



ODN Supporting Paper – SBCE Drainage Options

DATE: 14 March 2025

TITLE: South Bristol Cemetery Expansion Project - Report on investigation into alternative drainage solutions which avoid the Colliter's Brook SNCI

Executive Director lead: John Smith: Executive Director for Growth & Regeneration

Purpose of Briefing:

This document records the work conducted between October 2024 and March 2025 to explore alternative drainage solutions for the South Bristol Cemetery expansion project, aiming to avoid the SNCI. It also captures the decision made by the Executive Director of Growth and Regeneration, in consultation with the Chair of the Public Health and Communities Policy Committee, to proceed with the Baseline Option outlined in this briefing paper.

Background:

Bristol will run out of planned burial space by the end of 2026. At the Public Health and Communities Policy Committee meeting of 11 October 2024, the South Bristol Cemetery Expansion Project was approved to provide up to 870 additional standard coffin burial plots plus provision for other memorialisation in an area of land to the south of the existing cemetery, known as Area 1. This approach avoids expanding the cemetery into the adjacent Colliters Brook SNCI area (Site of Nature Conservation Interest) which has been the subject of a public challenge focussed on avoiding harm to the ecological value of the SNCI.

The project included environmental mitigation measures and proposals to restore lost and damaged grassland within the SNCI, these measures were sufficient to achieve the Biodiversity Net Gain (BNG).

Achieving the additional burial capacity requires new drainage infrastructure, to include laying a drainage carrier pipe and constructing a storm water attenuation pond. As these were proposed to be located within the SNCI, the Committee included a requirement for officers to: *'prioritise investigating alternative drainage solutions that do not rely on systems running through the SNCI' and to 'consider all mitigation options, and no final decisions regarding drainage infrastructure will be made without thorough assessment of the environmental impact and the feasibility of alternatives.'*

The project team have completed the required drainage investigation, reconfirmed the environmental impacts of the baseline option and considered the planning implications of any change to the scheme. This briefing paper presents a summary of the findings and seeks a decision on the next steps for the project.

Key points to discuss:

1. When reading these discussion points, please note:
 - a. The 'Baseline Option' refers to the original drainage design which received planning consent

in April 2024, as refined during detailed engineering design and reduced in size to reflect the PH&C Committee decision in October 2024 to remove the Area 3 burial area from the SNCI. The Baseline Option comprises an attenuation pond located near Colliters Brook in the SNCI and a drainage carrier pipe of 300mm diameter connecting the proposed Area 1 burial area to this attenuation pond.

- b. The Baseline Option features a storm water attenuation pond with a permanent water depth of 400mm (16 inches), albeit potentially subject to drying out in periods of low rainfall. This feature is therefore referred to as the Attenuation Pond, although in some documents it is also referred to as an Attenuations Basin, and attenuation storage. An Attenuation Basin is designed to remain dry most of the time.

2. **Ecological impact of the consented scheme (Baseline Option)** - The project ecologist, Rupert Higgins (Wessex Ecological Consultancy) attended site on the 22 October 2024 to renew the assessment of the grassland within the SNCI. Potential alternative attenuations pond locations were also reviewed.

- **The original site of the attenuation pond remains as described in previous reports:** Species-poor semi-improved grassland with tussocks of hard rush. Creation of an attenuation pond here could create a more ecologically valuable habitat than exists at present.
- **Proposed pipe route:** Most of the grassland through which the proposed pipe route passes is species-poor semi-improved grassland and none of the most important grassland areas on the SNCI would be affected. This is another area where the working methodology would have to include consideration for ecological restoration, but if carried out sensitively the works could be completed without any adverse impact. Enhancement could be achieved by clearing back nearby patches of bramble.

In summary, the consented drainage design does not impact the areas of higher value grassland of the Colliters Brook SNCI. This is a key consideration in assessing the comparative justification for alternative locations of the drainage attenuation pond where there is a necessity for hedge and tree removal (As in Options C and D described in paragraph 5 below).

