



**REPORT OF INTERIM SERVICE DIRECTOR, HIGHWAYS
NITROGEN DIOXIDE AIR QUALITY IN NOTTINGHAMSHIRE**

Purpose of the Report

1. The purpose of this report is to update Committee on the exceedances of nitrogen dioxide limit values in the county as a result of road traffic and the work being undertaken by the County Council and its partners to reduce nitrogen dioxide at these locations.
2. The report also updates Committee on the legal action against the UK for failure to meet the limit values within agreed timescales and failure to request an extension to those timescales.

Information and Advice

3. European directives on air quality set limit values and target values for various pollutants in ambient air, including nitrogen dioxide (NO₂), and require EU member states to assess, report compliance and take action to rectify any exceedances of those values. The limit values for NO₂ were meant to be met by 2010, although member states could apply for a time extension to 2015.
4. The Secretary of State for Environment, Food and Rural Affairs has responsibility for meeting the limit values in England and the Department for Environment, Food and Rural Affairs (Defra) co-ordinates assessment and air quality plans for the UK as a whole.
5. Defra are required under the Environment Act 1995 to produce a national air quality strategy for England, and this was last reviewed and published in 2007. This sets a number of air quality objectives (set in regulations for certain pollutants) for the protection of human health and the environment to be achieved between 2003 and 2020. The national strategy sets out how responsibilities for meeting EU limits are effectively shared between government and local authorities and recognises that action at national, regional and local level may be needed, depending on the scale and nature of the air quality problem. Part IV of the Environment Act 1995 and the National Air Quality Strategy 2007 require local authorities in England to assess air quality in their area and designate air quality management areas if improvements are necessary.
6. For the purposes of air quality assessment the UK comprises 43 zones. UK zones do not generally comprise a single administrative authority but comprise a number of local authorities, each of which may have local air quality management plans. Nottinghamshire falls into the East Midlands/Nottingham urban area zones.

Nitrogen Dioxide

7. Nitrogen dioxide is a brown gas, with the chemical formula NO_2 . It is chemically related to nitric oxide (nitrogen monoxide), a colourless gas with the chemical formula NO . Together, NO and NO_2 are known as nitrogen oxides or NO_x . NO_x is released into the atmosphere when fuels are burned (for example, petrol or diesel in a car engine or natural gas in a domestic central heating boiler). NO_x emissions from burning fossil fuels are mainly released as NO , but some sources can release a lot as NO_2 . For example, diesel vehicles (especially when moving slowly) release a lot of NO_2 , and NO_2 can make up as much as 25% of the total NO_x emissions from diesel vehicles. All of the road traffic related air quality issues in Nottinghamshire are due to higher levels of NO_2 .

Review and assessment of air quality

8. A review and assessment of air quality is the first step in the local air quality management process. Part IV of the Environment Act 1995 requires each local authority to review air quality 'from time to time'. The National Air Quality Regulations 2000 and the Air Quality (Amendment) Regulations 2002 prescribe air quality objectives and the dates for meeting them. For each objective, local authorities have to consider present and future air quality and assess whether the objectives are likely to be achieved by the prescribed date. For NO_2 , there are two limit values in the directive for the protection of human health that were required to be met by 1 January 2010:
- An annual NO_2 mean concentration of no more than $40\mu\text{g}/\text{m}^3$.
 - An hourly NO_2 mean concentration of $200\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times in a calendar year.
9. Review and assessment is undertaken using a phased approach, which initially requires the conducting of an 'Updating and Screening Assessment'. Where objectives set for air quality are unlikely to be met, local authorities must issue orders designating these areas as air quality management areas (AQMA). In these areas local authorities are required to draw up action plans to ensure air quality objectives are met. Action plans may include measures to be taken both within and outside an AQMA and also involve the setting of targets to ensure that the air quality objectives are met within agreed timescales.
10. Within Nottinghamshire the district and borough councils are responsible for undertaking the air quality assessments. If exceedances are primarily a result of road traffic the responsible highway authority (Highways England or the County Council) must work in partnership with the district/borough council to develop the AQMA action plan.

