AGENDA ITEM NO 9

BRISTOL CITY COUNCIL

Place Scrutiny Commission

10th September 2015

Report of: Stephen Hilton, Director – Bristol Futures

Title: Air Quality Update

Ward: Citywide

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RECOMMENDATION

- Note the current air quality in Bristol.
- Note the actions being undertaken to improve air quality in Bristol.
- Note the additional air quality monitoring and community engagement in Avonmouth.
- Note the results of the Health Impacts of Air Pollution in Bristol Study.

Summary

An update on latest air quality monitoring results (2014) within Bristol is provided. The results of additional air quality monitoring and community engagement work in Avonmouth are reported along with proposals for further monitoring. A summary of the major strategic transport initiatives that will work towards improvements in air quality is provided. Results of the study into health impacts of air pollution in Bristol are reported.

The significant issues in the report are:

- Latest air quality data for Bristol shows continued failure to meet objectives for nitrogen dioxide
- Significant health impacts due to air quality in Bristol are reported.
- Latest evidence on health impacts of nitrogen dioxide is significant.
- Avonmouth monitoring and community engagement.
- Significant transport projects planned.

Policy

The Joint Local Transport Plan 3 commits us to improve air quality and to address exceedances of air quality objectives within Bristol.

Bristol City Council has a statutory duty to report to Defra on the air quality of the city and on progress towards achieving compliance with national air quality objectives.

The United Kingdom has a duty to comply with limit values set in EU air quality directives. Currently the UK is in breach of the EU air quality directive and has a duty to develop an action plan to achieve compliance in as short a time as possible.

Consultation

1. **Internal**
   not applicable

2. **External**
   not applicable

Air Quality Monitoring and 2014 Results

3. The monitoring network in Bristol has refined over a period of more than 20 years so that it focuses on those pollutants and locations where potential for exceedance of air quality objectives has been identified, or to locations that are used to monitor background air quality trends. The focus of the current air quality monitoring network in Bristol is on nitrogen dioxide (NO_2), as exceedances of the objectives for this pollutant occur at locations close to heavily trafficked roads.

4. The current monitoring network in Bristol consists of 108 NO_2 diffusion tubes which provide an annual concentration for this pollutant. In addition to these sites, there are 6 real time NO_2 monitors which provide hourly data. Defra operate one monitoring site in Bristol which measures NO_2, particulate matter (PM_{10} and $PM_{2.5}$) and ozone. The Appendix contains maps showing the monitoring locations and information on the pollutant concentrations recorded at the diffusion tube locations.

5. 2014 monitoring data showed continued exceedances of the annual and hourly NO_2 air quality objective at roadside locations in the city centre and on the main arterial routes. The average NO_2 concentration taken from 21 diffusion tubes, used for the Local Transport Plan indicator, showed a reduction in NO_2 concentrations compared to 2013. Continued monitoring will help illustrate whether this is a result of a reduction in local emissions or related to favourable atmospheric conditions during

2014. The trends from the LTP indicator tubes are shown in the appendix.

Current Thinking on a Low Emission Zone

6. The Strategic Transport Team are currently carrying out research into the freight delivery needs of small to medium sized independent traders in the Old City area of Bristol city centre. This research will aim to identify ways in which we can address trader's requirements using lower emission methods.

7. The Old City has been identified as an area that could be designated as a pilot Low Emission Zone (LEZ) as freight movement are a large contributing factor towards poor air quality, any future low emission zone will seek to limit these movements. The research will allow us to better understand the requirements of traders and businesses in the pilot low emission zone so that we can ensure maximum take up of freight improvement.

Transport Measures Beneficial to Air Quality

8. Suburban Rail (MetroWest): The West of England is establishing a new suburban rail network (MetroWest). This will see new passenger lines established to Portishead and Henbury, improved service frequencies and new stations, together with a marketing and branding exercise. This is expected to improve the modal shift for rail on the Bath (A4), Portishead (A369), Weston-s-Mare (A370), Avonmouth (A4) and Henbury (A4018) corridors.

9. Rapid Transit (MetroBus): The West of England is also delivering a new network of bus rapid transit services, linking the north fringe, south Bristol and Ashton with the city centre. This is expected to improve the public transport modal shift on the M32 and Gloucester Road (A38) corridors. Emission standards will be specified for buses using Metrobus network.

