TASMAN DISTRICT COUNCIL
PROPOSED TASMAN RESOURCE MANAGEMENT PLAN

DRAFT VARIATION

Air Quality Management

EXPLANATORY STATEMENT

Good air quality is important for people's health and well-being. National and international data shows high PM_{10} concentration can increase mortality rates, aggravate respiratory illnesses such as asthma, and result in reduced activity (people work less because of illness or having to care for ill people).

Air quality monitoring in Richmond since 2000 has shown high levels of PM_{10} during winter months. This air quality exceeds the limits set in national regulations and Council must adopt measures to improve air quality and protect people's health.

Investigations show that the primary cause of poor air quality is burning solid fuels in domestic appliances. Over 80% of PM_{10} comes from this source. About 10% each comes from traffic and industry sources.

The Council proposes to amend the Proposed Plan by a variation to address the need to regulate sources of PM_{10} so that ambient air quality in Richmond and other townships can be improved to meet National Air Quality Standards.

The Council proposes to introduce new regulation over the installation of small-scale (domestic) solid fuel appliances in urban settlements. No new appliances will be allowed to be installed in Richmond. Existing burners and open fires will be permitted to be replaced, but only with an appliance that meets minimum standards for PM_{10} emissions. The Council will also enforce this standard at the time a house changes ownership. This new regulation will prohibit the discharge of any smoke from a non-compliant appliance once a house has changed ownership.

In other settlements, new solid fuel appliance will be required to meet minimum standards for emissions of PM_{10}.

The Council will not have any new regulations for the rural areas of the District, **except** that the Council will continue to enforce the National regulation introduced in September last year that requires higher performance appliances on any property that is less than 2 ha in size.

In addition to this, Council will introduce higher thresholds for industrial sources of PM_{10}. Existing emissions in the Richmond airshed will mostly be regulated by a controlled activity resource consent requirement, while any new sources of PM_{10} will be discretionary activities.

The Council will also provide Richmond people with regular information about air quality and the effects of PM_{10} on people's health. It will also provide information to people on alternative methods of home heating, measures to reduce energy use and how to operate solid fuel appliances to minimise emissions of PM_{10}.

The Council will review the effectiveness of these provisions in 2010.

Council has considered the benefits and costs, and need and appropriateness of these amendments. Council reports EP 05/12/07, EP 05/06/22, EP 05/02/07, EP 04/11/03, and EP 06/05/24 assess the options and are the reports prepared in compliance with the duties under Section 32 of the Resource Management Act 1991.

DRAFT SCHEDULE OF RECOMMENDED AMENDMENTS

The Proposed Tasman Resource Management Plan is amended in accordance with the following schedule:

1. MEANINGS OF WORDS (CHAPTER 2)

1.1 **Delete** meaning for domestic solid fuel burner and **replace** with:

Small Scale Solid Fuel Appliance *– means appliances having a net heat output of up to 40 kilowatts using solid fuels, and includes open fires, pot belly and domestic ranges and stoves, wood burners, multi-fuel (coal/wood and waste burning systems), and similar appliances.*

1.2 **Amend** plan so that references to "domestic solid fuel burners" are replaced with reference to "small-scale solid fuel appliance" as necessary.

1.3 **Insert** the following interpretation into the appropriate alphabetical place in section 2.2:

Richmond Airshed - *means that area of land specified by the Minister for the Environment by notice in the Gazette to be a separate airshed and subject to applicable rules.*

2. DISCHARGES TO AIR (CHAPTER 34)

2.1 **Add** new policies, as follows:

34.2.6A *To manage air quality to meet National Environment Standards for ambient air quality, especially in relation to concentrations of PM_{10}.*

34.2.6B *To improve air quality in urban settlements, especially in the Richmond Airshed, where ambient air quality is degraded because of PM_{10} concentrations by:*

(a) ensuring a high level of public awareness about effects of PM_{10} on human health;

(b) reducing the number of houses using solid fuel for home heating;

(c) enforcing higher performance standards for new or replacement solid fuel appliances in urban zones;

(d) improving operation of existing solid fuel appliances to reduce levels of PM_{10} being discharged;

(e) establishing standards for small-scale solid fuel appliances and enforcing these standards when a property changes ownership in the Richmond Airshed;

(f) setting performance standards to reduce PM_{10} emissions from industry;
(g) taking into account effects of vehicle emission on ambient air quality in road transport, cycle and pedestrian strategies;
(h) encouraging use of clean heating alternatives for home heating;
(i) encouraging use of sustainable housing design including those that take advantage of solar energy and insulation technology.

