Community Committee

Leeds CITY COUNCIL

Joint Report: of the Chief Officer Highways & Transportation and the Chief Planning Officer

Report to: Outer North East Community Committee

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Date: 07/08/2021 **To note**

Considerations Regarding the Harmful Environmental Effects of Motorways

Purpose of report

To provide the Outer North East Community Committee with an overview of the relevant policies of UK Government and Leeds City Council with regard to the environmental effects of transport with specific focus on the air quality and noise impacts related to the Motorway network.

Overview

1. The committee has been asked to consider issues relating to both the monitoring of, and the protection of residents from, the environmental effects of motorways as part of the process to updating the local development plan.

2. Whilst the environmental impacts of motorways can affect residents of Leeds, Leeds City Council has very limited powers to reduce and mitigate those effects except through planning policy related to proposed developments. Responsibility for the mitigation of impacts upon existing residential properties lie with Highways England.

Recommendations

3. To note the contents this report.

Main Issues

Concerns have been raised through the Outer North East Community Committee regarding the environmental impacts associated with the motorway network, particularly noise and air quality within the Outer North East Community area and the policies of Leeds City Council for mitigating the impacts on local residents.

This briefing note addresses the concerns raised and outlines the relevant national and local policies applicable to these issues.

4.1 Air Quality Management in Leeds

Existing air quality legislation was designed to reduce risks to human health and the environment. Emission limit values were set by the EU Air Quality Framework Directive and were transposed into UK law in the Environment Act 1995.

Regulations set under the Environment Act 1995 sets out the Local Air Quality Management (LAQM) process which makes local authorities responsible for the monitoring and assessment of air quality within their area. Where air quality is identified to exceed the levels at which relevant exposure could be damaging to health, the Local Authority must declare an Air Quality Management Area (AQMA) and prepare an action plan to reduce pollution levels to below the relevant limits.

In common with most other Local Authorities, most air pollutants included in the LAQM process have been screened out and considered to be well below the relevant objective levels within the Leeds District. Two pollutants which have remained a concern across the country are nitrogen dioxide (NO_2) and particulate matter (PM).

All the existing AQMAs within Leeds relate to annual average concentrations of NO_2 with levels of PM now predicted to be significantly below the objective threshold in all areas of Leeds.

The national objective levels are designed to identify areas where people are at risk from exposure to air pollution when exposed for the relevant period of time. The tables below detail the current objective levels for NO_2 and PM_{10} with the relevant exposure. The objectives are not relevant to places of work or locations where members of the public do not have regular access. There are several locations in Leeds where NO_2 levels do exceed the annual mean national objective levels but there is no relevant public exposure.

Table 1.1 – UK Air Quality Objectives and Pollutants - LAQM

Pollutant	Objective	Averaging Period	Obligation
Nitrogen dioxide (NO_2)	200µg/m^3 not to be exceeded more than 18 times a year	1-hour mean	All local authorities
	40µg/m^3	Annual mean	All local authorities
Particulate Matter (PM_{10})	50µg/m^3 not to be exceeded more than 35 times a year	24-hour mean	All local authorities
	50µg/m^3 not to be exceeded more than 7 times a year	24-hour mean	Scotland only
	40µg/m^3	Annual mean	All local authorities
	18µg/m^3	Annual mean	Scotland only

Averaging Period	Objectives should apply at:	Objectives should generally not apply at:
Annual mean	All locations where members of the public might be regularly exposed. Building façades of residential properties, schools, hospitals, care homes etc.	Building façades of offices or other places of work where members of the public do not have regular access. Hotels, unless people live there as their permanent residence. Gardens of residential properties. Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.
24-hour mean and 8-hour mean	All locations where the annual mean objective would apply, together with hotels. Gardens of residential properties[10].	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.
1-hour mean	All locations where the annual mean and: 24 and 8-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets). Those parts of car parks, bus stations and railway stations etc. which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more. Any outdoor locations where members of the public might reasonably expect to spend one hour or longer.	Kerbside sites where the public would not be expected to have regular access.

4.2 Impact of Motorways on Air Quality

Although motorways are a significant source of nitrogen dioxide (NO_2) concentrations reduce quickly with distance from the road due to a combination of their width and the turbulence created by vehicles assisting in the dispersion.

Monitoring data shows pollution levels associated with motorways tend to be a greater concern within urban areas, where the r background concentrations are higher due to a greater number of other contributing sources.

In more rural areas, general background concentrations of NO_2 are comparatively low and consequently only those properties which are very close to the road are at risk of exceeding the objective levels.

4.3 Existing Residential Properties

As part of the LAQM review and assessment process, when residential properties in close proximity to the road network are identified to be at risk of exceeding air quality objectives, monitoring is undertaken to confirm the situation. Once monitoring of a location begins, it continues until the data collected provides confidence that a breach of the objectives is extremely unlikely to occur.

Previous monitoring and assessment reviews have concluded that there are no existing properties close enough to the A1(M) within the Leeds District considered to be at risk of exceeding the objectives.

