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Democratic Services Section
Legal and Civic Services Department
Belfast City Council
City Hall
Belfast
BT1 5GS

8th February, 2023

SPECIAL MEETING OF THE PEOPLE AND COMMUNITIES COMMITTEE

Dear Alderman/Councillor,

The above-named Committee will be a hybrid (both remote and in person) in the Lavery Room - City Hall on Monday, 13th February, 2023 at 5.15 pm, for the transaction of the business noted below.

You are requested to attend.

Yours faithfully,

John Walsh

Chief Executive

AGENDA:

1. **Routine Matters**

   (a) Apologies

   (b) Declarations of Interest

2. **Update report on Detailed Assessment for Nitrogen Dioxide (NO2), Particulate Matter (PM10) and Fine Particulate Matter (PM2.5)** **(Pages 1 - 12)**

3. **Restricted**

   (a) Presentation - AECOM

PEOPLE AND COMMUNITIES COMMITTEE

Belfast City Council

Subject:	Detailed Assessment for Nitrogen Dioxide (NO_2), Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)
Date:	13th 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**	☐	**No**	✓
If Yes, when will the report become unrestricted?				
After Committee Decision		☐		
After Council Decision		☐		
Sometime in the future		☐		
Never		☐		

Call-in				
Is the decision eligible for Call-in?	**Yes**	✓	**No**	☐

1.0	**Purpose of Report or Summary of main Issues**
1.1	The Committee will be aware that at its meeting of 8th October 2019 and upon consideration of agenda item 3b, '*Local Air Quality Management Update for Belfast*', 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

	quality objective not being achieved. It should be noted that fine particulate matter ($PM_{2.5}$) is not in presently in regulation *(Air Quality Regulations (Northern Ireland) 2003))* 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.
1.2	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.
1.3	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 (NO_2), particulate matter (PM_{10}) 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.
1.4	In order to enable the Committee to consider the outworkings of the detailed assessment for nitrogen dioxide (NO_2), particulate matter (PM_{10}) 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.
1.5	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.
2.0	**Recommendations**
2.1	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

	Communities Committee on Monday 13th February 2023 and to consider party briefings on this subject in advance of the final report being tabled at committee.
3.0	**Main report**
	Key Issues
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	

	Detailed atmospheric dispersion modelling has been undertaken by Aecom consultants for NO_2, PM_{10} 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 *'typical'* ambient NO_2, PM_{10} 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.
3.5	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 (NO_2), 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.
3.6	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.
3.7	<u>Financial & Resource Implications.</u> 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.
3.8	<u>Equality or Good Relations Implications /Rural Needs Assessments</u> None.
4.0	**Appendices**
4.1	Appendix 1 - People and Communities Committee 8th November 2022 Update on Air Quality Detailed Assessment for Nitrogen dioxide (NO_2) and Fine Particulate Matter ($PM_{2.5}$)

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Belfast City Council

PEOPLE AND COMMUNITIES COMMITTEE

Subject:	Update on Air Quality Detailed Assessment for Nitrogen dioxide (NO_2) and Fine Particulate Matter ($PM_{2.5}$)
Date:	8th November 2022
Reporting Officer:	Siobhan Toland, Director of City Services
Contact Officer:	Vivienne Donnelly, City Protection Manager Alastair Curran, Environmental Protection Manager

Restricted Reports				
Is this report restricted?	**Yes**		**No**	X
If Yes, when will the report become unrestricted?				
After Committee Decision				
After Council Decision				
Sometime in the future				
Never				

Call-in				
Is the decision eligible for Call-in?	**Yes**	X	**No**	

1.0	**Purpose of Report or Summary of Main Issues**
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_2) and fine particulate matter ($PM_{2.5}$). 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_2) 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_{10}). Fine particulate matter ($PM_{2.5}$) 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 9th 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 11th 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.
2.0	**Recommendations**
2.1	The Committee is requested to: • Note the contents of this report. • 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.
3.0	**Main report**
	Key Issues
3.1	The Committee will be aware that the detailed assessment for nitrogen dioxide (NO_2) and fine particulate matter ($PM_{2.5}$) is comprised of a number of key components; namely, additional ambient monitoring for nitrogen dioxide (NO_2) and fine particulate matter ($PM_{2.5}$); 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_2) and fine particulate matter ($PM_{2.5}$) 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.
3.2	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_2 and $PM_{2,5}$, 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

	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_2 and $PM_{2,5}$ at this location, and at Lombard Street in the city centre in order to characterise the concentrations of NO_2 and $PM_{2,5}$ 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_2) and fine particulate matter ($PM_{2.5}$); 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_2 concentrations in excess of the 40 μgm^{-3} 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_{10}, annual mean concentrations were below the 40 μgm^{-3} 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 $PM_{2.5}$ across the Zephyr monitoring sites ranged from approximately 7.1 – 13 μgm^{-3} in 2019 and from approximately 7 – 12.1 μgm^{-3} in 2021. These concentrations are above the 2021 WHO recommended annual **air quality guideline level** of 5 μgm^{-3} for $PM_{2.5}$.
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 9th 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

	Finance and Resource Implications
3.10	Financial 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.
3.11	Human Resources 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.
3.12	Asset and Other Implications There are no asset or other implications for the council in connection with this report.
3.13	**Equality or Good Relations Implications/ Rural Needs Assessment** There are no Equality or Good Relations Implications / Rural Needs Assessment implications for the council in connection with this report.
4.0	**Appendices – Documents Attached**
	None.

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