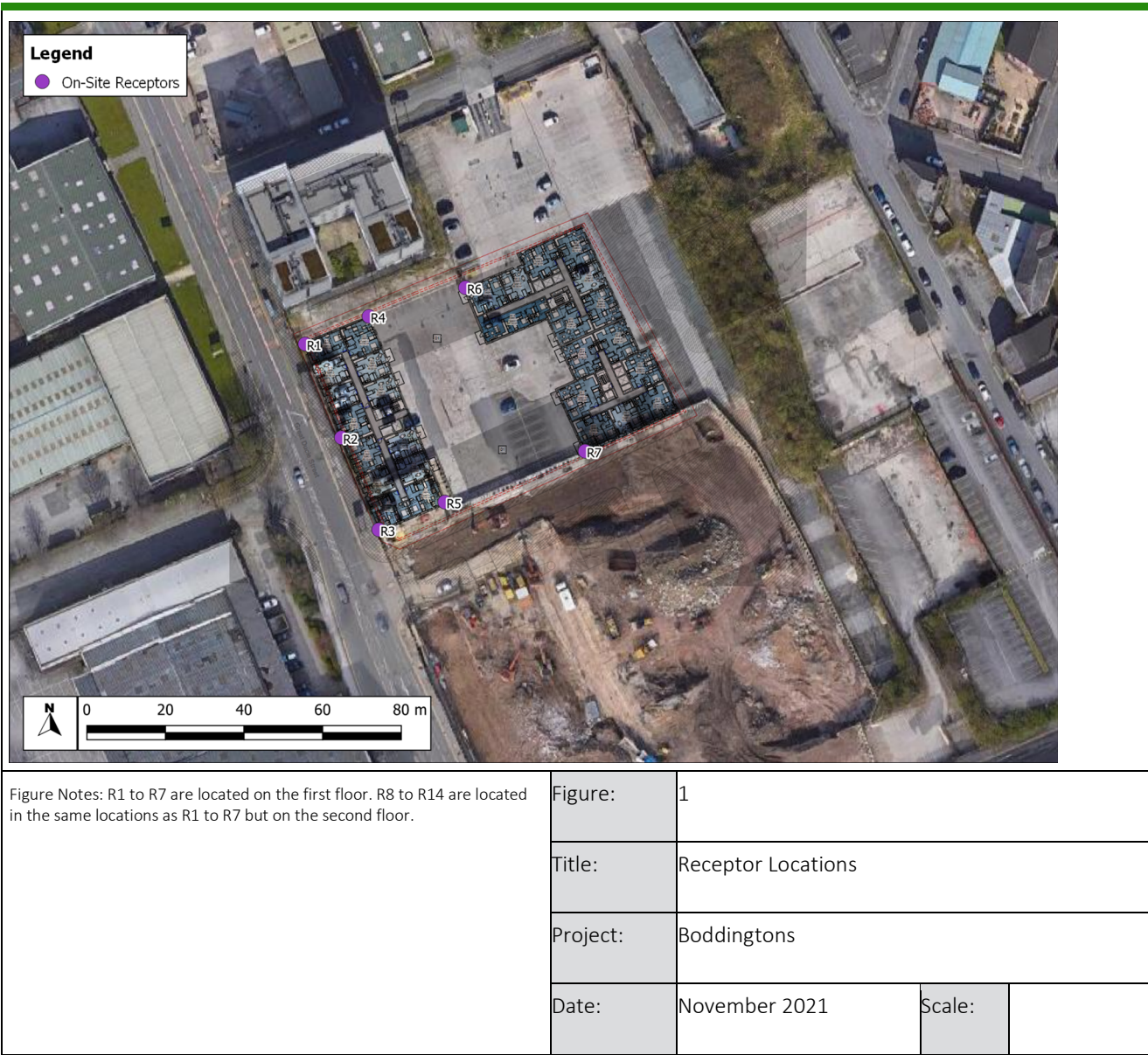


Air Quality Figures



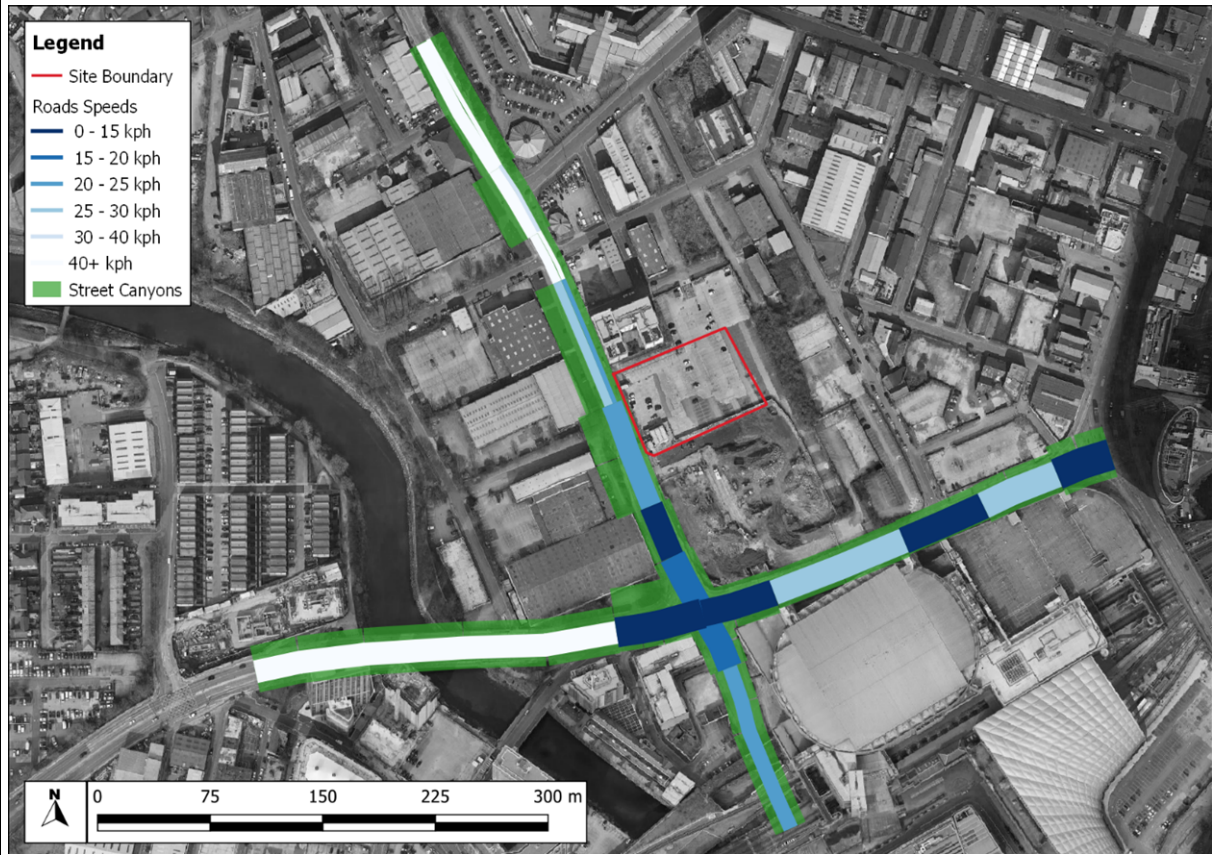


	Figure:	2		
	Title:	Modelled Road links, Speeds and Street Canyons at the Site		
	Project:	Boddingtons		
	Date:	November 2021	Scale:	

