HEALTH IMPACT SCREENING RECORD SHEET

Conducted by:

Environmental Protection Division

Title of the programme, policy or project

Environment (Air Quality and Soundscapes) (Wales) Bill

Description (including key themes and objectives)

Why are we taking this action?

The Bill is a key step in meeting our aim to improve air quality and reduce the impacts of air pollution on human health, biodiversity, the natural environment and our economy.

The World Health Organisation has described air and airborne noise pollution as the top two environmental health risks in Western Europe.

Consequently, the proposals in the Bill aim to facilitate improvements in the quality of our air environment at a Wales-wide level, at a local and regional level and throughout society. It will also contribute to our response to the climate and nature emergencies.

The Bill needs to be seen in a broad context, and not in isolation. It:

- is a crucial part of a package of measures set out in our Clean Air Plan to reduce airborne pollution and improve the air environment in Wales;
- builds on a suite of existing legislation; and
- complements legislation to achieve appropriate soundscapes as set out in the Noise and Soundscape Action Plan 2018-2023.

The Bill includes changes to existing legislation which will streamline, strengthen and complement existing processes to make them more effective and accessible. By introducing this legislation, we also aim to maximise our contribution to the sustainable development principle of the Well-being of Future Generations Act 2015 (WFGA) to improve the economic, social, environmental and cultural well-being of Wales. The Bill is firmly grounded in the seven well-being goals in the WFGA.

Proposal

At a Wales-wide level, we are proposing several actions:

- Creation of an air quality target-setting framework, allowing Ministers to set Wales-specific, evidence-based targets in relation to air pollutants. This will enable Ministers to consider existing targets as well as providing the ability to respond to emerging issues by setting new targets for pollutants as

evidence of harm arises. This proposal aims to help protect the health of the public, nature and the environment by reducing air pollution.

- Welsh Ministers must put in place arrangements for the collection of data in order to assess progress made towards targets, and ensure it is published. Welsh Ministers may also introduce a reporting and advisory function to interpret the data collected, assessing the pressures and risks of air quality across Wales and the progress made towards meeting any targets or interim targets set under the framework.

- A requirement for Welsh Ministers to publish both a Clean Air Plan for Wales and a Noise and Soundscape Plan for Wales following each Senedd election, allowing integrated action on the two policy areas. These plans will set out policy priorities and actions to protect and improve air quality and soundscape in Wales for current and future generations. As well as direct benefits to public health, joined-up action in these areas is expected to provide important benefits to quality of life and will help to protect nature, our climate and the wider environment.

At a local and regional level, we are proposing several actions:

- Ensure the Local Air Quality Management (LAQM) regime operates in a proactive way that seeks not only to effectively mitigate, but also prevent, higher pollution concentrations. Through the Bill we will strengthen and clarify the existing legislative framework and support implementation through updated policy guidance and reporting templates.

- Enable local authorities to better manage and enforce unlawful burning of unauthorised fuels in Smoke Control Areas through strengthened smoke control powers.

- Clean Air Zones/Low Emission Zones can result in improvements in local air quality by incentivising behaviour change, including take-up of cleaner transport modes and active travel alternatives which can also deliver wider health benefits. Through the Bill we will better enable Welsh Ministers to implement Clean Air Zones/Low Emission Zones, where they are needed.

- Enhanced powers for local authorities to tackle idling vehicles. Specifically, we will introduce a power for Welsh Ministers to create a monetary range for fixed penalties for unnecessary vehicle idling.

We will support people and organisations to reduce their exposure and contribution to air pollution through:

