

Community and Stakeholder Feedback Summary Report

Air Quality Engagement
July–September 2024

20 February 2025



Acknowledgements

Otago Regional Council wishes to acknowledge all the community members and stakeholders who took part in the air quality management engagement process. All the feedback received through the survey, drop-in sessions, emails and discussion with stakeholders is greatly valued by the ORC Policy and Planning team and Strategy team. It is one of the key inputs that will inform the development of ORC's refreshed approach to air quality management in Otago.

Executive summary

ORC staff undertook community and stakeholder engagement on air quality management from July to September 2024, which involved a survey, public drop-in sessions and discussion with key stakeholders. This report summarises the feedback received through these different avenues.

There were 510 valid responses to the survey. Almost all were from urban areas, and around half were from Central Otago. Around half of respondents thought poor air quality was a problem where they lived at least sometimes, and 40% had changed their behaviour because of poor air quality.

Home heating and outdoor burning were the activities most often identified by survey respondents as the main sources of air pollution in Otago, and were the issues most often brought up by attendees at drop-in sessions. The most popular approaches for addressing both issues were non-regulatory.

Most respondents did not support approaches to managing home heating that would result in people not being allowed to have solid fuel burners—survey respondents, drop-in session attendees and stakeholders all expressed concerns about these measures resulting in people having cold homes. However, there was majority support for banning coal burning and gradually replacing higher-emitting burners.

A significant minority of survey respondents supported restrictions on outdoor burning based on property location, or over winter. However, most respondents and some stakeholders were not supportive, mainly due to concerns about unintended consequences and costs to farmers.

Community feedback suggests community members do not see management of vehicle emissions as something ORC should prioritise, and that efforts in this area should be focused on improving public transport.

There was general support among survey respondents for management of industrial emissions, odour, dust and agricultural spraying, but most respondents also did not think these were main sources of air pollution in Otago.

The survey results suggest that in general, there may be more support for air quality management interventions, including on home heating, in Dunedin City District and Queenstown Lakes. Although Central Otago's urban areas have some of the poorest air quality in Otago, achieving community support for interventions in these areas may be more challenging.

The community feedback received is not representative of the Otago population, so it does not provide statistically reliable quantitative data. However, it still provides a useful insight into Otago residents' views on air quality and their levels of support for different approaches to air quality management.

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1. Introduction

1. ORC staff are currently reviewing the Air Quality Strategy for Otago ('Strategy') and the Regional Plan: Air for Otago ('Plan'). To inform development of a new strategy and plan, staff have undertaken community and stakeholder engagement on air quality management in Otago.
2. The scope of this engagement was based on the key air quality issues for Otago and possible options for addressing them identified in the 4 December 2023 Council paper 'Air Plan: Issues and Options' ('issues and options paper'). The paper focused mainly on the Plan and regulatory approaches managing air quality, but it also identified a range of non-regulatory approaches. In December 2023, the issues and options identified in the paper, along with additional options suggested by councillors, were approved by Council for engagement in 2024.
3. Engagement was undertaken from July to September 2024 and involved a survey, public drop-in sessions and discussion with key stakeholders. A few members of the public also reached out to ORC to give their feedback separately. This report summarises the feedback received through these different avenues.

2. Methodology

2.1. Survey

4. The purpose of the survey was to provide an avenue for individual members to give feedback on air quality management and was open from 22 July to 26 August 2024. It was available online and paper copies were provided at the drop-in sessions. It was advertised through local newspapers, Google, Facebook and radio.
5. The survey included both multi-choice questions and open-ended questions that allowed respondents to answer in their own words. A copy of the survey is attached as Appendix 2.
6. The survey had five sections:
 - *Section A 'About you and your household' (Questions 1–3)* asked respondents demographic questions.
 - *Section B 'Air quality in Otago' (Questions 4–9)* asked respondents about their views on air quality where they lived and in Otago generally.
 - *Section C 'Rethinking air quality management' (Questions 10–14)* asked respondents about their level of support for the options identified in the issues and options paper, and whether there are other air quality issues ORC should focus on.
 - *Section D 'Your home heating' (Questions 15–23)* asked about the age and insulation of respondents' homes, their current heating sources and barriers to changing their heating sources to lower-emitting options.
 - *Section E 'Additional comments' (Question 24)* provided an opportunity for respondents to share any other comments about air quality.
7. All respondents were asked to complete Sections A–C, Questions 15–19 in Section D and Section E. Respondents who had a solid fuel burner and burned wood in it also completed Questions 19A– 20 in Section D, which were about their burners and wood burning practices. Respondents with ultra-low emission burners (ULEB) were directed straight to Section E after

Question 20. The final questions in Section D, about barriers to changing heating sources, with a solid fuel burner that was not an ULEB and to respondents who were unsure whether their burner was an ULEB.

8. Questions 10–13 were important, as they addressed the management options approved by Council for engagement in 2023. These options were related to domestic (home) heating, outdoor burning, vehicle emissions, discharges from industrial and trade premises, agricultural spray drift, odour and dust. The last four topics were grouped together in the issues and options paper and in the survey, due to overlap in the suggested options for addressing them. Respondents were asked to rate each of the suggested options from 1 (do not support) to 5 (fully support).
9. Staff inputted all paper survey responses into the online survey form. After the survey closed, the results were exported from SurveyMonkey for analysis in Microsoft EXCEL. In total, 512 responses were received, but two were considered invalid and were removed from all further analysis. They were considered invalid because one was made on behalf of an organisation rather than an individual and the other was duplicate of another response. The organisation response was instead considered as part of the primary industry stakeholder feedback.
10. Data cleaning also included the following:
 - Some respondents gave a written response using the ‘other – please specify’ option that overlapped completely with one of the other multi-choice options. These responses were represented as the appropriate multi-choice option.
 - Some respondents used the ‘other – please specify’ option to explain why they had selected other multi-choice options. These responses were only represented as the other multi-choice options they selected.
 - Some respondents gave responses that did not answer the question, and these were marked as not applicable ‘N/A’.
 - The paper surveys allowed for more errors than the online survey—for instance, respondents could select more than the two multi-choice options allowed in response to a question. When this occurred, the response to that question was marked as ‘N/A’.
11. When a response to a particular question was marked as ‘N/A’ it was excluded from the analysis of that question. For instance, one respondent answered ‘Noyb’ to Question 17, ‘What is the main heating source in your home?’ So for this question, n = 509 rather than 510.
12. The responses to the survey’s open questions were analysed using coding, which involved identifying key commonalities among the written responses. The resulting information was used to assist with interpreting the quantitative survey data.

2.2. Other community feedback

13. Individual members of the public also gave feedback through drop-in sessions and by emailing ORC. Staff received 5 emails from members of the public who wished to give feedback that way.
14. Between 29 July and 22 August, ORC staff held public drop-in sessions in towns across Otago, and online. 16 sessions were held in 11 towns (Mosgiel, Dunedin, Ōamaru, Balclutha, Milton, Ranfurly, Arrowtown, Wānaka, Alexandra, Cromwell, and Roxburgh), and 2 online sessions were held on 5 August. These sessions were an opportunity for community members to discuss air

quality management with staff and councillors. Attendance was low, ranging from 1 to 12 people at each session and less than 100 attendees across all the sessions. Feedback from the drop-in sessions was recorded as notes taken by staff while talking to community members.

15. The community feedback collected through the drop-in sessions and emails represents a very small number of people, and often people at the drop-in sessions were attending because they had strong views on air quality management or a specific question they wanted answered.
16. Community feedback received through avenues other than the survey therefore only provided qualitative data. This information, along with the qualitative survey data, was used to assist with interpreting the quantitative survey data. It also allowed staff to identify some key considerations not captured by the survey results.

2.3. Stakeholder feedback

17. Key stakeholders were categorised into four focus groups: primary industry, production and processing, community, and territorial authorities. A list of the stakeholders who provided feedback is provided in Appendix 1. Online sessions for discussion with each of these focus groups were held between 23 August and 12 September and a few individual discussions were held with stakeholders who could not attend the focus group sessions. Some stakeholders also provided written feedback on air quality management and one primary industry stakeholder submitted feedback through the survey. As the development of the new Strategy and Plan was in its very early stages during engagement, most of the stakeholder feedback was fairly general, so it has only been briefly summarised in this report. Staff will continue to engage with stakeholders throughout the process of developing the new Strategy and Plan.

3. Community feedback summary

3.1. Survey respondent demographics

18. The survey received 510 valid responses and almost half were from Central Otago. The Dunedin City and Queenstown-Lakes Districts had around 20% of respondents each, while the Waitaki and Clutha Districts each had less than 10%. Alexandra was the town with the most respondents; there were 131, representing one quarter of the total respondents (Figure 1, Table 1).
19. The vast majority of respondents overall and in each district were urban residents; respondents who selected 'Other' as their location were in rural areas or very small towns. However, a significant proportion of respondents from the Clutha District were in places less populated than Milton or Balclutha; there were 7 'Other' respondents, representing more than one third of the respondents from Clutha.

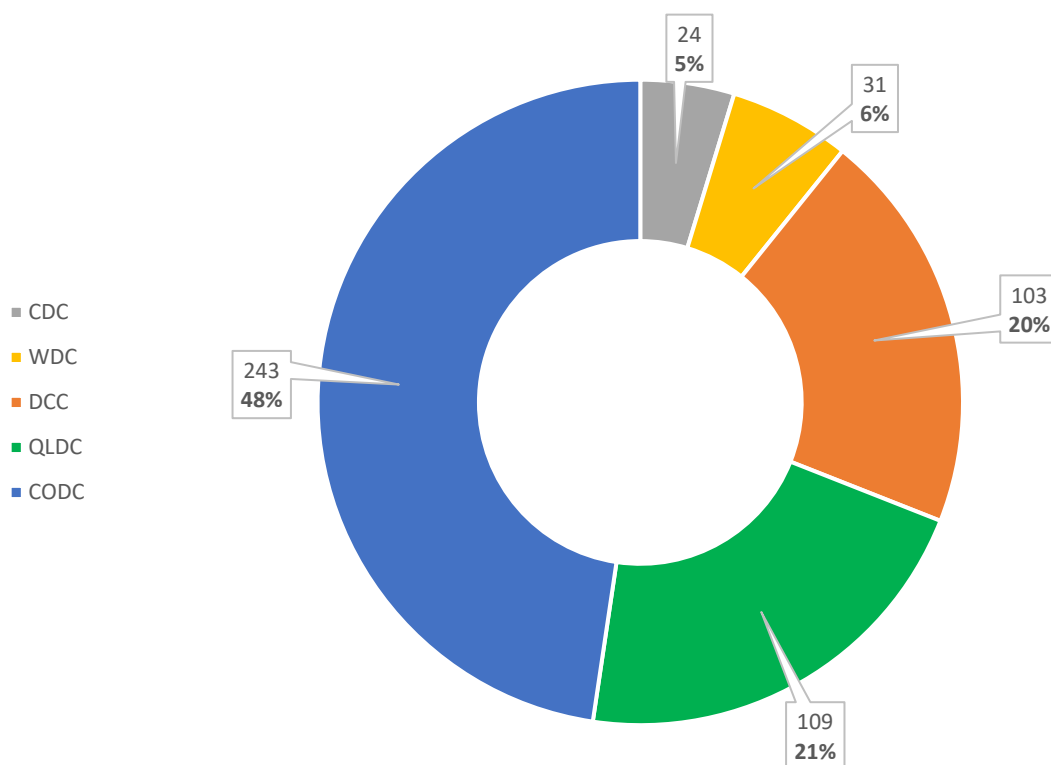


Figure 1. Survey respondents by district: Clutha (CDC), Waitaki (WDC), Dunedin (DCC), Queenstown-Lakes (QLDC) and Central Otago (CODC) (n = 510).

