

**AIR QUALITY - WELSH GOVERNMENT DIRECTION**

**STRATEGIC PLANNING & TRANSPORT (COUNCILLOR CARO WILD)**

**AGENDA ITEM: 16**

---

**Reason for this Report**

1. In response to a legal direction Cardiff Council received from Welsh Government- Environment Act 1995 (feasibility study for Nitrogen Dioxide Compliance) Air Quality Direction 20181- the Council must:
  - Submit “initial scoping proposals”- by March 2018- to set out how Cardiff Council would undertake a feasibility study.
  - Submit an “initial plan”, by September 2018, to set out the case for change and develop options for measures that the local authority will implement to deliver compliance with Clean Air targets in the shortest possible time.
  - Submit the “final plan”, by June 2019, to set out in detail the preferred option for delivering compliance in the shortest possible time, including a full business case

The Council must therefore follow a legal process to comply with the direction. As part of this process the Council submitted its “initial scoping proposals” in March 2018 and has commissioned a Clean Air Feasibility Study to inform the “initial plan”. This report outlines the results of the Clean Air Feasibility Study, and the steps the Council is undertaking to ensure compliance with the legal direction.

**Background**

2. The European Union Ambient Air Quality Directive (2008/50/EC)<sup>2</sup> sets legally binding limits for concentrations of certain air pollutants in outdoor air, termed ‘limit values’ for the protection of human health. The Directive requires that Member States report annually on air quality within zones designated under the Directive and, where the concentration of pollutants in air exceeds limit values, to develop air quality plans that set out

---

<sup>1</sup> Environment Act 1995 (Feasibility Study for Nitrogen Dioxide Compliance) Air Quality Direction 2018 14<sup>th</sup> Feb 2018

<sup>2</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02008L0050-20150918&from=EN>

measures in order to attain the limit values. The only limit values that the UK currently fails to meet are those set in respect of nitrogen dioxide (NO<sub>2</sub>).

3. In regards to the European Union Ambient Air Quality Directive (Directive 2008/50/EC) levels of nitrogen dioxide (NO<sub>2</sub>) and Particulate Matter smaller than 10µm (PM10) must not exceed 40µg/m<sup>3</sup> as an annual average (i.e. measured over a calendar year).
4. Annex III of the European Directive details specific criteria for the locality of where such limit values apply. Limit Value applies at locations which are accessible, including footpaths but exclude areas within 25m from major road junctions.

### **Air Quality in Cardiff: Results of the DEFRA Model**

5. The Government assesses air quality compliance with the European Directive in 43 areas across the country at single locations, using both monitoring and modelling. It uses the Department for Environment Food & Rural Affairs' (DEFRA) Pollution Climate Mapping (PCM) model to forecast exceedances, which is adjusted based on the monitored data. This is the approved means of reporting air quality information to assess legal compliance with the European legislation.
6. DEFRA's PCM model findings were published in UK Government's Detailed Air Quality Plan (the 2017 Plan) for tackling roadside NO<sub>2</sub> concentrations.<sup>3</sup> The 2017 Plan set out details of the authorities responsible for delivering air quality improvements including devolved administrations and Local Authorities.
7. DEFRA's localised modelling also identified two road links under baseline conditions which are projected to show non-compliance beyond 2021 and are detailed in Figure. The roads that were modelled as exceeding the NO<sub>2</sub> annual limit value for by 2021 using the DEFRA Model were:
  - Road Link ID: A48
  - Road Link ID: A432

