



## HEALTH AND WELLBEING BOARD

DATE: 13 NOVEMBER 2019

<b>REPORT TITLE</b>	Air Quality in Wirral: Status, Progress and Priorities
<b>REPORT OF</b>	Julie Webster, Director for Health and Wellbeing

### REPORT SUMMARY

Public Health England (PHE) has identified poor air quality as the largest environmental threat to public health in the UK generating wide-ranging health, social, environmental and economic consequences<sup>1</sup>. Tackling poor air quality is therefore important for Wirral to become a healthier place to live, work and visit as well as a fairer, greener, more productive borough.

Whilst recorded air pollution in Wirral does not exceed legal threshold limits and air quality is slowly improving, it is important to continue to take action to improve air quality and to monitor the impact on health and health inequalities. A collaborative approach is critical, and interventions must be sensitive to local context and influences, focused on reducing air pollution at source rather than mitigating the consequences.

The purpose of this report is to provide members of the Health and Wellbeing Board with detail on the current status of air quality in Wirral, its impact on the health of the population and progress to improve it.

### RECOMMENDATIONS

It is recommended that the Health and Wellbeing Board note the information included within this report and continue to seek regular assurance that partners are taking action to improve air quality across the borough.

### SUPPORTING INFORMATION

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<sup>1</sup> Public Health England (2019) Review of interventions to improve outdoor air quality and public health.  
<https://www.gov.uk/government/publications/improving-outdoor-air-quality-and-health-review-of-interventions>

## **1.0 REASONS FOR RECOMMENDATION/S**

Accumulating evidence of the wide-ranging negative impacts of air pollution has triggered heightened action to enhance air quality on a local and national scale<sup>2</sup>. The national government has called for local leadership to drive efforts to improve air quality and mobilise action in this field.

## **2.0 OTHER OPTIONS CONSIDERED**

Not applicable.

## **3.0 BACKGROUND INFORMATION**

There is an established, and evolving, body of evidence that air pollution can cause a wide variety of health problems in people that are exposed to it. The risk of adverse effects depends on several factors, including current health status, pollutant type and concentration, and the length of exposure. As well as the personal cost to health, the resultant problems can have impacts on hospital admissions, school attendance, and business productivity, meaning that poor air quality is also associated with substantial financial and societal costs<sup>1,2</sup>. Policies to improve air quality have the potential to alleviate these costs, but they may also generate improvements to health via indirect means, such as through enabling exercise and physical activity, reducing injuries and accidents, and preventing social isolation. In addition, many of the things that improve air quality will also reduce other environmental pollutants, such as carbon dioxide, meaning that tackling air quality can also increase sustainability and address the challenge of climate change.

### **3.1 OUTDOOR AIR QUALITY IN WIRRAL**

Air pollution is made up of gases, droplets and tiny, solid particles known as particulate matter (PM). High levels of air pollution indicate lower air quality. All Local Authorities in the UK have a duty under the Environment Act 1995 Part IV to review and assess local air quality at a variety of locations across the area. The Annual Air Quality Status Report 2019 (see background papers) details how Wirral Council is meeting the Local Air Quality Management (LAQM) obligations, and action to monitor and improve air quality. In order to fulfil its statutory obligations Wirral Council undertakes monitoring and reporting of air quality

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<sup>2</sup> Department for Environment, Food and Rural Affairs (2019) Clean Air Strategy.  
<http://www.gov.uk/government/publications/clean-air-strategy-2019>

across the borough to assess levels of air pollution. This monitoring is in the form of real time monitoring from the two Automatic Urban Rural Network (AURN) stations in the borough, operated by the Department of Environment, Farming and Rural Affairs' (DEFRA), and thirty one passive monitoring locations across the borough (see Annual Air Quality Status Report 2019 for a map and further information) strategically located to capture areas of relevant exposure, informed by local intelligence, historical data, and input from transportation services.

