

**CABINET MEETING: 18 NOVEMBER 2021**

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**LOCAL AIR QUALITY MANAGEMENT – CARDIFF COUNCIL AIR  
QUALITY ANNUAL PROGRESS REPORT 2021**

**CLEAN STREETS, RECYCLING & ENVIRONMENT  
(COUNCILLOR MICHAEL MICHAEL)**

**AGENDA ITEM: 3**

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**Reason for this Report**

1. The purpose of this report is to seek approval for the 2021 Cardiff Council (CC) Local Air Quality Management (LAQM) Annual Progress Report (APR), based upon on air quality datasets obtained in 2020, for submission to Welsh Government for approval.
2. To approve the undertaking of a procurement of a 2 year pilot project on a city wide indicative real-time monitoring network using the 20/21 One Planet Funding and to delegate all aspects of the procurement process to the Director of Planning, Transport & Environment in consultation with the Cabinet Members for Clean Streets, Recycling & Environment and Strategic Planning and Transport, the Section 151 Officer and the Council's Monitoring Officer (including approval of the evaluation criteria and authority to award contracts) and all ancillary matters pertaining to the procurement.

**Background**

3. Poor air quality is now considered the largest environmental risk to public health in the UK.<sup>1</sup> 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.
4. 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<sub>2</sub>). In the UK, it has been estimated that an equivalent of 23,500 deaths can be attributed to long-term exposure to NO<sub>2</sub> each year.<sup>2</sup>

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<sup>1</sup> 'Estimating local mortality burdens associated with particulate air pollution', Public Health England, (2014)

<sup>2</sup> 'Improving air quality in the UK: tackling nitrogen dioxide in our towns and cities: UK overview document' Defra (2015)

5. The principal 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<sup>3</sup> and extended this to all ambient air pollution in 2013.<sup>4</sup>
6. 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<sub>2</sub> exposure each year.
7. Poor air quality does not only cause ill health, but 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.<sup>5</sup>
8. 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.<sup>6</sup>
9. Examining the most recent datasets (2017) made available by Public Health Wales for the total number of all-cause non-accidental deaths registered in the Cardiff and Vale University Health Board area, the long-term mortality burden attributable to air pollution (fine particulate matter and nitrogen dioxide combined) is an estimated effect equivalent to 178-227 deaths.
10. Under Section 82 of the Environment Act 1995 every local authority has an obligation to regularly review and assess air quality in their areas, and to determine whether or not air quality objectives to protect health are likely to be achieved. Where the air quality reviews indicate that the air quality objectives are not being achieved, or are not likely to be achieved, Section 83 of the 1995 Act requires local authorities to designate an Air Quality Management Area ('AQMA'). Section 84 of the Act ensures that action must then be taken at a local level which is outlined in a specific Air Quality Action Plan (AQAP) to ensure that air quality in the identified area improves.
11. The air quality objectives applicable to LAQM in Wales are set out in the Air Quality (Wales) Regulations 2000, No. 1940 (Wales 138) and Air Quality (Amendment) (Wales) Regulations 2002, No 3182 (Wales 298).
12. This Annual Progress Report provides details on the ratified data for air quality monitoring undertaken in 2020 within the Cardiff Council area.

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<sup>3</sup> International Agency for Research on Cancer, (June 2012)

<sup>4</sup> International Agency for Research on Cancer, (October 2013)

<sup>5</sup> 'Every breath we take: the lifelong impact of air pollution', Royal College of Physicians and Royal College of Paediatrics and Child Health (2016).

<sup>6</sup> National Institute for Health and Care Excellence 2017; WHO Regional Office for Europe 2016

13. Welsh Government issue statutory policy guidance to Local Authorities under section 88 of the Environment Act 1995 to bring the local air quality management system in Wales into line with the sustainable development principle outlined in Welsh Government's Well-being for Future Generations legislation, 2015. This guidance, with which local authorities must have regard to when carrying out their air quality functions under the Environment Act 1995, sets out that authorities in Wales have to produce an Annual Progress Report in **draft** by 30<sup>th</sup> September each year and publish it by 31<sup>st</sup> December at the latest. This report must include monitoring results for the previous calendar year, a progress report on action plan implementation and an update on any new policies or developments likely to affect local air quality.
14. This Annual Progress Report satisfies the above criteria examining ratified datasets for air quality monitoring undertaken in 2020 within the Cardiff Council area.

## Issues

### Covid-Pandemic

15. During the COVID-19 pandemic local air quality monitoring continued in Cardiff. However, some non-automated results were not available due to the National 'lockdown' measures introduced in the month of March 2020. Local Authorities including SRS at the time of the 'lockdown' measures being imposed looked for official clarity to ascertain if the monitoring was classified as essential in view of quietened road networks which may lead to a favourable bias, as well as difficulties faced by analytical laboratories utilised by SRS which had to adapt their working practises which added to postage delays.
16. Following those initial discussions, air quality data collection was deemed as an essential service by Welsh Government, whereby monitoring was resumed for **May 2020**.
17. The results for 2020, have been corrected/ ratified to account for the gaps in the annual datasets incurred by the COVID situation.

