

Committees: Epping Forest and Commons Committee for decision Projects and Procurement Sub Committee for information	Dates: 17 July 2025 21 July 2025
Subject: Rookery Wood Reservoir Remedial Works Unique Project Identifier: <i>PV ID 12477</i>	Gateway 2: Project Proposal Regular
Report of: Executive Director of Environment Report Author: Jagdeep Bilkhu	For Decision
<h1 style="text-align: center;">PUBLIC</h1>	

Recommendations

1. Next steps and requested decisions	<p>Project Description: An important health and safety based engineering project to include culvert remedial works and improvements to the dam to satisfy the design flood conditions led by the Engineering Team.</p> <p>Next Gateway: 3</p> <p>Next Steps:</p> <ul style="list-style-type: none"> • Appoint a consultant to undertake the options study for the reservoir and dam works. • Appoint a consultant to provide a heritage impact assessment, arboriculture, hydrological and flood risk, and protected species guidance. • Undertake further survey and investigation work. <p>Requested Decisions:</p> <ol style="list-style-type: none"> 1. That budget of £122,000 is approved for Gateway 2 to reach the next Gateway. 2. Note the total estimated cost of the project at £2,500,000 (excluding risk).
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2. Resource requirements to reach next Gateway	Item	Reason	Funds/ Source of Funding	Cost (£)
	Staff costs	Project management, site visits, etc.	CWP	15,000
	Consultant Fees	Undertaking of options study and preparation of report with recommendations.	CWP	25,000
	Contractor's Fees	Ground works to prepare site for survey	CWP	10,000
	Consultant Fees	Advice and surveys for a heritage impact assessment, arboriculture, and protected species	CWP	20,000
	Consultant Fees	Hydrological and flood risk assessment. To include modelling of removing the function of the dam/or capacity as a potential statutory reservoir Flood modelling of properties downstream.	CWP	30,000
	Inspection by Panel Engineer	Advising and providing guidance.	CWP	2,000

	Investigation	Extent of damage caused by protected species to dam earthwork.	CWP	20,000
	Total			122,000
Costed Risk Provision requested for this Gateway: None				
3. Governance arrangements	<ul style="list-style-type: none"> The Epping Forest and Commons Committee is responsible for decisions in relation to the management of the buffer land adjacent to Epping Forest. Under the Reservoirs Act 1975, Paul Monaghan has the defined role of the <i>Responsible Person</i>. 			

Project Summary

4. Context	<p>4.1. Rookery Wood is part of the larger Copped Hall Estate, which is a registered Park and Gardens Grade II* listed landscape by Historic England. The Copped Hall Estate is buffer land, held by the City Corporation in its corporate capacity, and managed in support of Epping Forest. The proposed works involve maintaining the existing features as far as practical. The precise details of the listed status and its legal implications that may affect the proposed works are to be discussed with Historic England, e.g. to confirm the materials that could be used for repairing or replacing the culverts as part of maintenance.</p> <p>4.2. Rookery Wood largely consists of a 20th century poplar plantation planted across historic water features dating from the Tudor period and considered to be of high significance. The reservoir is the historic Tudor square pond that is fed from an unnamed watercourse (which is a statutory main river and a tributary of Cobbin's Brook).</p> <p>4.3. The Tudor Pond was dammed by raised trackway that was an ancient routeway into Copped Hall, which was formalised to create one side of the wall of the Tudor pond. This forms a dam. Over time, the water feature was adapted to create a formal canal along the stream leading up to the pond, and later on the pond was remodelled into a serpentine shape. The site has a network of raised historic earthworks. There are 19th</p>
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	<p>century culverts along the stream that pass through the dam. The asset is currently in a state of dis-repair, particularly the two culverts in the dam structure (on the eastern boundary of the asset) and these should be remediated as they have been identified as cause for concern on the grounds of matters relating to health and safety for operational staff and from a flood risk management perspective.</p> <p>4.4. This reservoir does not currently meet the water storage volume limit of 25,000m³ that would mean it is deemed a statutory Large Raised Reservoir (LRR). Its volume is approximately 17,200m³. However, statutory provisions have been made to reduce the limit of LRR's to 10,000m³ in the future; those can be triggered (at potentially short notice) when the relevant part of the Flood and Water Management Act 2010 is brought into force.</p> <p>4.5. The poplar plantation comprises mature trees, which may be at risk of falling/wind-throw and therefore pose a potential risk of damaging the historic earthworks and or buried archaeology. The removal and management of these trees will be the subject of a separate study by Epping Forest officers, however the Engineering Team will work closely with them to coordinate work where possible.</p>
5. Brief description of project	<p>5.1. Discussions between Epping Forest staff and engineering officers have taken place and officers have considered that full renewal of the dam is not applicable at this time. Therefore, the primary objective is to refurbish or replace the existing two culverts and their associated headwalls. The first inspection under the Reservoirs Act 1975 dated October 2017 identified the aforementioned items as a matter of safety along with registering the reservoir with the Environment Agency as a Large Raised Reservoir and carrying out a Flood Study & Routing Calculations.</p> <p>5.2. The Flood Study has confirmed that the reservoir does not fall within the current limit of a LRR which is a reservoir greater than 25,000m³.</p> <p>5.3. The Corporation did register the reservoir as an LRR but have successfully de-registered it in October 2019, after ascertaining that the volume does not classify it as a LRR. This has removed the need to repair the culverts by October 2020, i.e. within a time limit of 3 years of the original inspection dated October 2017, however, it should be noted that the state of the dam and culverts and their headwalls continues to deteriorate.</p>

