

NELSON CITY COUNCIL

Nelson Air Quality Plan

Proposed Plan Change A3

Wood Burners

Section 32 Report

16 January 2016



Section 32 Evaluation: Proposed Change A3 to the Nelson Air Quality Plan Amendments to wood burner provisions

1.0 Introduction

This report has been prepared pursuant to the requirements of Section 32 of the Resource Management Act 1991 (“the RMA” or “the Act”). It relates to Proposed Change A3 (“PC3”) to the Operative Nelson Air Quality Plan (“AQP” or “the Plan”).

The report is organised into four main parts:

- **Part 1** provides contextual background to PC3, including a summary of regulatory and non-regulatory drivers for the proposal;
- **Part 2** describes the proposed amendments contained in the plan change;
- **Part 3** evaluates the appropriateness of the proposed amendments, having regard to their cost-benefit efficiency and effectiveness relative to other reasonably practicable alternatives; and
- **Part 4** summarises the decision-making process leading up to the preparation of the plan change, including an index of references relied upon, and a synopsis of community and stakeholder consultation,

1.1 Existing Environment and Proposal Background

Air pollution has long been a significant resource management issue for Nelson, which historically had some of the poorest air quality in New Zealand. The Council and the Nelson community have invested more than \$14 million to address this problem over the past decade. This has involved the implementation of a number of regulatory and non-regulatory measures, including via a change¹ to the AQP in 2012 to align with updated national air quality standards (“the NES”)².

The AQP recognises that a major contributor to Nelson’s air pollution is fine grained particles discharged by domestic heating (and other) sources. The Plan also establishes a link between these pollutants and adverse health effects, adopting a ‘restrictive’ approach to wood burning for domestic heating.

¹ Plan Change A2 to the AQP

² Resource Management (National Environmental Standards for Air Quality) Regulations 2004

The Plan has been operative for seven years, and during that period the City's air quality has improved markedly. In this respect, the objectives, policies and methods in the Plan have been effective in addressing the City's resource management issues for air quality. Given the level of improvement achieved, some of the Plan's provisions are now partially redundant or unnecessarily restrictive. The Council is in the process of undertaking a full review of the AQP and all of its other RMA Plans presently, with the aim of producing a new Unitary Plan in the near future. This review will enable an opportunity for a comprehensive examination of the Plan's provisions, including those which are outdated.

In the meantime, the Council has identified an opportunity to initiate a discrete plan change to remove some unnecessary restriction by making the AQP more enabling of certain wood burning appliances for domestic heating. This opportunity is expressly anticipated in the operative Plan, which acknowledges that advances in low-emission wood burning technology could pave the way for the Plan to be more enabling, whilst also achieving other policy aims for improving ambient air quality and managing particulate matter emissions.

This plan change aims to update the Plan by responding to the most recent air quality data available for the District. It strikes an appropriate balance between the competing costs and benefits associated with particulate matter discharge from domestic heating by providing for a limited number of small scale ultra-low emission wood burners ("ULEB") in appropriate areas. The proposal also enables a process for this number of burners to be reviewed and added to over time, subject to future monitoring and modelling indicating that is appropriate.

A substantial non-regulatory method is proposed in conjunction with the plan change to enhance ambient air quality in the city's Urban Airsheds. Namely, a Behaviour Change Programme will be implemented by the Council to improve burning practice of all persons using solid fuel appliances for domestic heating. The programme will include targeted education and engagement with solid fuel users, and enhanced monitoring and enforcement regimes (among others).

1.2 Current Objectives, Policies and Methods

Before considering any potential alterations to the AQP, it is useful to provide a snapshot of the current policy approach in the Plan, and the methods used to implement those policies. This section of the report, presents the Plan's objective, policies and methods of most relevance to the plan change). It also provides a summary of how well the provisions have been achieved to date, having regard to the most up-to-date monitoring and related scientific data.

1.2.1 Objective A5-1

The AQP contains a single objective, being:

A5-1 Air quality

The maintenance, and the enhancement where it is degraded, of Nelson’s ambient air quality, and the avoidance, mitigation or remediation of any adverse effects on the environment of localised discharges into air.

This objective is consistent with national guidelines³ aimed at protecting people’s health and well-being from the adverse effects of air pollution. Generally, the aim is to enhance air quality in areas where it is degraded, and to maintain (if not further improve) air quality where it is acceptable.

The objective is broad in scope. It does not, in of itself, establish a different management approach for any specific pollutant or geographic area; however, it enables such distinctions to be made at the policy and rule level.

Of particular relevance to this plan change, the Plan’s policy approach to the management of particulate matter includes the following:

- **Policy A5-1.3:** Ambient air quality targets;
- **Policy A5-1.4:** Fine particle pollution; and
- **Policy A5-1.5:** Solid fuel fire numbers (small-scale solid fuel appliances and open fires).

³ MfE(2002) and NES guidelines.

1.2.2 Policy A5-1.3

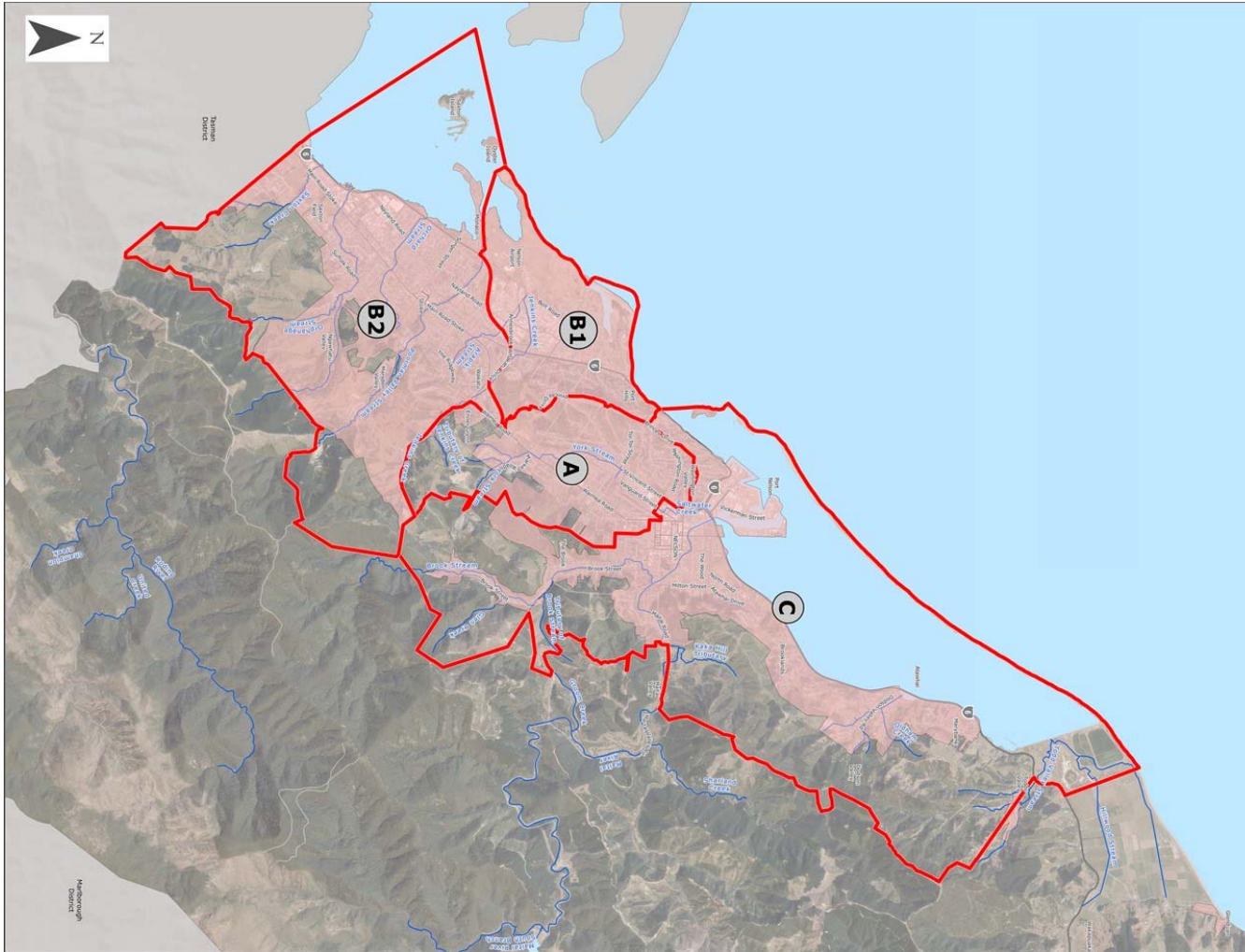
Policy A5-1.3 focuses on ambient air quality across the entire City, explicitly underscoring the AQP's strategic link with the national guidelines. The Policy codifies the guidelines for exposure levels to ambient PM₁₀ levels⁴ within the AQP. It steers the AQP's overall policy direction towards reduction of air pollution to an 'acceptable' level (defined as 33%-66% of the PM10 guidelines), recognising also that some areas have poorer air quality than others within the City. The policy reads:

A5-1.3 Ambient air quality targets

- a) *Nelson's ambient air quality will be managed in accordance with the Ministry for the Environment Ambient Air Quality Guidelines 2002, consistent with the guideline values in Table A5-1 and the air quality categories in Table A5-2, and with the National Environmental Standards for air quality (the ambient air quality standards of which are reproduced in Table A5-3), and***
- b) *Where for any contaminant, ambient air quality is worse than the 'Alert' category in Table A5-2, it will be a priority to enhance that air quality to an 'Alert' level or better within any timeframe specified by the NES, or where no timeframe is specified, as soon as practicable and no later than 8 years after the exceedance is first reported, and***
- c) *Where for any contaminant, ambient air quality is worse than the 'Acceptable' category in Table A5-2, air quality should be progressively enhanced to an 'Acceptable' level or better, and***
- d) *Where for any contaminant, ambient air quality is 'Acceptable' or better, no further degradation of the existing ambient air quality that is more than minor will be allowed***

Inherent in gauging how well the existing methods have implemented this policy to date – and relatedly, the capacity to exercise change to those methods in accordance with the policy – is the need to understand what category applies to ambient air quality in Nelson at present. As is described further under the discussion of Policy A5-1.4 below, Nelson's Urban Area has been partitioned into four distinct airsheds for the purposes of measuring ambient air quality. **Figure 1** defines the extent of each airshed.

⁴ PM₁₀ denotes particulate matter not exceeding 10 microns (µm) in size. The NES threshold for ambient PM₁₀ is 50 µg/m³ averaged over a given 24-hour period, and 20 µg/m³ annual average.



- Airshed A** – Nelson South
- Airshed B1** – Tahunanui
- Airshed B2** – Stoke
- Airshed C** – Rest of City

Figure 1 – Urban Area Airsheds

Table 1 below reproduces Table A5-2 in the AQP, and denotes the category which applies to each airshed at the present time based on the most up-to-date monitoring and modelling available.

