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From: Kay & Dale Richards <kayandale.richards@gmail.com>
Sent: Wednesday, 18 April 2018 1:01 a.m.
To: Air Plan
Subject: Submission - Plan Change 13 (Air Quality) to the Regional Natural Resources Plan

As you are probably aware, I have been voicing my concerns for a while now regarding the rules which are continually being changed and enforced in the Rotorua Air Shed.

I find that the BOPRC have one objective in mind and that is to make the public's life miserable by restricting the choices we have to be able to affordably heat our homes and by enforcing additional fees to install a clean air approved wood burner in some situations.

BOPRC has obviously spent a lot of time and rate payers money researching the issues related to PM10 emissions in the air which they constantly seem to blame entirely on wood burners. Why does the BOPRC not advertise a breakdown of what emissions are being condensed into the poor air quality? I have asked this in a past submission but to date have not seen any data relating to the composition of the air pollution in Rotorua to show what percentage transport, industry, domestic, pollen, agriculture, and geothermal make up the PM10 emissions in Rotorua. All the public is told is that Wood Burners are to blame!

I would like to see an independent Air Quality assessor do testing in Rotorua, Someone who is not bias and the results are available to the public so we can get a truthful picture of what are the causes of the PM10 emissions.

Also as I have suggested in the past, regulating the wood merchants to ensure the wood they are selling to consumers is dry, would be a start to ensure that the new clean air approved wood burners BOPRC is making people change to are operating effectively. If you burn wet wood in the new clean air approved fires they will make more pollution than an old non compliant fire which is burning dry wood.

Is the BOPRC / MFE using the World Health Organization's guidelines on Air Pollution? Or are the emission levels they are aiming for of their own choosing?

I have found that Rotorua is in the Low category for PM10 emissions according to the WHO.

Air pollution data from World Health Organization

PM ₁₀	18
PM _{2.5}	9
PM ₁₀ Pollution Level:	Low

(taken from <https://www.numbeo.com/pollution/in/Rotorua>)

Has the BOPRC thought about the adverse effects of restricting the choices of heating for families who cannot afford to pay for options which require electricity??

Often this will result in households having to go without other essential items just so they can stay warm or they will forfeit warmth and end up sick due to living in a cold damp house. There are more hospital admissions each year from living in cold damp mouldy houses than emissions due to PM10 exposure but BOPRC wouldn't know this as they have not investigated this as they have only concentrated on reducing the PM10 emissions by making up all these rules relating to wood burners and don't care about the resulting health issues it causes.

Living in a cold damp house will have worse health effects and be more fatal than the health implications from PM10 exposure. How many people have died from solely PM10 emissions? Air pollution is never listed as the primary cause of death on death certificates.

Has the BOPRC made any requests to the Ministry of Health to determine the amount of PM10 related deaths in Rotorua? I know that this information has been requested in the past in other regions and has been met by a response that "We cannot identify whether a death was caused by exposure to PM10". In other words, there is no evidence PM10 has been the cause of any deaths at any time in New Zealand.

Rotorua, I believe, does not have enough people to assess long term trends and that since the wood burner regulations have been in place the rate of hospital emissions for respiratory illnesses would have steadily increased in Rotorua the same as it has done in other regions which have restricted wood burners.

*There are a range of health impacts associated with low household temperatures, particularly for vulnerable population groups such as the elderly, infants and young children, low income households, and people with chronic illness. The introduction of either a ban on the use of wood burners or further restrictions on wood burners could exacerbate these affects for some wood burning households. Wood burning is one of the most affordable, commonly available forms of heating in New Zealand.

Household crowding can occur in a cold homes for a number of reasons. If families do not use heating, or heat only one area of the house, then they may congregate in one room for warmth. In addition, if low income families are unable to pay fuel bills they may decide to live together to reduce costs. Household crowding relates to a number of wider issues including communicable disease transmission, violence, and mental health. Household crowding can also produce opportunities for conflict and frustration, resulting in an atmosphere where individuals are more likely to be aggressive.

Respiratory health can be compromised by exposure to cold temperatures. These detrimental health impacts are particularly prevalent in the most vulnerable groups of society such as the elderly, children and individuals with existing respiratory conditions. Cold air affects the normal protective function of the respiratory tract, with increased bronchoconstriction, mucus production and reduced mucus clearance.

