

Havant Thicket Reservoir

Phase 3 Reserved Matters

Environmental Statement of Conformity (Main Reservoir
Embankment, Culvert and Valve Tower)

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Revision history

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1. Introduction

1. Future Water commissioned Royal HaskoningDHV to prepare an Environmental Statement of Conformity in support of the Phase 3 Reserved Matters application for the Havant Thicket Reservoir Scheme. Phase 3 of the Reserved Matters relates to the main reservoir embankment, culvert and valve tower.
2. The Havant Thicket Reservoir Scheme was granted planning permission subject to conditions in October 2021, by Havant Borough Council and East Hampshire District Council, Planning Application Refs: APP/20/00990 and 51680/001 respectively. The decision is for a hybrid application and includes full permission for some matters and outline permissions for others.
3. The applications which formed the subject of the Hybrid Consent were supported by an Environmental Statement (ES) (Havant Thicket Reservoir Project, Atkins, 2020) which reported the findings of the Environmental Impact Assessment (EIA). The EIA process was based on the parameters for a range of elements as set out in the Development Specification that was submitted and approved as part of the respective planning permissions.
4. The separate Section 73 applications are supported by an ES Addendum (2024)¹ which reports the findings of the EIA considering the proposed amendments to the main embankment, culvert and valve tower. The EIA process for the Hybrid Planning Permission was based on the parameters for a range of elements as set out in the Development Specification approved as part of that permission. The ES Addendum (2024) is based on the proposed Section 73 Development Specification (April 2024) submitted as part of the S73 Application.
5. This Environmental Statement of Conformity (Main Embankment) considers whether the proposed detailed design for the Main Embankment is likely to give rise to any new or materially different effects to those identified in the 2020 ES and ES Addendum (2024).

2. Description of Phase 3 Reserved Matters

6. The design of the main embankment for the Phase 3 Reserved Matters is based on the outline design work undertaken by Portsmouth Water to secure the hybrid planning permissions and subsequently the design work as part of the separate Section 73 Applications.
7. The design of the main embankment accords with the parameters, principles and standards set out in the Development Specification that has been submitted as part of the separate Section 73 Applications.
8. The following drawings have been prepared by Future Water for the Phase 3 Reserved Matters application:

¹ Royal HaskoningDHV - Havant Thicket Reservoir Environmental Statement Addendum (doc no: HTR-RHD-ZZ-ZZ-RP-Z-0001, 2024).



- HTR-GHD-ZZ-ZZ-DR-T-0021 Planning Strategy Key Plan;
 - HTR-GHD-ZZ-ZZ-DR-T-0019 Main Embankment Reserved Matters Application Area;
 - HTR-COF-EM-RE-DR-GE-4002 Main Embankment Proposed Site Layout;
 - HTR-COF-EM-RE-DR-GE-4003 Main Embankment Cross-Sections;
 - HTR-GHD-ZZ-ZZ-DR-T-0013 Proposed Culvert and Valve Tower Site Layout;
 - HTR-GHD-ZZ-ZZ-DR-T-0020 Outlet Works Valve Tower & Culvert General Arrangement Plan and Sections;
 - HTR-GHD-ZZ-ZZ-DR-T-0015 Valve Tower General Arrangement Plan and Sections;
 - HTR-GHD-ZZ-ZZ-DR-T-0011 Main Embankment Landscape Plan; and
 - HTR-GHD-ZZ-ZZ-DR-T-0018 Main Embankment Landscape Cross-Sections LA1-LA3.
9. The main embankment will create a reservoir with a minimum capacity of 8,700 million litres, with a Top Water Level of 39.5 m AOD. The main embankment will be 20m high with a crest level of 40.5 m AOD. The embankment will be 2,800 m in length with inside and outside slopes of 1:8 to 1:9, consistent with the details in the Section 73 Application.
10. The inside slope of the embankment will include rock rip rap in the wave protection zone and EnkaMat A20, an erosion-control mat, with top soil and grass above the wave protection zone.
11. In accordance with the Havant Thicket Reservoir Landscape and Ecology Management Plan (LEMP, Atkins, 2022)² and the Biodiversity Mitigation and Compensation Strategy (BMCS, Atkins, 2022)³ which were submitted and approved under the s106 legal agreement associated with the Hybrid Planning Permission, the outside slope of the main embankment will provide new species-rich grassland using low-nutrient soils to provide part of the compensation for loss of dry neutral and acid grassland to the Scheme.
12. The embankment will include a staircase along the alignment of The Avenue joining pedestrian access from Staunton Country Park, with a viewing area at the crest. The detail of the staircase and viewing area is fixed as part of the separate Section 73 Applications.
13. A footpath will be provided along the crest of the embankment along with a viewing area along the western boundary of the embankment.
14. As part of the main embankment, the reservoir culvert would provide a route through the main reservoir embankment for reservoir supply water to Farlington Water Treatment works via Bedhampton Pumping Station. As the reservoir culvert would be located within the embankment structure, it would not be visible under normal operating conditions of the reservoir. However, in the event that the reservoir is fully drawn down (which would only happen for emergency or maintenance reasons), parts of a concrete inlet structure would be visible at the upstream toe (inside) of the embankment. The primary access to the culvert would be via the control building.