Table 1: Current air quality category by airshed

Category	Value	Airshed
Action	Exceeds the guideline/standard value.	A
Alert	Between 66% and 100% of guideline/standard value.	B1
Acceptable	Between 33% and 66% of guideline/standard value.	B2 C
Good	Between 10% and 33% of guideline/standard value.	
Excellent	Less than 10% of guideline/standard value.	

Based on these observed category levels, the derived aim of Policy A5-1.3 by airshed is:

- for Airshed A and B1 – prioritise the enhancement of air quality to ‘Alert’ levels as soon as possible
- for Airshed B2 and C – progressively improve air quality to ‘Acceptable’ levels

1.2.3 Policy A5-1.4

Policy A5-1.4 is focussed on the management of fine particle pollution. This specific pollutant is generally denoted in the Plan with the label “PM₁₀,” which is indicative of particulate matter not exceeding ten microns (10µm) in size. The policy comprises four limbs that each adopt a distinct focus, as follows:

A5-1.4 Fine particle pollution

- a) A mid-term target for ambient PM_{10} levels will be, at a minimum, compliance with the Ministry for the Environment 'Alert' Air Quality Category (relative to the guidelines and standards in Policy A5-1.3) by:**

For Airshed A:

- i) 1 September 2016 with not more than 3 exceedances in a 12 month period of the 24-hour mean NES up to and including 31 August 2020, and**
- ii) 1 September 2020 onwards, not more than 1 exceedance in a 12 month period,**

For Airshed B:

1 September 2016 onwards, with not more than 1 exceedance in a 12 month period, or sooner if practicable, towards ultimate compliance or better with the 'Acceptable' air quality category as in Policy A5-1.3 by 2025.

Airshed C is expected to maintain its current compliance, subject to Policy A5 - 1.3 d).

- b) Discharges to air from all sectors producing fine suspended particles (domestic, transport, industrial or trade) shall be managed to support the achievement of these ambient targets, and the implementation of Policy A5-1.3.**
- c) In order to achieve the mid-term target in (a), the following reductions in PM_{10} emissions (relative to 2001 levels) are required across the Urban Area:**
- i. At least 70% from domestic heating, and**
 - ii. At least 98% from outdoor burning, and**
 - iii. At least 10% from industrial and trade sources (in aggregate), except in any area with a high concentration of industrial and trade discharges where higher percentage reductions may be required to achieve the target, and**
 - iv. A reduction in emissions from the transport sector.**

d) Greater or lesser reductions may be required in certain parts of the city to achieve the mid-term target, while recognising the potential contribution of contaminants from one airshed to another (interconnectedness of many airsheds), and also the reductions required to meet the longer term target of compliance or better with the 'Acceptable' air quality category.

Overall, recent studies suggest that the existing Plan methods are implementing this policy with positive effect. With respect to limb a), all four airsheds are generally on-track to satisfy the specified aims. The exception to this is that Airshed A is unlikely to reach the 'Alert' category by September 2016 or to satisfy the maximum annual exceedance criteria based on current progress. Annual exceedances are also still possible in all airsheds in certain circumstances, including where 'worst-case' meteorological conditions arise.

Regarding limbs b) and c), evidence suggests the Plan has effectively managed particulate emissions from all relevant sectors, and the 70% target reduction in domestic heating-related emissions relative to 2001 levels is being achieved, or nearly achieved, in three of the four airsheds⁵.

Limb d) is a particularly important consideration for the current plan change. Significantly, it anticipates that there may be opportunities to soften the Plan's methods for reducing PM₁₀ pollution, subject to longer term trends towards acceptable air quality being maintained.

1.2.4 Policy A5-1.5

Finally, **Policy A5-1.5** addresses the number of solid fuel fires in the Urban Area. It firstly signals Council's prohibition of new domestic wood burners in the urban area, which is implemented through a corresponding prohibited activity rule for new appliances and through the mandatory phase out of pre-2004 burners. Of particular significance for the proposed plan change, this policy also anticipates advances in burner technology over time and sets out criteria to have particular regard to in considering whether new lower emitting burners could be enabled in the Plan. The policy reads:

⁵ Current results indicate the reductions since 2001 levels by airshed are: A – 69%, B1 70%, B2 58% and C 65%.

A5-1.5 Solid fuel fire numbers (small-scale solid fuel appliances and open fires)

- a) *In order to achieve the targets in Policy A5-1.4, no increase in the total number of solid fuel fires (as at the date of notification of this Plan) should occur within the Urban Area, and in the worst polluted airsheds, reductions by up to 30% should occur (excluding low emission pellet burners).*
- b) *These numbers will be reviewed if new generation solid fuel burners become commercially available which can be shown in actual operation to be consistently and significantly below an emission level of 1.5g of PM₁₀ emissions per kilogram of fuel burnt.*
- c) *As part of the review, regard will be had to:*
 - i. *the expected emissions from the new burners when operated under real life conditions, and*
 - ii. *the progress the City is making towards the air quality targets in Policy A5-1.4, and*
 - iii. *any new national air quality guidelines or standards released or in preparation, and*
 - iv. *whether an increase in burner numbers would still allow the achievement of current or likely future air quality targets.*

While there are no new air quality guidelines or standards to have regard to at this time, the other three assessment matters under clause c) above are particularly relevant for the current proposal. These matters are considered in detail in section 3 of this report, and form the basis for the overall assessment approach used.

1.3 Current Rules

As noted above, the operative Plan includes a number of rules and other methods to implement these policies. Of particular note for this plan change are the following:

- **Prohibited activity Clause AQR.20** – this rule prohibits the burning of certain fuels and materials, including wood with a moisture content greater than 25% or which is painted, stained, oiled, coated or treated (among several other materials). The clause applies to domestic fires and outdoor burning.

- **Prohibited activity Clause AQR.21** – this rule prohibits solid fuel domestic fires in the Urban Area except in certain locations. An additional exception is made for pellet burners.
- **Clause AQR.22** – this clause sets out the general requirements for all discharges, with a broad focus on the management of potential nuisance effects.
- **Permitted activity Clause AQR.24** – this rule permits burners installed prior to the notification date of the AQP, subject to an eventual phase out of those burners by a specified period (this ranged between 2008 and 2012 depending on the area in question).
- **Permitted activity Clause AQR.25** – this rule permits the replacement of older solid fuel domestic heating appliances and open fires with NES-compliant burners.
- **Permitted activity Clause AQR.26** – this rule permits low emission pellet burners, provided that specific standards are met, including adherence to the matters in Appendix AQ2A (discussed below).
- **Appendix AQ2** – which sets out the emission and information requirements for NES-compliant burners.
- **Appendix AQ2A** – which sets out additional emission and information requirements for pellet burners.
- **Appendix AQ3** – which sets out the stack requirements for new burning appliances.

Similar to Policy A5-1.5, the AQP rules signal that changes in technology may enable a more enabling approach to domestic wood burners (see explanation AQR.21.5 for example).

1.4 Relevant Legislation

1.4.1 RMA and Regional Policy Statement

The Council has statutory responsibilities for air quality management under the Resource Management Act (1991). There are a range of processes governing the preparation, administration and review of the Plan, including the need to enforce the observance of national environmental standards. In particular **section 30(f)** outlines Council's function to control discharges of contaminants into air.

Part 2 of the RMA sets out the Act's sustainable management purpose to promote (emphasis added):

...the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—

- (a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

In achieving the Act's purpose, all persons must recognise and provide for matters of national importance under **s6**, and have particular regard to a range of other significant matters under **s7**. Of particular relevance to this proposal, the matters to consider under s7 include:

(a) kaitiakitanga;

(aa) the ethic of stewardship;

...

(c) the maintenance and enhancement of amenity values;

...

(f) maintenance and enhancement of the quality of the environment; and

(g) any finite characteristics of natural and physical resources...

Section 63 of the Act defines the purpose of the AQP as a Regional Plan. This section synthesises Part 2 and s30(f), noting the “*purpose of the preparation, implementation, and administration of regional plans is to assist a regional council to carry out any of its functions in order to achieve the purpose of this Act.*”

As noted above, there is a NES for air quality, and **s43B** of the Act is therefore a relevant consideration for PC3. This section of the Act establishes the requirement for the AQP to be consistent with the NES. In this respect, the AQP may be more stringent than the NES, but not less stringent. For completeness, it is noted that the operative AQP is more stringent than the NES.

Section 66 of the Act sets out the matters to be considered when changing the AQP. Of most relevance, the plan change must be prepared in accordance with the following matters under s66(1):

(a) [Council’s] functions under section 30; and

(b) the provisions of Part 2; and

...

(d) [Council’s] obligation to prepare an evaluation report in accordance with section 32; and

*(e) [Council’s] obligation to have particular regard to an evaluation report prepared in accordance with section 32;
and*

(f) any regulations.

Section 66 also requires that the Council have regard to any management plans or strategies prepared under other Acts⁶, and take into account any relevant planning document recognised by an iwi authority⁷.

⁶ s66(2)(c)(i)

⁷ s66(2A)(a)

Section 67 of the RMA sets out the matters that must be included in the AQP (objectives, policies and rules) and the matters that may be included (for example, issues, reasons, environmental results anticipated). Subsection (3) to s67 requires the AQP to give effect to the operative Nelson Regional Policy Statement (“RPS”)⁸. The RPS has one air quality objective, which seeks the improvement of Nelson’s ambient air quality. The objective is implemented by seven policies, which include the following relevant provisions (emphasis added):

DA1.3.1 To set minimum ambient air quality standards that are at levels which ensure that adverse effects on people or ecosystems at ground level are avoided or mitigated.

DA1.3.2 Where existing air quality is higher than the standards set under the above policy, no significant degradation to existing ambient air quality shall be permitted.

DA1.3.4 To ensure industrial, commercial, rural and domestic discharges avoid significant adverse effect on the environment, including people, plants or animals.

The operative AQP has been prepared to give effect to the above objective and policies, and any change to the AQP must ensure the Plan continues that relationship.

Finally, **s32** of the RMA is the primary driver for this report. It states⁹:

(1) An evaluation report required under this Act must—

- (a) examine the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of this Act; and*
- (b) examine whether the provisions in the proposal are the most appropriate way to achieve the objectives by—*
 - (i) identifying other reasonably practicable options for achieving the objectives; and*
 - (ii) assessing the efficiency and effectiveness of the provisions in achieving the objectives; and*

⁸ Subsection (3) also requires that any National Policy Statement and the New Zealand Coastal Policy Statement must be given effect to.

⁹ Note - Subsections (5) and (6) have not been reproduced here.

