

Oldlands Farm, Newlands Road, Bognor Regis, PO22 9JF



Transport Emissions Mitigation Plan

784-B030702

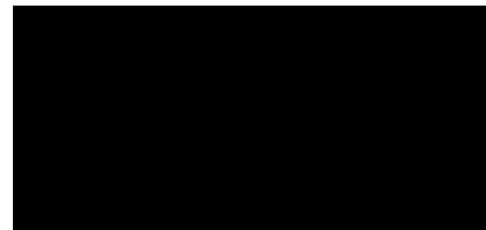
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1.0 INTRODUCTION

This report presents the findings of a Transport Emissions Mitigation Plan to accompany an application for the erection of a warehouse (Use Class B8) with ancillary office, associated vehicle parking, van storage, plant, ancillary structures, lighting, landscaping and infrastructure works including earthworks to facilitate flood compensation area at land at Oldlands Farm, Newlands Road, Bognor Regis.

1.1 SITE LOCATION

The central Grid Reference is approximately 494557, 101831. The application site is bounded to the north by bare land next to the A259, bounded to the east and west by open farmland and to the south by a warehouse.

Reference should be made to **Figure 1-1** for a map of the application site and surrounding area.

Figure 1-1. Satellite Image of Surrounding Site Area



Google Imagery (2021)

1.2 CONTEXT

The primary source of the air quality associated with the proposed scheme is from vehicle movements, arriving and departing the proposed development. The traffic data generated by the development has been used within the damage costs assessment.

The following assessment stages have been undertaken as part of this assessment:

- Assessment Methodology;

- Air Quality Damage Cost Assessment; and,
- Identification of mitigation measures (as required).

The results of the assessment are detailed in the following sections of this report.

1.3 REPORT STRUCTURE

Following this introductory section, the remainder of this report is structured as follows:

- Section 2: Policy and Legislative Context
- Section 3: Assessment Methodology
- Section 4: 'Damage Costs' Assessment
- Section 5: Mitigation
- Section 6: Conclusions

2.0 POLICY AND LEGISLATIVE CONTEXT

2.1 DOCUMENTS CONSULTED

The following documents were consulted during the undertaking of this assessment:

Legislation and Best Practice Guidance

- National Planning Policy Framework, Ministry for Housing, Communities and Local Government, Revised February 2019;
- Planning Practice Guidance: Air Quality, Ministry for Housing, Communities and Local Government, November 2019;
- The Air Quality Standards Regulations (Amendments), 2016;
- The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, Defra, 2007;
- The Environment Act, 1995;
- Local Air Quality Management Technical Guidance LAQM.TG16, Defra, 2021;
- Design Manual for Roads and Bridges, Volume 11, Section 3, Part 1, LA 105 Air quality, Highways England, November 2019;
- Land-Use Planning & Development Control: Planning for Air Quality, EPUK & IAQM, 2017;
- Guidance on the Assessment of Dust from Demolition and Construction, IAQM, 2014;
- A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites (Version 1.0), IAQM, May 2020; and,
- Ecological Assessment of Air Quality Impacts, CIEEM, January 2021.

Websites Consulted

- Google maps (maps.google.co.uk);
- The UK National Air Quality Archive (www.airquality.co.uk);
- Department for Transport Matrix (www.dft.gov.uk/matrix);
- emapsite.com;
- Multi-Agency Geographic Information for the Countryside (<http://magic.defra.gov.uk/>);
- Planning Practice Guidance (<http://planningguidance.planningportal.gov.uk/>); and,
- Arun District Council (<https://www.arun.gov.uk/>).

Site Specific Reference Documents

- Arun District Council, Air Quality Annual Status Report 2020;
- Air Quality and Emissions Guidance for Sussex, Sussex-Air, 2019; and,
- Arun District Council, Adoption Arun Local Plan 2011-2031 (Adopted July 2018).

3.0 ASSESSMENT METHODOLOGY

This report presents the findings of a Transport Emissions Mitigation Plan to accompany an application for the erection of a warehouse (Use Class B8) with ancillary office, associated vehicle parking, van storage, plant, ancillary structures, lighting, landscaping and infrastructure works including earthworks to facilitate flood compensation area at land at Oldlands Farm, Newlands Road, Bognor Regis.

A 'Damage Cost' Assessment has been undertaken in accordance with Defra's Air Quality Appraisal: damage cost guidance¹. 'Damage costs' are a simple way to value changes in air pollution. They estimate the cost of a change in emissions of different pollutants. The 'Damage Cost' Assessment has been undertaken to determine the scale and the proportionality of the impact on air quality and includes potential mitigation measures of the damage costs value.