34.2.6C *To take into account national guidelines for air quality when considering applications to discharge contaminants into the air.*

34.2.6D *To work closely with Nelson City Council to manage adverse effects of discharges to air that may cross into any airshed in Richmond or Nelson City especially where the airshed exceeds ambient air quality standards for PM_{10}.*

34.2.6E *To take into account potential adverse effects on ambient winter time PM_{10} concentrations in the Richmond Airshed of discharges to air that may enter the Richmond Airshed.*

2.2. **Add** new 'Methods of Implementation', as follows:

2.2.1 To (a) (Regulatory) **add:**

(iv) Rules that establish compliant heating standards and standards of performance for solid fuel appliances.
(v) Enforcement of compliant heating standards at the time a property changes ownership.
(vi) Capping the number of solid fuel appliances in the Richmond Airshed.
(vii) Rules that establish good performance standards for industrial sources of PM_{10}.

2.2.2 To (b) (Education and Advocacy) **add:**

(v) Ensuring good and timely information about air quality is available, including information about operation of solid fuel appliances.
(vi) Provide information about, and encourage adoption of, insulation and home heating methods that are sustainable and result in reduced emissions to air.

2.2.3 To (c) (Investigations and Monitoring) **add:**

(v) Continue to monitor PM_{10} concentrations in Richmond and to gather information about air quality in other townships.
(vi) Continue to liaise with Nelson City in the monitoring and reporting of air quality and in managing cross-boundary effects of discharges of contaminants into adjoining airsheds.
(vii) Continue to monitor and investigate climatic influences on ambient air quality in Richmond and between Richmond and neighbouring airsheds.

2.2.4 Add:

(d) ***Works and Services***
(a) Transport, cycling and pedestrian strategies that include measures to improve air quality in urban areas.

2.3 **Add** to 'Principal Reasons and Explanation' for policies:

Good air quality is important for people's health and well-being. National and international data shows high PM_{10} concentration can increase mortality rates, aggravate respiratory illnesses such as asthma and result in reduced activity (people work less because of illness or having to care for ill people).

Air quality monitoring in Richmond since 2000 has shown high levels of PM_{10} during winter months. This air quality exceeds the limits set in national regulations and Council must adopt measures to improve air quality and protect people's health.

Investigations show that the primary cause of poor air quality is burning solid fuels in domestic appliances. Over 80 percent of PM_{10} comes from this source. About 10 percent each comes from traffic and industry sources.

These policies will guide the Council in managing discharges to air so that the national standards can be met and air quality in Richmond and other urban settlements is suitable for people's good health. The policies and methods take into account social issues related to equity, and people's ability to pay for upgrading poorly-performing solid-fuel appliances and improving levels of insulation.

Industrial sources of PM_{10} from combustion type processes will be addressed through the establishment of higher performance standards and improved monitoring. Transport, cycle and pedestrian policies will take into account the effects of vehicles on ambient air quality.

3. RULES FOR CONTAMINANT DISCHARGES (CHAPTER 36)

3.1 **Delete** Rule **36.3.3** and **replace** with:

Discharge from Small-Scale Solid Fuel-Burning Appliances in Urban Areas

Except as prohibited by Rule 36.3.15, the discharge of any contaminant to air from a small-scale solid fuel-burning appliance that is located on any site in any of the following zones:

Central Business
Residential
Commercial
Tourist Accommodation
Industrial
Papakainga
Open Space
Recreation, and
Rural Residential zones [where the minimum net area is at least 2ha],

is a permitted activity that may be undertaken without a resource consent, if it complies with the following conditions:

(a) *Any discharge in the Richmond Airshed is not from an appliance prohibited under Rule 36.3.16A or 36.3.16B*

(b) *The discharge is from either:*

(i) *an appliance lawfully existing at <date of notification> including any appliance for which a building consent has been issued;*
or

(ii) *an appliance that emits no more than 1.5 grams of total suspended particulate per kilogram of fuel burned, when tested in accordance with AS/NZS4012:1999 and AS/NZS4013:1999 or AS/NZS4014.2:1999 as appropriate; and having a thermal efficiency for space heating as described in AS/NZS4013:1999, of at least 65 percent.*

(c) *Clauses (i) and (ii) of this condition do not apply to any solid fuel-burning appliance that is used primarily for cooking purposes or any kiln or forge..*

