

Note / Memo

Haskoning UK Ltd.
Industry & Buildings

To: Future Water MMJV Ltd
 From: Andrew Hepworth / Nicholas Haigh
 Date: 16 December 2025
 Copy: File
 Our reference: HTR-RHD-MW-RC-ME-X-0001
 Classification: Project related
 Checked by: Tim Britton
 Revision: P02
**Subject: Havant Thicket Reservoir: Cut Off Wall Works - January 2026
 Noise Modelling - Technical Note**

Havant Thicket Reservoir: Cut Off Wall Works at the Reservoir Culvert Structure

1. Introduction

As part of the construction works for the Havant Thicket Reservoir, an impermeable barrier must be created below the main embankment in order to retain water in the reservoir. This barrier is known as a 'cut off wall'.

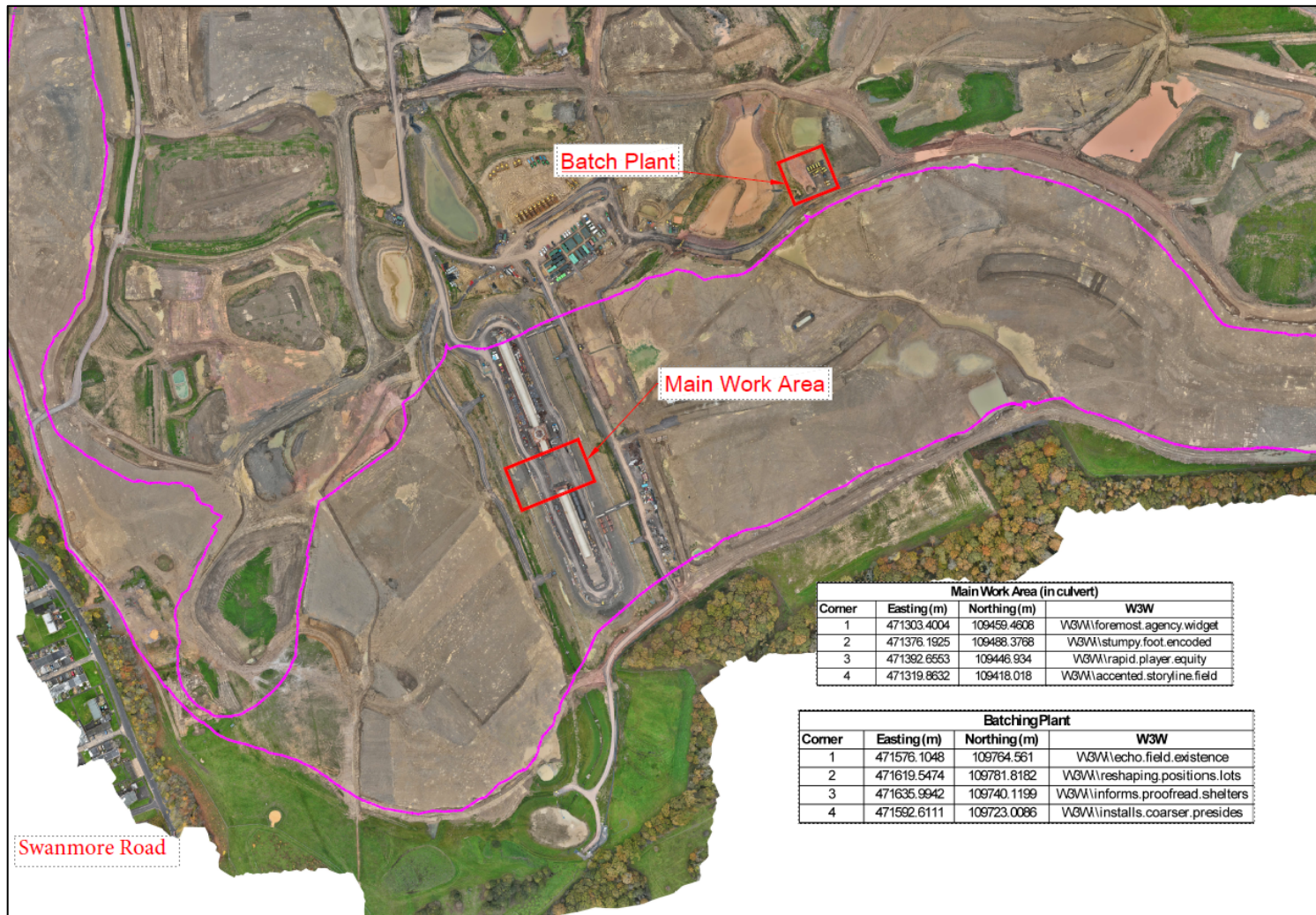
Whilst the majority of the cut off wall can be delivered within permitted working hours, the area where the cut off wall must pass under the reservoir culvert structure is more complex.