Air quality in Nottinghamshire

11. Air quality across the county is generally good but there are some locations which have transport related air quality issues. There are currently six transport related AQMA in the county all of which are due to exceedances of NO_2 . Four of the locations are on the Highways England managed motorway and trunk road network at:
- M1/A6007 closest houses to east of M1 in Iona Drive and Tiree Close, Trowell
 - M1/B600 houses on the Nottingham Road and Back Lane, Nuthall closest to the M1
 - A52 – houses adjacent to the A52 (trunk road) from Nottingham Knight roundabout northwest to the borough/city boundary

- A52 – Holme House, Stragglethorpe.
12. The two locations on the County Council managed road network are located at:
- A60 – on Trent Bridge at its junction with Radcliffe Road (in AQMA declared in 2005) which is adjacent to the Nottingham City Council AQMA and which runs along London Road
 - A60 – Mansfield Road, Daybrook between Sherbrook Road and Parkyn Road (in AQMA declared in 2011).
13. Road transport is the dominant source of pollution in areas exceeding the NO₂ limit values in the UK and Nottinghamshire. The County Council has therefore worked in partnership with Gedling and Rushcliffe Borough Councils on the development and delivery of their action plans to address air quality at the locations on the County Council's road network. The County Council has also assisted Rushcliffe Borough Council and Highways England in the development of the action plan to address air quality at the A52 locations identified above.
14. The AQMA in Daybrook is predominantly due to the close proximity of terraced properties to the carriageway and the volume of traffic (particularly diesel vehicles) queuing along the A60. The AQMA on Trent Bridge results from the proximity of residential property to southbound traffic queuing at traffic signals (the traffic signals have been optimised to reduce the length of time vehicles queue at this location).
15. The NO₂ levels at the A60 Trent Bridge did not exceed the limit value in either 2011 or 2013 and only marginally exceeded the 40µg/m³ limit value in 2014 (by 0.1µg/m³). The NO₂ levels at the A60 Mansfield Road, Daybrook exceeded the limit values by 4µg/m³ in 2013 (the most recent data available) which is a significant reduction (between 6 and 10µg/m³) when compared to 2012.
16. Reductions expected from improved vehicle standards have not materialised and is considered the main reason why the UK has not been able to achieve full compliance with the NO₂ limit value. Despite the introduction of vehicles meeting increasingly stringent Euro standards, real world emissions of NO_x from many vehicle classes have been considerably higher than anticipated. This has been compounded by the growth in diesel vehicles on UK roads (switching from petrol to diesel) and increases in van and local bus (both predominantly diesel engines) activity in some urban areas resulting in a parallel increase in NO_x emissions per vehicle. There has also been an increase in the fraction of NO_x directly emitted as NO₂ from diesel vehicle exhausts due to the fitting of oxidation catalysts and certain types of diesel particulate filters aimed at reducing other pollutant emissions (e.g. CO₂) from vehicles.
17. The reductions in NO₂ levels achieved to date are therefore primarily due to work undertaken as part of the air quality action plans delivered by the County and district councils and changes in traffic flows. Whilst traffic flows on the A60 Daybrook between 2010 and 2014 have increased by 0.5%, traffic flows on Trent Bridge have decreased by 2.2% during the same period.

Air quality action plans

18. The County Council works in partnership with Gedling and Rushcliffe borough councils to meet the statutory duty to prepare and publish annual AQMA action plans. The air quality

action plans detail a range of measures that will be delivered to help meet the EU NO₂ limit values. These measures include targeted measures within the AQMA such as infrastructure improvements and travel planning; as well as general measures that benefit larger areas such as promotion and marketing and passenger transport ticketing improvements. Primarily all of the measures included in the action plan aim to keep traffic moving freely, reduce the levels of traffic travelling through the AQMA and promote cleaner vehicles. The measures contained in the action plan include:

- Effective network management such as traffic control and upgrades to traffic signals
- Parking such as managing parking to improve journey time reliability, park and ride and the impact of the work place parking levy on reducing traffic travelling through the AQMA
- Travel planning at a variety of locations to promote travel alternatives to private vehicle use
- Smarter working such as flexible working, home working etc.
- Car sharing, promoting and facilitating car sharing
- Walking and cycling infrastructure improvements, marketing and promotion
- Passenger transport infrastructure and service improvements as well as marketing and promotion
- Passenger transport ticketing improvements such as smart cards, integrated ticketing and concessionary fares
- Promotion of cleaner vehicles (particularly buses through quality partnerships [BQPs] and HGVs through the eco-stars programme)
- Development control such as site location and mitigation in the vicinity of development
- Major transport schemes such as NET phase 2 and A453.

19. These measures are delivered through the work undertaken to deliver the County Council's Local Transport Plan. The ability to continue the level of work in the future will, however, be significantly impacted as central government funding for integrated transport improvements has been top-sliced and allocated to the Local Growth Fund. These changes in funding allocations have resulted in the amount of integrated transport funding allocated by government to Nottinghamshire reducing by almost 50% between 2014/15 and 2015/16.

