design in providing maximum ecological outcomes, culminating in a Biodiversity Net Gain Score for the works. It will also ensure that none of the works are detrimental to the environment or contravene environmental law (spawning season, nesting season, pollution prevention, etc.) avoiding reputational harm or even prosecution of the project team. Providing evidence of this will be vital for the permitting phase.

The results of the EclA can then be used to support ongoing monitoring and reporting on the client's broader environmental objectives (local policy, government targets, etc.).

Current ecological constraints foreseen include:

- Protected species on site,
- Invasive non-native species on site,
- Bird nesting season,
- Fish spawning season,
- Bat nesting sites,
- Fish rescue ahead of large-scale dredging works.

Feasibility Study of Mill Pond 1 Flood Storage Reservoir

The implementation of the natural flood management scheme and dredging of areas that are currently above the waterline will significantly improve local flood risk. To maximise use of the available resources for flood risk management, there is the potential to utilise Mill Pond 1 as a formal flood storage reservoir. This would provide a huge amount of protection to the business park and areas downstream, but also come with a multitude of legal responsibilities.

The feasibility study would build on the information gathered throughout the planned works in combination with additional modelling to assess the costs, benefits and deliverability of the scheme, locally, and to areas downstream.

The feasibility study would provide all information required to fully deliver or discount the scheme, including:

- Nature of the site
- Capacity of the structure
- Results of modelling and impact on flood risk
- Results of modelling and impact on drought
- Full engineering inspection and report on the existing structure by Reservoir Panel Engineer
- Outstanding maintenance requirements.
- Available and preferred options
- Outline design and scope of works required to convert pond to a flood storage reservoir
- Operational procedures to utilise flood storage reservoir
- Reservoir ownership and management structure
With Bolsover DC consent, management will be offered to, or discussed with, the Environment Agency to ensure appropriate flood risk management funding, depending on Bolsover DC's wishes and legal position.
- Legal rights and responsibilities of the reservoir owner and operator.
- Emergency planning
- Public safety
- Ecological impacts
- Maintenance requirements
- Construction and maintenance costs and benefits
- Further documentation required (operational instructions, off-site plan, blue book, etc.)
- Permitting for construction and impoundment
- Route to delivery
- Funding sources
- Feasibility of the project
- All other information required to fully deliver or discount the project.

Further details will be provided should Bolsover DC wish to fully explore this option.

Additional Services

Although not identified as immediately required, Beaumont Rivers can provide as much support with current or future environmental or modelling works as Bolsover DC / Dragonfly Management Ltd requires. This includes reviewing works and providing feedback, assisting with scope, managing contractors, providing meeting support, or undertaking modelling works with our delivery partners.

We aim to deliver maximum results and value for our clients, so ad-hoc advice will be given freely where possible. However, if further works are required, Beaumont Rivers would be delighted to quote for:

- Any modelling work required.
- Independent review of modelling by third parties.
- Project manage modelling work by third parties.

Additional services have not been included in the Next Steps, Roadmap to Delivery or pricing.

Next Steps

Given the scale and diversity of the scope, actions have been designated priorities according to safety and operational efficiency and broken down into a manageable workstream. Tasks have been assigned numbers, which correspond to costings and future organisation.

Priority 1: Works pertaining to safety and efficient delivery

- 1) Permitting for Priority 1 emergency works.
- 2) Undertake water quality testing.
- 3) Write scopes, procure 3 quotes for survey and construction works, assess quotes, make recommendations.
- 4) Construction attending to all immediate requirements in Reservoir Engineer's report.
- 5) Channel survey for Natural Flood Management scheme design (only required for the Meden and Forge Lane Drain, but may not be required if there is a pre-existing survey).
- 6) Identify source of oil/grease pollution.
- 7) Permitting for Priority 2 works, inc. NFM
- 8) Planning and design for Priority 2 works.
- 9) Ecological Impact Assessment with BNG calculation for Priority 2 works.
- 10) Flood Risk Assessment if required for funding or permitting authorities.
- 11) Write an onsite plan for Mill Pond 1 (actions to be carried out in an emergency) and a pumping plan to be able to reduce the water level in an emergency.
- 12) Site visits to facilitate the above – to be agreed as required.