In line with national air quality management guidelines air quality monitoring in Wirral predominantly focusses on nitrogen dioxide (NO<sub>2</sub>), reflecting a national focus on NO<sub>2</sub> reduction, but also measures particulate Matter (PM<sub>2.5</sub>), Ozone and Benzene. Wirral has no breaches of UK air quality objective levels for air pollution and therefore Wirral Council has not declared any Air Quality Management Areas (AQMA). In 2018, annual mean NO<sub>2</sub> concentrations in Wirral were below the national objective, with one exception at a Liscard taxi rank however this is deemed not to be a relevant exposure owing to its non-residential location. Since 2014, the annual mean concentrations of PM<sub>2.5</sub> in Wirral have remained below World Health Organisation and European Union standards.

Detailed information regarding the monitoring, outcomes and action being taken locally is included in the Annual Air Quality Status Report 2019.

### **3.2 IMPACT OF AIR POLLUTION ON HEALTH AND WELLBEING**

Since 1970 emissions of nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>2.5</sub>) and other volatile organic chemicals in the UK have fallen by 65 – 80% and are predicted to continue to reduce<sup>2</sup>. However, there is now further evidence of the harm caused by air pollution.

Nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>2.5</sub>) have well documented negative health impacts and are the air pollutants that are regarded as most adverse to health. Breathing in nitrogen dioxide is known to cause irritation in lung tissue and the evidence linking NO<sub>2</sub> and asthma is strongest. However there is some evidence implicating this pollutant as a cause of dementia, diabetes, lung cancer, low birth weight and Chronic Obstructive Pulmonary Disease (COPD)<sup>1</sup>. Particulate matter affects health differently and evidence suggests that breathing in high levels may contribute to disease processes that can increase the risk of developing heart disease, stroke, asthma and lung cancer as well as contributing to low birth

weight and COPD<sup>1</sup>. Vehicle exhausts, particularly diesel, are responsible for the majority of particulate matter (PM).

Estimating the health impact of air pollution for Wirral's population however presents some challenges. There are no routine health data that measure the combined effects of the main pollutants. High pollution over a longer time also exacerbates harm from other risk factors affecting health; for example, smoking, harmful alcohol intake, diet and obesity. Genetic factors also influence health outcomes. Currently air pollution is not recorded as a contributing cause of death on death certificates. It is also important to note that historical exposure to air pollution when air quality was worse may only present impact on health decades later.

During 2018 there were 3,789 deaths registered in Wirral with all cancers (1,055), all circulatory diseases (747) and all respiratory diseases (616) accounting for 63.8% (2,418) of the total. Public Health England estimates, using modelled data, that 3.9% (approximately 138) of deaths in Wirral in 2017 were attributable to particulate air pollution, lower than both the North West (4.1%) and England (5.1%).

Evidence suggests that whilst air pollution can be harmful to everyone, adverse effects fall disproportionality on residents at extremes of age, individuals with pre-existing cardiovascular or respiratory illnesses, those living in close proximity to densely trafficked roads, and people living in less affluent areas. Therefore policies to improve air quality will also help reduce health inequalities within the borough.

Further detail on the impact of air quality on health is included within Joint Strategic Needs Assessment on Outdoor Air Quality (see background papers). This is updated on an annual basis in order to regularly monitor health impact and to reflect the evolving evidence in this field.

### **3.3 ACTION TO IMPROVE AIR QUALITY IN WIRRAL**

There is an established hierarchy of interventions to improve air quality with preventing, reducing or replacing polluting activities to reduce emissions as the first priority (e.g. eliminate or reduce road emissions and domestic wood burners and prevention through the design and use of land using pollution and planning controls)<sup>1</sup>. Actions to reduce the concentration of air pollution once it has occurred is the second priority (e.g. changes to

traffic flow through travel management flow and urban design), and individual avoidance of exposure is the third (e.g. advice on steps to take during an air pollution episode). The most effective air pollution reduction strategies employ all these tactics. Furthermore, evidence suggests that local action should prioritise co-benefit strategies, which not only improve air quality, but also improve wider health outcomes.

