# 8. Environment - Air, Noise and Lighting





### **Air Quality**

Within Northampton Borough there are two Air Quality Management Areas (AQMA) of relevance to the Proposed Development: one is along the M1 to the immediate north of the site, including part of Collingtree village; and the other is along the A45 in Wootton. Whilst no AQMAs in South Northamptonshire are likely to be adversely affected, pollution levels in Roade have been highlighted as a concern by the local authority. A detailed dispersion model has been used to predict nitrogen dioxide (NO<sub>2</sub>) and fine particulate matter (PM<sub>10</sub>) concentrations in the vicinity of key roads around the site, i.e. the M1, A45 and A508, using outputs from the Transport modelling. Baseline diffusion tube monitoring has also been undertaken for a year, and data has been shared as part of the consultation process.

Results of this monitoring show that whilst elevated concentrations of  $NO_2$  are experienced in Collingtree at some locations very close to the M1, the concentrations decrease rapidly with distance from the motorway. Evidence shows that at a distance of 90m from the M1 pollution levels have largely dispersed to background levels, meaning that air quality for the vast majority of Collingtree is good. As an AQMA within the motorway corridor, air quality here is principally affected by strategic traffic rather than just local traffic.

The Proposed Development will contribute towards a range of impacts on air quality at different spatial scales, and these will be presented in the final application documents. Improvements to Junction 15 will improve capacity and will significantly reduce road traffic congestion at the junction and nearby. This will help provide local air quality benefits by reducing polluting emissions from congested traffic. Modelling shows there will be a small increase in traffic flows on the M1 relative to the current volumes (around 4%) and this could result in a small increase in pollution levels at a few properties within the Collingtree AQMA. However, the Highways England 'Smart Motorways' scheme will improve the operation of this stretch of the M1, reducing congestion and the frequency of 'stop-start' traffic known to generate higher levels of pollution than free-flowing traffic. Also, the proposed SRFI will enable a shift of freight from road to rail, reducing the reliance on road freight and reducing national HGV trip lengths. At the strategic (regional and national) level this will produce significant benefits in terms of emissions reductions. Based on an example of the types of freight journeys or routes which might transfer from road to rail, the Northampton Gateway SRFI could remove over 92 million HGV miles per year from the highway network, creating significant environmental and economic benefits, including contributing towards reducing the impacts of road transport on air quality.

In Roade, the Proposed Development (as a result of the Bypass) will see a notable improvement to air quality in the centre of the village.

The application will present an assessment of these various related factors, but overall the impacts on Air Quality are considered negligible or minor at a local scale, with beneficial effects predicted on a regional and national scale.

Mitigation measures will be delivered as part of the Proposed Development to minimise the impacts on air quality. These are likely to be framed around a Low Emissions Strategy and will include specific measures, such as:

- generous (above standard) provision of electric vehicle charging points on-site for employees;
- provision of LPG fuelling/battery storage of solar energy on-site to encourage and enable alternative fuels for HGVs (both on and off-site)
- provision of bus shuttle service for staff to access the site;
- provision of pedestrian and cycle routes for easier site access, and provision of secure cycle parking facilities on-site;
- provision of real time information on public transport;
- appointment of a travel co-ordinator to oversee the development and implement the Travel Plan and associated schemes to encourage and facilitate use of non-car modes and car-sharing.

# Lighting (night-time effects)

A lighting assessment and strategy has been undertaken as part of the ES and site design work. A Lighting Strategy is being developed which will then be used to determine the final and detailed lighting installed on the site once the position and number of buildings are known, and as the rail terminal is operated and expanded over time. The Lighting Strategy will inform decisions about the placing and type of lighting features installed to ensure that the proposed development will have minimal direct effects on neighbouring communities.

Part of the assessment process has included an assessment of the existing lighting context and any light pollution evident in views from the surrounding area. This shows that many nearby communities already experience 'sky-glow' and other lighting effects from the existing urban area of Northampton, from the M1,

and from the villages themselves. From many receptors to the south and west the SRFI site will be viewed against the backdrop of existing lighting from Grange Park and the Northampton conurbation.