10. Public transport: The Local Sustainable Transport Fund (LSTF) project created the BusChecker smartphone application that brings real time information of buses to mobile phones. 42 bus services have been installed with WiFi and information screens to improve the overall passenger experience and as such bus patronage has increased.

11. Cycling: Bristol has become a 'cycling city'. With a network of new off-road cycle routes is being developed in the West of England sub-region. The Local Sustainable Transport Fund (LSTF) project from 2012-2015 has seen lengths of '8-80' cycling infrastructure installed to enable and encourage new people into cycling. As part of this project, we also

engaged with 215 businesses, 47 schools and 14 neighbourhood partnerships to encourage a switch away from motorised private transport to sustainable modes by offering grants and personalised travel planning. Bristol is also one of 9 cities to receive the Cycling Cities Ambition Grant (CCAG), which has been used to deliver key sections of the cycle network as proposed in the Bristol Cycle Strategy.

12. Walking: improved, more direct walking routes are being developed in central Bristol. Many of the projects under the LSTF and CCAG projects have widely benefitted pedestrian movement by providing clear segregation between pedestrians, cyclists and motor vehicles and the intensive engagement work has encouraged modal shift from motorised vehicles towards walking.

13. Bristol City Council commenced work on the development of an Air Quality Strategy and has undertaken research to help inform the development of plans. Since much of the solutions to air quality problems lie in wider transport and place related issues, the air quality actions will form part of the refresh of the Joint Local Transport Plan, JLTP4, which is the statutory delivery vehicle.

Bristol Method – Air Quality

14. As part of the Green Capital year Bristol City Council is publishing a series of documents to enable other European cities to learn from Bristol's experience in managing environmental issues. BCC Strategic Transport and Air Quality teams are working with partners to develop a module on air quality and transport which will be published in 2015.

Health Impacts of Air Pollution in Bristol

15. In 2014 a report was commissioned by BCC to assess the current health impacts associated with air pollution in Bristol. The report focussed on the health impacts of particulate matter < 2.5 microns in size ($PM_{2.5}$).

16. The report calculated that a total of 188 deaths of Bristol residents could be attributed to air pollution ($PM_{2.5}$) in 2010. This figure combines the health impacts of both regional and local sources of $PM_{2.5}$ pollution. The report estimated that of these 188 deaths, 24 could be attributed to pollution from local road transport emissions. These deaths attributed to air pollution compare, on average, to 9 people killed in road traffic collisions in Bristol each year. In addition to deaths, 52 additional hospital admissions for breathing difficulties and 42 for heart problems can be attributed to $PM_{2.5}$ pollution in 2010.

17. The cost of the health effects of exposure to small airborne particles ($PM_{2.5}$) in Bristol is estimated at around £83 million per year.

18. Since this report was published, the weight of evidence of health impacts associated with nitrogen dioxide has grown. This evidence puts the health impacts of this pollutant on a par with those associated with particulate matter. In July 2015, London became the first city to estimate the health effects associated with NO_2 based on the latest evidence. The figures quoted in the Bristol health report are likely to significantly underestimate the health impacts of air pollution as they do not take into account the latest evidence on the impacts of NO_2.

Avonmouth Air Quality Monitoring

19. As a response to concerns raised by residents in Avonmouth, additional monitoring of particulate matter, including analysis of heavy metals has been carried out within the past year.

20. The Environment Agency monitored particulates for a three month period in late 2014. The Environment Agency report concluded that the short term monitoring demonstrated that compliance with air quality objectives for particulates would be achieved in Avonmouth when extrapolated for a full year. Bristol City Council will complete a full years monitoring for PM_{10} and $PM_{2.5}$ in Avonmouth in September 2015. Monitoring results for the first 8 months from this site confirm that compliance with air quality objectives for particulates and heavy metals is being achieved in Avonmouth.

21. Options for further air quality monitoring are being investigated and will be discussed with Avonmouth residents. This may include measurement of ‘visible’ dust through deposition monitoring in an attempt to quantify the impacts of the dust that people can see, rather than the current monitoring which has looked at pollutants which are of concern from a health based perspective.

