

Report Title:	<b>Windsor Air Quality – Report for the Windsor Town Forum</b>
Officer reporting:	Feliciano Cirimele – Environmental Protection Officer
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Responsible Officer(s):	Daniel Bayles, Community Protection Lead Feliciano Cirimele – Environmental Protection Officer

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## SUMMARY

The Council has declared five Air Quality Management Areas (AQMA), for exceedance of the annual mean air quality objective (AQO) for nitrogen dioxide (NO<sub>2</sub>), in Windsor (2 areas), Maidenhead, Bray (near the M4) and Wraysbury (near the M25).

The air quality in Windsor and across the Borough has significantly improved, all results in 2019 are below the national air quality objective of 40 µg/m<sup>3</sup>. The Imperial Road/St Leonards Road Junction AQMA is now eligible for revocation as the results for the last 3 consecutive years were below 36 µg/m<sup>3</sup>.

Roadside nitrogen dioxide is monitored by the Royal Borough's Environmental Protection Team. The majority of monitoring locations in 2019 remained below the national objective levels. Some marginal and localised exceedances were recorded within Windsor AQMAs. However, these are confined close to the roadside and when the distance from roadside to neighbouring property is taken into account the pollutant exposure falls below the annual mean target in real terms. The maximum NO<sub>2</sub> concentrations in 2019 when distance corrected to nearest exposure was below 10% the annual mean objective (<36 µg/m<sup>3</sup>). The revocation of AQMAs will be considered after three consecutive years of compliance with air quality objectives.

The Council is committed to reducing the exposure of people in the Royal Borough to poor air quality in order to improve health. Further measures to reduce congestion and improve air quality are planned over the next two years under the Highways Capital Programme – details of these schemes are set out within this report.

## **1 Air Quality Monitoring**

- 1.1. Road traffic is the main source of pollution in the UK (principally nitrogen dioxide - NO<sub>2</sub>), with the government placing a statutory duty on Local Authorities to monitor air quality at the roadside and report its findings to DEFRA.
- 1.2. Continuous automatic monitoring of NO<sub>2</sub> was undertaken at three sites during 2019, Frascati Way, Aldebury Road (Maidenhead) and at the Clarence Road roundabout in Windsor. The annual means at these sites were 35.1, 17.4 and 32.2 µg/m<sup>3</sup> respectively; all below the national objective of 40 µg/m<sup>3</sup>. Automatic monitoring for particulates (PM<sub>10</sub>) was also undertaken at the Frascati Way site; which returned an annual mean result of 22.8 µg/m<sup>3</sup>, also below the air quality objective of 40 µg/m<sup>3</sup>. The one hour mean for NO<sub>2</sub><sup>1</sup> and 24 hour mean for PM10<sup>2</sup> (particulates less than 10 microns in diameter) were also below the respective objectives.
- 1.3. In addition to continuous monitoring, the Royal Borough has an extensive diffusion tube network, commonly affixed to lampposts and other street furniture. These tubes are collected monthly and analysed to form our annual mean data for NO<sub>2</sub> levels.
- 1.4. In Windsor, the national objective for NO<sub>2</sub> was exceeded at one diffusion tube site in Arthur Road and at two sites at Imperial Road/St Leonards Road junction. The annual mean at these sites was 40.9, 42.1 and 47.4 µg/m<sup>3</sup> respectively.
- 1.5. In order to analyse these initial readings in real terms, a correction is applied to account for the distance between the roadside diffusion tube and the nearest residential dwelling. Once this correction was applied the annual mean at the above mentioned sites reduced to 35.8, 30.9 and 34.3 µg/m<sup>3</sup> respectively.
- 1.6. The Royal Borough has confirmed with DEFRA that the national air quality objective at Imperial Road/St Leonards Road junction has been fully achieved following the recording of concentrations below 36 µg/m<sup>3</sup> for three consecutive years.
- 1.7. Trends in annual mean nitrogen dioxide concentrations at diffusion tube roadside sites are shown in Appendix 1. Furthermore, a table of the results from all monitoring sites in Windsor and Eton is included in Appendix 2. Maps of the relevant AQMAs are included within Appendix 3.
- 1.8. Impact of Covid 19: air quality monitoring within the Royal Borough during lockdown continued as normal and no data was lost. Early indication from 2020 results show a marked reduction in concentrations compared to the same period in 2019. Provisional monthly concentrations for 2020 are shown in Appendix 1.

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<sup>1</sup> 200 µg/m<sup>3</sup> as a 1 hour mean, not to be exceeded more than 18 times a year

<sup>2</sup> 50 µg/m<sup>3</sup> as a 24 hour mean, not to be exceeded more than 35 times a year

## **2. Highways Measures & Improvements**

2.1. The Council has an active programme of measures in place to reduce the impact of traffic emissions on local air quality. These form an integral part of the Local Transport Plan (LTP) which informs the Highways Capital Programme with the impact on air quality considered as part of the Council's wider strategy.