- (iii) summarising the reasons for deciding on the provisions; and*
 - (c) contain a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposal.*
- (2) An assessment under subsection (1)(b)(ii) must—*
- (a) identify and assess the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions, including the opportunities for—*
 - (i) economic growth that are anticipated to be provided or reduced; and*
 - (ii) employment that are anticipated to be provided or reduced; and*
 - (b) if practicable, quantify the benefits and costs referred to in paragraph (a); and*
 - (c) assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.*
- (3) If the proposal (an amending proposal) will amend a standard, statement, regulation, plan, or change that is already proposed or that already exists (an existing proposal), the examination under subsection (1)(b) must relate to—*
- (a) the provisions and objectives of the amending proposal; and*
 - (b) the objectives of the existing proposal to the extent that those objectives—*
 - (i) are relevant to the objectives of the amending proposal; and*
 - (ii) would remain if the amending proposal were to take effect.*
- (4) If the proposal will impose a greater prohibition or restriction on an activity to which a national environmental standard applies than the existing prohibitions or restrictions in that standard, the evaluation report must examine whether the prohibition or restriction is justified in the circumstances of each region or district in which the prohibition or restriction would have effect.*

These matters are evaluated under sections 2 and 3 of this report as they relate to the current plan change proposal.

1.4.2 NES

As noted above, s66 of the Act requires that any plan change be prepared in accordance with any relevant regulations. The National Environmental Standard for Air Quality 2004 is relevant in this instance. The NES has 14 separate but interlinked standards for air quality comprising:

- Seven standards banning activities that discharge significant quantities of dioxins and other toxics into the air;
- Five standards for ambient (outdoor) air quality;
- A design standard for new wood burners installed in urban areas; and
- A requirement for landfills over 1 million tonnes of refuse to collect greenhouse gas emissions.

Having regard to the NES, Council has incorporated objectives, policies, and methods into the RPS and AQP along with non-regulatory programmes that have resulted in significant improvements to Nelson's air quality in the last decade. As noted above, the operative AQP standards in relation to managing particulate matter and ambient air quality are presently more stringent than the NES.

1.4.3 Iwi Management Plans

As noted above, iwi management plans must be taken into account when preparing a plan change. Nga Taonga Tuku Iho Ki Whakatu is relevant in this respect. It identifies Tawhirimatea as one of the domains of nga atua kaitiaki. The key objective of this plan seeks that

The mauri (life force) of air is maintained at a level which achieves the best air quality possible and safeguards the:

- *Spiritual nature of air;*
- *Health of flora and fauna;*
- *Well being and health of nga tangata; and*
- *Customary practices and tikanga (protocols of tangata whenua).*

These matters have been considered in the development of Plan Change A3 and through iwi engagement outlined in section 4 below.

1.5 Nelson 2060

Section 66 of the Act also requires that any relevant strategies or plans prepared under other Acts be considered. Nelson 2060 is the Council's 50-year sustainability strategy and is relevant to this plan change. Specifically, the ongoing management of air quality contributes to the achievement of Council's strategic outcomes, particularly healthy land, sea, air and water. As it relates to domestic heating, air quality management is relevant to the following components of Nelson 2060:

- **Goal 3:** Our natural environment – air, land, rivers and sea – is protected and healthy;
- **Goal 5:** We are able to rapidly adapt to change;
- **Goal 6:** We move from using fossil fuels to renewable energy sources; and
- **Goal 9:** Everyone in our community has their essential needs met.

These goals post-date the development of the AQP and have been actively considered through the plan making process for PC3.

1.6 Consultation Undertaken

A detailed consultation record is provided in section 4 below. Notwithstanding this, a brief synopsis of consultation undertaken to date is provided for context:

- A high level of support for increased woodburner availability in the Urban Area has been expressed by the community over recent years.
- To explore the possibility of increasing wood burners, Council formed a Woodburner Working Party ("WWP") in 2014, comprising elected members, Officers from Tasman District Council, iwi and health advisors. The WWP reported to full Council in November 2014, recommending that the review of the AQP be brought forward by three years as a matter of priority.
- Council adopted that recommendation of the WWP, prioritising the review of the Air Plan at its December 2014 meeting. A wider consultation programme commenced at that time.

- Consultation was carried out with an array of targeted stakeholders, as well the wider community in general. This included meetings, workshops and other engagement with (among others) an Iwi Working Group, industrial dischargers, the New Zealand Transport Agency, and a Wood Burner Community Group.
- Public meetings were held in March and July 2015 to gauge public views about the issues and options of interest.
- Overall, the consultative process resulted in an inventory of potential options for the management of domestic wood burners in the AQP. In summary, these included:
 - allowing NES-compliant woodburners;
 - allowing unlimited ultra-low emission burners (“ULEB”)
 - allowing limited ULEB
 - phasing out older wood burners
 - installation of emission control technology
 - advanced behaviour change programme
 - tradeable burner rights
 - allowing burners in fully insulated homes
 - amending airshed boundaries
 - point of sale rule as proxy for phase out of older burners
 - applying a set emission limit per site
 - set woodburner size limit by relative house size
 - provide community heating option
 - dispensation for special health need/deprived homes
 - control of hours of burning
 - improved monitoring
- In response to these options, additional monitoring and modifications to existing behaviour change initiatives commenced in winter 2015.
- Further detailed studies were also commissioned to test the validity of the various options considered. The results of this work are summarised in the section that follows

1.7 Supporting information

1.7.1 Air quality modelling

As noted above, a range of technical work has been carried out recently, including monitoring and modelling work which predates the consultative process described above. For example modelling undertaken by Environet¹⁰ in 2014 identified that Airsheds B2 and C may have some ability to accommodate additional discharges of PM₁₀. However, it was understood at that time that the findings of the Environet report needed to be updated with knowledge of the dispersion of PM₁₀ emissions between airsheds and by additional air quality monitoring results.

Consequently, an additional monitoring device was established in Airshed B2 (Stoke) and dispersion modelling was commissioned to provide up to date data on flows between airsheds following winter monitoring. This study – completed by Golder Associates Ltd¹¹ – revisited previous dispersion modelling at a finer resolution and with more representative meteorological data. The reported results of the study indicated that the likely flow of air pollution between the airsheds is significantly lower than previously estimated. In summary:

- Airshed C contributes 6% of the air pollution experienced in Airshed A
- Airshed B2 contributes 3% of the air pollution experienced in Airshed A
- Airshed B2 contributes 15% of the air pollution experienced in Airshed B1.

Following the completion of the Golder (2015) study and the compilation of recent monitoring data, the 2014 Environet report was revisited in late 2015. The revised report¹² also considered a number of the options summarised in the consultation section above. A key finding of the report was that no degradation in air quality and continuation of projected downward trends could be achieved in Airsheds B2 and C by allowing up to 1000 ULEB installations in Airshed B2 and 600 ULEB installations in Airshed C, provided that an enhanced behaviour change programme targeting a 10% reduction in PM₁₀ is advanced concurrently. The report found that NES-compliant burners could also be provided under similar circumstances; however, the overall number of these burners would be substantially lower than the ULEB figures (given their higher real-life emission rates) and would not be enough to satisfy future demand based on historic takeup of NES compliant burners. Additional burners in Airsheds A and B1 were not supported by the report findings based on current ambient air quality.

¹⁰ Environet (2014a)

¹¹ Golder (2015)

¹² Environet (2015a)

1.7.2 Economic modelling

Concurrently with the Environet 2015 update, Market Economics have modelled the economic impacts of the various options considered. The resulting report¹³ presented the following key findings:

- the enhanced behaviour change approach (targeted 10% reduction) results in the lowest marginal cost being imposed on the community, and is the only scenario that is expected to yield a health cost saving (benefit).
- the next lowest cost approach is allowing limited burners at a rate that maintains current ambient air quality levels. In contrast to the behaviour change option, this scenario is expected to transfer a portion of the total costs onto the community; however, compared to the other scenarios (excluding the behaviour change scenario), this scenario has the smallest portion of health costs (relative to total costs).
- the unlimited NES-compliant burner option is the most expensive in terms of total costs and health costs – this is largely owing to the fact that this option would result in the poorest overall ambient air quality.
- overall, the analysis suggests that the advanced behaviour change scenario is, relative to the other scenarios that were modelled, the most cost-effective option.

1.7.3 Health implications and other supporting information

The relationship between ambient air quality and public health are well captured in the existing regulatory context, and particularly in the NES and operative AQP. It is not intended to reproduce or expand upon that existing knowledge in this report. There are, however, relevant health factors which are not directly contemplated by these documents which are appropriate to consider through the current review process.

For example, in March 2015, the Parliamentary Commissioner for the Environment released a report¹⁴ regarding the state of air quality in New Zealand. The report addressed several matters, though a particular focus was on the effectiveness of national and regional

¹³ Market Economics (2014)

¹⁴ Parliamentary Commissioner for the Environment (2015)

emission control regimes at managing adverse health outcomes associated with poor air quality. The report made a number of recommendations including that a better understanding be achieved of the health impacts of cold homes. In particular, the Commissioner called for greater knowledge around the impact of current air quality rules and standards on other [non-air quality] public health issues, noting:

“that standards for particulate matter should be set to achieve the lowest concentrations possible in the context of local constraints, capabilities and public health priorities. It would be counterproductive if for instance, actions to reduce emissions from wood burners resulted in more cold damp homes.”

While no detailed health studies have been commissioned by the Council to date in relation to those wider health considerations, Council has obtained some relevant health information from a range of sources. In a discussion paper presented to the Council in 2014, the Nelson Medical Officer of Health¹⁵ noted that adverse health effects from living in cold, damp houses are well recognised with numerous studies available both internationally and in New Zealand. Generally the consequences of damp homes have been observed on respiratory health which can also be affected by moulds (which are more likely to occur in damp houses) and by indoor air pollutants such as nitrogen dioxide from unflued gas heaters used in some households.

The Canterbury District Health Board has canvassed this issue in a position statement¹⁶ developed in 2012. In that statement, the Board acknowledged that the direct effects of cold homes on health include excess mortality from cardiovascular and respiratory disease amongst the elderly, increased respiratory problems in children, increased illnesses such as colds, influenza and mental health problems, and the exacerbation of existing conditions such as arthritis. The position statement also emphasised the importance of home heating as a health protection measure, due to the significant public health impacts that result when dwellings do not provide a healthy environment for occupants.

In the above respects, there are some similarities associated with poor ambient air quality and cold homes in terms of impact on respiratory health.

The Medical Officer of Health’s discussion paper also provided some useful information as to how the above translates in the Nelson context. In particular, the paper cited information on Nelson and Marlborough hospital admission rates over the 1999-2013 period. Notwithstanding Nelson’s improving air quality over this timeframe, the information identified that a small increase in respiratory admission rates has been observed (among other findings). The Officer explained that the relationship between air quality and hospital

¹⁵ Kiddle (2014)

¹⁶ Canterbury District Health Board (2012).

admission rates is not wholly correlative, however, as a number of other factors contribute to respiratory problems, including cold homes and variations in mean temperature and circulation rates of influenza/other respiratory viruses. The Officer also noted that it is not possible to distinguish which factor (or factors) has contributed to each admission.