It is imperative that the emergency works are delivered before winter 2024.

Priority 2: Works pertaining to flood risk, amenity, and economic development

- 13) Construction works identified during site visit.
- 14) Construction works identified in the short-, medium-, and long-term recommendations in Reservoir Engineer's report (not inc. surveys, modelling, or works reliant on them).
- 15) Construction of Natural Flood Management measures.
- 16) Post-works, pre-demobilisation Reservoir Engineer inspection.
- 17) Site visits to facilitate the above – to be agreed as required.

If permitting goes smoothly, it would be optimal for these works to be undertaken during summer 2024.

Priority 3: Modelling and feasibility

- 18) Undertake as-built survey of dredged pond and drainage basin (as required by Reservoir Engineer), including culvert details and new NFM scheme.
- 19) Carry out a flood study and routing calculation to understand the potential flood inflows to the pond.
- 20) Model the capabilities of Mill Pond 1 to act as a flood storage reservoir.
- 21) Using above modelling, undertake feasibility study of utilising Mill Pond 1 as a flood storage reservoir.
- 22) Prepare scope/outline design of construction works required to utilise Mill Pond 1 as flood storage reservoir. Including (taken from Res. Engineer recommendations):
 - Regulate the crest to provide sufficient freeboard as defined by the study above.
 - Provide an auxiliary spillway to provide sufficient spillway capacity as defined by the study above.
 - Costings for detailed design and construction. This is impossible to quote for at this stage as the scope is unknown.

Roadmap to Delivery

These works will be carried out close to the order shown overleaf (Next Steps) by the 3-stage roadmap to project delivery. Not all tasks require all three stages, and each will be delivered to agreed timescales, similar to the order presented. Any services not required can be removed from scope and the pricing updated.

Construction works will be managed according to The Construction (Design and Management) Regulations 2015, with Beaumont Rivers operating as Client or Designer as needed.

Stage 1: Feasibility and Design:

This relates to the construction works in priority 1 and 2, and modelling and feasibility in priority 3.

This stage works with opportunities and constraints to produce feasible designs that achieve the project objectives. Supporting works, such as water quality testing will be carried out as part of this. Pre-application engagement will be undertaken with the permitting authorities to ensure all requirements or concerns are attended to before the final application is submitted in stage 2.

Stage 2: Permitting:

These works involve works on main river and ordinary watercourse, so permits are required from Derbyshire County Council (Land Drainage Consent) and the Environment Agency (Environmental Permit).

The scheme also includes felling trees in a conservation area, which means that a Felling License is required from the Forestry Commission. These are provided free of charge, so long as detailed designs and impact assessments are completed appropriately (these will be done as part of the detailed design phase).

As the scheme is being undertaken by Bolsover District Council, these works can be undertaken through permitted development, avoiding the requirement for planning permission and associated costs.

The actual paperwork for these permits is relatively straightforward and requires little resource allocation. However, the subsequent engagement with each authority requires significant resource over an extended time period.

To minimise the impact of permitting timescales on the project, we will undertake priority 1 groundworks under emergency procedures, which enable faster delivery. There is a solid case for doing this as a repeat flood event could further weaken the embankment and lead to a serious incident, similar to those at Whaley Bridge or Wainfleet in 2019. While these construction works are underway, we will be undertaking engagement for the priority 2 permits. Ideally, this will produce a smooth workflow, however permitting is invariably a lengthy process.

Stage 3: Construction:

Through effective management of the permitting process, it is hoped that priority 1 construction works will be delivered during spring/early summer 2024, and priority 2 delivered shortly after, however, this is contingent on the permitting process. It is feasible that construction for priority 2 works will be carried out during the summer of 2025.

To ensure fair competition and best value for the client, quotes for works will be obtained from a minimum of 3 contractors. These will be assessed by Beaumont Rivers for safety, value and quality of deliverables and presented to the client with a recommendation. The client will make the final decision.