### Air Quality in Cardiff

18. There are currently four Air Quality Management Areas (AQMA) declared across Cardiff which have all been declared due to exceedances of the annual mean NO<sub>2</sub> Air Quality Standard (40 µg/m<sup>3</sup>), the main source of the pollution being derived from road transport emissions. The established AQMA 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); and
  - **Llandaff AQMA** (declared 1/4/13).

19. **The 2021 Annual Progress Report presents monitoring data captured in 2020.** In line with the Cardiff Council's (CC) statutory duties under Part IV of the Environment Act 1995, Shared Regulatory Services on behalf of CC undertakes regular air quality monitoring at specifically allocated locations across Cardiff using automated and non-automated principles for ambient air Nitrogen Dioxide (NO<sub>2</sub>), Particulate Matter (PM<sub>10</sub> & PM<sub>2.5</sub>), Sulphur Dioxide (SO<sub>2</sub>), Carbon Monoxide (CO) & Ozone (O<sub>3</sub>).

### Automated Monitoring Network

20. In 2020, Cardiff had four automatic air quality monitoring sites located at Frederick Street in the City Centre, Richard's Terrace, just off Newport Road, Castle Street<sup>7</sup> and Lakeside Primary School.
21. The Frederick Street (Urban Background) site monitors on a 24/7 basis measuring levels of NO<sub>2</sub>, PM<sub>10</sub> & PM<sub>2.5</sub>, SO<sub>2</sub>, CO and O<sub>3</sub> feeding data directly into Defra's Automatic Urban and Rural Network (AURN).
22. The Richard's Terrace site (Urban Traffic/ Roadside monitors on a 24/7 basis measuring levels of NO<sub>2</sub> & PM<sub>10</sub> at that location, feeding data directly into Defra's Automatic Urban and Rural Network (AURN).
23. The Castle Street site was installed as part of the Council's Clean Air Plan and the site monitors on a 24/7 basis measuring levels of NO<sub>2</sub>, PM<sub>10</sub> & PM<sub>2.5</sub> at that location, forming part of the Welsh Air Quality Network. Monitoring commenced in October 2020 and thus for 2020 less 20% data has been captured.
24. The 2020 results of the monitoring for NO<sub>2</sub>, and PM<sub>10</sub>, at the above-mentioned stations is presented in Table 1.

**Table 1 - Summary of Automated Results for NO<sub>2</sub> and PM<sub>10</sub> as annual averages**

Pollutant	Frederick City Centre	Street Richards Newport Rd	Terrace Castle Street *
NO <sub>2</sub> µg/m <sup>3</sup>	16	19	25
PM <sub>10</sub> µg/m <sup>3</sup>	14	17	16

\*Data capture for the monitoring period is below 25% at 19.7% and thus it is not applicable to annualise data in this instance.

25. The results obtained at all 3 sites demonstrate compliance with the national air quality objectives for both NO<sub>2</sub> and PM<sub>10</sub> which are set at 40 µg/m<sup>3</sup> as an annual average. Full datasets for these monitors are available on the Welsh Air Quality Forum Website <https://airquality.gov.wales/>.
26. Lakeside Primary School (Urban Background) site monitors on a 24/7 basis measuring levels of Polycyclic aromatic hydrocarbons (PAH) at that location, feeding data directly into Defra's PAH Digital (solid phase) Network. SRS serve as a local site operator to this site, however data interpretation is sanctioned by the consultants Ricardo Energy and Environment Ltd. Therefore, the purpose of this site and results derived