(d) *The discharge does not result in any objectionable or offensive smoke, odour or deposition of particles beyond the property boundary.*

Note 1: *The Council may require evidence that the appliance complies with the standards specified and will accept authorisation or approval number assigned by the Nelson City Council, or Canterbury Regional Council (Environment Canterbury).* ***Approved*** *models are also listed on the website of the Ministry for the Environment.*

Note 2: *The NES requires that any new burners installed on any site up to 2 hectares since September 2005 must comply with the emission and efficiency standard given in clause (ii).*

3.2 **Insert** new Rule **36.3.16A** under 'Prohibited Activities (Discharges to Air)':

New Discharges from Solid Fuel Appliances in the Richmond Airshed

The discharge of any contaminant to air in the Richmond Airshed from any small-scale solid fuel-burning appliance that is used primarily for space heating, occurring after <the date of notification> ***is a prohibited activity*** *for which no resource consent shall be granted except that this rule does not apply to the following:*

(a) *Any solid fuel appliance that is used primarily for cooking rather than space heating.*

3.3 **Insert** new Rule **36.3.16B** under 'Prohibited Activities (Discharges to Air)':

Discharge from Non-Compliant Small-Scale Solid Fuel-Burning Appliances in the Richmond Airshed*.*

The discharge of contaminants into air in the Richmond Airshed from any small-scale solid fuel-burning appliance that does not comply with Rule 36.3.3A(b)(ii) and (c), at any time after the date upon which there is registered a transfer of ownership of the site on which the appliance is located, is a prohibited activity for which no resource consent shall be granted.

For the purposes of this rule, "transfer of ownership" does not include:

(a) *a transaction in which a person who was:*
  (i) *a registered proprietor of the land; or*
  (ii) *an occupier of the land*

at the date of notification of this Plan, remains or becomes a registered proprietor (whether or not the only registered proprietor) of that land after the transfer; or

(b) a transaction in which the transferee is a trustee of a trust, and one or more of the transferors is a beneficiary of that same trust; or

(c) a transaction which takes place before <date of notification>.

Note: *The Council may require evidence that the appliance complies with the standards specified and will accept authorisation or approval number assigned by the Nelson City Council or Canterbury Regional Council (Environment Canterbury). Approved models are also listed on the website for the Ministry for the Environment.*

EXPLANATION: This rule option allows for compliant burners to continue being used in Richmond. Some house owners may need to ensure a burner is upgraded to meet the new standards. It is consistent with the new rule 36.3.3A, which also allows old models to be replaced with compliant burners.

3.4 **Delete** Rule **36.3.6** and **replace** with:

36.3.6 Discharge from Enclosed Combustion Processes

The discharge of any contaminant to air from enclosed combustion processes, not including motor vehicles or aircraft, is a permitted activity that may be undertaken without a resource consent, if it complies with the following conditions:

(a) The fuel being burnt is only coal, wood, including bark or sawdust, heavy fuel oil, LPG, CNG, light fuel oil, diesel or kerosene, or any combination of these fuels.

(b) Where the fuel is coal, wood, including bark or sawdust, or heavy fuel oil or any of these in combination with any fuel listed in condition (c):
- *(i) the discharge is not in the Richmond Airshed; or*
- *(ii) any discharge in any Residential Zone outside the Richmond Airshed is existing as at <date of notification> and the combined heat output rate on the site does not exceed 2 megawatts; or*
- *(iii) the combined heat output rate on the site does not exceed:*
  - *1 megawatt in any Residential Zone outside the Richmond Airshed; or*
  - *2 megawatts in any other zone outside the Richmond Airshed or any Residential Zone.*

(c) Where the fuel is gas, including LPG or CNG; light fuel oil, including diesel, kerosene; or any combination of these:
- *(i) any discharge in the Richmond Airshed is existing as at <date of notification>; and the combined heat output rate on the site is less than 2 megawatts; or*
- *(ii) the combined heat output rate on the site does not exceed:*
  - *1 megawatt in the Richmond Airshed;*
  - *2 megawatts in any Residential Zone outside the Richmond Airshed; or*
  - *5 megawatts in any other zone outside the Richmond Airshed or any Residential Zone.*

(d) The sulphur content of the fuel does not exceed 1% by weight in the Richmond Airshed or in any Residential or Rural Residential Zone.