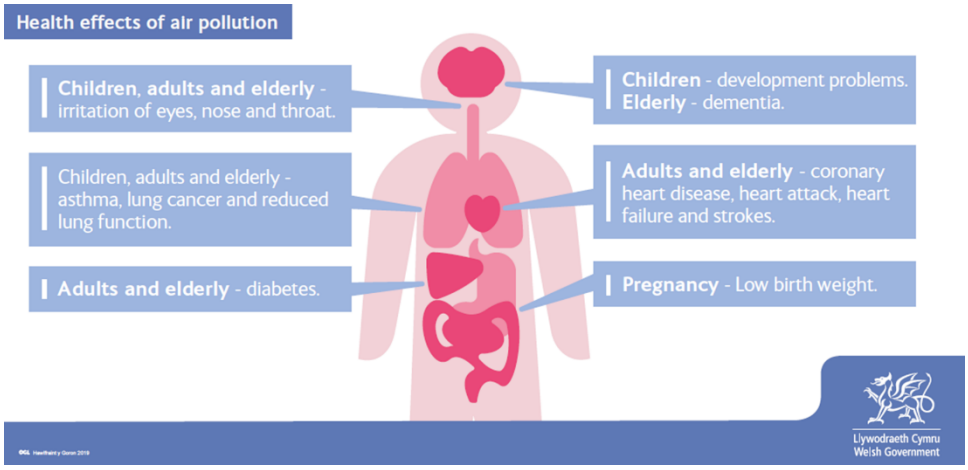
- A duty on Welsh Ministers to take steps to promote awareness of air pollution, including the health and environmental impacts and actions.

General overview – evidencing the need for action

In 2022, the UK Health Security Agency reported that the health burden attributed to long-term outdoor air pollution in the UK is 'an effect equivalent to' between 29,000 and 43,000 deaths per year amongst adults aged 30 and over. In Wales, using modelled data from 2019, the burden is reported to be 'an effect equivalent to' between 1,200 and 2,000 deaths each year (Chemical hazards and poisons report: issue 28 (publishing.service.gov.uk)). In interpreting the estimates, it is important to note that the figures do not refer to 'actual' deaths from air pollution exposure; rather, that the reduced life expectancy which everyone in a given population experiences because of air pollution exposure (6-8 months on average, but could range from days to years) is 'equivalent' to an estimated burden estimate range when summed. As impact estimates are uncertain, they are presented as a value range, not a single, central estimate; they are also relevant only to a single time and place so should not be used for comparisons.

Short-term exposure to pollutants can result in eye, nose and throat irritation, headaches and nausea, and exacerbate respiratory disease (e.g. asthma) symptoms. Long-term exposure increases risks of cardiovascular and respiratory disease, and lung cancer.

Emerging evidence suggests other body organs may also be affected, with possible effects on dementia, low birth weight and diabetes.



Children, older people and those with chronic lung or heart conditions are more vulnerable and/or susceptible to air pollution exposure.

There is emerging evidence children in their early years are especially at risk of exposure to air pollution, with adverse outcomes including asthma and poorer lung development.

Beyond these population groups, it is possible others are at a higher risk e.g. those working in polluted places or commuting to work through heavily congested urban areas.

People living in the most deprived areas may also be more susceptible to air pollution than those who live in least deprived areas. This is a problem because analyses of local air pollution, multiple deprivation and health data in Wales show average air pollution concentrations are highest in 'most' deprived areas where levels of chronic ill health tend to be highest. The next highest average air pollution

concentrations in Wales are experienced by those living in 'least' deprived areas. Air pollution, impaired health and deprivation status interactions can modify associations and create disproportionate disease burdens within and between communities (inequalities) i.e. a 'triple jeopardy' effect.

Understanding the relationships between air pollution and wider health determinants is therefore important to inform the development of local, regional and national scale air quality management solutions.

We have also considered the impacts of the proposals in the Bill on specific health related issues.

It is expected that as air quality improves, there will be an associated beneficial impact on health and well-being. A healthier society would provide greater opportunities to participate in sporting and recreational activities that will have an additional positive impact on health, with associated benefits to mental well-being.

A key focus of the Bill is to deliver improvements to the environmental and living conditions that affect health. A reduction of pollutants in the air will have beneficial effects on health conditions affected by the environment. Access to green space and increased opportunities for active travel options will encourage an increase in beneficial exercise and outdoor activities, and potentially result in reductions in transport related air pollution.

Improving air quality in areas affected by industry producing air pollution will as a consequence improve health conditions. Improved air quality will assist in reducing productive days lost to ailments associated with air pollution.

Improving air quality will provide long-term environmental benefits, with consequential beneficial impacts on health and well-being.

Commitments and intentions as a result of the Bill are expected to include active travel initiatives and improvements to public transport, with associated improvements in access and quality of services.

