

SILVERTOWN TUNNEL

Development Consent Order Application

Applicant's Response to Request from the DfT for Comments
on Air Quality


23 August 2017

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Development Consent Order Application Applicant's Response to Request from DfT for Comments on Air Quality

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Rev.	Date	Approved By	Signature	Description
0	23/08/2017	David Rowe (TfL Lead Sponsor)		For Submission

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1 REQUEST FOR COMMENTS

1.1 The DfT's letter of 9 August 2017 contains the following request:

The Secretary of State notes that since the close of the examination of Silvertown Tunnel the Government published on 26 July 2017 an updated UK Plan for tackling roadside nitrogen dioxide concentrations (<https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>) including a Zone Plan for the Greater London Urban area (<https://uk-air.defra.gov.uk/library/no2ten/2017-zone-plan-documents>).

Please could the applicant set out what impact the proposed Silvertown Tunnel development would have on meeting the proposals in the Zone Plan for the Greater London Urban area. This should include a further update to the air quality assessment based on the data included in the latest UK Plan for tackling roadside nitrogen dioxide concentrations published on 26 July 2017 and details of any further mitigation measures considered necessary to address any significant impacts on air quality.

Applicant's Response

- 1.1.1 The release in July 2017 of the latest UK Plan for tackling roadside nitrogen dioxide (NO₂) concentrations (which includes the Air Quality Plan for tackling roadside nitrogen dioxide concentrations in Greater London Urban Area (UK0001)) ('the UK Air Quality Plan') has the potential to change the outcome of the EU Limit Value compliance risk assessment ('the compliance risk assessment') that was undertaken as part of the Environmental Statement ('ES') for the Silvertown Tunnel Scheme. The UK Air Quality Plan does not have the potential to change any other part of the applicant's air quality assessment undertaken as part of the ES.
- 1.1.2 The compliance risk assessment has been undertaken in accordance with Highways England Interim Advice Note (IAN) 175/13, as described in the Chapter 6 of the ES, paragraphs 6.3.61 to 6.3.72 (AS-022). The compliance risk assessment is informed by modelling of the future impact of the proposed development, in combination with data about future levels of roadside air pollution from Defra's Pollution Climate Mapping ('PCM') model which is used to determine compliance with the EU Directive on Ambient Air Quality (2008/50/EC).

- 1.1.3 The UK Air Quality Plan provides updated future predicted roadside pollution levels but it is important to note that it does not provide new air quality modelling tools (such as emission factors) or guidance that would impact on the air quality modelling for the Silvertown Tunnel¹. Therefore, there is no requirement to undertake any additional air quality modelling in order to determine what implications (if any) the UK Air Quality plan has for the applicant's compliance risk assessment. The implications of the new Plan can be understood by utilising the applicant's original modelling results (as set out in the *Updated Air Quality and Health Assessment - REP2-041*), added to the updated data released by Defra with the UK Air Quality Plan.
- 1.1.4 As stated above, the only part of the applicant's air quality assessment conclusions that have the potential to be affected by the release of the latest UK Air Quality Plan is the compliance risk assessment. That assessment reports on the risk of the Scheme affecting the ability of the Greater London Urban Area to achieve compliance with the EU Directive on Ambient Air Quality ('the Directive'). The outcome of this assessment must be taken into account by the Secretary of State when determining the Development Consent Order ('DCO') application as set out in paragraph 5.13 of the National Networks National Policy Statement (NN NPS) which states that:
- 'The Secretary of State should refuse consent where, after taking into account mitigation, the air quality impacts of the scheme will: result in a zone/agglomeration which is currently reported as being compliant with the Air Quality Directive becoming non-compliant; or affect the ability of a non-compliant area to achieve compliance within the most recent timescales reported to the European Commission at the time of the decision.'*²
- 1.1.5 The air quality modelling undertaken by Defra (as part of its PCM model) has been used for the purpose of the compliance risk assessment for the Silvertown Tunnel Scheme. The air quality assessment for the Scheme (REP2-041) was based on the latest information available at that time

¹ While the UK Air Quality Plan uses updated emission factors from COPERT 5, that incorporate real-world emissions from diesel vehicles, this does not affect the assessment undertaken by the applicant and presented in the ES and during the DCO Examination. This is because the future year assessment undertaken by the applicant used the approach advocated in IAN 170/12v3 which uplifts the modelled predictions for future years to account for the real-world emission from these vehicles. Please see the applicant's written submission - REP3-028.

² The timescales for the achievement of compliance for the Greater London Urban Area in the UK Air Quality Plan is 2025, this is unchanged from the previous plan which provided the basis of the compliance risk assessment submitted in the applicant's air quality assessment (REP2-041).

released by Defra. The release of the latest UK Air Quality Plan has been accompanied by updated PCM modelled results and it is this data that enables the applicant to update its compliance risk assessment, as requested. To undertake the compliance risk assessment in accordance with IAN175/13 the change in pollutant concentrations as a result of the Scheme has been added to the Defra PCM roadside modelled pollutant concentrations to determine whether the Scheme is at risk of affecting the Government's plans to achieve compliance with the Directive Limit Values within the reported timescales.