Schedule of Costings

Costings	Task No.	Task	Cost	Further Details
Priority 1	1	Permitting for Priority 1 emergency works (not inc. permitting costs).	£2,000	
	2	Undertake water quality testing.	£790	
	3	Write scopes, procure 3 quotes for survey and construction works, assess quotes, make recommendations.	15%	Contract Management Fee. Three quotes to be obtained from suppliers.
	4	CDM Construction Project Management for Priority 1 emergency works.		
	5	Channel survey for Natural Flood Management scheme design (may not be required).	15%	Contract Management Fee. Three quotes to be obtained from suppliers.
	6	Identify source of oil/grease pollution.	£1,000	
	7	Permitting for Priority 2 works, inc. NFM (not inc. permitting costs).	£3,000	
	8	Planning and Design for Priority 2 works.	£9,000	
	9	Ecological Impact Assessment with BNG calculation for Priority 2 works.	15%	Contract Management Fee. Three quotes to be obtained from suppliers.
	10	Flood Risk Assessment if required for funding or permitting authorities.	15%	Contract Management Fee. Three quotes to be obtained from suppliers.
	11	Write an onsite plan for Mill Pond 1 (actions to be carried out in an emergency) and a pumping plan to be able to reduce the water level in an emergency.	£3,500	
	12	Site Visits (2 days quoted).	£2,000	
Priority 1 Total (not inc. contractor management fees)			£21,290	
Priority 2	13, 14 & 15	CDM Project Management for Priority 2 construction works.	£22,000	
	16	Post-works, pre-demobilisation Reservoir Engineer inspection.	£2,160	
	17	Site visits (2 days quoted).	£2,000	
	Priority 2 Total			£26,160

	Task No.	Task	Cost	Further Details
Priority 3	18	Undertake as-built survey of dredged pond and drainage basin (as required by Reservoir Engineer), including culvert details and new NFM scheme.	15%	Contract Management Fee. Three quotes to be obtained from suppliers.
	19	Carry out a flood study and routing calculation to understand the potential flood inflows to the pond.	15%	Contract Management Fee. Three quotes to be obtained from suppliers.
	20	Model the capabilities of Mill Pond 1 to act as a flood storage reservoir.	15%	Contract Management Fee. Three quotes to be obtained from suppliers.
	21	Using above modelling, undertake feasibility study of utilising Mill Pond 1 as a flood storage reservoir.	£6,000	
	22	Prepare scope/outline design of construction works required to utilise Mill Pond 1 as flood storage reservoir.		
	Priority 3 Total (not inc. contractor management fees)			£6,000
Combined Total (not inc. contractor management fees)			£53,450	Plus VAT and Expenses
Expenses (anticipated)	Mileage		HMRC Rate	Currently 45p/mile
	Hotel Accommodation		£60 p/n	Not likely to be used

Conclusion

The above proposal identifies broad-stroke requirements to deliver a holistic project that secures a sustainable future to the business park and local environment. Not all of these proposals will be taken forward, so the costings above are provided as a menu for the client to pick and choose as they wish. Although we have suggested an order of priority, this can also be changed should the client have differing needs, and we are always open to adding more to the scope if we can add value. The exceptions to this are the emergency works specified by the Reservoir Panel Engineer. Although the embankment is currently safe, this could change fast during a future flood event and needs addressing at the earliest opportunity - certainly before winter 2024.

The scope of works includes a number of environmentally and legally complex tasks. Beaumont Rivers' specialist skills, knowledge and experience will ensure that the project is delivered safely, efficiently, and with maximum results. This site presents great opportunity to utilise those capabilities to benefit people, ecology and the environment equally. It is also a chance to protect and safeguard the future of Pleasley Vale Business Park, its cultural heritage, and its future; unlocking opportunity for investment and economic growth in the area, vastly contributing to the wellbeing of local people.

The improved habitats will be a new resource for endangered species to colonise, and although those currently missing will not appear overnight, restoring their habitat significantly improves their opportunity to thrive.

This is a great opportunity for the council to deliver first class, measurable results in priority areas for people, the environment and the economy, highlighting best practice for the public sector.

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Appendix

- Pleasley Vale Natural Flood Management Project
- Silt and Water Quality Testing Results
- Reservoir Engineer Inspection Report



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