

Our ref: PT/MTW/GM12497/0001

Date: 21st October 2022

Your ref:

Mr Gary Rafferty

Lidl GB Ltd

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Dear Gary,

Hoyland, Barnsley - Amendment to Air Quality Assessment Emissions Mitigation

Wardell Armstrong LLP (WA) were commissioned by Lidl GB Ltd in January 2022 to undertake an air quality assessment to accompany a planning application for a proposed Lidl supermarket off Cross Keys Lane, Hoyland (planning application reference 2022/0194).

Following submission, comments were received from the Environmental Health Officer at Barnsley Metropolitan Borough Council in relation to the damage cost value calculated for the proposed development as part of the emissions mitigation assessment, undertaken in accordance with the Barnsley Metropolitan Borough Council (BMBC) "Air Quality and Emissions Good Practice Planning Guidance (2021)" document. Specifically, BMBC requested further detail on the specific mitigation measures that could be implemented up to the value identified in the emissions mitigation assessment.

The emissions mitigation assessment undertaken as part of the Air Quality Assessment in January 2022 has been replicated below, but has been updated to include specific mitigation measures relating to the proposed development in order to address the comments received from BMBC. The air quality assessment undertaken in January 2022 has not been amended and is still considered valid for the proposed development.



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Emissions Mitigation Assessment

The BMBC 'Air Quality and Emissions Good Practice Planning Guidance' document (most recent version issued November 2021) classifies the proposed development as a 'medium' sized proposal. In accordance with this document, any proposed development classed as medium or larger requires an emissions mitigation (damage cost) assessment to be undertaken as part of the air quality assessment.

A damage cost assessment provides a basis for quantifying a financial commitment required to offset potential development-generated traffic emissions. An air pollution damage cost assessment utilises the current DEFRA Emission Factor Toolkit (version 11.0), available on the Defra website, to estimate the annual link emissions associated with the additional development generated vehicle trips over a 5-year period.

The damage cost calculation has been undertaken using the most recent guidance available from Defra¹ (March 2021), which includes updated damage cost values for both NO_x and PM_{2.5}. The total number of trips in a 24-hour period, generated by the proposed development, is included within the damage cost assessment to determine the transport related emissions. The damage cost calculation uses central damage cost values provided by Defra and applies these to the opening year of the proposed development. Full operation of the development is assumed in the opening year.

Consultation undertaken with Bryan G Hall, the appointed Transport Consultants for the scheme, confirmed that 50% of the trips to and from the site will be new trips and 50% vehicles already on the network. Therefore, the total new vehicle trip generation for the proposed development (i.e., new trips generated by the proposed development, as Annual Average Daily Traffic - AADT) in a 24-hour period is 1009 vehicles (HGVs 0.05%).

The average trip length is assumed to be 10km and the average speed is 50kph. The calculation has been undertaken for both NO_x and particulate matter (PM) emissions, as these are the major pollutants associated with road traffic emissions. The Defra guidance gives a road transport sector estimated central cost of £81,518/tonne for PM_{2.5}. For NO_x, the Defra guidance gives a road transport sector central cost of £9,066/tonne.

In accordance with guidance, an uplift factor of 2% per year is applied to these costs. The EFT output (tonnes/annum) for each of the five assessed years is detailed in Table 1.

¹ Defra Air Quality Appraisal: Damage Cost Guidance, available at <https://www.gov.uk/government/publications/assess-the-impact-of-air-quality/air-quality-appraisal-damage-cost-guidance>
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Table 1: EFT Output (tonnes/annum)		
Year	NO _x	PM _{2.5}
2027	0.501583	0.063777
2028	0.449674	0.063582
2029	0.40523	0.063418
2030	0.367749	0.063272
2031	0.358107	0.063179

The emissions from Table 1 are then multiplied by the uplifted estimated sector costs. Table 2 details the central transport sector cost for each assessed year, beginning with the estimated development opening year of 2027.

Table 2: Calculated Cost for Each Year (£)		
Year	NO _x	PM _{2.5}
2027	5434.51	6213.27
2028	4969.53	6318.13
2029	4567.93	6427.91
2030	4228.33	6541.34
2031	4199.82	6662.41
Total	£55,563	

The total damage cost of both NO_x and PM_{2.5} for the proposed development over a five-year period is £55,563. Input data for the damage cost calculation can be seen in Figure 1, below.

Select Pollutants ☒ NO _x ☐ CO ₂ ☐ PM ₁₀ ☒ PM _{2.5}		Select Outputs ☐ Air Quality Modelling (g/km/s) ☐ Emissions Rates (g/km) ☒ Annual Link Emissions		Additional Outputs ☐ Breakdown by Vehicle ☐ Source Apportionment ☐ PM by Source		Advanced Options ☐ Euro Compositions ☐ Primary NO ₂ Fraction ☐ NO _x Annual Emissions Euro Split ☐ Simple Entry Euro Compositions ☐ Output % Contributions from Euro Classes ☐ PM ₁₀ Annual Emissions Euro Split ☐ Fleet Projection Tool ☐ PM _{2.5} Annual Emissions Euro Split		Click the button to: Run EFT Clear Input Data	
Please Select from the Following Options: Area: England (not London) Year: 2027 Traffic Format: Basic Split Select 'Basic Split' or 'Detailed Option 1 to 3' or 'Alternative Technologies' above		Export Outputs ☐ Save Output to New Workbook File Name:							
SourceID	Road Type	Traffic Flow	% HDV	Speed(kph)	No of Hours	Link Length (km)	% Gradient	Flow Direction	% Load
Site Access	Urban (not London)	1009	0.05	50	24	10			

Figure 1: Damage cost Assessment inputs



Proposed Mitigation Measures

In accordance with the BMBC Air Quality and Emissions Good Practice Planning Guidance, it is expected that the monetary value calculated as part of the emissions mitigation assessment should be used to contribute to on-site mitigation measures, however it is also possible contributions could also be made to off-site mitigation measures planned by BMBC.