4.4 Proposed Developments

When a residential development application is received by the Planning Authority, an assessment as to whether air quality is a relevant consideration is made by Air Quality Officers as part of the consultee process. If certain criteria are met, the applicant is required to submit an air quality assessment to assess the potential exposure risk to residents of the new properties.

Depending on the type, size and location of any proposed development, the developer may be required to assess the effect that additional traffic generated by that development might have elsewhere on the road network and how that may impact on any existing air quality sensitive properties.

All air quality assessments must follow an agreed methodology with the Planning Authority, in line with government's best practice guidance, using their approved vehicle emission toolkit and future vehicle fleet and traffic growth forecast scenarios.. Leeds City Council also routinely requests that air quality assessments should include a "worst case" scenario, calculating future pollution concentrations future traffic flows increasing as expected, but assuming the vehicle emission rates do not improve beyond the existing base year of the assessment.

4.5 Racecourse Approach

In the case of the Racecourse Approach development, Northeast of Wetherby, a detailed air quality assessment was included within the wider Environmental Impact Assessment report. The conclusion of the assessment found that, when assessed under the worst case scenario (using vehicle emissions rates from 2015), the façades of a small number of residential properties were predicted to narrowly exceed the NO_2 annual mean objective level of 40ug/m3, but were unlikely to exceed if the traffic fleet improved as expected by the year of first occupation.

Monitoring results within the Leeds district and the wider region since 2015 show there has been a general downward trend, suggesting vehicle emissions have reduced and that the worst-case scenario is not likely to occur. Nevertheless, the consultee advice is to adopt a precautionary approach and request that appropriate mitigation be considered where possible at the reserved matters phase.
Specific mitigation measures will depend on the details of the final residential layout and could include providing mechanical ventilation, sourced from the less polluted facades, or simply to consider moving the properties slightly further away from the road through redesigning the site layout. These measures are also considered desirable in providing future residents with greater mitigation against traffic noise also.

Larger developments such as Racecourse Approach, are also required to submit Travel Plans, which include initiatives aimed at reducing overall vehicle emissions as a result of the development which would both impact on the development itself and contribute to the overall emissions across the district. These measures could include such as subsidised public transport for residents, residential electric vehicle charging facilities to remove barriers to electric car ownership, car clubs and providing walking and cycling infrastructure within the development and its immediate vicinity etc.

4.6 The Future of Air Quality Management in Leeds

Leeds City Council is bound by the relevant national legislation and regulations in force at any given time. UK Government is currently preparing a new Environment Bill, intended to set out a new domestic framework for environmental governance. The Bill is expected to

include a national clean air strategy and set out revised legally binding targets for pollution levels, with regular review periods to allow for new evidence to be used in setting new targets.

The Environment Bill is expected to set more ambitious targets with regards to particulate matter in recognition that that recent evidence shows that fine particulates (referred to as $PM_{2.5}$) can have a more significant impact on human health than previously thought. The Bill is also expected to strengthen the ability for local authorities to address air quality issues at a local level through a revised local air quality management framework and ensure responsibility to address air pollution is shared across relevant public bodies.

In preparation for this, Officers presented a Leeds City Council Air Quality Strategy to be to the council's Executive Board in July 2021 which was approved. The Strategy aims to set targets for fine particulate matter in line with the latest World Health Organisation's health-based standards and will consider both exposure reduction and lower target levels where there is an opportunity to make tangible benefits. In recognition that road transport is not the dominant a source of particulate emissions, the strategy also considers the potential for actions targeted towards domestic, industrial and agricultural emissions appropriately.

5.1 Environmental Noise Management in Leeds

Complaints of noise arising from such as construction, commercial premises and neighbourhood noise con be investigated and addressed as Statutory Nuisance under the Environmental Protection Act 1990. Noise arising from transport sources, such as Aircraft, Rail and Road vehicles operating in an "ordinary" and lawful manner is specifically exempt from being classed as a statutory nuisance.

Directive 2002/49/EC, known as the Environmental Noise Directive or END required members states to produce strategic noise maps identifying exposure to environmental noise, prepare Noise Action Plans (NAPs) based on the results of the mapping and review the process on a 5 yearly cycle. The aims of the END are to define a common approach in avoiding, preventing, or reducing the harmful effects of environmental noise and defines environmental noise as the "*unwanted or harmful outdoor sound created by human activities, including noise emitted by means of transport, road traffic, rail traffic, air traffic and noise from sites of industrial activity*"

The Environmental Noise (England) Regulations 2006 which transposed the Environmental Noise Directive into domestic law identifies Defra as the competent authority for preparing and adopting the NAPs and reporting the number of people exposed to harmful noise levels. The Regulations continue to apply after EU exit until such time as any changes may be introduced through primary legislation.

In the case of Motorways, Highways England are classed as the relevant highway authority and classed as the "noise maker", whilst Local Authorities are classed as the "noise receiver".

