



Ipsos Reid



Residential Wood Burning Survey Final Report

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IPSOS REID
1285 WEST PENDER
STREET, SUITE 200
VANCOUVER BC
V6E 4B1
TEL: 778.373.5000
FAX: 604.688.9568



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Key Survey Findings

Air Quality

While perceptions of Metro Vancouver’s overall air quality are predominately positive, the majority of residents nonetheless think that improving the region’s air quality should still be a priority for local leaders. Nearly nine-in-ten residents rate Metro Vancouver’s overall air quality as “almost always good” or “good most of the time, poor on occasion”. Despite this overwhelmingly positive assessment of Metro Vancouver’s air quality, the majority of residents nonetheless think that improving the region’s air quality should still be a priority for local leaders (ranges from one-in-ten saying this should be a “very high” priority to one-third saying this should be a “mid-level priority”). Those with and without a wood burning device voice similar opinions on both of these issues.

Residential wood burning is seen as a minor contributor to the region’s air pollution, particularly when compared to activities such as transportation and industrial or commercial sources. While residents generally agree that residential wood burning has some impact on the region’s air quality, the overall view is that this is more of a “minor” source of air pollution rather than a “major” or “moderate” contributor. Rather, residents are much more likely to attribute the region’s air pollution to transportation and industrial or commercial sources; forestry, land clearing, and agricultural burning is also seen as playing a role. Again, opinions are similar among those with and without a wood burning device.

Inventory

Two-thirds use natural gas as their main heating source at home. Nearly three-in-ten use electricity. Less than 1% of those surveyed relies on wood or wood pellets as their home’s main heating source, suggesting that those who use a wood burning device generally do so for some reason other than a primary heat source (consistent with other survey results). Although not a primary heat source, 37% of those who use a wood burning device say that heat is the main reason for using such a device.

Three-in-ten residents have at least one type of wood burning device at home and most of these are operational. Overall, traditional wood burning fireplaces are the most common, followed by wood burning fireplace inserts, woodstoves, and pellet stoves. In total, more than eight-in-ten of those with a wood burning device say that at least one of these devices is operational.

On average, wood burning devices are 34 years old. Just over one-in-ten have a wood burning device that is less than 15 years old. Among these respondents, two-thirds report having at least one certified device. The remaining one-third either say their wood burning device is not certified or are unsure whether this is the case.

Burning Habits

Two-thirds of those with an operational wood burning device use it at least some point during the year. The vast majority of this usage occurs during the fall and winter season. On the days that residents use their wood burning device, a fire is burning for an average of 3.5 hours. Most residents who use a wood burning device burn less than ½ a cord of wood per year.



Residents primarily burn natural wood logs in their wood burning devices. Two-thirds of those who use a wood burning device primarily burn natural wood logs while two-in-ten use artificial or manufactured logs and one-in-ten use scrap wood or pallets. Among those who use natural wood logs, almost all tend to burn dry, seasoned wood rather than wood that is fresh-cut or moist. Nearly three-quarters gather their own wood while two-in-ten purchase wood from either a wood supplier or a local store. The few respondents who purchase their wood pay an average of \$105.40 each time they purchase it.

Ambiance is the number one reason for using a wood burning device. On an unprompted basis, half of those who use a wood burning device say they do so because of the ambiance it provides, including things such as appearance, smell, and sound. Just over one-third mention using it for heat. Ambiance also rises to the top once residents are presented with a specific list of reasons for burning wood at home. Specifically, eight-in-ten say a “major” or “moderate” reason why they burn wood is because they “like the smell or aesthetic beauty of a fire”. Two-thirds use their wood burning device as “an emergency heating source during electrical power failures”. In comparison, respondents are much less likely to mention the following as reasons why they might burn wood at home: “a wood supply is readily available”, “it is a relatively inexpensive way to heat my home”, “I think it is an efficient source of heat”, and “I think wood burning is better for the environment than using natural gas or electricity to heat my home”.

A reduction in wood burning would have little impact on home heating costs. Seven-in-ten respondents who use a wood burning device say that a reduction in wood burning would have “no impact” on their home heating costs, which is consistent with other survey results showing that residents tend to burn wood for ambiance rather than as a source of heat. Another 13% of residents say that a reduction in wood burning would actually decrease their home heating costs, while 17% anticipate these costs to rise as a result of a reduction in wood burning.

Lack of need and too much hassle are the main reasons for not using a wood burning device. One-third of respondents who have a wood burning device never use it. The main reasons for not using their wood burning device are no need and too much hassle.

Concerns

Very few residents voice any concerns about wood smoke in their neighbourhood.

Overall, more than eight-in-ten residents say they have no concerns about wood smoke in their neighbourhood, indicating this is not a problem for most residents. Of the few concerns that are mentioned, environmental concerns and health-related concerns top the list. No significant differences in opinion are seen among those with and without a wood burning device.

Periodic air pollution from wood smoke is generally not a problem in local neighbourhoods. Consistent with other survey results showing that most residents do not have any concerns about wood smoke in their neighbourhood, the survey also finds that two-thirds of residents say that periodic air pollution from wood smoke is “not a problem” in their neighbourhood. Another quarter feel this is only a “minor” problem, and less than one-in-ten say periodic air pollution from wood smoke is a “major” or “moderate” problem in their neighbourhood. Residents with a wood burning device are more likely than those without such a device to say that wood smoke is “not a problem” in their neighbourhood.

Most are aware of the negative health effects associated with breathing wood smoke.

Despite a general lack of concern about wood smoke in their neighbourhood, the majority of residents are aware of the negative health effects associated with breathing wood smoke. That said, one-third of residents are unaware of these health effects, pointing to an opportunity for increased public education. Those without a wood burning device are more likely to be aware of the negative health effects associated with breathing wood smoke.

While residents are open to the idea of taking extra steps to burning more cleanly, there is greater resistance to other proposed measures aimed at reducing the amount of residential wood smoke.

Once informed of some of the negative health effects associated with breathing wood smoke, three-quarters of those who use a wood burning device say they would be likely to consider “taking extra steps to burn more cleanly, such as burning clean, dry wood, monitoring air supply, and not leaving smouldering burns overnight”. Conversely, less than half would consider “converting your wood burning device to a cleaner technology alternative such as a low emission woodstove, a natural gas fireplace insert, or wood pellets”, “reducing the number of times you use your wood burning device”, and “not using your wood burning device altogether”. Getting people to consider these actions will require more than simply telling them about the negative health effects.

Support for specific regulatory initiatives varies. Generally speaking, residents are more likely to support less restrictive regulatory initiatives that may require some changes to wood burning activities rather than banning residential wood burning altogether. Of the specific regulatory initiatives tested, residents are most supportive of the following, with at least seven-in-ten respondents voicing support for these initiatives: “restricting residential wood burning during poor air quality days”, “restricting the operation of wood burning devices- e.g., has to be certified, must meet specific emission requirements, etc.”, “banning residential wood burning between May and September”, and “restricting the type of wood burning devices allowed in new and existing homes”. Residents are less supportive of “banning wood burning devices in new housing constructions”, although the majority of residents nonetheless support this initiative. Conversely, less than half of all residents support the following two initiatives, suggesting many see these as too extreme or restrictive: “requiring the removal of wood burning devices from existing homes when these homes are sold to a new owner” and “banning residential wood burning altogether”. Those without a wood burning device tend to be more supportive of these regulatory initiatives.

Introduction

Objectives

Metro Vancouver commissioned Ipsos Reid to conduct a public opinion research survey to gain a better understanding of the public's usage of and attitudes towards wood burning devices, including the level of support for various regulatory initiatives aimed at reducing emissions from residential wood burning. Ultimately, the results of the research will provide valuable input into Metro Vancouver's residential wood smoke emissions reduction program.

Specifically, the main objectives of the survey included:

- Assess perceptions of Metro Vancouver's air quality, including overall air quality, key contributors to air pollution, and the importance of improving air quality in the region;
- Conduct an inventory of residential wood burning devices in Metro Vancouver, including the incidence, number, type, and age of these devices as well as whether they are certified and operational;
- Understand residential wood burning habits, including how often people use their wood burning device, how much wood they typically burn, the type of wood burned, and where people get their wood;
- Determine what impact, if any, a reduction in wood burning would have on home heating costs;
- Learn the reasons for using/not using a wood burning device;
- Understand what concerns, if any, people have about wood smoke in their neighbourhood;
- Gauge awareness of the negative health effects associated with breathing wood smoke;
- Measure the likelihood of modifying residential wood burning behaviour once informed of the negative health effects associated with breathing wood smoke; and,
- Assess support for specific initiatives aimed at reducing the amount of residential wood smoke in the region.

Where appropriate, this year's results have been tracked and reported against a similar survey conducted by Metro Vancouver in 2002. Comparing the results of the surveys allows Metro Vancouver to understand how behaviours and attitudes regarding residential wood burning have changed over the past few years. Please note that due to changes in question wording and methodology, these comparisons should be considered as directional in nature only.

Methodology

In total, 600 telephone interviews were conducted with a randomly selected representative sample of Metro Vancouver residents aged 18 years or older. The sample of residents was drawn by postal code and respondents were asked in the beginning of the survey to identify the community in which they live to further validate residency. To ensure the research was conducted with the person best able to answer many of the survey questions (particularly those around home heating), an additional screening question was included to target the person in the household who is primarily or jointly responsible for making decisions around home heating. All interviews were conducted between the dates of April 14 and April 29, 2010.



Overall results based on a sample size of 600 are accurate to ±4.0 percentage points, nineteen times out of twenty. This means that we are 95% confident that if we interviewed all adult residents who are responsible for home heating decisions in Metro Vancouver, the overall results would be within ±4.0 percentage points of what was achieved with a sample size of 600.

To ensure appropriate representation from key target groups, quotas were set by region and whether or not respondents have a wood burning device (includes traditional wood burning fireplaces, wood burning fireplace inserts, pellet stoves, and woodstoves). The final data were weighted by region and the incidence of wood burning devices to ensure that it is reflective of the actual population in Metro Vancouver according to the 2006 Census data. A summary of the final number of interviews completed with each target audience, along with the associated margins of error, can be found in the table below.

| Quota Group | Number of Completed Surveys | Margin of Error (19 times out of 20) |
|--------------------------------------|-----------------------------|--------------------------------------|
| Region | | |
| Central | 200 | ±6.9% |
| North Shore | 100 | ±9.8% |
| Northeast | 100 | ±9.8% |
| South of Fraser | 200 | ±6.9% |
| Wood Burning/Non-Wood Burning | | |
| Have wood burning appliance | 300 | ±5.7% |
| Do not have wood burning appliance | 300 | ±5.7% |

**Central includes Vancouver, Burnaby, New Westminster*

**North Shore includes North Vancouver City, North Vancouver District, West Vancouver, Lions Bay, and Bowen Island.*

**Northeast includes Anmore, Belcarra, Coquitlam, Maple Ridge, Pitt Meadows, Port Coquitlam, and Port Moody.*

**South of Fraser includes Delta, Langley City, Langley Township, Richmond, Surrey, and White Rock.*

Note on Homeownership

It should be noted that the percentage of homeownership in the survey stands at 81%, which is higher than what is normally seen in the Lower Mainland (approximately 65%). The most probable explanation for this is that people who rent their place of residence were more likely to refuse to participate in the research upon hearing the survey topic, as well as more likely to drop out midway through (again, because of the survey topic). Review of the results for the 2002 survey shows this same bias.



