CARDIFF COUNCIL
CYNGOR CAERDYDD

CABINET MEETING: 11 OCTOBER 2018

LOCAL AIR QUALITY MANAGEMENT – ANNUAL PROGRESS REPORT 2018

STRATEGIC PLANNING & TRANSPORT (COUNCILLOR CARO WILD)

AGENDA ITEM: 6

Reason for this Report

1. To note the contents of the 2018 Air Quality Annual Progress Report (APR) so the report can be finalised and issued to Welsh Government.

Background

2. The Council has a statutory obligation under Part IV of the Environment Act 1995 to review and assess air quality in its area against National Air Quality Standards which have been set for the protection of human health. The Act requires local authorities to monitor, review and report on seven pollutants. Within Cardiff the pollutant of greatest concern is Nitrogen Dioxide (NO2).

3. The Council is required to report annually to Welsh Government (WG) with regard to latest monitoring data, changes and developments which may be significant with regard Local Air Quality Management (LAQM) and progress in implementing Air Quality Action Plans (AQAPs) devised to address previously identified areas of locally poor air quality.

4. The 2018 APR provides details on the ratified data for the local air quality monitoring undertaken in 2017.

5. Poor air quality is now considered the largest environmental risk to public health in the UK.[1] There is clear scientific evidence that shows that air pollution exposure reduces life expectancy by increasing mortality and morbidity risk from heart disease, and strokes, respiratory diseases, lung cancer and other conditions.

6. In the UK, in the context of air quality management, the main air pollutants that are the primary public health concern are particulate matter and Nitrogen Dioxide (NO_2). In the UK, it has been estimated that

[1] 'Estimating local mortality burdens associated with particulate air pollution', Public Health England, (2014)

an equivalent of 23,500 deaths can be attributed to long-term exposure to NO_2 each year.[2]

7. The principle source of these pollutants is from road transport emissions, particularly from diesel cars. In 2012, the International Agency for Research on Cancer listed diesel exhaust pollution as a Class 1 carcinogen[3] and extended this to all ambient air pollution in 2013. [4]

8. Public Health Wales has stated that poor air quality is the second greatest public health concern after smoking and is the most significant environmental determinant of health. In Wales, based on data for the period 2011-2012, it has been estimated that an equivalent of 1,100 avoidable deaths can be linked to NO_2 exposure each year.

9. Poor air quality does not only cause ill health, it also has a wider societal cost. Accounting for health service costs and reduced productivity through lost workdays in the UK this is significant, standing at around £20bn every year.[5]

10. Some people are more at risk than others. Air pollution can disproportionately affect vulnerable population groups (e.g. children, older people, people with underlying chronic disease), as well as those exposed to higher levels because of living or commuting in urban or deprived locations.[6]

11. Recent work by Public Health Wales estimates that the equivalent of over 220 deaths each year among people aged 30 and over in the Cardiff and Vale area can be attributed to NO_2, with many more citizens suffering ill health as a consequence of poor air quality.[7]

