Executive Summary: Air Quality in Our Area

Air Quality in Merthyr Tydfil County Borough Council

The main source of air pollution within Merthyr Tydfil County Borough Council (MTCBC) is from road traffic. Nitrogen oxides (NO_x = NO + NO_2) are formed during the combustion of fossil fuels. It is estimated that, on average in 2022, 65 per cent of the NO_x concentrations at the roadside originate as NO_x emissions from road transport[Error! Reference source not found.] (Defra, 2024). As such, MTCBC is concerned about roadside NO_2 concentrations. A passive air quality monitoring network is implemented throughout the district.

The NO_2 concentrations experienced in average a 24% drop throughout the district in 2020, due to the impact of COVID-19 and associated lock down measure, in comparison to the previous year (2019). After 2020, the concentrations had slightly increased but remain below the pre pandemic concentrations. All sites observed concentrations more than 10% below the annual mean air quality objective up to 2020. At one site, located within the Council Air Quality Monitoring Area (AQMA), the observed concentration (38.2 µg/m^3) in 2019 was within 10% of the annual mean air quality objective (36µg/m^3). This site is within the council AQMA.

Since 2017 there has been an AQMA in place along Twynyrodyn Road. The AQMA was declared as exceedances of the annual mean air quality objective (40 µg/m^3) were observed. The observed concentrations were associated with traffic, in particular uphill traffic along Twynyrodyn Road. The AQMA extends from the western end of Twynyrodyn Road to 147 Gilfach Cynon. More information and a map of the AQMA are available in the Twynyrodyn Road AQMA webpage. Following public consultation and Council approval, the Welsh Government (WG) approved the action plan to reverse the traffic flow along Pontmorlais High Street and Church Street as an initial action to address concentrations of NO_2 within the AQMA.

On 28th May 2019 traffic flow was reversed along Pontmorlais High Street and Church Street. This provided alternative routes away from Tesco and the Town Centre area

other than Twynyrodyn Road. Traffic build-up appears to have shifted away from the AQMA with fewer queues developing on Twynyrodyn Road.

Since 2020, all the monitoring sites within the AQMA remained below 10% of the annual mean air quality objective. From 2021 the concentrations within the AQMA are decreasing. If the trend continues and concentrations in 2024 remain below 10% of the annual mean air quality objective, the AQMA would have been compliant for 5 years and will be in a position to be revoked.

MTCBC also considers the impact on air quality of new developments and where necessary, planning conditions are used to mitigate any negative effects. The Local Transport Plan supports active travel and use of public transport to reduce reliance on cars.

Actions to Improve Air Quality

With regard to the Twynyrodyn AQMA, in 2018 a 12 week public consultation took place. The public were consulted on 3 options to reduce traffic use of Twynyrodyn Road. Most respondents (94%) expressed a preference for the option of reversing traffic flow along Pontmorlais High Street and Church Street. The Council approved an action plan to this effect being submitted to Welsh Government who subsequently approved it.

In November 2018 the Highways and Engineering Departments issued Traffic Regulation Orders. On 28th May 2019 traffic flow was reversed in accordance with the approved action plan. Traffic counts are available which quantified observations made by Environmental Health Officers that there was less traffic build-up in the Twynyrodyn Road AQMA. The traffic survey carried out prior to and after the reversal of flow along Pontmorlais High Street, showed a reduction in the volume of traffic travelling along Twynyrodyn Road AQMA by an average of 428 vehicles on a Friday when traffic volumes were at their highest. Some traffic build-up around Avenue De Clichy and Pontmorlais High Street was observed during peak times which has also been evidenced by the traffic survey, with an average weekday increase of 677 vehicle movements along the Avenue De Clichy. This is not considered likely to pose a public health risk as residential properties are set back from the road and there are no areas along it where people are likely to spend more

than one hour. On the west side of Avenue De Clichy is the River Taff, so there are no possible street canyons. The early observations suggested the traffic reversal made improvements in air quality within the AQMA and this has continued to be the case to date.

MTCBC is working with different schools within the district to generate awareness about air pollution.

Local Priorities and Challenges

The priority for 2019 was to monitor the effectiveness of the implemented action plan. To that end, additional diffusion tubes were installed along the traffic reversal route and surrounding streets. Since its implementation, the traffic reversal doesn't appear to have significantly increased concentrations of NO_2 along Pontmorlais High Street or any other diversion route.

NO_2 concentrations for 2020 following implementation of the national lockdown due to the coronavirus pandemic were significantly lower due to the associated decrease in vehicle movements. As such, the majority of the data for 2020 was not a true representation of concentrations for the area in terms of typical circumstances. As such, the priority for 2020 was to maintain the monitoring network and delay the intended revocation of the AQMA in 2021. Continued monitoring and demonstration that concentrations remain more than 10% below the annual mean air quality objective would allow the AQMA to be revoked in 2025.

Should concentrations increase to within 10% or exceed the annual mean air quality objective, additional works will be considered in updated action plans.

MTCBC continues to study the measured concentrations across the current monitoring network alongside with traffic patterns. If new heavy traffic areas that might affect air quality are identified, new monitoring locations can be added to the network. This was the case in 2022 when two new monitoring locations were added.

How to Get Involved

Further information on air pollution including access to previous air quality reports is available from www.merthyr.gov.uk. Specific questions can be addressed by emailing PublicHealth@merthyr.gov.uk or by telephoning 01685 725000.

If you require a copy of the full Air Quality Progress Report, please email publichealth@merthyr.gov.uk