Detailed Findings

Air Quality

Metro Vancouver's Overall Air Quality

Perceptions of Metro Vancouver's overall air quality are predominately positive.

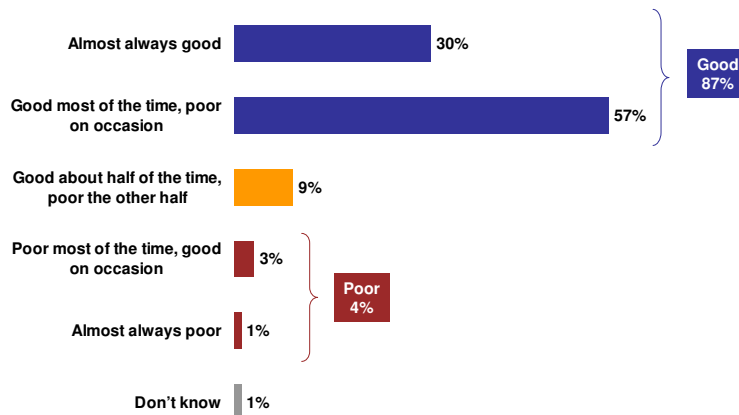
Nearly nine-in-ten (87%) residents rate Metro Vancouver's overall air quality as good, including 30% saying it is "almost always good" and 57% saying it is "good most of the time, poor on occasion". Another 9% of residents demonstrate a more mixed view and say the region's air quality is "good about half of the time, poor the other half". Only 4% of residents rate Metro Vancouver's air quality poorly, including 3% saying "poor most of the time, good on occasion" and 1% saying "almost always poor".

Perceptions of Metro Vancouver's air quality are not significantly different among those with a wood burning device (84% good overall) and without a wood burning device (88% good overall).



Metro Vancouver's Overall Air Quality

How would you rate the overall air quality in Metro Vancouver? Would you say it is...?



Base: All respondents (n=600)

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Analysis by key demographic subgroups shows that residents who are *more* likely to rate Metro Vancouver's air quality as good (**combined “almost always good/good most of the time, poor on occasion” responses**) include:

- Those living in Central (91%, compared to a low of 83% in South of Fraser);
- Those who are under the age of 55 (includes 94% of 18 to 34 year olds and 89% of 35 to 54 year olds, compared to 82% of those who are 55 years of age or older);
- Those with household incomes of \$120,000 or more (93%, compared to a low of 82% among those earning less than \$60,000); and,
- Those who do not think wood smoke is a problem in their neighbourhood (90%, compared to 80% of those who think wood smoke is a major/moderate/minor problem).

Priority Assigned to Improving Region’s Air Quality

Nearly six-in-ten think improving the region’s air quality should be a priority for local leaders.

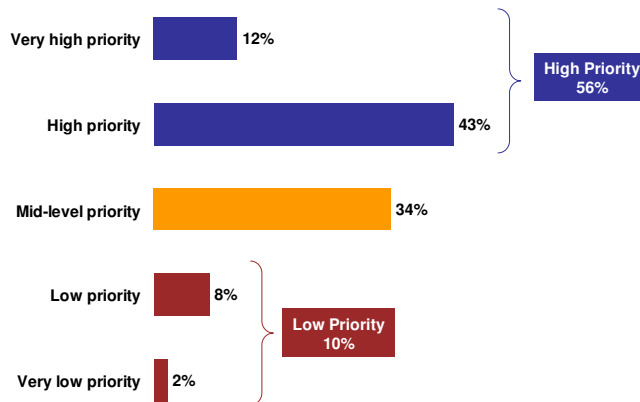
Despite an overwhelmingly positive assessment of Metro Vancouver’s overall air quality, the majority (56%) of residents nonetheless say that, compared to all the issues facing Metro Vancouver today, improving the region’s air quality should still be a “very high” (12%) or “high” (43%) priority for local leaders; another 34% see this as a “mid-level” priority. Only 10% say improving the region’s air quality should be a “low” (8%) or “very low” (2%) priority for local leaders.

The priority assigned to improving the region’s air quality is similar among those with and without a wood burning device.



Priority Assigned to Improving Region’s Air Quality

*Compared to all the issues facing Metro Vancouver today, how high a priority do you think local leaders should place on improving the region’s air quality?
Do you think this should be a...?*



Base: All respondents (n=600)

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Residents who are *more* likely to say improving the region’s air quality should be a “**very high**” or “**high**” priority include:

- Those who are 55 years of age or older (62%, compared to a low of 40% among 18 to 34 year olds);
- Homeowners (58%, compared to 44% of renters);
- Those living in households where someone suffers from a respiratory illness (67%, compared to 52% of those in households where no respiratory illnesses are present); and,
- Those who think wood smoke in their neighbourhood is a major/moderate/minor problem (70%, compared to 49% of those who think it’s not a problem at all).

Contributors to Air Pollution in Metro Vancouver

Residential wood burning is seen as a minor contributor to the region’s air pollution, particularly when compared to activities such as transportation and industrial or commercial sources.

The survey finds that while residents generally agree that residential wood burning, including fireplaces and woodstoves, has some impact on the region’s air quality, the overall view is that this has more of a minor contribution rather than being a major source of Metro Vancouver’s air pollution. Specifically, only 36% of residents think that residential wood burning has a “major” (7%) or “moderate” (29%) contribution to air pollution in Metro Vancouver, compared to more than half (55%) saying its contribution is “minor”.

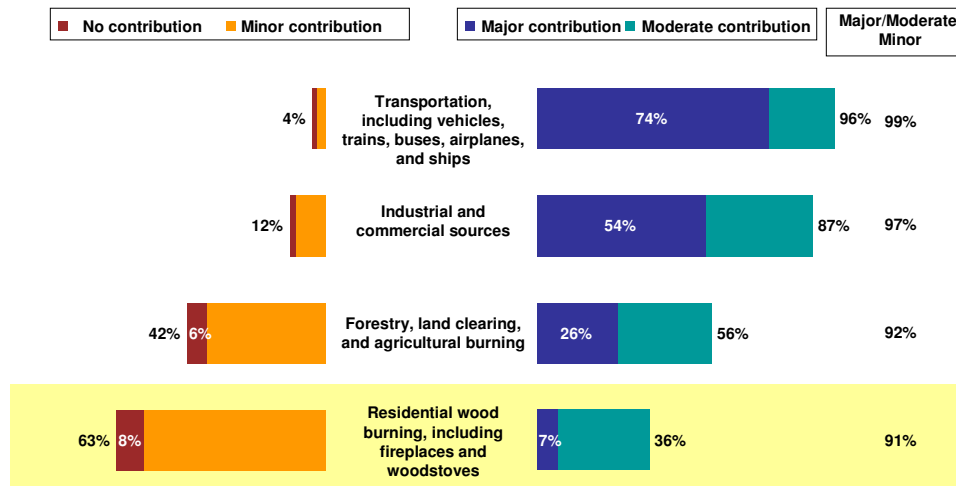
Residents are much more likely to attribute the region’s air pollution to transportation, including vehicles, trains, buses, airplanes, and ships (96% say transportation makes a “major” (74%) or “moderate” (21%) contribution to Metro Vancouver’s air pollution) and industrial and commercial sources (87% say this has a “major” (54%) or “moderate” (34%) contribution). Forestry, land clearing, and agricultural burning is also seen as playing a role (56% say this has a “major” (26%) or “moderate” (30%) contribution).

Opinions are similar among those with and without a wood burning device.



Contributors to Air Pollution in Metro Vancouver

For each of the following, please tell me whether you think this has a major, moderate, minor, or no contribution to air pollution in Metro Vancouver.



Base: All respondents (n=600)

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- Women are *more* likely than men to say that all of these sources are a “major” or “moderate” contributor to air pollution in Metro Vancouver.



Looking specifically at perceptions of **residential wood burning** finds that residents who are *more* likely to say this makes a “**major/moderate contribution**” to the region’s air pollution include:

- Women (44%, compared to only 26% of men);
- Respondents with household incomes of less than \$60,000 (44%, compared to a low of 29% among those earning \$60,000 to less than \$120,000);
- Those who have but do not use a wood burning device (41%, compared to 26% of those who use a wood burning device); and,
- Those who think wood smoke is a major/moderate/minor problem in their neighbourhood (62%, compared to 24% of those who don’t think wood smoke is a problem at all).



Inventory

Main Heating Source

Two-thirds use natural gas as their main heating source at home. Virtually none rely on wood or wood pellets as their main source of heat.

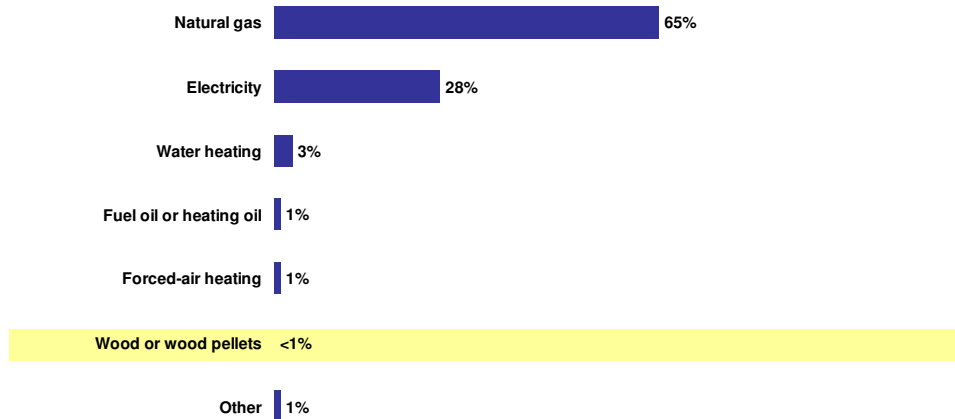
Overall, 65% of residents identify natural gas as the main source of heat in their home; another 28% use electricity. Other heating sources are mentioned much less often and less than 1% of those surveyed relies on wood or wood pellets as their home's main heating source.

While natural gas is the main heating source among those with and without a wood burning device, the survey finds it to be particularly popular among those with a wood burning device (77%, compared to 60% of those without a wood burning device). In comparison, 34% of those without a wood burning device rely electricity as their main heating source, compared to only 15% of those with a wood burning device.



Main Heating Source

What is the main source of heat in your home?



Base: All respondents (n=600)

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Analysis by key demographic subgroups shows that **natural gas** is particularly *common* among:

- Those living in the Northeast, South of Fraser, or North Shore (81%, 76%, and 75%, respectively, compared to 49% in Central);
- Those who are 55 years of age or older (71%, compared to a low of 49% among 18 to 34 year olds);
- Homeowners (70%, compared to 44% of renters);
- Those living in single, detached houses (85%, compared to 36% of those living in another type of housing);
- Those whose home is more than 30 years old (77%, compared to 57% of those whose home is 30 years or less); and,
- Those who have lived in their home for more than 10 years (75%, compared to 58% of those who have lived in their home for 10 years or less).

Incidence of Wood Burning Devices

Three-in-ten residents have at least one type of wood burning device at home. Traditional wood burning fireplaces are the most popular.