The provisions in the Bill are expected to reduce the burden of air pollution on public health, with associated reductions on health and social care costs. The reduced demand on NHS resources will enable re-focusing of medical service provision.

Modelling estimates suggest that a reduction of one $\mu g/m^3$ of $PM_{2.5}$ in 2017 in England could prevent 50,900 cases of coronary heart disease, 16,500 strokes, 4,200 lung cancers and 9,300 cases of asthma in people aged over 18 years by 2035 (Chief Medical Officer's Annual Report 2022 (publishing.service.gov.uk)).

The recent paper by Horton, Jones and Brunt: Air pollution and public health vulnerabilities, susceptibilities and inequalities in Wales, UK | Journal of Public Health | Oxford Academic (oup.com) concluded air quality in Wales is improving. However, local-level variations in exposure still exist. System-wide action must ensure that air quality improvement related benefits are equitable and

acknowledge current evidence about the harms that even low levels of air pollution can have on health. It also acknowledges outdoor air pollution is the largest environmental risk to health. Air pollution, deprivation and poor health status are inextricably linked; highlighting issues of environmental injustice, social and health inequalities.

The Bill places new duties on Welsh Ministers in relation to noise. Noise, meaning unwanted or harmful sound, can disrupt sleep and increase levels of stress, irritation and fatigue, as well as interfering with important activities such as learning, working and relaxing. It reduces people's quality of life. Exposure to loud sounds can cause immediate or gradual hearing damage, while exposure to noise in the long term can increase risk of hypertension-related illnesses and cardiovascular disease (https://www.euro.who.int/__data/assets/pdf_file/0008/136466/e94888.pdf).

Key reference: World Health Organization. Regional Office for Europe. (2011). Burden of disease from environmental noise: quantification of healthy life years lost in Europe. World Health Organization. Regional Office for Europe. https://apps.who.int/iris/handle/10665/326424https://apps.who.int/iris/handle/10665/326424

Environmental noise is considered the second biggest environmental contributor to the burden of disease in Europe after air pollution (https://www.euro.who.int/__data/assets/pdf_file/0008/383921/noise-guidelines-eng.pdf).
Our 2017 noise maps (https://datamap.gov.wales/layergroups/inspire-wg:EnvironmentalNoiseMapping2017) suggested that the homes of more than 200,000 people across Wales are exposed to external road traffic noise exceeding the World Health Organization's 2009 night noise guidelines.

According to the National Survey for Wales (https://www.gov.wales/national-survey-wales), a quarter of the people in Wales are regularly bothered by noise from outside their homes, with neighbour noise being at least as significant a contributor to this annoyance as noise from traffic, businesses and factories combined.

Everyone experiences sound differently, with some people more sensitive to noise than others, for example people with autism (https://auraldiversity.org).

Not all sounds are harmful or unwanted, and access to the right sounds in the right time and place (e.g. music or the sounds of nature) can enhance people's immediate and long-term health and well-being, including aiding recovery from ill health.

Nature of impact assessment undertaken and why

The Bill's proposals provide a framework for action that will have the effect of reducing airborne pollution (i.e. both air pollution and noise pollution). At this time, it is not possible to accurately assess the impact the proposals will have. That more accurate assessment will need to be undertaken when the proposals in the

Bill are implemented, as that is when the detail will be finalised, and evidence-based decisions will be taken on proposals such as targets to be set under the Air Quality Targets Regulations and the detail of road charging schemes for reducing or limiting air pollution are known.

Consequently, at this stage, we have conducted a high-level health impact assessment, in the knowledge that more detailed health impact assessments will be required when action is taken to implement the Bill's proposals.

The results of the high-level impact assessment are recorded below.

Nature of Evidence considered/to be used (including baseline data, technical and qualitative research, expert and community knowledge)

We have conducted literature searches and considered technical and qualitative research, including from the independent expert government advisory group, the Committee on the Medical Effects of Air Pollutants. We have also sought and received advice from a range of experts/professional advisers with expert knowledge of air pollution and its impact, including from technical consultants and Public Health Wales.