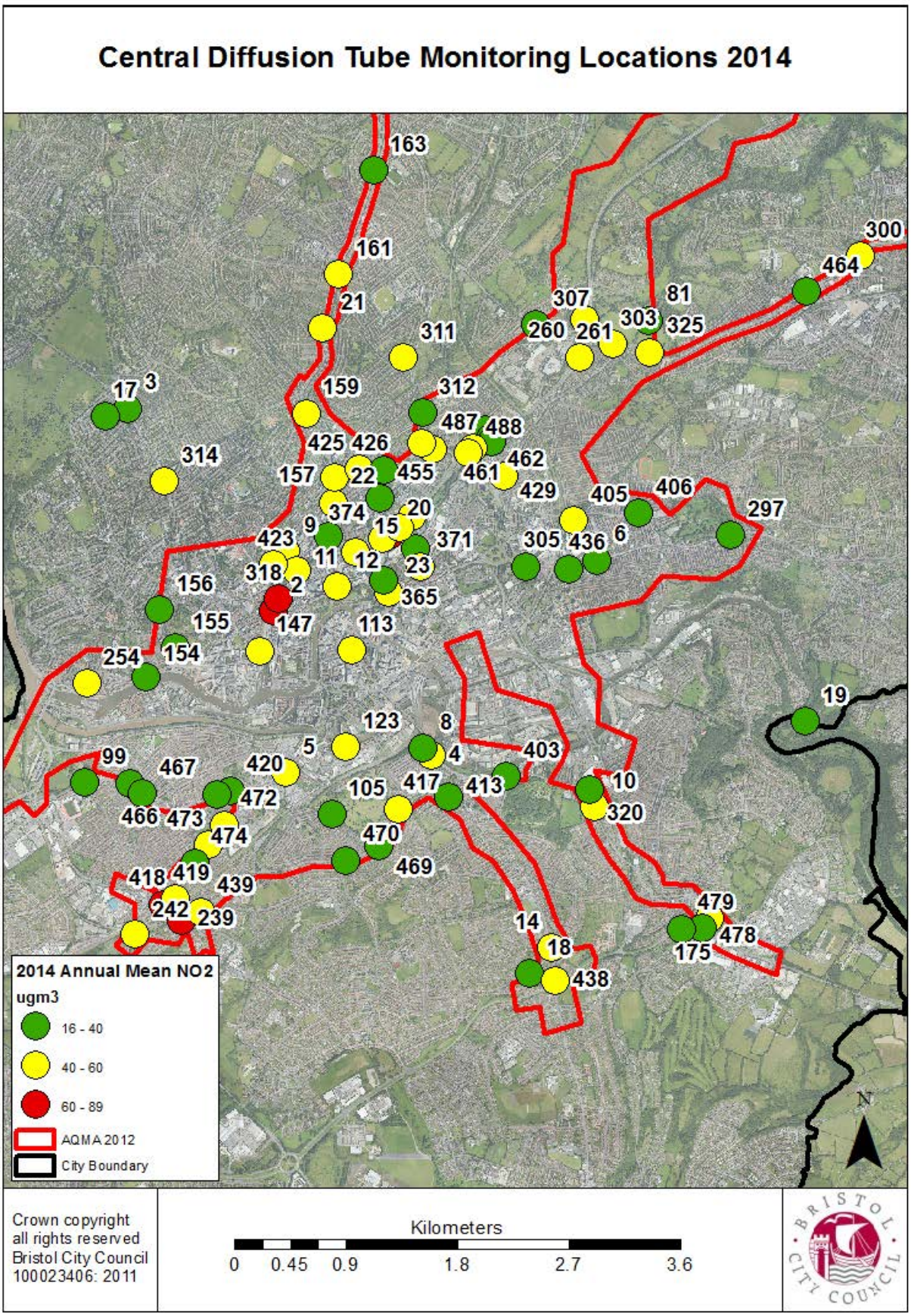
22. Engagement with the community in Avonmouth has taken place during 2014/2015. Public Health England and BCC Public Health teams are working together to produce a health profile for the Avonmouth area in response to residents’ concerns. Further meetings are planned with the local community in late October, to provide an update on air quality monitoring results, and in November, to present the draft findings of the local health profile.