As no Air Quality Management Areas (areas deemed to exceed air quality objectives) have been declared in Wirral, the Council is not legally required to produce an Air Quality Action Plan. However, local air quality issues, interventions, and priorities are outlined in the annual Air Quality Status Report (submitted to DEFRA) and the Outdoor Air Quality Joint Strategic Needs Assessment. The Wirral Council Air Quality Group spearheads multidisciplinary air quality leadership to improve air quality and achieve environmental sustainability with representation from technical teams across the Council (e.g. Fleet Management, Environmental Health, Public Health, Transport, Sustainability, Licensing, and Forward Planning) co-ordinating action and ensuring that the recommendations from the Annual Air Quality Report are being implemented. Additionally, there are strong collaborations between neighbouring local authority regions, through Wirral's representation in the Liverpool Air Quality Task Force and Air Quality Technical Group (AQTECH).

Wirral Council implements a wide range of air quality interventions, incorporating traffic-related; non-traffic related; and public behaviour approaches. Key action includes the introduction of anti-idling legislation, widespread improvements to public transportation across Liverpool City Region, and Wirral Council's Clean Air Campaign 'You're the Key', launched in June 2019. In line with the evidence, most air quality initiatives in Wirral are focussed at the top of the hierarchy of interventions, seeking to prevent (rather than reduce/avoid exposure to) emissions/air pollutants. Additionally, Wirral has implemented some co-benefit interventions, which offer the potential to generate sustainable improvements in wider health and social outcomes in addition to improving air quality; for example, promoting active transport through improvements to cycling infrastructure to increase physical activity and reduce obesity. There is synergy between local air quality objectives and the Wirral Climate Change Strategy, which includes an on-street residential e-vehicle charging pilot and improved cycle parking. In July 2019 Wirral Council declared a

Climate Emergency<sup>3</sup> and the Climate Change Strategy<sup>4</sup> is currently being updated, providing further opportunity to improve air quality.

A number of local interventions are tailored to vulnerable groups to address health inequalities in air quality health impacts, with a particular focus on children/schools through the Living Streets WOW walk to school project (promoting active transportation to school) and the Green Air Schools Project (GASP) working with 22 local schools to raise air quality awareness, identify poor air quality around school boundaries, and plant vegetation to mitigate air pollution exposure. There is internal and external stakeholder and community engagement in planning and delivery of some of the air quality interventions, particularly through GASP and work towards a joint public education website on air quality for the Liverpool City Region, led by the Air Quality Technical Group (AQTECH).

The NHS Long Term Plan sets out clear expectations for the changes NHS organisations should make to lessen their own contribution to air pollution and protect patients and staff setting targets to reduce air pollution from all sources<sup>5</sup>.

In March 2019, Public Health England (PHE) published a review of interventions to improve outdoor air quality and public health<sup>1</sup>. An audit of local action to improve air quality in Wirral against the PHE recommendations was completed in September 2019 (appended to this report). This concluded that there is a strong, comprehensive and collaborative commitment to air quality locally however some areas for improvement were identified. Specifically, Wirral currently has no mechanism for evaluating discrete air quality interventions (aside from monitoring trends in pollutant levels annually) to identify and share best practice. Additionally, further efforts to work with community subgroups most vulnerable to the adverse impacts of air quality (for example within schools/nurseries or hospitals/healthcare settings) are indicated. A challenge in conducting the audit was the lack of a dedicated local air quality plan to outline a long-term comprehensive vision for maximising air quality in

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<sup>3</sup> Wirral Council (2019) Climate Emergency. <https://www.wirral.gov.uk/about-council/climate-change-and-sustainability/climate-emergency>

<sup>4</sup> Wirral Council (2014) Cool-the climate change strategy 2014 - 2019 <https://www.wirral.gov.uk/about-council/climate-change-and-sustainability/cool-climate-change-strategy>

<sup>5</sup> Department of Health (2019) The NHS Long Term Plan. <https://www.longtermplan.nhs.uk/publication/nhs-long-term-plan/>

Wirral. The audit also highlighted the opportunity to embed air quality considerations in planning and development decisions across Wirral, prioritising proposals that generate net health gains for the local population through the Local Plan, Healthy Wirral Plan and regeneration projects.