Key population groups affected by the policy

We have identified the following groups will be impacted by our proposals:

Age related groups*
• Children and young people
• Older people
Health related groups
• People with pre-existing respiratory or cardiovascular conditions
• Neurodiverse groups and people with hearing impairments
Income related groups
• People on low income
Groups who suffer discrimination or other social disadvantage
• People with physical impairments or learning difficulties
• Black, Asian and minority ethnic groups

Protected characteristic or group	What are the positive or negative impacts of the proposal?	Reasons for your decision (including evidence)	How will you mitigate Impacts?
Age (infants)	Positive Impact Improving air quality will reduce the potential impact of air pollution on the reproductive cycle and new-born children.	There is a substantial body of evidence indicating the link between air pollution and risks to the health of both mother and unborn infant during pregnancy. **Evidence** • Examining Joint Effects of Air Pollution Exposure and Social Determinants of Health in Defining "At-Risk" Populations Under the Clean Air Act: Susceptibility of Pregnant Women to Hypertensive Disorders of Pregnancy World Medical and Health Policy, Volume 10, Issue 1, March 2018, Pages 7-54; Patricia D. Koman et al[1] • Association of Atmospheric Particulate Matter and Ozone with Gestational Diabetes Mellitus Environ Health Perspect. 2015 Sep;123(9):853-9**;** Hu, H et al[2] • The effects of air pollution on adverse birth outcomes Environ Res. 2014 Oct; 134: 198-204; Ha, S et al[3] • Maternal exposure to air pollution and risk of autism in children: A systematic review and meta-analysis Environmental Pollution, 10.1016/j.envpol.2019.113307, (113307), (2019); Hee Kyoung Chun et al[4]	Positive impact – no requirement for mitigation.

[1] https://www.ncbi.nlm.nih.gov/pubmed/30197817

[2] https://ehp.niehs.nih.gov/doi/full/10.1289/ehp.1408456

[3] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4262551/

[4] https://www.sciencedirect.com/science/article/pii/S0269749119314691

		• Air pollution exposure in early pregnancy and adverse pregnancy outcomes: A register-based cohort study Olsson D, Mogren I, Forsberg B[5]	
Age (Children and Younger People)	Positive Impact Children and young people are particularly vulnerable to airborne pollution, our proposals are expected to improve air quality and soundscapes.	The Welsh Government recognises that there are unique issues around foetuses, babies and children's susceptibility to the effects of airborne pollution. Poor air quality can affect children's physical and cognitive development, with cognitive development, activities requiring concentration and educational attainment also being affected by noise. Long term health issues and anxiety-inducing noisy learning environments can prevent children from attending school which can damage a child's future prospects. Long term health issues can persist well into adulthood. **Evidence** • Royal College of Physicians: Every breath we take: the lifelong impact of air pollution • Association between air pollution and lung function growth in southern California children: Results from a second cohort. *Am J Respir Crit Care Med.* 2002; 166: 76-84. Gauderman WJ, Avol E, Gilliland F, Vora H, Thomas D, Berhane K, McConnell R, Küenzli N, Lurmann F, Rappaport E, Margolis H, Bates D, Peters J.[6] • Childhood Asthma: Diagnosis and Treatment. Wim M van Aalderen[7] • The influence of ambient coarse particulate matter on asthma hospitalization in children: Case-crossover and time-series	Positive impact – no requirement for mitigation.

[5] https://bmjopen.bmj.com/content/3/2/e001955

[6] https://www.ncbi.nlm.nih.gov/pubmed/12091175

[7] https://www.nejm.org/doi/full/10.1056/NEJMoa040610

		analyses. *Environ Health Perspect.* 2002; 110: 575-581 Mei Lin, Yue Chen, Richard T. Burnett, Paul J Villeneuve, Daniel Krewski.[8] • An association between fine particles and asthma emergency department visits for children in Seattle. *Environ Health Perspect*. 1999; 107: 489-493., Norris G, YoungPong SN, Koenig JQ, Larson TV, Sheppard L, Stout JW.[9] • Air quality and pediatric emergency room visits for asthma in Atlanta, Georgia. *Am J Epidemiol.* 2000; 151: 798-810. Tolbert PE, Mulholland JA, Macintosh DL, Xu F, Daniels D, Devine OJ, Carlin BP, Klein M, Butler AJ, Nordenberg DF, Frumkin H, Ryan PB, White MC[10] • Effects of ambient air pollution on symptom severity and medication use in children with asthma *Ann Allergy Asthma Immunol.* 2003; 91: 346-353. Slaughter JC, Lumley T, Sheppard L, Koenig JQ, Shapiro, GG.[11] • An analysis of the association between respiratory symptoms in subjects with asthma and daily air pollution in Spokane, Washington. *Inhal Toxicol*. 2004; 16: 809-815; Peel JL, Tolbert PE, Klein M, Metzger KB, Flanders WD, Knox T, Mulholland JA, Ryan PB, Frumkin H.[12]	