In accordance with industry standards and recommended best practice the Lighting Strategy is being designed to prevent glare and light spill to locations off-site, including upward light that can contribute to sky glow. Furthermore, the landscaping and earthworks strategy (described elsewhere at this exhibition) will screen much of the lighting on the site from being directly visible from outside the site and so will form part of the mitigation for lighting as well as other potential visual effects.

In combination, the Lighting Strategy, plus the screening effects of the landscaping and planting, will be negligible for all receptors and communities nearby, with only minor impacts on very small numbers of properties with direct views or glimpsed views of the site. Similarly, the Roade Bypass will only be lit selectively at the junctions to meet required highway safety standards, with only minor impacts from lighting on a small number of properties.

#### **Noise and Vibration**

Surveys have been undertaken to determine the existing noise and vibration conditions at sensitive receptors around the proposed development. These include locations in Collingtree, the eastern side of Milton Malsor, the eastern edge of Blisworth, around Junction 15 of the M1, and in and around Roade. The survey locations are shown on the maps.

Road traffic noise from the M1 dominates the noise environment for most of the sensitive receptors. In addition, for receptors near to the Northampton Loop and West Coast Main Line railway lines, the existing noise environment is also punctuated by freight and passenger train movements.

The emerging scheme design includes inherent mitigation measures built into the development. This currently includes substantial earth bunding around the SRFI site. The noise assessment shows that these will assist in minimising adverse noise effects from the main (SRFI) site. For properties to the east of the M1, the anticipated impact of sound from operational activities at the SRFI will be negligible or at worse, minor adverse. This is due to the mitigation provided by the landscaping coupled with the generally higher ambient background noise levels from the M1.

Some properties to the west of the M1 are more likely to experience operational noise from the SRFI due to them being closer to the site boundary. However, the proposed landscaping and bunding around the main site and the earthworks strategy which will have the effect of partially sinking the buildings into the landscape will help to minimise any adverse impacts. Modelling work is still ongoing to determine the extent of these impacts.

