

## Submission by

## Hamilton City Council Staff

### The Ministry for the Environment's February 2020 Consultation Document 'Proposed Amendments to the National Environmental Standards for Air Quality - Particulate Matter and Mercury Emissions'

**31 July 2020**

It should be noted that the following submission is from staff at Hamilton City Council and does not necessarily represent the views of the Council itself.

#### **1.0 SUMMARY OF KEY POINTS/RECOMMENDATIONS**

##### **1.1 Support the Overall Direction and Intent of the Proposed Amendments**

1.2 Support the overall direction and intent of the Ministry for the Environment's 'Proposed Amendments to the National Environmental Standards for Air Quality - Particulate Matter and Mercury Emissions'.

1.3 Note that the RMA requires regional councils to be responsible for managing air quality, including monitoring areas where air quality is likely, or known, to exceed the National Environmental Standards for Air Quality.

1.4 Recognise and acknowledge that good ambient air quality is critical for the community's ongoing overall health and well-being.

1.5 Acknowledge and support the Ministry for the Environment's (MFEs) move towards there being a clear change of focus to PM<sub>2.5</sub> monitoring capability over PM<sub>10</sub> monitoring.

1.6 Hamilton requires additional monitoring sites (in addition to the current two sites) for PM<sub>10</sub> and PM<sub>2.5</sub> monitoring to ensure a more comprehensive picture of the city's ambient air quality.

##### **1.7 Support the Waikato Regional Council's Key Submission Points on Air Quality Monitoring**

1.8 Support key points in the Waikato Regional Council's submission to the MFE's consultation document regarding the proposed regulatory approach of augmenting PM<sub>10</sub> with PM<sub>2.5</sub> monitoring, with PM<sub>2.5</sub> monitoring being the primary regulatory tool for management of ambient particulate matter.

##### **1.9 Government Funding for Regional Councils to Monitor Ambient Air Quality**

1.10 Implementation of the Proposed Amendments to NES for Air Quality will clearly result in a significant increase in costs for regional councils to undertake ambient air quality monitoring programmes, particularly given the focus of PM<sub>2.5</sub> monitoring capability over PM<sub>10</sub> monitoring.

1.11 Recommend that Government fund regional councils to provide:

- For the establishment and ongoing operation/maintenance of comprehensive ambient air quality monitoring programmes in all gazetted airsheds throughout New Zealand (noting that in addition to monitoring PM<sub>10</sub> and PM<sub>2.5</sub>, such programmes should also include other key air quality pollutants such as nitrogen dioxide; BTEX - benzene, toluene, ethylbenzene, xylene; ozone; and carbon dioxide).
- Support and funding for behaviour change campaigns and strategies for improving New Zealand's ambient air quality.

## 2.0 INTRODUCTION

- 2.1 Staff from Hamilton City Council (HCC) support the overall direction and intent of the Ministry for the Environment's (MFEs) February 2020 consultation document 'Proposed Amendments to the National Environmental Standards for Air Quality - Particulate Matter and Mercury Emissions' (Proposed Amendments to NES for Air Quality).
- 2.2 Under the Resource Management Act, regional councils and unitary authorities are responsible for managing air quality, including monitoring areas where air quality is likely, or known, to exceed the National Environmental Standards for Air Quality. They are also responsible for enforcement of the Regulations.
- 2.3 We acknowledge and support the MFEs move towards there being a clear change of focus to PM<sub>2.5</sub> monitoring capability over PM<sub>10</sub> monitoring.
- 2.4 We also recognise and acknowledge the critical and increasing importance of good ambient<sup>1</sup> air quality for the community's ongoing overall health and wellbeing.
- 2.5 This is clearly reinforced by the World Health Organisation (WHO) i.e. They note that air pollution is associated with a broad spectrum of acute and chronic illness, and that in 2016, ambient air pollution was responsible for 4.2 million deaths. Worldwide, the WHO estimate ambient air pollution causes about 16 percent of lung cancer deaths, 25 percent of chronic obstructive pulmonary disease (COPD) deaths, about 17 percent of ischaemic heart disease and stroke, and about 26 percent of respiratory infection deaths.
- 2.6 Comprehensive air quality monitoring (i.e. PM<sub>10</sub> and PM<sub>2.5</sub> monitoring combined with monitoring other key pollutants such as nitrogen dioxide; BTEX - benzene, toluene, ethylbenzene, xylene; ozone; and carbon dioxide) is essential to obtain a clearer understanding of the community's health and wellbeing. It also aligns with HCC's wellbeing outcome of '*We love and protect our environment*'.
- 2.7 Such monitoring is also important in planning for the future growth of urban environments, and in particular around planning for sustainable transportation options. Given that the transportation sector contributes to PM<sub>10</sub> and PM<sub>2.5</sub> and other pollutants (including CO<sub>2</sub> emissions), data from comprehensive air quality monitoring programmes will also assist urban areas such as Hamilton to actively respond to the challenges of climate change (including contributing towards the emission reduction targets of the Climate Change Response (Zero Carbon) Amendment Act 2019).