23. As recently requested by OSM we will be organising a Members Briefing on air quality in Bristol, currently planned for October 2015. The purpose

will be to help members improve their understanding of sources of pollution, health effects and interventions with a specific focus on transport as the main source. This will provide them with an opportunity to understand and explore informally what can be a complex discipline including some of the misconceptions in the public domain.

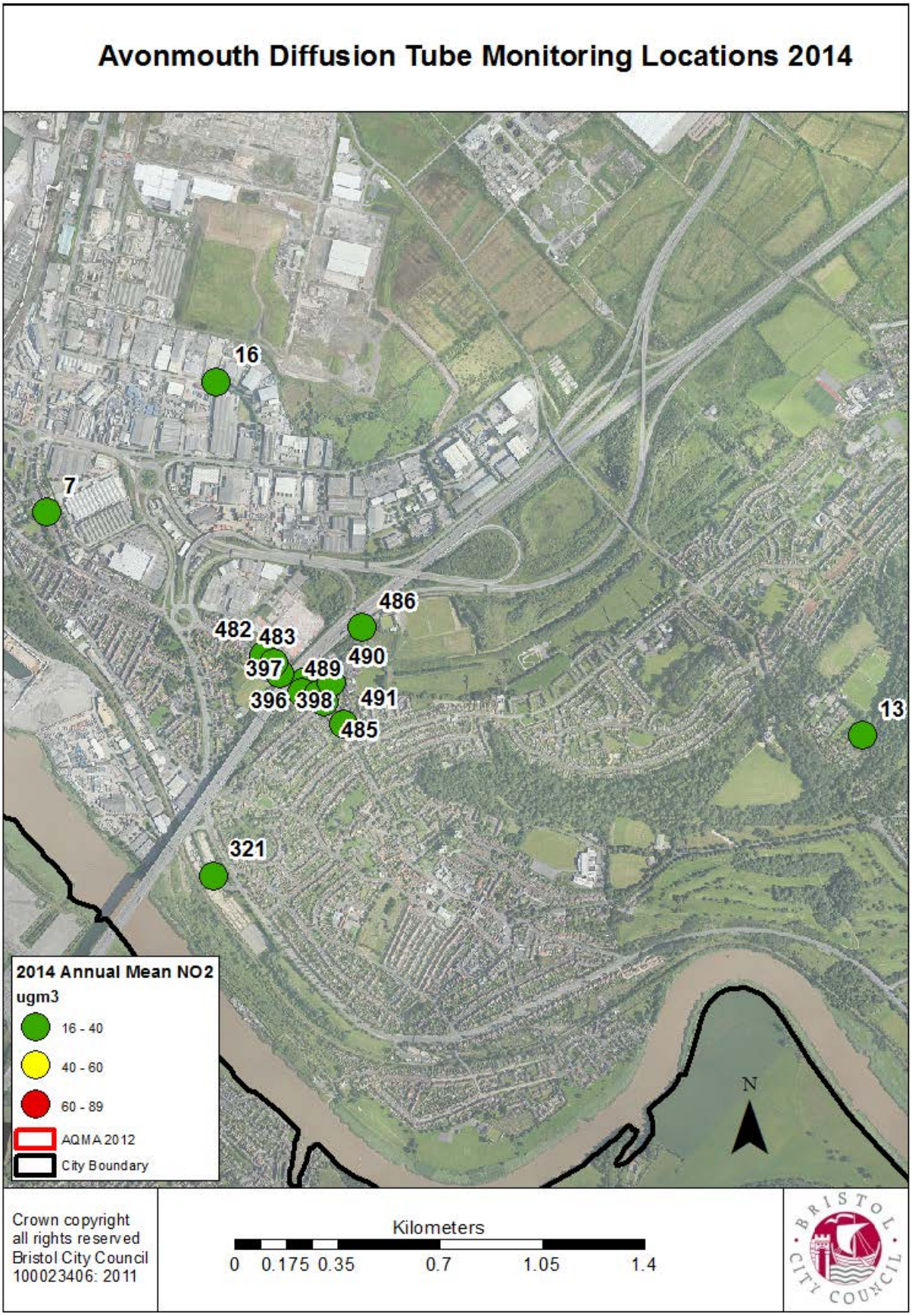
24. We are intending to invite UWE air quality experts to present alongside our team, Public Health and transport colleagues. We envisage it being approximately 1.5 hours with a number of short presentations and time for discussion.