The Damage costs calculation identifies costs of the air quality effects associated with the proposal, based on additional vehicle movements. These calculated costs provide a benchmark of mitigation that is expected to be proposed on measures to mitigate the impacts. The calculation utilises the most recent Defra Emissions Factor Toolkit (version 10.1) to estimate the additional pollutant emissions from a Proposed Development and the latest Defra Air Quality Damage Costs (published March 2021) for the specific pollutant of interest (NO₂ and PM_{2.5}), to calculate the resultant damage cost within the Emissions Assessment Calculator, provided by Defra. The emissions for NO₂ and PM_{2.5} have been calculated from exhaust emissions from vehicles including heavy and light goods vehicles and staff vehicles.

Mitigation measures proposed as part of the scheme are compared against the calculated 'Damage Cost' to determine if the proposed level of mitigation measures is appropriate.

¹ <https://www.gov.uk/government/publications/assess-the-impact-of-air-quality/air-quality-appraisal-damage-cost-guidance>

4.0 DAMAGE COSTS ASSESSMENT

The total vehicle movements and methodology stated within Section 2 and the Air Quality Appraisal: Damage Costs Guidance has been used to undertake the Damage Costs assessment.

The Emissions Assessment Calculator has been used as detailed below.

EFT Input:

- 989 Vehicle Movements
- 959 Cars (97.00%)
- 30 HGVs (3.00%)
- 50 kph
- 10 km (NTS UK avg.)

A Baseline Year of 2019 for 'Road Transport' has been used within this assessment. 2022 is assumed to be the worst-case opening year of the proposed development.

Table 4-1, **Table 4-2**, and **Table 4-3** below show how the total damage cost calculations have been calculated.

Table 4-1. Annual Emissions Factor Outputs (tonnes/year)

Pollutant	Year				
	2022	2023	2024	2025	2026
NO _x	0.88	0.79	0.71	0.64	0.57
PM _{2.5}	0.07	0.07	0.07	0.07	0.07

Table 4-2. Central Damage Costs (tonnes/year)

Pollutant	Year				
	2022	2023	2024	2025	2026
NO _x	£10,413	£10,622	£10,834	£11,051	£11,272
PM _{2.5}	£93,633	£95,506	£97,416	£99,364	£10,1352

Table 4-3. Annual Emissions Costs Calculation

Pollutant	Year				
	2022	2023	2024	2025	2026
NO _x	£35,035	£31,122	£27,585	£24,393	£21,584
PM _{2.5}	£20,428	£19,870	£19,384	£18,957	£18,575

Total NO_x = £139,720

Total PM₁₀ = £97,214

Total Damage Costs = **£236,934**

This calculated figure is to be put towards the mitigation measures outlined in Section 5 of the report and does not represent a sum owed by the developer.

5.0 MITIGATION

5.1 OPERATIONAL PHASE

The operational phase mitigation proposed for the proposed development has been reviewed, including the Travel Plan produced by Vectos transport consultants, which contains proposed methods to reduce the impacts of emissions on air quality from the proposed development.

As outlined within the Travel Plan, a Travel Plan Coordinator will be appointed to oversee the implementation of the Travel Plan on site. The Travel Plan Coordinator will be responsible for the administration of the Travel Plan, the implementation of mitigation measures, and the on-going monitoring and review of the Travel Plan.

The itemised list of mitigation measures to be implemented on site for the scheme are included in **Table 5-1** below.

Table 5-1. Travel Plan Air Quality Mitigation Measures Cost

Item/Measure	Total Spend
Travel Plan Coordinator	£125,000
Welcome Packs and Boards	£5,000
Promotion of Sustainable Transport Methods: Walking, Cycling and Public Transport	£8,000
High Quality Cycle Parking	£16,000
Cycle Shelter Installation	£4,000
Cycle to Work Scheme	N/A
Promotion and Monitoring of Car Sharing	£15,000
Electric Vehicle Charging Points	£28,000
Travel Plan Monitoring	£22,500
Remedial Measures	£15,000
Total	£238,500

It should be noted that the above measures exceed the value of the calculated damage costs in section 3.

Below is a summary of how each of the above aspects will help to minimise the effects of air quality during the operational phase of the development.

5.2 TRAVEL PLAN

This section provides a summary of the relevant parts of the Travel Plan aimed at reducing air quality emissions. Full details are available within the Travel Plan document produced by Vectos.

This Air Quality Mitigation strategy has been compiled using the Vectos Travel Plan.

