



Subject:	Detailed Assessment for Nitrogen Dioxide (NO ₂), Particulate Matter (PM ₁₀) and Fine Particulate Matter (PM _{2.5})
Date:	13 th February 2023
Reporting Officer:	Siobhan Toland, Director of City Services, City & Neighbourhood Services Department
Contact Officer:	Alastair Curran Environmental Protection Manager, City & Neighbourhood Services Department

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

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

1.0	Purpose of Report or Summary of main Issues
1.1	The Committee will be aware that at its meeting of 8 th October 2019 and upon consideration of agenda item 3b, ' <i>Local Air Quality Management Update for Belfast</i> ', the Committee agreed a proposal that the Council would agree to look at undertaking a detailed assessment and, additionally, to measure particulate matter (PM _{2.5}). The Committee additionally agreed to bring back a further report on how to meet the undertaking for a detailed assessment, and to include the measurement of PM _{2.5} . In accordance with the provisions of the government's local air quality management (LAQM) technical guidance, a detailed assessment is normally required whenever an Updating and Screening Assessment has indicated that there is a risk of an air

	<p>quality objective not being achieved. It should be noted that fine particulate matter (PM_{2.5}) is not in presently in regulation (<i>Air Quality Regulations (Northern Ireland) 2003</i>) for the purposes of the local air quality management but the Council has nevertheless elected to proactively include PM_{2.5} within the scope of the detailed assessment.</p>
1.2	<p>Subsequent reports were provided to the Committee as to how such a detailed review and assessment might be delivered for the city and on the basis of these reports, a competitive European Tender exercise was undertaken by the Council in September 2020 in order to appoint an appropriately experienced environmental consultancy to deliver the detailed assessment project.</p>
1.3	<p>Aecom consultants were subsequently appointed by the Council in early 2021 to deliver the detailed assessment project over an approximate 2-year period with a final project report to be completed by March 2023 including the findings to be presented to the People and Communities Committee within these timescales. It may be helpful to consider scheduling party briefings on this subject in advance of the final report being tabled at committee. The Aecom detailed assessment has considered nitrogen dioxide (NO₂), particulate matter (PM₁₀) and fine particulate matter (PM_{2.5}) for the city and has been undertaken in accordance with the provisions of Part III of the Environment (Northern Ireland) Order 2002 and of the Department for Environment, Food and Rural Affairs (Defra) Local Air Quality Management Technical Guidance (LAQM.TG22), published in August 2022.</p>
1.4	<p>In order to enable the Committee to consider the outworkings of the detailed assessment for nitrogen dioxide (NO₂), particulate matter (PM₁₀) and fine particular matter (PM_{2.5}) and to provide commentary on the emergent findings, Aecom consultants are scheduled to provide a presentation concerning the outworkings of the detailed assessment at the hybrid meeting of the People and Communities Committee on Monday 13th February 2023.</p>
1.5	<p>The Committee is advised that the detailed assessment atmospheric dispersion modelling is currently being refined by Aecom consultants with input from Belfast City Council Air Quality Officers. The atmospheric dispersion modelling aspect of detailed assessment project should therefore presently be considered as being in draft format.</p>
2.0	Recommendations
2.1	<p>The Committee is invited to note this covering report concerning the Aecom detailed assessment presentation to be presented at the hybrid meeting of the People and</p>

