

Twyford AQMesh Air Quality Data Processing for January to March 2022 and the LAQM Statistics

The January to March 2022 data processing for the Twyford AQMesh monitoring site has been completed. The data are not ratified like the automatic instruments since there are no calibrations. The obvious glitches have been removed although there may be some suspect periods remaining. The results should be treated as indicative. This report summarises the individual Statistical Report and includes network comparison plots.

Site Environment and Description

Station	Site Environment and Description
Twyford	Village Hall, High St, Twyford AQMesh

LAQM Statistics

Here are the current LAQM statistics for the year so far.

Nitrogen Dioxide NO₂

The NO₂ annual mean and hourly mean Objectives are not being exceeded.

The NO₂ annual means and annual data captures are shown below. The AQS annual mean Objective is 40 µg m⁻³ and the annual data capture target is 85%.

Station	Data Capture %	Mean µg m ⁻³	Objective Exceeding
Twyford	98.0	27	No

The NO₂ hourly mean AQS Objective is 200 µg m⁻³. The number of exceedences are shown below. There is an annual allowance of 18 hours.

Station	Number of Hourly Means > 200 µg m ⁻³	Objective Exceeding
Twyford	0	No

PM₁₀

The gravimetric PM₁₀ annual mean and daily mean Objectives are not being exceeded.

The gravimetric PM₁₀ annual means and annual data captures are shown below. The annual mean AQS Objective is 40 µg m⁻³ and the annual data capture target is 85%.

Station	Data Capture %	Mean µg m ⁻³	Objective Exceeding
Twyford	99.7	15	No

The gravimetric PM₁₀ daily mean AQS Objective is 50 µg m⁻³. The number of exceedences are shown below. There is an annual allowance of 35 days.

Station	Number of Daily Means > 50 µg m ⁻³	Objective Exceeding
Twyford	1	No

PM_{2.5}

The gravimetric PM_{2.5} annual means and annual data captures are shown below. The annual data capture target is 85%.

There should be a 15% cut in urban background exposure (annual mean) for all Local Authorities from 2010 to 2020.

Station	Data Capture %	Mean $\mu\text{g m}^{-3}$
Twyford	99.7	11

Ozone O₃

This AQMesh pod does not measure Ozone.

Daily Air Quality Index

The top four lines show the duration within the bands of the Daily Air Quality Index (DAQI). This was introduced by Defra in January 2012 and revised April 2013. The number of occasions within each band is summarised as follows.

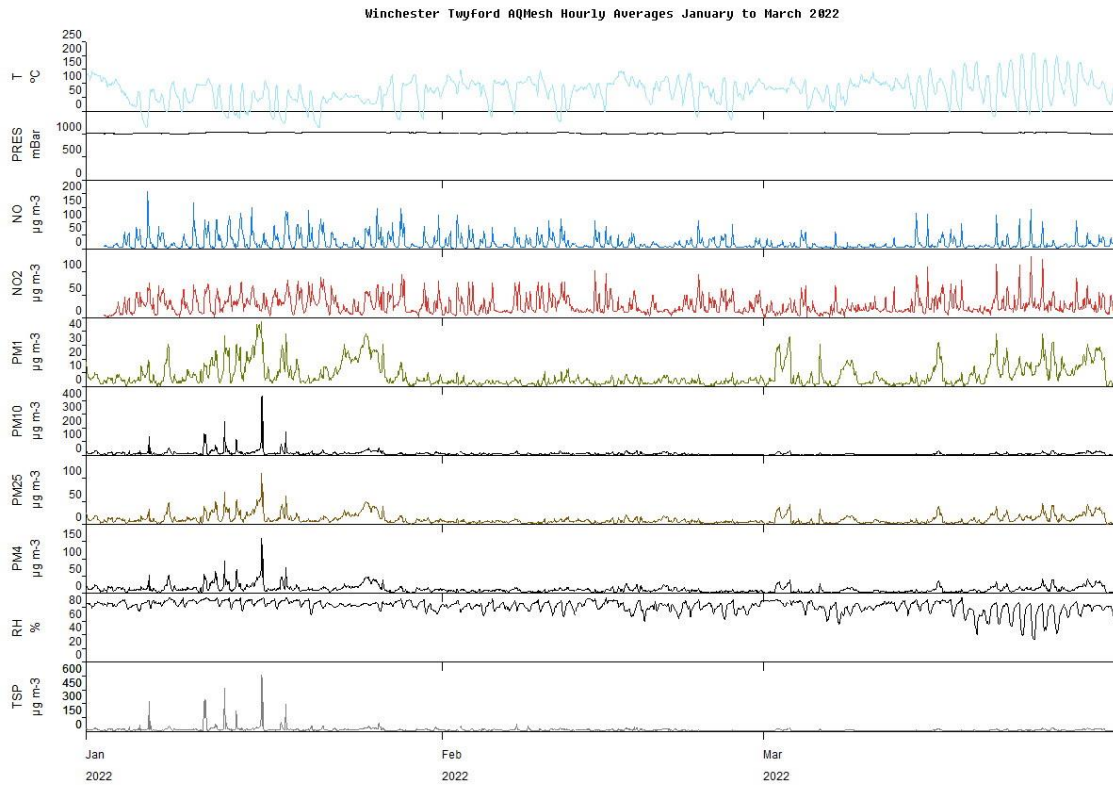
DAQI Pollutant	Moderate	High	Very High
NO ₂	0 hours	0	0
Gravimetric PM ₁₀	1 day	0	0
Gravimetric PM _{2.5}	1 day	0	0
Ozone	- hours	-	-