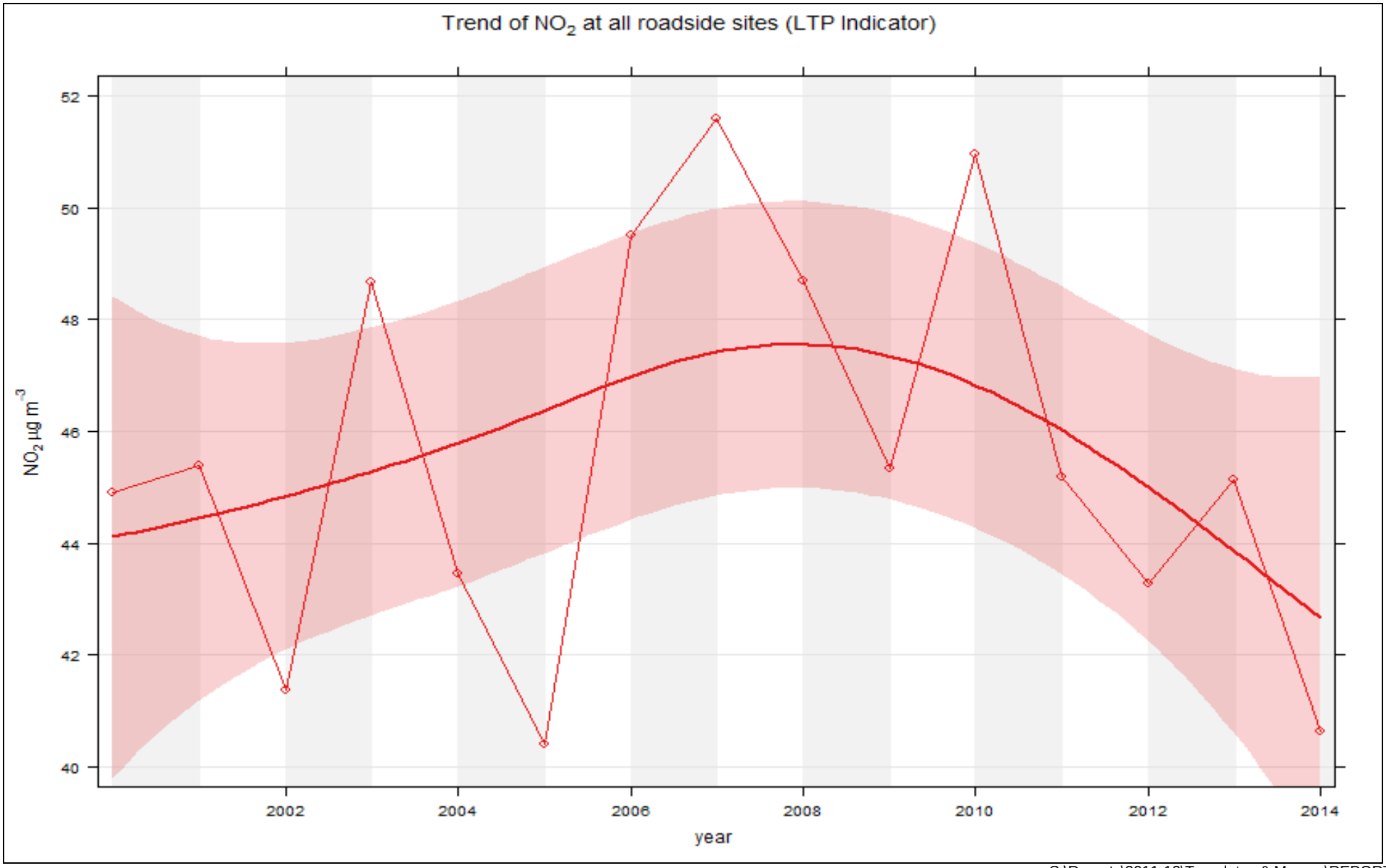
Appendix



- Monitoring locations shown on the Avonmouth map relate to nitrogen

dioxide diffusion tubes and not the recent additional particulates monitoring.




Trend of NO_2 at all roadside sites (LTP Indicator)
52
50
48
46
44
42
40
NO_2 µg m^{-3}
2002
2004
2006
2008
2010
2012
2014
year