Table 1. Survey respondents by town (Question 1). The district each town is in is shown in brackets.

Location	No. of respondents	% of respondents (n = 510)
Alexandra	131	26%
Dunedin	87	17%
Arrowtown	75	15%
Cromwell	34	7%
Clyde	33	6%
Ōamaru	28	5%
Roxburgh	21	4%
Wānaka	18	4%
Mosgiel	13	3%
Milton	9	2%
Queenstown	8	2%
Balclutha	8	2%
Hāwea	7	1%
Ranfurlly	3	1%
Palmerston	1	< 1%
Naseby	1	< 1%
Other	34	7%

20. Most respondents (89%) owned the home they lived in; only 57 respondents (11%) did not (Question 1). Excluding those with pellet burners, around three-quarters of respondents (375, 74%) used a solid fuel burner as either their primary or secondary source of heating. 372 (73%) had a solid fuel burner they burned wood in, and 9 had a multi-fuel burner that they fuelled using both wood and coal (Questions 17 and 18).

21. Around half of respondents used a wood burner as their main heating source, while one third used a heat pump and 16% used a different heating source (Figure 2). Other heating sources selected by at least 1% of respondents were diesel heating, gas heating, electric heaters, multi-fuel/coal burners and pellet burners. However, the split between different heating sources varied across districts. There was a fairly even split between wood burners and heat pumps in Dunedin City District and Queenstown Lakes, while respondents from other districts were more likely to have a wood burner as their main source of heating. There was particularly low reliance on heat pumps among respondents from Central Otago and Clutha, and respondents from Clutha were also more likely to have a multi-fuel/coal burner.

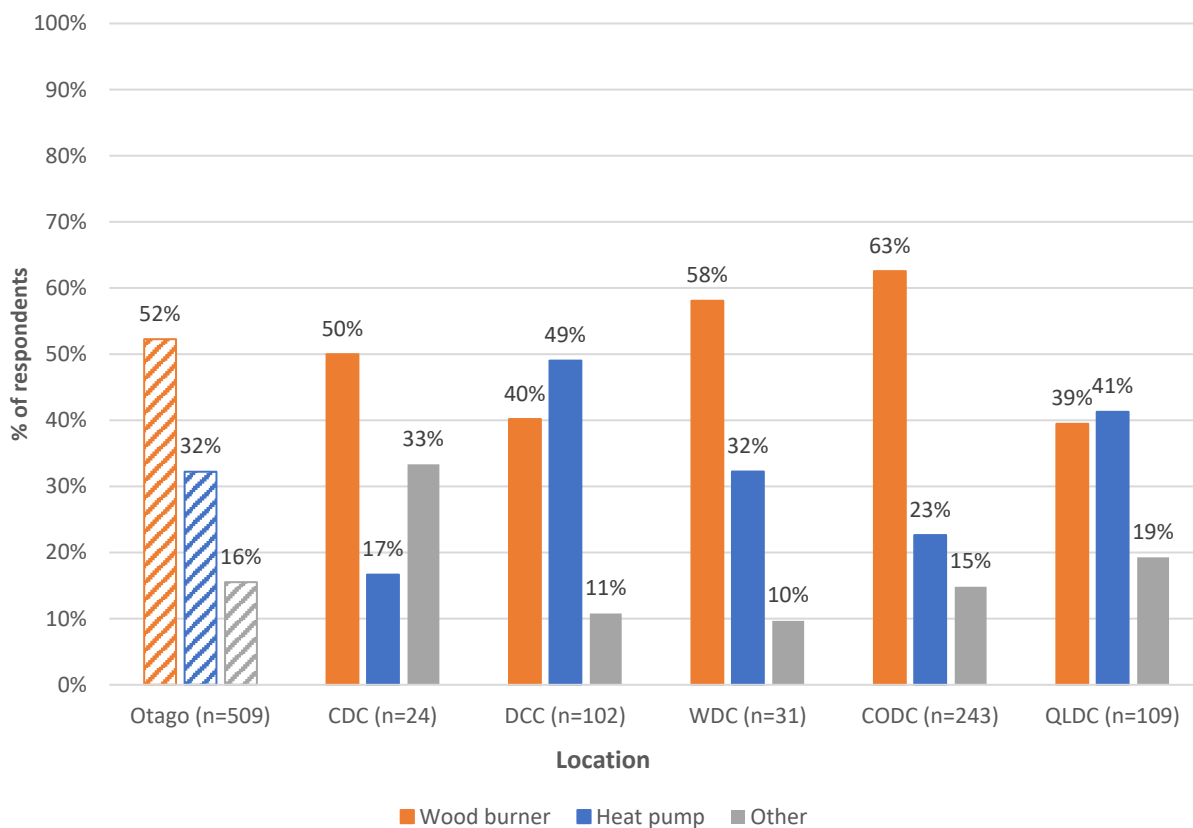


Figure 2. Responses to Question 17 ‘What is the main heating source in your home?’ for all respondents across Otago and by district: Clutha (CDC), Waitaki (WDC), Dunedin (DCC), Queenstown-Lakes (QLDC) and Central Otago (CODC).

3.2. Frequency and impact of poor air quality

22. Respondents were asked how often poor air quality is a problem where they live. Across Otago, only 2% selected ‘Always’, but there was a more even split between the other four options: ‘Often’ (21%), ‘Sometimes’ (28%), ‘Rarely’ (26%) and ‘Never’ (23%) (Figure 3). Overall, there was an approximately 50:50 split between respondents who believed poor air quality was a problem at least sometimes and those who thought it was a problem rarely or never.

23. Arrowtown, Alexandra, Cromwell and Clyde have some of the poorest air quality in Otago.¹ Most (77%) respondents from Queenstown Lakes thought poor air quality was a problem where they lived at least sometimes, and most respondents from this district lived in Arrowtown. However, while most of the respondents from Central Otago lived in Alexandra, Cromwell or Clyde, only 43% thought air quality was a problem where they lived at least sometimes (Table 2).

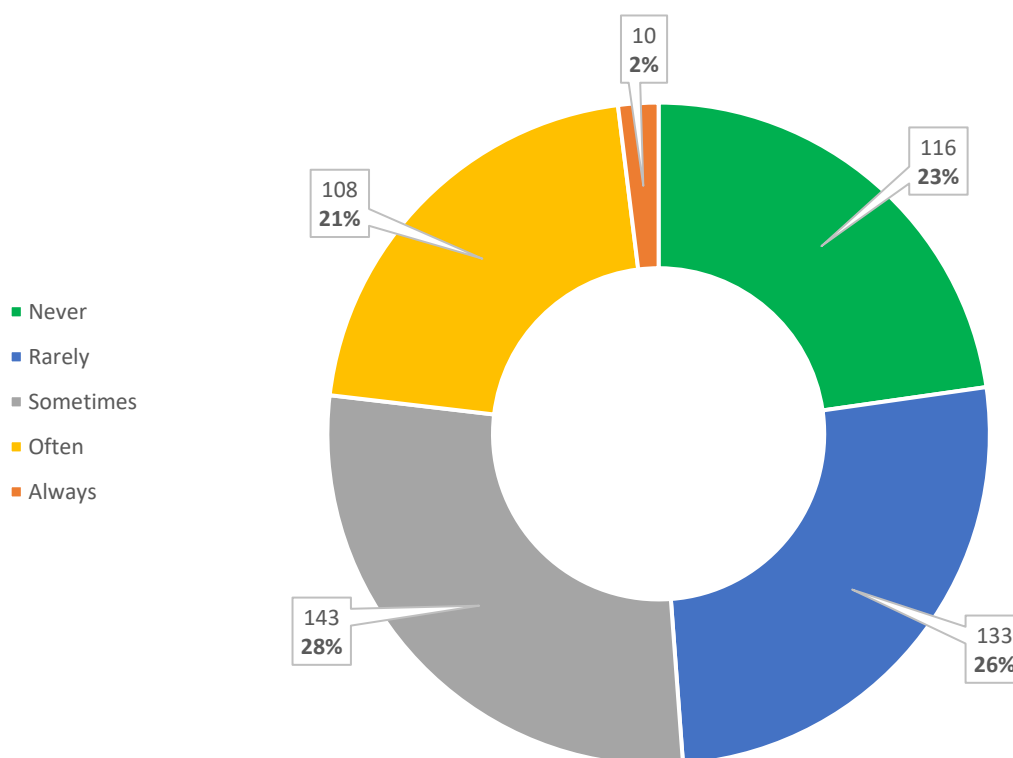


Figure 3. Responses to Question 6 ‘How often is poor air quality a problem where you live?’ (n = 510). Respondents could only select one option.

¹ Harrison, S. (2024) State of the Environment report: Air quality trends 2005–2023 Otago Regional Council, Dunedin.

Table 2. Responses to Question 6 'How often is poor air quality a problem where you live?' across Otago and by district: Clutha (CDC), Waitaki (WDC), Dunedin (DCC), Queenstown-Lakes (QLDC) and Central Otago (CODC).

	Otago (n=510)	CDC (n=24)	DCC (n=103)	WDC (n=31)	CODC (n=243)	QLDC (n=109)
Never	23%	38%	23%	26%	26%	11%
Rarely	26%	33%	29%	19%	31%	12%
Sometimes	28%	25%	27%	29%	28%	28%
Often	21%	4%	18%	23%	14%	44%
Always	2%	0%	2%	3%	1%	5%
At least sometimes	51%	29%	47%	55%	43%	77%

24. Respondents were also asked if they ever change their behaviour because of poor air quality and whether they had a health condition that could be affected by air quality (Questions 7 and 8). Most respondents had not changed their behaviour because of poor air quality (308, 60%), but a significant minority (202, 40%) had done so.

25. Respondents with a health condition affected by air quality were twice as likely to change their behaviour because of poor air quality than those without a health condition. There were 105 respondents who said they had a health condition affected by air quality, and 64% of them changed their behaviour. In comparison, only 32% of the 377 respondents without a health condition affected by air quality changed their behaviour.

26. Of the 202 respondents who had changed their behaviour because of poor air quality, 180 described how they changed their behaviour. There were three main types of behaviour change described:

- **Changed outdoor activity**, including spending less time outdoors, avoiding going outdoors at certain times of the day and avoiding areas that have poor air quality.
- **Reducing house ventilation** by keeping doors and windows closed.
- **Not drying washing outside** and either hanging it inside or using a drier more often.