Twyford

Gravimetric PM₁₀ was Moderate on 16th Jan with a daily mean reaching 63 µg m⁻³.
 Gravimetric PM_{2.5} was Moderate on 25th Jan with a daily mean reaching 40 µg m⁻³.

Hourly Mean Timeseries for the AQMesh

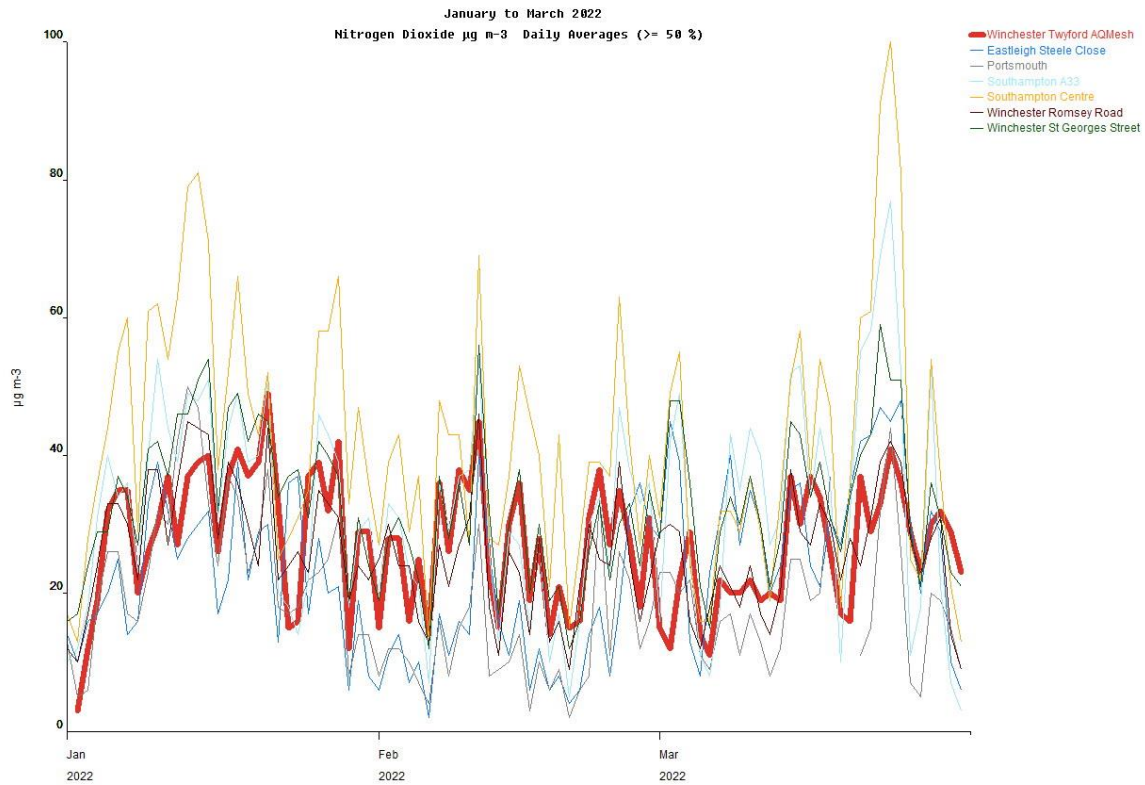
The plots below show the NO, NO₂, Ozone, PM_{2.5} and PM₁₀ hourly mean concentrations for the AQMesh.