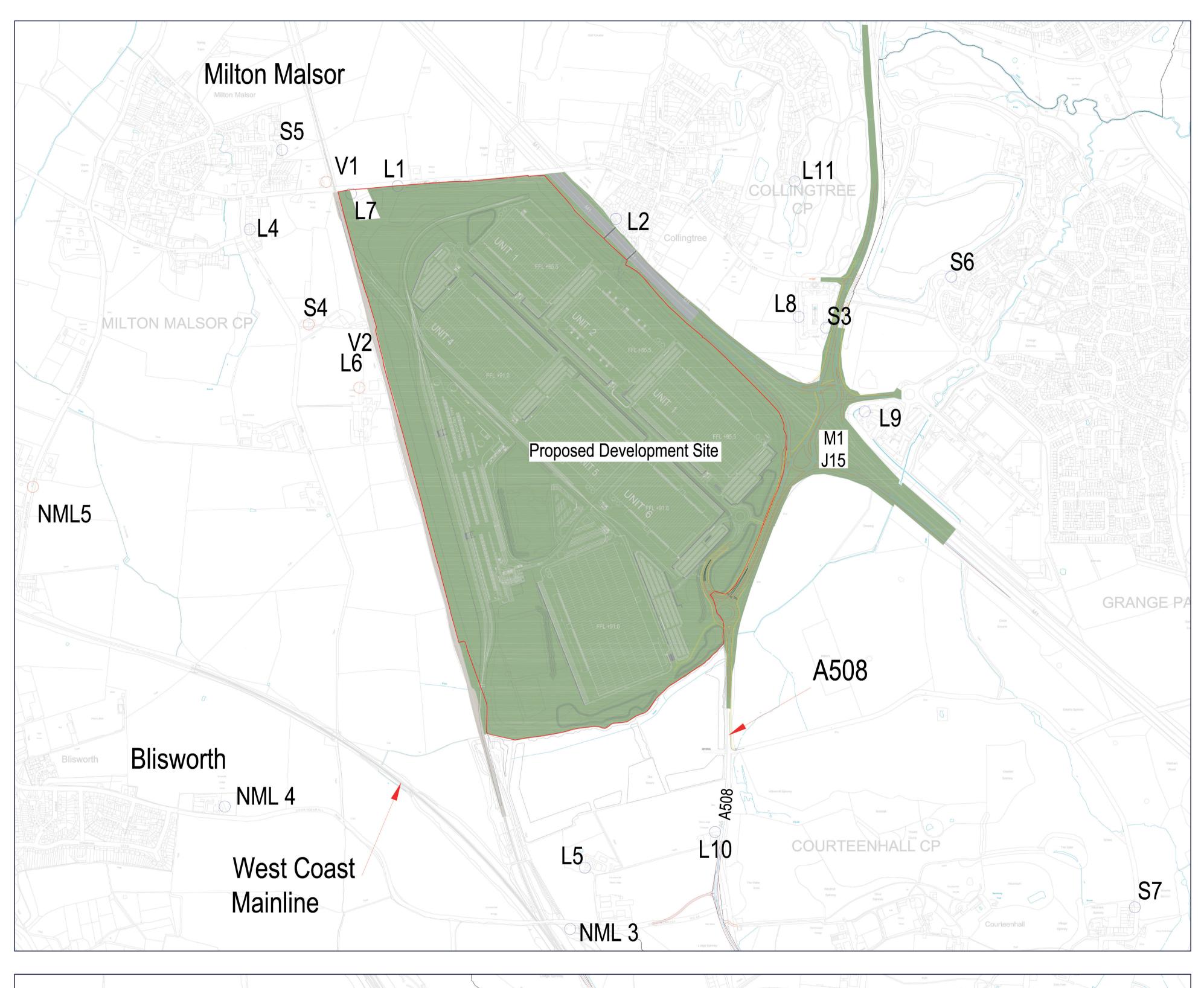
Other mitigation measures will include encouraging all occupiers and users to have their HGVs fitted with white noise reversing alarms (this is increasingly common on newer vehicles anyway). Furthermore, for any refrigerated HGVs that are likely to use the site, electric docking stations will be available to avoid the need for HGVs to keep their engines idling to operate their chiller units when at the SRFI. Such operational and management issues will assist in further minimising the operational noise impact. There will be an increase in traffic on the local road network associated with vehicles travelling to and from the proposed SRFI site. When added to the existing baseline flows on these roads, these vehicles are anticipated to result in a relatively modest increase in road traffic noise which is unlikely to be particularly noticeable at most nearby receptors. The initial modelling results indicate that most receptors are predicted to experience no more than a negligible impact.