(e) Annual maintenance is carried out by a person suitably qualified and experienced in boiler maintenance to include the following:
- *(i) removal of ash;*
- *(ii) adjustment of fuel ratios, including the fuel to air ratio and testing the ratio of combustion gases;*
- *(iii) testing of CO, and CO_2; and*
- *(iv) testing of SO_2 where coal or heavy fuel oil is used.*

(f) A maintenance record must be kept and made available to the Council on request.

(g) Except for a period not exceeding two minutes in any hour of operation, the smoke opacity at the discharge point of the stack does not exceed 40 percent (or no darker than Ringelmann Shade No.1 as described in NZS5201:1973).

(h) A record of the type of fuel used and quantities used per month must be kept and must be supplied to the Council on request.

(i) The emissions stack is whichever is the greater of either:
- *(i) at least 12.5 metres above the ground or*
- *(ii) 2 metres higher than the apex of any building, tree or other structure within a horizontal radius of 2.5 times the stack height.*

(j) The discharge is directed vertically into the air and not impeded by any obstruction that would lower the velocity of the exhaust gases.

3.5 Delete Rule **36.3.9** and **replace** with:

36.3.9 Discharge from Enclosed Combustion Processes

The discharge of any contaminant to air from enclosed combustion processes, not including motor vehicles or aircraft, that does not comply with the conditions for a permitted activity, is a controlled activity, if it complies with the following standards and terms:

(a) The fuel being burnt is coal, wood, including bark or sawdust, heavy fuel oil, LPG, CNG, light fuel oil, diesel, or kerosene.

(b) Where the fuel is coal, wood, including bark and sawdust, or heavy fuel oil, or any of these in combination with any fuel listed in condition (c):
- *(i) any discharge in the Richmond Airshed is existing as at <date of notification>; and the combined heat output rate on the site is less than 2 megawatts; or*
- *(ii) any discharge in any Residential Zone is existing as at <date of notification> and the combined heat output rate on the site does not exceed 5 megawatts; or*
- *(iii) the combined heat output rate on the site does not exceed:*
  - *2 megawatts in any Residential Zone outside the Richmond Airshed; or*
  - *5 megawatts in any other zone outside the Richmond Airshed or any Residential Zone.*

(c) Where the fuel is LPG, CNG, light fuel oil, diesel, kerosene or any combination of these fuels:

(i) any discharge in the Richmond Airshed is existing as at <date of notification>; and

(ii) the combined heat output rate on the site does not exceed:

- *5 megawatts in the Richmond Airshed or in any Residential Zone outside the Richmond Airshed; or*
- *2 megawatts in any other zone outside the Richmond Airshed.*

(d) The sulphur content of the fuel does not exceed 1 percent by weight in the Richmond Airshed or in any Residential or Rural Residential Zone.

(e) Except for a period not exceeding two minutes in any hour of operation, the smoke opacity at the discharge point of the stack, does not exceed 40 percent (or no darker than Ringelmann Shade No.1 as described in NZS5201:1973).

(f) Within the obstacle limitation surface for the Nelson Airport as shown on the planning map, the efflux velocity does not exceed 4.3 metres per second at a height greater than 60 metres.

***A resource consent** is required and may include conditions on the following matters over which the Council has reserved control:*

(1) Effects of the discharge on localised and ambient levels of contaminants including PM_{10}, sulphur and nitrogen oxides and other contaminants where relevant, including any effects on ambient air quality in adjacent airsheds.
(2) The type of fuel used, including options for alternative fuels to reduce adverse effects on the environment.
(3) Stack height and configuration of the boiler.
(4) Any best practice option to reduce any actual or potential adverse effect on ambient air quality.
(5) Maintenance and regular servicing including the following:
(i) efficient operation of the fuel burning equipment including maintenance of optimal fuel to air ratio
(ii) removal of ash;
(iii) adjustment of fuel ratios, and testing the ratio of combustion gases;
(iv) testing of SO_2.
(6) The keeping of records.
(7) Effects of the discharge on air traffic safety.
(8) The duration of the consent (Section 123 of the Act) and the timing of reviews of conditions and purpose of reviews (Section 128).
(9) Bonds, and covenants in respect of the performance of conditions, and administrative charges (Section 108).

3.6 **Insert** the following new rules:

36.3.6A Stationary Internal Combustion

The discharge of any contaminant to air from stationary internal combustion engine is a permitted activity if it complies with the following conditions:

(a) The fuel is gas, liquefied gas, petrol, diesel, vegetable oils, or alcohol.