Research shows that drops in outdoor temperature below 14°C are associated with increased hospital admissions and deaths from respiratory and cardiovascular disease. However, indoor temperatures may be more important to consider because people spend 80% of their time inside.

Conditions associated with cold homes, such as damp and mould, may also be important factors that need to be considered when addressing the effects of cold homes on respiratory health effects. Excess Winter Deaths are attributable to respiratory disease, reinforcing the important relationship between cold homes and respiratory health.

Asthma is a respiratory condition that is particularly affected by cold homes. There are a number of studies which investigate the effects of cold indoor temperatures on individuals with pre-existing respiratory conditions, such as asthma. Approximately 25% of children in New Zealand report symptoms of asthma and therefore a large majority may be affected. Cold temperatures, damp, mould and pollutants have been found to aggravate the symptoms of asthma.

Changes in temperature are associated with small reductions in lung function caused by reflex bronchoconstriction or by impairing immunological defences to respiratory infections. The respiratory health of older adults can also be compromised. A large scale study which looked at residents aged over 65 years in the London Borough of Newham, calculated excess winter morbidity based on emergency hospital

episodes for all respiratory diagnosis codes, and ranked this against a Fuel Poverty Index (FPI) The FPI was shown to be a predictor of excess winter morbidity, thus supporting evidence of a relationship between energy-efficient housing and winter respiratory disease among older adults.

Cardiovascular health - in a cold home may also have an impact on cardiovascular health. Literature suggests that there are strong links between the thermal quality of housing, and therefore house temperature, and cardiovascular health outcomes. By changing the thermal quality of a house to an optimal level from a non-optimal level, researchers have seen an improvement in cardiovascular health outcomes.

New Zealand specific research based on 1996-2000 health data suggests that 47% of all excess mortality was attributed to diseases of the circulatory system. Whilst this may not solely be related to household temperatures, the association between thermal quality of housing and cardiovascular health affects suggests that there is a risk and that this risk is exacerbated during the winter months. Some studies suggest that there is also a link between the temperature of a room and blood pressure.

The World Health Organisation determined in their research that below the zone of thermal comfort, cold - related disease may take many forms. Cardiovascular reflexes can be initiated by cold air on the face or hands that can result in changes in heart rate and blood pressure and consequently increased cardiovascular strain.

Mental health and wellbeing - Living in cold homes may adversely affect mental health and wellbeing in a number of ways. Research suggests that children living in sub-standard housing, including cold homes, were more likely suffer from mental health illnesses including anxiety and depression. Inconsistencies between the size of housing, type of heating, and the specific requirements of occupants have been linked with poorer mental health and wellbeing outcomes. Issues around self esteem, stress, and the cost of heating, lack of motivation to maintain the house and lack of control around modifications to the house as a tenant are common.

In addition the financial pressure of maintaining an optimal thermal environment from heating a home has been associated with poorer mental health outcomes. Conversely the physical improvement of the thermal environment in a home has been linked with improved mental wellbeing and self esteem. Cold household temperatures can also affect social functioning. Families have reported spending more quality time in the home when the strain of a cold home is removed, with positive changes in children's education, play and enthusiasm for attending school also being observed.

It is estimated that a ban on wood burner use would cause fuel poverty levels to increase, reinforcing the important role wood burners currently have as an affordable heating method. Importantly, heating method is one of many factors that play a role in winter warmth and wellbeing.

The level of insulation in homes has a significant impact on heating affordability, regardless of heating type. (More funding should be directed at this in the first instance.)

A 1968 World Health Organisation (WHO) report concluded that the human body can only compensate for a relatively small temperature range of approximately 15°C to 24°C.

The 1982 WHO working group found that for indoor temperatures between 18°C and 24°C there was minimal risk to the health of sedentary people, such as the elderly and young. Temperatures below 16°C, particularly in the presence of high humidity, are associated with adverse health consequences and temperatures below 12°C are a health risk for vulnerable groups. Cold homes have both direct and indirect effects on health. In New Zealand, households often fail to meet the WHO recommendations of heating homes to at least 18°C.*

* above is an extract from <https://www.cph.co.nz/wp-content/uploads/ecanairplanhia.pdf>

There are more negative effects of restricting wood burners than positive effects of doing so.