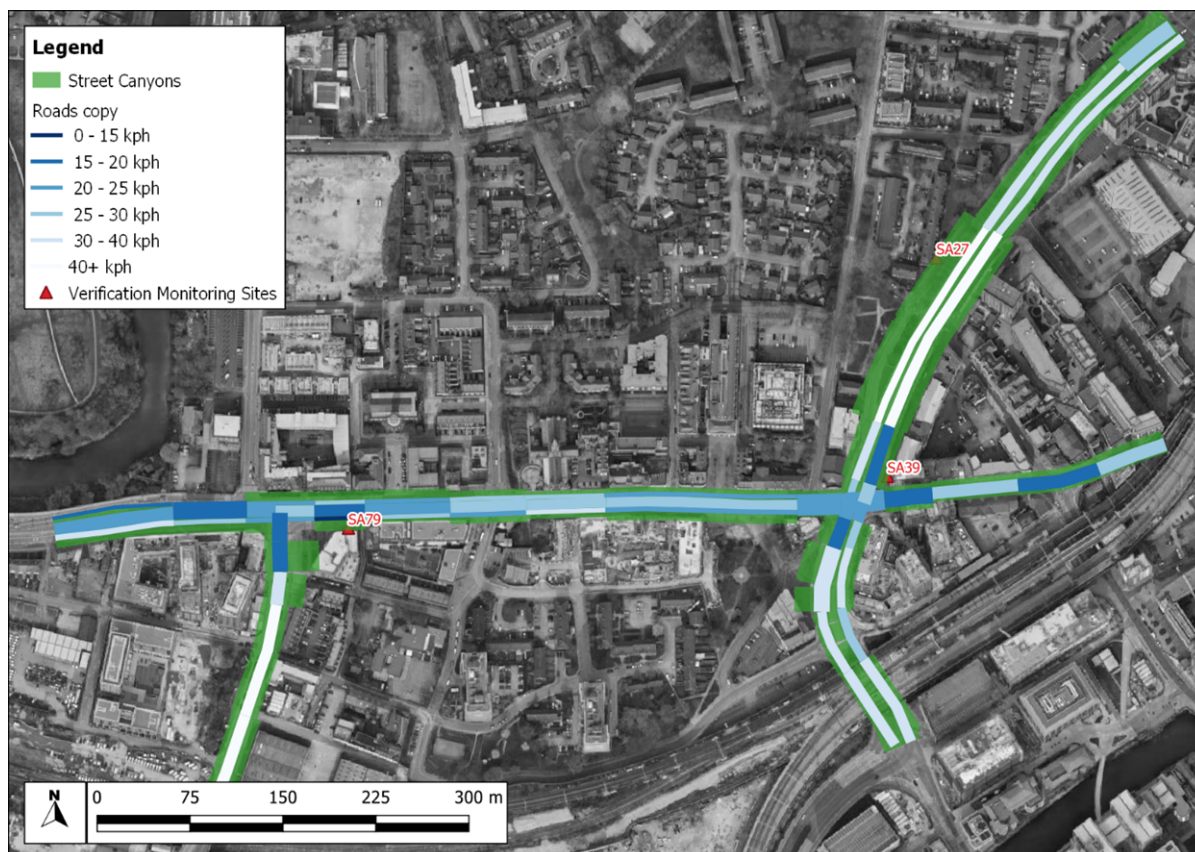


Figure:	3		
Title:	Modelled Road Links, Speeds and Street Canyons at the West Verification Monitors		
Project:	Boddingtons		
Date:	November 2021	Scale:	

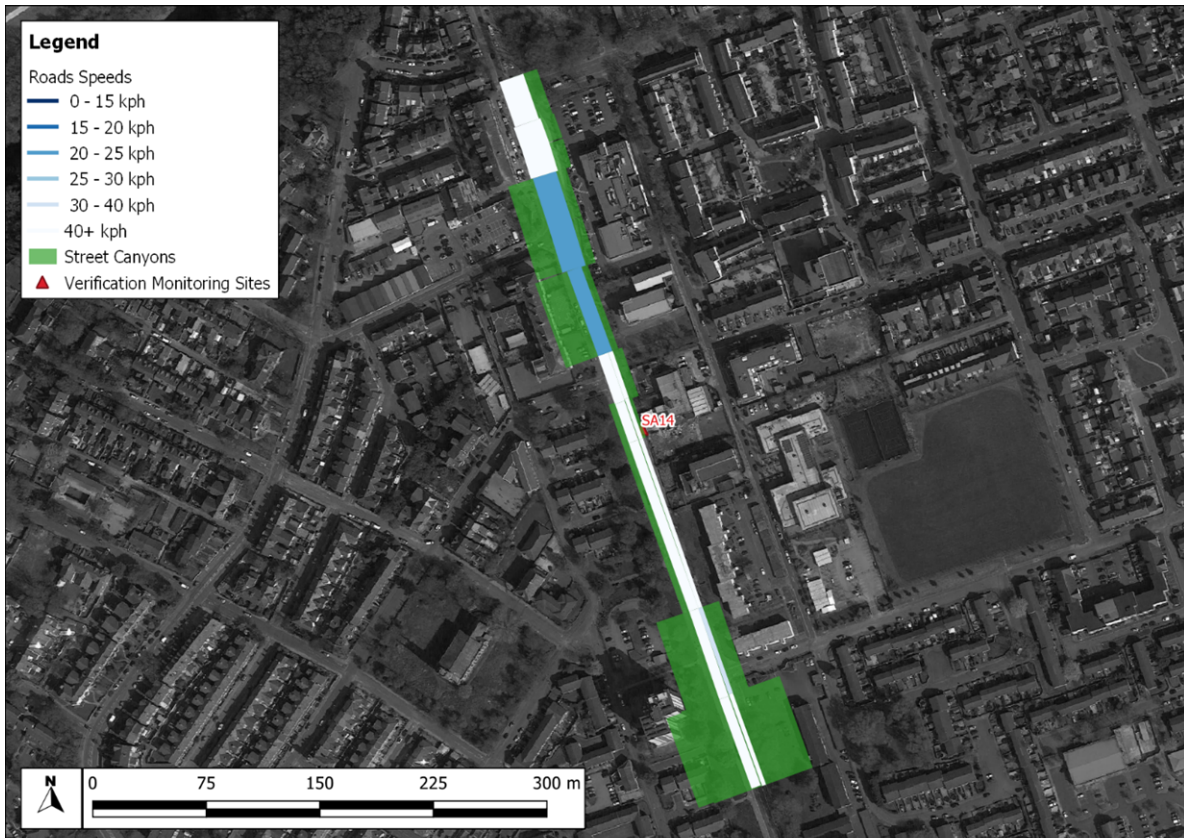


Figure:	4		
Title:	Modelled Road Links, Speeds and Street Canyons at the North Verification Monitor		
Project:	Boddingtons		
Date:	November 2021	Scale:	

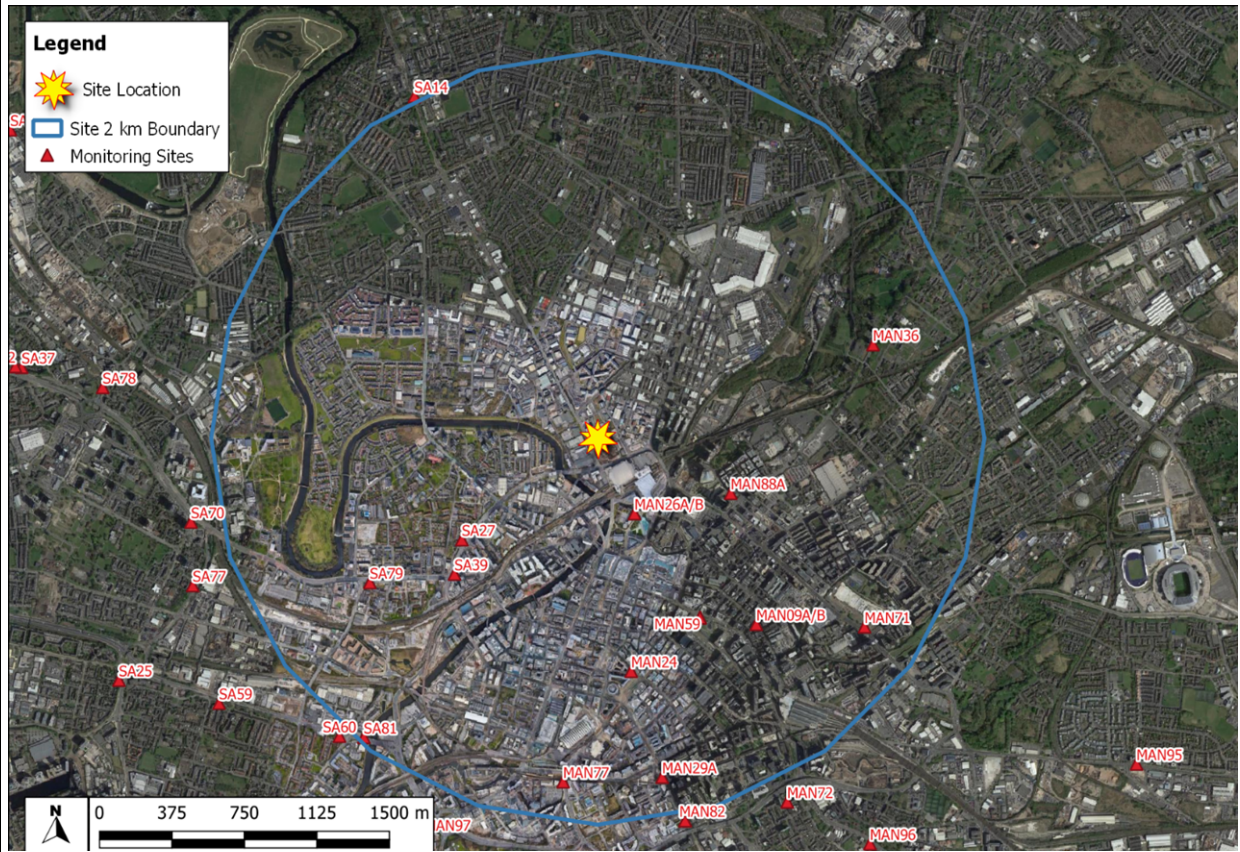


	Figure:	5		
	Title:	Monitor Locations within 2 km of the Site		
	Project:	Boddingtons		
	Date:	November 2021	Scale:	