1.1.6 In accordance with IAN 175/13, if a scheme results in a greater number of roads that are predicted to be in exceedance of the EU Limit Values (i.e. Annual Mean $40\mu\text{g}/\text{m}^3$, with respect to NO_2) experiencing a deterioration, rather than an improvement, in air quality of more than $0.4\mu\text{g}/\text{m}^3$ then a scheme air quality action plan ('SAQAP') is required. A value of $0.4\mu\text{g}/\text{m}^3$ is adopted as any change of up to 1% of the Annual Mean EU Limit Value is considered to be imperceptible and therefore not considered to require further assessment. An SAQAP is also required if the road Defra has determined to have the highest concentration in the Zone (or a road which, with the scheme impact, becomes the highest in the Zone) has a deterioration of greater than $0.4\mu\text{g}/\text{m}^3$ as a result of the scheme, as this is deemed to affect the date the Zone becomes compliant.

1.1.7 Table 1 provides the results of the applicant's compliance risk assessment submitted during the examination (table 2-9, REP2-041). The Scheme was assessed as not affecting the ability of the Greater London Urban Area (which is currently a non-compliant zone) to achieve compliance with the Directive within timescales reported by Defra at the time of assessment.

Table 1 - Compliance risk assessment extracted from *Updated AQ Assessment* (REP2-041)

Scheme Receptor ID	Defra Link Census ID	Equivalent Opening Year (2021) Annual Mean NO_2 ($\mu\text{g}/\text{m}^3$)	Change in Modelled Concentration at Scheme Receptor ($\mu\text{g}/\text{m}^3$)	Equivalent PCM Assessed Case (Equivalent Opening Year 2021 + Change in Modelled Concentration at Scheme Receptor) ($\mu\text{g}/\text{m}^3$)	Change in Concentration >1%	Improvement or Deterioration where change in concentration is greater than 1%.
3723	49035	43	-0.1	42.9	No	Imperceptible
6738	6071	41	-1.2	39.8	Yes	Improvement

4818	75427	39.8	0.3	40.1	No	Imperceptible
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1.1.8 Table 1 shows that there was only one link which experienced a greater than 0.4µg/m³ change as a result of the Scheme and that change was an improvement in air quality. The other links with modelled concentrations greater than 40µg/m³ experienced changes of less than 0.4µg/m³. The maximum projected PCM modelled concentration in 2021 in the dataset used in the assessment was 46.8µg/m³, located on the A40 Westway, which is located over 15km west of the study area for the Silvertown Tunnel and was not impacted by the Scheme. In accordance with IAN 175/13 the Scheme was assessed as being Low Risk and specific mitigation was not required to the achieve compliance with the Directive.

1.1.9 Defra has issued three sets of PCM projections with the UK Air Quality Plan (<https://uk-air.defra.gov.uk/library/no2ten/>). These are:

- Baseline projections (which assumes no measures);
- With Clean Air Zone (CAZ)³ projections; and
- CAZ plus Additional Measures projections⁴.

1.1.10 The 'CAZ' and 'CAZ plus Additional Measures' projections for 2021 (the year assumed to be the Scheme opening year for the air quality assessment) have the same modelled concentrations.

1.1.11 The applicant has assessed whether the updated PCM projections released by Defra with the UK Air Quality Plan have an impact on the compliance risk assessment for the Silvertown Tunnel. The modelled results for both the 'With-CAZ' projections and the 'Baseline' projections datasets have been used to update the compliance risk assessment in accordance with IAN 175/13. The results of this updated assessment are presented below in Tables 2 and 3.

³ The Plan states that the CAZ scenario primarily includes illustrative charging CAZs, but also incorporates updated Government Buying Standard.

⁴ The CAZ plus additional measures projections include actions which may be possible but for which assessment is highly uncertain. This includes potential action on exceedances on roads that are not suitable for a CAZ and a Zero Emission Zone in London, in addition to the measures in the CAZ scenario.

Table 2 - Compliance Risk Analysis using With-CAZ Projections (July 2017) in 2021

Scheme Receptor ID	Defra Link Census ID	Opening Year (2021) Annual Mean NO ₂ (µg/m ³)	Change in Modelled Concentration at Scheme Receptor (µg/m ³)	PCM Assessed Case (Opening Year 2021 + Change in Modelled Concentration at Scheme Receptor) (µg/m ³)	Change in Concentration >1%	Improvement or Deterioration where change in concentration is greater than 1%.
21102	26643	45.1	-1.2	43.9	Yes	Improvement
15585	48644	48.5	0.2	48.7	No	Imperceptible
3723	49035	41.8	-0.1	41.7	No	Imperceptible
19083	58266	49.3	0.1	49.4	No	Imperceptible
4119	74531	44.6	0.6	45.2	Yes	Deterioration
2927	74532	45.3	0.4	45.7	No	Imperceptible
2235	74533	43.9	0.1	44	No	Imperceptible
40084	39035	40.1	0.4	40.5	No	Imperceptible