The United Nations Environment Programme, is not looking at targeting woodburners. UNEP says 90 percent of air pollution in cities is attributed to vehicle emissions brought about by high number of older vehicles coupled with poor vehicle maintenance, inadequate infrastructure and low fuel quality. Urban Air Pollution, UNEP, http://www.unep.org/urban_environment/Issues/urban_air.asp

Which is pretty much the case in New Zealand as well. Forget about open fires and woodburners - there are bigger contributors to the air pollution that need addressing.

The Environment Ministry conjured up the PM10 scare initially by hosting breakfast meetings with local authorities in mid-2002 and went on to work with regional councils to promote air quality as a significant health and environmental issue "to ensure the sustainability of our towns and cities".
<http://www.mfe.govt.nz/publications/air/air-quality-standards-report/index.html>

Therefore, the over-hyped PM10 issue is not so much an actual health issue; it is a crisis that has been publicised into existence. Without busy body bureaucrats the issue would simply have not existed.

Wood Burner heating is not the major cause of air pollution (PM10), but it's actually the smaller particles that are more toxic from geothermal (sulphur), burning coal (yes ban the coal burners), industry and fumes from vehicles are responsible for most air pollution. Even if the BOPRC was to ban all wood burner use in the air shed, it would result in an increase in deaths not a reduction as people's health would be more prone to the respiratory illness from the less effective heating options which are available to them that are above their budget to operate resulting in cold houses.

Unless the BOPRC can supply the residents of Rotorua electricity at a very affordable cost so they can use the zero emission heat pumps and other electrical heating options it is bulling consumers in to, consumers will be disadvantaged financially and opt for unhealthy un-flued gas heating as an option. These un-flued gas heaters are another health disaster in their own right and cause worse health issues than the PM10 dilemma. (They should be banned from sale in New Zealand) Or they will suffer in a cold damp house and the effects of this will show in their health which will deteriorate due the their living conditions.

Now, for the recent Plan Change 13 (Air Quality) - the introduction of a Resource Consent and Emissions Trade Off.

The BOPRC have introduced a new Fee to charge people who wish to install a fire in their home and don't have an existing one they will be replacing or those who are building a new home in the air shed or purchase a property where the old fire has been removed at Point of Sale.

I discovered on 16/4/18, 6 weeks after the enforcement of the rule change, that this fee is \$2700.00. This is outrageous and blatant extortion. How is this justified let alone allowed.
Has the BOPRC change its occupation and become the BOP MAFIA?

I am sure the announcement of this outrageous fee was deliberately delayed until the week the submissions were due to close. If people had of known about this fee it would definitely cause more of an uproar and would have increased the amount of submissions - if it would have been advertised of course - this is another issue.

The Emission Trade off is a joke also. If someone wants a wood burner in their home they should be allowed one and not have to jump through hoops and pay through the nose to have one which is a human right. See Article 25 of the Human Right Act - **The right to an adequate standard of living** - Everyone has

the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services....

<http://www.un.org/en/documents/udhr/index.shtml#a25>

Adequate housing has been well defined in international human rights law. It means ensuring everyone has somewhere affordable, secure, safe, warm and dry to live and grow up.

Is the Human Rights commission aware of the BOPRC restrictions that they are imposing as this could be considered as a breach of the Human Rights Act. The wood burner/air plan rules and restrictions the BOPRC are imposing are undermining what the Human Rights Act is saying? The rules are taking away the right to an adequate standard of living.

And then I question the way the Plan Change 13 was introduced. No prior notification to the public? Let alone actively advertising the fact that it had come into force and that submissions were open for a SHORT period of time. The first advertising I saw in the local Weekender and Review news papers was 5 weeks after the rule was enforced and believe me I checked every paper I came across.

If people don't know about something how do you expect them to be able to make a submission/comment on it? A cunning move once again from the BOPRC to ensure they don't get very many submissions - just like the last submission on the air plan/bylaw emission rule change.

I feel a better use of the rate payers money would be to hold a referendum on the Wood Burner Verses PM10 debate - let the public speak.

The only thing I have no objection to is the introduction of the "Old burner cannot be used from 1 February 2020." That has my tick of approval.

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