Overall, 31% of residents currently have at least one type of wood burning device in their home. Based on the Statistics Canada 2006 Census showing there are 817,225 occupied private dwellings in Metro Vancouver, it can be estimated that approximately 253,340 households have at least one type of wood burning device.

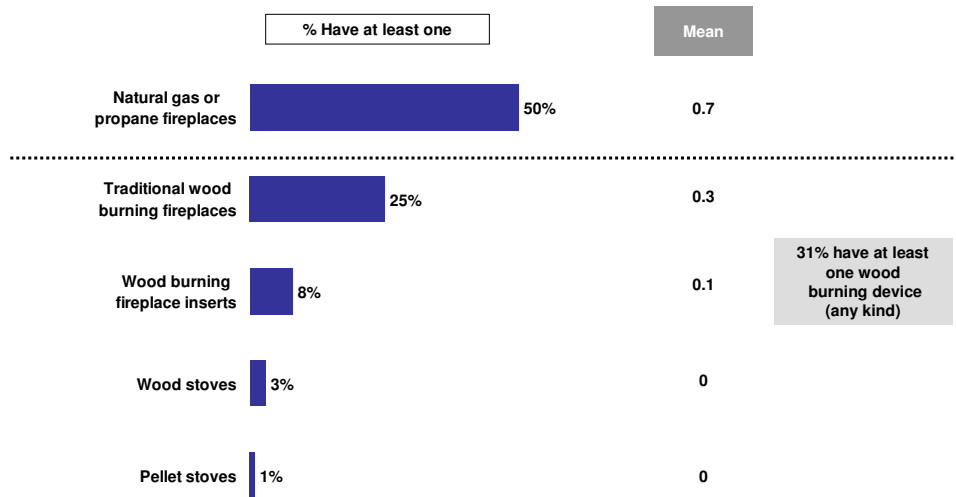
Turning our attention back to the survey results shows that one-quarter (25%) have a traditional wood burning fireplace, 8% have a wood burning fireplace insert, 3% have a woodstove, and 1% have a pellet stove. Further analysis shows that none of these types of wood burning devices are as popular as natural gas or propane fireplaces, which can be found in 50% of homes.

These results are not significantly different from what was reported in 2002 when 34% of Greater Vancouver residents reported having a wood burning fireplace or woodstove.



Incidence of Wood Burning Devices

How many, if any, ... do you currently have in your home?



Base: All respondents (n=600)

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Wood burning devices are *more* likely to be found among:

- Those living in single, detached houses (43%, compared to 14% of those living in some other type of housing);
- Those living in homes that are older than 30 years (45%, compared to 21% of those whose homes are 30 years or less); and,
- Those who have lived in their homes for more than 10 years (42%, compared to 23% of those who have lived in their home for 10 years or less).



Age of Wood Burning Devices

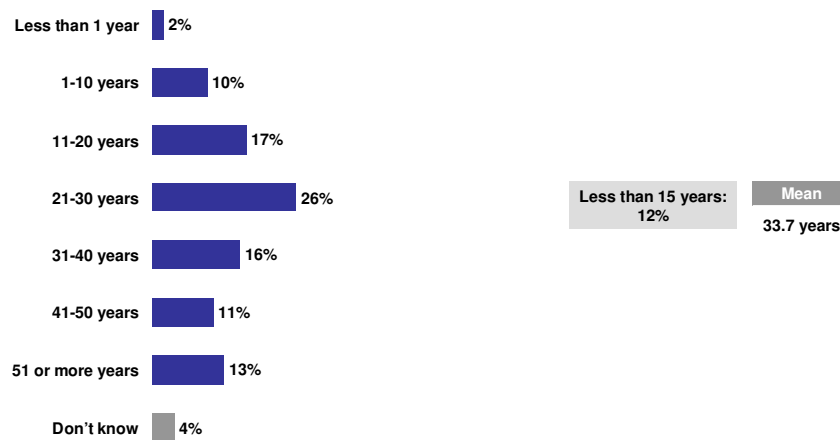
On average, wood burning devices are 34 years old.

When respondents with a wood burning device were asked how old each of these devices were, the average response is 33.7 years. Responses range from 12% saying their wood burning device is 10 years or less to 13% saying their device is more than 50 years old.



Age of Wood Burning Devices

To the best of your knowledge, how old is your wood burning fireplace, fireplace insert, pellet stove, or wood stove?



Base: All wood burning devices (n=464)

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Analysis by key demographic subgroups shows that the **average age of wood burning devices** is significantly *higher* among:

- Those living in Central or the North Shore (39.7 years and 38.5 years, compared to 27.7 years in the Northeast and 28.5 years in South of Fraser);
- Those who are 55 years of age or older (37.0 years, compared to 28.1 years among 18 to 34 year olds and 31.1 years among 35 to 54 year olds);
- Those living in single, detached houses (35.1 years, compared to 26.0 years among those living in some other type of housing);
- Those whose home is older than 30 years (42.2 years, compared to 20.9 years among those whose home is 30 years or less); and,
- Those with household incomes of at least \$60,000 (includes 39.4 years among those earning \$120,000 or more and 33.5 years among those earning \$60,000 to less than \$120,000, compared to 28.4 years among those earning \$60,000 or more).



Certification of Wood Burning Devices

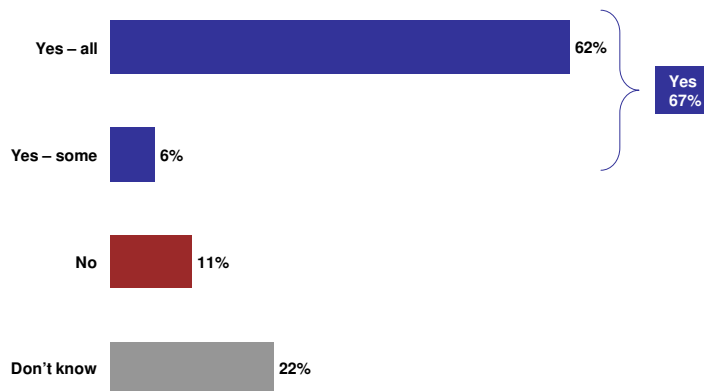
Two-thirds of those with a wood burning device that is less than 15 years old have at least one device that is certified.

In total, 12% of residents have a wood burning device that is less than 15 years old. When these respondents were asked whether their appliance was certified with either the EPA or CSA, a total of 67% report having at least one certified device. More specifically, 62% say that all their devices under 15 years of age are certified while another 6% say that only some of these devices are certified. One-in-ten (11%) say their wood burning device is not certified and 22% are unsure whether or not this is the case.



Certification of Wood Burning Devices

Is your wood burning fireplace, fireplace insert, pellet stove, or woodstove a cleaner burning low-emission appliance which is certified? It could be certified with either the United States Environmental Protection Agency (EPA) or the Canadian Standards Association (CSA).



Base: Respondents who have wood burning devices 0 - 14 years old (n=44)*

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*Small base size, interpret with caution.

- No significant differences in the certification of wood burning devices are seen across the key demographic subgroups.

Operational Wood Burning Devices

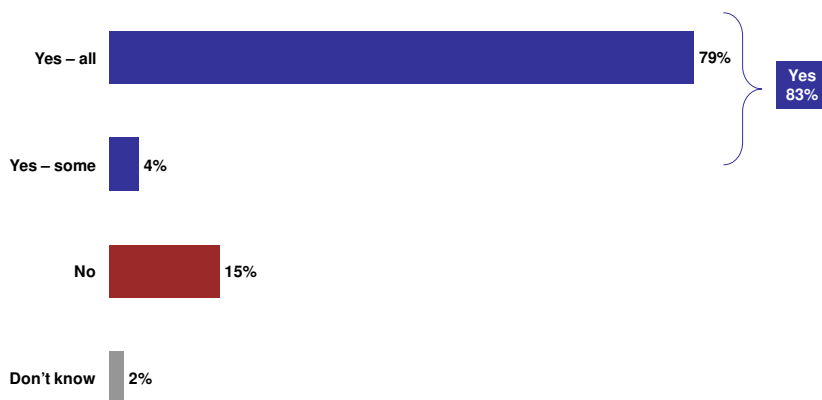
Most wood burning devices are operational.

In total, 83% of those with a wood burning device say that at least one of these devices is operational. Of this, 79% say that all their wood burning devices are operational, while 4% say only some of them are operational.



Operational Wood Burning Devices

Is your wood burning fireplace, fireplace insert, pellet stove, or woodstove operational?



Base: Respondents with wood burning device (n=300)

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- For the most part, no significant differences are seen across the key demographic subgroups.
- One exception to this is when looking at whether or not someone in the household suffers from a respiratory illness. Specifically, those living in households where no one suffers from such an illness are more likely to have an operational wood burning device (87%, compared to 72% of those where someone does have a respiratory illness).

Burning Habits

Usage of Wood Burning Devices

Two-thirds of those with an operational wood burning device use it at least some point during the year.

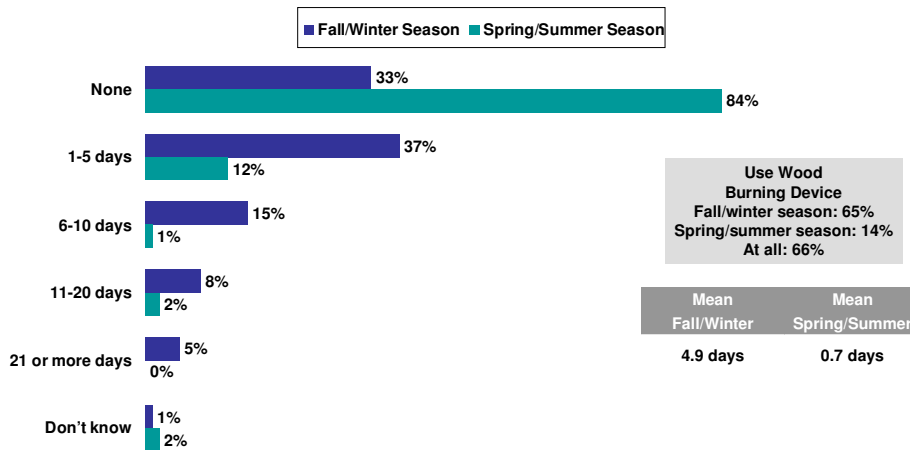
A total of 66% of those with an operational wood burning device use it at least once during the year. The vast majority of this usage occurs during the fall and winter season, when 65% of respondents report using their wood burning device at least one day a month (average usage in the fall and winter sits at 4.9 days per month). In comparison, only 14% of respondents use their wood burning device in the spring and summer season, with average usage during this time sitting at 0.7 days per month.

In 2002, Greater Vancouver residents reported using their wood burning fireplace or stove an average of 5.5 days per month during the fall and winter season and an average of 0.7 days per month during the spring and summer season.



Usage of Wood Burning Devices

In a typical year, how many days per month would you say you use your wood burning device during the...?



Base: Respondents whose wood burning device is operational (n=252)

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- Usage of wood burning devices does not significantly vary across all key demographic subgroups.