<sup>7</sup> Installed late summer 2020 and operational from October 2020

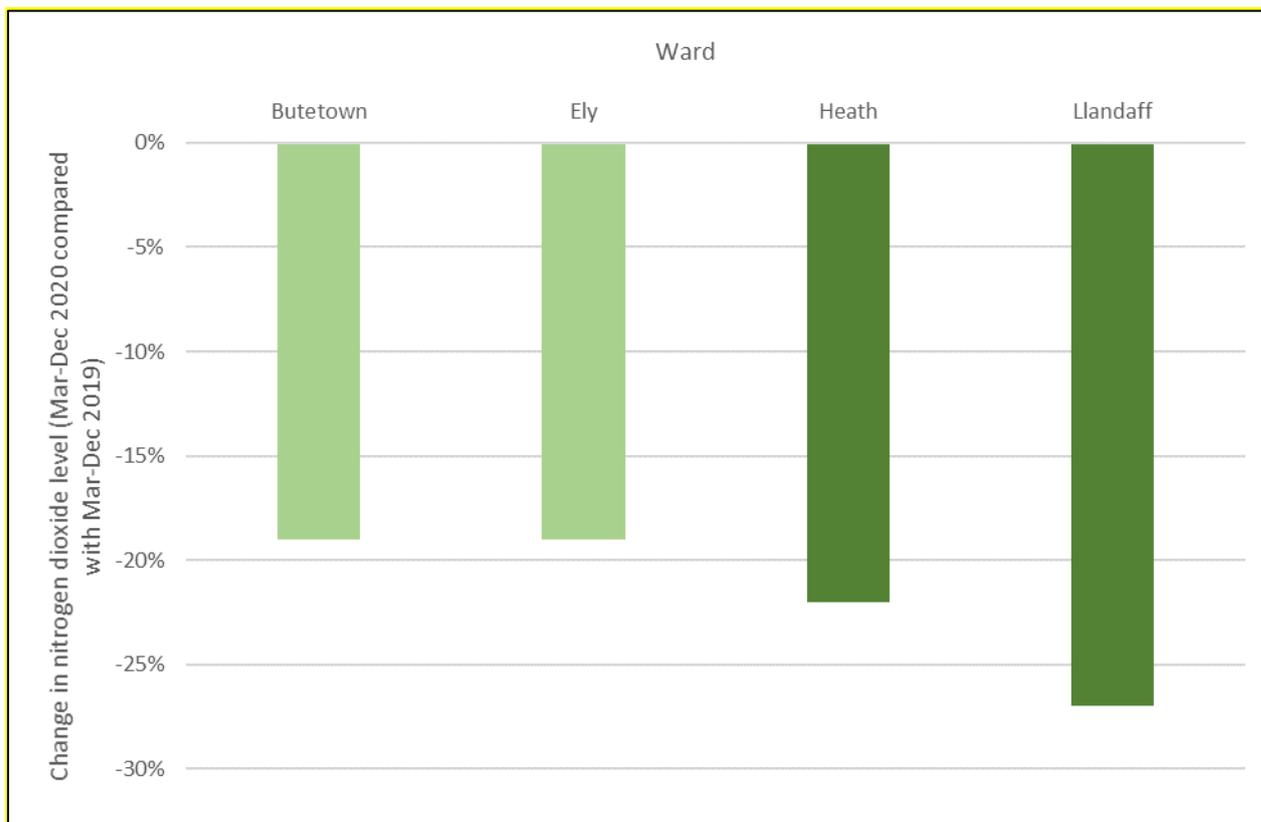
are not corresponded to any of the limit values outlined for the purposes of LAQM in Wales.

27. In addition, Cardiff Council has acquired the 6 near real time indicative air quality analysers. 5 analysers were purchased with the financial support of Welsh Government and the 6<sup>th</sup> analyser was facilitated by the Shared Regulatory Services (SRS) who had successfully accrued funding via a S106 planning contribution. The analysers have been specifically placed in locations to monitor the impacts of the Clean Air Plan, and also improve monitoring in the Llandaff AQMA and represent relevant exposure. The analysers continuously monitor for Nitric Oxide, Nitrogen Dioxide & Ozone, PM10 & PM2.5, and do so every 15 minutes (data uploaded every hour).
28. An online platform to access the available datasets is yet to be finalised with Cardiff Council's webpage development team.

### **Non-automatic Monitoring Sites**

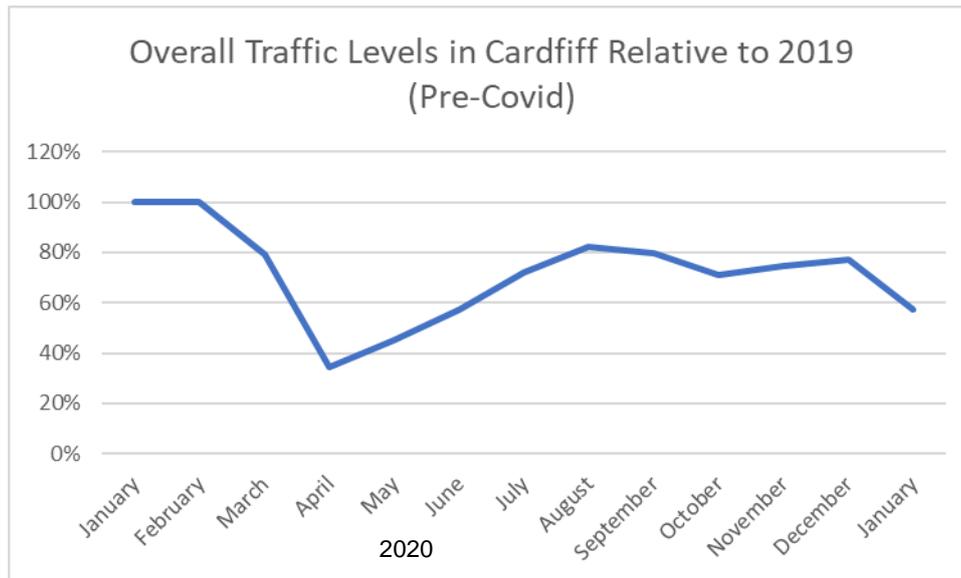
29. In 2020 CC operated 92 specifically allocated non automatic monitoring sites in Cardiff which monitor levels of Nitrogen Dioxide (NO<sub>2</sub>).
30. **In 2020, out of the 92 monitoring locations, no monitoring sites recorded exceedances of the annual average objective set for NO<sub>2</sub> (40 µg/m<sup>3</sup>).**
31. The results are indicative that the impacts of the COVID lockdowns and restrictions therein have had an impact on pollution levels in Cardiff which is likely owing to traffic volumes having decreased. It is therefore likely that the concentrations recorded in 2020 are not representative of a true business as usual scenario and the results have generated a bias/underestimation of levels of pollution across Cardiff in 2020.
32. To demonstrate this further comparing a time period between March and December 2020 to the same period in 2019, across selected wards in Cardiff, there were reductions in NO<sub>2</sub> concentrations across the city as a result of the lockdowns and changes in travel patterns as detailed in Figure 1.

