

# THIRD WAVE LOCAL AUTHORITIES – TARGETED FEASIBILITY STUDY TO DELIVER NITROGEN DIOXIDE CONCENTRATION COMPLIANCE IN THE SHORTEST POSSIBLE TIME

<b>Local authorities covered</b>	Peterborough City Council
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**Further information on the content of each section is set out in the guidance.**

## Part 1: Understanding the problem

*This section should set out background on the information about the road links projected to have exceedances in the PCM national model, in combination with source apportionment data, to provide a description of the severity of the NO2 exceedance and its possible sources and causes. It should set out the scale of the problem and the case for change. Maps and local data should be included. **Each road link should be addressed in turn.***

### PETERBOROUGH CITY COUNCIL - TARGETED FEASIBILITY STUDY TO DELIVER NITROGEN DIOXIDE CONCENTRATION COMPLIANCE IN THE SHORTEST POSSIBLE TIME

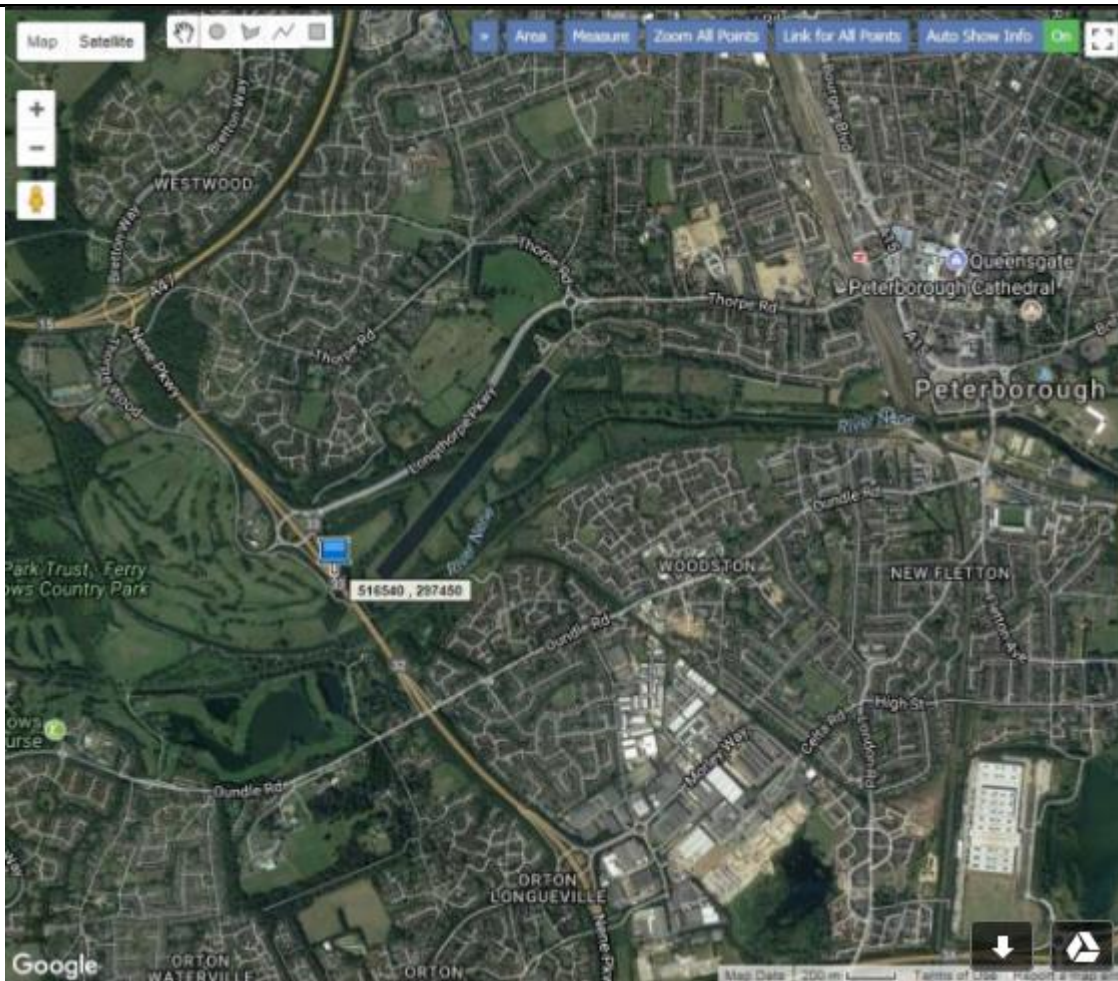
#### 1. Background on the information about the road link census ID 27586 projected to have exceedances in the PCM national model.