Number of Hours that a Fire is Burning

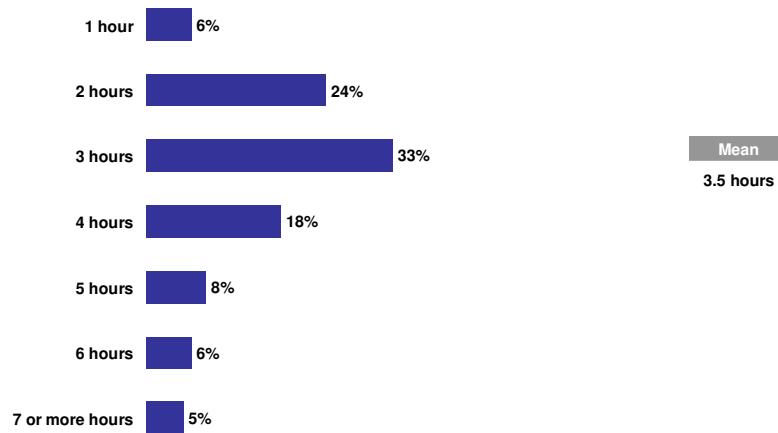
On days that residents use their wood burning device, a fire is burning for an average of 3.5 hours.

Residents who use their wood burning device say that on the days this device is employed, a fire is typically burning for an average of 3.5 hours. The number of hours that a fire is burning ranges from 1 hour (6%) to 7 or more hours (5%).



Number of Hours that a Fire is Burning

On days that you use your wood burning device, how many hours of the day do you typically have a fire burning?



Base: Respondents who use wood burning device (n=170)

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Residents who are *more* likely to have a fire burning for a greater number of **average hours** include:

- Those living on the North Shore or South of Fraser (4.1 hours and 3.8 hours, compared to a low of 3.1 hours among those in Central); and,
- Those living in households where someone suffers from a respiratory illness (4.7 hours, compared to 3.2 hours among those in households where no one suffers from such an illness).



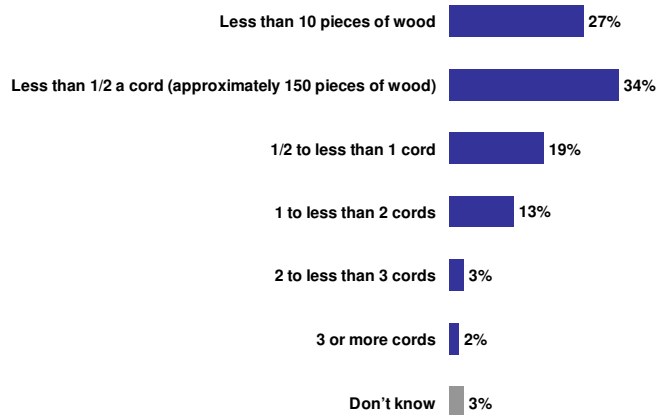
Amount of Wood Burned Per Year

Most residents who use a wood burning device burn less than 1/2 a cord of wood per year. Among residents who use their wood burning device, 27% say they use less than 10 pieces of wood per year and another 34% say they use less than 1/2 a cord per year. Two-in-ten (19%) use 1/2 to less than 1 cord and 13% use 1 to less than 2 cords. Very few use 2 or more cords per year (includes 3% saying they use 2 to less than 3 cords and 2% saying they use 3 or more cords).



Amount of Wood Burned Per Year

In total, how many cords of wood do you burn in your wood burning device in a typical year? One full cord is a stack of firewood that measures 4 feet in width, 8 feet in length, and 4 feet in height. Please stop me when I've reached your category. Would you say you use...?



Base: Respondents who use wood burning device (n=170)

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Residents who think wood smoke is a major/moderate/minor problem in their neighbourhood tend to burn slightly *less* wood than those who do not think wood smoke is a problem at all. Specifically:

- 41% of those who think wood smoke is a major/moderate/minor problem burn less than 10 pieces of wood per year, compared to 21% of those who think it's not a problem at all.
- 39% of those who think wood smoke is not a problem burn less than 1/2 cord of wood per year, compared to 22% of those who think it is a major/moderate/minor problem.



Type of Wood Primarily Burned

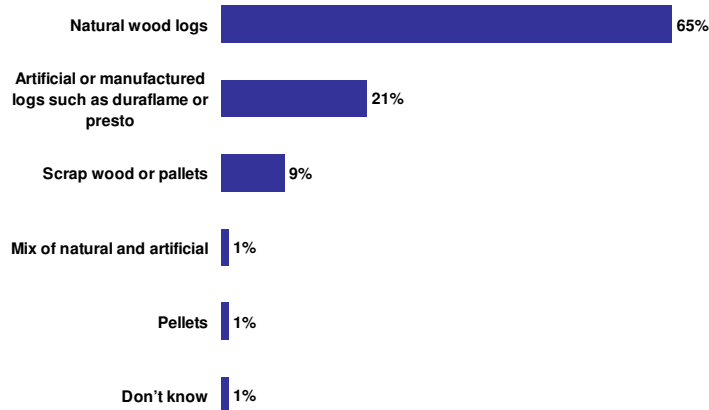
Residents primarily burn natural wood logs in their wood burning devices.

Two-thirds (65%) of residents who use a wood burning device primarily burn natural wood logs. Two-in-ten (21%) use artificial or manufactured logs such as duraflame or presto and 9% use scrap wood or pallets.



Type of Wood Primarily Burned

What type of wood do you primarily use in your wood burning device?



Base: Respondents who use wood burning device (n=170)

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Residents who are *more* likely to say they use **natural wood logs** include:

- Those living on the North Shore (89%, compared to lows of 55% in South of Fraser and 63% in Central); and,
- Those whose home is more than 30 years old (74%, compared to 51% of those whose home is 30 years or less).



Dry, Seasoned Wood versus Fresh-Cut, Moist Wood

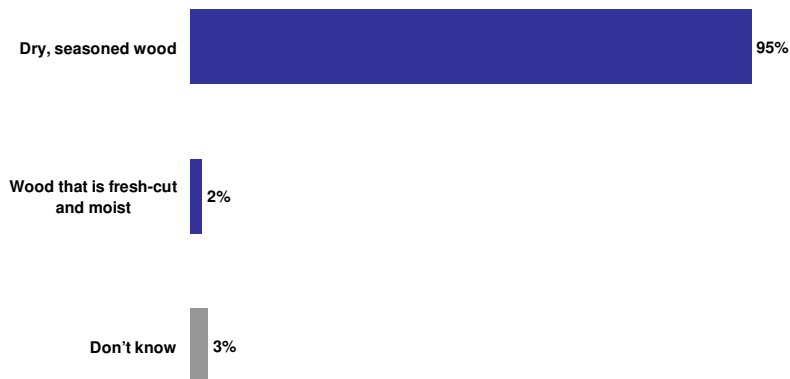
Almost all of those burning natural wood logs use dry, seasoned wood.

More than nine-in-ten (95%) of those who burn natural wood logs tend to burn dry, seasoned wood rather than wood that is fresh-cut and moist.



Dry, Seasoned Wood versus Fresh-Cut, Moist Wood

Do you tend to burn dry, seasoned wood or wood that is fresh-cut and somewhat moist?



Base: Respondents who use natural wood logs (n=116)

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- Dry, seasoned wood is particularly common among those living in homes that are more than 30 years old (98%, compared to 87% of those living in homes that are 30 years or younger).



Source of Wood

Nearly three-quarters of those who burn natural wood logs gather their own wood. In total, 73% of those who burn natural wood logs say they typically gather their own wood. Two-in-ten (21%) purchase their wood from either a wood supplier (16%) or local store (5%).

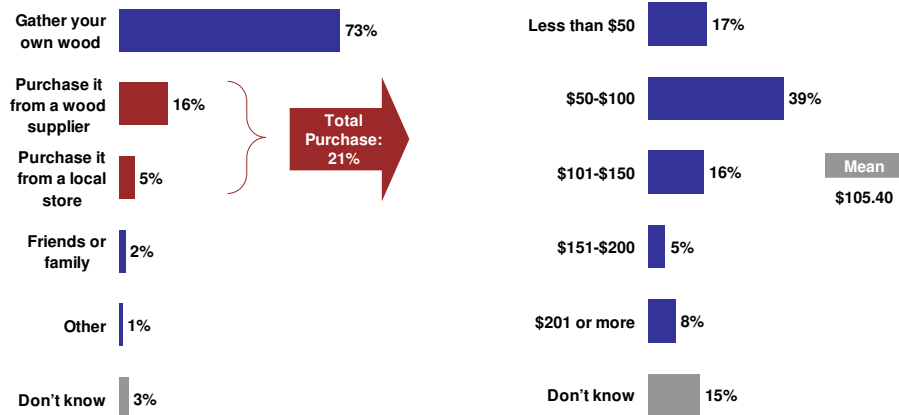
The few respondents who purchase their wood pay an average of \$105.40 each time they purchase it.



Source of Wood

Where do you typically get your wood? Do you...?

How much do you typically pay for wood each time you purchase it?



Base: Respondents who use natural wood logs (n=116)

Base: Respondents who purchase natural wood (n=25)*

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*Small base size, interpret with caution.

Respondents who are *more* likely to **gather their own wood** include:

- Men (88%, compared to 62% of women); and,
- Those whose home is more than 30 years old (82%, compared to 53% of those whose home is 30 years or younger).



Reasons for Using Wood Burning Device (Unprompted)

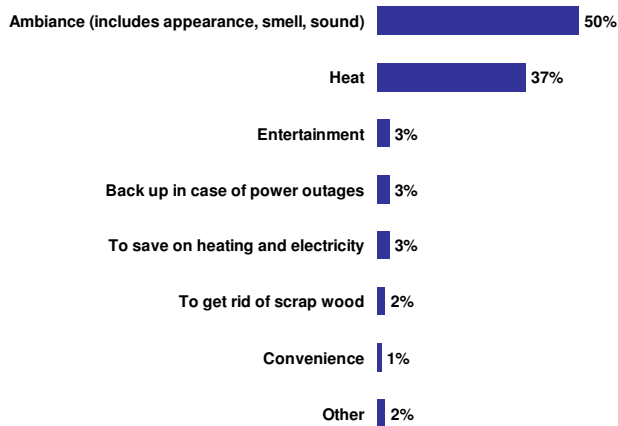
On an unprompted basis, **ambiance** is cited as the number one reason for using a wood burning device.

Among those who use a wood burning device, half (50%) say they do so because of the ambiance it provides (includes things such as appearance, smell, and sound). Another 37% mention using it for heat.



Reasons for Using Wood Burning Device (Unprompted)

What is the main reason why you use your wood burning device?



Base: Respondents who use wood burning device (n=170)

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- Respondents who live in a household where no one suffers from a respiratory illness are *more* likely to mention using a wood burning device for **ambiance** (54%, compared to 34% of those living in households where someone suffers from such an illness).
- Conversely, those living in households where someone does suffer from a respiratory illness are *more* likely to use a wood burning device for **heat** (58%, compared to 31% of those living in households where no one suffers from such an illness).

Reasons for Using Wood Burning Device (Prompted)

Ambiance also rises to the top once residents are presented with a specific list of reasons for burning wood at home.

Respondents who use a wood burning device were also read a list of reasons why people may burn wood in their home and asked whether each one was a major, moderate, minor, or not a reason for burning wood in their home. Of the items tested, “I like the smell or aesthetic beauty of a fire” rises to the top, with 81% of respondents saying this is a “major” (57%) or “moderate” (25%) reason why they choose to burn wood at home; another 12% say this is a “minor” reason for doing so. Some respondents also use their wood burning device as “an emergency heating source during electrical power failures”, with 64% saying this is a “major” (46%) or “moderate” (18%) reason why those burn wood at home.