3. **Drainage Investigation** - AtkinsRealis were commissioned to investigate alternative drainage design options which avoid the Colliters Brook SNCI. The investigation focused on alternative drainage routes and alternative locations for the attenuation pond. This briefing paper summaries the results of this study.
4. **Drainage Routes** – Two alternative drainage carrier pipe routes avoiding the Colliters Brook SNCI were investigated (Options A and B). Neither option was considered feasible due to insufficient downstream drainage capacity and the high cost of constructing a new pumping station to overcome upslope gradients, along with other technical, legal, policy and operational constraints. Consequently, the drainage engineer recommended against progressing either option. AtkinsRealis estimated the additional costs (excluding downstream system upgrades) at £365k and £481k, respectively, over the Baseline Option, which uses a gravity system and attenuation pond in the SNCI.
5. **Alternative locations for the Attenuation Pond** – AtkinsRealis assessed two alternative designs for the storm water attenuation pond, both utilising space at the edge of the cemetery, outside of the

SNCI. The primary alternative (Option C) involves excavating an open pond in the western corner of Area 1. Due to the challenging topography, achieving the necessary pond volume would result in the loss of approximately 100 grave plots and the removal of around 70 meters of tree line, including Lawson Cypress overgrown hedging, 7 mature Hybrid Black Poplars, and 4 mature White Willows.

The cost of this option was estimated at £258k over the Baseline Option. The removal of trees and the loss of burial space, coupled with the additional cost and the impact of construction works on cemetery users and infrastructure makes this option less preferable than the baseline in terms of cost, ecological impact, construction risk, and operational disruption. However, it does avoid works on an attenuation pond within the SNCI.

A secondary design was considered (Option D is a sub option of Option C) which comprised a buried attenuation tank, constructed of modular geocellular crates, buried a minimum of 600mm below ground. This option is more space efficient, potentially negating the loss of burial space, however this option would also require the loss of mature trees which should be compared against the lesser ecological impact of the Baseline Option. The cost of Option D is £552k over the Baseline Option.

Note regarding removal of trees and the protection of nesting birds (Options C and D):

- The removal of trees would require the development of an updated compensatory planting proposal to ensure the requirements of the current Bristol City Council Policy DM17 policy or subsequent amendments are met.
- The bird nesting season may be a constraint to the programming of construction works requiring the removal of hedges and trees, this is defined by Natural England as ‘main nesting and breeding season from 1 March to 31 August.’

6. Summary of Option Costs and Impacts

AtkinsRealis have updated the construction cost estimate for the Baseline Option to reflect the removal of Area 3 from the project. Costs for the alternative options have been estimated to reflect the extent of the design development of these options. Neither Option A or Option B are considered feasible due to the cost of additional downstream works and other constraints including third party land ownership and reliance on third party drainage assets.

Table 1 - Drainage Works Construction Cost Comparison (£)

Option	Drainage & Pond Cost	Additional cost above Baseline Option	Notes
Baseline Option	£ 463,000	£ -	Attenuation pond size reduced by 25% to reflect removal of Area 3 from the SNCI. 300mm pipe to outfall. No additional tree and hedge removal.
Option A*	£ 828,000	£ 365,000	Excludes O&M** costs and downstream system upgrade costs. Assumes Option C pond. Avoids SNCI.
Option B*	£ 944,000	£ 481,000	Excludes O&M** costs and downstream system upgrade costs and land acquisition costs. Assumes Option C pond. Avoids SNCI.
Option C	£ 721,000	£ 258,000	Requires loss of 100 burial plots, removal of approx. 11 mature trees and hedgerow. Avoids pond in SNCI. 225mm pipe to outfall through SNCI.
Option D	£ 1,015,000	£ 552,000	Requires removal of approx. 11 mature trees and hedgerow. Minimal loss of burial plots expected. Avoids pond in SNCI. 225mm pipe to outfall through SNCI.
*Neither Option A or Option B considered feasible – See paragraph 4 for detail			
**Operation and maintenance cost of pumping station – E.g. Routine inspection, cleaning, servicing, maintenance, electricity.			

7. Budget status

Funding of £2.4m was approved by the BCC Cabinet on 23rd January 2024. This funding delivered two new Burial Areas (Area 1 and Area 3) with associated new drainage infrastructure and SNCI restoration. The funding also provided for the repairs to the existing Muslim Burial Area (completed during 2024) and the construction of a new Muslim Baby Burial area. Delays in the project start date and the investigation into alternative drainage solutions have introduced additional costs to the scheme. The decision to omit the Area 3 burial area from the project scope has reduced the overall cost by an estimated £346k. However, the 2000 new double depth coffin burial plots in Phase 1 and future Phase 2 of Area 3 will no longer be delivered.