27. Changed outdoor activity was the most common impact of poor air quality; half of respondents who changed their behaviour described changes in their outdoor activity, representing 20% of all respondents (Table 3).

28. Most respondents who changed their behaviour did so because of smoke, although a few mentioned other issues such as vehicle emissions or industry.

Table 3. How respondents changed their behaviour because of poor air quality (Question 8A).

	No. of respondents	% behaviour change (n = 202)	% total (n = 510)
Changed outdoor activity	101	50%	20%
Reduced house ventilation	73	36%	14%
Not drying washing outside	56	28%	11%
Other	27	13%	5%

3.3. Perceived sources of air pollution

29. Respondents were asked what they thought the main sources of air pollution in Otago were and were allowed to select up to two options. Home heating and outdoor burning were the most commonly selected sources of air pollution—each was selected by around half of respondents. These were also the issues that generated the most discussion at drop-in sessions. Vehicle emissions (33%) and industrial emissions (27%) were the next most commonly selected sources of air pollution, and only 12% of respondents selected spraying of agricultural chemicals (Figure 4).
30. The results suggest there may be some discrepancies between what Otago residents perceive as the main sources of air pollution and the science on this topic—in particular, they may underestimate the contribution of home heating emissions to air pollution compared to outdoor burning.
31. In Otago, the main sources of air pollution are burning of solid fuels for home heating (particulate matter) and vehicle emissions (nitrogen dioxide).² However, almost half of respondents did not think home heating was one of the main sources of air pollution in Otago. Queenstown Lakes was the only district where significantly more than half of respondents thought home heating was a main source of air pollution (Table 2).
32. Although outdoor burning and home heating are both sources of particulate matter, outdoor burning has a much smaller influence on ambient air quality than home heating. However, equal numbers of respondents selected home heating and outdoor burning as sources of air pollution. This may be partly because the effects of outdoor burning are very visible, which can lead to it generating more concern in communities than home heating.³

² Harrison, S. (2024) State of the Environment report: Air quality trends 2005–2023 Otago Regional Council, Dunedin.

³ Memorandum: Impacts of outdoor burning on urban areas in Otago. (Harrison, S. 2023).

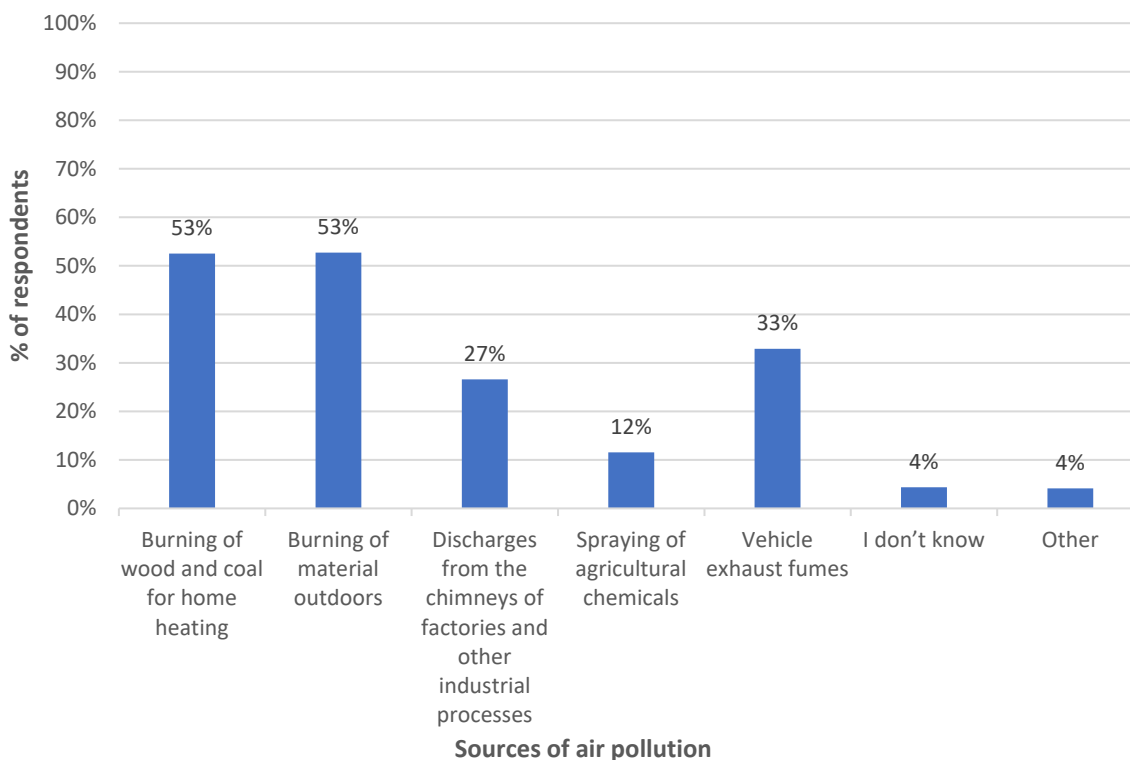


Figure 4. Responses to Question 5 'What do you think the main sources of air pollution are?' (n = 495). Respondents could select up to 2 options.

Table 4. Responses to Question 5 'What do you think the main sources of air pollution are?' across Otago and by district: Clutha (CDC), Waitaki (WDC), Dunedin (DCC), Queenstown-Lakes (QLDC) and Central Otago (CODC).

	Otago (n=495)	CDC (n=24)	DCC (n=99)	WDC (n=30)	CODC (n=237)	QLDC (n=106)
Burning of wood and coal for home heating	53%	35%	54%	30%	38%	77%
Burning of material outdoors	53%	35%	18%	33%	63%	53%
Discharges from industrial processes	27%	35%	40%	40%	22%	9%
Spraying of agricultural chemicals	12%	17%	6%	7%	15%	6%
Vehicle exhaust fumes	33%	26%	51%	43%	24%	24%
I don't know	4%	9%	3%	3%	1%	6%
Other	4%	0%	0%	3%	4%	4%

3.4. Home heating

3.4.1. Support for different management options

33. Most of the suggested options for managing home heating were supported by more than half of respondents. However, the most stringent regulatory options (preventing new solid fuel burner installations and removing all existing ones) were not supported by the majority of respondents. A significant minority of respondents were supportive of these options, and very few gave neutral responses. Overall, there was more support for non-regulatory options than for regulatory options, but gradually replacing higher-emitting solid fuel burners and banning coal burning were regulatory options supported by the majority of respondents (Table 4).

Table 5. Respondents' level of support for approaches to managing home heating (Question 10). 'Supportive' respondents rated an approach 4 or 5, while those 'not supportive' rated it 1 or 2. 'Neutral' respondents rated an approach 3. For each option, the highest percentage is bolded.

Approach	% Supportive	% Not supportive	% Neutral
Gradually replace existing solid fuel burners if they have high emissions (n=507)	52%	34%	14%
Prevent new installations of solid fuel burners (n=507)	28%	64%	8%
Gradually stop burning coal (n=507)	64%	12%	24%
Gradually remove all existing solid fuel burners (n=507)	20%	72%	8%
Financial support (n=507)	55%	28%	17%
Education about wood burner best practice (n=508)	72%	14%	14%
Firewood certification scheme (n=508)	44%	38%	18%
Support improvements in housing standards and housing insulation programmes (n=508)	74%	11%	15%

34. Many respondents commented that burners are necessary in Otago. Common themes in respondents' comments were that the cost of electricity makes heat pumps too expensive to run, electricity supply is not reliable enough to use only a heat pump, and heat pumps do not heat homes adequately over winter (especially in older houses and in colder districts like Central Otago and Queenstown Lakes). Respondents also often commented on the impact of burning practices, noting that emissions from solid fuel burners can be reduced by only using dry firewood and ensuring there is sufficient airflow during combustion.

35. Respondents were more supportive of gradually replacing only higher-emitting solid fuel burners than the more stringent restrictions. Comments suggested many people would like to see improvements in air quality but are concerned that not allowing burners would result in people having cold homes. Replacing higher-emitting solid fuel burners with lower-emitting ones was seen as a more balanced approach (Figure 5). These were also common themes of discussion in the drop-in sessions.

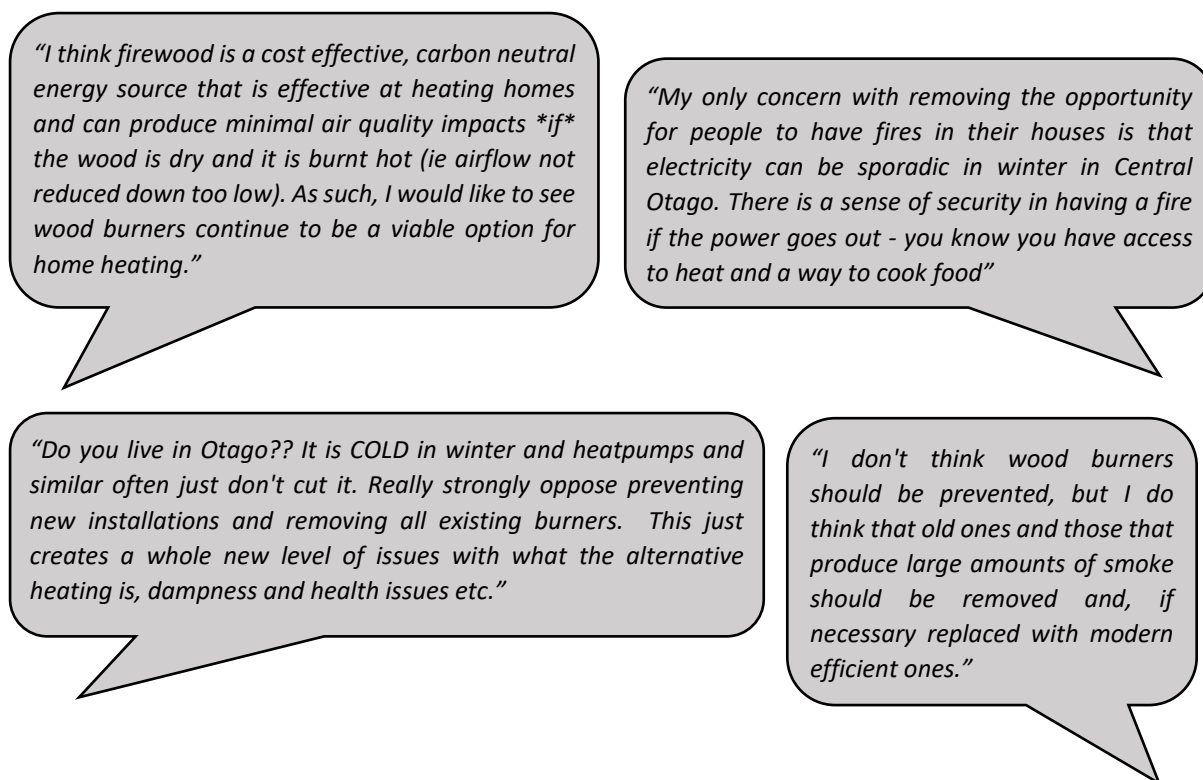


Figure 5. Examples of respondent comments about solid fuel burner restrictions.