Moreover, the Medical Officer also reported in depth on the known health risks of poor ambient air quality, including from particulate matter. The paper concluded that there is no 'safe' level of respirable particulate matter, and accordingly, that good air quality should not be compromised at the expense of heating cold homes.

Related to this, it is relevant to consider whether the methods adopted by Council for achieving good air quality has impacted the prevalence of cold homes in Nelson. This very matter was assessed through a study commissioned by Council in 2014 (and reported on in 2015). The associated report¹⁷ for this study concluded that it is unlikely that there has been any increase in cold homes in Nelson since 2006 as a result of the phasing out of high emission wood burners under the AQP. The report also noted that the proportion of households that do not heat their homes has not increased over this period and there are fewer households relying on high cost heating methods such as electricity (non-heat pump) and unflued gas. In addition, the study revealed an increase in the proportion of dwellings with ceiling and underfloor insulation, meaning houses should require less energy to achieve the same temperature (or the same energy may be used but the household may be warmer). Based on dwelling and heating method information, the report concludes that household warmth should have been more achievable in 2014 than in 2006.

Council has also contacted the Ministry for the Environment and other regional Councils around NZ to source information about what methods Councils are using to manage air quality and how effective these methods have been in achieving NESAQ standards. A synopsis of this work is provided in Annexure 1. This work indicates that Nelson has made substantial progress in improving ambient air quality when compared to other councils.

¹⁷ Environet (2015b)

2.0 Proposed Amendments to the Operative Plan

2.1 Overview

The primary response for the proposed plan change is to enable the installation of 1600 new ULEB in Airsheds B2 and C (1000 and 600 burners respectively). The proposal also provides for two further pathways that would enable additional burners to be considered in any airshed, provided it can be demonstrated such action would not compromise the Plan's policy targets. These two pathways include:

- **Non-complying activity resource consent** – ad hoc applications can be made for burners in Airshed A or B1, or for burners in excess of the 1600 permitted in Airsheds B2 and C; and
- **Certification** – Council will grant future certificates for burners where monitoring and modelling data indicate there is capacity to do so.

The amendments proposed to the AQP fall into 4 broad categories as follows:

- new definition for ULEB;
- new Clause AQr.26A, which includes the permitted and non-complying rules referred to above;
- new Appendix setting out the minimum requirements for ULEB, including certification process that must be followed in conjunction with the building consent; and
- consequential amendments.

These amendments are described and evaluated in the report section that follows. In addition, the non-regulatory behaviour change programme is a key method described below.

For completeness, it is noted that no changes are proposed to the Plan's objective or policies.

2.2 Proposed Amendments

2.2.1 New ULEB definition

The proposed definition for ULEB is as follows:

Small-scale ultra-low emission burning appliance means any small-scale solid fuel burning appliance that can meet either of the following emissions and efficiency standards:

- a) *38 milligrams per megajoule; or*
- b) *no more than 0.5 grams of total suspended particulate per kilogram of fuel burned and a thermal efficiency of 65% or greater.*

For the purposes of this definition:

- *the appliances on the Council's 'List of Authorised small-scale ultra-low emission burning appliances' described in Appendix AQ2B satisfy the above standards for real-life testing; and*
- *ultra-low emission burning appliances do not include small-scale pellet burning appliances.*

The definition firstly establishes the emission and efficiency standards which distinguish ULEB from other solid fuel burners. These standards are more stringent than the criteria for NES-compliant burners in two main respects. Firstly, the figures themselves equate to a 67% reduction in particulate matter generated per kilogram of fuel burned (1.5g/kg for NES burners versus 0.5g/kg for ULEB). Secondly, the definition requires that the appliance be tested against simulated real-life conditions, versus the laboratory-based standard adopted by the NES. This approach is adopted to account for real-life emissions typically being higher than under NES test conditions. For example, it is not uncommon for NES-compliant burners to have a real-life particulate emission level of more than 4g/kg.

The Council will keep a list of appliances that demonstrate compliance with the ULEB standards under real life testing.

2.2.2 New Rule AQR.26A

As noted above, this rule permits the discharge of contaminants from 1000 ULEB in Airshed B2 and 600 in Airshed C, subject to meeting identified standards. Any ULEB in Airshed A or B1 and any ULEB in Airshed B2 or C that does not meet the permitted standards is identified as a non-complying activity. Assessment criteria and explanatory text that largely reproduce or echo similar terms used elsewhere in the AQP are also included under the rule to assist the decision-making on any non-complying activity resource consent applications.

The ULEB must meet the following standards in order to be permitted:

- the appliance must comply with the stack requirements for NES-compliant burners in the operative AQP (AppendixAQ3);
- no burning of fuels prohibited under Rule AQR.20 may occur;
- the appliance must be operated to avoid discharges of excessive smoke (excluding a 15-minute start up period);
- where any ULEB is proposed to be replaced by another appliance, it must be replaced with another ULEB; and
- the appliance must comply with a new Appendix AQ2B, which sets out general requirements and a certification process for new ULEB.

By and large, these standards are consistent with other permitted activity rules in the operative Plan, including the reference to various additional requirements in the Plan's appendices. However, the new appendix introduced for ULEB contains some bespoke provisions as described immediately below.

2.2.3 New Appendix AQ2B

This new Appendix has three main functions. Firstly, it sets out minimum requirements for ULEB, including information to be displayed on the appliance, restrictions on modifying any appliance from its original state, and operational requirements.

The second function of the appendix is to identify that the Council will maintain a list of appliances that have demonstrated compliance with the ULEB emission and efficiency rates (described in the ULEB definition) under real-life testing. The list will be accessible to the public, and will be updated as new appliances are authorised.

For both of these first two functions, the Appendix adopts the same approach used in relation to NES-compliant burners under Appendix AQ2 and for pellet fires under Appendix AQ2A.

Where new Appendix AQ2B differs from its predecessors is in relation to the third function – the certification process. Certification for new ULEB will be forthcoming under the Appendix via 2 scenarios:

- any ULEB in Airshed B2 or C will be certified, provided that the overall limits of 1000 and 600 appliances (respectively) are not exceeded; and
- where two-yearly modelling and monitoring identifies there is additional capacity to exceed this initial allocation permitted in Airsheds B2 and C and/or to enable some appliances in Airsheds A and B1. If no additional capacity is identified through those investigations, no additional Burner Allocation Certificates (“BAC”) will be provided for as a permitted activity.

The certification process describes in detail the methodology that will be adopted for determining whether capacity is available in the future under the second scenario. This methodology is based upon the approach used in the Environet 2015 update report referred to in section 1.7.1 above, which identified the 1600 ULEB allocation for the purposes of this plan change.

Irrespective of whether additional capacity is identified by the two yearly review process, Council will publish the results of the review, including the number of additional appliances (if any) that are able to be certified for the subsequent 2 year period. This reporting requirement is also codified in the Appendix.

In addition, the Appendix notes that the Council will maintain a database of interested parties who wish to obtain a certificate under future allocations where they are not eligible under the current allocation period.

The Appendix aligns the BAC with the building consent process which must be followed to install any new wood burner. To ensure that allocated BACs do not go unimplemented, a lapse period of 12 months is specified in the Appendix. This aligns with the standard 12-month duration ascribed to building consents. Provided that a code compliance certificate (“CCC”) is obtained within 12 months of the issuance of the building consent and BAC, the BAC will not lapse. If 12 months expires before the CCC is obtained, the BAC will lapse and the applicant must reapply for the BAC. As part of the certification service, the Council will give BAC holders 3 months’ notice of the lapse date.

The Appendix also identifies the CCC as the completion point for the certification process. After a CCC is obtained for the appliance, it is at the owner’s discretion as to whether he or she seeks a Certificate of Compliance (“CoC”) for Rule AQR.26A.

Figure 2 below summarises the certification process for interpretive purposes.

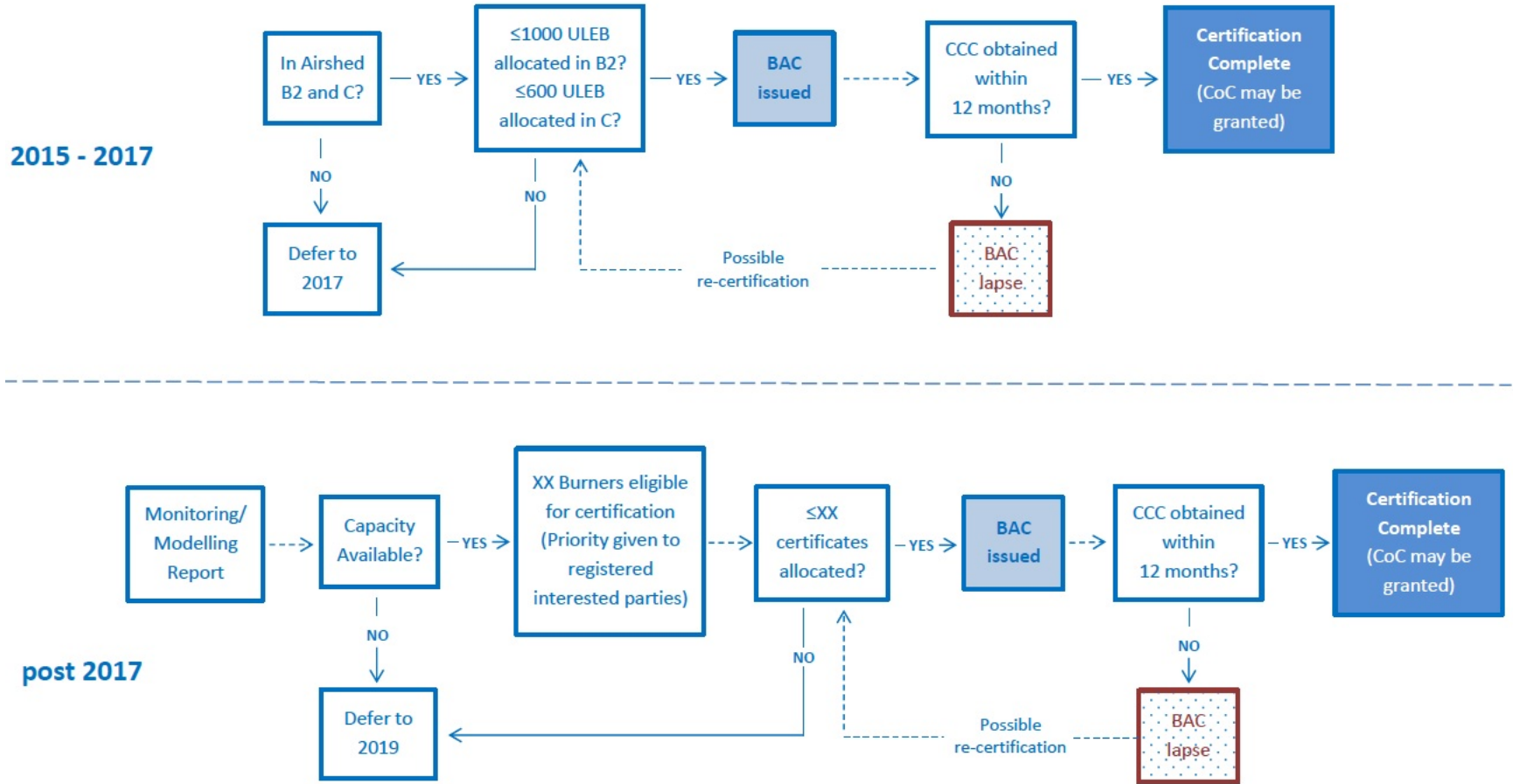


Figure 2 – Certification process

2.2.4 Consequential Amendments

Finally, five consequential amendments are proposed in the plan change to ensure the proposed permitted activity rule AQR.26A does not unintentionally frustrate, nor become frustrated by, other requirements of the Plan. These amendments include:

- an exemption from the prohibited activity rule for new solid fuel appliances (AQR.21);
- an exemption from permitted condition c) under rule AQR.25 relating to the replacement of existing (non-ULEB) solid fuel appliances;
- two associated amendments to the explanation to rule AQR.25;
- an amendment to the explanation to rule AQR.25A to clarify that ULEB can be installed in sites that have become part of the Urban Area subsequent to the notification of the original AQP, subject to rule AQR.26A.