---

<sup>3</sup> <https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>

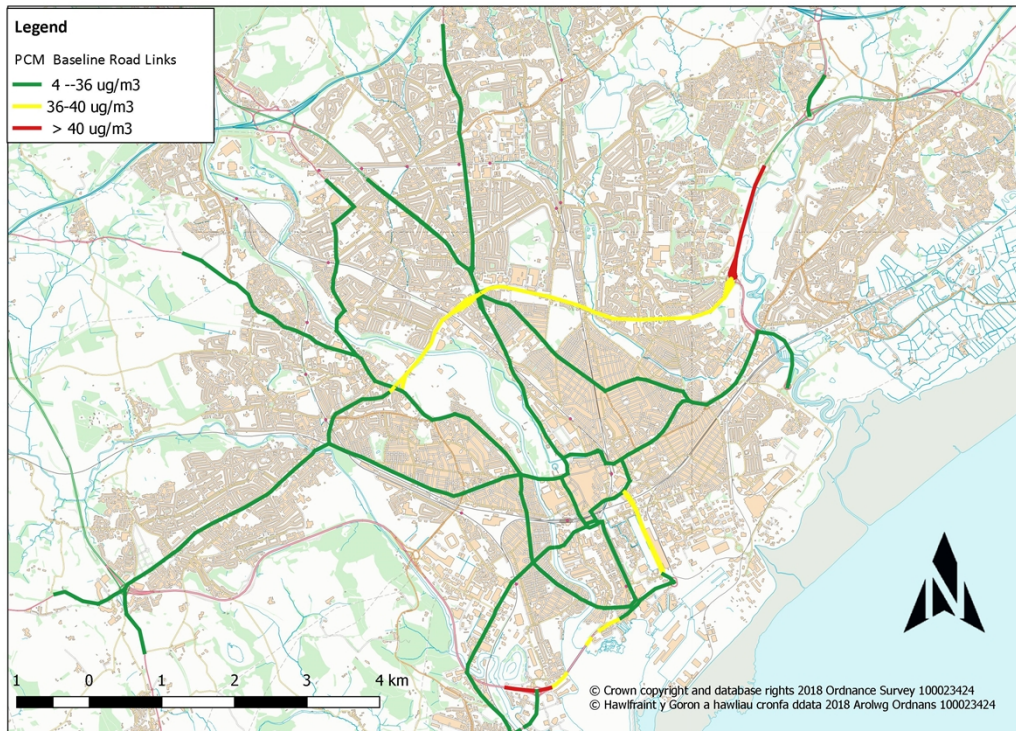


Figure 1: Defra PCM Modelling NO2 Forecast Results 2021

8. Based on the DEFRA results and in order to meet its requirements under the 2017 Plan, the Welsh Government directed<sup>4</sup> Cardiff Council to undertake a feasibility study to bring forward compliance with NO2 Limit Values in the shortest possible time. The direction outlined specific activities that are legally required to be completed by set deadlines;
  - Initial Scoping Proposals (Deadline 31<sup>st</sup> March 2018)
  - Initial Plan (Deadline 30<sup>th</sup> September 2018)
  - Final Plan (Deadline 30<sup>th</sup> June 2019)
  
10. On 28<sup>th</sup> March 2018 the Cabinet agreed to approve the undertaking of a feasibility study, as required by the legal direction from Welsh Government, and submitted a proposal for the initial scoping exercise. In doing so the Council discharged the first part of the legal direction.<sup>5</sup> The Initial Plan has also now been completed- informed by a Clean Air Feasibility Study- that was submitted to Welsh Government on 30 September. This is attached as Appendix 1.

### **Air Quality in Cardiff: Results of the Clean Air Feasibility Study**

11. Using independent analysis from external consultants- with recognised expertise and a proven track record of supporting other UK Core Cities- localised air quality modelling and transport modelling was undertaken to

<sup>4</sup> Environment Act 1995 (Feasibility Study for Nitrogen Dioxide Compliance) Air Quality Direction 2018 14<sup>th</sup> Feb 2018

<sup>5</sup> Cardiff Council Initial Scoping Report for Feasibility Study

establish local baseline conditions for the years 2015 and 2021. The Clean Air Feasibility Study is considered a more sophisticated analysis than the DEFRA assessment (para 7 and Figure 1), as it is based on more accurate localised data, rather than national data. The Clean Air Feasibility Study therefore provides more accurate modelling data than was previously available for the DEFRA assessment. The localised data used as part of the Clean Air Feasibility Study included measured air quality data, speed assumptions, local emission sources and fleet composition captured as part of an Automatic Number Plate Recognition (ANPR) study.

12. The results of this assessment are presented for 2015 and 2021, with the 2021 results representing a Business As Usual (BAU) scenario where only measures currently implemented to improve air quality have been modelled. Examining the baseline years of 2015 and 2021, source apportionment analysis has been undertaken for a number of road links in Cardiff to provide an indication of the major contributing factors to the pollution levels.

Results - Baseline Year Analysis;

- The Council’s localised modelling has identified only one road link under baseline conditions which is projected to show non-compliance beyond 2021, this being the A4161 Castle Street as detailed in Figure 2.