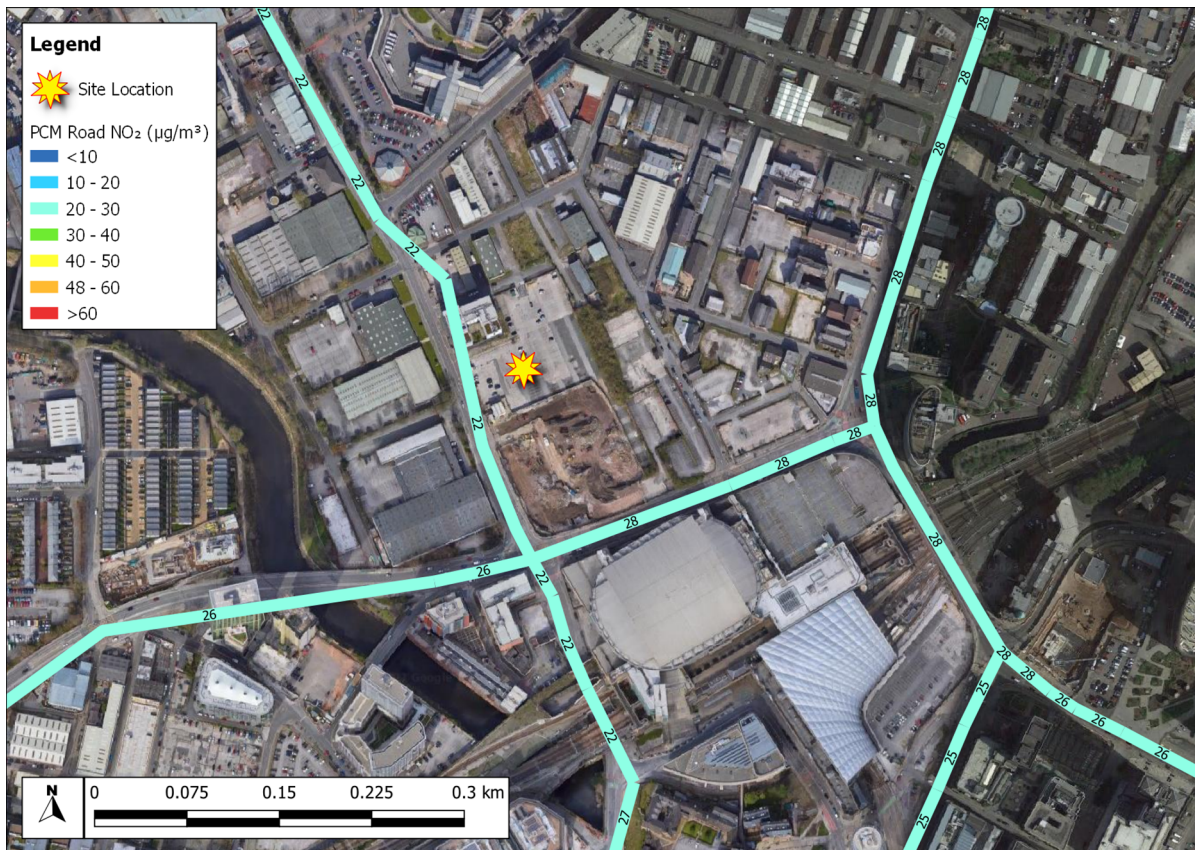


Figure:	6		
Title:	PCM Road Predicted NO ₂ Concentrations		
Project:	Boddingtons		
Date:	November 2021	Scale:	

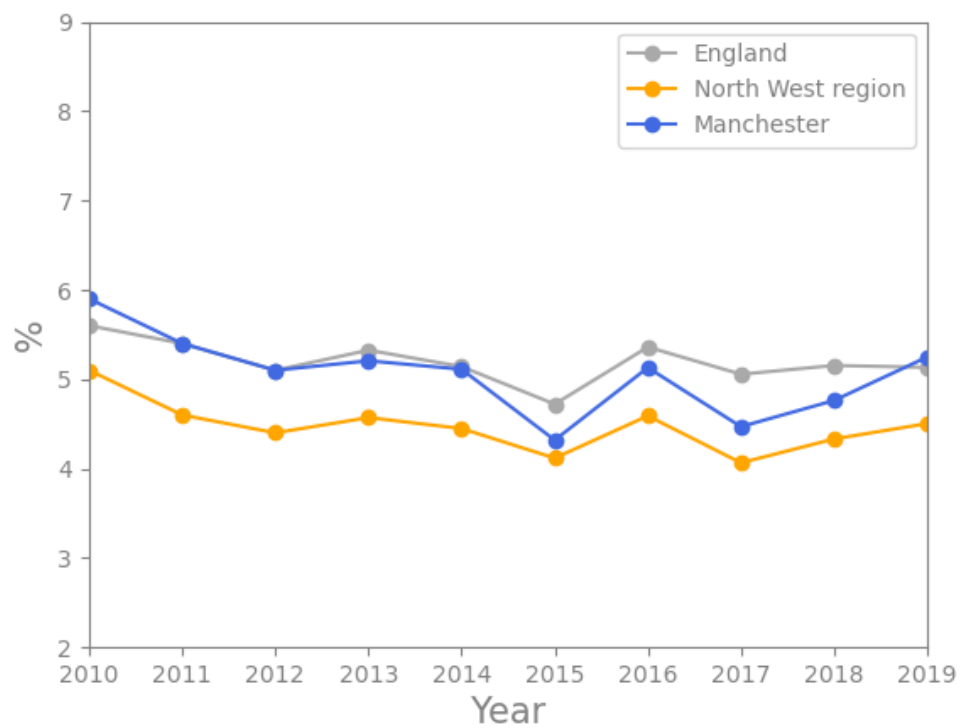


Figure:	7		
Title:	Mortality fraction attributable to PM _{2.5} pollution		
Project:	Boddingtons		
Date:	November 2021	Scale:	

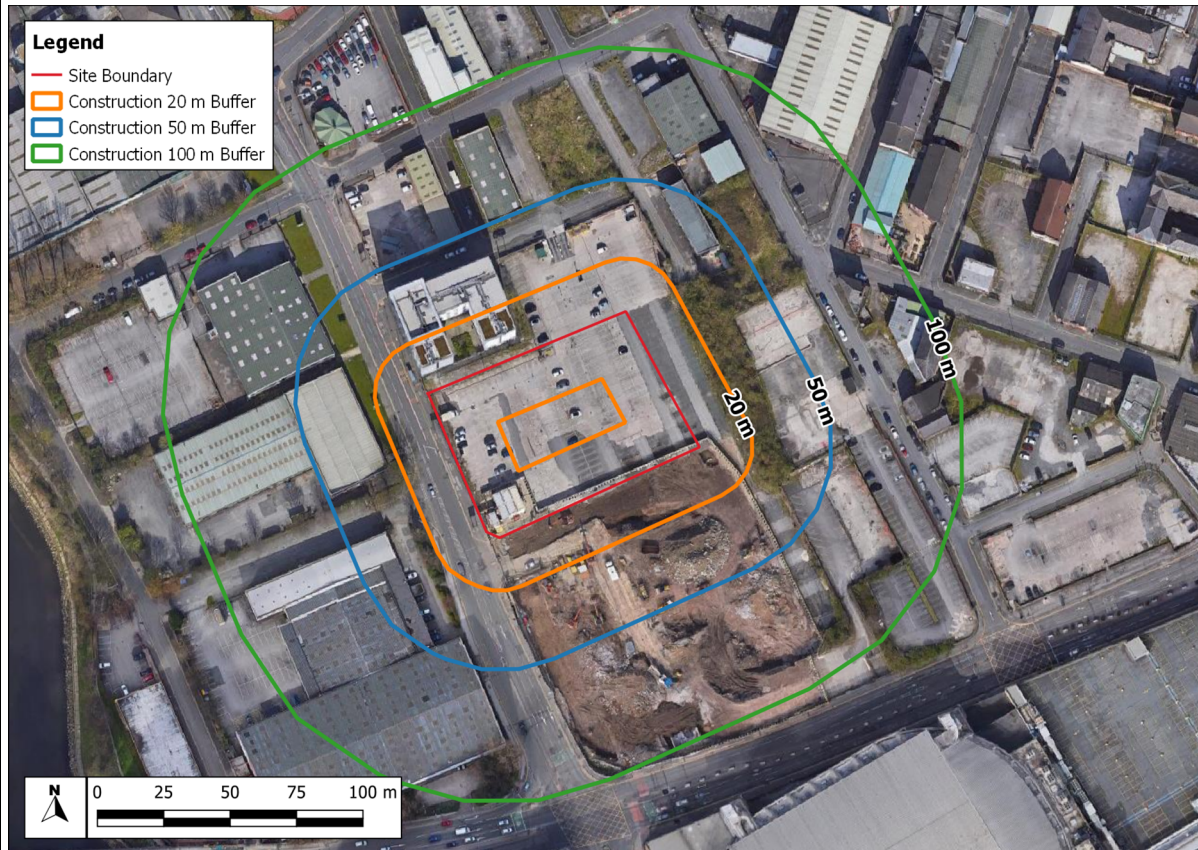


Figure:	8		
Title:	Construction Dust Distance Buffers		
Project:	Boddingtons		
Date:	November 2021	Scale:	