Air Quality in Cardiff

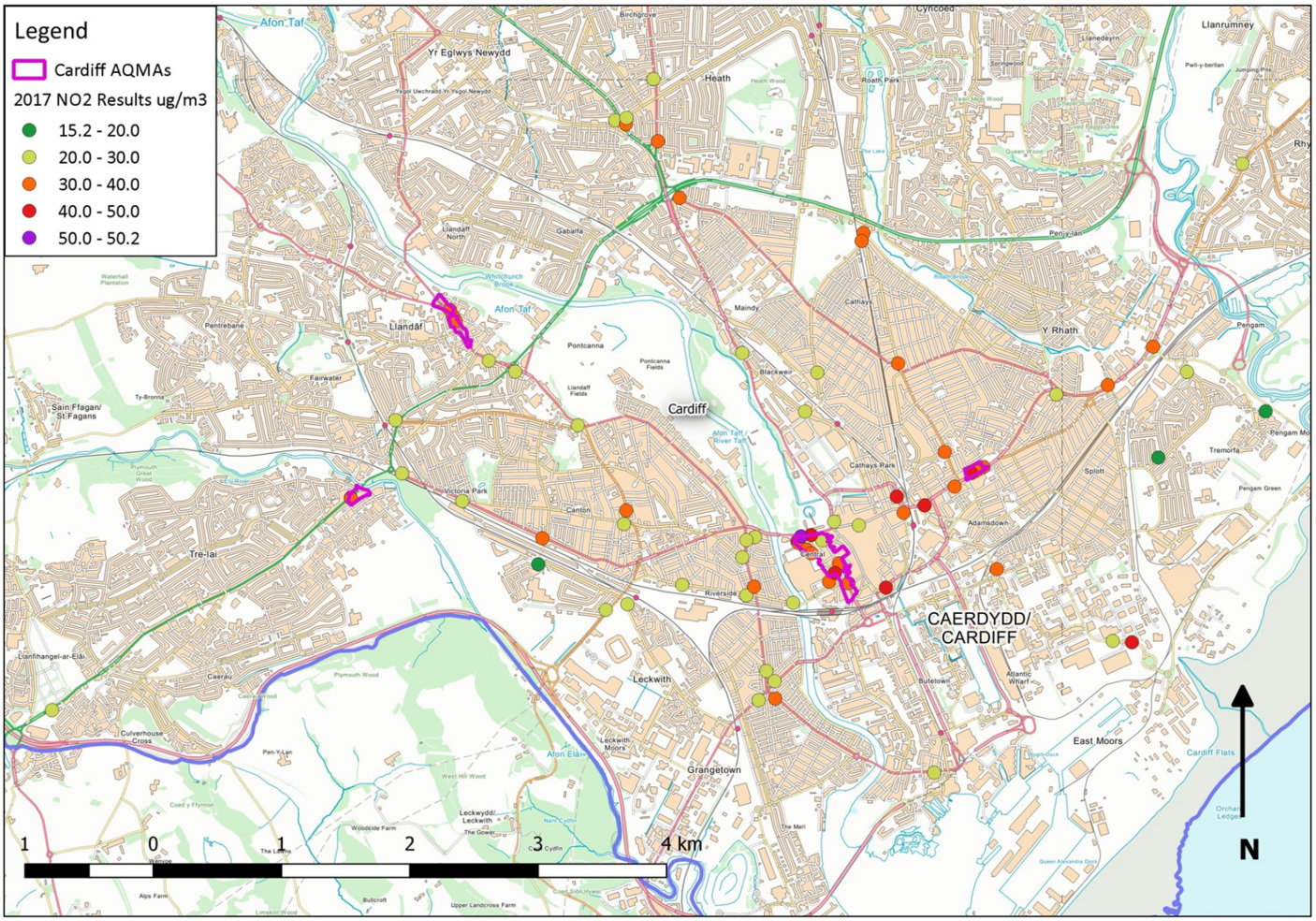
12. There are currently four Air Quality Management Areas (AQMAs) declared in Cardiff as a result of exceedence of the annual mean objective of Nitrogen dioxide of 40 µg/m^3 ; these areas are:

- **Cardiff City Centre AQMA** (declared 1/4/13 to incorporate Westgate Street; formerly St Marys St AQMA);
- **Ely Bridge AQMA** (declared 1/2/07);
- **Stephenson Court AQMA** (declared 1/ 12/10);
- **Llandaff AQMA** (declared 1/4/13)

[2] 'Improving air quality in the UK: tackling nitrogen dioxide in our towns and cities: UK overview document' Defra (2015)
[3] International Agency for Research on Cancer, (June 2012)
[4] International Agency for Research on Cancer, (October 2013)
[5] 'Every breath we take: the lifelong impact of air pollution', Royal College of Physicians and Royal College of Paediatrics and Child Health (2016).
[6] National Institute for Health and Care Excellence 2017; WHO Regional Office for Europe 2016
[7] Estimating local mortality burdens associated with particulate air pollution, Public Health Wales (2014).

13. The 2018 Progress Report provides a series of maps which identify the boundaries of each of the four AQMA's, and the locations are detailed in Figure 1 below.

Figure 1 – 2017 Monitored NO2 Results and Locations of AQMAs in Cardiff



14. The 2018 Annual Progress Report presents monitoring data captured in 2017, for the seven key pollutants that the Council is required to consider under the Local Air Quality Management (LAQM) regime.

Automated Monitoring Network

15. Cardiff has two automatic air quality monitoring sites located at Frederick Street in the City Centre and on Richard's Terrace, just off Newport Road.

16. The Frederick Street (Urban Background) site monitors on a 24/7 basis measuring levels of NO2, PM10 & PM2.5, SO2, CO and O3 feeding data directly into Defra's Automatic Urban and Rural Network (AURN).

17. The Richard's Terrace site (Urban Traffic/ Roadside) is a newly commissioned site (April 2018) and monitors on a 24/7 basis measuring levels of NO2 & PM10 at that location, feeding data directly into Defra's Automatic Urban and Rural Network (AURN).

Non-automatic Monitoring Sites-

18. In 2017 CC operated 75 specifically allocated non automatic monitoring sites in Cardiff which monitor levels of Nitrogen Dioxide (NO_2), as detailed in Figure 1 above.