Hourly Mean Timeseries during 2022

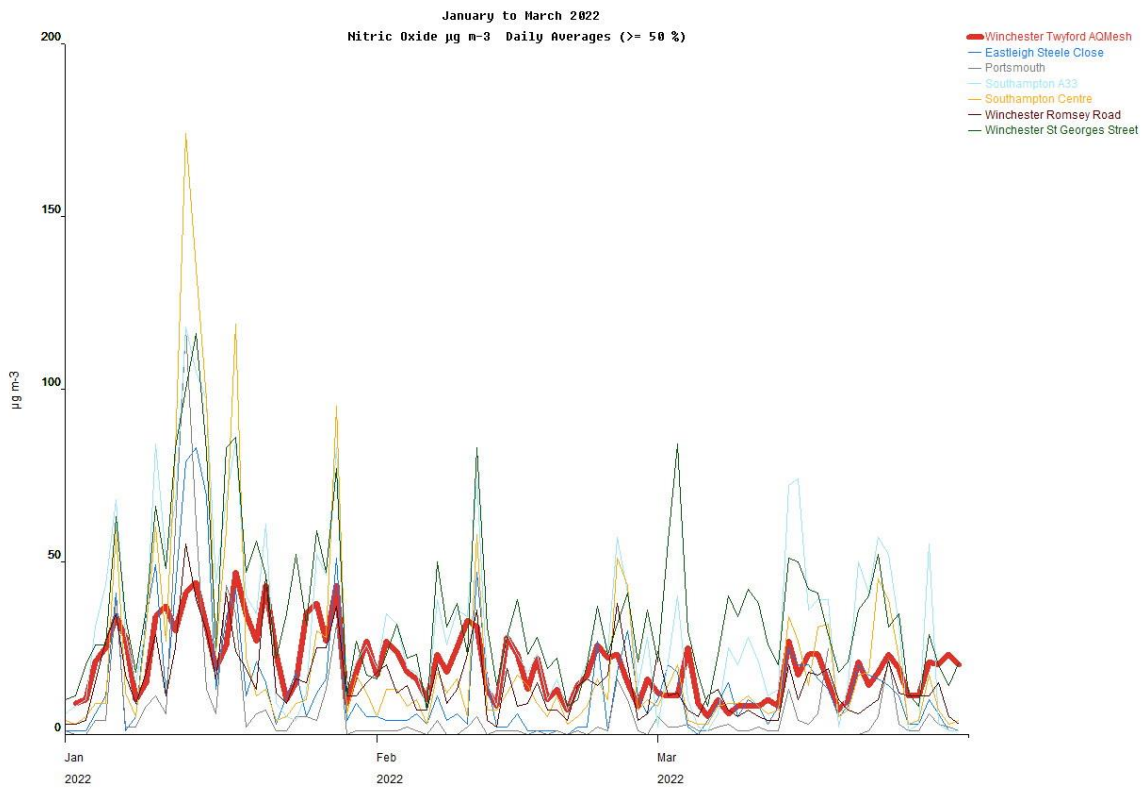
Comparison with nearby stations

The daily mean NO₂ concentrations for the AQMesh followed the same profile as the other stations. The peak concentrations are similar.



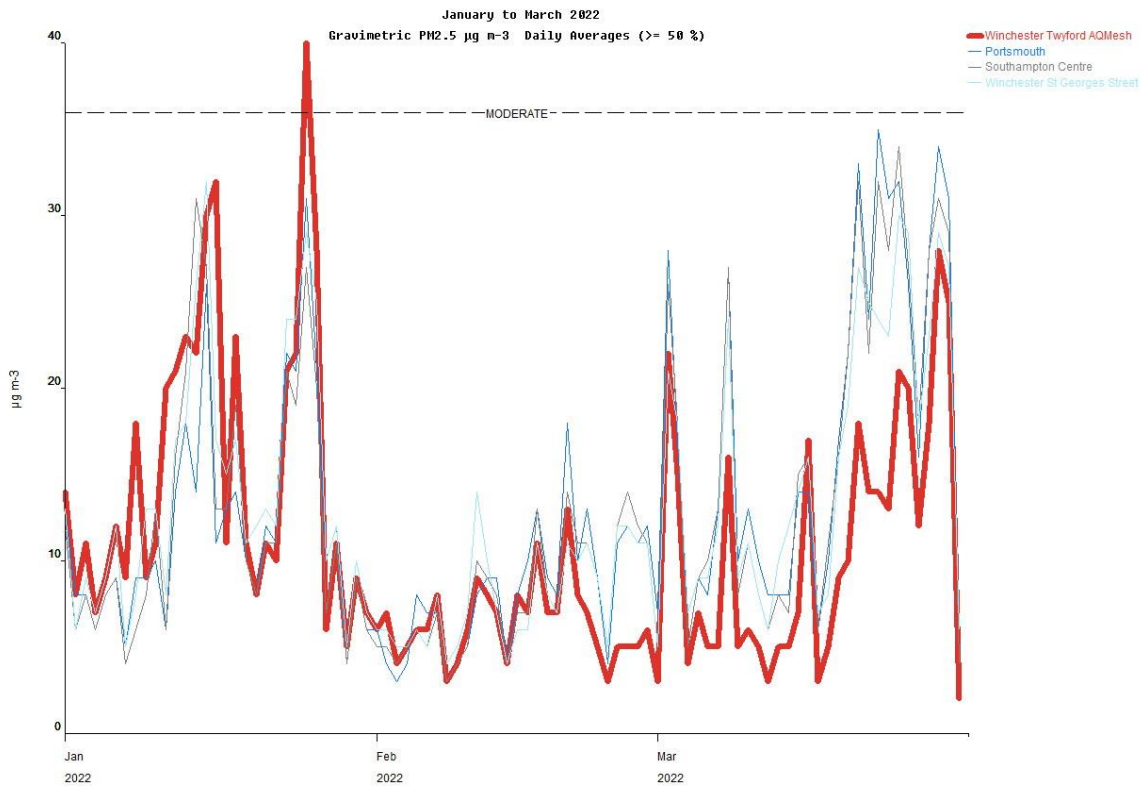
Daily Mean NO₂ Compared to Nearby Stations during 2022