	<p>5.4. If it is not treated as a LRR, then work to satisfy the requirement of design flood condition are not immediately required. However, if the reservoir requires re-registration as a LRR in the future, then the creation of a spillway or strengthening the dam such that water could pass safely in the event of the design flood conditions must be undertaken in addition to the culvert works.</p> <p>5.5. Protected species have been recorded on and adjacent to the dam. The extent of the damage to the earthworks (dam, culvert, and outfalls) by the protected species is unknown and will be assessed under the further investigations proposed by this report. It is noted that the protected species are protected by legislation. Any potential future options in relation to the protected species will be considered in relation to the requirements of that legislation and will be brought to the relevant committees for consideration.</p> <p>5.6. The reservoir is an historic water body with Tudor and later features and falls within the Registered Park and Garden area. The earthworks have been assessed, following consultation with Historic England, as having high historic significance. There are poplar trees that are mature and are a potential threat to the earthworks from rooting or falling, some of which are next to the earth dam. However, this would need to be assessed via a Tree Condition Survey. Historic England are keen for all the trees to be removed, which would be best historic feature management practice. This will enable better management of the reservoir structures as well. The strengthening of the dam would be key to allow future management across the whole reservoir area to prevent regrowth of poplar and other trees. Removal of the trees does not form part of this project but the Engineering Team will liaise closely with officers from Epping Forest.</p> <p>5.7. A permanent access road is proposed to be constructed for the dam remedial works as well as future access and maintenance. Current vehicular access is not possible or suitable for construction traffic. This road would need to be appropriately and sensitively designed given the heritage features, with any necessary planning or other approvals obtained before its construction.</p>
6. Consequences if project not approved	<p>6.1. The existing two culverts will continue to deteriorate and, if nothing is done, they will eventually collapse. There is a risk to safety of City Corporation staff and other appointed personnel, e.g. those who manage the area generally and inspect the dam.</p> <p>6.2. There is no dedicated spillway for water in the event of a flood and nor is the dam designed to overtop safely.</p>

	<p>Therefore, if the culverts were to collapse, water would not be able to pass safely in the event of heavy rainfall or for the design flood conditions. The 2018 flood management survey identified that water escaping the dam would likely flow into the nearby brook ('Cobbins Brook'), thus potentially causing flooding in the area directly north and south of the dam. That study recommended that further investigations be carried out to assess any potential risks. The proposed further assessment, modelling, and surveys recommended by this report will provide a better understanding of the potential implications for the surrounding areas in the event of unplanned water escape from the reservoir. We are aware, for example, that property owners have already had to undertake flood alleviation works to protect their properties from flood events at Cobbins Brook.</p>
7. SMART project objectives	7.1. To complete remedial works to both culverts by 2027.
8. Key benefits	<ul style="list-style-type: none"> (i) Improvement in the interests of safety of both the culverts after remedial works. (ii) Meeting the objectives of the asset owning department and recommendations of the Copped Hall Conservation Management Plan, which is to preserve this part of the historic landscape in its existing form as far as reasonably practical.
9. Project category	2. Statutory
10. Project priority	A. Essential
11. Notable exclusions	11.1 Removal of poplar trees in the reservoir (square pond) not to be undertaken as part of this project but explored by officers from Epping Forest.