In order to address the comments received from the EHO at BMBC, Wardell Armstrong have undertaken detailed consultation with Bryan G Hall to discuss potential cost values for the proposed mitigation measures within the Travel Plan which would be paid for using the £55,563 figure calculated as part of the emissions mitigation assessment.

Travel Plan Mitigation Measures

Bryan G Hall have provided the following indicative costings associated with the various mitigation measures outlined within the Travel Plan, and the associated cost over the 5-year lifetime of the Travel Plan.

Table 3: Travel Plan Measures		
Measures listed within the Travel Plan	Details	Total cost over 5-year period
Measure 2: Sustainable Travel Board to provide staff with sustainable travel information	£500 in Year 1 plus up to £200 printing.	£1,500
Measure 5: Liaison with external bodies to investigate the potential for improvements to facilities and services	Annual events, up to £1,000 each including equipment.	£5,000
Measure 6: Discounted public transport tickets	Assume £60 monthly voucher per staff, and 100 staff over the 5-year period	Up to £6,000
Measure 7: Staff induction (travel pack)	£500 in Year 1 plus up to £200 printing	£1,500
Measure 10: Guaranteed ride home	Up to £500.00 per year	£2,500
Total cost over 5-year period for measures outlined above		£16,500

Some measures outlined within the Travel Plan require implementation by a designated



Travel Plan Co-ordinator (TPC) who will be appointed by Lidl for the proposed development. These include measures such as:

- Advice on personal safety
- Participate in national and local events
- Encourage car sharing

Bryan G Hall estimate the standard fee for the time of the TPC to implement the Travel Plan, over the course of the 5-year period required, is £12,500 (£2,500 per year). An additional £16,500 is expected for delivering the specific measures listed above over the five-year period. Together, these both equate to a total cost for the TPC of £29,000.

Table 4 outlines the total costs over the five-year period for the proposed Travel Plan mitigation measures and costs associated with the TPC.

Table 4: Total Costs for Travel Plan Measures	
Travel Plan Measure	Total cost over 5-year period
Travel Plan measures outlined in Table 3	£16,500
Costs associated with Travel Plan Co-ordinator	£12.500
Total cost over 5-year period for all proposed Travel Plan Mitigation Measures and TPC	£29,000

The total estimated costs for the Travel Plan mitigation measures, as detailed in Table 4, falls below the damage cost value calculated as part of the emissions mitigation assessment (£55,563). However, Lidl have also committed to further mitigation measures at the proposed development that will further aid in the mitigation of air quality impacts. These additional measures could be partly paid for using the remainder of the emissions mitigation assessment value.

Electric Vehicle Charging Provision

The proposed development is to include 1 Electric Vehicle (EV) charging point that is able to serve two vehicles at the same time (two EV charging spaces).

The BMBC guidance does not specify the power output required for EV charging points and it is therefore common practice for developers to install standard 7kW chargers. Lidl have



confirmed that the EV charging point at the proposed development will be a 50kW charger that can charge 48 vehicles from 0% within a 24-hour period from these two car parking spaces. This means the proposed development is capable of charging the equivalent of one vehicle every 30 minutes.

Lidl are also committed to the provision of passive infrastructure for a further 20% of spaces future.

Commercial Specific Mitigation Measures

The BMBC guidance states that for commercial developments such as the proposed development, the following mitigation measures should be considered:

- *All commercial vehicles should comply with current or the most recent European Emission Standards from scheme opening, to be progressively maintained for the lifetime of the development;*
- *Fleet operators should provide a strategy for reducing emissions, including the uptake of low emission fuels and technologies such as ultra-low emission service vehicles;*
- *Fleet operators should consider joining schemes such as the South Yorkshire ECO Stars scheme.*

Lidl have confirmed that all their delivery vehicles currently comply with all recent European Emission Standards and will continue to do so in the future.

Lidl are also beginning to incorporate biogas vehicles into their fleet, using biogas generated from residual food waste from their stores. The proposed development will make use of these biogas trucks as one of the first in the region.

Lidl have also confirmed that their team are also looking into how the company can join the South Yorkshire ECO Stars scheme mentioned in the guidance.

Site Design Measures

There are potential air quality mitigation measures that could be included as part of the site design, that could be paid for using the remainder of the emissions mitigation assessment value. Bryan G Hall have provided the following estimated costs associated with the following suggested site design measures:

- 5 Sheffield cycle stands with cover – estimated cost of £2,500 per stand. Total cost for 5 stands is £12,500.



- Pedestrian refuge island across the site access junction, including tactile paving and illuminated bollards – estimated cost of £5,000, assuming this forms part of the delivery of the S278 works. Standalone cost would be higher.
- Footway connection to the north-east including small bridging structure over a ditch – estimated cost of £15,000.

Summary

The air quality assessment undertaken by Wardell Armstrong in January 2022, predicts that the impact of the proposed development will be not significant. However, mitigation measures will assist in reducing any potential impact and general best practice measures in relation to air quality could be implemented.

The result of the damage cost calculation, undertaken in accordance with the BMBC Air Quality and Emissions Good Practice Planning Guidance document, shows the total damage cost of both NO_x and PM_{2.5} emissions for the proposed development over a five-year period is £55,563.

Suitable mitigation measures within the Travel Plan for the proposed development have been detailed above, with estimated costs for each measure provided. The proposed mitigation measures from the Travel Plan fall below the damage cost value calculated in the emissions mitigation assessment and so additional mitigation measures are also proposed.

Yours sincerely

for Wardell Armstrong LLP

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