Figure 1 shows the location of the proposed works. At this location, there is a critical interface between the construction of the cut off wall and the reinforced concrete reservoir culvert, which necessitates continuous working to prevent the cement-based slurry within the cut off wall from curing before a steel sheet can be embedded. This will ensure the structural integrity and impermeability of the interface between the cut off wall and the reservoir culvert.

The cut off wall works require continuous working for up to 62.5 hours commencing in January 2026 (Note – previously stated as 'approximately 90 hours' in error). The anticipated programme of work is provided below.

12/01/2026 (Monday)	07:30	Works commence
	07:30 – 23:59	Excavation and cement-based slurry fill
13/01/2026 (Tuesday)	00:00 – 23:59	Excavation and cement-based slurry fill
14/01/2026 (Wednesday)	00:00 – 12:00	Excavation and cement-based slurry fill
	12:00 – 22:00	Embedded sheet installation
	(No later than) 22:00	Works conclude

Figure 1 – Site location of reservoir culvert structure (main works) and on-site batching plant



2. Cut Off Wall Works - Noise & Vibration

a. Applicable conditions

Havant Borough Council and East Hampshire District Council, as Local Planning Authorities (LPAs), granted Planning Permission in October 2021 for the Havant Thicket Reservoir project in accordance with the Town and Country Planning Act 1990 (as amended) and subject to compliance with the following noise and vibration planning conditions, including:

Planning Condition 9

No phase of the development approved under Condition 4 shall commence until a construction noise and vibration management plan, including a targeted scheme wide construction noise and vibration monitoring and reporting programme, has been submitted to, and approved in writing by, the Local Planning Authority. The development shall be carried out in accordance with the approved details.

Planning Condition 10

No phase of the development approved under Condition 4 shall commence until a revised and updated assessment of potential noise and vibration arising during construction shall be prepared in accordance with BS 5228-1:2009+A1:2014. The assessments shall include likely eligibility for noise insulation or temporary re housing and shall be submitted to and approved in writing by the Local Planning Authority and construction carried out in accordance with the agreed recommendations.

Planning Condition 11

Subject to Condition 10 [ABOVE], no night time working shall take place, unless otherwise in accordance with a scheme submitted to and approved in writing by the Local Planning Authority. Night-time works to be carried out strictly in accordance with the approved scheme.

Noise and vibration level predictions for the main reservoir site construction works were undertaken and reported in the Noise and Vibration Impact Assessment (Future water doc no. HTR-RHD-P2-RE-EN-Z-009) (NVIA) which was approved pursuant to discharge condition 10 of the planning consent for the project. Systems and controls to manage noise and vibration throughout construction are included in the Noise and Vibration Management Plan (Future Water doc no. HTR-RHD-P2-RE-PL-W-0017) (NVMP) which was approved pursuant to discharge condition 9 of the planning consent for the project.

b. Noise limits and durations

The NVMP sets out the thresholds for construction noise impacts in Table 1 and identifies minimum durations of exceedances for potential impacts to occur of “40 days in a 6 month period or 10 days in a 15 day period”. These durations apply irrespective of noise level or timing of the works.

These thresholds and minimum durations are the same as those identified in the Environmental Statement (ES) for the Havant Thicket Reservoir project for a potential impact to occur, and are standard industry practice for such assessments. The NVMP was submitted to and agreed by the LPAs to discharge *Planning Condition 9 Construction noise and vibration*.

The proposed 62.5 hours of 24/7 working for the cut off wall would include up to 3 nights; hence a potential noise impact is not anticipated according to the method used in the ES and approved as part of the NVMP.

Table 1 Construction Noise Threshold Levels

Period	Construction noise threshold level L _{Aeq} (dB)	Duration of works for potential impacts
Monday to Friday 07:00 to 19.00 Saturday 07:00 to 13:00	65	40 days in a 6 month period
Monday to Friday 19:00 to 23.00 Saturday 13:00 to 23:00 Sundays 07:00 to 23:00	55	or 10 days in a 15 day period
Night-time 23:00 to 07:00	45*	
* To ensure potential worst-case impacts are captured and mitigated appropriately, the project has elected to use a lower (i.e., more conservative) night-time threshold value of 45 dB L _{Aeq} , rather than the category B limit of 50 dB L _{Aeq} determined in the ES.		

c. Management Measures

Planning permission was granted on the basis of a number of environmental actions and commitments made in the 2021 Environmental Statement. The Record of Environmental Actions and Commitments (REAC) (NV1-NV6) captures these actions which are required to be adhered to, at the pre-construction, construction and operation stages of the project.