1.1.12 Table 2 presents the results of the assessment using the 'With-CAZ' projections (released in July 2017). It shows that the Scheme impacts on two links where the change in concentration is greater than 1% of the Limit Value (i.e. greater than 0.4µg/m³). One link is predicted to have a deterioration (+0.6µg/m³) and one is predicted to have an improvement (-1.2µg/m³). The link in the zone with the highest modelled concentration is the A12 (52.2µg/m³), which is not impacted by the Scheme. None of the links impacted by the Scheme would have a concentration greater than 52.2µg/m³ and, as a result, the Scheme would not impact on the overall compliance date for the Greater London Urban Area. In accordance with IAN 175/13, the Scheme would still be assessed as **Low Risk** to compliance and, therefore, the conclusions reached in the ES do not change (para. 2.3.50, REP2-041).

1.1.13 In addition to the 'With-CAZ' projections, an updated compliance risk assessment has also been undertaken on the 'Baseline' projections to ensure that the Silvertown Tunnel Scheme would not impact on compliance assuming no measures were implemented to improve air quality.

**Table 3 - Compliance Risk Analysis using Baseline Projections (July 2017)
2021**

Scheme Receptor ID	Defra Link Census ID	Opening Year (2021) Annual Mean NO₂ (µg/m³)	Change in Modelled Concentration at Scheme Receptor (µg/m³)	PCM Assessed Case (Opening Year 2021 + Change in Modelled Concentration at Scheme Receptor) (µg/m³)	Change in Concentration >1%	Improvement or Deterioration where change in concentration is greater than 1%.
6738	6071	48.8	-1.2	47.6	Yes	Improvement
3712	18736	42.8	-2.2	40.6	Yes	Improvement
6512	26217	46.4	-0.7	45.7	Yes	Improvement
21102	26643	47.4	-1.2	46.2	Yes	Improvement
5063	27917	44.8	0.1	44.9	No	Imperceptible
5683	28092	40	0.2	40.2	No	Imperceptible
15585	48644	51.4	0.2	51.6	No	Imperceptible
3633	48814	47.3	-1.2	46.1	Yes	Improvement
3723	49035	53.4	-0.1	53.3	No	Imperceptible
19083	58266	52.9	0.1	53	No	Imperceptible
6888	58446	45.4	-3	42.4	Yes	Improvement
3737	73554	50.6	-0.2	50.4	No	Imperceptible
7414	74527	48.2	0	48.2	No	Imperceptible
7365	74528	42	0.1	42.1	No	Imperceptible
4119	74531	46.5	0.6	47.1	Yes	Deterioration
2927	74532	48.1	0.4	48.5	No	Imperceptible
2235	74533	46.3	0.1	46.4	No	Imperceptible
6526	75426	45.4	-0.8	44.6	Yes	Improvement
4818	75427	46.6	0.3	46.9	No	Imperceptible
40078	73961	39.8	0.5	40.3	Yes	Deterioration
40084	39035	51.4	0.4	51.8	No	Imperceptible
40449	70003	45.9	-1.1	44.8	Yes	Improvement

1.1.14 Table 3 shows that the Scheme impacts on ten links where the change in concentration is greater than 1% of the Limit Value (i.e. greater than $0.4\mu\text{g}/\text{m}^3$). Two of these links are predicted to have a deterioration in air quality and eight are predicted to have an improvement. The link in the zone with the highest modelled concentration is the A40 ($60.9\mu\text{g}/\text{m}^3$), which is not impacted by the Scheme. None of the links impacted by the Scheme would have a concentration greater than $60.9\mu\text{g}/\text{m}^3$ and as a result the Scheme would not impact on the overall compliance date for the Greater London Urban Area. In accordance with IAN 175/13 the Scheme would still be assessed as **Low Risk** to compliance and therefore the conclusions reached in the ES do not change (para. 2.3.50, REP2-041).

Summary

1.1.15 The applicant has been requested to provide an update to the air quality assessment to determine what impact the Silvertown Tunnel Scheme would have on meeting the proposals in the Zone Plan for the Greater London Urban area, based on the data included in the UK Plan for tackling nitrogen dioxide concentrations published in July 2017. The updated air quality modelling data provided by Defra with the UK Air Quality Plan has been used by the applicant to update the compliance risk assessment for the Scheme in accordance with the methodology adopted when preparing the air quality assessment as part of the DCO application. This updated assessment has demonstrated that the UK Air Quality Plan does not change the conclusions of the air quality assessment supporting the application. Accordingly, no further mitigation measures (in addition to those already included in the applicant's proposals) are considered necessary.