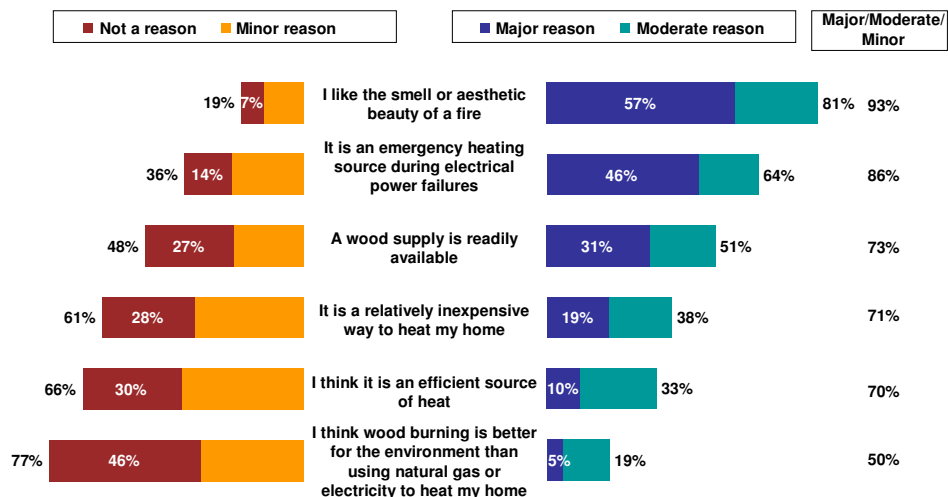
In comparison, respondents are less likely to mention the following as reasons why they might burn wood at home:

- “A wood supply is readily available” (51% say this is a “major” (31%) or “moderate” (20%) reason);
- “It is a relatively inexpensive way to heat my home” (38% say this is a “major” (19%) or “moderate” (19%) reason);
- “I think it is an efficient source of heat” (33% say this is a “major” (10%) or “moderate” (23%) reason); and,
- “I think wood burning is better for the environment than using natural gas or electricity to heat my home” (19% say this is a “major” (5%) or “moderate” (14%) reason). In fact, nearly half (46%) of respondents say this is “not a reason” why they burn wood at home.



Reasons for Using Wood Burning Device (Prompted)

I'm going to read a list of reasons why people may burn wood in their home. For each one, please tell me if this is a major reason, moderate reason, minor reason, or not a reason for burning wood in your home.



Base: Respondents who use wood burning device (n=170)

- Respondents who are *more* likely to say they burn wood because they **like the smell or aesthetic beauty of a fire** include those living in households earning more than \$120,000 (95% major/moderate reason, compared to a low of 78% among those earning \$60,000 to less than \$120,000).
- No significant demographic differences are seen when it comes to burning wood as **an emergency eating source during electrical power failures**.
- Respondents who are *more* likely to say they burn wood because **a wood supply is readily available** include those living on the North Shore and South of Fraser (71% major/moderate reason and 64% major/moderate reason, respectively, compared to 37% of those in Central and 39% of those in the Northeast).
- Respondents who are *more* likely to say they burn wood because **it is a relatively inexpensive way to heat my home** include those living in the South of Fraser (53% major/moderate reason, compared to lows of 26% in the Northeast and 27% in Central) and those who are between 35 and 54 years of age (46% major/moderate reason, compared to a low of 29% among those who are 55 years or older).
- Respondents who are *more* likely to say they burn wood because they **think it is an efficient source of heat** include those living in South of Fraser (47% major/moderate reason, compared to a low of 24% in Central) and those whose home is 30 years or younger (43% major/moderate reason, compared to 27% of those whose home is more than 30 years old).
- Respondents who are *more* likely to say they burn wood because they **think wood burning is better for the environment than using natural gas or electricity to heat my home** include men (28% major/moderate reason, compared to 12% of women).

Impact of Reduction in Wood Burning on Home Heating Costs

A reduction in wood burning would have little impact on home heating costs.

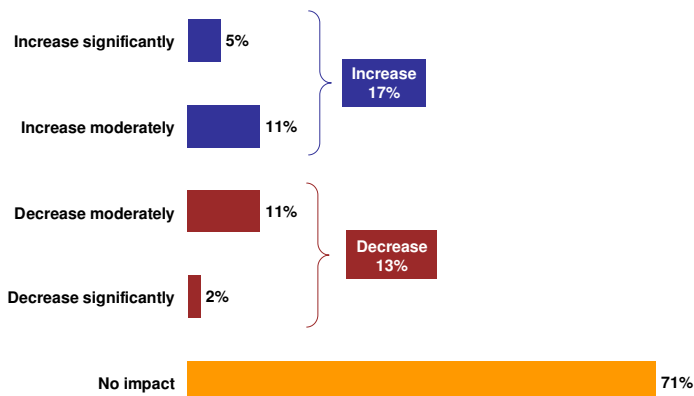
Seven-in-ten (71%) respondents who use a wood burning device say that a reduction in wood burning would have “no impact” on their home heating costs. This is consistent with other survey results showing that most residents tend to burn wood for ambiance rather than as a source of heat.

Another 13% of residents say that a reduction in wood burning would actually decrease their home heating costs, including 11% saying these would “decrease moderately” and 2% saying they would “decrease significantly”. Only 17% of residents anticipate their home heating costs to rise as a result of a reduction in wood burning (5% “increase significantly” and 11% “increase moderately”).



Impact of Reduction in Wood Burning on Home Heating Costs

What impact, if any, would a reduction in wood burning have on your home's heating costs? Would it cause your heating costs to increase, decrease, or have no impact? (Is that increase/decrease significantly or moderately?)



Base: Respondents who use wood burning device (n=170)

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Residents who are *more* likely to say that a reduction in wood burning would increase **(combined “increase significantly” and “increase moderately” responses)** their home heating costs include:

- Those living in South of Fraser (26%, compared to a low of 8% among those in Central); and,
- Those living in households where someone suffers from a respiratory illness (29%, compared to 13% of those living in households where no one suffers from such an illness). This is consistent with earlier survey findings showing that those living in households where someone suffers from a respiratory illness tend to burn wood as a source of heat, while those living in households where no one suffers from such an illness tend to burn wood for ambiance.



Reasons for Not Using Wood Burning Device

Lack of need and too much hassle are the main reasons for not using a wood burning device.

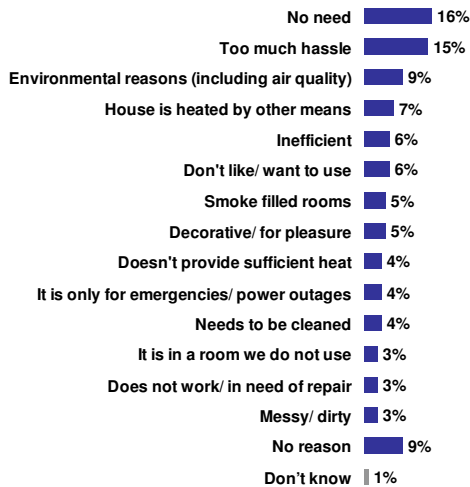
One-third (34%) of respondents who have a wood burning device never use it. The main reasons for not using their wood burning device are no need (16%) and too much hassle (15%).

Other reasons are mentioned by less than 10% of these respondents and include environmental reasons (including air quality) (9%), house is heating by other means (7%), inefficient (6%), don't like/want to use (6%), smoke filled rooms (5%), and decorative/for pleasure (5%), among others.



Reasons for Not Using Wood Burning Device

Why don't you use your wood burning device? Any other reasons?



Note: Only includes mentions of 3% or more.

Base: Respondents who do not use wood burning device (n=82)*

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**Small base size, interpret with caution.*

- The reasons for not using a wood burning device are consistent across all key demographic segments.

Concerns

Concerns about Wood Smoke

Very few residents voice any concerns about wood smoke in their neighbourhood.

Overall, 84% of residents say they have no concerns about wood smoke in their neighbourhood, indicating this is not a problem for most citizens.

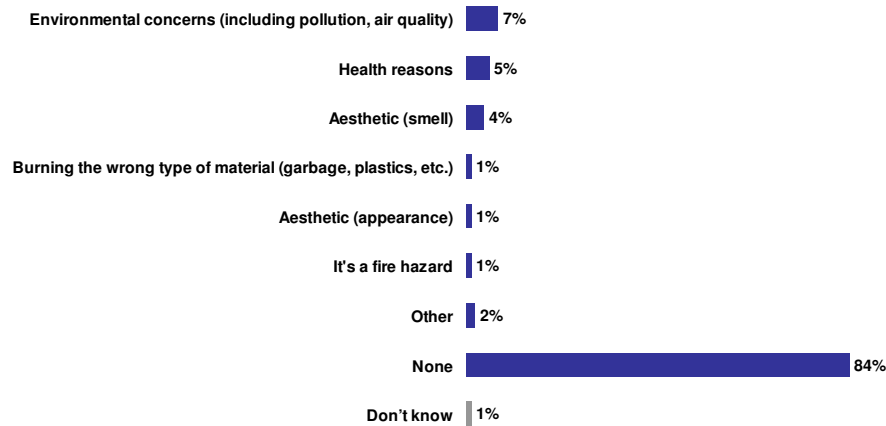
Of the few concerns that are mentioned, environmental concerns (including pollution, air quality) top the list, mentioned by 7% of respondents. Another 5% mention health-related concerns.

No significant differences in opinion are seen among those with and without a wood burning device.



Concerns about Wood Smoke

What concerns, if any, do you have about wood smoke in your neighbourhood? Any others?



Base: All respondents (n=600)

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Residents who are *more* likely to say they **have no concerns about wood smoke** include:

- Those living on the North Shore (93%, compared to lows of 82% in South of Fraser and 82% in the Northeast);
- Those whose home is more than 30 years old (88%, compared to 81% of those whose home is 30 years or less);
- Those who live in a household where no one suffers from a respiratory illness (87%, compared to 74% of those living in a household where someone does suffer from such an illness); and,
- Those who don't think wood smoke is a problem at all in their neighbourhood (96%, compared to 58% of those who think wood smoke is a major/moderate/minor problem).

Air Pollution in Neighbourhood

Periodic air pollution from wood smoke is generally not a problem in local neighbourhoods.

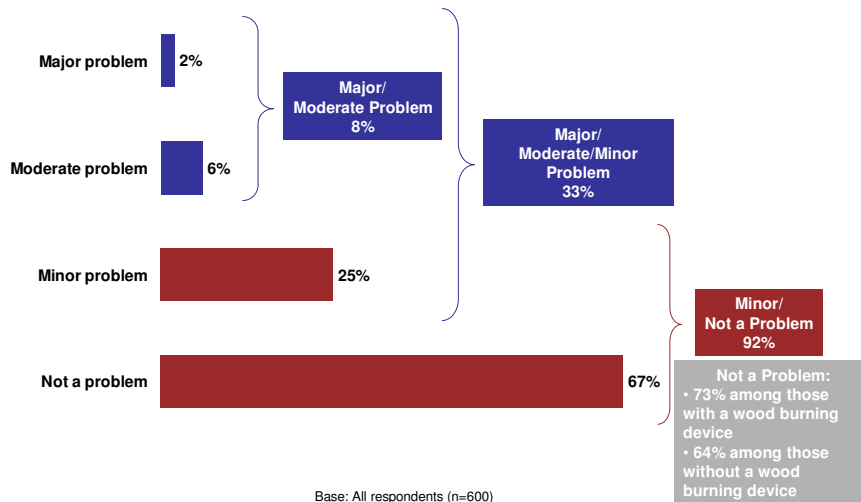
Two-thirds (67%) of residents say that periodic air pollution from wood smoke is “not a problem” in their neighbourhood. Another quarter (25%) say this is only a “minor” problem. Less than one-in-ten (8%) residents feel that periodic air pollution from wood smoke is a “major” (2%) or “moderate” (6%) problem in their neighbourhood.

