# OTTERPOOL PARK

## Environmental Statement Appendix 6.4: Dispersion Model Parameters

MARCH 2022

# 1 Dispersion Model Parameters

| Work Element | Setting or process used |
|---|---|
| **MODEL SET UP** | |
| Model used for Roundhill Tunnel emissions | ADMS Urban v5.0.0.1 |
| Model used for open roads | |
| Pollutants modelled | NOx (converted to NO2 in post modelling processing), PM10 and PM2.5 |
| Baseline and opening years | 2018, 2024, 2030 and 2044 |
| Meteorological Data | Lydd 2018 |
| Surface Roughness and minimum Monin-Obukhov length | Surface Roughness: 0.5m (Parkland, Open Suburbia)<br>Minimum Monin-Obukhov length: 10m (Small towns <50,000) |
| Air temperature | +15 Degrees Celsius |
| Buildings included? | No |
| Modelled receptors | Worst case existing receptors i.e. those receptors closest to the edge of the modelled roads. On site future receptors to be built as part of the proposed Development and Framework Masterplan also considered. The location of the future receptors was chosen based on proposed Development Areas in the parameter plans for approval. |
| Receptor height | 1.5m |
| Roundhill Tunnel represented by | Single volume source per portal calculated by ADMS Roads based on portal dimensions |
| Dimensions used for Roundhill Tunnel | Bore Depth (vertical extent of tunnel) – 10.3m Northbound Portal, 10.3m Southbound Portal<br>Outflow Width (width of portal exit) – 7.4m Northbound Portal, 7.4m Southbound Portal |
| Portal in cutting? | No, all at grade |

| Work Element | Setting or process used |
|---|---|
| **TRAFFIC AND EMISSIONS** | |
| Criteria to define operational study area | Table 6.2 of Institute of Air Quality Management (2017) Land-Use Planning & Development Control: Planning for Air Quality. However decision was made to model all of roads in traffic microsimulation area as the majority of the modelled road network was affected in respect of the IAQM traffic change criteria. |
| Extent of Model | • The M20/A20 between north east Ashford and Capel-le-Ferne.<br>• A20 Hythe Road<br>• The proposed development and surrounding roads<br>• Lympne<br>• Newingreen<br>• Westenhanger<br>• Hythe<br>• North Folkestone<br>• Sellindge |
| Diurnal profile used | 24 Hour Annual Average Daily Traffic |
| Method to estimate emissions | Defra Emission Factor Toolkit (EFT) v10.1 |
| Traffic mix used in EFT | EFT basic (not London) – GIS lookup of Rural, Urban and Motorway road types |
| Emissions years used | 2024 and 2030. For the 2044 scenario, 2030 emissions were used as current Defra emissions projections in tools have a horizon year of 2030. Therefore the 2044 assessment is 14 years conservative in terms of emissions and background concentrations as emissions are expected to decrease with time. |
| Gradients considered | No |
| Topography considered | No |

| Work Element | Setting or process used |
|---|---|
| **PROCESSING OF RESULTS** | |
| Background values | Defra background maps uplifted by a factor of 1.47 following comparison with monitored background concentrations. In grid motorways, trunk A, and primary A roads sector removed to prevent double counting. No removal of minor roads or out of grid square contributions from other sectors. |
| Post processing method and values | NOx to NO2 v8.1, local authority and traffic mix selected according to receptor location.. |
| Verification and adjustment applied | Yes, two geographical zones based around Ashford and the Otterpool Park proposed development, see Appendix 6.2 for further detail |
| Sensitivity tests included? | DMRB La 105 methodology used to uplift 2024 and 2030 results with LTTE6 emissions projections. |
| Significance determined in accordance with | Institute of Air Quality Management (2017) Land-Use Planning & Development Control: Planning for Air Quality |

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