Table 2 - Cemetery Expansion Total Works Cost Estimate and Budget (£m)

	Baseline	Option A*	Option B*	Option C	Option D
Total Works Cost Estimate**	1.78	2.16	2.27	2.05	2.35
Council contingency of 20%	0.36	0.43	0.46	0.41	0.47
Total Works Cost inc. contingency	2.14	2.59	2.73	2.46	2.82
Approved Budget (inc. Area 3 £346k)	2.40	2.40	2.40	2.40	2.40
Forecast Outturn Balance of Budget	0.26	-0.19	-0.33	-0.06	-0.42

* Option A and Option B greyed out as not considered feasible – See paragraph 4 for detail

**Costs assume construction during Q3 2025

With the 20% contingency included, only the Baseline Option is forecast to remain within the

approved budget envelope.

8. Programme Impacts

Options A, B, C, and D necessitate constructing a new attenuation pond in the northwest corner of Area 1, extending beyond the existing consented red line planning boundary. This will require submitting, considering, and determining a new planning application. Additionally, it is likely that further planning conditions will need to be discharged before commencing works. Consequently, construction on the drainage system is unlikely to begin before the drier 2026 construction season.

For Options A, B, C, and D, the construction of the new cemetery burial area in Area 1 is dependent upon first completing the new attenuation pond in the same area. This dependency extends the construction period, and this cost has been factored into the construction costs presented in Table 1. Consequently, the entire project would need to be completed in the latter half of 2026. However, construction price inflation and additional management costs for a 2026 works have not been included in the cost estimates in Table 1.

Considering the Baseline Option, it is anticipated that site works can commence in 2025, but only once the following activities have been completed:

- Discharge of pre-commencement planning conditions, included revision of LEMP (Landscape and Ecological Management Plan) and revising the BNG (Biodiversity Net Gain) calculation to reflect reduced scheme
- Completion of Detail Design to reflect reduced scheme (potentially including procurement of designer)
- Construction contractor procurement

Other programme considerations include:

- Bird nesting season – Constraints on removal of nesting habitats, scrub and bushes etc.
- Application for an EA Flood Risk Activities permit for drainage discharge into Colliters Brook.
- Completion of any LEMP activities – such as scrub clearance for grassland restoration.

9. In consultation with the resident of the neighbouring Yew Tree Farm, another drainage route option was considered which utilised the existing Wessex Water drainage system, making a connection within the neighbouring Yew Tree Farm. Land level survey was completed, however this confirmed there are insufficient falls in ground levels to make this a feasible drainage option without introducing a siphoned system. Due to requirement to use of land outside the council ownership and control, this option would also potentially require complex third-party liaison. For these two reasons this option is not being progressed.

10. Implications for Planning Consent – Rapleys LLP provided advice on the planning implications of any changes to the scheme.

- **Alternative location for attenuation pond** - Where an alternative location for an attenuation pond is required, a separate new application is considered necessary. The existing consented application for the scheme would remain in place for the cemetery expansion works in Area 1.
- **Adjustment to land drainage route only**
The consented redline boundary does not reflect the drainage pipe route which avoids the MG5 grassland. To ensure the least ecologically impactful route is selected, the final alignment

of this pipe was always intended to be determined during the post planning detailed construction design and engineering phase.

Schedule 2, Part 12 & 12A of the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended) allows for Local Authorities to carry out maintenance and improvement works on their land. Advice from Rapleys LLP and initial feedback from an enquiry to the LPA suggest the selection of an alternative drainage route outside the consented redline boundary could be undertaken as permitted development, without the need for a new separate planning application. This provision is applicable for up to 200m³ of development; therefore this is only relevant if the attenuation pond (reduced in size) remains in the consented location within the SNCI. An application to the LPA for a Lawful Development Certificate (LDC) will determine whether the drainage realignment works are permitted development.

A new separate planning application will likely take at least 6 to 9 months to submit, process and determine.