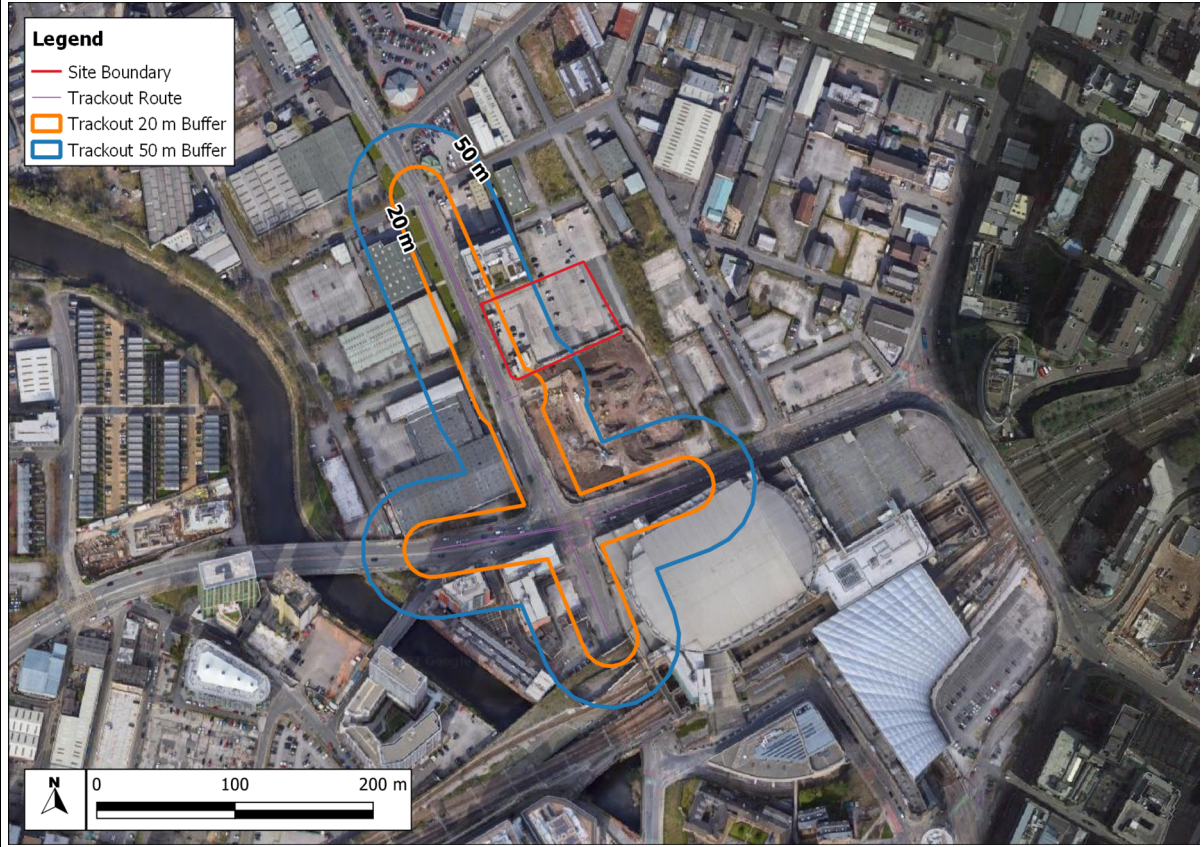


	Figure:	9		
	Title:	Construction Trackout Distance Buffers		
	Project:	Boddingtons		
	Date:	November 2021	Scale:	

Modelling

The Model

1. Parameters and data relating to the detailed dispersion modelling approach are set out below.

Modelled Roads

2. The road links, widths and heights (if necessary) included in the dispersion model have been aligned using Ordnance Survey, Google Satellite, Cumulative Scheme Plans and professional judgement. The modelled road links and speeds around the Site are shown in Figure **Error! Reference source not found.** Figure 3 and Figure 4 show the modelled roads close to local monitoring sites.
3. Where appropriate, the vehicle speeds have been reduced to take account of slower speeds at junctions and queuing.

Vehicle Emissions

4. Emissions of road-NO_x (i.e. the contribution from vehicles using roads), road-PM₁₀ and road-PM_{2.5} have been derived from the latest version of Defra's Emission Factor Toolkit (EFT) at the time the assessment was carried out (v10.1) using the traffic data presented in Table 1. The EFT is based on the COPERT 5 (Computer Programme to calculate Emissions from Road Transport) vehicle emission model and provides speed-average based emission rates. The EFT provides vehicle emission rates for the years 2017 – 2030; future years are based on a range of factors, such as expected vehicle fleet release dates, anticipated improvements in emission reduction technologies, expected uptake rates of different vehicles based on government policies, etc. It is therefore possible that the expected future emission rates in the EFT may differ from reality.

Fraction of Primary NO₂

5. In addition to emission rates, the fraction of primary NO₂ (f-NO₂) has to be obtained from the EFT. This represents the amount of NO₂ released from vehicle exhausts, before any further chemical reactions in the atmosphere, which becomes an important variable when post-processing the model predictions. In order to obtain the f-NO₂ value at each receptor location, the NO_x emission rates have been multiplied by f-NO₂ values to derive NO₂ emission rates. These NO₂ emissions have been included in the model and primary NO₂ concentrations have been predicted at the receptors. The predicted NO_x concentrations have been divided by the predicted primary NO₂ concentrations to calculate the f-NO₂ values at the receptor locations. The f-NO₂ values have then been used in the model post-processing (see paragraph 45).

Time-Based Profiles

6. Vehicle emissions vary over time depending on the volume of traffic, this includes hourly, daily and seasonal variations. Seasonal (monthly) and diurnal (hourly) traffic flow profiles have been taken from DfT national statistics (2019). Both the profiles have been assumed to follow an urban traffic profile for all modelled roads. These have been used in the model to adjust the emissions for each hour of the year modelled. These profiles are shown Figure 10 and Figure 11.

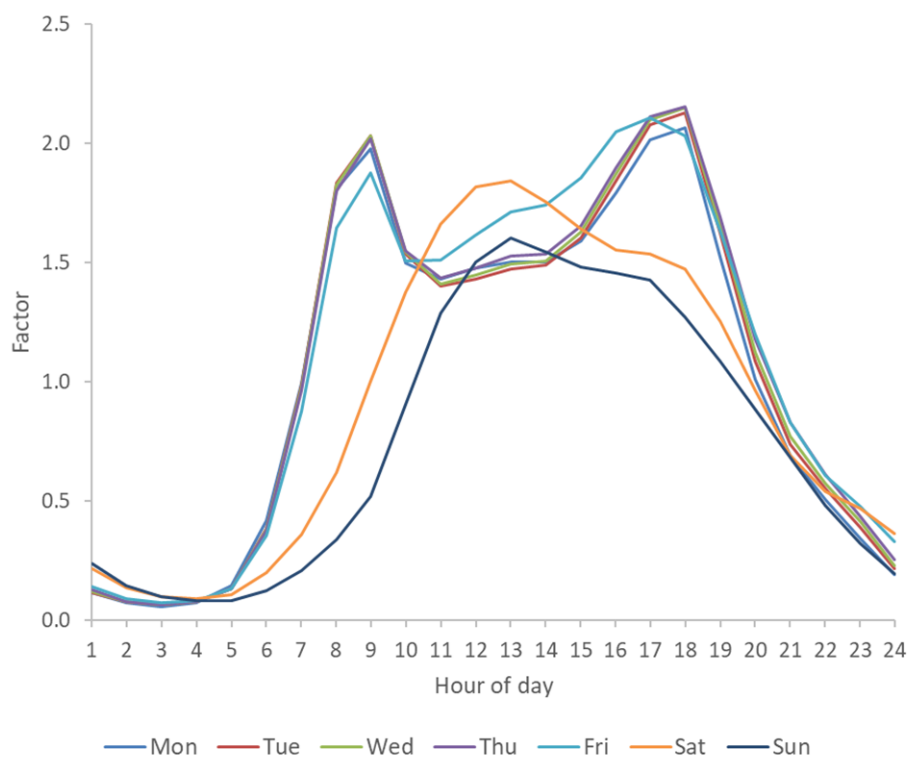


Figure:	10		
Title:	Urban Diurnal Profile for Each Day of the Week used in the Model, where the Factor is the Value that the Average Daily Emissions are Multiplied by in the Model		
Project:	Boddingtons		
Date:	November 2021	Scale:	

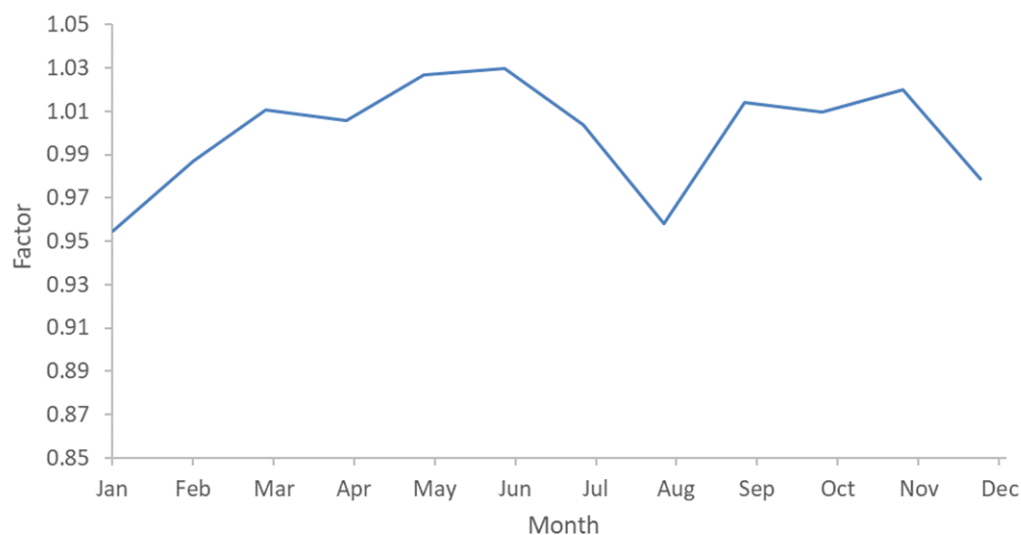


Figure:	11		
Title:	Urban Seasonal Profile for Each Month of the Year used in the Model		
Project:	Boddingtons		
Date:	November 2021	Scale:	

Traffic Flows

7. The traffic flows used in the model are presented below in Table 1 along with the percentage of heavy-duty vehicles for context. The traffic flows were sourced from Department for Transport (2021) count points and were growthed from 2019 to 2024 using a local growth factor obtained from TEMPro (Department for Transport, 2021). This TEMPro growth will account for cumulative development in the general region. Additional traffic generated by specific nearby committed developments was also added to the traffic flows. The traffic generation for each of these committed developments is identified in paragraph 1.125 of the Air Quality ES Chapter.

