Regional Public Health
HAUORA Ā IWI KI TE ŪPOKO O TE IKA A MĀUI
Better health for the greater Wellington region

10 August 2020

Ministry for the Environment
PO Box 10362
Wellington 6143

AirQualityNESsubmissions@mfe.govt.nz

Tēnā koe

Re: Improving the quality of our air

Thank you for the opportunity to provide a written submission on this consultation document.

Regional Public Health serves the greater Wellington region, through its three district health boards (DHBs): Capital & Coast, Hutt Valley and Wairarapa and as a service is part of the Hutt Valley District Health Board.

We work with our community to make it a healthier safer place to live. We promote good health, prevent disease, and improve the quality of life for our population, with a particular focus on children, Māori and working with primary care organisations. Our staff includes a range of occupations such as: medical officers of health, public health advisors, health protection officers, public health nurses, and public health analysts.

We are happy to provide further advice or clarification on any of the points raised in our written submission. The contact point for this submission is:

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Ngā mihi

Dr Stephen Palmer
Medical Officer of Health

Peter Gush
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With a surface area roughly the size of a tennis court, of all the organs in the body, the lungs are our main point of contact with the environment, much greater than that of the skin. The lung is also our most vulnerable organ as the alveoli walls where gas exchange takes place are much thinner than the gut, and far thinner than the skin. Each day we take in 20,000 litres of air compared to just a few litres of food and drink. Particles larger than $PM_{2.5}$ are removed in the upper and middle airways but fine particles reach the alveoli and ultimately lead to the destruction of the alveoli wall which cannot be regenerated. Also, it appears that ultra-fine particles my enter the bloodstream by crossing the alveoli membrane or by passing between cells that make up the alveolar wall.

This is why it is described that air pollution is the biggest environmental risk to human health globally. Although air quality in New Zealand is generally good in most places at most times of the year and there is an overall trend in slight improvement there are still pockets that experience poor air quality. For such areas this poor air quality will be contributing to poor health outcomes.

Our scientific knowledge and understanding of how particulate matter pollution adversely effects health has rapidly advanced over recent decades and is likely to continue to do so. Some countries, such as the United States, adopted $PM_{2.5}$ standards in the mid-1990s and the current World Health Organisation air quality guidelines were developed in 2005 and published in 2006. New Zealand is now considering to adopt these at a time when the WHO guidelines are likely to be updated.

In the post Havelock North era it is questionable if it is ethical, when there are known serious health effects, to delay 14 years implementing a well-recognized and widely accepted international standard. Just because the NESAQ is administered by a government department other than the Ministry of Health does not mean that ethical standards should be disregarded. This submission is written with a focus on the questions asked from a human health point of view.

Q1. Do you agree the proposed $PM_{2.5}$ standard shall replace the PM_{10} standards as the primary standard for managing particulate matter?

RPH strongly supports the $PM_{2.5}$ standard and, given that this aspect of the science was well known since the 1990s, we wonder why it has taken so long. Our scientific understanding and the evidence about the health impacts is likely to continue to change and, because the adverse health outcomes may be significant, it will be important the NESAQ evolves at a pace that is more in sync with advances in the science.

Q2. Do you agree we should include both daily and annual standard for $PM_{2.5}$?

RPH strongly supports the inclusion of both a daily and an annual standard. Both are relevant as they pertain to quite different independent health outcomes relating to either short-term or long-term exposure. The people of Masterton report exacerbation of their asthma and in increased use of steroid inhalers during winter, or on days with higher air pollution, where-as chronic illness and premature mortality will be linked to long-term background exposure to particulate matter.

Q3. Do you agree the standards should reflect the WHO guidelines?

RPH strongly supports the application of WHO guidelines, however, these guidelines are now 15 years old and are expected to be updated later this year. We wonder why it has taken so long for

New Zealand to implement these. It may be prudent to wait until the updated guidelines are published or be ready to further amend the NESAQ in the near future.

Q4. Do you consider your air shed would meet the proposed $PM_{2.5}$ standards? If not, what emissions sources do you expect to be most problematic?

RPH covers the greater Wellington region including the Wairarapa. We expect the Masterton urban area to not comply with both the proposed annual and daily standards. Other urban areas in the Wairarapa, such as Carterton, may be borderline and we expect the Wainuiomata airshed to be borderline. The predominant emission sources are home heating (home fires) during the winter months.