4.1 The exceedance identified in national modelling through the Pollution Climate Mapping (PCM) model for Peterborough City Council is 1.83km of the A1260. This location is identified as census ID 27586 in Annex K Table 1 of the UK Plan for tackling roadside Nitrogen Dioxide concentrations. The location of this road link is detailed in Appendix 1. Source apportionment and baseline roadside NO2 concentration for projected years for this road link is provided below (Table 1) and also in Appendix 1.

Roads in exceedance	Census ID	2017	2018	2019	2020	2021	Source apportionment
A1260	27586	44	42	41	39.1	37	42% diesel car; 16% LGV diesel; 10% petrol car; 6% HGVr; 4% HGVa; 2% bus

**Table 1: Source Apportionment and Projected Exceedance from PCM modelling for road link ID 27586.**

4.2 The location of census ID 27586 identified in Annex K Table 1 of the UK Plan for tackling roadside Nitrogen Dioxide concentrations is identified in the satellite view (Figure 1).



**Figure 1: Location of census ID 27586.**

**4.3** For the purposes of assessing census ID 27586, short-term exposure has not been considered since there is no indication that the hourly mean for Nitrogen Dioxide will be exceeded.

**4.4** In consideration of the annual mean, 2 locations were identified for further consideration.

**4.5** Location A is for the road segment of the A1260 to the north of Oundle Road at Grid Reference 515953,298141

**4.6** Location B is for the road segment of the A1260 to the south of Oundle Road at Grid Reference 517235,296637

**4.7** These locations are identified as the closest gardens and dwellings to the road link, to represent the points where the highest public exposure concentrations may be expected in relation to annual mean exposure for nitrogen dioxide emissions identified from the A1260.

**4.8** LAQM.TG (16) advises Local Authorities that the annual mean objective for nitrogen dioxide should not normally apply at gardens of residential properties.

**4.9** DEFRA's approach however, for the purposes of the PCM modelling used to report compliance under the Ambient Air Quality Directive, has been to include roads where there is public access, including gardens, within 15 metres.

**4.10** Garden exposure and façade concentrations have therefore been considered for both Location A and Location B.

**4.11** Following communications to identify locations modelled as an exceedance, JAQU also advised Peterborough City Council that their consultants "*have been conducting a further review of public access along the section of the A1260 ..., and have confirmed that there is a short section of footpath within 15 metres of the road*". This is identified as Location C for the purposes of this study.

**4.12** JAQU provided a list of the criteria they use to assess public access for the purposes of reporting compliance under the Ambient Air Quality Directive. Considering the A1260 and the footpath at the location identified by JAQU response, the following criteria has been applied.

*Criteria: Where there is public access (houses, gardens, footpaths) within 15 m at grade with the road, these road links are included. Where there is public access via a footpath or similar that is not at grade with the road, because the road is elevated or in a cutting, these roads are included if the access is parallel to (runs alongside) the road.*

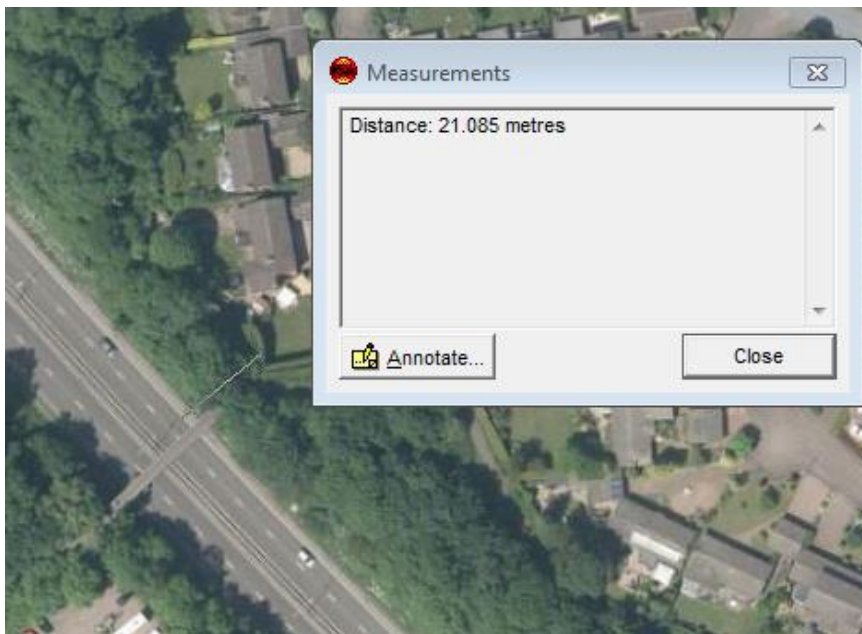
**4.13** The Pollution Control Mapping model, upon which the reported exceedances have been based, identifies "baseline roadside projections for NO<sub>2</sub> concentrations". The issue of "roadside" at these locations is critical to the determination of pollutant levels at relevant public exposure locations, and hence whether an air quality exceedance exists.