[8] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1240873/

[9] https://www.ncbi.nlm.nih.gov/pubmed/10339450

[10] https://www.ncbi.nlm.nih.gov/pubmed/10965977

[11] https://www.sciencedirect.com/science/article/abs/pii/S108112061061681X

[12] https://www.researchgate.net/publication/51366198

		• Ambient air pollution and respiratory emergency department visits. *Epidemiology*. 2005; 16: 164-174. Szyszkowicz M, Kousha T, Castner J, Dales R[13] • Department for Education and Education Funding Agency, Building Bulletin 93: Acoustic design of schools: performance standards – Version 17, February 2015. https://www.gov.uk/government/publications/bb93-acoustic-design-of-schools-performance-standards • The impact of noise and soundscape on children with autism in schools | UCL Institute for Environmental Design and Engineering - UCL – University College London (https://www.ucl.ac.uk/bartlett/environmental-design/news/2021/dec/impact-noise-and-soundscape-children-autism-schools)	
Age (Older people)	<u>Positive Impact</u> Older people are particularly vulnerable to airborne pollution. The National Survey for Wales tells us older people are more likely than younger people	Air pollution also has an adverse effect on older people, in particular in terms of respiratory and cardiovascular diseases. Reducing air pollution will have a positive impact on the health of older people. **Evidence** • Royal College of Physicians: Every breath we take: the lifelong impact of air pollution • Improvements in air quality: whose lungs benefit? European Respiratory Journal 2019; Ulrike Gehring, Gerard H. Koppelman[14] • Air pollution and myocardial infarction in Rome: A case-crossover analysis. *Epidemiology*. 2003; 14: 528-535. Zanobetti A, Schwartz J.[15]	Positive impact – no requirement for mitigation.

[13] https://www.ncbi.nlm.nih.gov/pubmed/29459308

[14] https://erj.ersjournals.com/content/53/4/1900365

[15] http://europepmc.org/abstract/MED/14501267

	to be regularly bothered by noise from traffic, businesses or factories in their home. Our proposals are expected to improve air quality and soundscapes.	• The effect of particulate air pollution on emergency admissions for myocardial infarction: A multicity case-crossover analysis. *Environ Health Perspect.* 2005; 113: 978-982.[16] • Systemic Inflammation and lung function in young, healthy adults Thorax. 2007 Dec; 62(12): 1064–1068; Hancox RJ, Poulton R, Greene JM, Filsell S, McLachlan CR, Rasmussen F, Taylor DR, Williams MJA, Williamson A, Sears MR[17] • Concentrated ambient air particles induce mild pulmonary inflammation in healthy human volunteers. *Am J Respir Crit Care Med.* 2000; 162(3 Pt 1): 981-988. Ghio AJ, Chong Kim, Devlin RB[18] • The effects of air pollution on hospitalizations for cardiovascular disease in elderly people in Australian and New Zealand cities. *Environ Health Perspect*. 2006; 114: 1018-1023. Barnett AG, Williams, GM, Schwatrz J, Best TL, Neller AH, Petroeschevsky AL, Simpson RW[19] • Particulate air pollution and hospital admissions for cardiac diseases in potentially sensitive subgroups Epidemiology. 2012 May; 23 (3):473-81; Colais P, et al[20] • Aural Diversity online resources and infographic. Hugill, A et al (https://auraldiversity.org)	

[16] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1280336/

[17] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2094275/

[18] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2094275/

[19] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1513338/

[20] https://journals.lww.com/epidem/fulltext/2012/05000/Particulate_Air_Pollution