**Figure 1 Improvements in air quality in Cardiff following Covid-19 lockdowns**



33. The decreases in NO<sub>2</sub> concentrations are likely associated with a decrease in car travel to work and shopping centres, and an increase in walking and cycling during this period. It is notable that reductions appeared larger in less deprived areas, and one assumption is that this is likely to be due to a higher proportion of working adults being able to work from home in these areas.
34. This is supported by data from Transport Team which demonstrated that traffic across Cardiff overall was reduced by 28% for the year as a whole in 2020 (January-December) relative to 2019 pre-Covid levels. This reduction is even higher when the City Centre is viewed in isolation with a reduction of 38% being measured. Figure 2 illustrates the decreases in traffic compared to a pre-Covid (2019) period and it is clearly evident from the data the impacts of the national lockdowns/ firebreaks in March, October and December 2020 on traffic levels in Cardiff with noticeable decreases evident.

**Figure 2 - Overall 2020 Traffic Levels in Cardiff Relative to 2019**



35. To note it is not viewed as a preferable indicator to directly compare to previous years' data given influencing meteorological conditions that will influence results, however the exercise is useful to populate indicative trends/ visualise impacts that the COVID pandemic has had on pollution levels.
36. In accordance with Welsh Government's (WG) Local Air Quality Management Policy Guidance, July 2017, Cardiff Council recognise that there is no defined "safe level" when describing levels of air quality and work remains ongoing to reduce air pollution across Cardiff.

## Results in AQMAs

### City Centre AQMA

37. It is apparent that annual average NO<sub>2</sub> datasets in the City Centre, in and around the AQMA, were impacted by the pandemic as each monitoring location demonstrated compliance with the NO<sub>2</sub> objective of 40 µg/m<sup>3</sup> as an annual average. The full impacts of the COVID pandemic and the measures implemented by the Council in response, particularly around Castle Street are most evident at the monitoring locations on Castle Street.
38. Using sites 186 & 187 located on Castle Street levels measured in 2019 pre pandemic were 44 µg/m<sup>3</sup> at both sites. In comparison for 2020 the same locations recorded concentrations of 23 µg/m<sup>3</sup> and 26 µg/m<sup>3</sup>, which equates to a reduction of 47% and 41%.

### Ely Bridge AQMA

39. Monitoring undertaken within the Ely Bridge AQMA, at the façade of residential properties (Site 117, 192 & 218) recorded annual average levels of NO<sub>2</sub> at 30µg/m<sup>3</sup> or less. Although levels captured are compliant with the air quality objectives, they need to be considered in light of the

Covid Pandemic and thus it is considered necessary that the AQMA should remain in place and focussed monitoring has continued into 2021.

### Llandaff AQMA

40. Residential monitoring locations within the Llandaff AQMA, all indicate compliance with the annual average objective for NO<sub>2</sub> in 2020. As expected, owing to the impacts from COVID all monitoring locations in the AQMA have reduced concentrations. Site 212 which did indicate an exceedance of the annual average objective in 2019 with an annual average reading of 41.3 µg/m<sup>3</sup> recorded a concentration of 33 µg/m<sup>3</sup>, a reduction of 20%.

### Stephenson Court, Newport Rd, AQMA

41. All three monitoring sites within the Stephenson Court AQMA (Sites, 81, 131 & 198) show compliance with the annual average objective, and no site recorded concentrations >30 µg/m<sup>3</sup>. Site 131 recorded the highest concentration of 28 µg/m<sup>3</sup> which in comparison to concentrations recorded in 2019 is a reduction of 22%.

### Summary of Results in the AQMAs

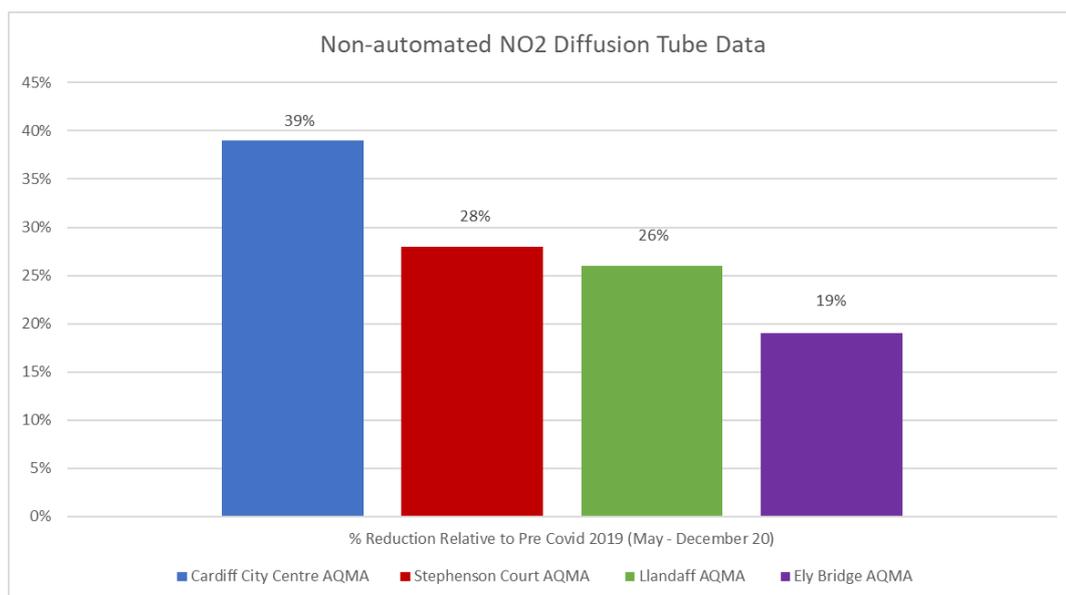
42. Table 2 below summarises the highest recorded annual average result at a residential location within each of the 4 AQMAs in 2020, thus representing worse case relevant exposure in terms of the annual objective for NO<sub>2</sub>. It should be noted that the results summarised below in some instances is not a portrayal of the same monitoring site year on year, owing to variations in concentrations and the addition of any new monitoring sites.