## **5. Location A: road segment of the A1260 to the north of Oundle Road at Grid Reference 515953,298141.**

**5.1** Location A is for the road segment of the A1260 to the north of Oundle Road at Grid Reference 515953,298141 and is identified in Figure 2. The distance to the closest residential façade from the kerbside at this location is 27 metres. Figure 3 identifies the distance to the closest garden of this location as 21 metres.



**Figure 2: Location A A1260 north of Oundle Road at Grid Reference 515953,298141**



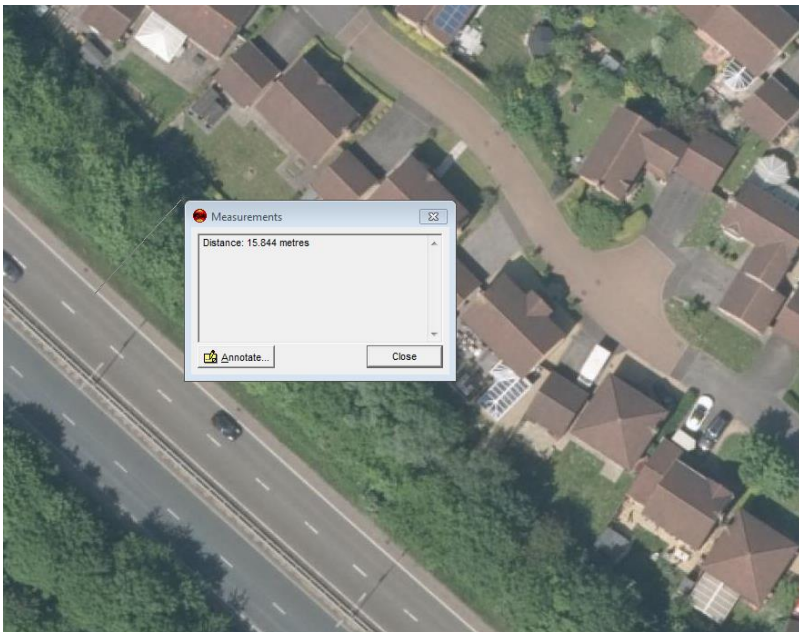
**Figure 3: Distance of Garden from kerbside at Location A.**

**6. Location B: road segment of the A1260 to the south of Oundle Road at Grid Reference 517235,296637.**

**6.1** Location B is for the road segment of the A1260 to the south of Oundle Road at Grid Reference 517235,296637 and is identified in Figure 4. The distance to the closest residential façade from the kerbside at this location is 22 metres. Figure 5 identifies the distance to the closest garden of this location as 15 metres.