36. Banning coal burning was a much less controversial option: 64% of respondents were supportive, and 20% were neutral. Respondents commented that compared to wood burning, coal burning is non-renewable, more polluting, and its smell is more offensive (Figure 6).

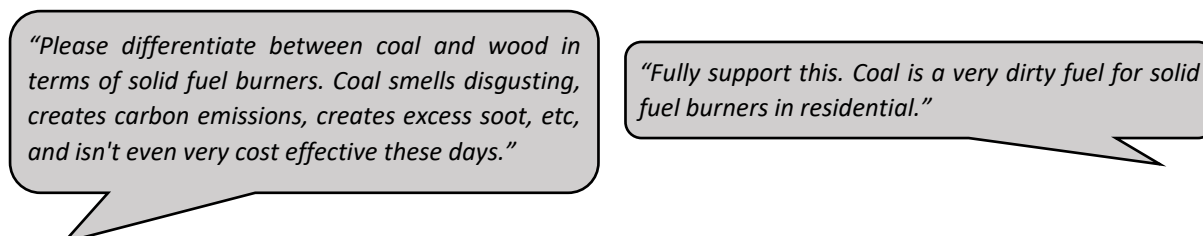


Figure 6. Examples of respondent comments about coal burning.

37. The most popular approaches overall were non-regulatory: almost 75% of respondents were supportive of ORC providing education about wood burner best practice and ORC supporting improvements in housing standards and insulation programmes. As well as education on burning practices, respondents suggested that ORC supports education on insulation, the health impacts of solid fuel burning and available lower-emitting burners.

38. A firewood certification scheme was supported by 44% of respondents, but almost as many were not supportive, while 18% were neutral. Comments from the respondents suggest it may have been unclear that a firewood certification scheme would be only for firewood suppliers, not individual households, so some of the opposition was likely for this reason. Some respondents who were not supportive also explained that this was because they thought a certification

scheme would be ineffective, due to many people sourcing their own firewood. However, surveys conducted as part of emissions inventories in Otago indicate that in most urban areas—except for Milton—most people purchase firewood from suppliers rather than sourcing it themselves.⁴

3.4.2. Responding to a very smoky chimney

39. Respondents were asked what they would do if they saw a very smoky chimney in their neighbourhood and could select all the options they agreed with. Most respondents said they would do nothing, and several explained that this was because they believe no one should interfere with someone else’s home heating choices, or because they believe acting on a smoky chimney is ORC’s responsibility.

40. Additionally, several respondents commented that they did not know ORC had a pollution hotline and would consider using this in the future. Considering this, promoting awareness of the pollution hotline and the ability to make a report through ORC’s website could be valuable (Figure 8).

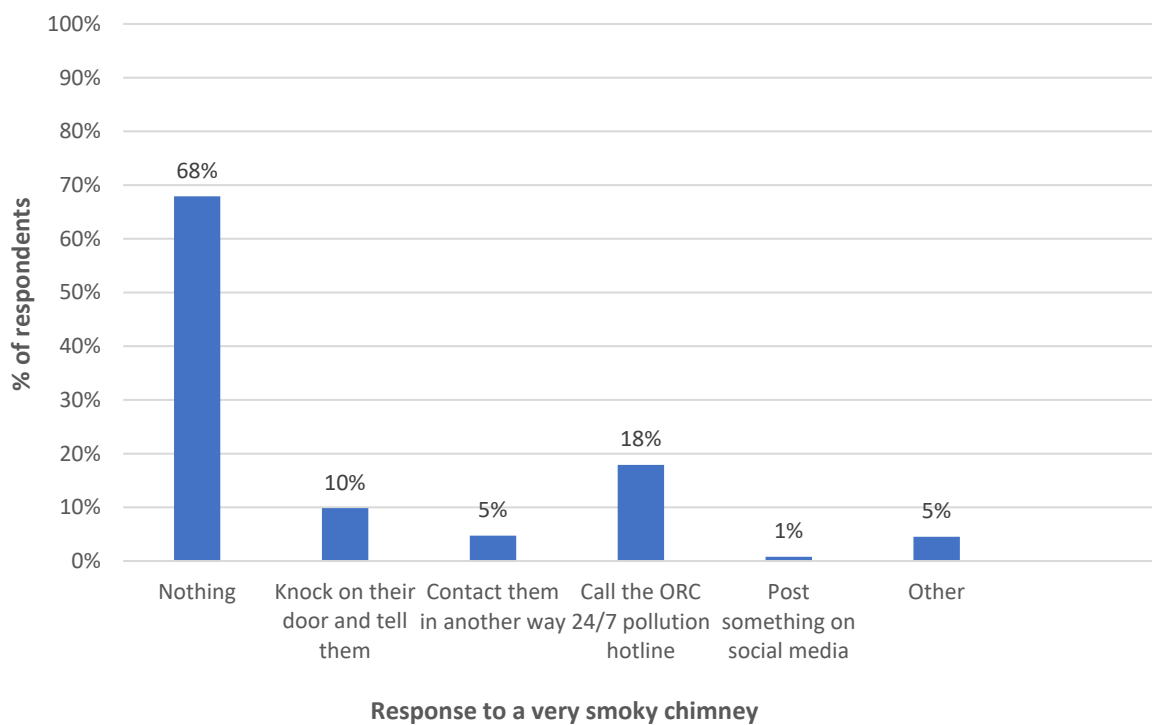


Figure 7. Responses to Question 9 “What would you do if you saw a very smoky chimney in your neighbourhood?” (n = 508). Respondents could select all the options they agreed with.

⁴ Wilton, E. (2023) Air quality management in Otago: an evaluation of management options to achieve air quality targets for PM₁₀ and PM_{2.5} in Arrowtown, Clyde, Cromwell, Milton and Mosgiel.

3.4.3. Burning practices and knowledge

41. The 372 respondents who had a solid fuel burner and burned wood in it were asked questions about their burners and wood burning practices.
42. Respondents were asked whether they run their burner so that it emits as little smoke as possible (Question 19B). Of the 372 respondents, 84% answered 'Yes', 9% answered 'I'm not sure, I'd like more information about how to do this', and only 7% answered 'No; I know how to do this it's just not always practical.' However, when these respondents were asked how they would like to receive information on good wood burning practices, most respondents (64%) were interested in receiving the information, while only 36% answered that they were not interested. The preferred ways of receiving the information were accessing it online (56%) and an information pack delivered to their home (42%) (Figure 9).
43. In 2014 ChangeHub, on behalf of Environment Canterbury, surveyed households from Auckland, Christchurch and Otago to understand their wood burning practices. Nearly all respondents to the ChangeHub survey claimed not to have a smoky chimney or not to know. Among Otago respondents, 60% strongly agreed that they run their wood burners very well and only 35% were interested in knowing how to run their wood burner as efficiently as possible.⁵ The results of this survey are similar in that most respondents claimed to run their burner as efficiently as possible. However, compared to the 2014 ChangeHub survey, respondents were more open to receiving information about good wood burning practices.

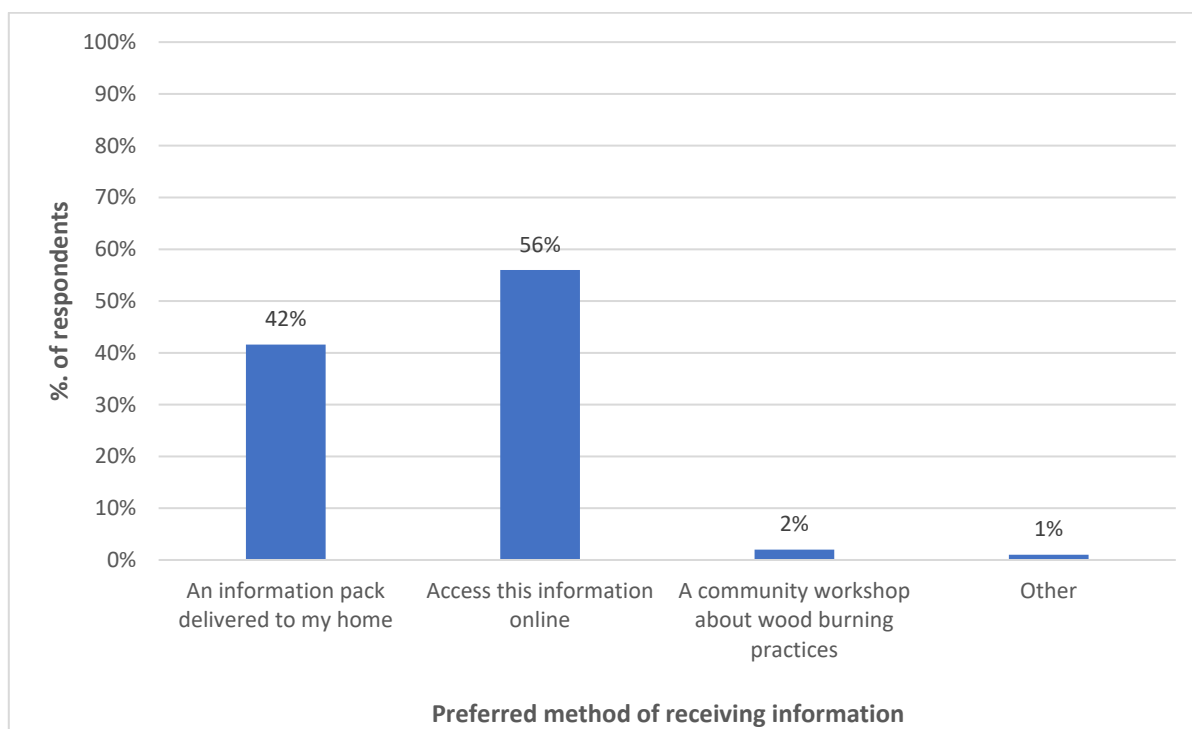


Figure 8. Responses to Question 19C 'Good wood-burning practices reduce the smoke your burner emits and makes your firewood last longer. How would you like to receive information about good wood burning practices?' (n = 372) Respondents could select all the options they agreed with.

⁵ ChangeHub (2015) Household Woodburner Behaviour Change Programme. Summarised in Jacobs (2024) Non-statutory approaches to managing air quality in Otago.

44. The 372 respondents who used wood in their solid fuel burner were asked if they had an ULEB. 31% answered ‘Yes’, 44% answered ‘No’ and 25% did not know. The 256 respondents who did not have an ULEB or did not know were then asked when their burner was installed (Table 6).
45. The first ULEBs were authorised between 2014 and 2016, so all respondents who said they had an ULEB can be assumed to have a burner installed from 2014 onwards. Therefore, around three-quarters of respondents had a burner that they thought was installed 20 years ago or less. There were 40 respondents (11%) who did not know whether their burner was an ULEB or when it was installed (Table 6).
46. Given a significant number of people may not know much about the type and age of their burner, so it could be valuable to promote awareness of how to access this information. If a burner has been legally installed, territorial authorities usually hold information about the type of burner and when it was installed.