**Table 2 Highest Annual Average NO<sub>2</sub> Concentration (µg/m<sup>3</sup>) in AQMAs**

AQMA	Annual Average NO <sub>2</sub> Concentration (µg/m <sup>3</sup> ) Air Quality Standard =40 µg/m <sup>3</sup>							
	2013	2014	2015	2016	2017	2018	2019	2020
City Centre	42.1	42.1	38.2	38.7	38.2	37.3	35.6	24.7
Stephenson Court	43.9	41.2	39.5	39.6	36.7	38.2	35.7	28.4
Ely Bridge	44.9	42.3	39.5	41.3	38	39.9	38.6	30.4
Llandaff	39.1	37.2	32.3	35.0	32.5	32.5	41.3	32.9

43. Some further analysis has been undertaken to ascertain what impact the pandemic has had on air quality levels, especially within the established AQMAs. Comparative exercises have been undertaken to observe a change in levels between certain time periods, for example a comparison to previous years' results which examines a pre Covid time period with that of a Covid impacted time period. As mentioned previously it is not viewed as a preferable indicator to directly compare to previous years' data given influencing meteorological conditions, however the exercise is useful to populate indicative trends and visualise the overall impacts of Covid. The results of this exercise is presented in Figure 3 below.

**Figure 3 - COVID 19 Analysis on AQMA NO<sub>2</sub> Results**



44. The reduction in the concentrations recorded in all four existing AQMAs will be highly influenced by the impact of the pandemic and subsequent lockdowns and travel restrictions throughout 2020. Therefore, monitoring within the AQMAs has continued in 2021, consideration of any future actions for the AQMAs which could include reviewing the boundary or revoking the AQMA will be assessed by the Council once an assessment of the longer-term recovery from Covid has been determined. The results to date for 2021 are currently suggesting similar reductions showing the impact that the pandemic has continued to have in influencing results. It is therefore imperative that focussed monitoring within the AQMAs continues and the need for any further action reviewed accordingly once it is confident that a near normal/ new normal situation has stabilised following the pandemic.
45. Although the 2020 data indicates that compliance is met in all 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 reasonably practicable.*<sup>8</sup>
46. In accordance with LAQM best practise guidance, there are no monitoring sites in the district with annual average concentrations above 60 µg/m<sup>3</sup> in 2020. This is therefore indicative that is unlikely that the hourly NO<sub>2</sub> objective was exceeded during this monitoring period.

### **Action Plans and Development of a Clean Air Strategy**

47. Section 84 of the Environment Act 1995 ensures that action must then be taken at a local level which is outlined in a specific Air Quality Action Plan (AQAP) to ensure that air quality in the identified area improves. Therefore,

<sup>8</sup> [Welsh Government Local air quality management in Wales Policy guidance June 2017](#)

Cardiff Council has a statutory requirement to produce an Air Quality Action Plan (AQAP) for each identified AQMA.

48. In 2017 the Council gave a commitment to produce a Clean Air Strategy and Action Plan by 2018. This objective of this report was to develop an Action Plan to address air quality issues not only in the AQMAs, but across all of Cardiff.
49. Highlighting this commitment, in 2018, SRS & CC developed a citywide Clean Air Strategy & Action Plan (CASAP) for Cardiff. The strategy coincides with Cardiff's Capital Ambition report and helps to implement and deliver the priorities outlined in the Ambition report with an overarching aim to improve air quality to protect and improve public health in Cardiff. The CAS & Action Plan appoints strategic measures that will look to generate a positive impact to citywide air quality levels, in particular traffic derived NO<sub>2</sub> levels. Each measure has endured a cost benefit appraisal procedure by weighting the measures in terms of air quality impact, cost and timescale. The key theme of the strategic measures is to increase the uptake of sustainable modes of transport by influencing a behavioural change in Cardiff.
50. The CASAP fulfils the requirements of the LAQM process to produce an Air Quality Action Plan (AQAP).
51. It will be imperative that the CASAP is reviewed following the full implementation of the Clean Air Plan in order to further prioritise measures, to ensure air quality levels are continuously improved in Cardiff. Therefore, it is likely that the CASAP will need a full review and update in 2022/23.