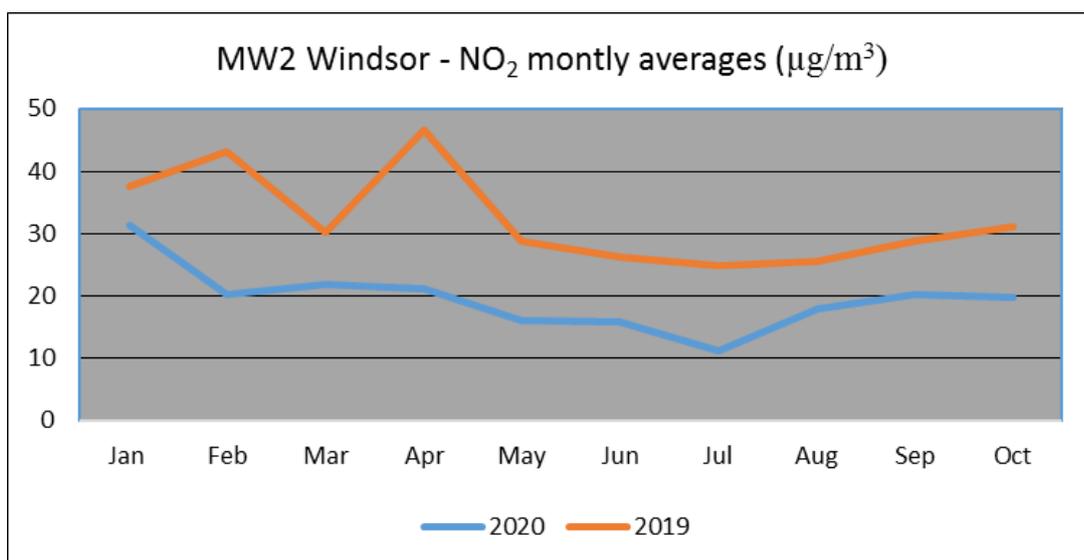
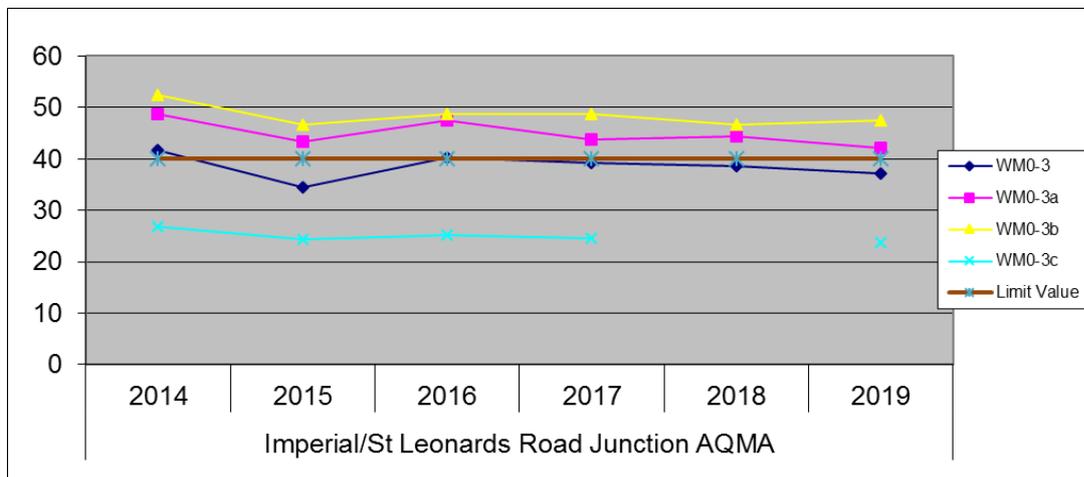
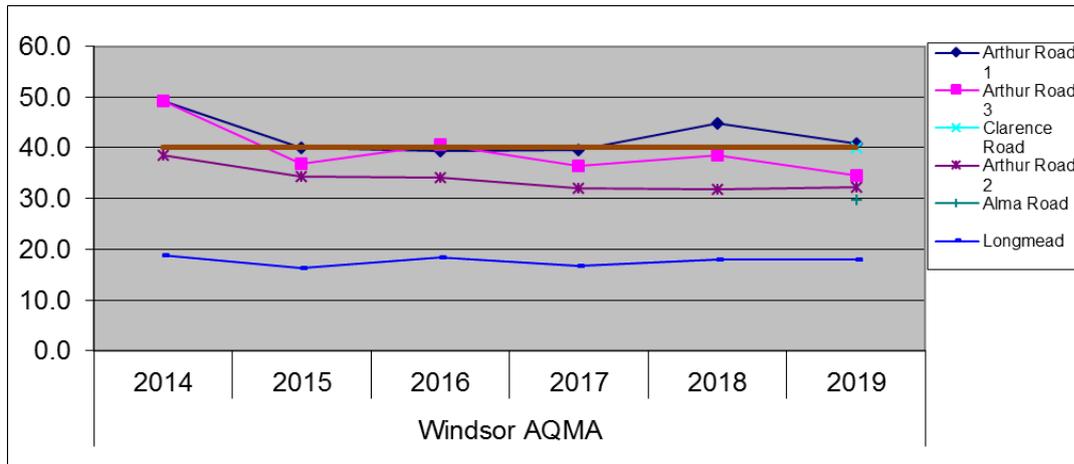
2.2. Ongoing, implemented and proposed measures include:

- 2.1.1 A bid to the Office for Ultra Low Vehicles (OLEV) for grant funding was successful. This is now going through procurement and implementation to provide on-street electric vehicle charge points in residential areas with no off-street parking. Opportunities will be taken to incorporate environmental sensors within charge points to provide additional data on local air quality.
- 2.1.2 Air quality schemes for 2020/21 include Arthur Road/Vansittart Road traffic signals are due to be refurbished with MOVA upgrade, intelligent pedestrian detection and LED upgrade to help reduce queuing. There is also a 'No idling / switch off engines' initiative. This will entail signage at locations (to be confirmed) and a supporting publicity exercise.
- 2.1.3 Cycling schemes: West Windsor to Windsor Town Centre – cycle quiet route completed, links between Dedworth and Windsor Town Centre have been improved including the A308 / Barry Avenue cycle route. There is also a new cycle parking facility in Thames Street.
- 2.1.4 Following the significant increase in walking and cycling across the UK during the pandemic the government has announced new funding for local authorities to make changes to their highways to encourage more people to choose alternatives to public transport. It is estimated that 14,000 trips previously done by public transport across the Royal Borough will need to be made by other means. The Council wishes to boost cycling as the best alternative to car use and public transport and is seeking to bring forward cycling schemes outlined in the Council's Cycling Action Plan. A bid was submitted in June 2020 to the Department for Transport. The first tranche of measures include footway widening and 20mph schemes in Maidenhead, Windsor and Ascot.
- 2.1.5 Public transport infrastructure Improvements schemes: 2019/20 St Leonards Road, Windsor – Bus stop accessibility upgrade
- 2.1.6 The Maidenhead Road/Stovell Road junction traffic signals have been replaced with a roundabout to improve traffic flow.
- 2.1.7 The Arthur Road/Alma Road junction has a remaining restriction, whereby coaches are banned from turning right onto Arthur Road when leaving the coach park.

- 2.1.8 Changes to the operation of the traffic signals at the Imperial Road/St Leonards Road and Clewer Hill Road / Winkfield Road junctions were completed in July 2016. Also repositioning of induction loops to improve reliability of the signals, were completed in 2019. The changes have reduced journey times and improved traffic flow at the junction.
- 2.1.9 A traffic management scheme has been completed at the Dedworth Road / Clarence Road / Parsonage Lane / Hatch Lane junction; where a double mini-roundabout has replaced the previous traffic signals. This helps to keep traffic flowing and minimise congestion.
- 2.1.10 LEGOLAND travel plan and traffic signage: The Borough has secured a travel plan from this location in order to manage staff, hotel guests and day visitors travel to and from the resort. Improved traffic signage has been introduced to encourage visitors to use alternative routes that avoid congested junctions. Work continues on this theme.

**Appendix 1**

**Trends in Annual Mean NO<sub>2</sub> Concentrations Measured at Diffusion Tubes Sites**



**Note: 2020 results are based on provisional data**

**Appendix 2: Windsor and Eton Roadside Monitoring Results 2014 to 2018**

Site ID	Location	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
		2015	2016	2017	2018	2019
MW2	Clarence Road roundabout	36.4	39	34.5	34.3	32.1
WM1	Longmead	16.2	18.5	16.8	17.9	18
WM9a	Alma Road/Clarence Road	-	-	-	-	29.7
WM10a	Imperial Road					39.9
WM18	Clarence Road roundabout	34	35.7	35.1	34.3	32.0
WM19	Clarence Road roundabout	33.7	36.4	34.6	32.9	32.1
WM20	Clarence Road roundabout	33.3	36	34.5	32.5	32.8
WM28	Keate's Lane - Eton	28.4	34.3	30.2	31.2	27.3
WM28a	Eton Wick Road	26.8	35.5	34.3	32.6	29.1
WM31	Arthur Road	<b>40</b>	39.3	39.5	<b>44.8</b>	<b>40.9</b>
WM32	Arthur Road	34.4	34.2	32.1	31.7	32.2
WM33	Arthur Road	37	<b>40.6</b>	36.4	38.5	34.6
WM03	St Leonards Road	34.4	<b>40.3</b>	39.2	38.7	37.1
WM03a	St Leonards Road	<b>43.3</b>	<b>47.4</b>	<b>43.8</b>	<b>44.3</b>	<b>42.1</b>
WM03b	St Leonards Road	<b>46.6</b>	<b>48.8</b>	<b>48.7</b>	<b>46.7</b>	<b>47.4</b>
WM03c	St Leonards Road	24.3	25.3	24.6	-	23.7
WM04	Osborne Road	30.9	34.8	29.4	31.5	30.9
WM04a	Osborne Road	-	-	-	34.8	31.5

### Appendix 3 – AQMA Maps