		• National Survey for Wales [21] • Clean Air Day 2020: Air pollution and children's learning (philips.co.uk)	
Low-income households	**<u>Positive Impact</u>** Evidence indicates that those on the lowest incomes are more likely to be adversely affected by poor air quality and noise at home. They also have less choice about where to live, and fewer options for relocating if the local environment is poor.	Deprivation and poor health influences can combine to make people less able to cope with or adapt to air pollution exposure, risks and impacts may be worse compared with elsewhere. The Bill's proposals will have beneficial health impacts on these groups in the long term. The National Survey for Wales has found that people living in the most deprived 20% of Wales (in terms of the Welsh Index of Multiple Deprivation) are twice as likely to say they are regularly bothered by noise from outside their homes than people living in the least deprived 20%. **Evidence** • Royal College of Physicians: Every breath we take: the lifelong impact of air pollution • Fine particulate air pollution and mortality in nine California counties: results from CALFINE. *Environ Health Perspect.* 2006: 114: 29-33; Ostro B, Broadwin R, Green S, Feng WY, Lipsett M.[22] • The Impact of Components of Fine Particulate Matter on Cardiovascular Mortality in Susceptible Subpopulations. *Occup Environ Med.* 2008; 65(11): 750-6. Ostro B, Feng WY, Broadwin R, Malig B, Green S, Lipsett M.[23] • The Health and Socioeconomic Impact of Traffic-related Air Pollution in Scotland. University of St Andrews Hyland, J. (2017).[24]	Positive impact – no requirement for mitigation.

[22] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1332652/

[23] https://oem.bmj.com/content/65/11/750

[24] https://research-repository.st-andrews.ac.uk/handle/10023/11734

		• Updated Analysis of Air Pollution Exposure in London Aether [25] • Inequalities in exposure to nitrogen dioxide in parks and playgrounds in Greater London International Journal of Environmental Research and Public Health, Vol 16 No 17 2019, pp1-11; Sheridan, Charlotte E et al [26] • National Survey for Wales [27]	
Disability or ill health (adults and children)	Positive Impact Disabled people are particularly vulnerable to air pollution. People who are neurodiverse or have hearing impairments may be more sensitive to noise. Our proposals are expected to improve the air	People with lung disease such as asthma and chronic obstructive pulmonary disease (COPD), which includes chronic bronchitis and emphysema, will benefit from being able to breathe cleaner air. Fewer pollutants result in less irritation and potential reaction to pollutants. Improvements in air quality have the potential to increase physical and recreational activity with associated benefits to mental well-being. **Evidence** • Royal College of Physicians: Every breath we take: the lifelong impact of air pollution • Ambient air pollution and cardiovascular emergency department visits in potentially sensitive groups. *Am J Epidemiol*. 2007; 165: 625-633. Peel JL, Metzger KB, Klein M, Flanders WD, Mulholland JA, Tolbert PE.[28] • Health effects of fine particulate air pollution: Lines that connect. *J Air Waste Mange Assoc.* 2006; 56: 709-742. Pope CA III, Dockery DW.[29]	Positive impact – no requirement for mitigation

[25] https://www.london.gov.uk/sites/default/files/aether_updated_london_air_pollution_exposure_final_20-2-17.pdf

[26] https://www.mdpi.com/1660-4601/16/17/3194

[28] https://academic.oup.com/aje/article/165/6/625/63845

[29] https://www.ncbi.nlm.nih.gov/pubmed/16805397

	quality and soundscapes.	• Research Priorities for Airborne Particulate Matter: IV. Continuing Research Progress. Washington, DC: The National Academies Press, 2004.[30] **Asthma** • Long-term exposure to air pollution and asthma hospitalisations in older adults: a cohort study Thorax. 2012 Jan; 67(1):6-11; Andersen, ZJ et al[31] **Aural Diversity** • Aural Diversity online resources and infographic. Hugill, A et al (https://auraldiversity.org) **Autism** • A Systematic Review and Meta-Analysis of Multiple Airborne Pollutants and Autism Spectrum Disorder PLOS ONE DOI:10.1371/journal.pone.0161851 September 21, 2016; Juleen Lam[32] **Breast Cancer** • Association between ambient air pollution and breast cancer risk: The multi ethnic cohort study Cancer Epidemiology; Iona Cheng et al[33] **Hearing Loss** • Noise-induced hearing loss – RNID (https://rnid.org.uk/information-and-support/hearing-loss/types-of-hearing-loss-and-deafness/noise-induced-hearing-loss/)	

