



|                           |  |
|---------------------------|--|
| <b>Subject:</b>           | Update on Air Quality Detailed Assessment for Nitrogen dioxide (NO <sub>2</sub> ) and Fine Particulate Matter (PM <sub>2.5</sub> ) |
| <b>Date:</b>              | 8 <sup>th</sup> November 2022  |
| <b>Reporting Officer:</b> | Siobhan Toland, Director of City Services  |
| <b>Contact Officer:</b>   | Vivienne Donnelly, City Protection Manager<br>Alastair Curran, Environmental Protection Manager                                    |

|   |   |
|---|---|
| <b>Restricted Reports</b>                         |   |
| Is this report restricted?                        | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| If Yes, when will the report become unrestricted? |   |
| <i>After Committee Decision</i>                   | <input type="checkbox"/>  |
| <i>After Council Decision</i>                     | <input type="checkbox"/>  |
| <i>Sometime in the future</i>                     | <input type="checkbox"/>  |
| <i>Never</i>                                      | <input type="checkbox"/>  |

|                                       |   |
|---------------------------------------|---|
| <b>Call-in</b>                        |   |
| Is the decision eligible for Call-in? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |

|            |  |
|------------|--|
| <b>1.0</b> | <b>Purpose of Report or Summary of Main Issues</b>   |
| 1.1        | The Committee will be aware that the council has appointed Aecom Consultants via a competitive tender process to undertake a detailed ambient air quality assessment for the Belfast City Council area for nitrogen dioxide (NO <sub>2</sub> ) and fine particulate matter (PM <sub>2.5</sub> ). The council has declared four Air Quality Management Areas (AQMAs) across the city for a combination of exceedances of annual and 1-hour mean nitrogen dioxide (NO <sub>2</sub> ) air quality objectives. These exceedances are related principally to road transport emissions and so the AQMAs encompass arterial road routes. No AQMAs are currently declared for particulate matter (PM <sub>10</sub> ). Fine particulate matter (PM <sub>2.5</sub> ) is not currently in regulation for the purposes of the council's statutory local air quality management functions but it is nevertheless being addressed as a component of the detailed assessment process. |

|            |   |
|------------|---|
| 1.2        | Information concerning progress with the detailed assessment was last formally provided to Committee at its meeting of 9 <sup>th</sup> November 2021 as a component of a wider Air Quality Monitoring Report (Agenda item 9).   |
| 1.3        | At the meeting of the People and Communities Committee of 11 <sup>th</sup> October 2022, the Committee requested that a report be brought to the November or December 2022 meeting concerning progress with the detailed assessment. This report serves to address that request.  |
| <b>2.0</b> | <b>Recommendations</b>  |
| 2.1        | <p>The Committee is requested to:</p> <ul style="list-style-type: none"> <li>• Note the contents of this report.</li> <li>• Consider whether the formal presentation by Aecom for the detailed assessment project can be considered as an agenda item at either the February or March 2023 scheduled meeting of the People and Communities Committee, or whether the Committee would wish to receive the presentation at a special meeting of the Committee.</li> </ul>   |
| <b>3.0</b> | <b>Main report</b>  |
| 3.1        | <p><b><u>Key Issues</u></b></p> <p>The Committee will be aware that the detailed assessment for nitrogen dioxide (NO<sub>2</sub>) and fine particulate matter (PM<sub>2.5</sub>) is comprised of a number of key components; namely, additional ambient monitoring for nitrogen dioxide (NO<sub>2</sub>) and fine particulate matter (PM<sub>2.5</sub>); automatic number plate recognition (ANPR) surveys to more accurately characterise the local road fleet and road transport emissions; development of an emission inventory for nitrogen dioxide (NO<sub>2</sub>) and fine particulate matter (PM<sub>2.5</sub>) for the Belfast City Council area and; detailed atmospheric dispersion modelling studies to identify the location and geographic extent of any exceedances of UK, European or World Health Organisation (WHO) air quality objectives, standards or guideline values. The Committee is advised that the WHO global air quality guideline values have been updated since the detailed assessment project was commenced.</p> |
| 3.2        | <p>In addition to the council's extensive air quality monitoring network, Aecom had recommended the installation of an additional six Zephyr small scale air quality monitors for NO<sub>2</sub> and PM<sub>2.5</sub>, located so as to characterise principal sources of these pollutants across the city in greater detail. The monitors have therefore been located on the A55 Upper Knockbreda Road adjacent to St. Bernard's Primary School in order to characterise road transport related ambient concentrations at this location; at Clara Street in order to</p>   |

characterise local domestic related concentrations; at the boundary of George Best Belfast City Airport; adjacent to the A12 Westlink to characterise road transport concentrations; at Mount Eagles Glen in order to characterise domestic, transport and other sources of NO<sub>2</sub> and PM<sub>2,5</sub> at this location, and at Lombard Street in the city centre in order to characterise the concentrations of NO<sub>2</sub> and PM<sub>2,5</sub> to which those visiting, living and working in the city centre are being exposed.