Table 1: Traffic data used in the model – 2024 ^a

Link	2019 AADT	HDV (%)	2024 AADT	HDV (%)
A56 Great Ducie Street	n/a	n/a	17,650	2.0
A56 Great Ducie Street Bus Lane Southbound	n/a	n/a	84	100.0
A6042 Ring Road West of Great Ducie Street	n/a	n/a	33,519	2.4
A6042 Ring Road East of Great Ducie Street	n/a	n/a	36,353	2.7
A6 Chapel Street West of Chapel Street	23,493	1.3	n/a	n/a
A6 Chapel Street West of Chapel Street Bus Lane Eastbound	602	100.0	n/a	n/a
A6 Chapel Street West of Chapel Street Bus Lane Westbound	587	100.0	n/a	n/a
A5066 Oldfield Road	9755	0.2	n/a	n/a
A6042 Ring Road North of Chapel Street Northbound	14,629	2.7	n/a	n/a
A6042 Ring Road North of Chapel Street Southbound	15,712	2.6	n/a	n/a
A6042 Ring Road South of Chapel Street Northbound	6280	1.7	n/a	n/a
A6042 Ring Road South of Chapel Street Southbound	6471	1.3	n/a	n/a
A6 Chapel Street East of A6042	9537	0.9	n/a	n/a
A56 Bury New Road	17,349	2.2	n/a	n/a

A56 Bury New Road Bus Lane Southbound	148	100.0	n/a	n/a
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Table notes:

a. Roads with n/a values have only been included to verify the model against 2019 measured concentrations and are not relevant for the future year of 2024 within the assessment.

Wake effects

8. As vehicles travel along a road a wake is left behind the vehicles as air in the path of travel is forced around the vehicle. The wake can be considered the turbulence induced by the movement of the vehicle, which affects the dispersion of pollution away from roads. The AADT traffic flows have been entered into the ADMS-roads dispersion modeling in order to account for vehicle wake effects which will vary on each link depending on the proportion of large vehicles to small vehicles.

Street Canyons

9. Roads in the local area are enclosed by buildings and vegetation, leading to restricted dispersion of pollution away from the roads and higher pollutant concentrations close to the roads along with a recirculation of pollution due to the wind passing over the urban canopy and 'trapping' pollution within the streetscape. This is known as a 'street canyon' effect. Roads where there is a potential for the streetscape to result in elevated concentration have therefore been modelled as asymmetric street canyons using the Advanced Street Canyon Module, within the ADMS-Roads model, accounting for the fraction of covered 'canyons'. Canyon widths are shown in Figure **Error! Reference source not found.**, Figure 3 and Figure 4.

Meteorology

10. Meteorological data has been taken from the Rosethorne Meteorological Station for the year of 2019. This station is located approximately 17 km southwest of the application site and is considered reasonably representative of meteorological conditions in Central Manchester; both the station and application site are located in Greater Manchester and will experience some similarity in meteorological conditions. Although the Meteorological Station is located in an area with flatter ground this will at least be partially accounted for through modelling different surface parameters. Meteorological data for the year of 2019 is considered to provide typical conditions. Illustrations of wind speed and direction for 2019 and other recent years are presented in Figure **Error! Reference source not found.**.