[30] https://www.nap.edu/read/10957/chapter/9

[31] https://thorax.bmj.com/content/67/1/6.long

[32] https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0161851

[33] https://www.ncbi.nlm.nih.gov/pubmed/30924138

		• Hearing loss - NHS (www.nhs.uk) (https://www.nhs.uk/conditions/hearing-loss/) • Statistics - Noise-induced hearing loss in Great Britain (hse.gov.uk) (https://www.hse.gov.uk/statistics/causdis/deafness/index.htm) **Heart Disease** • Long-term exposure to outdoor air pollution and incidence of cardiovascular diseases Epidemiology, 24(1), 44-53; Atkinson, Richard W. et al (2013).[34] **Chronic Obstructive Pulmonary Disease (COPD)** • Long-term exposure to outdoor air pollution and the incidence of chronic obstructive pulmonary disease in a national English cohort Occup Environ Med. 2015 Jan; 72(1): 42–48; Atkinson RW, Carey IM, Kent AJ, Anderson HR, Cook DG[35] • Air pollution and chronic obstructive pulmonary disease Respirology Vol. 17 (3) 2012; Ko, Dr. Fanny; Hui, Dr. David[36] **Dementia** • Long-term exposure to air pollution and first hospitalisation for dementia Occupational and Environmental Medicine 2018;75:A1-A2; Francesco Cerza et al [37] **Diabetes**	

[34] https://journals.lww.com/epidem/fulltext/2013/01000/Long_Term_Exposure

[35] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4283678/

[36] https://onlinelibrary.wiley.com/doi/10.1111/j.1440-1843.2011.02112.x

[37] https://oem.bmj.com/content/75/Suppl_1/A1.3

		• Are diabetics more susceptible to the health effects of airborne particles? *Am J Respir Crit Care Med.* 2001; 164: 831-833. National Research Council. Zanobetti A, Schwartz J.[38] • Air Pollution as a Risk Factor for Type 2 Diabetes Toxicological Sciences, Volume 143, Issue 2, February 2015, Pages 231–241; Xiaoquan Rao et al[39]	

[38] https://www.atsjournals.org/doi/full/10.1164/ajrccm.164.5.2012039

[39] https://doi.org/10.1093/toxsci/kfu250

Screening

<table>
<tr><td colspan="2">• Lifestyles - Diet/Physical activity/Use of alcohol, cigarettes, non-prescribed drugs/Sexual activity/Other risk-taking activity</td><td>Vulnerable Groups/distribution</td></tr>
<tr><td>(Positive) +
We do not believe the Bill will have a direct impact on lifestyles. However, the air quality improvements achieved through implementation of the Bill will contribute to healthy environments that make using green spaces, outdoor sport and recreation and active travel more attractive.</td><td>(Negative) -</td><td>N/A</td></tr>
<tr><td colspan="2">• Social and community influences on health - Family organisation and roles/Citizen power and influence /Social support and social networks /Neighbourliness /Sense of belonging/Local pride/Divisions in community /Social isolation/Peer pressure/Community identity /Cultural and spiritual ethos/Racism/Other social exclusion</td><td>Vulnerable Groups/distribution</td></tr>
<tr><td>(Positive) +
We do not believe the Bill will have a direct influence on social and community influences on health.</td><td>(Negative) -</td><td>N/A</td></tr>
<tr><td colspan="2">• Living/ environmental conditions affecting health – Built environment/Neighbourhood design/Housing/ Indoor environment/Noise /Air and water quality /Attractiveness of area/ Green space/Community safety/Smell/odour/ Waste disposal/Road hazards /Injury hazards/Quality and safety of play area</td><td>Vulnerable Groups/distribution</td></tr>
<tr><td>(Positive) +
The Bill’s proposals will have a significant and positive impact on noise and air quality.
There is a large body of evidence, outlined in the section above which demonstrates how improvements in the air environment (both air and noise pollution) can have beneficial impacts on the</td><td>(Negative) –</td><td>Children and young people
Older people
Disabled people /ill health
Low-income households</td></tr>
</table>