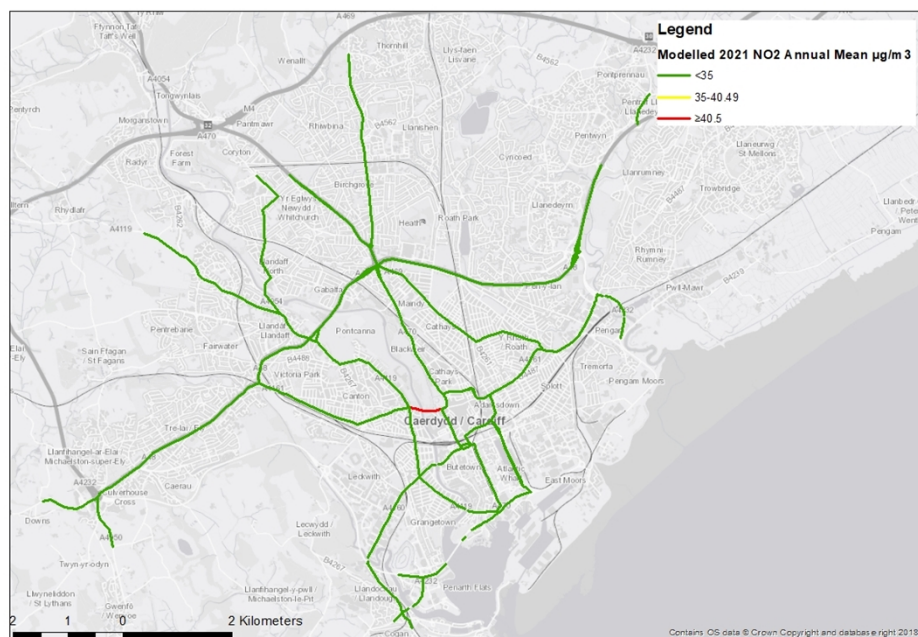


Figure 2 Local Modelling NO2 Forecast Results 2021

13. Examining the baseline years of 2015 and 2021 source apportionment analysis has been undertaken for a number of road links in Cardiff to provide an indication of the key sources contributing to pollution levels. The analysis shows that the main source of air pollution is from road traffic, which accounts for **80 - 84 %**, while the remainder of the pollution is from background sources. Overall, diesel cars are the main contributor

(36%) followed by buses (19%) and Heavy Goods Vehicles (HGVs 18%). Taxis account for approximately 7% of NOx

14. In 2021 the main contribution to pollution in Cardiff is still anticipated to be road traffic (73 – 78 %) with diesel cars still forecasted to contribute the largest proportion of road NOx emissions (36%). The proportion of emissions from HGVs and buses is expected to reduce to 10% and 11% respectively.
15. Adhering to the legal direction, the Clean Air Feasibility Study (Appendix 1) has been produced- as far as possible- in line with the guidance issued by the Joint Air Quality Unit (JAQU) in 2017, and the HM Treasury Green Book . It also reflects the requirements of the Welsh Transport Appraisal Guidance (WeITAG).

### **Comparing the Results of the DEFRA Modelling with the Clean Air Feasibility Study Modelling**

16. The results of the initial DEFRA PCM modelling and the more sophisticated citywide localised modelling undertaken as part of the Clean Air Feasibility Study reveal significant differences in the areas of projected exceedance.

<b>Projected Exceedance: Results of the DEFRA PCM Modelling</b>	<b>Projected Exceedance: Results of the Clean Air Feasibility Study</b>
A48 – Eastern Avenue	A4161 Castle Street
A4232 – Bay Link by Cardiff Bay Retail Park	

17. The Council’s modelling has identified that neither the A48 or A4232 are projecting exceedance, as these roads are now projected to be compliant by 2021 based on more accurate modelling.

### **Ensuring Compliance: Developing and Refining a Shortlist of Measures**

18. As a result of the localised assessment of air quality the Council needs to develop a list of measures that can deliver compliance with the limit value in the shortest possible time.
19. A long list of measures were subjected to a qualitative assessment to produce a short list of measures which were most likely to prove effective in ensuring compliance with air quality targets. The measures were assessed against primary and secondary objectives, the Primary objective being whether the measures were likely to achieve compliance with the limit value in the shortest possible time.
20. As a requirement of the legal direction, the shortlist of measures will be benchmarked against a charging Clean Air Zone (CAZ) in terms of establishing whether they can achieve compliance in a timeframe equal or sooner than that of a charging CAZ.