² Atkins Landscape and Ecology Management Plan (doc no: HTR-ATK-ZZ-ZZ-RP-L-0002, (July 2022))

³ Atkins Biodiversity Mitigation and Compensation Strategy (doc no: HTR-ATK-ZZ-ZZ-RP-Y-0001, (July 2022))



15. As part of the culvert and main embankment, the valve tower would also provide an upper draw off / intake off from the reservoir. The upper draw off / intake structure would consist of a concrete headwall with a rock lined channel extending from the valve tower to the face of the inner embankment slope. This structure would not be visible under normal operating conditions of the reservoir due to its positioning below the top water level. The valve tower would also provide a dry area for manual operation, inspection and maintenance of low-level draw off valves from the culvert and access to the high-level draw off valves in the valve tower, and would allow valves and pipework to be removed in accordance with scheduled maintenance activities.
16. The valve tower would have a diameter of approximately 8 m and would be constructed of concrete with a plain, neutral coloured finish. The upper 1.5 m of the valve tower would protrude above the high waterline, with this potentially increasing by 1.0-2.0 m seasonally, due to variations in the reservoir water level. The top of the valve tower would be slightly higher (+41.10 m AOD) than the embankment crest (+40.5 m AOD).
17. The primary access to the valve tower will be via the control building and the culvert. Internal stairwells in the valve tower will provide access to the high level draw off valves, continuing to the roof of the valve tower accessed through lockable covers.
18. The following elements are outside the scope of the Phase 3 – Main Embankment reserved matters application:
 - Phase 1 – Northern Access Route (Approved);
 - Phase 2 – Wetland;
 - Phase 4 – Southern Access Road;
 - Phase 5 – Control house and Pipe;
 - Phase 6 – Secondary means of access to valve tower (if required);
 - Phase 7 – Spillway;
 - Phase 8 - Remaining areas of hard and soft landscaping; and
 - Phase 9 – Visitor centre.

Reserved Matters Application

19. The application is seeking approval of the following 'reserved matters' for the Phase 3 - Main Embankment:
 - Siting;
 - Scale;
 - External appearance; and
 - Landscaping.

