Item 2

8th November 2022

Glasgow City Council

Net Zero and Climate Progress Monitoring Committee

Report by Executive Director of Neighbourhoods Regeneration and Sustainability

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ANNUAL PROGRESS REPORT ON AIR QUALITY

Purpose of Report:

To advise Committee of the city's 2022 Annual Progress Report on Air Quality.

Recommendations:

It is recommended that the Committee notes:

(a) The content of this report on air quality in the city.
(b) The progress being made in improving pollution levels.
(c) The impact of pandemic measures on traffic and pollution levels and the resultant pollution increase in 2021 as these measures lessened.
(d) The intention to revoke the Byres Rd / Dumbarton Rd Air Quality Management Area following sustained compliance with national objectives.

Ward No(s):	Citywide: ✓
Local member(s) advised: Yes ☐ No ☐	consulted: Yes ☐ No ☐

1 Background on Annual Progress Report (APR)

1.1 This report presents the findings of the Council's Annual Progress Report (APR) on air quality, detailing a comprehensive overview of data and trends for air quality across the city in the 2021 calendar year. The full report is appended to this report.

1.2 The Environment Act 1995, which implemented EC Directive 96/62, requires that local authorities regularly review and assess the air quality within their area of responsibility. This review and assessment process is the basis of Local Air Quality Management (LAQM). It is intended to compare current and future concentrations of key air pollutants against the objectives detailed in the regulations as part of the national strategy for air quality.

1.3 In accordance with the LAQM requirements, the APR considers monitoring data available since the last round of review and assessment, as well as assessing the impact from various potential sources of pollution, such as any major new developments.

1.4 Previous rounds of the LAQM review and assessment process have seen Glasgow declare Air Quality Management Areas (AQMA). A local authority is required by law to declare an AQMA where air quality objectives are not being met. In Glasgow these have been due to elevated levels of the air pollutants nitrogen dioxide (NO_2) and particulate matter (PM10).

1.5 The main source of air pollution produced within the city itself comes from road traffic. Airborne particulate matter is more heavily influenced by non-local effects, such as prevailing wind conditions, over which the city has no control, which can blow in pollutants from continental Europe and beyond. Nitrogen dioxide, however, is more directly attributable to local traffic volumes and engine type – and in particular to diesel engines, which emit comparatively more nitrogen dioxide than petrol engines.

1.6 To date the city has declared four AQMAs, as follows:

- City Centre (NO_2 and PM10) – declared in 2002.
- Parkhead Cross (NO_2) – declared in 2007 and revoked in 2020.
- Byres Road/ Dumbarton Road (NO_2 and PM10) – declared in 2007. Amended in 2020 to remove PM10
- City-wide (PM10) – declared in 2012 and revoked in 2016.

2 Actions to Improve Air Quality

2.1 In response to the implementation of the AQMAs in the city, Glasgow City Council produced Air Quality Action Plans (AQAP) in 2004 and 2009, introducing a range of measures aimed at reducing pollution in the city. The Action Plans considered several measures such as vehicle idling enforcement, vehicle emission testing and initiatives towards cleaner vehicles. Other measures such as sustainable transport initiatives and public information

promotion continue to evolve. Progress on actions is reported within the APR. A revised Air Quality Action Plan is currently in draft and will be further developed before consultation and adoption in 2023.

2.2 A table outlining progress of the Air Quality Action Plan measures in 2021 can be found in Table 2.2 of the APR.

2.3 As a result of these combined measures, the Citywide AQMA for PM10 was revoked in 2016 and the Parkhead Cross AQMA for NO_2 was revoked in 2020 following a prolonged period of achieving the relevant air quality objectives. The Byres Rd / Dumbarton Rd AQMA was amended in 2020 to remove the PM10 component. These developments are tangible evidence that improvements in air quality continue to be achieved within Glasgow.