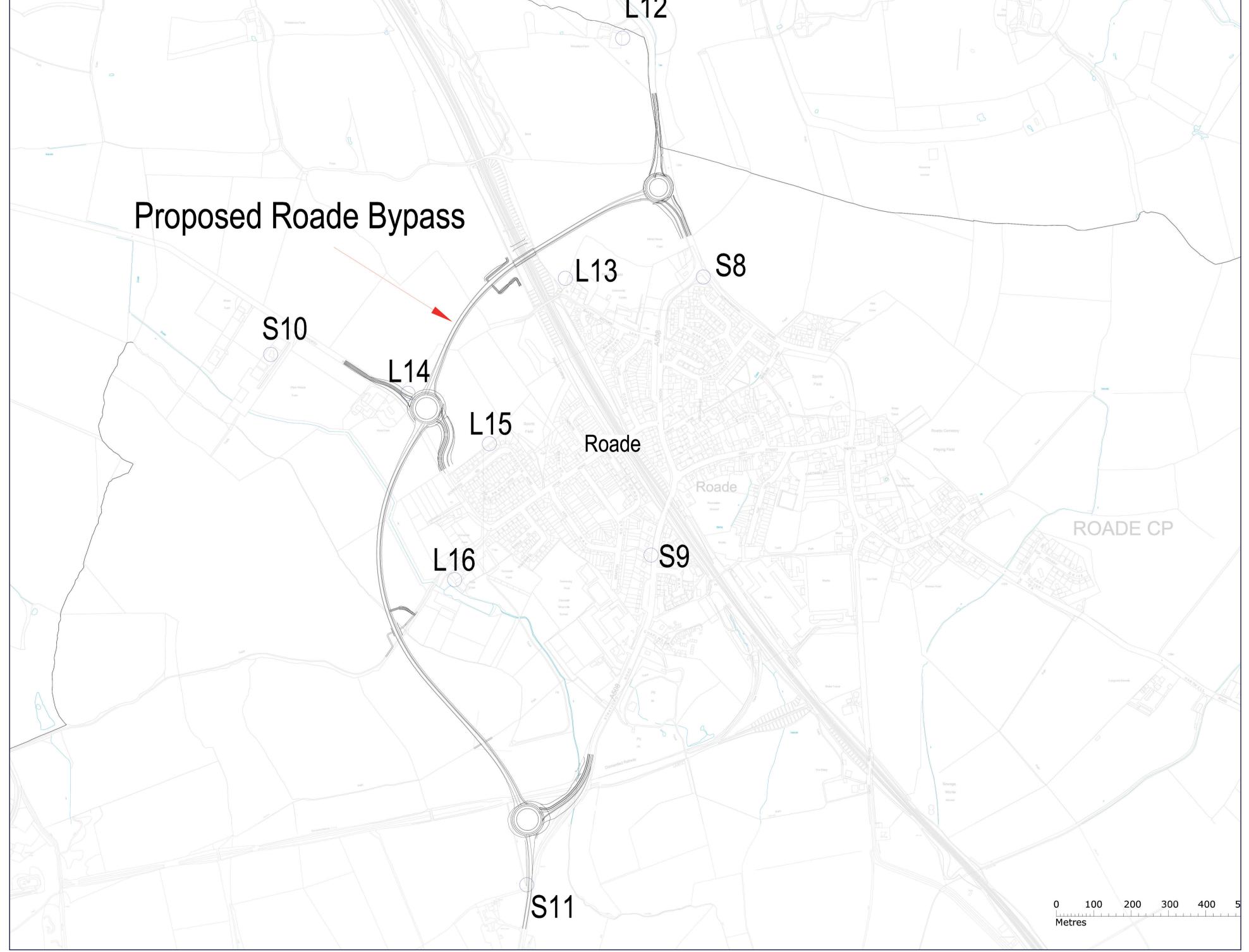
The proposed bypass will reduce the volume of traffic on the A508 through the centre of Roade, noticeably reducing the traffic noise such that some receptors in close proximity to that part of the A508 will have as much as a major beneficial impact. Creation of the bypass will increase the traffic noise experienced on the outskirts of Roade near the Bypass, an area currently with relatively low ambient noise levels. The bypass design is already including mitigation measures in the form of earth bunds. The assessment is continuing with a view to optimising the overall mitigation package provided.

There is likely to be increased railway noise at receptors near to the Northampton Loop railway line due to the additional freight train movements. The extent of this impact has been assessed and is not anticipated to be significant, with no more than negligible impacts expected at the affected receptors.

The additional freight movements on the Northampton Loop, could also give rise to potential vibration effects. These effects are only likely to be experienced at dwellings in Milton Malsor, in close proximity to the Northampton Loop. The initial assessment indicates that there would be a negligible increase in overall vibration at these receptors and that no adverse effect would be expected from the increase in train movements.

## Noise Monitoring location plans





Note the above plan indicates both potential Bypass corridor options, see board 11 for further information.



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