AIR QUALITY TECHNICAL NOTE - RUTHIN ROAD, WREXHAM

Introduction

Redmore Environmental Ltd was commissioned by Redrow Homes Limited to undertake an Air Quality Assessment (reference: 4432r5) in support of a residential led development on land off Ruthin Road, Wrexham. Further to submission of the planning application for the scheme, a revised Masterplan has been produced to include safeguarded land required by the Welsh Government to deliver a potential upgrade to Junction 4 of the A483. This includes provision of 1,450 residential units, which is slightly lower than the 1,520 considered within the original Air Quality Assessment.

The revised Masterplan has the following implications for air quality:

- Potential future exposure of residents to elevated pollution levels associated with vehicle exhaust emissions should the Junction 4 scheme be delivered; and,
- Variations to the Air Quality Assessment conclusions due to changes in the assessed quantum of development.

These are considered in the following Technical Note.

Potential Future Exposure

The potential for future residents to be exposed to any existing air quality issues was considered within the original Air Quality Assessment. This indicated that pollutant concentrations were predicted to be below the relevant Air Quality Objectives (AQOs) across the development. As such, the site was considered suitable for residential use from an air quality perspective.

The revised Masterplan itself will not affect any emission sources. However, should the Junction 4 scheme be delivered then it would introduce new slip roads to the west of the site, as well as a new link road through the development. Vehicle exhaust emissions from these links have the potential to affect pollutant levels at proposed unit locations. Traffic modelling for the new scheme was not available due to the stage of the project. However, similar flows to those currently on the A525 and slip roads would be anticipated. As shown on Figure 5 of the Air Quality Assessment, predicted annual mean nitrogen dioxide (NO_2) concentrations in the vicinity of these links are below the relevant AQO, with exceedences limited to the immediate surroundings of the A483. Figure 7 and Figure 9 shown compliance with the relevant AQOs for

particulate matter with an aerodynamic diameter of less than 10µm (PM_{10}) and particulate matter with an aerodynamic diameter of less than 2.5µm ($PM_{2.5}$) throughout the modelling domain. Based on these results, future residents of the development are not predicted to be exposed to AQO exceedences should the Junction 4 improvements be implemented. As such, the revised Masterplan indicates delivery of the scheme would not be affected by the proposals.

Variations to Air Quality Assessment Conclusions

As outlined previously, a slightly larger quantum of development than that shown in the revised Masterplan was considered in the original Air Quality Assessment. Vehicle trip generation and associated exhaust emissions directly correlates to the number of residential units. As such, the assessment results for the larger scheme can be considered a robust appraisal of potential impacts. These indicated residual impacts as a result of the operation of the development were **not significant**, in accordance with the Institute of Air Quality Management (IAQM) guidance 'Land-Use Planning & Development Control: Planning for Air Quality'[1]. The revised Masterplan has therefore not affected the conclusions of the original Air Quality Assessment due to changes in the assessed quantum of development.

Summary

Redmore Environmental Ltd was commissioned to undertake an Air Quality Assessment in support of a residential led development on land off Ruthin Road, Wrexham. Further to submission of the planning application, a revised Masterplan has been produced to include safeguarded land required by the Welsh Government to deliver a potential upgrade to Junction 4 of the A483. The potential implications for air quality were therefore considered in the context of the original assessment results.

The potential for future residents to be exposed to elevated pollutant concentrations was assessed based on the dispersion modelling outputs detailed in the original Air Quality Assessment. This indicated future residents of the development are not predicted to be exposed to AQO exceedences. As such, the revised Masterplan indicates delivery of the Junction 4 scheme would not be affected by the proposals.

The revised Masterplan includes a slightly smaller quantum of development than considered in the Air Quality Assessment. As such, the original results can be considered a robust appraisal of

[1] Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

potential impacts. The revised Masterplan has therefore not affected the conclusions of the original Air Quality Assessment.

Technical Note produced by Jethro Redmore, Director, Redmore Environmental, on 19th June 2024