

**Cambridge Waste Water Treatment Plant Relocation Project**  
Anglian Water Services Limited

# Appendix 17.4: Operational Noise Sources

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## 1 Noise and Vibration, Operational Noise Sources

### 1.1 Operational Noise Sources

- 1.1.1 Operational plant information as detailed within Chapter 2:Project Description (Application Document Ref 5.2.2) have been used for the purposes of assessment of noise impacts. Data is based on suppliers and manufacturers information from the plant specification. Data has typically been provided as broadband sound pressure levels for each element of plant at a determined distance based on plant specifications.
- 1.1.2 Where data is unavailable or plant selections are indicative only reference has been made to values from equivalent plant units or measurement results from similar sites. Values have been selected to represent reasonable worst case assumptions for noise emissions from plant within the operational site. Alternatively, where data is unavailable the maximum noise level specification for plant items have been provided as the worst case noise level plant will be permitted to generate once installed. These maximum noise level specifications are driven partly by occupational noise requirements (i.e. to accommodate appropriate noise conditions for site staff during daily operation, inspections and maintenance).
- 1.1.3 The majority of operational noise sources within the proposed WWTP comprise ground level equipment and plant. Several items include sub-ground noise sources (e.g. TPS and wet well pumps) or elevated noise sources (e.g. grit removal plant, flare stack, mixers). The noise sources have been included within acoustic modelling at identified heights.
- 1.1.4 Several noise sources are proposed to be located within buildings or acoustic enclosures for operational requirements or to minimise noise emissions for the plant operators and surrounding noise sensitive receptors. Noise level values for plant items shown to be located within enclosures include the acoustic attenuation provided by enclosures. Noise level values for plant items shown to be located within buildings do not include the acoustic attenuation provided by the building, however, calculations account for the noise break out from building facades and openings within modelling.
- 1.1.5 Emergency power systems would not be used during typical plant operation and would only be used during an emergency scenario during a power cut except for testing which would occur during daytime periods. Noise from backup power systems ~~has~~ **has** therefore ~~not~~ been included within calculations for completeness.
- 1.1.6 The flare stack would be used to prevent excess gas pressure at the proposed WWTP and could operate during day or night-time periods. The flare stack exhaust is located approximately 15m above local ground level. Whilst noise from the flare stack is not expected to occur during normal operation it has been included within calculations to represent a reasonable worst case scenario accounting for the elevated location and potential operation during day and night-time periods.
- 1.1.7 The following table summarised details of plant that have been included within noise calculations for prediction of noise during operation of the Proposed Development.

**Table 1-1: Operational noise sources**

Noise source	Quantity	Description	Height relative to ground, m	L <sub>Aeq,T</sub> dB at 1m
Blowers (surface mounted with acoustic enclosures)	4	Within Enclosure	1	80
TPS subsurface in concrete shaft with cover	6	Sub-ground	-26	85
RAS Pumps – surface mounted	3	External	1	73
SAS Pumps – surface mounted	3	External	1	62
Interstage PS – concrete wet well	1	Sub-ground	-4	85
Grit removal plant	1	External	5	80
Inlet works screens	1	External	5	80
Screenings handling	1	External	1	80
Washwater boosters		External	1	70
Sludge holding tank jet mixers	6	External	1	80
Strain press feed pumps	4	External	1	80
Strainpress inc. compressor - on platform	4	External	3.5	80
Thickener feed pumps - in thickener building (portal frame)	4	Within Building	1	80
Thickeners - in thickener building	3	Within Building	1	80
Thickened sludge tank feed pumps - in thickener building	3	Within Building	1	80
Filtrate pumps - in concrete wet well	2	Sub-ground	-2	80
HpH Feed pumps	2	External	1	80
HpH mixing pumps	4	External	1	80
Digester mixing pumps	4	External	1	80
Recirculation pumps	4	External	1	80
Dewatering feed pumps	3	External	1	80
Dewaterers (centrifuges)	2	Within Enclosure	4	85
Cake conveyors - inside cake building (dutch barn)	2	External	3	80
Gas bag blowers - surface mounted in acoustic enclosure	2	Within Enclosure	1	80
Post digestion tank blower - surface mounted in acoustic enclosure	4	Within Enclosure	1	80
Boiler house burner with silencer and acoustic covering - in boiler building (assumed spherical propagation from exhaust stack)	2	Within Building	24	80
Flare stack (assumed spherical propagation from stack)	1	External	16	90
Backup generators, <del>emergency only</del>	<del>4</del>	External	1	<del>N/A</del> 80
Tertiary treatment pumps	3	External	1	85
Standby Generators	3	Within Enclosure	3	80

Noise source	Quantity	Description	Height relative to ground, m	L <sub>Aeq,T</sub> dB at 1m
MaBR Mixers	12	External	9	85
PST De-sludge Pumps	2	External	1	85
Gas-to-Grid Plant	1	Within Building	1	85
Elovac Blowers	2	External	1	80
LTP Blowers	3	Within Enclosure	1	80
STC Heat Pump	1	Within Enclosure	2	85

## Get in touch

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You can view all our DCO application documents and updates on the application on The Planning Inspectorate website:

<https://infrastructure.planninginspectorate.gov.uk/projects/eastern/cambri-dge-waste-water-treatment-plant-relocation/>