health of all members of society, including children and young people, older people, disabled people/ill health and low-income households.		
• **Economic conditions affecting health –** Unemployment Income/ Economic inactivity/ Type of employment/ Workplace conditions		**Vulnerable Groups/distribution**
(Positive) + We do not believe the Bill will have a direct impact on economic conditions affecting health. However, research shows that areas of high deprivation also have poorer air quality and higher noise levels in the home. Poor quality living and learning environments can affect educational attainment and the future employment prospects of children. Poor quality local environments might deter business investment in an area. Poor soundscape quality in the workplace, including for home workers, can also affect performance and productivity. It can be reasoned that poor air and soundscape quality may restrict the potential for growth of the local economy due to potential impact on its current and future work force.	**(Negative) -**	Children and young people Older people Disabled people /ill health Low-income households
• **Access and quality of services -** Medical services/ Other caring services/ Careers advice/ Shops and commercial service/Public amenities/Transport including parking /Education & training/ Information technology		**Vulnerable Groups/distribution**
(Positive) + The benefits to health are expected to be able to be realised more quickly as new national air quality targets and supporting	**(Negative) –**	Children and young people Older people Disabled people /ill health

provisions are brought in under the Bill. This in turn would reduce associated health and social care costs.		Low-income households
6. Macro-economic, environmental and sustainability factors - Government policies Gross Domestic Product Economic development/ Biological diversity Climate		**Vulnerable Groups/distribution**
(Positive) + Air, Water, and Plastic Pollution Affects the Economy Reducing or eliminating pollution requires a commitment to change on all levels of society: government policies, individual and household habits, and especially corporate and agricultural practices.	**(Negative) -**	Children and young people Older people Disabled people /ill health Low-income households

The aim of the Bill's proposals is to improve air quality and reduce the impacts of air pollution on human health, biodiversity, the natural environment and our economy. Consequently, the proposals in the Bill aim to facilitate improvements in the quality of our air environment at a Wales-wide level, at a local and regional level and throughout society. It will also contribute to our response to the climate and nature emergencies.

The recent paper by Horton, Jones and Brunt: Air pollution and public health vulnerabilities, susceptibilities and inequalities in Wales, UK, concluded that air quality in Wales is improving. However, local-level variations in exposure still exist. System-wide action must ensure that air quality improvement related benefits are equitable and acknowledge current evidence about the harms that even low levels of air pollution can have on health. It acknowledges outdoor air pollution is the largest environmental risk to health. Air pollution, deprivation and poor health status are inextricably linked; highlighting issues of environmental injustice, social and health inequalities.

The conclusion we have drawn from this high-level impact assessment is the proposals in the Bill will have a positive impact on the health and well-being of people who live in and visit Wales. The benefit is likely to be particularly strong for those in vulnerable groups (such as children and young people, older people, disabled people/those who suffer from ill health and low-income households). The evidence we have outlined above supports this general statement. However, for the reasons outlined below, we are of the view that more detailed health impact assessments will be required when the Bill is implemented.

Recommendations

Are the impacts that have been identified above enough to warrant a more comprehensive health impact assessment?

Yes – we will complete further health impact assessments through the Bill implementation process

If no, what are the reasons for not conducting an assessment?

Do any additional actions need to be taken as a result of this HIA process?
No

If a further HIA is required, outline the next steps (E.g. Date and time of scoping meeting)

Full health impact assessments will be prepared to accompany the implementation of the Bill's proposals. It is during the implementation process, when the full details of secondary legislation and guidance required to implement the Bill's proposals will be known. This detail will enable us to conduct more comprehensive health impact assessment.

Have there or will there be other impact assessments conducted? i.e. Equality Impact Assessment, Environmental Impact Assessment. Or will it form part of one?

If yes, please outline

A number of other impact assessments have been completed including a full Children's Rights Impact Assessment, a full Equality Impact Assessment, a Welsh Language Impact Assessment, Socio-Economic Duty Assessment and a Biodiversity Impact Assessment.