3. Environmental appraisal - Phase 3 Reserved Matters

20. The ES prepared in 2020 assessed the potential for significant effects arising from the Scheme with respect to: air quality, historic environment, biodiversity, ground conditions, landscape and visual, noise and vibration, traffic and transport, material resources and waste, water (flows, quality and groundwater) climate, climate change vulnerability, population and human health, cumulative effects and vulnerability to major accidents and disasters.
21. The ES Addendum (2024) describes the proposed changes to the Scheme since the publication of the 2020 ES and presents an assessment of any new or different significant effects that could result from these changes. The Vulnerability to Major Accidents and Disasters topic was scoped out of further assessment, as the changes to the Scheme would not result in any new, or materially different significant effects.
22. Following grant of the hybrid planning permissions, applications have been made to discharge planning Condition 5 on the respective permissions, which requires the submission and approval of a Construction Environmental Management Plan (CEMP) (doc no: HTR-RHD-P2-RE-PL-Z-0018), based upon the Outline Environmental Management Plan (OEMP) (Atkins Doc No.: HTR-ATK-XX-XX-RP-Z-0069) in the 2020 ES. Therefore, the mitigation measures set out in OEMP are being implemented through the CEMP. The CEMP is supported by a number of topic specific management control plans and will ensure appropriate mitigation measures are implemented during the construction works.
23. A summary of the environmental topic assessments reviewed is presented in Table 1.

Table 1 - Summary of environmental topics reviewed for Phase 3 Reserved Matters

2020 ES /2024 ES Addendum Topic	Environmental Appraisal Summary
Air quality	2020 ES The 2020 ES did not identify any significant adverse air quality effects during construction or operation. 2024 ES Addendum For construction-generated road traffic, the average daily construction-generated vehicle flows would be no higher than those examined in the 2020 ES. As such, the air quality effects arising from construction dust and construction road traffic emissions would be no greater than those predicted in the 2020 ES. There would be no change to the planned operation of the Scheme and the assessment of effects presented in the 2020 ES remains unchanged. All relevant committed mitigation can continue to be applied to control potential residual effects to non-significant levels.

2020 ES /2024 ES Addendum Topic	Environmental Appraisal Summary
	As such, no change to the significance of effects are anticipated from air emissions and dust sources from that described in the 2020 ES. Phase 3 Reserved Matters application The design in the Reserved Matters application for the Phase 3 main embankment is consistent with that considered in the 2024 ES Addendum and as such no changes to the conclusions are anticipated.
Historic environment	2020 ES The 2020 ES reported that two heritage assets would experience adverse effects that would be significant relating to the removal of part of The Avenue and the Sir George Staunton Conservation Area. 2024 ES Addendum Any direct archaeological impacts arising from ongoing and future construction activities would not materially change from those assessed in the 2020 ES. Archaeological works have already commenced as part of the enabling works for the Scheme. During construction, the magnitude of any change to the setting of the Grade II* Leigh Park Registered Park and Garden, the Sir George Staunton Conservation Area and the Listed Buildings would not materially alter. The position of the embankment crest would move further north, away from the Grade II* Leigh Park Registered Park and Garden, the Sir George Staunton Conservation Area and the Listed Buildings. As such, the changes to the Scheme would not alter the impacts presented in the 2020 ES. The relocation of the valve tower would not result in any change to the setting of the Grade II* Leigh Park Registered Park and Garden, the Sir George Staunton Conservation Area, or the Listed Buildings. The investigative mitigation agreed with the local planning authorities under the two Written Scheme of Investigations and Archaeological Management Plan (Planning conditions 21-23) would remain appropriate to the proposed Scheme changes. Overall, the Scheme would not result in any change to the significance of effects on heritage assets reported in the 2020 ES. Phase 3 Reserved Matters application The design in the Reserved Matters application for the Phase 3 main embankment is consistent with that considered in the 2024 ES Addendum and as such no changes to the conclusions are anticipated.
Ground conditions	2020 ES