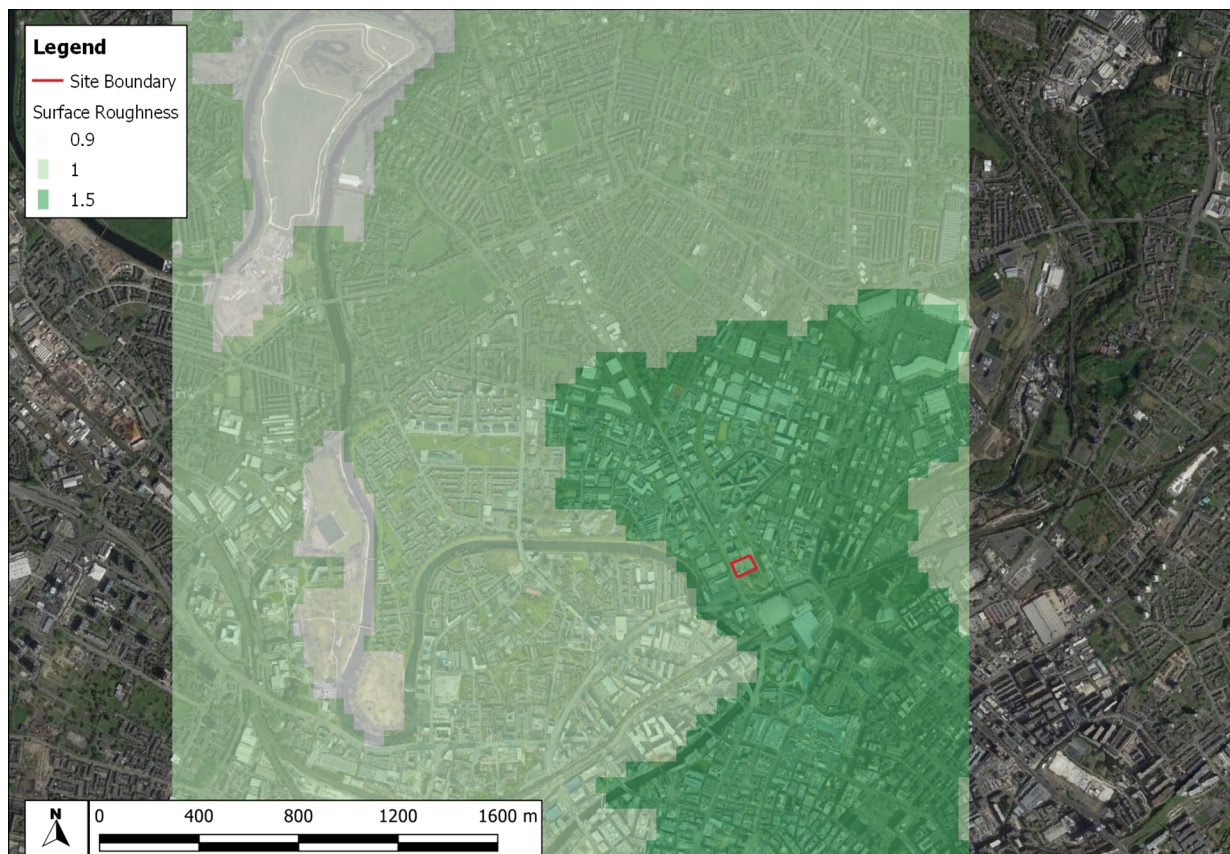


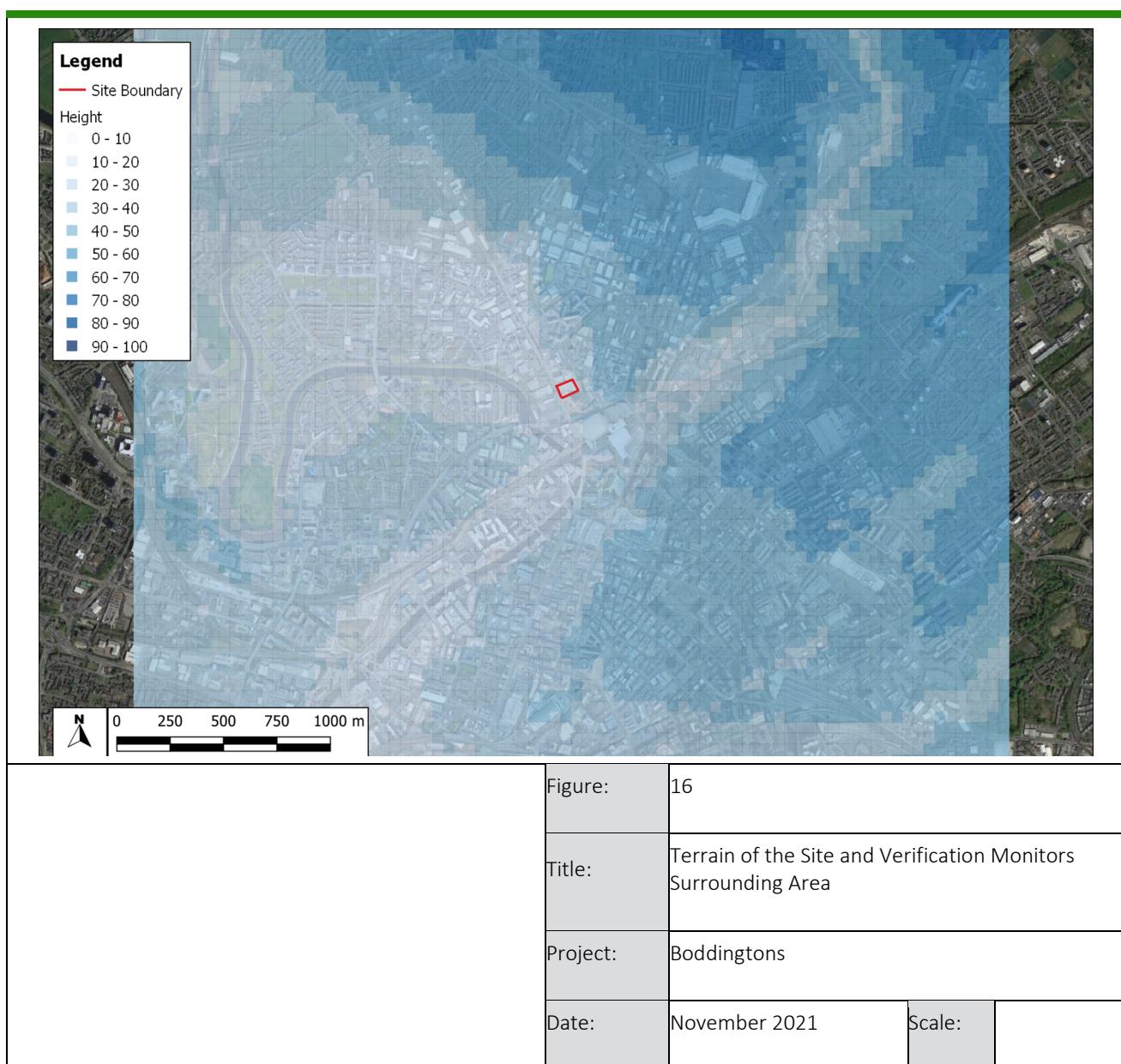
Figure:	1415		
Title:	Surface Roughness of the Site and Verification Monitors Surrounding Area		
Project:	Boddingtons		
Date:	November 2021	Scale:	

14. The surface albedo is the ratio of reflected to incident shortwave solar radiation at the surface of the earth. This varies depending on the land use, and thus area-weighted average albedos have been derived for the meteorological and dispersion sites and used in the models. Albedo values have been derived based on the different land uses in the study area. For this project Albedo has been calculated based on land-use up to 5,000m from the centre point (both the Application Site and the observation site) and is an arithmetic mean. The mean includes an inverse distance weighting for distances over 1,000m.
15. The Priestley-Taylor parameter is a parameter representing the surface moisture available for evaporation. A Priestley-Taylor parameter of 1 has been set in the model.
16. The CERC user guide explains that “the Monin-Obukhov length provides a measure of the stability of the atmosphere. In very stable conditions in a rural area its value would typically be 2 to 20 m. In urban areas, there is a significant amount of heat generated from buildings and traffic, which warms the air above the town/city”. For large urban areas this is known as the urban heat island. It has the effect of preventing the atmosphere from ever becoming very stable. The minimum Monin-Obukhov (M-O) length can be defined in the model to account for the urban heat island effect which is not represented by the meteorological data. Minimum M-O ratio is calculated based on land-use up to 5,000m from the centre point (both the Application Site and the observation site) and is a geometric mean. The mean includes an inverse distance weighting for distances over 1,000m.

Table 2: Meteorological Parameter Values used in the Model

Parameter	Meteorological Site Value	Dispersion Site Value
Latitude (°)	n/a	53.5
Surface roughness (m)	0.031	1.419
Surface albedo	0.23	0.193
Minimum Monin-Obukhov length (m)	12.2	58.5
Priestley-Taylor parameter	1	1

17. The effects of complex topography on atmospheric flows can result in changes in pollutant concentrations. These effects are most pronounced when the terrain gradient exceeds 1 in 10, i.e. a 100 m change in elevation per 1 km step in horizontal plane. The model can account for complex topography if required. The local terrain data, based on Ordnance Survey Terrain 50 data, is shown in Figure 12. The study area is considered to be relatively flat and therefore the terrain module within ADMS (FLOWSTAR) has not been used. The local terrain data is based on Ordnance Survey Terrain 50 data.



Processed meteorological Data

18. The meteorological parameters alter the meteorological data inputted into the model to reflect conditions at the dispersion site. For example, if the dispersion site has a higher surface roughness value than the meteorological site, then the model will reduce the wind speed at the dispersion site to reflect this. **Error! Reference source not found.** 13 shows the frequency of wind speeds and directions measured at the meteorological station in 2019 (left), which has been inputted into the model, as well as the frequency of wind speeds and directions processed

by the ADMS-roads model for the dispersion site (right). These illustrate that wind predominantly comes from the southwest and that the model has slightly lower wind speed at the dispersion site.

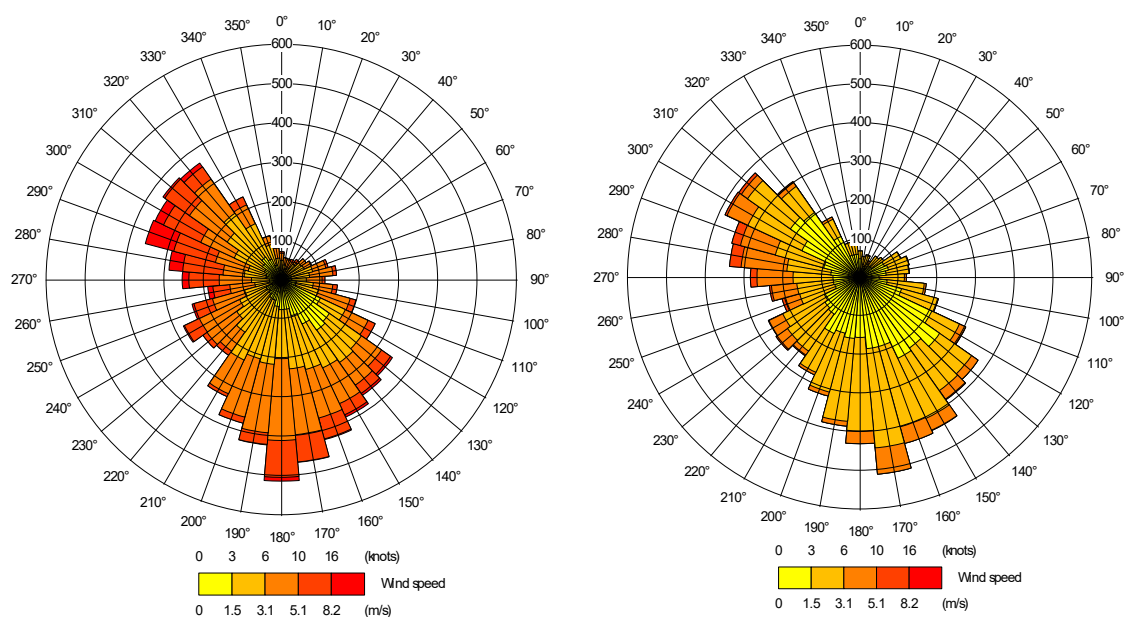


Figure:	17		
Title:	Wind Rose Showing the Frequency of Wind Speed and Wind Direction for the Meteorological Station (Left) and the Modelled Dispersion Site (Right) for the Year of 2019		
Project:	Boddingtons		
Date:	November 2021	Scale:	

Post-processing

NO_x to NO₂

19. Concentrations of road-NO_x and primary NO₂ have been predicted at each receptor using the ADMS-Roads model. The primary NO₂ emission factor (f-NO₂) at each receptor has been calculated by taking the ratio of predicted primary NO₂ concentration to road-NO_x concentration.
20. The f-NO₂ values along with the adjusted modelled road-NO_x concentrations and background NO₂ concentrations have been inputted into Defra's NO_x to NO₂ calculator (v8.1) in order to determine predicted road-NO₂ concentrations at each receptor. This tool has been run assuming the traffic is described as 'All other urban UK traffic', which is considered appropriate for the traffic associated with the study area.

Total concentrations

21. The adjusted (where appropriate) road-NO₂ concentrations have been added to the background NO₂ concentrations to calculate total NO₂ concentrations at the receptor.
22. Similarly, the adjusted (where appropriate) road-PM₁₀ and road-PM_{2.5} concentrations have been added to the background PM₁₀ and PM_{2.5} concentrations to calculate total PM₁₀ and PM_{2.5} concentrations at the receptor.
23. Process contributions from the combustion plant in the adjacent developments have been added to the road and background concentrations. As the concentration from the air quality assessments for the

adjacent developments include background and road pollutant contributions, the concentration predicted at R8 was removed from the value in the contour plot for the adjacent development to calculate the boilers process contribution. This represents a worst case process contribution for the boilers as it is the highest concentration on the contour plot despite being far from the road in the south-east corner of the Site.