Again, these amendments are consequential only, to enable legible implementation of the Plan.

2.2.5 Behaviour Change Programme – non regulatory method

The Council has invested in wood burner behaviour change over the last decade with great effect. This has included media campaigns, direct engagement at community events, the 'Good Wood Scheme' (promoting public access to dry wood), free advice on home heating and energy use/conservation, and enforcement. It is intended that these programmes will continue, and be enhanced by further measures to improve operating practice and (therefore) ambient air quality across the City.

The programme will be developed to coincide with the implementation of this plan change, and will be designed to target a minimum 10% reduction in domestic particulate emissions relative to 2015 levels. While the specific elements of the programme are not finalised to date, the 10% target is considered to be highly achievable based on the success of existing programmes in Nelson and elsewhere in New Zealand.

Some potential methods that may be utilised include:

- expanding the Good Wood Scheme to include chimney sweeps (Clean Sweep scheme) to promote annual flue clean/burner maintenance;

- increased and targeted identification of excessive and/or serial smoky burners – this will be followed by an investigation as to the source of the problem and education/support to facilitate change;
- targeted engagement could be bolstered by follow-up visits from advisors to ensure changes / improvements have been made;
- increased media campaigns and direct engagement at public events and in high-volume areas (CBD, town centres, sports fields, etc);
- escalating the profile of behaviour change during autumn and winter months;
- collaboration with the Ministry for the Environment, neighbouring territorial authorities and other councils in New Zealand adopting similar programmes (Environment Canterbury, for example); and
- increased monitoring and enforcement where targeted education programmes are not successful.

2.3 Costs and Benefits of the Proposed Rules

This section of the report considers the costs and benefits of the plan change, and draws on the supporting information summarised in section 1.7 above. The discussion is organised to separately consider social and cultural, economic, and environmental (health) effects in turn. These costs and benefits are then compared to alternative options in section 3 below.

2.3.1 Social and Cultural considerations

Overall, it is anticipated that the proposal will have a net-beneficial effect on social and cultural values. This benefit will not be experienced evenly across the Urban Area, given that ULEB are only permitted in Airsheds B2 and C; however, the plan change provides opportunities for subsequent allocations of appliances in all airsheds. Non-complying activity status for burners that are not permitted also softens the current prohibitive status for burners that would apply in absence of the plan change.

The benefits relate to enabling personal preference to be exercised by those individuals and groups who prefer solid fuel burning for domestic heating.

2.3.2 Economic considerations

The economic assessment undertaken by Market Economics details the economic costs and benefits of the proposal (as noted in section 1.7.2 of this report). In summary, the report concludes that the proposal will have net health cost savings (benefit), derived from the continued air quality improvement enabled by the behaviour change programme.

It also notes that the programme itself will entail an administrative cost to implement, and that capital and operational (fuel, maintenance, etc) costs will be borne by parties who install new ULEB.

Overall, however, the marginal cost to the community from implementation of the plan change will be low.

2.3.3 Health considerations

The proposal is anticipated to be beneficial for health outcomes. The number of appliances permitted by the proposal will maintain the Plan's policy approach of continual air quality improvement. Any resource consents or subsequent certification processes for additional appliances over the permitted allocation will only be provided for where that policy approach is maintained.

The behaviour change programme and rule approach is also anticipated to improve burning practice across the Urban Area as a whole, thereby further enhancing the City's ambient air quality. In the event the programme is more successful than its 10% improvement target, and/or the uptake of permitted appliances is less than the 1600 enabled by the plan change, there will be further enhancement to air quality still.

Though the plan change does not prioritise allocation of appliances to homes that currently have no heat source or a poor heat source, it enables a portion of those homes to install ULEB if desired. This in turn may contribute additional positive health benefits through avoidance of cold or damp homes.

2.4 Adequacy of Information and Risk of Acting (or not acting)

Overall, it is considered that the level of information gathered in support of the plan change is appropriate for the amendments proposed. Some assumptions have been made in the respective air quality modelling reports and the economic assessment; however, the overall level of information derived from those studies is considered to be of a relatively high reliability. For the avoidance of any doubt about the sufficiency of the information obtained, however, a risk summary has been provided below.

The supporting information suggests that **the risk of not acting is low**. Evidence suggests that there is no imperative to alter the continual improvement approach in the AQP as there is no associated demonstrable adverse health or economic outcomes evident from that approach. There is a social cost to adopting a prohibitive approach to wood burners for people who prefer that type of domestic heating. However, this cost is tempered by the improved air quality and associated health and economic benefits that flow from that.

While the risk of acting is likely to be higher than the risk of not acting, overall, the **risk associated with the proposal is also low**. The number of new burners enabled by the proposal will result in an improved social outcome for people who opt for that domestic heating source. Moreover, the number of burners permitted has been limited to maintain the Plan’s policy approach to continual air quality improvement, which is aided by the proposed behaviour change programme. In this way, the proposal has benefits for social, cultural and economic well-being and for community health and safety.

3.0 Options Evaluation

3.1 The Proposed Option

The Proposed Option is described in section 2 above. For comparative purposes, **Table 2** below summarises the number of new burners enabled by this option for all airsheds.

Table 2: Number of burners enabled by proposed option

Airshed	# ULEB	# NES-compliant burners
A	0	0
B1	0	0
B2	1000	220
C	600	130

Several alternatives to the preferred option are discussed in the report section immediately below; however, for completeness it is noted here that sub-options of the proposed option have also been considered in the evaluation of alternatives exercise. Firstly, consideration has been given to enabling NES-compliant burners, rather than ULEB. This sub-option has ultimately been discarded in favour of ULEB’s for a number of reasons, including (most notably):

- Relative to ULEB, fewer NES-compliant burners can be accommodated. Anticipated demand for burners based on historic uptake suggests that the 550 NES-burners enabled would not be sufficient for the two airsheds. 1600 ULEB on the other hand, would meet or nearly meet forecasted demand¹⁸.
- The difference between test-based and real-life emissions for NES-compliant burners is larger and more variable than the ULEB authorised under real-life testing. This carries increased risk associated with potential over-allocation of appliances, relative to the proposed ULEB allocation method.
- ULEB presently carry a higher capital cost than NES-compliant burners, but the difference in cost between the two is anticipated to reduce significantly as more ultra-low emission appliances come to market.

Consideration was also given to accommodating some ULEB in Airshed A on the basis that capacity would be created by the enhanced behaviour change programme. Modelling showed this could be achieved whilst still implementing the current aim of reducing ambient air quality levels to 'Alert' status (as per Policy A5-1.3). However, the programme would have to be coupled with a phase out of pre-2004 appliances and continual reductions in the other airsheds that contribute emissions to Airshed A to accommodate that end, and the number of ULEB enabled would be in the order of 100-200. This number is roughly equal to the number of pre-2004 appliances that would have to be phased out. Accordingly, this sub-option was also discarded.

3.2 Alternatives

The **status quo** alternative is outlined in sections 1.2 and 1.3 above.

Further alternatives are as follows:

1. Alternative 1 – Maintain current air quality levels

This alternative considers the number of appliances that could be enabled if current air quality levels are maintained (rather than improved). This scenario is summarised in Appendix A of the 2015 Environet update report, and defines the number of ULEB or NES-compliant burners that could be accommodated in each airshed as a result. A further capacity creation variation is made for

¹⁸ Evidence suggests demand will be approximately 820 appliances in Airshed B2 and 700 in Airshed C.

this option by including or excluding a mandatory phase out of existing pre-2004 burners that have not been phased out by the AQP to date. In summary, the results of this option (in burner numbers enabled) are set out in **Table 3**:

Table 3: Number of burners enabled by Alternative 1

Airshed	Pre-2004 phase out?	# ULEB	# NES-compliant burners
A	Yes	0	0
	No	0	0
B1	Yes	0	0
	No	0	0
B2	Yes	2500	550
	No	1250	225
C	Yes	3000	700
	No	1500	350

2. Alternative 2 – achieve compliance with NES levels

This alternative considers the number of appliances that could be enabled if the NES target for ambient air quality levels is used as a benchmark. This scenario is summarised in Appendix A of the 2015 Environet update report, and defines the number of ULEB or NES-compliant burners that could be accommodated in each airshed as a result. Further capacity creation methods are factored in for this option including mandatory phase out of existing pre-2004 burners that have not been phased out by the AQP to date, behaviour change programmes, and cross-airshed reductions (among other variations). In summary, the results of this option (in burner numbers enabled) are set out in **Table 4**:

Table 4: Number of burners enabled by proposed option

Airshed	Variation	# ULEB	# NES-compliant burners
A	Pre-2004 phase out + 10% Behaviour Change + 2% reduction in other airsheds	200	40
	Pre-2004 phase out + 10% Behaviour Change + maintain air quality in other airsheds	100	25
	Pre-2004 phase out + 10% Behaviour Change + air quality in other airsheds to NES	0	0

Airshed	Variation	# ULEB	# NES-compliant burners
B1	Pre-2004 phase out + reduced emissions in B2	500	125
	Pre-2004 phase out + maintain emissions in B2	160	35
	Pre-2004 phase out + air quality in B2 to NES	0	0
B2	Pre-2004 phase out	5000-6500	1100-1400
	No phase out, assume 50% replace (20yr)	3750-5250	775-1105
	No extra capacity created	2500-4000	550-880
C	Pre-2004 phase out	4500-5500	1000-1200
	No phase out, assume 50% replace (20yr)	3000-2850	680-900
	No extra capacity created	1500-2500	330-550

3.3 Analysis

Table 5 below discusses each alternative compared to the Status Quo. Appropriateness is measured in terms of the extent to which each option implements the existing policies and objective of the Plan.