As per REAC commitment NV1, all works will be carried out in accordance with the Best Practicable Means, as defined in Section 72 of the Control of Pollution Act 1974 and Section 79 of the Environment Protection Act 1990, and noise control measures, as suggested by BS 5228 Part 1. Best practical means will be implemented to minimise noise & vibration nuisance during the cut off wall works in accordance with the NVMP (HTR-RHD-P2-RE-PL-W-0017 - Noise Vibration Management Plan) and as set out in the Havant Thicket Reservoir: Cut Off Wall Works - January 2026 Noise and Vibration Technical Note (HTR-RHD-MW-RC-ME-EV-0001).

d. Noise modelling

The construction plant required for the cut off wall works at the reservoir culvert structure is listed in Table 2. The closest works areas are around 450m from the closest residential receptors on Swanmore Road located to the west, and Winterslow Drive located to the south.

Slurry will be pumped from the on-site concrete batching plant to the excavation via overground pipework, again listed in Table 2. The on-site batching plant will be located further to the east of residential receptors on Swanmore Road and further north of properties on Winterslow Drive, as shown in Figure 1.

The SoundPLAN (version 9.1) noise model described in the NVIA (see e.g. HTR-RHD-P2-RE-EN-Z-0009) has been used to model noise emissions resulting from the worst-case programmed evening and night-time activities. This has been informed by received hour-by-hour plant usage data, plant specifications and in some cases noise data, with the topography expected at this phase of the earthworks.

Where the client has not supplied noise data, best efforts have been made to determine representative plant noise levels using online resources and consultation with the manufacturers in the case of the concrete batching plant. Therefore the sound power levels for some items are derived from generic library data, and may not precisely correspond to the actual plant used. This is notably the case for the concrete batching plant.

The noise data used within the noise model is summarised below. Note that the concrete pump is not provided on the plant list, but its presence is inferred from the description of the operations. The 100t crane is not scheduled to be operated during night-time and is therefore not included on the list.

Table 2 Construction plant noise data

Item	Emission Spectrum	Sound power L _{WA} (dB)	Comment on L _{WA} and other
Lighting Tower Trime X-ECO 8.5m LED	C4.87 Diesel generator for Lights	90	L _{WA} from Manufacturer datasheet, spectrum from BS5228-1
ADT Volvo V40	C2.33 Articulated dump truck	112	L _{WA} from Volvo datasheet, spectrum from BS5228-1
Generator (enclosed)	C4.77 Diesel generator	95	L _{WA} from manufacturer datasheet, spectrum from BS5228-1
Concrete pump	C3.25	106	BS5228-1
Concrete batching plant	D6.10	106	BS5228-1
4x4 Pickup 1 per hour	Pickup Truck	45	SoundPLAN library data; assumed 1 return journey per hour at 10mph
CAT 374 85t longreach	C5.18 Tracked excavator	108	L _{WA} from CAT datasheet, spectrum from BS5228-1

The following Table 3 presents the calculated noise levels at the worst-case receptor for the worst-case evening and night-time periods.

Table 3 Noise levels at worst-case receptors

Period	Construction noise L _{Aeq} (dB)	Criterion L _{Aeq} (dB)	Comment
Night-time	49.5	45.0	Level at 63-77 Swanmore Rd

e. Conclusion

The above assessment demonstrates that noise levels at the closest receptors to the proposed works will marginally exceed the 45 dB(A) criterion for night-time construction noise for the Havant Thicket project identified in the NVMP. However, the project voluntarily selected a more stringent criterion of 45dB(A) for the NVMP compared to the usual best practice approach.

We note that according to the BS5228-1 guidance 'ABC method' used to assess night-time impacts, and the ES for the Havant Thicket project on which the consent is based, a criterion of 50 dB(A) is applicable to the night-time period. When considering a criterion of 50 dB(A) for night-time noise, in line with best practice guidance, there is no predicted exceedance from the proposed January 2026 works.

The noise modelling does not account for the benefits of the construction best practice which is required by the NVMP, so noise levels at receptors are likely to be lower than the above noise modelling results. The noise model also assumes favourable noise propagation conditions for the worst-affected receptors which are unlikely to occur in practice; for example, when the wind is from the south-west (as is typical) the construction noise levels at receptors will be lower than predicted.

In conclusion, the works duration of up to 3 nights is less than the minimum duration of 10 days for a significant effect to occur (as per the NVMP approved pursuant to Condition 9, and the ES). In addition, the works proposed are assessed to be below the best practice night-time noise criterion of 50 dB(A); although are marginally greater than the more stringent 45 dB(A) criterion set for the project in the NVMP.

Future Water will be conducting noise monitoring during the night-time operations, in order to determine compliance with the conditioned noise criteria.

Best Practicable Means must be employed, as detailed in the NVMP, to minimise noise emissions. This also includes informing residents beforehand of the proposed works, including how long they will be undertaken, why they are needed, and the measures being implemented to minimise noise emissions.

In view of the above, it is considered that noise from the short-term proposed night-time works in January 2026 is unlikely to cause significant disturbance.