Table 6. Responses Question 21 ‘When was your burner installed?’, along with the number of respondents who said they had an ULEB (as they did not answer Question 21). The percentage column shows the number of respondents as a percentage of respondents who used wood in their solid fuel burner (n = 372).

	No. of respondents	% of respondents
ULEB	53	31%
Before 2005	53	14%
2005–2015	76	20%
2016–2020	42	11%
After 2020	45	12%
I don’t know	40	11%

3.4.4. Barriers to change

47. The 256 respondents who did not have an ULEB or did not know were asked if there are any barriers preventing them from replacing their current burner with a lower-emitting heat source. Question 22 was ‘Is anything stopping you from buying a ULEB?’ and Question 23 was ‘Is anything stopping you from relying only on a heat pump and not using a burner?’ Respondents could select all the options they agreed with (Table 7, Table 8).
48. Cost was the standout barrier to buying an ULEB; it was the only barrier selected by more than half of respondents (61%). However, this does not necessarily mean the majority of respondents would require financial support to replace their current burner with an ULEB.
49. The next most common barrier was ‘I prefer my current burner’ (46%), and respondents’ comments suggest there were two main reasons why respondents felt this was a barrier. Some simply did not want to replace their current burner while it still functioned well; this is unsurprising, considering the survey results indicate that most respondents had a burner that was installed no more than 20 years ago. Others were concerned that an ULEB would not have the features they liked in their current burner, such as wetback and the ability to burn overnight. Although there are fewer ULEB models with these capabilities compared to other burners, they

are available.⁶ This, combined with 17% of respondents selecting ‘I don’t know enough about them’ as a barrier, suggests that promoting awareness of the different types and capabilities of ULEBs could be valuable.

50. Inconvenience of renovation and complexity of the building consent process were both selected by 30% of respondents. Allowing secondary technology (devices that scrub emissions after combustion) such as chimney filters could help to address these barriers. Some chimney filters can reduce the emissions of certain wood burners⁷ so that they are equivalent to those of an ULEB. These filters cost a similar amount to some ULEBs,⁸ but they may be a preferable option for people who want to avoid replacing their current burner.

51. The results also indicate that it could be valuable for ORC to work with territorial authorities to make the process of replacing solid fuel burners less daunting—for instance, by providing guidance on solid fuel burner replacement and covering the cost of building consent.

Table 7. Percentage of respondents (n = 254) who selected each option for Question 22 ‘Is anything stopping you from buying a ULEB?’. Respondents could select all the options they agreed with.

Barrier	No. of respondents (%)
Cost	61%
I prefer my current burner	46%
Inconvenience of renovation	30%
Complexity of the building consent process	30%
I don't know enough about them	17%
Not owning my own home	7%
Other	11%
Nothing, I intend to buy one	1%

52. Cost was also the most common barrier to relying on a heat pump, but in this case, it was cost of electricity. In contrast, only 23% of respondents chose ‘cost of installation’ as a barrier.

53. The other barriers listed were all selected by more than half of respondents, suggesting that while cost may be the single biggest barrier to installing a ULEB, there are a range of concerns that present significant barriers to relying solely on a heat pump. This aligns with the responses to Question 10, where many respondents commented that they believe burners are necessary in cold climates because of the cost and reliability of electricity and because they are more effective at heating in cold temperatures.

6 Wilton, E (2020) Evaluation of technologies for reducing particulate emissions in Otago Airsheds.

7 Only if they are installed on a wood burner that meets the emissions and efficiency standards required by the National Environmental Standards for Air Quality: particulate matter emissions of no more than 1.5 g/kg and 65% thermal efficiency.

8 Wilton, E (2020) Evaluation of technologies for reducing particulate emissions in Otago Airsheds.

Table 8. Percentage of respondents (n = 256) who selected each option for Question 23 'Is anything stopping you from relying only on a heat pump and not using a burner'. Respondents could select all the options they agreed with.

Barrier	No. of respondents (%)
Cost of electricity	71%
I think a burner provides more heat	63%
Reliability of heat pumps in cold temperatures	60%
Reliability of electricity supply	57%
I prefer the ambience/cosiness of a fire	52%
Cost of installation	23%
Other	7%
Nothing, I intend to use only a heat pump in the future	2%

3.5. Outdoor burning

54. The approaches to managing outdoor burning supported by less than half of respondents were bans on outdoor burning (over winter or on properties smaller than 2 ha) and establishing a particulate matter limit at properties boundaries. As with home heating, the most popular options were non-regulatory (Table 9).
55. However, both the approaches involving bans were still supported by a significant minority of respondents, and just as many supported the option of banning outdoor burning on properties smaller than 2 ha as did not support it (42%).
56. Themes in the comments of respondents who were supportive of stronger rules for outdoor burning were the belief that outdoor burning is used when it is not necessary, alternatives are under-utilised, and that outdoor burning has a noticeable impact on nearby areas—especially on still winter days. Respondents also expressed the view that there are fewer controls on outdoor burning compared to solid fuel burners, and that this should be changed (Figure 9). Some respondents were more concerned about large scale burning undertaken as part of rural land management (e.g. land clearance, large burn piles of green waste) while others were more concerned about noxious and dangerous discharges from burning of rubbish.

Table 9. Respondents' level of support for approaches to managing outdoor burning (Question 11). 'Supportive' respondents rated an approach 4 or 5, while those 'not supportive' rated it 1 or 2. 'Neutral' respondents rated an approach 3. For each option, the highest percentage is bolded.

Approach	% Supportive	% Not supportive	% Neutral
Prevent outdoor burning during winter months (n=506)	45%	38%	16%
Require smoke management plans for large-scale/long-lasting outdoor burning (n=506)	59%	26%	15%
Prevent outdoor burning on properties smaller than 2 ha (n=506)	42%	42%	16%
Require alternatives to outdoor burning where practicable (n=506)	55%	29%	16%
Education programmes about the role of outdoor burning and smoke management (n=507)	65%	21%	14%
Liaise with city/district councils to make sure they have adequate waste collection services (n=507)	66%	20%	14%
Establish a particulate matter limit for outdoor burning at property boundaries (n=505)	47%	38%	15%

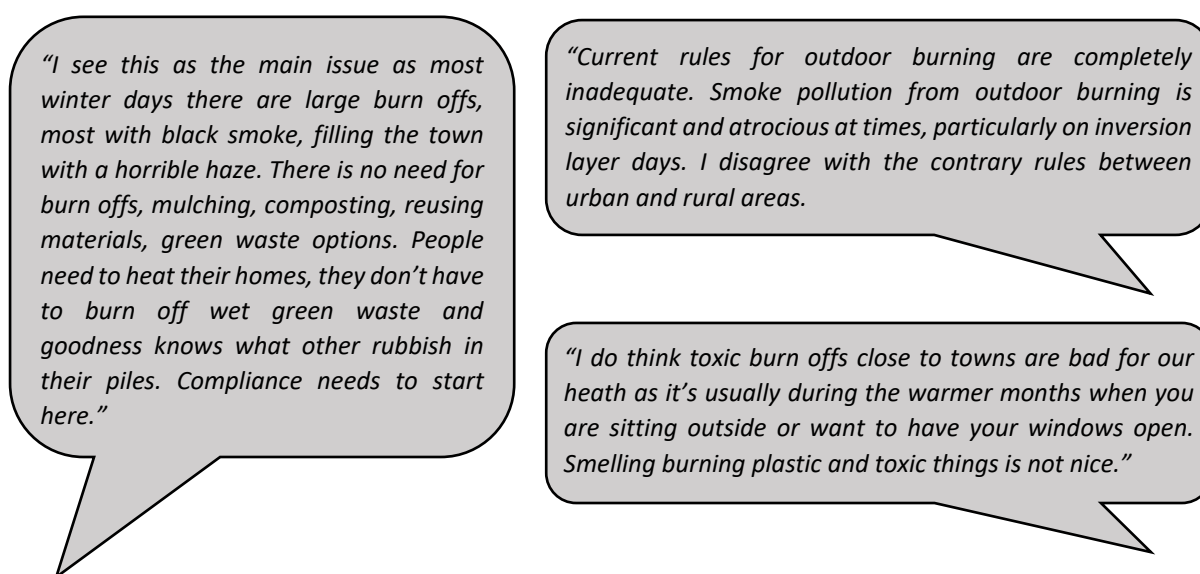


Figure 9. Examples of comments from respondents who supported stronger rules for outdoor burning.

57. Most respondents who did not support bans on outdoor burning emphasised its role as a rural land management and green waste disposal tool. One key concern was that limiting outdoor burning over winter would result in increased fire risk if these burns then took place in warmer months. Another concern about winter bans specifically was that this could have the effect of a total ban on outdoor burning, given it is usually prohibited or restricted over warmer months by Fire and Emergency New Zealand. Some respondents were more concerned about the cost of alternative disposal methods, including for household rubbish—although outdoor burning of household rubbish is already prohibited under the current Plan (Figure 10).

58. The concerns outlined above likely contributed to the greater support for non-regulatory options, which encourage better practices but avoid the risk of people not being able to burn when they need to. Some respondents commented that they thought people would be more likely to change their behaviour if approaches such as education on best practice and reduced disposal costs were used (Figure 10).
59. An outdoor burning topic that did not appear in the survey results but was discussed in multiple drop-in sessions was agricultural wrap burning. One rural attendee mentioned that they recycled their bale wrap, and that this is required for certain industry certifications such as the New Zealand Farm Assurance Programme. Another rural contractor emailed ORC to request banning of bale wrap burning, noting that this has been done in Southland. However, all drop-in session attendees who discussed agricultural wrap burning also noted that recycling it is a more time consuming and costly option.

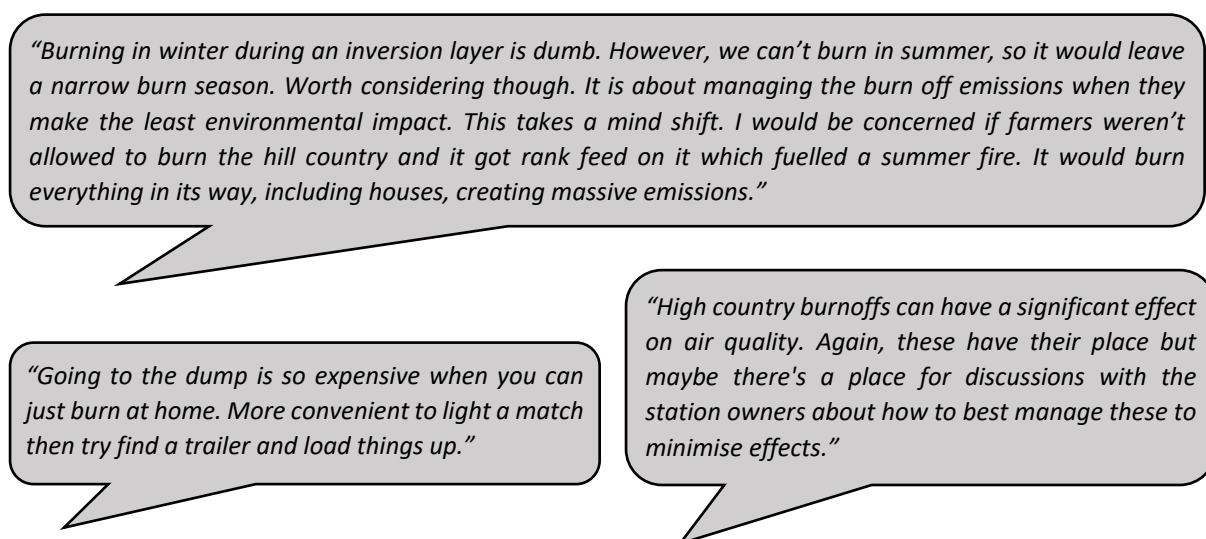


Figure 10. Examples of comments from respondents who opposed bans on outdoor burning.