19. The monitoring data confirms the findings of previous reports in that, for the six regulated pollutants other than nitrogen dioxide (particulate matter, sulphur dioxide, carbon monoxide, benzene, 1,3 butadiene and lead) **there are no areas where measured concentrations are above the air quality standards.**

20. In 2017, out of the 75 monitoring locations only 10 recorded exceedences of the annual average objective set for NO_2 (40µg/m^3). Of the 10 exceedences, 6 were recorded within the already established air quality management areas (AQMA).

21. The four monitoring locations monitoring locations (Site IDs 172, 179, 180,) which are not located within AQMAs.

22. Site 172 (Ocean Way) is a kerbside location situated up to 650m from any relevant exposure, used to examine potential impacts of traffic resulting from industrial development in the area. The site is not representative of relevant exposure, the nearest being >650m away. For 2018 Site 172 has been revoked from the monitoring network as it is felt that a strong trend of data has been collected at this location

23. Site 179 is not representative of relevant exposure and datasets collected at this monitoring location would apply to the 1-hour objective set for NO2 **(200µg/m3, not to be exceeded more than 18 times per year).** The monitoring at this location does not indicate that the 1 hour mean objective would be exceeded.

24. Sites 180 & 181 were implemented due to new developments with the potential for adverse air quality impacting the amenity of future occupants (Windsor House, Windsor Lane & Fitzalan Court, Newport Road). Both developments commenced construction in 2016, through into 2017, therefore influencing any datasets recorded. Section 106 contributions have been accepted via the planning system for the Fitzalan Court development. With the use of the S106 contributions an indicative real time monitor has been purchased to examine air quality levels, particularly NO_2 concentrations. Following relevant quality checks involving a comparison study with an approved quality checked real time monitoring site, it is envisaged for the monitor to be installed by the end of 2018

Results in AQMAs

City Centre AQMA

25. It is apparent that annual average NO_2 datasets in the City Centre, in and around the AQMA, continue to be elevated in 2017 showing little evidence of improvement from the 2016 datasets. Annual levels of NO_2 at residential accommodation on Westgate Street (Sites 126, 143 & 144) are approaching the objective with concentrations >38µg/m^3. An increase in levels has been recorded at the monitoring site on Havelock Street.

Ely Bridge AQMA

26. Monitoring undertaken within the Ely Bridge AQMA, at the façade of residential property (Site 117) recorded an annual average of NO_2 of 38 ug/m^3 · Whilst this has shown an improvement and could be seen to be complaint with the objective, it is considered to be an elevated result. For 2018, the Council ahs implemented revised monitoring location within the AQMA, which now represents a location of worst case exposure. Further revision and expansion of the monitoring network within this AQMA will be considered for 2019.

Llandaff AQMA

27. Residential monitoring locations with the Llandaff AQMA (Sites 99 and 161) showed compliance with the annual average objective, both results recorded at 31.0µg/m^3 & 33.4µg/m^3. The 2017 APR highlighted that any decision made to revoke the AQMA needs to be mindful of the potential development of the strategic LDP sites to the north of the AQMA, Plasdwr and BBC Studios. Whilst detailed air quality assessments undertaken as part of the planning process have modelled that there is unlikely to be a detrimental impact on air quality levels in the AQMA, this can only be fully verified through on going monitoring.

28. In an effort to reassure local residents and to be satisfied that levels will remain compliant with the NO_2 standard officers have reviewed the non-automatic monitoring network of NO_2 diffusion tubes for 2018. As result new and amended monitoring sites have been allocated. Officers will further assess the potential to implement real-time capabilities in the Llandaff AQMA as part of our statutory duties under Part IV of the Environment Act 1995**.**

Stephenson Court, Newport Rd, AQMA

29. Three of the four monitoring sites within the Stephenson Court AQMA (Sites, 81, 129 & 130) showed compliance with the annual average objective, however results remain elevated, particularly at Site 130 which is encroaching on the UK objective.

Summary of Results in the AQMAs

30. Table 1 below summarises the average concentrations at residential facades within the 4 AQMAs since 2012 which represents worst case exposure i.e., residential facades. The datasets of the annual average NO_2 l have shown and continue to show some signs of improvement.