Options Appraisal

12. Overview of options	<p>The options for the remedial works to the culvert have their own options as follows:</p> <ul style="list-style-type: none"> 12.1 Repair both existing culverts 12.2 Repair both culverts with a new lining. 12.3 Replace both culverts with new culverts (not necessarily in the existing material)
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Project Planning

13. Delivery period and key dates	<p>Overall project: <i>state length of project/expected completion</i></p> <p>Key dates: The reservoir is not deemed a Large Raised Reservoir (LRR) but the repair of the two culverts is recommended. The next gateway is proposed for presentation to Epping Forest and Commons Committee early next year, to secure project approval and funding, upon which consultants will be engaged for the next stage of work.</p> <p>Other works dates to coordinate: None.</p>
14. Risk implications	<p>Overall project risk: Medium</p> <p>Further information available within the Risk Register (Appendix 2).</p>
15. Stakeholders and consultees	<p><u>Internal</u></p> <p>Environment Department (including Epping Forest)</p> <p>Chamberlains Department – Finance Team</p> <p>Chamberlains Department – Procurement Team</p> <p>Town Clerks Department – Project Management Office</p> <p><u>External</u></p> <p>Epping Forest District Council – Local Planning Authority (LPA)</p> <p>Historic England – (in relation to the Registered Park and Garden Grade II* listing via the LPA)</p> <p>Natural England (in relation to protected species)</p> <p>Environment Agency (Enforcement body for reservoirs)</p> <p>Essex County Council – Highway Authority</p>

Resource Implications

16. Total estimated cost	<p>Likely cost range (excluding risk):</p> <p>£500,000 to £2,500,000</p> <p>Likely cost range (including risk):</p> <p>The likely cost range will not be affected due to the total identified CRP of £150,000 in the Risk Register at this early stage of the project but will be revised when the Risk Register becomes more developed at the next stages of the project process.</p>
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17. Funding strategy	Choose 1:	Choose 1:																
	<table><tr><th>Funds/Sources of Funding</th><th>Cost (£)</th></tr><tr><td>City Surveyor's CWP</td><td>£122,000</td></tr><tr><td>City Estates (2024/25 Capital Bid)</td><td>£470,000</td></tr><tr><td>Country Stewardship Scheme</td><td>None confirmed</td></tr><tr><td>Funding to be identified.</td><td>£2,058,000</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td>Total</td><td>£2,650,000</td></tr></table>		Funds/Sources of Funding	Cost (£)	City Surveyor's CWP	£122,000	City Estates (2024/25 Capital Bid)	£470,000	Country Stewardship Scheme	None confirmed	Funding to be identified.	£2,058,000					Total	£2,650,000
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18. Investment appraisal	Not applicable.																	
19. Procurement strategy/route to market	<p>19.1. It is recommended that this work be put out to the open market to be tendered and completed with the agreement of the appointed reservoirs Supervising Engineer.</p> <p>19.2. The existing term contract that the Corporation have for the appointment of the Supervising Engineer does not preclude the options study or any design work being tendered as a service independent of that contract.</p>																	
20. Legal implications	<p>20.1. If Rookery Wood were to be classed as a LRR under the lower 10,000m³ capacity listed in the Reservoirs Act 1975, as varied by the Flood and Water Management Act 2010, then it would fall within the LRR regime and the repair of the reservoir would be required under the relevant provisions of the 1975 Act. This would also require further oversight from the Environment Agency for the reservoir, including (but not limited to) the requirement to prepare, review and test an on-site emergency flood plan for the area. Under the LRR regime, if Rookery Wood were deemed a 'high risk' LRR, the City Corporation would be also required to appoint a supervising engineer, undertake any measures in the interest of safety or maintenance recommended by them, and would have to undertake inspections of the asset at a minimum of every 10 years.</p> <p>20.2. The further investigations proposed by this report will consider whether protected species are causing damage to the reservoir. It is noted that the protected species are</p>																	

	<p>protected by environmental and wildlife legislation and any options for dealing with them at the site in the future will need to take into account (and comply with) the requirements of the legislation. Protected species licences from Natural England may be required to legally undertake the work.</p> <p>20.3. The status of Copped Hall Park and Garden as a Grade II* Listed Park under the National Heritage Act 1983 places certain protections and legal planning constraints on works undertaken on the property and the surrounding area. Any planning permission or other approvals required will need to be obtained before works commence.</p> <p>20.4. The works and assessments proposed in this report will help the City Corporation to assess whether there are potential risks to neighbouring properties in the event of water escape from the reservoir, and enable a better understanding of potential areas of liability going forwards.</p>
21. Corporate property implications	There are no scope overlaps with works of the City Surveyor's Corporate Property team.
22. Traffic implications	<p>22.1. No major traffic implications are envisaged.</p> <p>22.2. It should be noted however that there is no easy direct or indirect route to the dam and best access is via a private road. There is a distance of 500m approximately that would involve off-road driving.</p>
23. Sustainability and energy implications	23.1 Adapting to the likelihood of climate change that could result in higher water levels in the ponds and being better prepared in the likelihood that this does happen.
24. IS implications	None.
25. Equality Impact Assessment	An equality impact assessment will not be undertaken.
26. Data Protection Impact Assessment	The risk to personal data is less than high or non-applicable and a data protection impact assessment will not be undertaken.

Appendices

Appendix 1	Project Briefing
Appendix 2	Risk Register
Appendix 3	Photos

Contact

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