(b) The combined power output of any engines on the site does not exceed:
(i) 30 kilowatt, or
(ii) 400 kilowatt, if the engine is only operated in an emergency when normal power supply is interrupted.

(c) The discharge is directed vertically into air and is not impeded by any obstruction that would lower the natural velocity of the exhaust gases.

3.7 **Amend** Rule **36.3.14** (Prohibited discharges to air from outdoor burning) to delete clause (c)(iii) (bitumen burning on roads).

3.8 **Insert** in Rule 36.3.15 (Prohibited materials for combustion in small-scale solid-fuel burning appliances) **insert:**

coal having a sulphur content of more than 0.5% in the Richmond Airshed, or wood having a moisture content of more than 25% by weight.

3.9 **Insert** new text into Principal Reasons for Rules **36.3.17:**

Domestic Sources of PM_{10}

The Richmond Airshed is the same as that gazetted by the Ministry for the Environment under the National Environment Standards for air quality and is the same for consistency. This airshed exceeds the ambient air quality standard for PM_{10} (small particulate matter). The primary source of this contaminant is domestic solid fuel appliances which contribute over 80% of the PM_{10}. Industry and vehicles contribute less than 10% each.

The rules ensure that no new sources of PM_{10} are permitted in the Richmond Airshed except where it is a replacement of an existing solid fuel appliance with a compliant (cleaner burning model).

The rules permit the continued use of existing domestic solid fuel appliances in all residential zones, including Richmond, although the operation of the burners is required to be such that PM_{10} discharge is minimised. This will help address ambient air quality as well as nuisance issues arising because of excessive smoke emissions.

Replacement of existing solid fuel appliances in all residential zones is also permitted, provided the new burner complies with higher emissions standards.

The rules establish a higher standard for domestic solid fuel appliances, but establish that the new standards are only enforced at the time a house changes ownership or when a burner is replaced.

This allows the price of the house to reflect the state of insulation and heating standards and the degree to which they need to be upgraded to meet the performance standards. Level of insulation is important because this may influence the amount of energy needed to heat a house. It avoids imposing unnecessary costs on all ratepayers or on people with low incomes.

When an existing solid fuel appliance is replaced in any urban zone, the rules ensure that new appliances are cleaner models to reduce the cumulative impact of domestic heating sources on ambient air quality.

Industrial Sources of PM_{10}

Industrial wood and coal burning boilers can discharge significant amounts of PM_{10} and other contaminants that affect local and ambient air quality. The amount of particulate material discharged varies according to design and operation of each appliance with wood and coal boilers emitting up to 30 – 50 times more PM_{10} than diesel or kerosene boilers.

Sulphur dioxide levels in emissions from coal boilers can also be significantly higher than from diesel boilers. The rules distinguish between boilers on the basis of fuels burnt, size of the boiler and location of the boiler because of the adverse effects of these contaminants, especially in areas where people's health may be affected.

While discharges from small-scale boilers are still permitted, Council is increasing the maintenance and record keeping requirements to ensure emissions from such boilers is minimised and best practice to reduce emissions is followed.

Small generators are often used by businesses and institutions to provide electricity in the event of a power supply failure. These generators typically have an energy output of less than 400 kW and are usually operated infrequently during power supply emergency or testing and maintenance purposes. Other small internal combustion engines (up to 30KW) such as pumps, are also maintained for emergency or occasional use.

Emissions of particulate matter and nitrogen oxides (per kilogram of fuel burned) are significantly higher from internal combustion than from external combustion sources. However, because of the small scale and infrequency of discharge, any adverse effects are normally minor.

According to US EPA emission factors, the emission rate of PM_{10} from internal combustion engines can be up to 33 times higher than the emission rate from a boiler burning the same amount of diesel oil. Because of the potentially significant contribution from such internal combustion sources to ambient and localised PM_{10}, SO2 and NO2 concentrations, the use of these generators as a permitted activity is restricted to maintenance and emergency purposes only. Consequently, operating time is restricted.

Any discharge from internal combustion engines larger than those permitted is likely to have a more significant impact on localised or ambient air quality and effects need to be assessed on a case by case basis.

4. ANNEXURES

Insert as Annex 2 to Part VI: "Resource Management (National Environmental Standards Relating to Certain Air Pollutants, Dioxins and Other Toxics) Regulations 2004" and a map indicating the Richmond Airshed as gazetted by the Minister for the Environment.