11. **Carrier drainage pipe sizing** – AtkinsRealis have revised the sizing of the main carrier drainage pipe up to a 300mm diameter pipe where the attenuation pond is sited at the bottom of the slope within the SNCI. Intermediate inspection chambers would be 600mm diameter and made of plastic. To ensure the least impact to the grassland, a construction methodology for the installation of this pipe would be developed with an ecologist and the contractor.
12. **Flood Risk Activity Permit and Outfall Location – Colliters Brook** - Once a decision is made on the preferred drainage design, if relevant a review of the drainage outfall location into Colliters Brook will be undertaken to assess the merit of revising the discharge pipe route away from the mature oak tree. An alternative route is available which removes more bramble and thorn scrub and a number of younger trees but removes any risk to the oak tree.

The drainage discharge location and design will be subject to the granting of an Environment Agency Flood Risk Activity Permit.

Officer recommendation (record of decision):

On 11th October 2024 the Public Health and Communities Policy Committee ‘Authorised the Executive Director Growth and Regeneration in consultation with the Chair of the Public Health and Communities Policy Committee to take all steps required to progress the preferred option...’ This decision was to be taken following the completion of investigations into ‘alternative drainage solutions that do not rely on systems running through the SNCI.’

The decision was made at the following sequence of meetings:

10 February 2025 – Project Board – The initial findings of the investigation were presented to the Project Board, chaired by the Executive Director of Growth and Regeneration. Officers provided a draft report, which included the recommendation that the updated Baseline Option be considered the only viable solution. Alternative options were assessed and found to be realistically unfeasible (requiring extensive downstream system upgrading), prohibitively expensive, or required the removal of a significant number of

trees.

After detailed consideration of the options presented in the investigation, the Executive Director of Growth and Regeneration accepted the recommendation that the Baseline Option be regarded as the preferred choice.

This choice was based on the outcome of the consultant investigation into construction feasibility, cost, and the balance of ecological impact between the removal of mature trees and hedgerows in options C and D, in contrast to the impact on the lower-value grassland at the proposed site of the attenuation pond within the SNCI. The potential impact of the construction works on cemetery users and the potential loss of burial space and income were also considered in reaching this recommendation.

Updated report and draft PCCB Briefing issued on 4 March 2025

5 March 2025 – A dedicated meeting was held to present the findings to the Chair of the Public Health and Communities Policy Committee. The Committee Chair accepted the recommendations from the Executive Director of Growth and Regeneration. Minor follow-up queries were addressed, and an updated PCCB Briefing was issued on 13 March 2025.

14 March 2025 - Executive Director Growth and Regeneration briefed the full Public Health and Communities Policy Committee prior to the main committee meeting.

Consultation Details: Not applicable to this stage of the project

Equalities impacts:

Are there any equality impacts which need to be considered?	No (if yes provide detail)
Have you engaged with the Equalities and Inclusion team? Committee submission.	Yes – For the October 2024 PH&C

Environmental impacts:

Are there any environmental impacts? PH&C Committee submissions.	Yes – As set out in the October 2024
Have you engaged with the Environmental performance team? Committee	Yes – For the October 2024

Financial implications:

Are there any financial implications?	Yes
Have you engaged with the Finance Business Partner?	Yes

This report provides an update on progress with the South Bristol Cemetery Expansion. The previous committee decision not to expand into the Area 3 burial area means that 2000 new double depth coffin burial plots in Phase 1 and future Phase 2 of Area 3 will no longer be delivered with no reduction in cost. The £346k saving previously associated with this reduction in scope has now been absorbed by changes in the project. The report lays out four possible options for the drainage pipe and attenuation pond of which none are not feasible without a significant increase in the current £2.4m budget and Options C and D

would require felling 10 mature trees. It is therefore proposed to continue with the current baseline option.

Ben Hegarty – Finance Business Partner – February 2025

HR implications:

Are there any HR implication?	No (if yes provide detail)
Have you engaged with your HR Business Partner?	No

IT implications:

Are there any IT implications?	No (if yes provide detail)
Have you engaged with an IT team Leader?	No

Legal implications:

Are there any Legal implications?	No
Have you engaged with Legal Services?	No

Procurement implications:

Are there any procurement implications?	Yes – Only so far as a contractor, designer and consultants will need to be procured to progress the options.
Have you engaged with a Procurement Business Partner?	No

Reputational risks:

Are there any reputational implications either positive or negative?	Yes – Project is high profile and subject to public interest.
Have you engaged with PR team?	Yes