Q5. Do you agree councils should be required to keep monitoring and managing PM_{10}?

RPH is of the view that it will be helpful to continue monitoring PM_{10} as a secondary standard. $PM_{1\text{-}2.5}$ is also associated with adverse health outcomes such as exacerbation of asthma and CORD (Chronic Obstructive Respiratory Disease). Councils should only consider stopping the monitoring of PM_{10} after meaningful consultation and negotiation with their DHBs and public health unit.

Q6. What would be the additional costs involved in retaining PM_{10} monitoring alongside $PM_{2.5}$ monitoring, versus the potential loss of valuable monitoring information?

As councils are already monitoring PM_{10} the additional marginal cost will be minimal.

The economic benefits from reduced absenteeism work, hospital care and premature mortality of retaining PM_{10} as a secondary standard we believe would easily outweigh the small marginal cost.

Q7. Do you agree an airshed should be deemed polluted if it breaches either the annual or the daily $PM_{2.5}$ standard?

Please see the answer to Q2.

Q8. If all new resource consent applications to discharge $PM_{2.5}$ into a polluted airshed must be offset or declined, how would this affect your activities, or activities in your region?

As far as RPH is aware we have not used offsets in the greater Wellington region. RPH is concerned that the current non-compliance of the Masterton urban airshed is holding back the economic development of that city. This places a significant burden on neighbourhoods that are less advantaged particularly Māori and Pacifica. Meaningful employment and the ability to earn a living wage is a key health determinant. The adverse impact on health outcomes from economic stagnation may be equal to, or even greater than, the adverse health impact of air pollution on health.

Q9. Can you identify a more appropriate, measurable threshold for controlling consented discharges in a $PM_{2.5}$ context?

It is difficult to envisage there is a more appropriate measure given the universal international acceptance of $PM_{2.5}$.

Q10. Do you agree that if a council does not have adequate $PM_{2.5}$ data, the airshed's classification under the PM_{10} standards should continue to apply?

RPH views this as a rhetorical question. Given that the Harvard Six Cities study was reported in the early 1990s showing the importance and relevance of $PM_{2.5}$ to health, any council with a non-complying airshed or a borderline airshed, should already have extensive $PM_{2.5}$ data. To do otherwise would not meet minimum ethical standards from a human health point of view.

For the Wellington region the non-comlying or borderline airsheds, as well as Wellington City, $PM_{2.5}$ have been monitored for a number years. There are two airsheds that are only monitored for PM_{10} and three airsheds that are not monitored at all.

Q11, Q12 and Q14 are about standards for domestic solid-fuel burners

This area is outside the scope of RPH from a technical point of view. The emission standard should be set as low as technically feasible.

However, tight milestones should be set for the universal adoption of the standard in areas where there is a non-compliant airshed. We have known that for years the Masterton urban airshed does not comply with the current PM_{10} standard and will not comply with the $PM_{2.5}$ standard. It is still difficult to quantify the adverse health outcomes, however, we hope to do this over the next 12 months. Even with the will of the Regional Council, Masterton District Council is not willing to enact bylaws etc, to make any meaningful progress.

Q13. Do you agree the new emissions standard should apply to all domestic, solid feel burners newly installed in properties less than two hectares in size?

RPH believes that this is another rhetorical question. All new solid fuel burners sold and installed in New Zealand should comply with the emission standard. The notion of two hectares appears to be impractical.

Q15 to Q20 relate to the Minamata Convention on Mercury which was signed by New Zealand in 2013

Given the hazardous nature of mercury, we as a country have taken too long to ratify the convention. The best practice guidance should already be in place.

Q21. Do you agree that lead in times are required for starting to monitor $PM_{2.5}$ and for burners that will no longer be compliant? What lead in times would you suggest and why?

For the first part of the question please see the answer to Q10. For those airsheds with minimal air pollution that are monitored it may take some months to install monitoring equipment for $PM_{2.5}$ but given what has happened in other countries many councils should have anticipated this need. From a public health point of view those that have not done so need to start moving toward monitoring $PM_{2.5}$ as soon as possible and before the updated NESAQ is put in place. Those airsheds that are not monitored should be reassessed as soon as possible as these are matters related to human health.

With respect to the proposed changes for burners RPH is concerned that that these are not already in place. We are dealing with human health rather than purely environmental issues.