Residents with a wood burning device are more likely to say wood smoke is “not a problem” in their neighbourhood (73%, compared to 64% of those without a wood burning device).



Air Pollution in Neighbourhood

Would you say that periodic air pollution from wood smoke in your neighbourhood is a...?



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Residents who are *more* likely to say that periodic air pollution from wood smoke is **not a problem** include:

- Those living in households where no one suffers from a respiratory illness (71%, compared to 54% of those living in households where someone does suffer from such an illness); and,
- Those living in households earning at least \$60,000 (includes 74% of those earning \$120,000 or more and 70% of those earning \$60,000 to less than \$120,000, compared to 58% of those earning less than \$60,000).

Awareness of Health Effects of Breathing Wood Smoke

Most are aware of the negative health effects associated with breathing wood smoke.

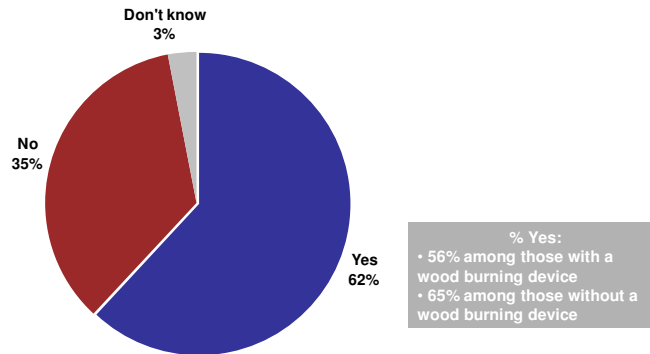
Six-in-ten (62%) residents are aware of the negative health effects associated with breathing wood smoke. While the majority of residents are aware of these adverse health effects, one-third (35%) are unaware, pointing to an opportunity to increased public education.

Those without a wood burning device are more likely to be aware of the negative health effects associated with breathing wood smoke (65%, compared to 56% among those with a wood burning device).



Awareness of Health Effects of Breathing Wood Smoke

To the best of your knowledge, are there any negative health effects associated with breathing wood smoke?



Base: All respondents (n=600)

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- Residents living in households where someone suffers from a respiratory illness are *more* likely to be **aware** of the negative health effects associated with breathing wood smoke (75%, compared to 58% of those living in households where no one suffers from such an illness).

Likelihood of Modifying Wood Burning Behaviour

While residents are open to the idea of taking extra steps to burn more cleanly, there is greater resistance to other proposed measures aimed at reducing the amount of residential wood smoke.

Survey respondents were read the following statement and then asked how likely they would be to consider taking various actions as a result of this information. The statement read to respondents was: *As you may know, emissions produced by wood burning devices can be harmful to human health due to the particles released into the atmosphere. For example, wood smoke can cause or aggravate health problems ranging from minor eye, nose, and throat irritations to more serious diseases such as asthma and emphysema.*

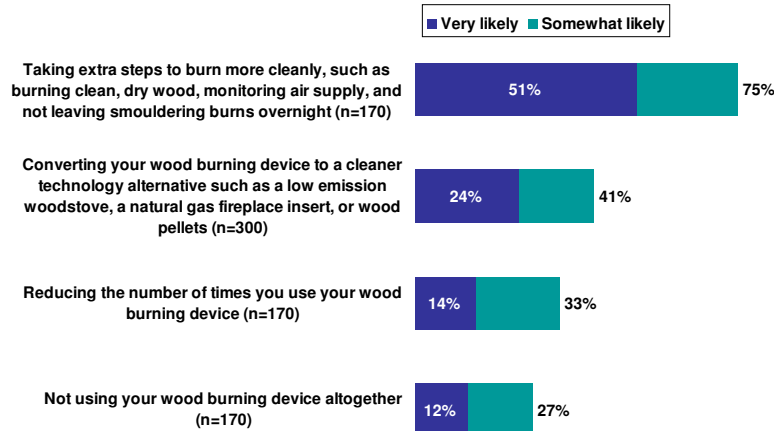
Once being read this statement, three-quarters (75%) of those who use a wood burning device say they would be likely to consider “taking extra steps to burn more cleanly, such as burning clean, dry wood, monitoring air supply, and not leaving smouldering burns overnight”, including 51% saying “very likely” and 23% saying “somewhat likely”.

Residents are much less likely to take other steps aimed at modifying their wood burning behaviour. Getting people to consider these actions will require more than simply telling them about the negative health effects. For example:

- Only 41% of those with a wood burning device are likely to consider “converting your wood burning device to a cleaner technology alternative such as a low emission woodstove, a natural gas fireplace insert, or wood pellets” (24% “very likely”).
- Only 33% of those who use a wood burning device are likely to consider “reducing the number of times you use your wood burning device” (14% “very likely”).
- Only 27% of those who use a wood burning device are likely to consider “not using your wood burning device altogether” (12% “very likely”).

Likelihood of Modifying Wood Burning Behaviour

As you may know, emissions produced by wood burning devices can be harmful to human health due to the particles released into the atmosphere. For example, wood smoke can cause or aggravate health problems ranging from minor eye, nose, and throat irritations to more serious diseases such as asthma and emphysema. Knowing this, how likely would you be to consider...?



Base: Varies- includes respondents with wood burning device (n=300) or respondents who use wood burning device (n=170)

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In 2002, 80% of Greater Vancouver residents said they would be likely to consider taking extra steps to burn more cleanly and 45% said they would be likely to consider converting their wood burning fireplace or stove to a cleaner technology alternative, neither of which is significantly different from what is reported today. However, there has been a significant drop in the percentage of respondents that would consider reducing the number of times they use their existing fireplace or woodstove (45% in 2002, compared to 33% today).

Analysis by key demographic subgroups finds that residents who are *more* likely (combined “very/somewhat likely” responses) to consider:

- **Taking extra steps to burn more cleanly** include those who have lived in their home for 10 years or less (85%, compared to 67% of those who have lived in their home for more than 10 years) and those earning \$60,000 to less than \$120,000 (83%, compared to a low of 63% among those earning less than \$60,000).
- **Converting their wood burning device to a cleaner technology alternative** include those who are between 35 and 54 years of age (54%, compared to 32% of those who are 55 years or older), those who have lived in their home for 10 years or less (48%, compared to 36% of those who have lived in their home for more than 10 years), and those who think wood smoke is a major/moderate/minor problem in their neighbourhood (52%, compared to 37% of those who don't think wood smoke is a problem at all).
- **Reducing the number of times they use their wood burning device** include those who think wood smoke is a major/moderate/minor problem in their neighbourhood (61%, compared to 22% of those who don't think wood smoke is a problem at all).
- **Not using their wood burning device altogether** include those who think wood smoke is a major/moderate/minor problem in their neighbourhood (49%, compared to 19% of those who don't think wood smoke is a problem at all).

Regulatory Action

Support for Regulatory Initiatives

Support for specific regulatory initiatives varies.

Generally speaking, residents are more likely to support less restrictive regulatory initiatives that may require some changes to wood burning activities without banning residential wood burning altogether.

Of the specific regulatory initiatives tested, residents are most supportive of:

- “Restricting residential wood burning during poor air quality days” (83% support, including 59% “strongly support”);
- “Restricting the operation of wood burning devices – e.g., has to be certified, must meet specific emission requirements, etc.” (77% support, including 51% “strongly support”);
- “Banning residential wood burning between May and September” (70% support, including 42% “strongly support”); and,
- “Restricting the type of wood burning devices allowed in new and existing homes” (70% support, including 40% “strongly support”).

In comparison, residents are less supportive of “banning wood burning devices in new housing constructions”, although the majority (57%) of residents nonetheless support this initiative (34% “strongly support”).

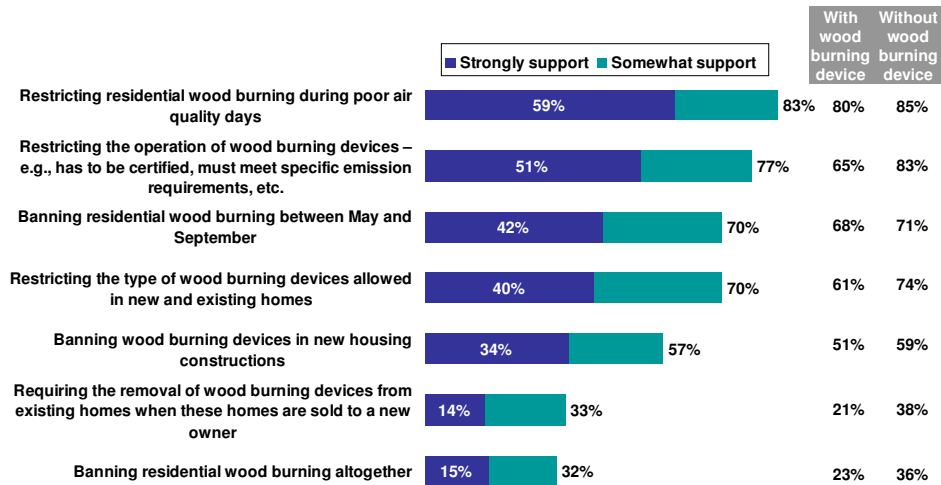
Conversely, less than half of all residents support the following two initiatives, suggesting many residents see these as too extreme or restrictive.

- “Requiring the removal of wood burning devices from existing homes when these homes are sold to a new owner” (33% support, including 14% “strongly support”). Two-thirds (65%) of residents oppose this initiative, with 42% saying “strongly oppose”.
- “Banning residential wood burning altogether” (32% support, including 15% “strongly support”). Two-thirds (67%) of residents oppose this initiative, with 40% saying “strongly oppose”.

Those without a wood burning device tend to be more supportive of these regulatory initiatives, particularly when it comes to restricting the operation of wood burning devices (83% support, compared to 65% of those with a wood burning device), restricting the type of wood burning devices allowed in new and existing homes (74% support, compared to 61% among those with a wood burning device), requiring the removal of wood burning devices from existing homes when these homes are sold to a new owner (38% support, compared to 21% of those with a wood burning device), and banning residential wood burning altogether (36% support, compared to 23% of those with a wood burning device).

Support for Regulatory Initiatives

I'm now going to read a number of initiatives being considered by Metro Vancouver as a way to reduce the amount of wood smoke in the region. Considering all of the potential impacts that each initiative may have on you personally, please tell me whether you support or oppose each one.