## 3.0 AIR QUALITY MONITORING AND THE STATE OF HAMILTON'S AIR

- 3.1 PM<sub>10</sub> monitoring has been undertaken in Hamilton by the Waikato Regional Council (WRC) since 1998 and occasional exceedances of the PM<sub>10</sub> standard were recorded prior to 2012.
- 3.2 The Hamilton airshed is not classified as polluted as it has not had any exceedances of the standard since then, apart from a series of exceedances in 2013 which were considered exceptional circumstances and were discounted by the MFE.
- 3.3 While an improvement in air quality was observed over this earlier period, based on an up-to-date assessment of monitoring data, there is currently no evidence of either an improving or worsening trend.
- 3.4 PM<sub>2.5</sub> monitoring was undertaken in Hamilton from 2013 to 2014. There was one exceedance in 2013 and five in 2014 of the daily PM<sub>2.5</sub> WHO guideline. However, the instrument's performance was considered questionable over this period and it was suspected to have been recording overly elevated concentrations.
- 3.5 PM<sub>2.5</sub> monitoring was resumed in Hamilton using a new monitoring instrument in May 2019. An analysis of the data from May 2019 to June 2020 indicates that there were three days over the winter of 2019 when PM<sub>2.5</sub> concentrations were approaching the PM<sub>2.5</sub> WHO daily guideline but were not

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<sup>1</sup> Ambient air is atmospheric air in its natural state. It is what we breathe when the atmosphere is not contaminated by airborne pollutants. The composition of ambient air varies depending on the elevation above sea level as well as human factors such as the level of pollution. Ambient air quality criteria, or standards, are concentrations of pollutants in the air, and typically refer to outdoor air. Ambient particulate matter is one of the components of ambient air pollution, which can be produced either by natural processes such as volcanic activity or dust storms, or by human activity such as fossil fuel combustion or chemical production.

exceeded.

- 3.6 An annual average calculated over this period indicates that the annual average WHO guideline was also not exceeded. WRC do not have sufficient PM<sub>2.5</sub> monitoring data at this stage to identify any trends.
- 3.7 As noted previously, good ambient air quality is critical for the community's ongoing overall health and well-being. Given Hamilton is a rapidly growing city with a population of over 170,000, we are of the view that additional sites (in addition to the current two sites) are required for PM<sub>2.5</sub> monitoring to ensure a more comprehensive picture of the city's air quality.

#### 4.0 SUPPORT WRC'S KEY SUBMISSION POINTS ON AIR QUALITY MONITORING

- 4.1 We support the following key points in WRC's submission to the MFE's Proposed Amendments to NES for Air Quality regarding the proposed regulatory approach of augmenting PM<sub>10</sub> with PM<sub>2.5</sub> monitoring, with PM<sub>2.5</sub> monitoring being the primary regulatory tool for management of ambient particulate matter:
- 4.2 **Particulate Matter:** *WRC supports the proposed regulatory approach of replacing PM<sub>10</sub> with PM<sub>2.5</sub> as the primary regulatory tool for management of ambient particulate matter. WRC consider this approach to be well supported by international research that has identified that smaller particles are more damaging to human health than larger particles and that better health outcomes are achieved by managing the smaller particles.*
- 4.3 **Short and Long-Term Standards:** *WRC recommend that the setting of short and long-term PM<sub>2.5</sub> standards for New Zealand is based on a health impact assessment which takes account of the New Zealand context rather than the proposed approach of direct adoption of the WHO guidelines, which could increase the number of airsheds WRC would have to manage without necessarily being anymore protective of human health, except where management interventions led to a reduction in the annual average.*
- 4.4 **Monitoring:** *WRC support the proposal to require regional councils to monitor both PM<sub>2.5</sub> and PM<sub>10</sub> but recommend that sufficient transition time is provided to allow regional councils to resource this monitoring requirement.*