3.6. Vehicle emissions

60. The only approach to managing vehicle emissions that was supported by more than half of respondents across Otago was improving public transport. The other approaches had the support of less than half of respondents and more than one third were not supportive (Table 8).
61. Respondents from Dunedin City District and Queenstown Lakes were more supportive of all the approaches. This was likely because these districts contain the most populated urban areas in Otago (Dunedin and Queenstown), which have greater volumes of traffic as well as public transport. All the options for managing vehicle emissions were supported by more than half of respondents from these districts, although improving public transport was still the most popular one, supported by almost 70% of respondents.

Table 10. Respondents' level of support for approaches to managing vehicle emissions (Question 12). 'Supportive' respondents rated an approach 4 or 5, while those 'not supportive' rated it 1 or 2. 'Neutral' respondents rated an approach 3. For each option, the highest percentage is bolded.

Approach	% Supportive	% Not supportive	% Neutral
Policies that recognise the effects of nitrogen dioxide emissions and focus on reducing them (n=506)	43%	36%	21%
Improve public transport to reduce reliance on private vehicles (n=508)	58%	28%	14%
Decarbonise ORC's fleet vehicles and buses (n=507)	45%	34%	21%
Joint education campaigns with city/district councils (n=507)	47%	34%	19%
Work with other organisations to reduce vehicle emissions (n=508)	48%	34%	18%

62. Respondents' comments suggest that improving public transport may have been considered the best value for money. It is already part of ORC's work programme and provides co-benefits such as reduced carbon emissions and greater transport choices.

63. The most common theme among respondents' comments was that most of the options were not worth the cost to ratepayers because they would have little impact on vehicle emissions and/or because they did not think managing vehicle emissions was ORC's responsibility. Additionally, many respondents were from smaller towns with little or no public transport, and where alternatives to cars are less likely to be viable in the foreseeable future.

64. Regarding decarbonising ORC's fleet vehicles and buses, respondents' comments indicated there was more support for electric buses than fleet vehicles. Some respondents thought that ORC should set an example and demonstrate the benefits of electric vehicles, while others were concerned that this would be a cost to ratepayers but would not improve air quality (Figure 11).

It is not your business to get people out of cars and onto bikes. However it is your job to take responsibility for public transport. Get trains to Mosgiel, improve the bus service. It is unusable to get around Dunedin. The buses dont go often enough and dont get to where people live.

"We don't have any public transport in our area & it doesn't seem likely we will in the near future, so the options on survey are not really relevant for us."

"I wouldn't agree with rate payers funding the changeover in vehicles but agree with it being a great idea in principle to change the fleet of ORC's vehicles."

"Do NOT waste money on education campaign or more policy rubbish. Just clean up your fleet and provide public transport. If public transport is cheaper than running a vehicle, people will eventually use it."

Figure 11. Examples of respondent comments about managing vehicle emissions.

3.7. Industrial emissions, odour, dust and agricultural spraying

65. The suggested approaches to managing industrial emissions, odour, dust and agricultural spraying generally received less opposition compared to those for home heating, outdoor burning and vehicle emissions. More respondents were neutral and supportive. No approaches stood out as particularly popular; they were all supported by 50%–60% of respondents (Table 10).

Table 11. Respondents' level of support for approaches to managing industrial emissions, odour, dust and agricultural spraying (Question 13). 'Supportive' respondents rated an approach 4 or 5, while those 'not supportive' rated it 1 or 2. 'Neutral' respondents rated an approach 3. For each option, the highest percentage is bolded.

Approach	% Supportive	% Not supportive	% Neutral
Require that dust and odour from permitted industrial and trade activities don't leave the site (n=506)	58%	19%	23%
Require discharge permit applicants to use the best practicable option to minimise impacts on air quality (n=506)	60%	19%	21%
Define adequate setbacks or buffer zones to minimise the adverse effects of new activities on air quality (n=505)	59%	22%	19%
Require discharge permit applicants to provide dust or odour management plans (n=506)	58%	21%	21%
Provide information about FIDOL assessments ⁹ to complainants and emitters(n=505)	57%	20%	23%
Strengthen existing rules for agricultural spraying (n=506)	50%	27%	23%

66. Unlike the options for managing the other air quality issues, the options for managing industrial emissions, odour, dust and agricultural spraying would only directly impact a minority of respondents. This may have contributed to the higher numbers of both neutral and supportive responses. Additionally, some respondents commented that they didn't know enough about these issues or the management options, which is also likely to have contributed to the higher number of neutral responses (Figure 12).

"Industry causes more pollution than the individual."

"Focus on irresponsible business and farmers. Residents can't take any more cost Burden ... we are literally breaking under the weight."

Figure 12. Examples of comments from respondents who supported the suggested options for industrial emissions, odour, dust and agricultural spraying.

⁹ FIDOL (frequency, intensity, duration, offensiveness, location) factors are the standard criteria used in New Zealand to assess whether a discharge to air is having offensive or objectionable effects.

67. The most common theme among the comments on these management options was the importance of not over-regulating. Respondents often commented that they were supportive of the suggested options in principle but were concerned about the risk of discouraging commercial activities and about costs being passed on to consumers (Figure 13).

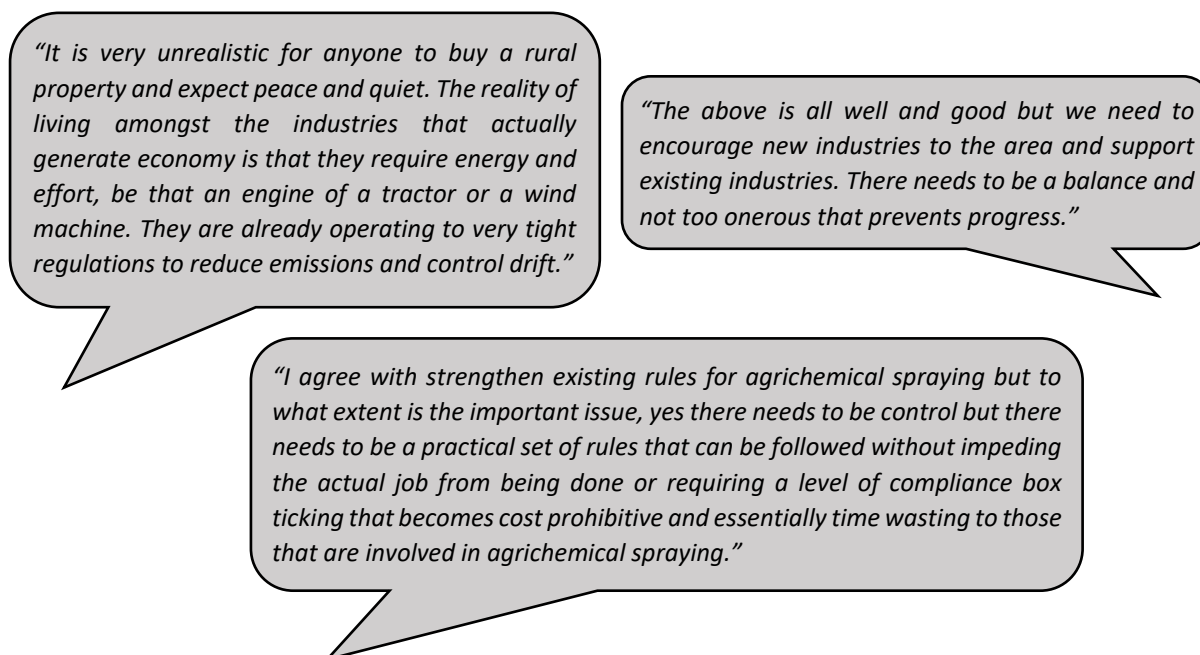


Figure 13. Examples of comments from respondents concerned about over-regulation of commercial activities.

68. Only 12% of respondents selected agrichemical spraying as a main source of air pollution in Otago, and accordingly, there were few comments on this issue. However, a community member did email ORC staff about an agrichemical spray drift incident they had experienced. This involved helicopter spraying over a nearby rural property on Otago Peninsula, and increasing wind speeds resulting in spray drift. This was a particular concern for the community member, as their domestic water supply was from rooftop tanks and they also kept bees. They suggested neighbours should be notified before this type of spraying occurs, so that they can make any necessary preparations (Figure 14).

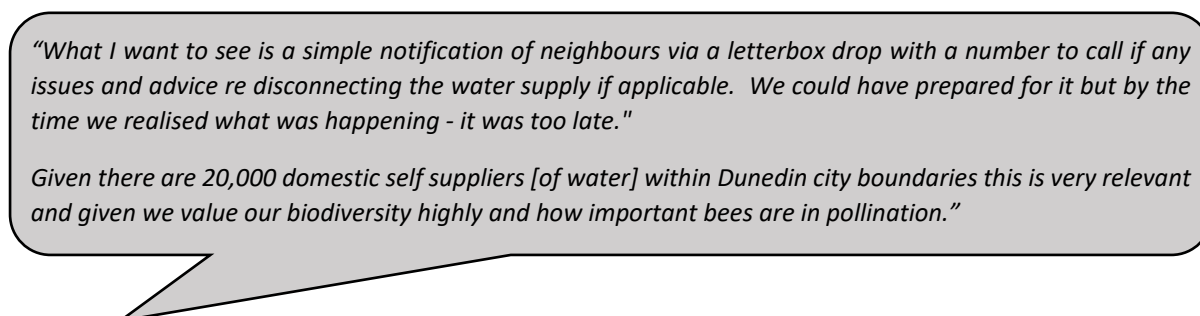


Figure 14. Excerpt of an email from a community member about agrichemical spray drift.

3.8. Overall support for air quality management approaches

69. The overall level of support for the suggested approaches to air quality management varied between districts. Respondents from Queenstown Lakes and Dunedin City District tended to be the most supportive; almost all the suggested approaches were supported by more than half of respondents from these districts. Respondents from the other districts tended to be comparatively less supportive (Figure 15).