2020 ES /2024 ES Addendum Topic	Environmental Appraisal Summary
	The 2020 ES did not identify any significant adverse effects on ground conditions during construction with appropriate mitigation measures in place. 2024 ES Addendum The significance of effects on ground conditions would remain unchanged from those presented in the 2020 ES. All relevant committed mitigation can continue to be applied to control potential residual effects to non-significant levels in accordance with the Record of Environmental Actions and Commitments (REAC) presented in the OEMP. A Materials Management Plan has been prepared to manage the site won materials and demonstrate that it is being appropriately used on site within the main reservoir works. As such, no change to the significance of effects are anticipated on ground conditions during construction from that described in the 2020 ES. Phase 3 Reserved Matters application The design in the Reserved Matters application for the Phase 3 main embankment is consistent with that considered in the 2024 ES Addendum and as such no changes to the conclusions are anticipated.
Noise and vibration	2020 ES The 2020 ES reported that noise and vibration from construction works would not result in adverse effects that would be significant during daytime hours. During operation, no adverse effects were identified that would be significant on receptors. 2024 ES Addendum During construction, noise and vibration would not result in adverse effects that would be significant during daytime hours with the implementation of mitigation measures. As such, the assessment presented in the 2020 ES remains unchanged. A Noise and Vibration Management Plan (NVMP) (doc no. HTR-RHD-P2-RE-PL-W-0017) has been prepared and sets out the mitigation measures adopted during construction. The Noise & Vibration Management Plan is being submitted for local planning authority approval through a separate application to discharge planning condition 9. During operation, the assessment of noise and vibration effects remains unchanged from the 2020 ES and there would be no significant adverse effects.

2020 ES /2024 ES Addendum Topic	Environmental Appraisal Summary
	Phase 3 Reserved Matters application The design in the Reserved Matters application for the Phase 3 main embankment is consistent with that considered in the 2024 ES Addendum and as such no changes to the conclusions are anticipated.
Biodiversity	2020 ES The 2020 ES reported that there would be residual adverse effects that would be significant as a result of the direct loss of ancient woodland, habitat within Sites of Importance for Nature Conservation, priority habitat and watercourses. 2024 ES Addendum The changes to the Scheme lie wholly within the planning application boundary presented in the 2020 ES. A substantial area of habitat has already been cleared as part of the Scheme enabling works. No further land take or direct impact on ecological receptors are anticipated with the proposed changes to the Scheme. An Ecological Mitigation, Compensation and Enhancement Measures Report (doc no. HTR-RHD-P3-XX-RP-Z-0003) has been prepared which provides details of the ecological mitigation, compensation and enhancement measures for the Phase 3 Reserved Matters. The Ecological Mitigation, Compensation and Enhancement Measures Report for Phase 3 is being submitted for local planning authority approval through a separate application to discharge planning condition 36. All relevant committed mitigation can continue to be applied as envisaged in the 2020 ES. As such, there would be no change to the significance of effects on biodiversity reported in the 2020 ES. Phase 3 Reserved Matters application The design in the Reserved Matters application for the Phase 3 main embankment is consistent with that considered in the 2024 ES Addendum and as such no changes to the conclusions are anticipated.
Landscape and visual	2020 ES During construction, significant adverse effects on landscape and visual amenity on views were reported in the 2020 ES from the Sir George Staunton Conservation Area, the Grade II* Leigh Park Registered Park and Garden, adjacent Public Rights of Way and from residential areas. 2024 ES Addendum There would be no change to the landscape effects during construction from the 2020 ES, although the construction period would be extended for two