Model Performance

24. The modelling will inherently have some uncertainties and may not reflect real conditions in the local area. An important part of modelling is reviewing the model results carefully and checking the model setup parameters and input data to minimise uncertainties.
25. LAQM.TG.16 (Defra, 2021), provides local authorities with advice on good practice for modelling air quality. This advice is widely applied for air quality assessments of proposed developments, although it is specifically aimed at local authority's duties to review and assess air quality. LAQM.TG.16 states that model verification, defined as a comparison of modelled results with monitoring results at relevant locations, is necessary (paragraph 7.520).
26. There are many reasons why there may be a difference between modelled and monitored concentrations and LAQM.TG.16 states "Model verification is the process by which these and other uncertainties are investigated and where possible minimised." (paragraph 7.512). It provides a list of the factors that may explain the differences including meteorological data, source activity data (e.g., traffic flow and speed), emission factors, model input parameters such as roughness length, and monitoring data.
27. The advice in LAQM.TG.16 is generic for all dispersion models. ADMS has been shown to predict concentrations well given sufficiently accurate data inputs.
28. It is important to review the results of the modelling carefully and check the model setup parameters and input data. Once reasonable efforts have been made to reduce the uncertainties of input data for a model, further comparison of modelled and monitored results should be undertaken. Where discrepancies remain, consideration may be given to adjusting the model.
29. Using good modelling techniques provides confidence that the model is performing as well as possible everywhere in the modelling area in the base year, not just at the monitoring locations. Modelling is often an iterative process of improving the model setup and evaluating the impact on model performance. The same principles need to be applied to the entire modelling study area to ensure the model performs well throughout the study area.
30. There are uncertainties in the traffic data used in the model. Baseline data was based on Department for Transport (2021) count points, which should be representative. However, the data has been growthed into the future and combined with traffic from other nearby committed developments. The road traffic flows are thus likely to be the greatest uncertainly for the model.
31. All reasonable efforts have been made to improve the model inputs. The model has gone through several modelling iterations to consider whether the performance of the modelled inputs can be improved. Improvements are based on comparison with the measured concentrations at specific monitoring locations and where improvements have been made, they have been applied as a wholistic approach with systematic updates to the entire model study area to ensure that the model is not performing well exclusively at the monitoring locations.
32. A final model verification exercise has been undertaken to determine whether there are any remaining discrepancies and to derive a factor with which to adjust the predicted concentrations from the model so that they match local conditions as closely as possible.

Model Verification

33. A final model verification exercise has been undertaken, following the guidance set out by Defra in Box 7.14 and Box 7.15 of LAQM.TG(16) (2021) and following good modelling practice.

NO₂

34. Concentrations of road-NO_x and primary NO₂ have been predicted for the year of 2019 using the ADMS-roads dispersion model at a number of sites, shown in Figure 5:
 - SA79 diffusion tube;
 - SA39 diffusion tube;

- SA27 diffusion tube;
- SA14 diffusion tube.

35. These are considered the most representative monitoring sites in the local area. There are, however, uncertainties associated with the suitability of each monitoring site. Each site is discussed below and presented in Figures 14 to 17:

- SA79 – The monitoring site is located approximately 6 m back from the kerb and is partially shielded by a tree.
- SA39 – The monitoring site is located against the wall of a building, approximately 5 m back from the kerb.
- SA27 – The monitoring site is located on a lamppost approximately 16 m away from the nearest main road, the A6042. The lamppost itself is located on Frederick Street, a quiet minor road. The modelling has not been able to take account of the localised emissions from vehicles using Frederick Street though due to insufficient traffic data being available. There is also a line of trees between the A6042 and the monitoring site, which will act to shield the monitoring site from some of the pollution associated with the A6042. This cannot be accurately accounted for in the dispersion model. As such, it is likely that the model would underestimate concentrations at this monitoring site.
- SA14 – The monitoring site is located on a lamppost about 1 m from the kerb. There are some evergreen trees located adjacent to the lamppost, the branches and leaves of which are likely to interfere with the measurements. Additionally, the diffusion tube is partially located behind a small sign, which will shield the monitoring site from some fumes from the adjacent road.



	Figure:	18		
	Title:	SA79 Diffusion Tube Monitoring Site (Location Circled in Red)		
	Project:	Boddingtons		
	Date:	November 2021	Scale:	



	Figure:	19		
	Title:	SA39 Diffusion Tube Monitoring Site (Location Circled in Red)		
	Project:	Boddingtons		
	Date:	November 2021	Scale:	



	Figure:	20		
	Title:	SA27 Diffusion Tube Monitoring Site (Location Circled in Red)		
	Project:	Boddingtons		
	Date:	November 2021	Scale:	



	Figure:	21		
	Title:	SA14 Diffusion Tube Monitoring Site (Location Circled in Red)		
	Project:	Boddingtons		
	Date:	November 2021	Scale:	

36. Predictions have been made at the heights of the monitor inlets.
37. Initially, the measured NO₂ concentrations at the monitoring sites have been inputted into Defra's NO_x to NO₂ Calculator, along with the background NO₂ concentrations and f-NO₂ values, in order to obtain 'measured' road-NO_x concentrations at the monitoring sites. The primary NO₂ emission factor (f-NO₂) at each monitoring site was calculated by taking the ratio of predicted primary NO₂ concentration to predicted road-NO_x concentration.
38. The predicted road-NO_x concentrations have then been compared to the 'measured' road-NO_x concentrations and NO_x factor calculated for each monitor, see Table 3.

Table 3: Measured and Modelled NO_x Comparison

Monitor	Measured NO ₂	Background NO ₂	Predicted f-NO ₂	Measured Road-NO _x	Modelled Road-NO _x	NO _x Ratio (measure / modelled)
SA79	41.1	22.5	0.21	42.9	27.1	1.585
SA39	41.7	25.0	0.25	35.9	31.8	1.128
SA27	37.2	24.3	0.27	26.3	9.8	2.685
SA14	31.6	18.2	0.27	26.7	17.4	1.539

39. Table 3 **Error! Reference source not found.** demonstrates that the model is performing relatively well at monitoring sites SA79, SA39 and SA14; and is not performing as well at SA27. SA27 is underpredicting by a larger

amount than the other monitors as emissions from a street close to the monitor was not modelled due to a lack of traffic data.

40. The model marginally underpredicts the concentrations at SA39 and slightly underpredicts at SA79 and SA14. These three sites are used for the final model adjustment calculations.
41. The predicted road-NO_x concentrations have then been compared to the 'measured' road-NO_x concentrations, see Figure **Error! Reference source not found.**. An adjustment factor of 1.351 has been derived from the equation of the linear trend line that has been fitted through zero. This factor indicates that, overall, the model is slightly underpredicting concentrations at the monitoring sites. The adjustment factor has been applied to all predicted road-NO_x concentrations to uplift the values to match the real measured 2019 concentrations at the monitoring sites. This is illustrated in Figure 23, which shows a comparison of the measured NO₂ concentrations and the total (i.e. road plus background) predicted NO₂ concentrations. While the spread of the points shown in Figure 23 is greater than would be ideal. statistics of this comparison, as given in Table 4, demonstrate that the predicted NO₂ concentrations have an acceptable fractional bias and correlation coefficient.
42. Overall, the adjustment is small at it is considered the model is performing well.

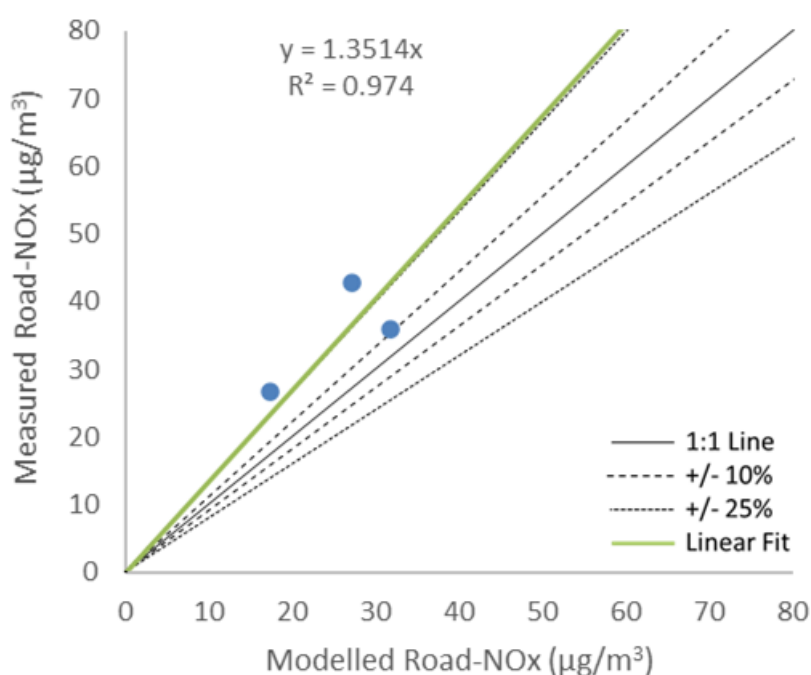


	Figure:	22		
	Title:	Comparison of predicted road-NO _x to 'measured' road-NO _x		
	Project:	Boddingtons		
	Date:	November 2021	Scale:	