The objectives of the Travel Plan are as follows:

‘To engage with and encourage staff to use more sustainable ways of travelling to the warehouse through more effective promotion of sustainable modes. This will minimise the impact of the development on the surrounding road and public transport network during peak hours.’

The sub-objectives are as follows:

- To reduce the need to travel;
- To actively promote sustainable transport options for travel to and from the site, to enable informed decisions about how to travel;
- To increase the use of active and green travel modes (particularly for shorter trips), and to encourage staff to build active travel into their everyday routines to support and contribute to wider health initiatives;
- To maximise the accessibility of the site by active modes at all times;
- To raise awareness of the impacts of their travel choices on health, the local environment; and
- To facilitate the use of non-car modes where it is reasonably practical.

Measures within the travel plan will promote long-term sustainable travel measures to and from the proposed development site. This will help in reducing single occupancy car travels or promotion of alternative means of transport. The measures to be implemented which will reduce emissions include:

- Layout of the site to promote cycle and pedestrian routes; and,
- A dedicated Travel Plan Coordinator (TPC) to ensure uptake and management of the Travel Plan.

5.2.1 Induction Packs

The future occupier of the building will provide staff with information about the TP and travel options through an induction pack. The pack will contain as a minimum the following information: Information on the health benefits of using active modes of transport;

- Name and contact details of the TPC and the availability of the TPC to speak with staff; Any other public transport information;
- An introduction to the TP, its purpose, and a summary document;
- Information on the health benefits of using active modes of travel;
- Promotion of public transport through the inclusion of bus route maps and timetables and
- Any other public transport information;
- Promotion of walking and cycling through the inclusion of maps showing walking and cycling routes close to the site;
- Any Company policy related to travel; and
- Details of any cycle discounts and local schemes.

5.2.2 Measures to Promote Public Transport

- Up-to-date timetables of bus and rail services, including route information and service frequencies, will be permanently on display for the information of staff;

- National Rail and Travel Line websites and enquiry phone numbers will be advertised through all relevant means to raise awareness.

5.2.3 Walking and Cycling

The following measures are proposed in order to promote walking and cycling to and from the site:

- The internal pedestrian / cycle routes will provide safe and convenient crossing facilities;
- All staff will be informed about the Travel Information Boards which will include maps of local walking and cycle routes and information;
- High quality cycle parking will be provided at convenient and visible locations within the site and uptake will be monitored; and
- The TPC will raise awareness of the health benefits of walking and cycling.

5.2.4 Cycle to Work Scheme

- The prospective occupier has in operation a cycle to work scheme, which is available to all permanent staff. This enables the future occupier to purchase a tax-exempt bicycle and cycling safety equipment. Staff will later loan the bicycle from the future occupier with payment taken as a salary sacrifice. At the end of the 12-month period, staff can then purchase the bicycle for a nominal fee.

5.2.5 Car Sharing

- Car sharing schemes are particularly suitable for the future occupier's storage and delivery unit as there are regular shift patterns in place meaning that many staff will start and finish at the same time.
- The future occupier will promote a car sharing scheme, such as Liftshare, to staff. The TPC will also encourage staff to find car share users.

5.2.6 Other Measures and Incentives

Measures to raise travel awareness will be promoted by the TPC, with these including national events such as those listed below:

- The future occupier will promote a car sharing scheme, such as Liftshare, to staff. The TPC will also encourage staff to find car share users.
- National Liftshare Week;
- Walk to Work Day;
- National Bike Week; and,
- Discounted public transport tickets.

6.0 CONCLUSIONS

This report presents the findings of a Transport Emissions Mitigation Plan to accompany an application for the erection of a warehouse (Use Class B8) with ancillary office, associated vehicle parking, van storage, plant, ancillary structures, lighting, landscaping and infrastructure works including earthworks to facilitate flood compensation area at land at Oldlands Farm, Newlands Road, Bognor Regis.

A 'Damage Cost' Assessment has been undertaken in accordance with Defra's Air Quality Appraisal: damage cost guidance. The 'Damage Cost' Assessment has quantified the level of Nitrogen Dioxide (NO₂) and Particulate Matter (PM_{2.5}) exhaust emissions from vehicles associated with the development.

The proposed mitigation measures included within the travel plan as part of the scheme which are designed to reduce emissions have a total value of £238,500, which exceeds the total calculated Damage Cost sum of £236,934 associated with the development. Therefore, it is considered that there are sufficient mitigation measures in place, as presented within the Travel Plan, to offset additional air emissions from the development.

APPENDIX A - REPORT TERMS & CONDITIONS

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