2020 ES /2024 ES Addendum Topic	Environmental Appraisal Summary
	years, which would increase the duration of the effects. There would also be no change to visual effects experienced during construction, except for the extension of the construction period by two years. During operation, the changes to the main embankment slopes would not result in a significant adverse effects on the landscape. The relocation of the valve tower would also be a local modification limited to a small area of the overall reservoir footprint. The overall effect would be no change from the previously predicted level of effects reported in the 2020 ES. The changes to the Scheme accords with the outline management objectives for the Main Embankment in the Havant Thicket Reservoir LEMP (Atkins, 2022). Adherence to the LEMP and future maintenance of landscape planting is a commitment made in the 2020 ES to mitigate the landscape effects of the Scheme. Phase 3 Reserved Matters application The design in the Reserved Matters application for the Phase 3 main embankment is consistent with that considered in the 2024 ES Addendum and as such no changes to the conclusions are anticipated.
Population and human health	2020 ES The 2020 ES identified impacts on human health could arise during construction from the temporary reduction in access to open space which would be mitigated by maintaining safe access for the public, where possible. 2024 ES Addendum During construction, access to open space would be temporarily restricted for an additional two years which would have an adverse effect on the local population. However, this would be mitigated by diverting access routes in order to maintaining safe access for the public wherever possible. With the implementation of mitigation, all construction phase residual effects on health determinants remain unchanged from the 2020 ES. The likely significant effects assessed during operation of the reservoir, as presented in the 2020 ES, remain unchanged. A Construction Traffic Management Plan (doc no. HTR-FUW-RZ-RE-HS-E-0506) has been prepared which sets out how traffic and site operations will be managed during the main construction works and how construction staff will travel to and from the site. The Construction Traffic Management Plan is being submitted for approval through a separate application to discharge Condition 12. The Noise and Vibration Management Plan (NVMP) (doc no. HTR-RHD-P2-RE-PL-W-0017) sets out the mitigation measures adopted during construction.

2020 ES /2024 ES Addendum Topic	Environmental Appraisal Summary
	The Noise & Vibration Management Plan is being submitted for approval through a separate application to discharge Condition 9. All relevant committed mitigation can continue to be applied as envisaged to control potential residual effects to slight adverse levels. As such, there would no change to the significance of effects reported in the 2020 ES with respect to population and human health. Phase 3 Reserved Matters application The design in the Reserved Matters application for the Phase 3 main embankment is consistent with that considered in the 2024 ES Addendum and as such no changes to the conclusions are anticipated.
Traffic and transport	2020 ES The 2020 ES did not identify any significant adverse effects arising from traffic and transport during construction or operation with mitigation measures in place. 2024 ES Addendum During construction, although there would be a need to import a greater quantity of aggregate and sand, the daily maximum number of heavy goods vehicles arriving and departing the construction site would remain unchanged. Similarly, the daily maximum number of cars arriving and departing the reservoir construction site would remain unchanged. As such, there would be no significant change in effects resulting from construction related activities with the proposed changes to the Scheme. As required by TT1 of the REAC, a Construction Traffic Management Plan (doc no. HTR-FUW-RZ-RE-HS-E-0506) has been prepared which sets out how traffic and site operations will be managed during construction and how workers will be travelling to and from site. The Construction Traffic Management Plan is being submitted for local planning authority approval through a separate application to discharge planning condition 12. No changes are proposed to vehicular access or parking provision during operation. As such, the findings of the traffic and transport assessment in the 2020 ES remain unchanged and there would be no significant adverse effects during the operation phase. Phase 3 Reserved Matters application The design in the Reserved Matters application for the Phase 3 main embankment is consistent with that considered in the 2024 ES Addendum and as such no changes to the conclusions are anticipated.