### **School Monitoring - School Streets Project**

52. In view of the corporate commitment to deliver active travel plans for all schools by April 2022, SRS was commissioned by Cardiff Council's Transportation, Policy and Strategy Team to assist with Cardiff Council's Schools Streets pilot project in October 2019, which involves the temporary closure of road links surrounding and initial 6 specific schools in Cardiff.
  - Whitchurch High Lower;
  - Ysgol Melin Gruffydd;
  - Peter Lea Primary;
  - Llandaff Church in Wales Primary;
  - Pencaerau; and
  - Lansdowne Primary
53. These initial schools were selected for the pilot project owing to an assessment made by the Road Safety Team following numerous concerns and correspondence received relating to road safety issues at these schools. The road layouts at these schools allowed for the project to be accommodated.

54. The Traffic Regulation Order (TRO) is effective during the schools' morning and afternoon drop-off and pick-up hours. This project is seen as an excellent opportunity to take action to encourage parents, staff and children to adopt an alternative mode of travel.
55. Shared Regulatory Services (SRS) have further supported this pilot project by providing additional air quality monitoring at an additional 9 schools. The monitoring at the additional schools only commenced in December 2020 and thus data captured at these schools will be reported in the 2022 APR. The additional 9 schools are:
- St Cuthbert's School
  - Tredegarville School
  - St Peters School
  - St Monica's / Gladstone School
  - Lakeside School
  - Bryn Hafod School
  - Glan Yr Afon School
  - Willow Brook School
  - Creigiau School
56. SRS gather monthly datasets for NO<sub>2</sub> using non-automated passive diffusion tubes, undertaken at the schools' premises, inside the TRO zone at a residential façade and outside the TRO zone at a residential façade. This strategic placement of monitoring sites allows the examination of potential displacement impacts as a result of the adopted TRO zone.
57. The collection of data was suspended during the Covid Pandemic and was resumed when risk assessments deemed it was acceptable for officers to attend schools.
58. The results obtained from each of the 6 school sites indicated **full compliance with the NO<sub>2</sub> annual average objective of 40 µg/m<sup>3</sup>**. These results are summarised below in Table 3:

**Table 3 - School Streets Monitoring NO<sub>2</sub> Results µg/m<sup>3</sup>**

School Location	Streets	Monitoring	Annualised NO <sub>2</sub> concentration µg/m <sup>3</sup>
Whitchurch School	High	Lower	19.7
Crossroads of Old Church Rd and Glan-Y-Nant Ter. (outside)			27.5
Ysgol Melin Gruffydd School			18.3
36 Old Church Rd (outside)			27.3
Peter Lea Primary			17.3
3 Carter Place (outside)			16.2
Llandaff Church in Wales Primary			22.2
48 Hendre Close (outside)	Llandaff		18.8

<b>Pencaerau School</b>	<b>18.6</b>
<b>6A Cyntwell Avenue (outside)</b>	<b>18.9</b>
<b>Lansdowne Primary School</b>	<b>18.5</b>
<b>209 Lansdowne Rd (outside)</b>	<b>31.7</b>

59. Full details of these results are presented in the Annual Progress Report. Details of the results from the additional 9 Schools will be presented in the 2022 report owing to the work only commencing in December 2020.

### Implementation of Clean Air Plan

60. At the start of 2020 Cardiff Council received confirmation of the grant funding from Welsh Government to implement its approved Clean Air Plan to ensure compliance with the EU Ambient Air Quality Directive limit value for NO<sub>2</sub>.
61. The Council's published [Full Business Case](#) (Final Plan) set out a series of measures not only aimed at ensuring compliance on the A4161 Castle Street could be achieved in the shortest possible time, but provided city wide air quality improvements. The measures set out and approved by Welsh Government included:
- Implementation of Electric Buses – 36 Electric Buses to be implemented on a number of routes within the City Centre;
  - Bus Retro Fitting Programme;
  - Taxi Mitigation Scheme; and
  - City Centre Transportation Improvements.
62. A key component of the Clean Air Plan to deliver compliance was the full implementation of the City Centre Schemes, particularly the City Centre North (Castle Street) Scheme. The schemes would establish a high-quality active travel infrastructure for the city and improve connectivity between key developments by strategically aligning bus routes and enhancing links with the new Transport Interchange. These schemes were due to commence in early 2020, prior to the onset of the COVID pandemic.
63. As set out in the 'Recovery and Renewal: Greener, Fairer, Stronger' report, approved by Cabinet in May 2021, the Covid-19 pandemic had a unique impact on the city centre and on mobility patterns in the city. In order to create Covid-secure mobility options and environments a series of innovations and adaptations were introduced at pace in the city centre throughout 2020, including:
- **Summer 2020:** Castle Street was closed to all traffic to accommodate an outdoor dining area, with Station Terrace restricted to bus, taxi and limited access only.