LAQM does not include NO. This pollutant shows how the stations are influenced by traffic. The daily mean NO concentrations for the AQMesh followed the same profile as the other stations. The peak concentrations are similar. The NO baseline is uneven and too high.



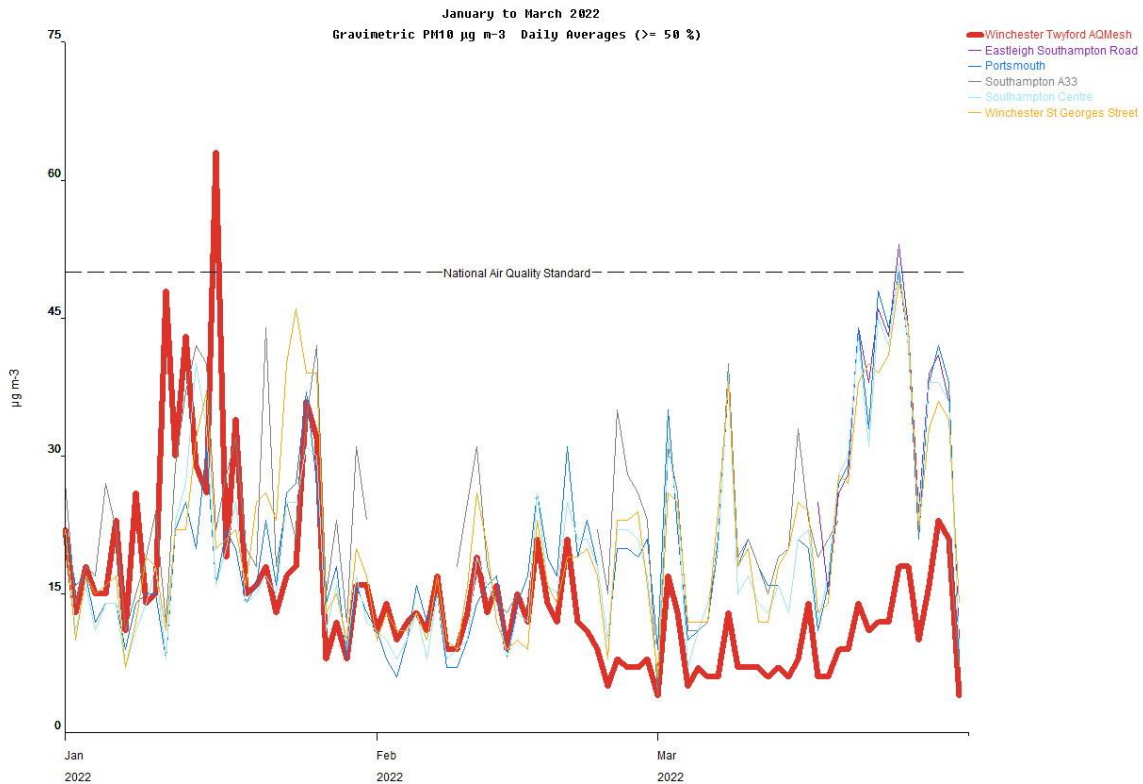
Daily Mean NO Compared to Nearby Stations during 2022

The daily mean PM_{2.5} followed the same profile as the other stations and has similar peaks.



Daily Mean PM_{2.5} Compared to Nearby Stations during 2022

The daily mean PM₁₀ followed the same profile as the other stations and has similar peaks. The AQMesh appears to be underreading since late February.



Daily Mean PM₁₀ Compared to Nearby Stations during 2022