2020 ES /2024 ES Addendum Topic	Environmental Appraisal Summary
Material resources and waste	2020 ES The 2020 ES did not identify any adverse effects that would be significant on the availability of construction materials, or from wastes produced during construction. 2024 ES Addendum A greater quantity of aggregate and sand would need to be imported for the changes to the Scheme, compared to the quantities assessed in the 2020 ES. Also, a greater quantity of fill material would also be sourced from within the reservoir site to build the larger footprint of the main embankment and for landscaping. Material for the construction of the main embankment would be largely sourced from the site. The design, mitigation and enhancement measures included in the 2020 ES remain relevant and no further mitigation measures are required. As required by the OEMP (Atkins Doc No.: HTR-ATK-XX-XX-RP-Z-0069) and REAC requirement MRW2, a Site Waste Management Plan (doc no. HTR-FUW-P2-RE-RM-W-0008) has been developed to manage waste produced during construction. There would be no change to the significance of effects reported in the 2020 ES. The classification presented in the 2020 ES assessment remains valid based on the materials and wastes included. Phase 3 Reserved Matters application The design in the Reserved Matters application for the Phase 3 main embankment is consistent with that considered in the 2024 ES Addendum and as such no changes to the conclusions are anticipated.
Water	2020 ES The 2020 ES reported that there would be residual adverse effects that would be significant on aquatic habitats, habitat connectivity and geomorphology. Compensation and mitigation measures were identified for the impacted water body of Riders Lane Stream. 2024 ES Addendum The changes to the Scheme would not alter the findings of the 2020 ES assessment and no additional mitigation would be required as part of the ongoing package of compensation and mitigation measures. The effects on flood risk would be no greater than those predicted in the 2020 ES. As required by W1 of the REAC, a Water Quality Management Plan (doc no. HTR-FUW-P2-RE-RP-EN-0014) has been prepared which provides details of mitigation measures required to protect the quality of surface and groundwater during construction.



2020 ES /2024 ES Addendum Topic	Environmental Appraisal Summary
	During operation, the significance of effects on the water environment remains unchanged from the 2020 ES. Phase 3 Reserved Matters application The design in the Reserved Matters application for the Phase 3 main embankment is consistent with that considered in the 2024 ES Addendum and as such no changes to the conclusions are anticipated.
Climate	2020 ES The 2020 ES reported that the Scheme is unlikely to cause significant effects on climate, or significantly affect the UK's ability to meet its emissions reduction targets. 2024 ES Addendum The greenhouse gas emissions from changes to the Scheme, together with the additional assessment of emission sources not considered in the 2020 ES, would result in a 7% increase in construction emissions. However, the increase in emissions is not deemed material and the Scheme is anticipated to make a small contribution to the overall UK emissions. Therefore, the conclusion of the 2020 ES, that the Scheme is deemed unlikely to cause a significant effect on climate change remains unchanged. All relevant committed mitigation can continue to be applied as envisaged in the 2020 ES. The assessment of emissions during operation remains unchanged from the 2020 ES. Phase 3 Reserved Matters application The design in the Reserved Matters application for the Phase 3 main embankment is consistent with that considered in the 2024 ES Addendum and as such no changes to the conclusions are anticipated.
Vulnerability to climate change	2020 ES The Scheme includes embedded mitigation to avoid, minimise or reduce potential impacts from changes in climate. None of the potential climate vulnerability impacts identified would have adverse effects that would be significant with embedded mitigation. 2024 ES Addendum During construction, the significant effects assessed in the 2020 ES, such as the likelihood for extreme weather events, remain unchanged with embedded mitigation. The significant effects assessed during operation presented in the 2020 ES, also remain unchanged with embedded mitigation.

2020 ES /2024 ES Addendum Topic	Environmental Appraisal Summary
Cumulative and In-Combination effects	2020 ES The 2020 ES reported that with mitigation, there would be no adverse cumulative or in-combination effects that would be significant. 2024 ES Addendum There would be no change to the cumulative and in-combination effects arising during construction or operation. All relevant committed mitigation can continue to be applied as envisaged in the 2020 ES. As such, there would be no change to the significance of effects reported in the 2020 ES. Phase 3 Reserved Matters application The design in the Reserved Matters application for the Phase 3 main embankment is consistent with that considered in the 2024 ES Addendum and as such no changes to the conclusions are anticipated.

4. Conclusion

24. This report has considered whether the proposed detailed design for the Phase 3 Reserved Matters application is likely to give rise to any new or materially different significant effects to those identified in the 2020 ES and ES Addendum (2024).
25. All committed mitigation can continue to be effectively applied and is sufficient to control the potential impacts of the Phase 3 design and construction related activities.
26. This report concludes that the Phase 3 design submitted for Reserved Matters approval does not give rise to any new or materially different effects to those reported in the 2020 ES or the ES Addendum (2024).