	Communities Committee on Monday 13 th February 2023 and to consider party briefings on this subject in advance of the final report being tabled at committee.
3.0	Main report
	<u>Key Issues</u>
3.1	The Committee will be aware that the detailed assessment project comprises four main components; (i) additional ambient monitoring; (ii) development of an emissions inventory for Belfast; (iii) atmospheric dispersion modelling for the Belfast City Council area and (iv) provision of a final written summary report of the Detailed Assessment project for NO ₂ , PM ₁₀ and PM _{2.5} . These project components will form the basis for the Aecom Committee presentation.
3.2	In addition to the various monitoring for NO ₂ , PM ₁₀ and PM _{2.5} , presently being undertaken across Belfast by Belfast City Council and DAERA, a further six small sensor air quality monitors were procured, installed and operated during 2021 by Aecom as part of the detailed assessment project at locations across the city, representative of key emission sources for NO ₂ , PM ₁₀ and PM _{2.5} , including a city centre site; two roadside sites; two urban background sites, reflective of domestic, small industrial, institutional and commercial space heating and regional pollutant contributions; and a site adjacent to George Best Belfast City Airport. It should be noted that data from small sensor air quality monitoring undertaken separately by Belfast Harbour within the port area has also been considered as part of the detailed assessment project. Ownership of the six small sensor air quality monitors procured by Aecom transferred to Belfast City Council in early 2022 and the monitors are now operated by Belfast City Council Air Quality Officers.
3.3	An emissions inventory for Belfast has been compiled by Aecom consultants covering important emission sources, including George Best Belfast City Airport, the Port of Belfast, railways, domestic and industrial sources and the local road network. Road fleet emissions have been additionally informed by a series of Automatic Number Plate Recognition (ANPR) surveys. Data from the emissions inventory has been employed in the atmospheric dispersion modelling aspects of the detailed assessment project. Moreover, the emissions inventory data will provide a useful resource for Belfast City Council in undertaking any subsequent atmospheric dispersion modelling studies for the city or for evaluating and taking forward any local air quality management improvement recommendations arising from the detailed assessment project.
3.4	

<p>3.5</p> <p>3.6</p> <p>3.7</p> <p>3.8</p>	<p>Detailed atmospheric dispersion modelling has been undertaken by Aecom consultants for NO₂, PM₁₀ and PM_{2.5} for the Belfast City Council area for a 2019 base year and for a forward projection year of 2028. 2019 was chosen as the base year as it is the year immediately prior to the onset of the Covid-19 pandemic and therefore considered to be representative of what were <i>‘typical’</i> ambient NO₂, PM₁₀ and PM_{2.5} concentrations across Belfast. The atmospheric dispersion modelling data has been validated, verified and adjusted using ratified Belfast City Council ambient monitoring data, together with calibrated and ratified monitoring data from the six small sensor air quality monitors, to ensure that it is representative of ambient conditions in the 2019 base year and the forward projection year of 2028.</p> <p>Modelled ambient concentrations have been compared with air quality objectives detailed within the Air Quality Strategy for England, Scotland, Wales and Northern Ireland and with the September 2021 WHO Global Air Quality Guidelines in order to identify any areas of exceedance across the city. In addition and in light of the outworkings of the detailed atmospheric dispersion modelling, Aecom consultants have provided commentary on the council’s four Air Quality Management Areas that have been declared for a combination of exceedances of the 1-hour and annual mean objectives for nitrogen dioxide (NO₂), associated principally with road transport emissions. Source apportionment studies have been carried out by Aecom for a series of modelled sensitive receptors to determine the relative contributions from each of the modelled source sectors.</p> <p>The final detailed assessment atmospheric dispersion modelling report and the accompanying detailed assessment summary report will contain a series of project conclusions and where necessary, recommendations for further ambient air improvements across the city.</p> <p><u>Financial & Resource Implications.</u></p> <p>The Committee is advised that the detail assessment project is being supported by the Department for Agriculture, Environment and Rural Affairs (DAERA) through the local air quality management (LAQM) grant process. Funding support has been provided during the 2020/2021, 2021/2022 and 2022/2023 LAQM grant years.</p> <p><u>Equality or Good Relations Implications /Rural Needs Assessments</u></p> <p>None.</p>
<p>4.0</p>	<p>Appendices</p>
<p>4.1</p>	<p>Appendix 1 - People and Communities Committee 8th November 2022 Update on Air Quality Detailed Assessment for Nitrogen dioxide (NO₂) and Fine Particulate Matter (PM_{2.5})</p>