**Figure 4: Location B A1260 South of Oundle Road at Grid Reference 517235,296637**



**Figure 5: Distance of Garden from kerbside at Location B.**

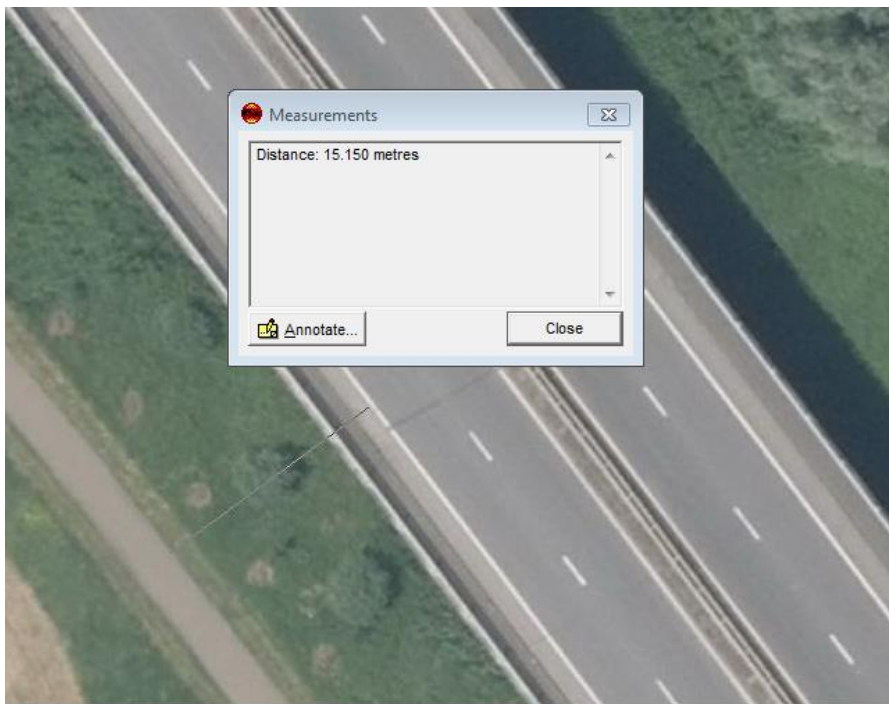
**7. Location C: road segment of the A1260 identified by JAQU for the consideration of footpath exposure at Orton Mere (Grid Reference 516618, 297310).**

**7.1** Location C is for the road segment of the A1260 identified by JAQU for the consideration of footpath exposure at Orton Mere (Grid Reference 516618, 297310). This is identified in Figure 6 provided by DEFRA



**Figure 6: Location C A1260 Orton Mere Footpath at Grid Reference 516618,297310**

**7.2** The 13.4 metres indicated in Figure 6 provided by DEFRA is however not measured from the kerb of the road. A kerb to kerb measurement of this location does not identify the footpath within 15 metres as identified in Figure 7.



**Figure 7: Distance of Footpath from kerbside to kerbside at Location C.**

## **8. Assessment of Public Exposure concentrations of Nitrogen Dioxide.**

**8.1** The closest public exposure point at a residential façade is identified as at 22 metres for the A1260 road link (census ID 27586).

**8.2** The closest point of any garden is located at 15 metres for the A1260 road link (census ID 27586).

**8.3** The closest public exposure point at a footpath meeting the assessment criteria is identified as being 15.2 metres for the A1260 road link (census ID 27586).