The audit report made the following recommendations:

- Air pollutants (specifically NO<sub>2</sub> and PM<sub>2.5</sub>) continue to be strategically monitored across Wirral to identify long term trends and areas for action locally.
- Continue to annually review and update the Outdoor Air Quality Joint Strategic Needs Assessment.
- Wirral Council maintains its current commitment to air quality, evidenced by the absence of Air Quality Management Areas, and considers extending membership of the Wirral Air Quality Group to include health partners and other anchor organisations.
- NHS partners use their Sustainable Development Management Plans to deliver on the air quality goals in the NHS Long Term Plan and share how they are supporting patients and staff to reduce the health impacts of air pollution.
- Prioritisation of air quality activities is based on the hierarchy of interventions (prioritising prevention of emissions over reducing/avoiding exposure).
- Air quality initiatives continue to employ a focus on vulnerable populations and foster collaborations with internal/external stakeholders and the wider community.
- Embed actions related to air quality emerging from the Health Impact Assessment of the Wirral Council Local Plan.
- Local air quality interventions are formally evaluated to identify/share good practice.
- The Wirral Air Quality Group drafts a dedicated local air quality plan to clearly and comprehensively define local air quality commitments, priorities and monitoring/evaluation over the next five to ten years, aligned to Liverpool City Region and national air quality strategies.
- Key strategic plans for the borough embed air quality considerations across all actions, prioritising initiatives that deliver a net health gain within the local population.

### **3.4 SUMMARY**

Continued improvement in air quality is challenging and will take time to achieve. National legislation, mass behaviour change and new infrastructure will be required to support

progress. Whilst air pollution levels in Wirral are within legal limits and estimated health impact are below regional and national average it is important to continue to work together to improve air quality. The Health and Wellbeing Board has an important role in ensuring that the actions included in the Annual Air Quality Status Report and the Outdoor Air Quality Joint Strategic Needs Assessment are implemented and that opportunities to embed air quality improvement in key strategic plans are maximised.

#### **4.0 FINANCIAL IMPLICATIONS**

There are no financial implications arising directly from this report.

#### **5.0 LEGAL IMPLICATIONS**

There are no legal implications arising directly from this report. However considerable resource will be required to implement necessary infrastructure change to improve air quality.

#### **6.0 RESOURCE IMPLICATIONS: ICT, STAFFING AND ASSETS**

There are no resource implications arising directly from this report.

#### **7.0 RELEVANT RISKS**

Failure to commit to addressing air quality issues on a local and national scale risks wide-ranging impacts on public health, the environment and the economy.

#### **8.0 ENGAGEMENT/CONSULTATION**

No public engagement/consultation was conducted.

#### **9.0 EQUALITY IMPLICATIONS**

No equality impact assessment has been conducted.

#### **10.0 ENVIRONMENT AND CLIMATE IMPLICATIONS**

The content and/or recommendations contained within this report are expected to reduce emissions of CO<sub>2</sub>.

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## APPENDICES

1. Audit of Wirral Air Quality actions against PHE recommendations (2019).

## REFERENCE MATERIAL

2. Annual Air Quality Status Report (2019) <https://www.wirral.gov.uk/environmental-problems/pollution-control/air-quality>
3. Outdoor Air Quality Joint Strategic Needs Assessment (2019) <https://www.wirralintelligenceservice.org/jsna/>

## SUBJECT HISTORY (last 3 years)

Council Meeting	Date
N/A	

## APPENDIX: AIR QUALITY AUDIT SUMMARY REPORT



### SUMMARY REPORT AUDIT OF WIRRAL LOCAL AIR QUALITY ACTIONS USING PHE RECOMMENDATIONS SEPTEMBER 2019

#### **RATIONALE**

Air pollution generates wide-ranging health, social, environmental and economic consequences. Accumulating evidence of these negative impacts has triggered heightened action to enhance air quality at a local and national level. A collaborative approach to addressing air pollution is critical, however interventions must be sensitive to local context and influences. The national government has called for local leadership to drive efforts to improve air quality and mobilise action in this field. In March 2019, Public Health England (PHE) published a review of interventions for addressing air quality. This report presents the findings of an internal audit which reviewed the air quality interventions/actions being taken by Wirral Council against PHE recommendations to determine compliance with national standards and to identify priority areas for improvement.