The mechanisms available for to manage road traffic noise include:

- Use of low noise road surfacing
- Traffic management – such speed limits or vehicle-type restrictions.
- Congestion Management.
- Noise barriers / landscaping.
- Provision of Acoustic glazing

Following the last round of noise mapping published in 2019, Highways England undertook to continue their previous policy of using "low noise" surfacing where there are properties identified as being exposed to the highest noise levels as a result of one of their roads. This method of reducing noise is one of the most effective options available to them as it greatly reduces the noise generated by the interaction of the tyres on the roads surface which is the most dominant noise source on high speed roads.

Low Noise surfacing also has the benefit of improving the noise exposure for all residents regardless of the noise levels they would otherwise be exposed to. It can also benefit wildlife and areas of tranquillity and amenity by reducing noise levels generally. However, low noise surfacing is significantly more expensive than tradition road surfaces and consequently, Highways England have only committed to use it when the existing surfacing requires replacement as part of normal maintenance requirements. As the "noise receiver" Leeds City Council has assessed that the policy as being reasonable and proportionate.

In relation to the Outer North East Leeds area, 4 of the 6 lanes of the A1(M) carriageway have now been replaced with low noise surfacing for the majority, if not all, of its route north of the A64

5.2 Existing Properties

When a new development or highway scheme requires new or substantially altered sections of highway. The schemes are assessed by Leeds City Council under Part 2 of the Land Compensation Act 1973 using the criteria laid out in the Nosie Insulation Regulations 1975 (as amended). Any property which meets the qualifying noise criteria of exceeding 68dB L_{A10} (18 hour) with an increase of at least 1dB due to the new or altered highway is offered a noise insulation package consisting of enhanced acoustic glazing and acoustic ventilation capable of providing substancial noise attenuation to achieve desirable internal noise levels.

Additional mitigation is always sought through the design stage of new road schemes to incorporate features such as landscaped earth bunds and acoustic barriers to reduce the impact of noise from new schemes generally particularly for such as amenity gardens of existing properties wherever practical.

5.4 Proposed Developments

As part of the planning consultation process, proposed residential developments which are identified as being potentially subject to elevated transport noise are passed to the Environmental Studies Team for assessment and advice.

For larger developments, consisting of multiple houses, the developer is requested to submit a suitable noise impact assessment, carried out by a competent person and referencing the ProPG Planning and Noise Guidance, BS8233:2014 and World Health Organisation Guidelines for Community Noise.

The assessment is expected to detail how the new properties will achieve the recommended internal noise levels quoted within BS 8233:2014 '*Guidance on sound insulation and noise reduction for buildings*' (shown in Table 3 below). The noise assessments are also required to demonstrate that all reasonable measures have been considered to achieve the desirable daytime noise level of no more than 50db LAeq for external amenity garden areas, with an upper limit of 55dB LAeq being required in almost all cases.

Table 3 Internal noise levels required noise levels

Activity	Location	0700–2300	2300–0700
Resting	Living Room	35 dB $L_{Aeq\ (16\ hour)}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq\ (16\ hour)}$	30 dB $L_{Aeq\ (8\ hour)}$

The noise mitigation measures required to meet the internal and external recommended noise levels can include features such as; enhanced glazing specifications, alternative means of ventilation, revised building layouts/ orientation and boundary treatments such as acoustic fencing. Suitable mitigation features identified in the assessment can be conditioned into the planning permissions as appropriate.

Occasionally, where sizeable residential developments show the majority of site can meet the desirable or upper noise limits within amenity gardens a balanced view may be taken to allow a small number of properties to slightly exceed the upper limit if the target can only be achieved through excessive mitigation features which may be otherwise undesirable from a planning point of view.

For smaller residential developments, such as single plot sites, consultation does not normally request a detailed noise impact assessment due to the disproportionate cost. Instead, consultation advice follows a precautionary approach and requires any site identified by the national noise mapping as being exposed to elevated noise levels to include enhanced acoustic glazing and ventilation as a default, and where appropriate consider acoustic boundary fencing. It is expected that the minimum performance of any windows in such a location will be capable of delivering the recommended internal noise levels set out in BS8233:2014.

5.2 The Future of Noise Management in Leeds

Defra have recently consulted with stakeholders regarding their intention to produce the results of Round 4 of the noise mapping and reporting process in 2022. A key focus of this process will be on how the existing mapping process can be improved to provide more useful interactive features over and above the statutory reporting requirements. Leeds City Council's Environmental Studies Team have taken a proactive role within the consultation process and is currently in conversation with Defra's appointed consultants regarding what additional data can be provided within the mapping process to ensure that the Leeds District has the most accurate and widest coverage of information possible.

This mapping data is also expected to be to provide the basis for future key indicators on exposure to transport noise under the government's 25 Year Environment Plan and the Public Health Outcomes Framework. Once published, an advice note identifying the obligations and opportunities it presents to Leeds City Council.

6 Recommendation

To note the content of this report