70. This general pattern was reflected across all the air quality issues: home heating, outdoor burning, vehicle emissions and industry, odour, dust and agricultural spraying. Although most respondents from Central Otago were from urban areas with poor air quality (Alexandra, Cromwell and Clyde), they tended to be less supportive of air quality interventions, particularly those involving more stringent regulation. Respondents from Central Otago were also less likely to think that air quality was a problem where they lived. This suggests that although Central Otago is a priority area for intervention on air quality, achieving community support for this may be more challenging.

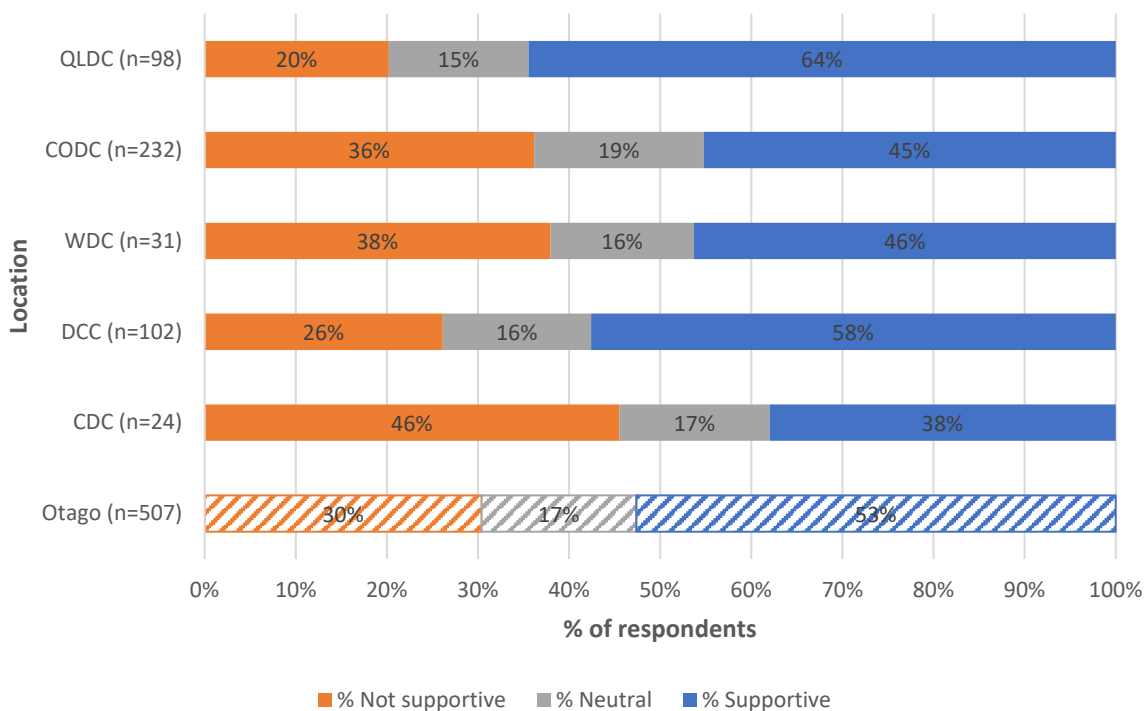


Figure 15. Respondents’ overall level of support for approaches to air quality management across Otago and by district: Clutha (CDC), Dunedin (DCC), Waitaki (WDC), Central Otago (CODC) and Queenstown-Lakes (QLDC) (Questions 10–13). ‘Supportive’ respondents rated an approach 4 or 5, while those ‘not supportive’ rated it 1 or 2. ‘Neutral’ respondents rated an approach 3.

4. Stakeholder feedback summary

71. This section briefly summarises the stakeholder feedback received through the 2024 engagement process. Discussion with key stakeholders will continue during the drafting of the new Strategy and Plan.

4.1. Community stakeholders

72. In general, community stakeholders were most interested in the issue of home heating and thought that ORC's current approach to managing it is not sufficient to improve air quality. However, although they tended to support restrictions on solid fuel burners, they also emphasised the need for non-regulatory support to prevent regulations from having unintended consequences such as colder homes. Non-regulatory measures mentioned by stakeholders included:

- Financial support to help households transition to alternative heating sources and potentially for other home improvements such as insulation.
- Education programmes about good burning practices, burner maintenance, ways to keep homes warm and dry (e.g. insulation, curtains and extractor fans) and the impact of home heating.

4.2. Primary industry stakeholders

73. Primary industry stakeholders discussed the issues of outdoor burning, agrichemical spraying and fertilisers and home heating.

74. There were varying views on additional restrictions on outdoor burning. Some stakeholders opposed any changes from the current Plan rules on the basis that outdoor burning should not be restricted when home heating is the main contributor to particulate matter pollution. Like some community members, they highlighted the importance of outdoor burning in rural land management, expressed concern about the practicality of winter restrictions on outdoor burning, and noted that not allowing outdoor burning of agricultural wrap would be a significant change for many in rural communities. Other stakeholders were less opposed to restrictions on outdoor burning, noting that most of the suggested approaches exist in other regions, but they emphasised the importance of burning to control diseases in all situations.

75. In general, primary industry stakeholders supported agrichemical rules reflecting the industry standard, NZS 8409:2021 Management of Agrichemicals. Some thought Otago's current rules were adequate in that they referred to this standard, while others identified areas for improvement, particularly user qualifications and notification of neighbours. One stakeholder who has been involved with agrichemical management across New Zealand mentioned that lack of notification has been a key issue in other regions, with many complaints occurring simply because they were not aware large-scale spraying was going to occur on a neighbouring property. This is reflected in the experience of the community member who emailed ORC staff about agrichemical spray drift.

76. Primary industry stakeholders also mentioned reverse sensitivity¹⁰ in relation to outdoor burning and agrichemical spraying, noting that certain discharges are anticipated in rural areas. They emphasised the importance of ensuring that regulation does not prevent essential rural activities from occurring in rural areas.
77. On the issue of home heating, primary industry stakeholders emphasised that air quality is primarily an urban issue and that wood burners are essential for resilience in rural areas, particularly in more remote places.

4.3. Industry and processing stakeholders

78. There was general interest among industry and processing stakeholders in ensuring that activities with existing resource consents have a straightforward pathway to consent renewal, and that reverse sensitivity does not present a barrier to this. Stakeholders noted that industrial activities can have significant localised adverse effects but are not significant contributors to air pollution in Otago, and regulations should reflect this. No major issues with the current framework were identified, but stakeholders noted that consideration should be given to the organisation of airsheds, considering the impact of the “polluted airshed” designation on consenting.

4.4. Territorial authorities

79. Discussion with territorial authorities was more focused on outlining ORC’s process to date and understanding what territorial authorities are doing in air quality related areas such as waste disposal and building consents for solid fuel burners.

5. Limitations

80. The community feedback received through the survey, drop-in sessions and emails provides a useful insight into Otago residents’ views on air quality and their levels of support for different approaches to air quality management. However, it is not representative of the Otago population, so it does not provide statistically reliable quantitative data. The relative population of different locations in Otago is not reflected in the survey sample (e.g. Central Otago represents 10% of Otago’s population, but around half of the survey respondents). The results were not transformed to account for this, although splitting the results by location provided insight into how the overall results might be skewed by location. Additionally, the total number of survey respondents (510) represents less than 1% of Otago’s population, and it is likely that the survey attracted respondents with strong views on air quality management (as the drop-in sessions tended to do).

¹⁰ In the case of air discharges, reverse sensitivity can occur when a new sensitive activity is established near an existing activity that involves discharges to air. Complaints from the new activity can stifle the existing activity, or even drive it elsewhere.

6. Conclusion

81. ORC staff undertook community and stakeholder engagement on air quality management in 2024 and provided multiple avenues for feedback. Drop-in sessions were not well attended, but 510 valid responses to the survey were received. Almost half of these respondents lived in Central Otago, and around three-quarters of all respondents used solid fuel burners as a heating source.
82. Around half of survey respondents thought poor air quality was a problem where they lived at least sometimes, and the other half thought it was a problem rarely or never. 40% of respondents had changed their behaviour because of poor air quality—usually because of smoke. The most common type of behaviour change was in outdoor activity (20% of respondents).
83. Home heating and outdoor burning were the activities most often identified by survey respondents as the main sources of air pollution in Otago, and were the issues most often brought up by attendees at drop-in sessions. The most popular approaches for addressing both issues were non-regulatory.
84. There was strong support for education programmes as an approach to managing air quality, particularly for home heating. 73% of survey respondents supported education on wood burner best practice and more than half of respondents who burned wood in a solid fuel burner were interested in receiving information about wood burner best practice. Additionally, the survey results suggest that some people may lack knowledge about the type and age of their own burner and about ULEBs, so education on these fronts could also be valuable.
85. A complete ban on solid fuel burners and a ban on new installations of solid fuel burners were the least popular options for addressing home heating emissions. It is likely that if they were introduced, these measures would face significant public opposition.
86. More acceptable regulatory options for managing home heating emissions (supported by more than half of survey respondents) were banning the use of coal for home heating and gradually replacing higher-emitting solid fuel burners, which were both supported by more than half of respondents. Cost was the stand-out barrier to changing from a higher-emitting burner to an ULEB, but the survey results and discussion at drop-in sessions suggest that there are a range of concerns that present significant barriers to relying solely on a heat pump. Requiring solid fuel burners to be more efficient but allowing people to continue using them would help to address some of the key concerns: the cost and reliability of electricity and the ability of heat pumps to provide sufficient heating.
87. Restrictions on outdoor burning based on property size or over winter were supported by a significant minority of respondents, but most respondents and several primary industry stakeholders were not supportive. Respondents and stakeholders who were not supportive expressed concerns about the potential unintended consequences of these measures and their costs to farmers. However, more than half of respondents supported education around outdoor burning.
88. Feedback suggests that community members may not see vehicle emissions as something ORC should prioritise in their air quality management approach, particularly in smaller urban areas. Survey respondents' comments suggest many people are aware that ORC has limited control over vehicle emissions, and therefore any interventions are less likely to result in significant reduction

in vehicle emissions. Improving public transport was the most supported option, likely because it is an existing ORC programme with multiple co-benefits.

89. All the approaches for addressing emissions from industry, odour, dust and agricultural spraying were supported by at least half of respondents. However, a common theme in comments from respondents was support for the approaches in principle, but concern about over-regulation of commercial activities. This was broadly consistent with stakeholder feedback.
90. The survey results suggest that in general, there may be more support for air quality management interventions, including on home heating, in Dunedin City District and Queenstown Lakes. Although Central Otago's urban areas have some of the poorest air quality in Otago, achieving community support for interventions in these areas may be more challenging.

Appendix 1. List of key stakeholders

Stakeholders who provided feedback during the 2024 engagement on air quality management are listed in Table 12.

Table 12. Stakeholders who provided feedback during ORC's 2024 engagement on air quality management.