20. Alternative funding, such as central government grants, will be sought to deliver air quality improvements within the AQMAs, although there is no guarantee of success for such bids. For example, a Green Bus Fund bid made to DfT to fit equipment on bus services running through AQMA to reduce emissions was not prioritised for funding. The County Council will, however, continue to attempt to secure funding from DfT for air quality improvements in the AQMAs and a bid to the Office for Low Emission Vehicles (OLEV) is being drafted with the City Council and BQP partners to implement a low emission corridor which includes the Trent Bridge AQMA, and part of the bid includes higher Euro standards (VI) vehicles.

Future considerations

Development control

21. Whilst the borough councils, as the planning authority, consider the local air quality impacts in the vicinity of each individual new development they do not currently have any planned mitigation of the traffic growth at AQMA locations as part of development proposals (including cumulative impacts of planned development on the AQMA locations). The borough councils as the responsible air quality monitoring/planning authority also have no

plans to undertake air quality modelling of the cumulative impacts (particularly on the AQMAs) of proposed developments in either Gedling or Rushcliffe boroughs. The County Council therefore has raised concerns that without significant mitigation at the development locations to specifically address the housing proposals on the AQMA (e.g. by ensuring traffic levels do not increase as a result of development by securing significant sustainable transport improvements from the developers), any measures subsequently included within an AQMA action plan would be very unlikely to mitigate this planned growth, and certainly would not reduce the pollutants to an acceptable level.

Legal action against the UK

22. Four years ago ClientEarth (a non-profit environmental law organisation) launched legal action against Defra. The case concerns 16 parts of the country (including the East Midlands) for which the government has not met its NO₂ limit values and for which the government did not apply to the EC for a time extension to achieve those limit values.
23. Whilst the High Court agreed that the UK had failed in its duty to achieve NO₂ limits by the 2010 deadline, it did not agree that the UK had to apply to the EC to extend the deadline and did not award any remedy. ClientEarth appealed the High Court decision to the Court of Appeal, who upheld the decision and dismissed the appeal. In 2013, however, the Supreme Court determined that the UK had breached the EU Air Quality Directive and referred several questions on interpretation of EU law to the Court of Justice of the EU (CJEU).
24. In November 2014 the CJEU ruling subsequently confirmed that the UK should have submitted plans to apply for a time extension for all non-compliant areas. It also confirmed that the lower national courts were wrong not to give a remedy for the UK's breach of the law and that the national courts now need to ensure that the government produces plans to reach the limits in as short a time as possible.
25. Following the CJEU ruling, the case was heard at the Supreme Court on 16 April 2015 to consider the ruling and determine what, if any, remedy is appropriate. The resultant Supreme Court judgement ruled that government must draw up a plan by the end of 2015 detailing how it will meet EU pollution limits as soon as possible.
26. In February 2014 the European Council also launched a separate legal action against the UK for its failure to meet air quality limit values although it is likely that before proceeding any further the European Council will wait until the outcome of the Supreme Court's ruling.
27. It is not currently clear what impact either of these court cases will have on the district authorities responsible for air quality, or the County Council as the AQMAs result from road traffic, for which the County Council is responsible. One potential outcome may be the requirement to introduce a Low Emission Zone whereby all diesel vehicles over a certain size (e.g. HGVs and buses) would be required to meet specific emission standards for NO_x in order to travel on roads within the AQMA.

Other Options Considered

28. There are no alternative options to consider as the report is for information only.

Conclusions

29. The County Council will continue to work in partnership with district councils and other partners to monitor air quality, and develop and deliver improvements at locations where air quality exceeds limit values in the county. A further report will be presented to Committee should the Supreme Court (or any subsequent) ruling have an impact on the actions required to be undertaken to address NO₂ limit values in Nottinghamshire.

Statutory and Policy Implications

30. This report has been compiled after consideration of implications in respect of crime and disorder, finance, human resources, human rights, the NHS Constitution (Public Health only), the public sector equality duty, safeguarding of children and vulnerable adults, service users, sustainability and the environment and ways of working and where such implications are material they are described below. Appropriate consultation has been undertaken and advice sought on these issues as required.

RECOMMENDATION/S

It is recommended that Committee note the contents of the report.

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For any enquiries about this report please contact:
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Constitutional Comments (SLB 30/04/2015)

31. This report is for noting only.

Financial Comments (GB 30/04/2015)

32. There are no direct financial implications arising from this report.

Background Papers and Published Documents

- Nottinghamshire Local Transport Plan Strategy 2011/12-2025/26
- 2013 Air Quality Action Plan for Gedling Borough Council – *Gedling Borough Council 2014*
- 2013 Air Quality Action Plan for Rushcliffe Borough Council – *Rushcliffe Borough Council 2014*

- Air Quality Plans for the achievement of EU air quality limit values for nitrogen dioxide (NO₂) in the UK: Draft UK Overview Document – *Defra June 2011*

Electoral Division(s) and Member(s) Affected

- All