Table 5: Evaluation of appropriateness

	Status Quo	Proposed Option	Alternative 1	Alternative 2
Effectiveness	<i>As summarised by section 1.2.2 and 1.2.3 above, the operative rules and methods have been effective at achieving the relevant policies in the AQP.</i>	<i>This option will be as effective as, if not more effective than, the status quo. This will depend (in part) on the success of the behaviour change programme and uptake rates of allocated burners. In any case, the proposed methods</i>	<i>This option will not be consistent with the Plan's continual improvement policy aims.</i>	<i>This option is the least effective at implementing the Plan's continual improvement policy aims.</i>

	Status Quo	Proposed Option	Alternative 1	Alternative 2
		<i>will not hinder the implementation of the Plan's continual improvement policy aims.</i>		
Efficiency	<i>The status quo is the most efficient option. The AQP has been in effect for more than a decade. The existing methods could continue to achieve the Plan's policy aims without further intervention.</i>	<i>The proposed option is the second most efficient option. This method will implement the Plan's policy aims, albeit with a need for regulatory intervention through the current plan change process. It is more enabling than the status quo, but requires increased management and administration, including through the certification process.</i> <i>The Council is required to monitor air quality under the NES, so there is efficiency in converting that legislative requirement into a useable reference tool for adaptive resource management purposes.</i>	<i>Alternative 1 will not implement the operative AQP policy framework. The overall approach in the Plan would need to be substantially altered to enable Alternative 1.</i> <i>It is anticipated that the Nelson Plan review process will be a more appropriate forum to consider more fundamental changes to the Policy framework of this nature.</i> <i>This and Alternative 2 are the least efficient options.</i>	<i>Alternative 2 will not implement the operative AQP policy framework. The overall approach in the Plan would need to be substantially altered to enable Alternative 2.</i> <i>It is anticipated that the Nelson Plan review process will be a more appropriate forum to consider more fundamental changes to the Policy framework of this nature.</i> <i>This and Alternative 1 are the least efficient options.</i>
Costs	<i>The status quo has negligible cost implications. The most notable cost is the social</i>	<i>The proposed option entails increased capital cost and operational costs for individuals and</i>	<i>This option entails similar capital and operational costs as the preferred option, though the costs</i>	<i>This option entails similar capital and operational costs as the preferred option, though the costs</i>

	Status Quo	Proposed Option	Alternative 1	Alternative 2
	<p><i>and cultural cost to individuals and groups that prefer burning solid fuel for domestic heating, but are prohibited from doing so under the AQP.</i></p>	<p><i>groups who opt to install ULEB. This will be a relative cost, though, and compared to some heating options will be more cost-effective.</i></p> <p><i>Additional cost (funding) will be required to implement the Behaviour Change Programme.</i></p> <p><i>Compared to the status quo, this is the lowest marginal cost option.</i></p>	<p><i>vary depending on whether ULEB or NES-compliant burner sub-options are adopted (due to the lower capital cost of the latter presently).</i></p> <p><i>Relative to the status quo and preferred option, increased health costs for the community attributed to poorer air quality would be anticipated for this alternative.</i></p> <p><i>If mandatory phase outs are used, this will entail an added cost for those owners of pre-2004 appliances, including a capital replacement cost.</i></p>	<p><i>vary depending on whether ULEB or NES-compliant burner sub-options are adopted (due to the lower capital cost of the latter presently).</i></p> <p><i>Relative to the other options, Alternative 2 is anticipated to have the highest overall health costs for the community attributed to poorer air quality.</i></p> <p><i>If mandatory phase outs are used, this will entail an added cost for those owners of pre-2004 appliances, including a capital replacement cost.</i></p> <p><i>This is the highest cost option.</i></p>
Benefits	<p><i>The status quo will continue to deliver improved air quality and associated health benefits that stem from that. This, in turn has flow on economic savings for society.</i></p> <p><i>An additional cost saving of this option is that no</i></p>	<p><i>This option has the highest health benefits, owing to both reduced air pollution and increased accessibility to appliances for home heating (relative to the status quo).</i></p> <p><i>Increased social and cultural benefits will be</i></p>	<p><i>Increased social and cultural benefits will be realised (relative to the status quo) for people who prefer solid fuel sources for domestic heating.</i></p> <p><i>Up to 1.7x more ULEB are enabled by Alternative 1 (relative to</i></p>	<p><i>Increased social and cultural benefits will be maximised (relative to the other options) for people who prefer solid fuel sources for domestic heating (owing to this option providing the greatest number of burners overall). The number of burners</i></p>

	Status Quo	Proposed Option	Alternative 1	Alternative 2
	regulatory cost would be incurred (plan change cost).	realised (relative to the status quo) for people who prefer solid fuel sources for domestic heating who can afford it.	<p>the preferred option) without pre-2004 phase out, and more than 3x are enabled with the phase-out. This is likely to be greater than anticipated demand given historical uptake.</p> <p>Additional capital cost savings could be achieved if NES-compliant burners are used; however, this substantially reduces the total number of appliances (relative to ULEB) that can be accommodated.</p>	<p>enabled is likely to be greater than anticipated demand given historical uptake, however.</p> <p>This is the only option that accommodates new ULEB in all airsheds; however, in Airsheds A and B1, this also entails mandatory phase out (which carries associated costs).</p> <p>Additional capital cost savings could be achieved if NES-compliant burners are used; however, this substantially reduces the total number of appliances (relative to ULEB) that can be accommodated.</p> <p>This option provides a simpler administrative solution to allocating burners than the proposed option or Alternative 1 largely owing to the lack of any need for a certification process.</p>
Risks	The status quo is a low	Also outlined in section	The risk of acting on	The risk of acting on

	Status Quo	Proposed Option	Alternative 1	Alternative 2
	<i>risk option. This is summarised in section 2.4 above in relation to the risk of not acting.</i>	<i>2.4, the risk of acting on the proposed method is low.</i>	<p><i>Alternative 1 is greater than the status quo and the preferred option, owing largely to the increased likelihood of adverse health outcomes attributed to poorer air quality.</i></p> <p><i>This option also increases the likelihood of non-compliance with NES ambient air quality standards. Relative to the status quo and the preferred option, this option increases the risk associated with more stringent national air quality requirements, should they ever be advanced.</i></p>	<p><i>Alternative 2 is greatest, owing largely to the increased likelihood of adverse health outcomes attributed to the poorest air quality being achieved.</i></p> <p><i>This option also increases the likelihood of non-compliance with NES ambient air quality standards. Of all the options, this would render the AQP most susceptible to risk associated with more stringent national air quality requirements, should they ever be advanced.</i></p>
Appropriateness	<i>This option has already been deemed to meet the Plan's policies. Overall, this option is considered appropriate.</i>	<i>The proposed option is considered the most appropriate. It will achieve the same (or better) implementation levels of the Plan's policy framework, whilst being more enabling than the status quo for people to realise social and cultural preferences for solid fuel for domestic heating. These benefits will be</i>	<i>This option is not appropriate, owing to its inability to implement the Plan's policy aims, and its low cost-benefit relationship.</i>	<i>This option is the least appropriate, owing to its inability to implement the Plan's policy aims, and its lowest overall cost-benefit relationship.</i>

	Status Quo	Proposed Option	Alternative 1	Alternative 2
		<i>realised with a relatively low marginal cost, which is considered to be outweighed by the benefits.</i>		

3.4 Conclusion

In summary, the proposed option is the most appropriate of the four options¹⁹ considered. It will result in the highest air quality and represents the least costs to society as a whole. The plan change is relatively simple, largely adopts the format and methods used for other appliances in the plan²⁰ and carries a low risk profile relative to the two alternative options (in particular). Moreover, the new technology introduced by the plan change is expressly anticipated in the plan’s policy framework.

There are elements of the plan change than are inherently complex (primarily, the future certification process); however, these measures have been adopted to ultimately provide for more efficient processes²¹ for reviewing whether additional appliances can be accommodated in the future. They are considered necessary to ensure the process for making that determination is legible, certain, and replicable.

Overall, the proposal is consistent with the role of the AQP to assist the Council in carrying out its functions under the RMA. It is also consistent with the NES for air quality. The plan change has been prepared in accordance with the provisions of Part 2 of the Act, and the proposal gives effect to the Nelson RPS.

¹⁹ Including the various sub-options/variations described

²⁰ Including NES-compliant and pellet burners

²¹ Relative to future plan changes or ad hoc non-complying resource consents.

4.0 Record: development of provisions

4.1 Background

This report section builds upon the summaries provided in sections 1 and 2 above. In particular, it outlines the key findings of the supporting information relied upon and provides a comprehensive summary of the results from public consultation leading up to the development of the plan change.

4.2 Information and Analysis

Some of the more substantive information gathered in support of the plan change has been summarised in section 1.7 of this report above. A more fulsome summary of the key report findings for the relevant supporting documents is provided in Table 6 below for completeness.

Table 6: Detailed summary of supporting information

Report	Summary/Key findings
Health and Air Pollution in Nelson – outputs from HAPINZ and evaluation of impact of changes from 2001 to 2013, July 2014, Environet	<ul style="list-style-type: none">• Concentrations of PM10 decreased significantly in Nelson over the period 2001-2013, particularly in Airshed A where the annual average PM₁₀ concentration reduced from 42µg/m³ in 2001 to around 18µg/m³ in 2013.• Concentrations in other airsheds reduced also but not to the same extent.• Health benefits will occur as a result of improvements in air quality.• The most significant measure in terms of costs avoided is premature mortality. Air pollution-related premature mortality in Nelson is estimated to have reduced from around 31 deaths per year in 2001 to around 26 in 2013, a total of seven premature deaths avoided per year. The majority of these occur as a result of improvements in PM₁₀ concentrations in Airshed A.