3 Annual Progress Report

3.1 Air quality is a devolved matter and the Council therefore works to measure and achieve hourly, daily and annual objectives on various pollutants which have been established by the Scottish Government. The APR represents the Council's submission in respect of both the current levels of these pollutants and the efforts made to reduce these and achieve compliance with the health based objectives.

3.2 An update on the two main pollutants of concern can be summarised as follows:

- Particulate Matter (PM10)

Levels of PM10 recorded across the city in 2021 were satisfactory with both the daily mean and annual mean objectives being met at all monitoring locations. This continued the trend of compliance in respect of this pollutant which has been observed for several years. It should be noted that the Scottish objective for this pollutant is set at just under half that of the UK and EU limits. The city is therefore doing relatively well in this area.

- Nitrogen Dioxide (NO_2)

Levels of NO2 in 2021 at all automatic monitoring stations were within the objective levels with the exception of Glasgow Kerbside (Hope St - see Figure 1 below). 2020 was the first year since monitoring began where all automatic monitoring locations had met the air quality objectives, however fewer restrictions due to the pandemic in 2021 has resulted in an annual increase in NO_2 levels at the majority of locations. Although an increase has been recorded, NO_2 remains below pre-pandemic levels.

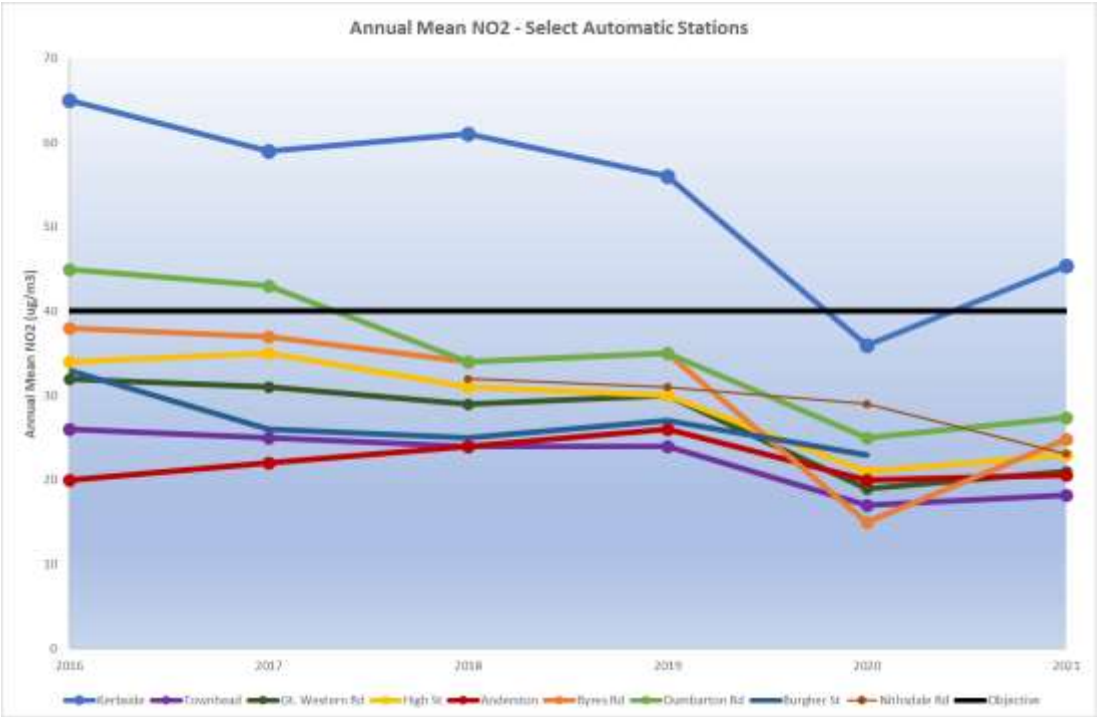


Figure 1: Trends in annual mean NO_2 at selected automatic monitoring stations

3.3 NO_2 levels are also recorded by diffusion tubes across Glasgow and in 2019, six monitoring locations within the city centre recorded exceedances of the objective. In 2020, all monitoring was within the objective except for one marginal exceedance which was within the margin for error of this form of monitoring. In 2021, this had increased to exceedances at two locations in the city centre, with a further 4 locations within 10% of the objective, reflecting the general increase recorded at the automatic monitoring stations.