#### **BACKGROUND**

All Local Authorities in the UK have a duty under the Environment Act 1995 Part IV to review and assess local air quality. In Wirral, air quality is monitored by 31 passive (non-automatic) diffusion tubes and two Urban Background Air Quality Monitors, strategically located to capture areas of relevant exposure. Wirral has no Air Quality Management Areas (areas deemed to exceed stated air quality objectives), meaning no dedicated Air Quality Action Plan is indicated. However, local air quality issues, interventions, and priorities are outlined in the annual Air Quality Status Report (ASR) submitted to DEFRA, and the Outdoor Air Quality Joint Strategic Needs Assessment (JSNA).

Assessing the health impact of air pollution for Wirral's population presents some challenges. During 2018 there were 3,789 deaths registered in Wirral with all cancers (1,055), all circulatory diseases (747) and all respiratory diseases (616) accounting for 63.8% (2,418) of the total. Public Health England estimates that 3.9% (approximately 138) of deaths in Wirral in 2017 were attributable to particulate air pollution, lower than both the North West (4.1%) and England (5.1%). Therefore, whilst recorded air pollution in Wirral does not exceed legal threshold limits and air quality nationally is slowly improving, it is important to continue to take action to improve air quality and to monitor the impact on health.

#### **AIM**

To audit Wirral's air quality plan against PHE recommendations for air quality interventions in local authorities to determine compliance with national standards.

To identify areas for improvement in Wirral's air quality plan.

## **AUDIT SCOPE AND METHODOLOGY**

PHE's published recommendations for air quality interventions in local authorities were reviewed in detail. Key recommendations were drawn out of the report, which formed the criteria by which local action was assessed for this audit (See Appendix). As no discrete air quality plan for Wirral has been produced, local air quality action detailed in the air quality JSNA and ASR (both updated in 2019) were assessed against the audit criteria to determine concordance with PHE recommendations. Local performance was measured against these criteria. In instances where PHE recommendations were not satisfied at the local level, priority areas for action were identified.

## **FINDINGS**

The audit revealed that Wirral's air quality plan broadly reflects recommendations from PHE. The lack of a dedicated local air quality plan however means gaining a comprehensive and cohesive understanding of the long-term vision for air quality priorities and actions moving forward is challenging. For example, the contribution and mitigation of agricultural causes of air pollution locally are not discussed in either the JSNA or ASR.

Strategic air quality monitoring across Wirral has consistently revealed no Air Quality Management Areas. Traffic-related; non-traffic related; and public behaviour interventions are represented within air quality initiatives underway locally.

There is an established hierarchy of interventions to improve air quality with preventing, reducing or replacing polluting activities to reduce emissions as the first priority. Actions to reduce the concentration of air pollution once it has occurred is the second priority and individual avoidance of exposure is the third. The most effective pollution reduction strategies employ all these tactics. In line with PHE recommendations, local air quality interventions primarily act at the top of the hierarchy of interventions, seeking to reduce emissions rather than simply avoid exposure to pollutants.

There is evidence of internal and external stakeholder and community engagement in planning and delivering some of the air quality interventions, with strong collaborations between adjacent local authority regions and co-ordinated action via the Liverpool Air Quality Task Force and Air Quality Technical Group (AQTECH). Furthermore, many interventions deliver public health co-benefits, or link to other local initiatives to improve wider health determinants. Specifically, there is notable synergy with the Climate Change Strategy. There is some effort to tailor interventions to vulnerable groups to reduce health inequalities, with a focus on children/schools.

## **RECOMMENDATIONS FOR IMPLEMENTATION**

The audit identified the following recommendations:

1. Air pollutants (specifically NO<sub>2</sub> and PM<sub>2.5</sub>) continue to be strategically monitored across Wirral to identify long term trends and areas for action locally.