Base: All respondents (n=600)

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- Support for **restricting residential wood burning during poor air quality days** is *higher* among those who are under the age of 55 (includes 91% of 18 to 34 year olds and 88% of 35 to 54 year olds, compared to 77% of those who are 55 years or older) and those with household incomes of at least \$60,000 (includes 88% of those earning \$60,000 to less than \$120,000 and 86% of those earning \$120,000 or more, compared to 75% of those earning less than \$60,000).
- Support for **restricting the operation of wood burning devices** is *higher* among those in Central (81%, compared to a low of 67% on the North Shore), those between 18 and 34 years of age (87%, compared to a low of 72% among those who are 55 years or older), those who do not live in single, detached houses (83%, compared to 73% of those in single, detached houses), those who have lived in their home for 10 years or less (81%, compared to 73% of those who have lived in their home for more than 10 years), those with living in a household where someone suffers from a respiratory illness (85%, compared to 75% of those living in households where no one suffers from a respiratory illness), and those who think wood smoke is a major/moderate/minor problem in their neighbourhood (87%, compared to 73% of those who don't think it is a problem at all).
- Support for **banning residential wood burning between May and September** is *higher* among those living in Central (76%, compared to a low of 64% in South of Fraser), those who are between 35 and 54 years of age (75%, compared to a low of 57% among 18 to 34 year olds), those with living in a household where someone suffers from a respiratory illness (78%, compared to 68% of those living in households where no one suffers from a respiratory illness), and those who think wood smoke is a major/moderate/minor problem in their neighbourhood (77%, compared to 67% of those who don't think it is a problem at all).

- Support for **restricting the type of wood burning devices allowed in new and existing homes** is *higher* among those who think wood smoke is a major/moderate/minor problem in their neighbourhood (79%, compared to 65% of those who don't think it is a problem at all)..
- Support for **banning wood burning devices in new housing constructions** is *higher* among those who are 55 years of age or older (60%, compared to a low of 45% among 18 to 34 year olds), homeowners (59%, compared to 47% of renters), and those who think wood smoke is a major/moderate/minor problem in their neighbourhood (66%, compared to 52% of those who don't think it is a problem at all).
- Support for **requiring the removal of wood burning devices from existing homes when these homes are sold to a new owner** is *higher* among those who have lived in their home for 30 years or less (38%, compared to 26% of those who have lived in their home for more than 30 years), those with household incomes of less than \$60,000 (39%, compared to a low of 24% among those earning \$120,000 or more), and those who think wood smoke is a major/moderate/minor problem in their neighbourhood (49%, compared to 25% of those who don't think it is a problem at all).
- Support for **banning residential wood burning altogether** is *higher* among women (36%, compared to 27% of men), those who are 55 years of age or older (37%, compared to 19% of 18 to 34 year olds and 28% of 35 to 54 year olds), those whose home is 30 years or less (36%, compared to 26% of those whose home is more than 30 years old), those who have but do not use a wood burning device (29%, compared to 16% of those who use a wood burning device), and those who think wood smoke is a major/moderate/minor problem in their neighbourhood (48%, compared to 24% of those who don't think it is a problem at all).



Appendix A: Weighted Sample Characteristics

The tables and charts below illustrate the breakdown of the sample into demographic and household categories. Please note that the overall results are weighted by region (according to the 2006 Census data) and the incidence of wood burning devices to ensure that the characteristics of the sample reflect that of the actual population in Metro Vancouver.



Age, Gender, Income, and Region

| | All Respondents (n=600) | | All Respondents (n=600) |
|----------------------------------|----------------------------|-----------------|----------------------------|
| Age: | | Region: | |
| 18-24 | 2% | Central | 42% |
| 25-34 | 9% | Northeast | 13% |
| 35-44 | 19% | South of Fraser | 37% |
| 45-54 | 23% | North Shore | 8% |
| 55-64 | 24% | | |
| 65+ | 22% | | |
| <i>Mean</i> | <i>53 years</i> | | |
| Gender: | | | |
| Male | 43% | | |
| Female | 57% | | |
| Income: | | | |
| Under \$30,000 | 7% | | |
| \$30,000 to just under \$60,000 | 21% | | |
| \$60,000 to just under \$90,000 | 23% | | |
| \$90,000 to just under \$120,000 | 16% | | |
| \$120,000 or more | 20% | | |
| Refused | 14% | | |

Base: All respondents

Housing

| All Respondents (n=600) | | All Respondents (n=600) | |
|-----------------------------------|-----------------|--|-----------------|
| Rent or Own: | | Length of Time in Current Home: | |
| Rent | 18% | Less than 1 year | 3% |
| Own | 81% | 1-5 years | 33% |
| Type of Home: | | 6-10 years | 20% |
| Detached house | 59% | 11-15 years | 13% |
| Apartment | 18% | 16-20 years | 11% |
| Townhouse or rowhouse | 15% | 21 or more years | 19% |
| Duplex, triplex, or semi-detached | 5% | Mean | 13 years |
| Condominium | 1% | | |
| Other | 1% | | |
| Age of Current Home: | | | |
| Less than 1 year | 1% | | |
| 1-15 years | 25% | | |
| 16-30 years | 33% | | |
| 31-45 years | 19% | | |
| 46 or more years | 22% | | |
| Mean | 32 years | | |

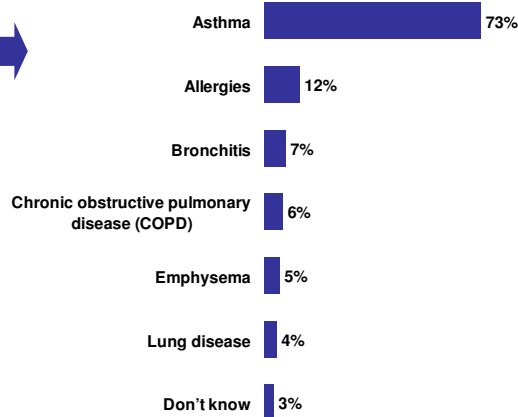
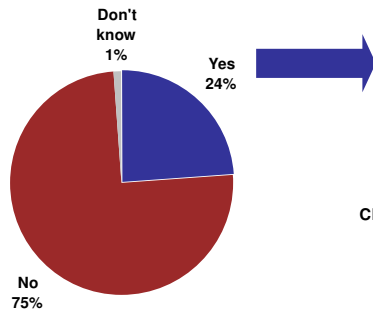
Base: All respondents

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Respiratory Illnesses

Do you or does anyone in your household suffer from a respiratory illness?

What specific respiratory illness do they suffer from? Any others?



Note: Only includes mentions of 4% of more.

Base: All respondents (n=600)

Base: Household suffers from a respiratory illness (n=139)

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Appendix B: Questionnaire

Hello, this is _____ from Ipsos Reid, a professional public opinion research firm. We are not selling anything. Metro Vancouver has asked us to conduct a survey of residents to learn their views on the environment and other local issues.

(IF NECESSARY: Please be assured that this survey is completely confidential.)

(IF NECESSARY: Depending on your answers, this survey will take anywhere between 10 and 14 minutes to complete.)

(INTERVIEWER NOTE: Schedule a call back if inconvenient timing.)

May I please speak with someone in your household who is 18 years of age or older? Is that you?

Yes

[CONTINUE]

Don't know

[ASK AGAIN. IF STILL DK/REF, THANK & TERMINATE]

No

May I please speak to that person? **[READ INTRODUCTION]**

A1. Are you either primarily or jointly responsible for making decisions around home heating?

Yes

Don't know

No - May I please speak to that person?

[If YES CONTINUE, IF NO RE-INTRODUCE, IF DK/REF THANK & TERMINATE]

A. First of all, do you or does anyone in your household work for **(READ LIST)?**

[RANDOMIZE]

Metro Vancouver

The media, that is a radio or TV station, newspaper, or magazine

A market research firm

(DO NOT READ) None

[IF 'NONE' IN QA, CONTINUE. OTHERWISE, THANK & TERMINATE.]

B. In what municipality do you live? **(READ LIST TO PROMPT IF NECESSARY, ACCEPTING ANSWER ONCE GIVEN) [ACCEPT 1 MENTION ONLY]**

[DO NOT RANDOMIZE]

Anmore [ANN-MORE]

Belcarra [BELL-CARE-RA]

Bowen Island

Burnaby

Coquitlam [KO-QUIT-LUM]

Delta (includes North Delta, Tsawwassen [TA-WASS-SEN], and Ladner [LAD-NER])

Langley (City)

Langley (Township) (includes Aldergrove or Fort Langley)



Lions Bay
Maple Ridge
New Westminster
North Vancouver (City)
North Vancouver (District)
Pitt Meadows
Port Coquitlam [KO-QUIT-LUM]
Port Moody
Richmond
Surrey (includes Cloverdale, Newton, Whalley, or Guildford)
Vancouver
West Vancouver
White Rock
Other [do not specify]

[IF 'OTHER/DK/REF' IN QB, THANK & TERMINATE. OTHERWISE, CONTINUE.]

C. RECORD GENDER: **(DO NOT ASK)**

Male
Female

AIR QUALITY

To begin...

1. How would you rate the overall air quality in Metro Vancouver? Would you say it is **(READ LIST)**?

Almost always good
Good most of the time, poor on occasion
Good about half of the time, poor the other half
Poor most of the time, good on occasion
Almost always poor

2. Compared to all the issues facing Metro Vancouver today, how high a priority do you think local leaders should place on improving the region's air quality? Do you think this should be a **(READ LIST)**?

Very high priority
High priority
Mid-level priority
Low priority
Very low priority

3. For each of the following, please tell me whether you think this has a major, moderate, minor, or no contribution to air pollution in Metro Vancouver. The first one is **[INSERT ITEM]**. How about **[INSERT ITEM]**? **(REPEAT LIST IF NECESSARY)**

[RANDOMIZE]

Industrial and commercial sources



Transportation, including vehicles, trains, buses, airplanes, and ships
Residential wood burning, including fireplaces and woodstoves
Forestry, land clearing, and agricultural burning

Major contribution
Moderate contribution
Minor contribution
No contribution

INVENTORY

Changing topics slightly, I'd now like to ask a few questions about your home's heating devices.

4. What is the main source of heat in your home? **(READ LIST) [ACCEPT 1 MENTION]**

[RANDOMIZE]

Electricity
Natural gas
Fuel oil or heating oil
Wood or wood pellets
[ALWAYS LAST] Other [specify]

5. How many, if any, **[INSERT ITEM]** do you currently have in your home? **(RECORD NUMBER) What about [INSERT ITEM]? (RECORD NUMBER)**

[RANDOMIZE]

Traditional wood burning fireplaces (IF NECESSARY: This includes brick or stone wood burning fireplaces that have an open hearth [HARRTH].)
Wood burning fireplace inserts (IF NECESSARY: A fireplace insert is a cast iron or steel device that is inserted into an existing wood burning fireplace and has glass doors that allow the flames of the fire to be viewed while the insulated doors remain closed.)
Natural gas or propane fireplaces
Pellet stoves
Woodstoves

[RANGE 0-10]

[IF 'TRADITIONAL WOOD BURNING FIREPLACE, WOOD BURNING FIREPLACE INSERT, PELLET STOVE, OR WOODSTOVE' IN Q5, ASK Q6-Q19. OTHERWISE, SKIP TO Q20.]

6. To the best of your knowledge, how old is your wood burning fireplace, fireplace insert, pellet stove, or wood stove? (IF NECESSARY: Please provide your best estimate.)
(RECORD AGE OF DEVICE – E.G., NUMBER OF YEARS OLD, NOT THE YEAR IT WAS MADE OR INSTALLED) (IF LESS THAN 1, ENTER AS '0') (INTERVIEWER NOTE: If respondent has more than one of these devices, record age of each device.)