Table 1. Annual Average NO2 Concentration (µg/m3) Air Quality Standard =40 µg/m3

AQMA	Annual Average NO_2 Concentration (µg/m³) Air Quality Standard =40 µg/m³					
	2012	**2013**	**2014**	**2015**	**2016**	**2017***
City Centre	**41.5**	**42.1**	**42.1**	38.2	38.7	38.2
Stephenson Court	**47.9**	**43.9**	**41.2**	39.5	39.6	36.7
Ely Bridge	**42.6**	**44.9**	**42.3**	39.5	**41.3**	**38**
Llandaff	**43.0**	39.1	37.2	32.3	35.0	32.5

31. Although the 2017 data indicates that compliance is met in the four AQMAs, the Welsh Government has stated that '*air just barely compliant with the objectives is not 'clean' and **still carries long-term health risks** and while compliance with the national air quality objectives is essential, it is desirable to keep levels of pollution as low as reasonable practicable*.'[8]

32. There are no monitoring sites in the district with annual average concentrations above 60µg/m³ in 2017. Therefore this indicates it is unlikely that the hourly nitrogen dioxide objective was exceeded.

Action Plans and Development of a Clean Air Strategy

33. Cardiff Council has a statutory requirement to produce an Air Quality Action Plan (AQAP) for each identified AQMAs within the local authority area.

34. An Action Plan for Ely Bridge AQMA was adopted in February 2009. The action plans drew heavily on traffic and emission reduction measures contained in the Local Transport Plan (LTP).

35. Interim Action Plans for the remaining AQMAs in the City Centre, Llandaff and Stephenson Court were devised and were included in the 2016 Progress Report.

36. In 2017 the Council gave a commitment to produce a Clean Air Strategy and Action Plan by 2018, and this report was to develop an Action Plan to address air quality issues not only in the AQMAs, but across all of Cardiff.

37. However since committing to the development of the Clean Air Strategy and Action Plan, Cardiff Council was issued with a Legal Direction from

[8] Welsh Government Local air quality management in Wales Policy guidance June 2017

Welsh Government to undertake a feasibility study to identify an option which will bring compliance with the EU Limit Value for Nitrogen Dioxide in the shortest possible time**.**

Legal Direction from Welsh Government

38. The direction came into force, as signed by the Minister, on 15th February 2018, and was delivered to Cardiff Council on 09th March 2018. The direction has a schedule of specified activities, and states:

> *'Under the Environment Act 1995 (Feasibility Study for Nitrogen Dioxide Compliance) Air Quality Direction 2018, the Welsh Ministers make this direction having determined that it is necessary in order to meet obligations placed upon the United Kingdom under the EU Ambient Air Quality Directive.*
>
> *Cardiff Council will undertake, as part of the UK plan for tackling roadside nitrogen dioxide concentrations 2017, a feasibility study in accordance with the HM Treasury's Green Book approach, to identify the option which will deliver compliance with legal limits for nitrogen dioxide in the area for which the authority is responsible, in the shortest possible time.'*

39. Further to the Councils statutory duty under Part IV of the Environment Act, the Direction places, a further legal duty on Cardiff Council to undertake the requirements of the direction as detailed above within the specified timescales

40. The Direction required an Initial Plan to be submitted to Welsh Government by the 30th September 2018 and this report has now been submitted to Welsh Government.

41. The Direction also requires that by 30th June 2019 at the latest a **Final Plan** Identifying in detail the preferred option for delivering compliance in the shortest possible time, must be submitted to Welsh Government.

42. Therefore the feasibility Study will ultimately become a city wide Action Plan to address air quality, as the project to date has not only focussed on roads modelled to exceed the NO_2 limit value, but has also assessed likely compliance within the AQMAs. Consequentially the preferred option to be detailed in the Final Plan will look to demonstrate likely improvements in air quality within the AQMAs. Thus feasibility study will also be used to finalise the Action Plan to satisfy the requirements of the LAQM process

43. Further in developing the Initial Plan, a long list of improvement measures that were developed as part of the draft Clean Air Strategy and where seen as appropriate actions, were qualitatively assessed in terms of achieving compliance in the shortest time possible. Whilst these measures were assessed as not being effective in terms of achieving compliance in the shortest possible time, they are still seen as valid measures to improve overall air quality across Cardiff Council. However,

the Council may need to undertake further assessment of these measures as part of a wider Action Plan, and this work may progress following the completion of the Feasibility Study work.

Reason for Recommendations

44. To enable Cardiff Council to submit the Annual Progress Report on Local Air Quality Management to Welsh Government.

Financial Implications

45. There are no Financial Implications from the Annual Progress Report.

Legal Implications

46. There are no legal implications regarding the publication of the Annual Progress Report.

RECOMMENDATIONS

Cabinet is recommended to approve the Annual Progress Report 2018 for submission to Welsh Government.

SENIOR RESPONSIBLE OFFICER	**Andrew Gregory** **Director Planning, Transport & Environment**
	5 October 2018

The following appendices are attached:

Appendix 1 2018 Annual Progress Report.