2. Wirral Council should continue to annually review and update the Outdoor Air Quality Joint Strategic Needs Assessment.
3. Wirral Council should maintain its current commitment to air quality, evidenced by the absence of Air Quality Management Areas, and considers extending membership of the Wirral Air Quality Group to include health partners and other anchor organisations.
4. NHS partners use their Sustainable Development Management Plans to deliver on the air quality goals in the NHS Long Term Plan and share how they are supporting patients and staff to reduce the health impacts of air pollution.
5. Prioritisation of air quality activities implemented is based on the hierarchy of interventions (prioritising prevention of emissions over reducing/avoiding exposure).
6. Air quality initiatives continue to employ a focus on vulnerable populations and foster collaborations with internal/external stakeholders and the wider community.
7. Wirral Council should consider how to embed actions related to air quality emerging from the Health Impact Assessment of the Local Plan.
8. Local air quality interventions are formally evaluated to identify/share good practice.
9. The Wirral Air Quality Group drafts a dedicated local air quality plan to clearly and comprehensively define local air quality commitments, priorities and monitoring/evaluation over the next five to ten years, aligned to Liverpool City Region and national air quality strategies.
10. Key strategic plans for the borough embed air quality considerations across all actions, prioritising initiatives that deliver a net health gain within the local population.

## **DISSEMINATION OF FINDINGS**

An overview of these findings will be shared with the Wirral Air Quality Group, the Wirral Health Protection Board and key partners across the Council. The recommendations from the audit will also be presented within a report to the Health and Wellbeing Board in November 2019.

## **FURTHER WORK**

A repeat audit cycle should be completed in 12 months (September 2020) to reflect emerging evidence and policy in this field and to determine whether recommendations identified by this audit have been incorporated into practice.

## REFERENCES

1. Department for Environment, Food and Rural Affairs (2019) Clean Air Strategy.
2. Public Health England (2019) *Review of interventions to improve outdoor air quality and public health*. <http://www.gov.uk/government/publications/improving-outdoor-air-quality-and-health-review-of-interventions>
3. Wirral Intelligence Service (2019) Outdoor Air Quality - Joint Strategic Needs Assessment <https://www.wirralintelligenceservice.org/jsna/>
4. Wirral Council (2019). Air Quality Annual Status Report <https://www.wirral.gov.uk/environmental-problems/pollution-control/air-quality>

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## APPENDIX: AUDIT CRITERIA FOR ASSESSING LOCAL ACTION

<p><b>Are Pollutant Levels above UK/WHO Guidelines?</b></p>	
<p><b>Is Public Health Considered in the AQ Plan?</b></p>	<p>Does the plan address inequalities related to AQ?</p> <p>Are there synergies with other priorities/co-benefits for other wider determinants of health?</p> <p>Is there internal/external stakeholder/community engagement and linkage to health and wellbeing strategy?</p> <p>Does the plan include evidence-based initiatives to engage public and promote action?</p>
<p><b>General Recommendations for AQ Interventions</b></p>	<p>Targeted interventions to identify/address local issues</p> <p>Use hierarchy of interventions to prioritise AQ interventions</p> <p>Reduce sources of pollution in populated areas</p> <p>Systematically evaluate all interventions</p>
<p><b>Traffic-Related AQ Interventions</b></p>	<p>Reducing emissions from existing vehicles: planning for active travel and public transport</p> <p>Promoting the uptake of low emission vehicles and reducing demand for more polluting forms of transport</p> <p>Using spatial planning to reduce sources and exposure to pollution</p>
<p><b>Non-Traffic Related AQ Interventions</b></p>	<p>Reducing exposure to pollution from local airports, ports and the railway sector</p> <p>Planning interventions</p> <p>Agricultural interventions</p>
<p><b>Public Behaviour</b></p>	<p>Raising awareness of air pollution and health</p> <p>Providing information/advice to businesses/public explaining actions to minimise contribution to air pollution</p>

	Providing information and advice to the public explaining how people can minimise their exposure to air pollution
<b>Key Considerations</b>	<p>Is 'Net Health Gain' approach to new policy/work which affects air pollution adopted in the local authority?</p> <p>Is there a particularly focused approach on reducing the impact of air pollution on children?</p>