[RANGE 0-200]

[IF '0 TO 14 YEARS' IN Q6, ASK Q7. OTHERWISE, SKIP TO Q8.] [ONLY ASK Q7 ONCE REGARDLESS OF THE NUMBER OF WOOD BURNING DEVICES.]

7. Is your wood burning fireplace, fireplace insert, pellet stove, or woodstove a cleaner burning low-emission appliance which is certified? It could be certified with either the United States



Environmental Protection Agency (EPA) or the Canadian Standards Association (CSA).
(INTERVIEWER NOTE: If respondent has more than one of these devices, probe to see if all or some are certified. If respondent only has one device and it is certified, record as Yes – all.)

- Yes – all
- Yes – some
- No

[ASK Q8 TO ALL THOSE WITH A ‘TRADITIONAL WOOD BURNING FIREPLACE, WOOD BURNING FIREPLACE INSERT, PELLET STOVE, OR WOODSTOVE’ IN Q5.] [ONLY ASK Q8 ONCE REGARDLESS OF THE NUMBER OF WOOD BURNING DEVICES.]

8. Is your wood burning fireplace, fireplace insert, pellet stove, or woodstove operational?
(INTERVIEWER NOTE: If respondent has more than one of these devices, probe to see if all or some are operational. If respondent only has one device and it is operational, record as Yes – all.)

- Yes – all
- Yes – some
- No

BURNING HABITS

[IF ‘YES’ IN Q8, ASK Q9-Q19. OTHERWISE, SKIP TO Q20.]

I’d now like to ask some questions about your usage of your wood burning fireplace, fireplace insert, pellet stove, or woodstove, which I’ll simply refer to as your wood burning device for the rest of this survey. When answering these questions, please think about your usage in a typical year and not necessarily the mild winter that we just experienced this past year.

9. In a typical year, how many days per month would you say you use your wood burning device during the **[INSERT ITEM]**? **(RECORD NUMBER OF DAYS)** How about during the **[INSERT ITEM]**? **(RECORD NUMBER OF DAYS)**

[RANDOMIZE]

- Fall and winter season
- Spring and summer season

[RANGE 0-31]

[IF ‘1 OR MORE’ TO EITHER ITEM IN Q9, ASK Q10-Q18. OTHERWISE, SKIP TO Q19.]

10. On days that you use your wood burning device, how many hours of the day do you typically have a fire burning? **(RECORD NUMBER OF HOURS)** (IF NECESSARY: Please provide your best estimate of the average number of hours.)

[RANGE 0-24]

11. In total, how many cords of wood do you burn in your wood burning device in a typical year? One full cord is a stack of firewood that measures 4 feet in width, 8 feet in length, and 4 feet in height. Please stop me when I’ve reached your category. Would you say you use **(READ LIST)**?



- Less than 10 pieces of wood
- Less than ½ a cord, which is approximately 150 pieces of wood
- ½ to less than 1 cord
- 1 to less than 2 cords
- 2 to less than 3 cords
- 3 or more cords

12. What type of wood do you primarily use in your wood burning device? **(READ LIST)**
[ACCEPT 1 MENTION]

[RANDOMIZE]

- Natural wood logs
- Artificial or manufactured logs such as duraflame or presto
- Scrap wood or pallets
- Pellets

[ALWAYS LAST] (DO NOT READ) Other [specify]

[IF 'NATURAL WOOD LOGS' IN Q12, ASK Q13-Q15. OTHERWISE, SKIP TO Q16.]

13. Do you tend to burn dry, seasoned wood or wood that is fresh-cut and somewhat moist?

- Dry, seasoned wood
 - Wood that is fresh-cut and moist
- (DO NOT READ)** Both

14. Where do you typically get your wood? Do you **(READ LIST)? [ACCEPT 1 MENTION]**

- Purchase it from a wood supplier
 - Purchase it from a local store
 - Gather your own wood
- [ALWAYS LAST] (DO NOT READ)** Other [specify]

[IF 'PURCHASE' IN Q14, ASK Q15. OTHERWISE, SKIP TO Q16.]

15. How much do you typically pay for wood each time you purchase it? **(RECORD AMOUNT)**
(IF NECESSARY: Please provide your best estimate.)

[RANGE \$1-\$5000]

[ASK Q16-Q18 TO ALL THOSE SAYING IF '1 OR MORE' TO EITHER ITEM IN Q9.]

16. What is the main reason why you use your wood burning device? **(DO NOT READ LIST)**
[ACCEPT 1 MENTION]

- Heat
- Ambiance (includes appearance, smell, sound)
- Other [specify]

17. I'm going to read a list of reasons why people may burn wood in their home. For each one, please tell me if this is a major reason, moderate reason, minor reason, or not a reason for burning wood in your home. The first one is **[INSERT ITEM]**. How about **[INSERT ITEM]**?
[REPEAT LIST IF NECESSARY]



[RANDOMIZE]

A wood supply is readily available

It is a relatively inexpensive way to heat my home

I like the smell or aesthetic beauty of a fire

It is an emergency heating source during electrical power failures

I think it is an efficient source of heat

I think wood burning is better for the environment than using natural gas or electricity to heat my home

Major reason

Moderate reason

Minor reason

Not a reason

18. What impact, if any, would a reduction in wood burning have on your home's heating costs?

Would it cause your heating costs to increase, decrease, or have no impact? (Is that increase/decrease significantly or moderately?)

Increase significantly

Increase moderately

Decrease moderately

Decrease significantly

No impact

[IF '0' TO BOTH ITEMS IN Q9, ASK Q19. OTHERWISE, SKIP TO Q20.]

19. Why don't you use your wood burning device? Any other reasons? **(DO NOT READ LIST)**

[ACCEPT 2 MENTIONS]

Environmental reasons (including air quality)

Health reasons

Too much hassle

Smoke filled rooms

Complaints from neighbours

Don't know where to get wood

Cost

Other [specify]

CONCERNS

[ASK ALL]

Changing topics slightly...

20. What concerns, if any, do you have about wood smoke in your neighbourhood? Any others?

(DO NOT READ LIST) [ACCEPT 2 MENTIONS]

Health reasons

Aesthetic (appearance)

Aesthetic (smell)

Environmental concerns (including pollution, air quality)

None

Other [specify]



21. Would you say that periodic air pollution from wood smoke in your neighbourhood is a **(READ LIST)**?

- Major problem
- Moderate problem
- Minor problem
- Not a problem

22. To the best of your knowledge, are there any negative health effects associated with breathing wood smoke?

- Yes
- No

As you may know, emissions produced by wood burning devices can be harmful to human health due to the particles released into the atmosphere. For example, wood smoke can cause or aggravate health problems ranging from minor eye, nose, and throat irritations to more serious diseases such as asthma and emphysema.

[IF 'TRADITIONAL WOOD BURNING FIREPLACE, WOOD BURNING FIREPLACE INSERT, PELLET STOVE, OR WOODSTOVE' IN Q5, ASK Q23. OTHERWISE, SKIP TO Q24.]

23. Knowing this, how likely would you be to consider **[INSERT ITEM]**? Would you say **(READ LIST)**? How about **[INSERT ITEM]**? **(REPEAT LIST IF NECESSARY)**

[RANDOMIZE]

Converting your wood burning device to a cleaner technology alternative such as a low emission woodstove, a natural gas fireplace insert, or wood pellets

[ONLY ASK TO THOSE SAYING '1 OR MORE' TO EITHER ITEM IN Q9] Reducing the number of times you use your wood burning device

[ONLY ASK TO THOSE SAYING '1 OR MORE' TO EITHER ITEM IN Q9] Not using your wood burning device altogether

[ONLY ASK TO THOSE SAYING '1 OR MORE' TO EITHER ITEM IN Q9] Taking extra steps to burn more cleanly, such as burning clean, dry wood, monitoring air supply, and not leaving smouldering burns overnight

- Very likely
- Somewhat likely
- Not very likely
- Not at all likely

REGULATORY ACTION

[ASK ALL]

24. I'm now going to read a number of initiatives being considered by Metro Vancouver as a way to reduce the amount of wood smoke in the region. Considering all of the potential impacts that each initiative may have on you personally, please tell me whether you support or oppose each one. The first one is **[INSERT ITEM]**. (Would that be strongly or somewhat support/oppose?) How about **[INSERT ITEM]**? **(REPEAT SCALE IF NECESSARY)**



[RANDOMIZE]

- Restricting residential wood burning during poor air quality days
- Banning residential wood burning altogether
- Banning residential wood burning between May and September
- Banning wood burning devices in new housing constructions
- Requiring the removal of wood burning devices from existing homes when these homes are sold to a new owner
- Restricting the type of wood burning devices allowed in new and existing homes
- Restricting the operation of wood burning devices – e.g., has to be certified, must meet specific emission requirements, etc.

- Strongly support
- Somewhat support
- Somewhat oppose
- Strongly oppose

DEMOGRAPHICS

Finally, just a few last questions for statistical purposes...

25. In what year were you born? **(RECORD YEAR)**

[RANGE 1900 TO 1992]

26. Do you own or rent your current place of residence?

- Own
- Rent

27. What type of housing do you currently occupy? **(READ LIST) [ACCEPT 1 MENTION]**

[DO NOT RANDOMIZE]

- Detached house
- Duplex, triplex, or semi-detached
- Apartment
- Townhouse or rowhouse
- (DO NOT READ)** Other [specify] (NOTE TO INTERVIEWER: IF RESPONDENT SAYS 'CONDOMINIUM', ASK: Do you mean an apartment, townhouse, or duplex?)

28. To the best of your knowledge, how old is your current place of residence? **(RECORD AGE OF HOME – E.G., NUMBER OF YEARS OLD, NOT THE YEAR IT WAS BUILT) (IF LESS THAN 1 YEAR, ENTER 0)**

[RANGE 0 TO 200]

29. How many years have you lived in your current place of residence? **(RECORD NUMBER OF YEARS) (IF LESS THAN 1 YEAR, ENTER 0)**

[RANGE 0 TO 100]



30. Do you or does anyone in your household suffer from a respiratory illness?

Yes
No

[IF 'YES' IN Q30, ASK Q31. OTHERWISE, SKIP TO Q32.]

31. What specific respiratory illness do they suffer from? Any others? **(DO NOT READ LIST)**
[ACCEPT 2 MENTIONS]

Lung disease
Asthma
Allergies
Bronchitis
Cancer
Emphysema
Sensitivity to chemicals/carcinogens/toxins in wood
Other [specify]

[ASK ALL]

32. Which of the following broad categories best describes your family income? That is the combined total income before taxes of all persons in your household. Please stop me when I've reached your category. **(READ LIST)**

Under \$30,000
\$30,000 to just under \$60,000
\$60,000 to just under \$90,000
\$90,000 to just under \$120,000
\$120,000 or more

33. Lastly, in order to know how to classify your responses, can you please provide me with your postal code? (IF NECESSARY, ADD: I assure you that this information will remain completely confidential. We only use it for classification purposes.)

34. **RECORD REGION [FROM SAMPLE]**

That's all the questions I have. On behalf of myself and Ipsos Reid I'd like to thank you very much for your time and opinions.