



The Sizewell C Project

6.8 Volume 7 Yoxford Roundabout and Other Highway Improvements

Chapter 5 Air Quality

Appendix 5A Dust Risk Assessment for Yoxford Roundabout

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VOLUME 7, CHAPTER 5, APPENDIX 5A – DUST RISK ASSESSMENT FOR YOXFORD ROUNDABOUT

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Plates

None provided.

Figures

None provided.

1. Dust Risk Assessment for Yoxford Roundabout

1.1 Initial screening

1.1.1 In accordance with the Institute of Air Quality Management (IAQM) guidance methodology (Ref. 1.1), the assessment of construction dust effects on sensitive receptors from the proposed development cannot be screened out due to the presence of human receptors within 350 metres (m) of the proposed development site and of trackout up to 500m of the site. Therefore, a dust risk assessment has been undertaken in accordance with the guidance. However, effects on ecological receptors are screened out as there are no sensitive habitats within 500m of the proposed development site.

1.2 Assessment of risks

1.2.1 The activities within each phase of construction of the proposed development that could potentially generate dust are:

- demolition (including breaking up of existing hardstanding road);
- earthworks (including vegetation and site clearance and stockpiling of soils);
- construction (including construction of new road, signage and landscaping); and
- trackout (heavy duty vehicle (HDV¹) movements on unpaved surfaces and mud transferred onto the highway, up to 500m from site exit).

1.2.2 The potential, uncontrolled, dust generation magnitude is defined based on the likely scale and frequency of activities and has been estimated with reference to the IAQM guidance methodology, as described in **Volume 1, Chapter 6, Appendix 6H1**.

1.2.3 Uncontrolled demolition associated with the construction of the proposed development would likely have a medium dust emission magnitude due to the potentially dusty material being broken up.

1.2.4 Uncontrolled earthworks associated with the construction of the proposed development would likely have a medium dust emission magnitude due to size of the proposed development and the number of HDVs transporting spoil and preparing the site.

¹ The term heavy duty vehicles (HDV) is used as an extension of heavy good vehicles (HGVs) to include consideration of other heavy vehicles, for examples buses and/or coaches.

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1.2.5 Uncontrolled construction activities associated with constructing the facility would likely result in the construction processes having a medium emission of dust.

1.2.6 Without mitigation, the HDV movements onto the highway from the site and their movement across unpaved surfaces during construction of the proposed development would likely result in small dust emission levels from trackout.

1.3 Sensitivity of area

1.3.1 The sensitivity of the area is defined by considering the highest sensitivity receptors identified and their distance to the source for:

- dust soiling effects on people and amenity, including the number of affected receptors;
- human health effects of Particulates (PM₁₀), including the number of affected receptors and consideration of existing background concentrations; and
- ecological effects of dust deposition.

1.3.2 All sensitive receptors near to the proposed development site are classified as being highly sensitive as they are all residential properties. The sensitivity of nearby receptors and their distance from the proposed development are shown in **Table 1.1**. The shortest distance from the source (construction site activities and trackout onto road) for each receptor has been used in the assessment.

Table 1.1: Sensitivity of receptors within screening distance of the proposed development.

Receptor	Sensitivity	Distance from Site Boundary (m).	Distance from Trackout (m).
YX2	High	Less than 100.	Less than 50.
YX3	High	Less than 20.	Less than 20.
YX6	High	Less than 20.	Less than 20.
YX18	High	Less than 20.	Less than 20.
YX19	High	Less than 20.	Less than 20.
YX20	High	Less than 350.	Less than 20.
E22	Low	Less than 20.	Less than 20.

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- 1.3.3 The existing background PM₁₀ concentration within the site is 12.8 micrograms per cubic meter (µg/m³) air to 13.1µg/m³, less than the lowest screening category within the IAQM methodology (24µg/m³), therefore representing the lowest baseline risk.
- 1.3.4 The sensitivity of the area to dust soiling effects at nearby sensitive receptors is classified as medium based on the number of high sensitivity receptors within 20m of the potential dust sources. The sensitivity of the area to human health impacts is low based on the existing baseline PM₁₀ level, the number of sensitive receptors and their distance from the dust sources.

Table 1.2: Area sensitivity to dust impacts.

Potential Impact.	Risk			
	Earthworks	Construction	Trackout	Demolition
Dust Soiling.	Medium	Medium	Medium	Medium
Human Health.	Low	Low	Low	Low
Ecological	Low	Low	Low	Low

1.4 Risk of impacts

- 1.4.1 Based on the assumed medium dust emission magnitude from activities associated with the proposed development (before mitigation is applied), and the medium sensitivity of the area to dust soiling, the risk of unmitigated dust impacts would be medium, which therefore describes the recommended level of risk mitigation.

Table 1.3: Risk of dust impacts from unmitigated activities.

Potential Impact.	Risk			
	Earthworks: Medium Magnitude.	Construction: Medium Magnitude.	Trackout: Medium Magnitude.	Demolition: Medium Magnitude.
Dust Soiling.	Medium risk.	Medium risk.	Low risk.	Medium risk.
Human Health.	Low risk.	Low risk.	Low risk.	Low risk.
Ecological	Low risk.	Low risk.	Low risk.	Low risk.

- 1.4.2 The control measures detailed in a **Code of Construction Practice (CoCP)** (Doc Ref. 8.11) were determined assuming that the construction and operation associated with the proposed development would have a high risk of dust impact on sensitive receptors. Therefore, with these embedded mitigation measures in place, the resulting dust effects would be **not significant**.

References

- 1.1 Institute of Air Quality Management (2016). Assessment of dust from demolition and construction.