#### 5.0 THE INCREASING COST OF AIR QUALITY MONITORING AND REPORTING

- 5.1 WRC operate two main air quality monitoring sites in Hamilton that measure PM<sub>2.5</sub> and PM<sub>10</sub> i.e. by the Claudelands Events Centre and the Hamilton Bloodbank on the corner of Ohaupo and Kahikatea Drive.
- 5.2 Recent airshed modelling by WRC has confirmed that these two sites are generally in the locations predicted to be worst for air quality in Hamilton.
- 5.3 The cost to establish both monitoring sites was just over \$150,000. In addition, ongoing operating and maintenance costs for both sites are in the vicinity of \$25,000 per annum.
- 5.4 WRC also operate seven passive BTEX (benzene, toluene, ethylbenzene and xylene) monitoring sites in Hamilton that are situated near busy intersections, which costs around \$9,000 per annum for the BTEX samplers and laboratory fees.
- 5.5 WRC also provide contributory funding to Waka Kotahi New Zealand Transport Agency to support nine passive NO<sub>2</sub> (nitrogen dioxide) sites around Hamilton at busy intersections.
- 5.6 Under the Proposed Amendments to NES for Air Quality, there is a clear change of focus towards PM<sub>2.5</sub> monitoring capability over PM<sub>10</sub> monitoring. Currently, WRC only have about 20 percent of their 20 gazetted airshed sites resourced for PM<sub>2.5</sub> monitoring across the entire Waikato Region.
- 5.7 We acknowledge WRC's support for the proposed regulatory approach of augmenting PM<sub>10</sub> with PM<sub>2.5</sub> monitoring, with PM<sub>2.5</sub> monitoring being the primary regulatory tool for management of ambient particulate matter.
- 5.8 We also agree that this approach appears to be well supported by international research, which has identified that smaller particles (PM<sub>2.5</sub>) are more damaging to human health than larger particles (PM<sub>10</sub>) and that better health outcomes are achieved by managing the smaller particles.

- 5.9. In reality, comprehensive air quality monitoring programmes undertaken by regional councils extend beyond PM<sub>10</sub> and PM<sub>2.5</sub> i.e. such monitoring programmes should also include other key air quality pollutants such as nitrogen dioxide; BTEX - benzene, toluene, ethylbenzene, xylene; ozone; and carbon dioxide.
- 5.10. However, there will clearly be significant additional costs incurred by regional councils in order to meet the Proposed Amendments to NES for Air Quality for PM<sub>2.5</sub> monitoring, especially around the cost of purchasing equipment that is capable/suitable of monitoring to this particulate level.
- 5.11. We recognise that many regional councils currently find it financially challenging to ensure minimum monitoring standards are complied with. Any requirement by the MFE for an increase in the number of monitoring locations (and particularly if there is a 'push'/requirement for all gazetted airsheds to be monitored) will further necessitate the need for additional funding.
- 5.12. In the Waikato Region, WRC is responsible for 20 of the country's 79 gazetted airsheds (i.e. the Waikato comprising 25 percent of New Zealand's total number of airsheds). WRC has advised that they can only feasibly afford to resource monitoring within about seven airsheds at a time.
- 5.13. The impending increase in costs to undertake PM<sub>2.5</sub> monitoring and reporting through enactment of the Proposed Amendments to NES for Air Quality will in itself restrict the financial ability of WRC to consider adding more monitoring sites in Hamilton and other gazetted airsheds in the Waikato Region that are capable of monitoring PM<sub>2.5</sub>. This is likely to be an issue facing all regional councils.
- 5.14. WRC's submission to the Proposed Amendments to NES for Air Quality notes that *"We support the proposal to require regional councils to monitor both PM<sub>2.5</sub> and PM<sub>10</sub> but recommend that sufficient transition time is provided to allow regional councils to resource this monitoring requirement"*.
- 5.15. We support WRC's recommendation of allowing a sufficient transition period for regional councils to resource this additional air quality monitoring requirement.
- 5.16. While good ambient air quality is clearly critical for the community's health and well-being, implementation of the Proposed Amendments to NES for Air Quality will result in regional councils facing relatively significant costs to establish, monitor and report on data obtained from air quality monitoring sites - both in terms of new monitoring equipment and additional monitoring sites.
- 5.17. We are of the view that commensurate Government funding be made available to regional councils when imposing the likes of new air quality standards, particularly when such standards will result in a significant increase to both capital and operating costs.
- 5.18. We would also encourage Government to support and fund behaviour change campaigns and strategies for improving New Zealand's air quality.
- 5.19. Given the foregoing, we recommend that Government fund regional councils to provide:
- For the establishment and ongoing operation/maintenance of comprehensive ambient air quality monitoring programmes in all gazetted airsheds throughout New Zealand (noting that in addition to monitoring PM<sub>10</sub> and PM<sub>2.5</sub>, such programmes should also include other key air quality pollutants such as nitrogen dioxide; BTEX - benzene, toluene, ethylbenzene, xylene; ozone; and carbon dioxide).
  - Support and funding for behaviour change campaigns and strategies for improving New Zealand's ambient air quality.

## 6.0 FURTHER INFORMATION

- 6.1. Should the Ministry for the Environment require clarification of the above points, or additional information, please contact Mark Brougham (Programme Manager - Analysis and Research) on 022 136 1578, or email [mark.brougham@hcc.govt.nz](mailto:mark.brougham@hcc.govt.nz) in the first instance.

Yours faithfully



**Richard Briggs**  
**CHIEF EXECUTIVE**