Report	Summary/Key findings
<p>Assessment of trends in PM10 concentrations in Airshed A and evaluation of airshed capacity, August 2014, Environet</p>	<ul style="list-style-type: none"> • Total health benefits associated with this improvement in air quality are estimated at around \$27 million per year. • An assessment of PM₁₀ concentrations on days when worst-case meteorological conditions occurred suggested a decrease in PM₁₀ of around 66-69% since 2001. • This is close to the 70% reduction estimated in the original air plan based on worst case 2001 concentrations. • An estimate of 2014 equivalent concentrations indicated a reduction in PM₁₀ concentrations of around 14% would still be required; however this is 14% of 2014 concentrations which represents only 5% relative to 2001 concentrations.
<p>Nelson Air Emission Inventory – 2014, October 2014, Environet</p>	<ul style="list-style-type: none"> • Electricity was the most common method of heating the main living area with 73% (Airshed A) to 88% (Airshed B2) of households using electric heating methods. • For these households heat pumps were the most common electric heating option (60% -80% of households using heat pumps depending on airshed). • Wood burners were used by 35% of households in Airshed A, B1 and B2 and 32% of households in Airshed C. In 2006 the proportions were 38%, 35%, 34% and 37% respectively. • Domestic heating is the main source of anthropogenic PM₁₀ emissions in all airsheds in Nelson accounting for 55% (Airshed B1) to 94% of daily winter emissions. • Motor vehicle emissions were minimal at around 2-6% of daily winter PM₁₀ emissions. • The industrial contribution to PM₁₀ emissions was 41% in Airshed B1

Report	Summary/Key findings
	<p>(Tahunanui/ Airport) and 2-5% in the other airsheds.</p> <ul style="list-style-type: none"> On an average winter's night, around 164 kilograms of PM₁₀ were discharged from these sources in Airshed A, 159kg in Airshed B1, 223kg in Airshed B2 and 186kg in Airshed C. A comparison of PM₁₀ emissions to previous inventories (after adjusting for differences in methodology) suggested a reduction in anthropogenic PM₁₀ emissions of around 56% in Airshed A, 44% in Airshed B1, 39% in Airshed B2 and 46% in Airshed C since 2006.
<p>Nelson Air Quality Assessment – meeting the NES for PM10 2014 update, October 2014, Environet</p>	<ul style="list-style-type: none"> While significant reductions in PM₁₀ concentrations occurred in Airshed A since 2001, additional reductions of around 14% of 2014 emissions are estimated to be required to meet the NES for a worst case year in terms of meteorological conditions. Some options could enable new appliances in Airshed A, subject to phase out of pre-2004 burners. Allowing the installation of NES compliant burners in new dwellings and existing dwellings using other methods of heating in Airshed B2 is very likely to compromise attainment of the NES in Airshed B1. Allowing the installation of ULEB burners in Airshed B2 is less likely to compromise attainment of the NES for PM₁₀ in Airshed B1 but will result in some degradation of air quality in both areas. All available evidence suggested reductions in PM₁₀ concentrations in Airsheds C and B2 would occur and compliance with the NES for PM₁₀ as well as additional capacity relative to the NES for PM₁₀ would be achieved In Airshed C there is capacity to allow households to install NES compliant wood burners with limited risk of breaching the NES.

Report	Summary/Key findings
	<ul style="list-style-type: none"> Reducing PM₁₀ concentrations below the NES will have health benefits and allowing this capacity to be used by allowing the installation of NES compliant wood burners or ULEB burners may result in health impacts.
<p>Urban Airshed Modelling – Dispersion of PM10. Nelson Air Quality Plan – Air Quality Technical Assessment, Golder & Associates, 2015</p>	<ul style="list-style-type: none"> The report analysed the likely flow of air pollution between the airsheds and found that the level of dispersion between airsheds is lower than previously estimated. In summary it is estimated that: <ul style="list-style-type: none"> Airshed C contributes 6% of the air pollution experienced in Airshed A Airshed B2 contributes 3% of the air pollution experienced in Airshed A Airshed B2 contributes 15% of the air pollution experienced in Airshed B1.
<p>Air quality management in Nelson – modelling of additional scenarios – 2015, Environet, 2015</p>	<ul style="list-style-type: none"> Unless management measures are adopted to reduce PM10 concentrations to well below the target in the National Environmental Standard (50 micrograms per cubic metre) there is unlikely to be any capacity in Airshed A for new emissions. There is currently no capacity within Airshed B1 for the installation of new burners. However, the replacement of older pre-2004 burners over time is one of the options that may create more capacity in future. In Airshed B2 a 10% reduction in emissions, as a result of behaviour change, would enable up to 1000 ULEBs to be installed, while maintaining acceptable air quality. In Airshed B2 this number could be increased to up to 2500 ULEBs or 550 NES compliant burners could be installed without compromising existing air quality if older burners were required to be replaced at the end of a 20 year useful life. If the replacement of older burners is not compulsory, lower limits such as 1250 ULEB or 225 NES compliant burners would need to be set, if existing air quality is to be maintained.

Report	Summary/Key findings
	<ul style="list-style-type: none"> • In Airshed C a 10% reduction in emissions as a result of behaviour change would enable 600 ULEB to be installed, while achieving acceptable air quality. • This number could be increased to around 3000 ULEB or 700 NES compliant burners without compromising existing air quality if older burners were required to be replaced at the end of a 20 year useful life. If the replacement of older burners is not compulsory, lower limits, such as 1500 ULEB or 350 NES compliant burners should be set if existing air quality is to be maintained.
<p>Potential impacts of management measures - heating, household and fuel poverty data for Nelson – (2014), Environet, 2015</p>	<ul style="list-style-type: none"> • Around 5837 households in Nelson (combined airshed area only) used a wood burner for home heating in their main living area in 2014. • The proportion of households with no insulation in Nelson appears to have decreased from around 12% in 2006 to 4% in 2014. • The majority of wood burners are used in owner occupied accommodation (77%). • Around two thirds of the wood used in wood burners was purchased from wood suppliers. • Wood burners are typically used in larger houses (3+ bedrooms) more than 40 years old. • Around 16% of households in Nelson are estimated to meet the definition of fuel poverty (10% or more of the annual income is spent on energy). • There is no evidence to suggest the AQP policy approach of continual air quality improvement has increased the proportion of cold homes in the City.

Report	Summary/Key findings
Nelson City Council: Assessment of Air Quality Management Options, Market Economics, 2015	<ul style="list-style-type: none"> • Of the options considered (and summarised above), implementing an enhanced behaviour change programme would result in the greatest benefits for the least costs. The benefits would be experienced by the wider society more than by individual households. • Continuing to improve air quality (as provided for in the current air quality plan) is the best option, followed by maintaining air quality at current levels. • Increasing air pollution would result in a transfer of costs from individual households to society as a whole.

4.3 Consultation

4.3.1 Consultation process

The consultation process undertaken to date has been summarised in section 1.6 of the report above. Key findings of that engagement process are presented in detail below.

4.3.2 Summary of feedback received

The table below (**Table 7**) outlines the key themes of the feedback received during the consultation process.

Table 7: Summary of feedback received through consultation

Issue	Feedback summary
<i>Airsheds B2 and C have more capacity, so people in these airsheds should be allowed to install fires.</i>	<ul style="list-style-type: none"> • Different options for addressing air quality in the different airsheds should be considered. • Some people want wood burners where there is spare capacity for them – others want wood burners to be allowed, regardless of whether or not

Issue	Feedback summary
	there is capacity.
<i>Airshed boundaries should be changed</i>	<ul style="list-style-type: none"> • Woodburners should be allowed in Atawhai (which is part of Airshed C). • Monaco should be excluded from Airshed B2.
<i>New technology including Ultra Low Emission Burners (ULEB) and emission control technologies should be recognised and provided for.</i>	<ul style="list-style-type: none"> • ULEB should be permitted in new and existing homes. Pellet fires are permitted, so ULEB should also be permitted. A number of ULEB are now available, and are allowed in Christchurch. • Any plan change should allow for future technological improvements so that if new a wood burning model(s) comes along and it meets an appropriate standard, it can be installed without the need for another plan change. • ULEB should be considered, however there is concern that these are currently expensive. We should be encouraging New Zealand made low emission burners and support local businesses. • Council officers met with Tasman District Council officers, who noted with interest that Nelson proposes to carry out a plan change which is likely to allow ULEB in Airsheds B2 and C. Tasman District Council will note the feedback on this proposal through the submissions process and keep a watching brief on the outcome.
<i>Wood burners should be allowed and emissions managed through education (primarily) and enforcement where wet wood is used, or fires are excessively smoky</i>	<ul style="list-style-type: none"> • Suggestions included: <ul style="list-style-type: none"> – mandatory annual cleaning of chimneys and regulation of wood suppliers – more education about how to run a fire – regular inspection of wood to consider storage, moisture

Issue	Feedback summary
	<p>content, and suitability for burning.</p> <ul style="list-style-type: none"> Strong support was expressed for continuation of the Council's Eco Design Adviser role, providing free information on insulation, double glazing and home heating options.
<p><i>Greater choice should be available about how people heat their homes, and many people prefer wood burners</i></p>	<ul style="list-style-type: none"> People want cheap, affordable, sustainable and effective heating. Wood is renewable and less expensive. Wood as a heating source is cheap and even free for some people. Fires are an important source of heating and cooking during power outages. Fires put out two to three times more heat than a decent sized heat pump. Disadvantages of alternatives: <ul style="list-style-type: none"> Heat pumps make the room too dry Pellet fires are unusable in a power cut and use processed wood Gas heaters are unsafe and a health hazard. Cold homes are unhealthy. Winter is tough for some families. Older people and young families often live in older, colder homes. These matters should be given regard by the Council and/or in the Air Quality Plan. Cost is a factor for pensioners. There is a health consequence for the elderly. They bear the brunt of the rules. As the population is ageing, the amount of people living in cold homes will increase. A community nurse noted that she sees a lot of people in Housing New Zealand houses and in the community who don't use heating as they

Issue	Feedback summary
	<p>can't afford it.</p> <ul style="list-style-type: none"> Timeframes for replacement of old fires should be relaxed. There are a number of reasons why people didn't replace a wood burner during the phase out periods including affordability, choosing a heat pump at the time, and moving house since the phase out period finished. Mould is an issue in some places where a fire is not permitted. Fires help to dry mould out of houses. People should be able to heat their homes however they want. People with NES compliant burners that are using good wood should not be penalised.
<i>More investment in a range of solutions</i>	<ul style="list-style-type: none"> A number of people supported Council investing in solutions including research into low emission, cost effective burners and other technology. Further support was provided to Council encouraging alternative solutions to be developed, and supporting those doing research to come up with low cost, effective burners. Council should also look into emission control technologies.
<i>Air quality is important</i>	<ul style="list-style-type: none"> There are people in the community who don't want to see air pollution worsening in Nelson – and hope that Council will not just listen to those in favour of increasing wood burner numbers. People who have not experienced the poor air quality in Nelson might not understand what it was like historically. Before the current rules were in place, air pollution in Nelson was really poor and the smoke smell was strong in winter. Fine particle pollution is a major cause of lung disease and there is an

Issue	Feedback summary
	<p>obligation to future generations to keep the City's air quality standards high.</p>
<p><i>Options to consider</i></p>	<ul style="list-style-type: none"> • Transferable rights – the ability to transfer wood burner rights to others who want them • Point of (house) sale phase out for older burners • Behaviour change programmes • Insulation (to reduce fuel use) • Emission control technology • Airshed boundary changes • Greater enforcement of smoky fires • Phase out of older burners to create capacity for new burners • Dispensations for people with special needs • More compliance monitoring and enforcement • Control hours of operation of burners (7-midnight) • Performance based approach – regulating the amount of discharge rather than the type of appliance being used for heating • Criteria for allowing burners, if there is a cap on the number in an airshed, eg other sources of heating, income and number of children. The view expressed by the Woodburner Community Group was that people in fuel poverty should be the priority, followed by others that want burners.