Table 4: Model Verification Statistics

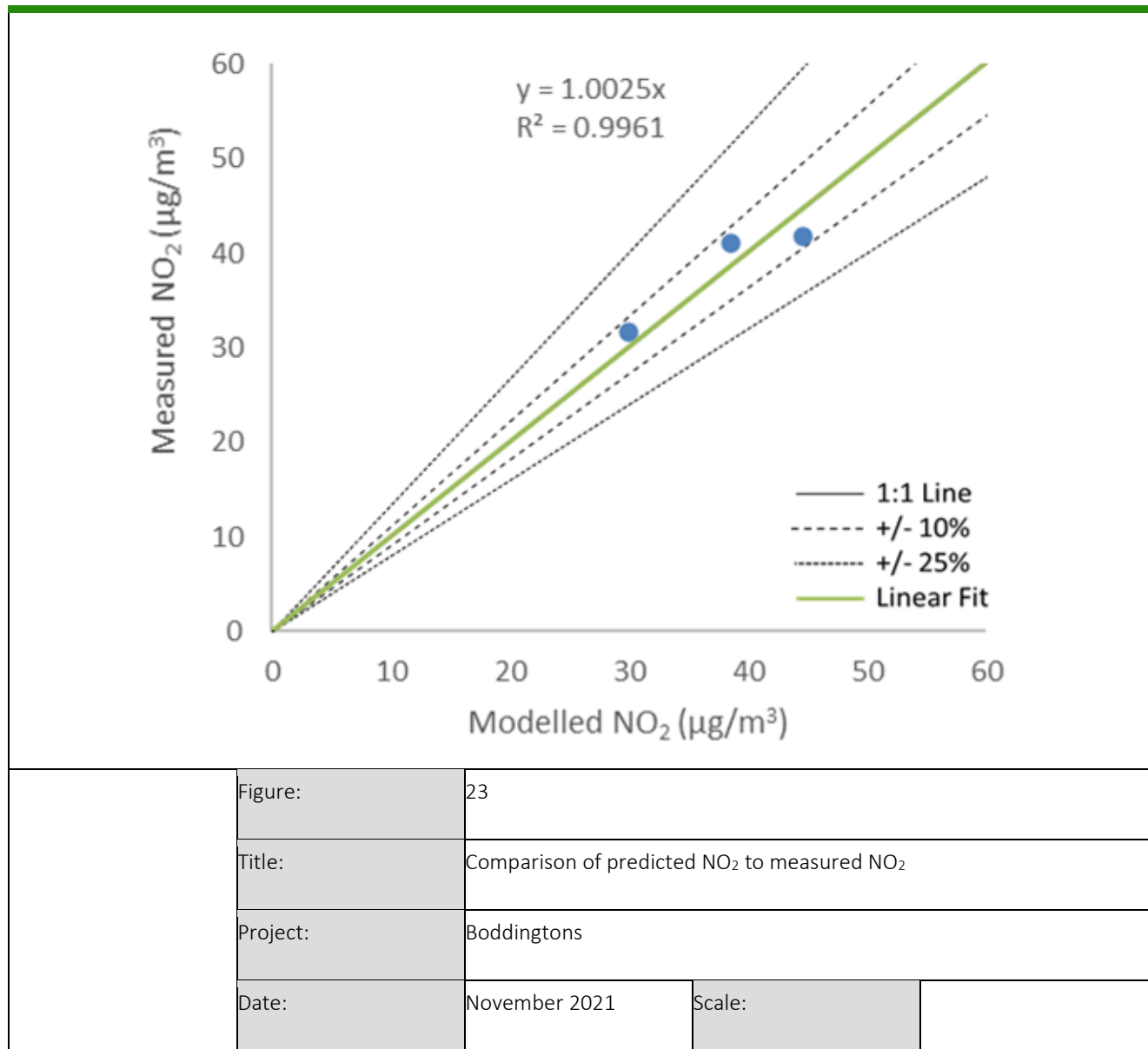
Statistic	NO ₂
Correlation Coefficient (r) ^a	0.718
Real Mean Squared Error (RSME) ^b	10.847
Fractional Bias (FB) ^c	0.321

Table Notes:

a. This is used to measure the linear relationship between predicted and measured concentrations. A value of zero means no relationship and a value of 1 means absolute relationship (ideal value).

b. RMSE is used to define the average error or uncertainty in the model. The ideal value for NO₂ is zero, and a value within 10% of the objective (i.e., 4 µg/m³) is general acceptable although models should always be improved where possible even where the value is less than 10% of the objective. If the value is greater than 25% of the objective (i.e., 10 µg/m³) then it is recommended that the model be revisited (this only applies to NO₂).

c. This is used to identify if the model shows a systematic tendency to over or under predict. FB values range between -2 and +2 and has an ideal value of zero. Negative values indicate a model over-prediction and positive values indicate a model under-prediction.



PM₁₀

- The Council do not operate any monitoring sites that measure roadside concentrations of PM₁₀ or PM_{2.5} in close proximity to the Site. In the absence of relevant monitoring sites with which to verify the model predictions of PM against, the model adjustment factor for road-NO_x has been used to uplift all predicted road-PM concentrations.

Post Processing

- Concentrations of road-NO_x and primary NO₂ have been predicted at each receptor using the ADMS-Roads model. The primary NO₂ emission factor (f-NO₂) at each receptor has been calculated by taking the ratio of predicted primary NO₂ concentration to road-NO_x concentration.
- The f-NO₂ values along with the adjusted modelled road-NO_x concentrations and background NO₂ concentrations have been inputted into Defra's NO_x to NO₂ calculator (v8.1) in order to obtain predicted road-NO₂ concentrations at each receptor. This tool has been run assuming the traffic is described as 'All other urban UK traffic', which is considered appropriate for the traffic associated with MCC. It should be noted, however, that receptor specific f-NO₂ values have been used in the NO_x to NO₂ calculator, which supersede the traffic selection.
- The road-NO₂ concentrations have then been added to the background NO₂ concentrations to obtain total NO₂ concentrations at the receptors. Similarly, the adjusted road-PM₁₀ and road-PM_{2.5} concentrations have been added to the background PM₁₀ and PM_{2.5} concentrations to obtain total PM₁₀ and PM_{2.5} concentrations at the receptors.

Uncertainty and limitations

47. The assessment involves a range of uncertainties, including the model inputs, assumptions, the model, model verification and post-processing of model results. A brief overview of the key uncertainties is discussed below.
48. There are inherent uncertainties associated with the traffic data; the DfT traffic data are based upon a total of 12-hour manual count surveys and continuous data from automatic traffic counts of vehicles travelling on the roads in the UK. These provide estimated vehicle trips in an average way, but the specific routing, timing, driving conditions and driving behavior of vehicles will vary and potentially lead to different emission levels.
49. The emission factors also involve a considerable amount of uncertainty. Emissions from the EFT are link averages and do not explicitly take account of acceleration or deceleration. Modelled speeds have been adjusted to account for this where possible. Future year vehicle emission rates are also based on a range of factors, such as expected vehicle fleet release dates, anticipated improvements in emission reduction technologies, expected uptake rates of different vehicles based on government policies, etc. It is therefore possible that the expected future emission rates in the EFT may differ from reality. Historically, evidence had suggested that Defra's EFT exaggerated reductions in NO_x emissions as expectations of reductions from diesel vehicles were included which were not seen in practice. However, analyses of recent NO_x measurements now provide evidence that vehicle controls are working and as a result Defra's EFT (v10.1) is the current best reflection of the rate of reductions into the future. The unknown of the future traffic fleet composition (built into the EFT) remain uncertain. In the absence of officially published alternative emissions, the approach of this assessment has been to utilise the EFT as recommended by Defra in the LAQM.TG(16) guidance (2021).
50. The model itself is based on assumptions of a range of parameters, including road geometries, road widths, street canyons and meteorological related parameters. There is uncertainty in all these parameters, but the modelling has been setup in a robust way based on professional experience to best represent the conditions. One of the main uncertainties in the model is meteorological data; this has been based on measurements made at a representative meteorological station, and although meteorological conditions will remain similar, it is entirely likely that meteorological conditions will vary in subsequent years and lead to marginally different concentrations.
51. The ambient background concentrations are also uncertain. While these are provided by Defra, the 1x1 km resolution is coarse, and the maps do not include all sources of pollution. Given the urban fringe location of the Site, it is considered likely that the background maps for this area are likely to be reasonable. To minimise uncertainty in the spatial resolution of the maps, the background concentrations have been interpolated to each receptor; essentially smoothing out the coarseness of the maps.
52. Emerging evidence (Grange, S, et al., 2017) suggests that the f-NO₂ has been decreasing in recent years, which is not taken into account within Defra's EFT or NO_x to NO₂ Calculator. If lower f-NO₂ values were assumed, then the predicted concentrations would likely be slightly lower throughout the Site and local area. Until more detailed scientific analysis is undertaken to understand the full extent of why f-NO₂ is decreasing and how it will behave in the future, it remains an uncertainty.
53. A model verification exercise has been undertaken to adjust the predicted concentrations from the model so that they match local conditions as best as possible. This has adjusted concentrations to match average conditions; some locations will remain underpredicted and some overpredicted.
54. This report does not consider the impacts of air quality on the health implications associated with Covid-19, as there remains too much uncertainty at this stage to consider this explicitly. In addition, the potential long-term implications of the pandemic on transport practices has not been considered, as it is too uncertain at this stage.
55. Although there is uncertainty associated with air quality modelling, the predictions made by this assessment have been carried out in a robust manner to minimise uncertainties where possible.

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