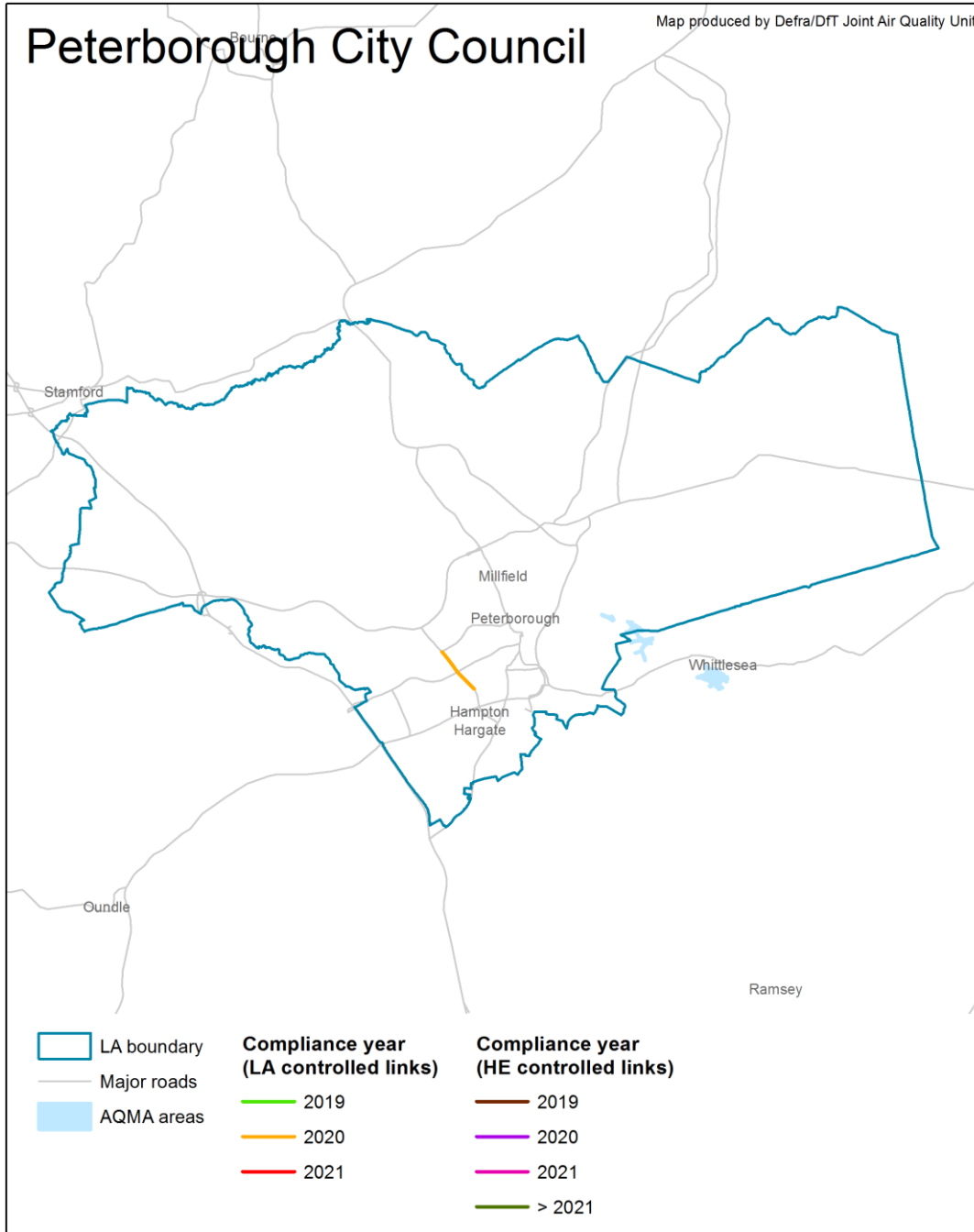
## **9. Summary**

**9.1** Following communication with JAQU, Peterborough City Council provided further information about public access and on this basis have been advised that the consultants for JAQU have agreed that the road link identified as census ID 27586 has no public access within 15 m of the kerb.

**9.2** It is concluded therefore that the road link is compliant and does not need to progress to complete the rest of the Targeted Feasibility Study.

# Peterborough City Council

Map produced by Defra/DfT Joint Air Quality Unit



Roads in exceedance	Census ID	2017	2018	2019	2020	2021	Source apportionment
A1260	27586	44	42	41	39.1	37	42% diesel car; 16% LGV diesel; 10% petrol car; 6% HGVr; 4% HGVa; 2% bus

**Figure A1: Census ID 27586 A1260 Peterborough. Location and Source Apportionment identified in national modelling through the Pollution Climate Mapping (PCM) model.**



Baseline Roadside NO <sub>2</sub> Concentration for Projected Years (µgm-3)					
Census ID (Monitoring sites)	2017	2018	2019	2020	2021
27586 (A1260)	44	42	41	39.1	37

**Table A1: Baseline Roadside NO<sub>2</sub> Concentrations for Projected Years.**

Census ID (Monitoring sites)	Cars (Petrol)	Cars (Diesel)	HGVs (r)	HGVs (a)	Buses	LGVs (Petrol)	LGVs (Diesel)	M/Cycles	Taxis
27586	10%	42%	6%	4%	2%	0%	16%	0%	0%
Average for P/borough	6%	25%	5%	3%	6%	0%	13%	0%	0%

**Table A2: Source Apportionment identified in national modelling through the Pollution Climate Mapping (PCM) model. (N.B. NO<sub>x</sub> source apportionment % does not add up to 100% as background NO<sub>x</sub> sources not included).**



**Figure A2: Satellite image of a section of the A1260 (Census ID 27586). The start point is A605 and the end point is A1179.**