3.4 The NO_2 Hourly Mean Objective was not exceeded at any of the automatic monitoring stations.

4 Pandemic Impact and Recovery

4.1 The lockdown measures imposed as a method of control of the spread of Covid-19 led to unprecedented reductions in road traffic, particularly within the city centre following the initial lockdown from the end of March 2020. The resultant reduction in monitored air pollution levels, and subsequent compliance with the air pollution objectives, demonstrates conclusively that road traffic sources are the major contributor to instances of objective exceedance within Glasgow.

4.2 Analysis of pollution levels recorded at the Hope St monitoring station during 2020 and 2021 is presented in Figure 2 below. The immediate impact of lockdown can be seen with a significant fall in NO_2 levels recorded in April and May 2020. This was followed by a gradual return to higher levels in late summer / autumn of that year, matching observed increases in traffic levels.

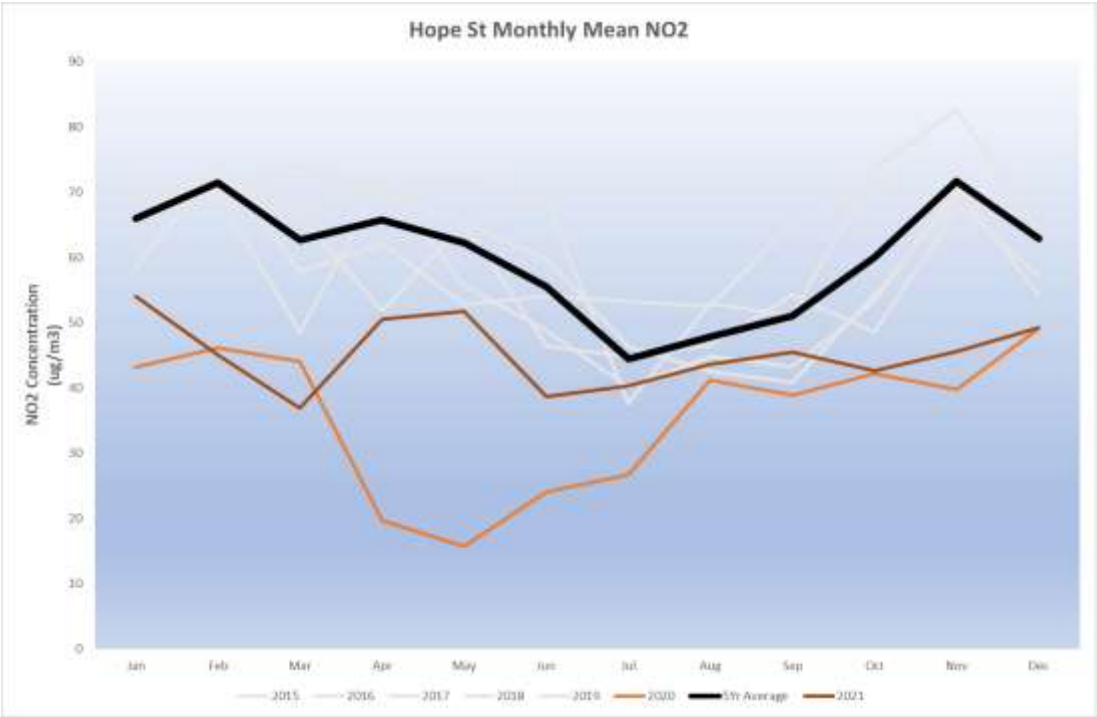


Figure 2: monthly mean NO_2 levels at Hope St

4.3 Although pandemic restrictions persisted in periods through 2021, these were less pronounced than the initial restrictions of March 2020 and had a correspondingly lower impact on road traffic. This can be seen in Figure 2 above where the monthly mean NO_2 levels are consistently higher in 2021 than in 2020.