- **Autumn 2020:** The pavement was extended on Castle Street south, outdoor dining areas were removed and buses, taxis & access vehicles were allowed in.
  - **Autumn 2020 – October 2021:** A series of Pop-up Cycleway were installed in the city centre to replicate those included in the permanent programme, extensions to these cycleways continue to be on site today and will see over 2.5 miles of additional cycleway installed.
64. The temporary measures established on Castle Street in response to COVID-19 led to a significant improvement in air quality on Castle Street and ensured that compliance with the EU Limit for NO<sub>2</sub> was achieved in advanced of the modelled forecast date within the Clean Air Plan of 2021.
65. Monitoring has continued on Castle Street throughout 2021 and the current average concentration for NO<sub>2</sub> between January-September 2021 has been recorded at **22 µg/m<sup>3</sup>**. Full details of the monitoring undertaken in 2021 will of course be detailed in the 2022 APR.
66. In June 2021 Cabinet approved the construction of the original City Centre North Scheme as detailed in the Clean Air Plan, albeit on an interim basis. This of implementing an interim scheme based on the need to assess any following a full post Covid recovery period could be fully accounted for to ensure that no detrimental impacts in terms of congestion and air quality would result from the Clean Air Scheme. At the time of this report these works are ongoing and impacts will be monitored and reported in the 2022 Annual Progress Report.
67. As part of this evidence to support the Cabinet decision further detailed modelling of the City Centre Schemes. Further variable demand modelling (VDM) has been undertaken by transportation consultants, to provide updated transport data to reflect potential mode shift changes/ cancelled journeys as a result of the schemes. This differs from the previous modelling which was fixed demand which meant the model didn't take account of any changes and assumed travel behaviours remained the same. Using the updated VDM traffic data further air quality modelling has been undertaken which demonstrated that further improvements to NO<sub>2</sub> concentrations on Castle Street are now forecasted with a revised compliance figure of 28 µg/m<sup>3</sup> calculated to be achieved by the end of 2021.
68. Constant dialogue and ongoing collaboration with Welsh Government officials has been maintained throughout the pandemic in order to ensure that the Plan remains on course to deliver compliance in the shortest possible time.
69. The Taxi Support Scheme was impacted as a result of the impacts of Covid and were further delayed to ensure that both schemes complied with revised competition/ state aid rules as set out the UK-EU Trade and Corporation Agreement.

70. The bus retrofit scheme was launched in September 2020 and following an open application process which ended on the 31<sup>st</sup> of December 2020, and subsequent review process, two application submissions were deemed successful. As per the requirements of the grant 80% funding to cover capital costs has been awarded to Cardiff City Transport Services Ltd (Cardiff Bus) to retrofit 20 buses, and Stagecoach South Wales to retrofit 29 vehicles.
71. It is anticipated that both operators will complete the delivery of their intended retrofit schemes by the end of October 2021.
72. Further details of these measures will be reported in the 2022 APR as these two schemes have yet to be fully implemented

### **Increasing Real Time Data/One Planet: Establishing a real-time city-wide air quality monitoring network**

73. Although the Clean Air Plan devised a package of mitigation options with the primary objective to achieve legal compliance on Castle Street, via detailed analysis a wider benefit to air quality across the city is expected.
74. In view of monitoring of the expected outcomes derived by Cardiff's Clean Air Plan, data collection has remained primarily focused on the City Centre and existing Air Quality Management Areas (AQMA). These key areas, through the Clean Air Plan funding have been strengthened with enhanced air quality monitoring techniques, in the form of automated monitoring which allows the collection of air quality datasets (24/7). It is recognised that there would be wider benefits of establishing a broader real time air quality monitoring network across the City, which would further add to the existing network.
75. This broadened real time air quality monitoring network will strengthen the Council's and public's understanding for Cardiff's air quality by providing appropriate datasets and interpretation via a web-based platform/ smart application.
76. The purpose of the network would be to provide Cardiff with one of the most advanced regulatory monitoring networks for air quality data in Wales and enable the Council to comply with any future legislative changes from Welsh Government in terms of the likely introduction of a Clean Air Act/ Bill for Wales.
77. The data collected will serve as the foundation stone for research, policy development, health impact analysis and public understanding of air quality more widely across Cardiff. It will enable the Council to assess the impact of interventions that are currently being implemented through the Clean Air Plan and Transport Vision and any future interventions that may be required in other parts of the city to further reduce the impacts on air quality and encourage further modal shift to sustainable forms of transport.
78. By providing readily accessible real time datasets it is hoped that residents would use this data to make informed decisions on daily travel choices,

making use of alternative sustainable modes of transport which will create a positive impact for local air quality levels. Incidentally this will potentially have an indirect CO<sub>2</sub> benefit if these behaviours are solidified. Here with a potential increase in sustainable transport modes coincided with fewer journeys made by Cars this will evidently led to reductions in CO<sub>2</sub> emissions and support the Council's One Planet Ambitions.

79. One Planet Cardiff Capital funding has been made available to support the expansion of this network and the aim is to undertake a 2-year pilot project and increase the density of monitors in the city in the region of ~50 units. Following the completion of the pilot project, it will be necessary to undertake a review of the success of the project and assess options on continuation of the monitoring. After the 2 years additional revenue would be needed of approximate £50,000 p.a. to maintain access to the data by the Council.
80. In terms of locations of where the monitors will be cited officers will adopt a risk-based approach to any allocation considering the requirements of Local Air Quality Management Technical Guidance 16 (TG16), April 2021. The designated monitoring locations will be assigned based on relevant exposure to pollutants and where certain Air Quality Objective levels for a particular pollutant apply.