21. As a result of the qualitative assessment of the long list of measures the following shortlist of measures have been chosen to be modelled in detail;
- Implement further speed restrictions and enhance already established 20mph Zones;
  - Development of Cycling Superhighways infrastructure and expansion of Nextbike Scheme;
  - Increase Zero Emission Buses on Cardiff Network;
  - Improvement of Taxi Licensing Policy, to set minimum vehicle emissions standards;
  - City Centre West and Eastside Scheme;
  - Bus Programme- Strategic Bus Network to improve bus networks and efficiency of the services via increased and improved bus lanes;
  - Accelerating the Park and Ride programme in the North West & North East of Cardiff.
    - In the North West of Cardiff this will include a development at J33/ Llantrisant Road – 750 P&R at J33 and 250 P&R off Llantrisant Rd
    - In the North East of Cardiff this will include the expansion of P&R on the A48;
  - Improve and promote the uptake of low emission vehicles by enhancing Cardiff's EV infrastructure;
  - Review car parking and car permit charges and allow for reduced rates for EV/OLEV, and increased rates for vehicles with emission standards <Euro6.
22. It must be noted that the above shortlisted measures were initially assessed in response to the DEFRA modelling which identified the A48 and A4232 near Cardiff Bay as the areas projected to be non-compliant. However, the measures were also assessed in terms of their likely impact on improving air quality within the Councils existing Air Quality Management Areas (AQMA). Castle Street is immediately adjacent to the boundary of the City Centre AQMA, and measures put forward to address air quality in this AQMA will likely have an impact on this road link.
23. The Council has agreed with WG to submit an interim report, which will report on the modelling results of the impact of the shortlist of measures.

## **Funding**

24. Within the letter from Hannah Blythyn, Minister for the Environment that accompanied the formal direction it was confirmed that finance would be made available for the production of the feasibility study and for the implementation of the chosen scheme. The Welsh Government has stated that it has allocated over £20 million for an Air Quality Fund through to



2021 to help accelerate compliance with NO<sub>2</sub> limits and improve air quality in Wales. The Welsh Government has also stated that this fund will primarily be used to provide on going support, guidance and finance to enable Cardiff Council (and Caerphilly County Borough Council) to take action to achieve compliance in the shortest possible time.

25. In addition to the above funding mechanisms, the Council will continue to work collaboratively with Welsh Government officials to identify all available and an appropriate funding mechanisms including transportation funds, to maximise the financial contribution from Welsh Government towards the implementation of any measures.

### **Next Steps**

26. The shortlisted measures will be quantitatively assessed both in terms of transport and air quality modelling. The Council will submit an Interim Report on the Clean Air Feasibility Study, to the Welsh Government. , with a completed assessment of the initial shortlist of measures to demonstrate the effectiveness of the measures on whether they accelerate compliance with the limit value for NO<sub>2</sub>. This report will be reviewed and assessed by the Welsh Government's expert Review Panel.

### **Reason for Recommendations**

27. To enable Cardiff Council to meet the requirements of the Welsh Government Legal Direction.

### **Financial Implications**

28. As set out in the body of the report funding has been made available by the Welsh Government to the Council in order to carry out the feasibility study. In addition the Welsh Government has created an Air Quality Fund with earmarked funding of £20m to deliver measures required to ensure compliance with air quality standards. , . The Council will continue to work collaboratively with Welsh Government officers to maximise the financial contribution from the Welsh Government towards the implementation of any measures.
29. On that basis the current assumption is that the implementation costs of any measures required to ensure compliance will be directly funded by the Welsh Government with no direct financial implications for the Council as a consequence. The development of the Full Business Case will require more detailed costings of the proposed measures including the identification of any recurring operational or lifecycle costs.

### **Legal Implications**

30. Section 87(5) of the Environment Act 1995 states that it is the duty of a local authority to comply with any direction given to it. The Council therefore has a statutory duty to comply with the Direction, which could be enforced through a court order.

31. Any specific proposals which are developed will require appropriate consultation, equality impact assessment, and evaluation in relation to the Council's wellbeing objectives.

## **RECOMMENDATIONS**

Cabinet is recommended to:

1. Note the Clean Air Feasibility Study Report produced by the Council which satisfies the scheduled reporting requirements for an Initial Plan outlined by the legal direction received from Welsh Government.<sup>1</sup>
2. Note the development of an Interim Report assessing the shortlist of measures to be submitted to Welsh Government.

<b>SENIOR RESPONSIBLE OFFICER</b>	<b>ANDREW GREGORY DIRECTOR OF PLANNING, TRANSPORT AND ENVIRONMENT</b>
	<b>9 November 2018</b>

*The following appendix is attached*

Appendix 1 - Cardiff Council Clean Air Feasibility Study September 2018