Issue	Feedback summary
	<ul style="list-style-type: none"> • Carry out a plan change to allow for the efficient ULEBs and wait for the revised NES to come out before making further changes. • Be able to apply to have a wood burner based on location, type of burner, etc. • One person spoke about the impact of pollution from neighbours' old fires in Airshed C where older fires did not have to be replaced, and was in favour of requiring phase outs of these wood burners.
<p><i>The plan change process to enable installation of new burners should be expedited</i></p>	<ul style="list-style-type: none"> • Frustration was expressed at the length of time required to make changes to the Air Quality Plan. The lengthy time needed to conduct further monitoring, modelling, plan change development, and decision-making processes was questioned. • The Woodburner Community Group expressed a preference to proceed straight to fully notified plan provisions rather than seeing a draft plan. The group also preferred acting before any changes to the NES are proposed. • The Woodburner Community Group requested preparation of a speedy building consent process once new burners are allowed, to cater for demand. They would also like to see retailers being kept informed of the changes so that they are ready for the influx of people wanting to install wood burners.
<p><i>Concerns about changing the rules</i></p>	<ul style="list-style-type: none"> • Recognition needs to be given to people who have spent money updating their fires already. • People shouldn't buy a house without a fire and then expect to be able to put one in (buyer beware principle should apply).
<p><i>Questions about the air quality monitoring</i></p>	<ul style="list-style-type: none"> • Concerns were raised that domestic emissions are being unfairly

Issue	Feedback summary
<i>information</i>	<p>targeted, rather than other sources of emissions (industry and transport).</p> <ul style="list-style-type: none"> • The representativeness of monitoring locations was queried.
<i>Questions about the health statistics</i>	<ul style="list-style-type: none"> • Questions were raised about health improvements from air quality improvements compared to health impacts from cold homes (is hospitalisation increasing because of cold homes)? • The DHB's statistics show that people with respiratory problems who have had their house insulated don't come back to hospital as often. • The Medical Officer of Health, Ed Kiddle, advised that it is challenging to link hospital admission information to cold homes or to particulates as there are small sample sizes and the conditions are multi-factorial. Problems caused by particulates are masked by other factors. The preference he expressed is to work on both problems – air particulates and cold homes. He added that cold homes impact people quickly, whereas impacts of particulate take longer to show.
<i>Resilience and Iwi values</i>	<ul style="list-style-type: none"> • Council officers met with an Iwi Working Group throughout 2015. Several air quality issues of significance to Iwi have been identified through that dialogue, most of which will be addressed in the upcoming Nelson Plan review. These include recognition of traditional values such as use of fires for provision of kai and expression of manaaki tanga, as well as contemporary issues including the warmth and health of low income families, and Iwi ownership of forestry land. • Air quality and the proposed Woodburner Plan Change were discussed in late 2015 Iwi Working Group meetings. Feedback from the Group included a preference for Option 1. They emphasised the importance of maintaining improvements in overall air quality, regular monitoring and

Issue	Feedback summary
	<p>taking a holistic approach to air quality management. Incentives and education are generally preferred as an initial approach, with regulatory follow up if this is required. They also support any opportunities to work with council and other interest groups to enhance burner accessibility for people with health issues or low incomes.</p>
Equity	<ul style="list-style-type: none"> • Without a system of allocation it could be that people who can afford wood burners get them first and those who can't afford them, and need them most, are still unable to get them. • People who are renting are unlikely to benefit from rule changes because landlords are unlikely to pay for expensive new burners. • The insulation scheme also applies to homes that are rented. Several people expressed a view that the community shouldn't be paying to insulate landlords' houses as it improves their asset.

4.4 Decision-Making

Table 8 below presents the formal Council resolutions leading to the notification of the plan change.

Table 8: Summary of feedback received through consultation

Date	Relevant decision
18 December 2014 – Council meeting	<p><i>That Council resolves that:</i></p> <p>(a) <i>The review of the Nelson Air Quality Plan be brought forward 3 years and commence immediately;</i></p> <p>(b) <i>Engagement with interested persons to hear their views and to help scope the issues to be addressed in the Plan Review will occur early in 2015;</i></p> <p>(c) <i>Ministry for the Environment officials will be invited to engage directly with</i></p>

	<p><i>Nelson City Council in the preparatory stages of this Plan Review, including hearing the views of interested persons;</i></p> <p><i>(d) The preparation of the Air Chapter of the draft Nelson Plan will occur concurrently with continuing monitoring and modelling to support the Plan review;</i></p> <p><i>(e) Financial capability for this work will be provided for within existing budgets and the draft Long Term Plan;</i></p> <p><i>(f) Council's commitment to a single Nelson Plan remains but, in order to fast track the provisions relating to Air Chapter hearings and final decisions to enable this section to be made operative, this matter will take first priority.</i></p>
<p>17 December 2015 – Council Meeting</p>	<p><i>THAT the report Proposed Change A3 to the Nelson Air Quality Plan - Amendments to Woodburner Provisions (R5193) – based on Option 1 of continuing to seek improving air quality as outlined in the Nelson Air Quality Plan and its attachments (A1473707, A1472304, A1472293, A1469510, A1469489, A1472174, A1469497, A1469511, A1469503) be received;</i></p> <p><i>AND THAT the Woodburner Plan Change (PCA3) and section 32 report be approved for notification on 16 January 2016;</i></p> <p><i>AND THAT at the time of notification of Proposed Change A3, Council officers survey residential landowners without woodburners to indicate the likelihood and preference for installing either a new NES compliant woodburner or an Ultra Low Emission Burning device over the next two years;</i></p> <p><i>AND THAT the Mayor, Planning and Regulatory Committee Chair and Chief Executive be delegated authority to make further minor changes following the Council meeting to enable notification on 16 January 2016.</i></p>

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Note – all the above materials can be accessed via the Council website (www.nelson.govt.nz) -

ANNEXURE 1

Synopsis of feedback from TAs: woodburner rules

Summary of Regional Council domestic burner rules (June 2015)

Council	Regional rules
Auckland Council	Applies the National Environmental Standard for Air Quality (NESAQ) emission and efficiency limits to all solid-fuel burners (eg, multi-fuel burners, cookers). 4g/kg standard applies to all new domestic fires not covered by NES i.e. open fires (however, NES polluted airshed clause came into effect overriding this rule with a ban on new open fires).
Bay of Plenty Regional Council (through the Rotorua District Council)	Established the Rotorua Air Quality Control Bylaw in 2010 which contains three rules (all in effect) (1) only pellet burners and compliant wood burners can be installed within the airshed (2) all non-compliant solid-fuel burners must be removed (or open fires made inoperable) when homes are sold (3) a ban on the use of indoor open fires.
Waikato Regional Council	No Regional Plan regulations pertaining to domestic burners. Trying to encourage introduction of bylaw on woodburners for Tokoroa with South Waikato District Council.
Hawke's Bay Regional Council	More stringent solid-fuel burner emission in effect in Hastings Airzone 1 (1.0 g/kg). Applies the NESAQ emission and efficiency limits to all solid-fuel burners. Staged bans on the use of older, non-compliant solid-fuel burners (1 January 2014, 2016, 2018, 2020). Point of sale rule: fire becomes non-compliant on change of ownership date
Nelson City Council	Applies the NESAQ emission and efficiency limits to all solid-fuel burners. Staged bans on the use of older solid-fuel burners in Airsheds A, B1 and B2. Ban on the installation of new solid fuel burners in new homes and where none previously existed, except for ultra-low emission pellet burners. Open fires banned in urban area from 1 January 2008.
Tasman District Council	Ban on the installation of new burners in new homes and where none previously existed. Ban on the use of non-compliant burners after a house is sold. These fires may be replaced with a compliant fire. Requiring burner operation without the creation of excessive smoke.
Marlborough District Council	Currently no controls on burners. About to release new plan which proposes a prohibition on all open fires; prohibition of backyard burning; encouraging phasing out of any burner after 15 years, and applying NESAQ for any burner.
Environment Canterbury	Proposed rules: Region wide – use dry, seasoned wood; no visible smoke (except brief periods); new burners installed by

accredited installer; no burning toxic substances/materials; requirements to keep maintenance records.

Christchurch – from 2015: Ultra low emission burners are allowed into all homes, including new homes; installation of low emitting burners into new homes is not allowed; use of older style burners is not allowed; use of low emitting burners is allowed for up to 15 years or until 2019 (whichever is later); from 2019: From 1 January 2019 any new burner installed must be an ultra-low emitting burner.

Ashburton, Rangiora & Kaiapoi - from 2015: Ultra low emission burners are allowed into all homes, including new homes; installation of low emitting burners in Ashburton into new homes and new situations is not allowed from 31 December 2015; installation of low emitting burners into new homes and new situations in Kaiapoi and Rangiora is not allowed ; use of older style burners is not allowed; use of low emitting burners is allowed for up to 15 years or until 2019 (whichever is later); from 2019: From 1 January 2019 any new burner installed must be an ultra-low emitting burner.

Timaru – 2015: Ultra low emitting burners are allowed into all homes including new homes; use of open fires is not allowed from 31 December 2015. From 2016: Installation of low emitting burners into new homes and new situations is not allowed; use of low emitting burners is allowed for up to 15 years. From 2017: use of older style burners is not allowed after 1 January 2017. From 2019: From 1 January 2019 any new burner must be an ultra low emitting burner.

Waimate & Geraldine – From 2105: Ultra low emitting burners are allowed into all homes including new homes. From 2016: use of open fires is not allowed after 31 December 2016. From 2020: use of older style burners is not allowed after 31 January 2020.

Otago Regional Council	<p>More stringent solid-fuel emission rule in effect in Air Zone 1 (0.7 g/kg), with requirement to replace existing non-compliant burners before January 2012.</p> <p>Solid-fuel emission rule in effect in Air Zone 2, and in properties less than 2 hectares in Air Zone 3 (1.5 g/kg), with no requirement to replace existing non-compliant burners.</p> <p>Setting a regional PM₁₀ goal level of 35 ug/m³ as an objective standard.</p>
Environment Southland	<p>Invercargill & Gore airsheds – From 1 September 2015: use of open fires is prohibited. From 1 January 2016: use of any non-approved burner/boiler installed before 1 January 2001 is prohibited. From 1 January 2021: use of any non-approved burner/boiler installed between 1 January 2001 and 1 September 2005 is prohibited. From 1 January 2025: use of any non-approved burner/boiler installed between 1 September 2005 and 1 January 2010 is prohibited. From 1 January 2029: use of any non-approved burner/boiler installed from 1 January 2010 is prohibited.</p>