Primary industry	Federated Farmers Beef + Lamb New Zealand Horticulture New Zealand New Zealand Agricultural Aviation Association Groundspread New Zealand Growsafe Poultry Industry Association New Zealand Egg Producers Federation of New Zealand AgResearch Limited
Production and processing	Port Otago Fonterra Ravensdown Enviro NZ
Community	Southern Health Dr. Alex Macmillan Cosy Homes Trust CleanSweep Chimney Sweeps Te Pūkenga Otago Polytechnic Otago University Disabled Persons Assembly
Territorial authorities	Dunedin City Council Waitaki District Council Central Otago District Council Queenstown Lakes District Council

Appendix 2. Air quality survey 2024

Air quality survey



Otago
Regional
Council

Your feedback will influence how ORC manages air quality in the future.

Questions marked * are mandatory

Section A | About you and your household

1. Which one of the following places do you live in?* Please select one option.

- | | |
|---------------------------------|--|
| <input type="radio"/> Alexandra | <input type="radio"/> Naseby |
| <input type="radio"/> Arrowtown | <input type="radio"/> Ōamaru |
| <input type="radio"/> Balclutha | <input type="radio"/> Palmerston |
| <input type="radio"/> Clyde | <input type="radio"/> Queenstown |
| <input type="radio"/> Cromwell | <input type="radio"/> Ranfurly |
| <input type="radio"/> Dunedin | <input type="radio"/> Roxburgh |
| <input type="radio"/> Hāwea | <input type="radio"/> Waikouaiti |
| <input type="radio"/> Kingston | <input type="radio"/> Wānaka |
| <input type="radio"/> Milton | <input type="radio"/> Other; somewhere else in Otago – please specify: |
| <input type="radio"/> Mosgiel | _____ |

2. Do you own the home you live in?*

- Yes
 No

3. What type of household do you live in?*

- One person
 Couple only
 Family with children
 Other multi-person
 Other – please specify:

Section B | Air quality in Otago

4. Why do you think it is important to have clean air?*

Please select all the options you agree with.

- People's health
- Quality of life
- Climate change
- Wildlife/environment
- I don't think it's important to have clean air
- Other — please specify:

5. What do you think the main sources of air pollution in Otago are?*

Please select up to two options.

- Burning of material outdoors, e.g. bonfires and burn-offs
- Discharges from the chimneys of factories and other industrial processes
- Burning of wood and coal for home heating
- Spraying of agricultural chemicals
- Vehicle exhaust fumes
- I don't know
- Other — please specify:

6. How often is poor air quality a problem where you live?*

Please select one option.

- Never
- Rarely
- Sometimes
- Often
- Always

Section B | Air quality in Otago continued . . .

7. Do you ever change your behaviour because of poor air quality?*

Changing your behaviour could include things like spending less time outside, not opening windows or not hanging washing outside.

- Yes — please answer **Question 7A** below
- No — go to **Question 8**

7A. Please tell us how you changed your behaviour and why:

8. Do you have any health conditions that can be affected by poor air quality?*

- Yes — please answer **Question 8A** below
- No — go to **Question 9**
- Prefer not to say

8A. Please select any of the below health conditions you have that can be affected by poor air quality:

- Asthma
- Bronchitis
- Chronic obstructive pulmonary disease (COPD)
- Other — please specify:

Section B | Air quality in Otago continued . . .

9. What would you do if you saw a very smoky chimney in your neighbourhood?*
Please select all the options you agree with.

- Nothing
- Knock on their door and tell them
- Contact them in another way
- Call the ORC 24/7 pollution hotline
- Post something on social media
- Other — please specify:

Continued on next page

Section C | Rethinking air quality management

We've come up with **four key issues** for air quality in Otago and some approaches we could take to address them. Some approaches could be used together, and since air quality varies across Otago, different approaches could be used in different places.

The issues and approaches are summarised below — let us know what you think about them. Do you think we've focused on the right issues?

Which of these possible approaches would you support?

Please indicate your level of support from 5-1, where 5 is fully support and 1 is do not support.

10. Home heating by burning wood or coal has been one of the cheapest ways to keep warm, but is also the main source of air pollution in Otago.*

For the different approaches we could use to manage **home heating**, please indicate your level of support from 5-1 for each approach (5 is fully support and 1 is do not support).

	5	4	3	2	1
Gradually replace existing solid fuel burners if they have high emissions					
Prevent new installations of solid fuel burners (i.e. if your home doesn't already have a burner, you can't get one installed)					
Gradually stop burning coal					
Gradually remove all existing solid fuel burners (i.e. nobody has a solid fuel burner)					
Financial support, e.g. subsidies to replace higher-emission solid fuel burners					
Education about wood burner best practice					
Firewood certification scheme					
Support improvements in housing standards and housing insulation programmes					

Please let us know if you have any comments regarding the approaches stated above and your level of support for a specific approach:

Section C | Rethinking air quality management continued . . .

11. Outdoor burning is a common land management tool in rural areas, and some people use it for waste disposal. It contributes to air quality issues and can be a nuisance.*

For the different approaches we could use to manage **outdoor burning**, please indicate your level of support from 5-1 for each approach (5 is fully support and 1 is do not support).

	5	4	3	2	1
Prevent outdoor burning during winter months					
Require smoke management plans for large-scale/long-lasting outdoor burning					
Prevent outdoor burning on properties smaller than 2 ha					
Require alternatives to burning where practicable					
Education programmes about the role of outdoor burning and smoke management					
Liaise with city/district councils to make sure they have adequate waste collection services					
Establish a particulate matter limit for outdoor burning at property boundaries					

Please let us know if you have any comments regarding the approaches stated above and your level of support for a specific approach:

Section C | Rethinking air quality management continued . . .

12. Vehicle emissions release particulate matter and nitrogen dioxide, which harm human health and contribute to climate change. We currently rely on fossil fuel-based vehicles, but there are still ways ORC can reduce vehicle emissions.*

For the different approaches we could use to manage **vehicle emissions**, please indicate your level of support from 5-1 for each approach (5 is fully support and 1 is do not support).

	5	4	3	2	1
Policies that recognise the effects of nitrogen dioxide emissions and focus on reducing them					
Improve public transport to reduce reliance on private vehicles					
Decarbonise ORC's fleet vehicles and buses					
Joint education campaigns with city/district councils (e.g. on not idling vehicles, road sharing)					
Work with other organisations to reduce vehicle emissions (e.g. support pedestrian and bike infrastructure and rerouting freight)					

Please let us know if you have any comments regarding the approaches stated above and your level of support for a specific approach:

Section C | Rethinking air quality management continued . . .

13. Industrial emissions, odour, dust and agricultural spraying often accompany important economic activities. They cause a range of air quality impacts, but we can take similar approaches to managing them.*

For the different approaches we could use to manage **industrial emissions, odour, dust and agricultural spraying**, please indicate your level of support from 5-1 for each approach (5 is fully support and 1 is do not support).

	5	4	3	2	1
Require that dust and odour from permitted industrial and trade activities don't leave the site					
Require discharge permit applicants to consider approaches other than air discharges and use the best practicable option to minimise impacts on air quality					
Define adequate setbacks or buffer zones to help minimise the adverse effects of new activities on air quality					
Require discharge permit applicants to provide dust or odour management plans					
Provide information about FIDOL (frequency, intensity, duration, offensiveness and location) assessments to complainants and emitters					
Strengthen existing rules for agrichemical spraying					

Please let us know if you have any comments regarding the approaches stated above and your level of support for a specific approach:

14. What other air quality issues do you believe we should focus on?

Section D | Your home heating

15. When was your house built?*

- 2023 or later
- 2008–2023
- 2001–2007
- 1992–2000
- 1978–1991
- Before 1978

16. How well insulated is your home?*

Please select all options that apply to your home.

- Ceiling insulation
- Underfloor insulation
- Wall insulation
- Single glazing
- Double glazing
- Triple glazing
- None of the above

17. What is the main heating source in your home?*

- Heat pump
- Electric heater
- Gas heating
- Wood burner
- Pellet burner
- Multi-fuel or coal burner
- Other — please specify:

Section D | Your home heating continued . . .

18. Do you have a secondary heating source in your home?*

- Yes — please answer **Question 18A** below
- No — go to **Question 19**

18A: What is a secondary heating source in your home?

- Heat pump
- Electric heater
- Gas heating
- Wood burner
- Pellet burner
- Multi-fuel or coal burner
- Other — please specify:

19. Do you use wood and/or coal in your burner? Please select one option. If you don't have a wood and/or coal burner, go to **Question 24**

- Wood only — go to **Question 19A** below
- Coal only — go to **Question 22**
- Both wood and coal — go to **Question 19A** below

19A: How do you check that the wood you're using is dry?

Please select all that apply.

- By looking at it and feeling it
- By keeping it in a well-sheltered spot
- By using a moisture meter/probe
- By buying it from a reputable provider
- None of the above
- Other — please specify: _____

Section D | Your home heating continued . . .

19B: Do you run your burner so that it emits as little smoke as possible?

- Yes
- No; I know how to do this, it's just not always practical — please tell us why it's not practical:

- I'm not sure, I'd like more information about how to do this

19C: Good wood-burning practices reduce the smoke your burner emits and makes your firewood last longer. How would you like to receive information about good wood-burning practices?

Please select all the options you agree with.

- I'm not interested in receiving that information
- An information pack delivered to my home
- Access this information online
- A community workshop about wood burning practices
- Other — please specify:

20. Ultra-low emission burners (ULEB) have very low particulate matter emissions. These burners are the cleanest type of wood burner, and they must meet an emissions standard of 38 milligrams per megajoule or emit less than 0.5 grams of total suspended particulate per kg of fuel burned, and have a thermal efficiency of 65% or greater.

Do you have an ultra-low emission wood burner?

- Yes — go to **Question 24**
- No — go to **Question 21**
- I don't know — go to **Question 21**

21. When was your wood burner installed?

- Before 2005
- 2005-2015
- 2016-2020
- After 2020
- I don't know

22. Is anything stopping you from buying an ultra-low emission burner?*
Please select all the options you agree with.

- I prefer my current burner
- I don't know enough about them
- Cost
- Inconvenience of renovation
- Complexity of the building consent process
- Not owning my own home
- Nothing – I intend to buy one
- Other – please specify: _____

23. Is anything stopping you from relying only on a heat pump and not using a burner?* Please select all the options you agree with.

- I prefer the ambience/cosiness of a fire
- I think a burner provides more heat
- Cost of installation
- Cost of electricity
- Reliability of electricity supply
- Reliability of heat pumps in cold temperatures
- Nothing – I intend to use only a heat pump in the future
- Other – please specify: _____

Section E | Additional comments

24. Let us know if there is anything else you'd like to tell us about air quality.

THANK YOU
for taking part in our air quality survey.

Submissions close at 11.59pm on Monday, 26 August 2024. You can drop this form in to an Otago Regional Council office at:

- **Level 2, 144 Rattray Street, Dunedin 9016** or
- **Alta House, Level 1, Terrace Junction, 1092 Frankton Road, Queenstown 9300**

or post it to Otago Regional Council, Private Bag 1954, Dunedin 9054.