### **Scrutiny Consideration**

81. The Environmental Scrutiny committee has considered this report. Any comments received will be reported to the Cabinet meeting.

### **Reason for Recommendations**

82. To enable Cardiff Council to a final version of the Annual Progress Report on Local Air Quality Management to Welsh Government to meet statutory reporting requirements and to progress a city-wide pilot project for real-time air quality monitoring.

### **Financial implications**

83. SRS has an existing budget to complete a programme of air quality management and monitoring across Cardiff. As previously reported to Cabinet the measures proposed and submitted to Welsh Government to achieve compliance with the Air Quality Legal direction have been agreed by Welsh Government. Welsh Government has awarded the subsequent funding to support the implementation of these measures.
84. Further thought as to how the ongoing revenue costs from expanding the Air Quality Monitoring Network if the pilot is a success will need to be considered.

## **Legal Implications**

85. The legislative framework is set out in the body of the report. However, in addition when considering this matter Cabinet should have regard to the general legal advice set out below.
86. The second recommendation is to put simply ask Cabinet to delegate all aspects of the procurement process to the Director of Planning, Transport & Environment in consultation with the Cabinet Members for Clean Streets, Recycling & Environment and Strategic Planning and Transport, the Section 151 Officer and the Council's Monitoring Officer.
87. Full legal advice should be sought on the proposals the procurement process and in relation to the draft terms and conditions of the contract as the same are developed.
88. It should be noted as with any procurement undertaken by the Council that it should be carried out in accordance with the Council's Contract Procedure Rules and other applicable procurement legislation

## **General Legal Implications**

89. The decision about these recommendations must be made in the context of the Council's public sector equality duties. The Council has to satisfy its public sector duties under the Equality Act 2010 (including specific Welsh public sector duties). Pursuant to these legal duties, Councils must in making decisions have due regard to the need to (1) eliminate unlawful discrimination, (2) advance equality of opportunity and (3) foster good relations on the basis of protected characteristics. The Protected characteristics are age, gender reassignment, sex, race –including ethnic or national origin, colour or nationality, disability, pregnancy and maternity, marriage and civil partnership, sexual orientation, religion or belief – including lack of belief.
90. Also, in considering this matter Cabinet must also have regard to the Council's wider obligations under the Welsh Language (Wales) Measure 2011 and the Welsh Language Standards.
91. The Well-Being of Future Generations (Wales) Act 2015 places a 'well-being duty' on public bodies aimed at achieving seven national well-being goals for Wales - a Wales that is prosperous, resilient, healthier, more equal, has cohesive communities, a vibrant culture and thriving Welsh language, and is globally responsible.
92. In discharging its duties under the 2015 Act, the Council has set, and published well-being objectives designed to maximise its contribution to achieving the national well-being goals. The well-being objectives are set out in Cardiff's Corporate Plan 2021-24
93. When exercising its functions, the Council is required to take all reasonable steps to meet its well-being objectives. This means that the decision makers should consider how the proposed decision will contribute towards

meeting the well-being objectives and must be satisfied that all reasonable steps have been taken to meet those objectives.

94. The well-being duty also requires the Council to act in accordance with a 'sustainable development principle'. This principle requires the Council to act in a way which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs. Put simply, this means that Council decision makers must take account of the impact of their decisions on people living their lives in Wales in the future. In doing so, the Council must:

- Look to the long term;
- Focus on prevention by understanding the root causes of problems;
- Deliver an integrated approach to achieving the seven national well-being goals;
- Work in collaboration with others to find shared sustainable solutions; and
- Involve people from all sections of the community in the decisions which affect them

### **HR Implications**

95. There are no HR implications to this report.

### **Property Implications**

96. No immediate property implications are anticipated from the Cardiff Annual Air Quality Progress Report 2021.

97. Any future requirement to use Council land or property to deliver the objectives of the Cardiff Annual Air Quality Progress Report 2021 should be done so in accordance with the Corporate Property Strategy, Council's Asset Management process and in consultation with Strategic Estates and relevant service areas.

## **RECOMMENDATIONS**

Cabinet is recommended to:

1. note and accept the monitored results gathered in 2020 and approve the 2021 Annual Progress Report (as attached as Appendix 1) for submission to Welsh Government for approval.
2. delegate authority to the Director of Planning, Transport & Environment in consultation with the Cabinet Members for Clean Streets, Recycling & Environment and Strategic Planning and Transport, the Section 151 Officer and the Council's Monitoring Officer to determine all aspects of the procurement process for the 2 year pilot project on a city wide real-time monitoring network (including approval of the evaluation criteria and

authority to award contracts) and all ancillary matters pertaining to the procurement.

<b>SENIOR RESPONSIBLE OFFICER</b>	Andrew Gregory Director of Planning, Transport & Environment
	12 November 2021

*The following appendix is attached:*

Appendix 1: Cardiff Council Annual Air Quality Progress Report 2021.