3.3 It should be noted that the Belfast Harbour have separately installed additional Zephyr small scale air quality monitors across the harbour area in order to characterise ambient air quality at that location. It is understood that data from the Belfast Harbour monitoring network will be made available to Aecom as an addition to the detailed assessment monitoring data. Members will be aware that Belfast Harbour Commissioners are a key partner and contributor to development and implementation of the Belfast City Air Quality Action Plan 2021-2026.

3.4 Ambient monitoring was undertaken by Aecom during 2021, into early 2022, with ownership of the monitors and responsibility for their operation now transferred to the council. The Zephyr small scale air quality monitors have been retained in their locations and continue to be operated pending the outcome of the detailed assessment, whereupon they may be relocated to focus on any new areas of exceedance identified through the detailed assessment.

3.5 A monitoring report is presently being finalised by Aecom and it is proposed that a 'standalone' monitoring report will be added to the Member's Library once completed. The monitoring data will additionally be used to validate, verify and adjust the subsequent dispersion modelling studies for nitrogen dioxide (NO<sub>2</sub>) and fine particulate matter (PM<sub>2.5</sub>); and it will form a component of the final project report and presentation to Committee.

3.6 Whilst the monitoring report and data interpretation are not yet finalised, Aecom have indicated that there were no exceedances of the statutory Air Quality Strategy objectives at the Zephyr monitoring locations, with the exception of scaled data for the A12 Westlink site, which exhibited monitored NO<sub>2</sub> concentrations in excess of the 40 µgm<sup>-3</sup> annual mean objective during 2019 and 2021. Aecom have added that it is important to note that this site is located immediately adjacent to the A12 Westlink and so when the data is adjusted for distance, it is likely that the site would not exceed the annual mean objective at a location of relevant human health exposure. This comment is in keeping with Belfast City Council's

nitrogen dioxide monitoring data and conclusions detailed within, '*Section 2.2 Comparison of Monitoring Results with Air Quality Objectives*' of the council's 2022 Air Quality Progress Report. For PM<sub>10</sub>, annual mean concentrations were below the 40 µgm<sup>-3</sup> annual mean objective during 2019 and 2021 for ratified and scaled data. Whilst Aecom have considered the monitoring data against the WHO Air Quality Guidelines detailed in the 2005 Global Update, council officers have asked Aecom to reconsider the data against the 2021 revised WHO values in the final monitoring report. However, preliminary ratified and scaled annual mean concentrations for PM<sub>2.5</sub> across the Zephyr monitoring sites ranged from approximately 7.1 – 13 µgm<sup>-3</sup> in 2019 and from approximately 7 – 12.1 µgm<sup>-3</sup> in 2021. These concentrations are above the 2021 WHO recommended annual **air quality guideline level** of 5 µgm<sup>-3</sup> for PM<sub>2.5</sub>.

3.7 Aecom are currently completing an emissions inventory for the Belfast City Council area in conjunction with the council's Air Quality Officers and undertaking preliminary dispersion modelling and associated model validation, verification and adjustment works. The emissions inventory comprises data derived from the National Atmospheric Emissions Inventory, road transport and road geometry data obtained from the Department for Infrastructure (DfI) Roads, industrial emissions data from the Public Register for Pollution, Prevention and Control Permitted Processes, and relevant activity data for the Port of Belfast and George Best Belfast City Airport, etc.

3.8 The Committee will be aware that the detailed assessment project is scheduled to conclude at the end of March 2023. As part of the project reporting requirements, Aecom is to provide a formal presentation to the People and Communities Committee in February or March 2023. The Committee is invited therefore to consider whether the project presentation by Aecom can be considered as an agenda item at either the February or March 2023 scheduled meeting of the People and Communities Committee or whether the Committee would wish to receive the Aecom detailed assessment presentation at a special meeting of the Committee, on a date to be agreed.

3.9 As an addendum to this report, the Committee is invited to note that the council's 2022 Air Quality Progress Report, which was considered at Committee on 9<sup>th</sup> August 2022, has been appraised by the technical assessors, it has been accepted and it is available via the DAERA NI Air website as follows: <https://www.airqualityni.co.uk/laqm/district-council-reports#511>

|            |   |
|------------|---|
|            | <b><u>Finance and Resource Implications</u></b>   |
| 3.10       | <p><b><u>Financial</u></b></p> <p>There are no financial or resource implications for the council in connection with this report. The Committee is advised that in addition to revenue funding from the council supporting this detailed air quality assessment project, the assessment is also being supported by the Department of Agriculture, Environment and Rural Affairs (DAERA) through the local air quality management grant process.</p> |
| 3.11       | <p><b><u>Human Resources</u></b></p> <p>There are no human resource implications for the council in connection with this report. The detailed assessment project is being delivered from within existing Environmental Protection, Public Health and Housing Unit staffing resources.</p>   |
| 3.12       | <p><b><u>Asset and Other Implications</u></b></p> <p>There are no asset or other implications for the council in connection with this report.</p>   |
| 3.13       | <p><b><u>Equality or Good Relations Implications/ Rural Needs Assessment</u></b></p> <p>There are no Equality or Good Relations Implications / Rural Needs Assessment implications for the council in connection with this report.</p>  |
| <b>4.0</b> | <b>Appendices – Documents Attached</b>  |
|            | None.   |