4.4 Ongoing changes to behaviour and work patterns arising from the pandemic are expected to contribute to air quality improvements into 2022, based on the pre-pandemic 5 year average. However, these improvements are likely to be less pronounced than seen in 2020 and 2021. The role of ongoing measures, such as the implementation of the Glasgow Low Emission Zone, is critical to being able to impact on pollution levels in a sustainable way.

5 Byres Rd / Dumbarton Rd AQMA

5.1 Previous Air Quality APRs confirmed compliance with relevant annual mean objectives for both the Parkhead Cross and the Byres Road / Dumbarton Road AQMAs. Proposals to revoke the AQMAs in place in respect of the Annual Mean Objective for NO_2 at Parkhead Cross and the Annual Mean Objective for PM10 at Byres Road / Dumbarton Road were noted by the Environment, Sustainability and Carbon Reduction City Policy Committee of Glasgow City Council. The amendment and revocation were formally approved by Order on 1st October 2020.

5.2 Whilst the Byres Rd / Dumbarton Rd AQMA remained in effect in respect of the annual mean objective for NO_2, continued monitoring has shown no exceedances of this objective since 2017. The 2022 APR therefore proposes that this AQMA be revoked in terms of this objective.

5.3 Should this proposal be accepted by the Scottish Environment Protection Agency and the Scottish Government, a further report will be submitted to Committee prior to formal revocation.

6 Policy and Resource Implications

Resource Implications:

Financial:	Grant funding for air quality monitoring and action plan measures is provided by the Scottish Government.
Legal:	The APR is a statutory duty of Local Authorities under Part IV of the Environment Act 1995
Personnel:	LAQM duties are undertaken utilising GCC personnel.
Procurement:	None at present.

Equality and Socio-Economic Impacts:

Does the proposal support the Council's Equality Outcomes 2021-25? Please specify.	Generally supportive of the stated outcomes.
What are the potential equality impacts as a result of this report?	No significant impact. The LAQM process is aimed at protecting the health of some of Glasgow's most vulnerable residents and visitors. Poor air quality differentially impacts on those with prior health conditions and improvements in air quality should therefore provide benefits.
Please highlight if the policy/proposal will help address socio-economic disadvantage.	Poor air quality differentially impacts on lower socio-economic groups and improvements in air quality should therefore provide benefits.

Climate Impacts:

Does the proposal support any Climate	LAQM has many co-benefits and shared actions with the Climate Plan including actions:

Plan actions? Please specify:	22 – Development of the LEZ 26 – Alternative actions for bus delivery 33 – Feasibility study of a Workplace Parking Levy 42 – Ban of gas heating in new developments 51 - Delivery of a comprehensive active travel network 52 - Enable a rapid and strategic shift to electric vehicles through increasing the current rate of deployment of EV charging infrastructure 53 – Support transition to cleaner public transport 54 – Transition GCC fleet to electric 55 – Transition private hire fleet to zero emissions by2030 56 - Reduce the need to own and use a car through measures in the City Development Plan 2, Glasgow Transport Strategy and the Liveable Neighbourhoods
What are the potential climate impacts as a result of this proposal?	The APR includes an update on action plan measures, many of which have slight beneficial climate impacts.
Will the proposal contribute to Glasgow's net zero carbon target?	Measures progressed and reported within the APR have slight beneficial climate impacts, especially in relation to transport, and therefore contribute to the net zero carbon target.
Privacy and Data Protection Impacts:	This report has no immediate impacts upon privacy or data protection. However, data collection as part of any actions to improve air quality will be fully considered for compliance with relevant legislation and procedures.

7 Recommendations

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