



Regional Air Quality Program

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# **The 2003 Great Okanagan Wood Stove Exchange Program**

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## **Synopsis**

Submitted by:

**The Central Okanagan Regional District Air Quality Program**

In partnership with:

Wood Energy Technicians of BC (WETBC)

The Hearth Patio and Barbecue Association of Canada

The Western Hearth Patio and Barbecue Association of Canada

Interior Health Authority

Okanagan Similkameen Regional District

North Okanagan Regional District

BC Lung Association

BC Gas Utility

Okanagan Hearth Product Retailers

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## 1.0 Background

Thousands of households in the Okanagan Valley use wood for heating and recreational purposes in their homes and vacation properties. Approximately 21% of Okanagan homes (21,654 residences) have an indoor burning appliance; 89% are inefficient conventional wood stoves or masonry fireplaces. These wood burning appliances release approximately 478 tonnes of smoke particulate into the Okanagan Valley air each year. There are many reasons to heat with wood: a source of pleasure, a secure, low cost home heating option, a relatively inexpensive system to purchase and install and the recognition that wood heating is a renewable energy source when fuel wood is harvested in a sustainable manner. Unfortunately, poor operation, in combination with old technology appliances, result in a lot of wood smoke – a significant source of air pollution, which in turn can result in health and environmental problems. There is considerable recognition in the region that wood smoke is a significant problem and as a result some jurisdictions have contemplated implementation of burn bylaws to control the use of wood stoves during periods of bad air quality.

BC is Canada's only province to implement legislation that requires all new wood stoves to be tested and certified to CSA B415 or US EPA standards for reduced emissions. These new technology wood stoves can significantly reduce wood smoke by up to 90%, increase energy efficiency and thereby reduce the amount of wood needed to heat the home. The problem is that the great majority of wood appliances in daily use are old technology stoves and many wood burners are unaware that these new technologies are available and / or the impact their stoves may be having on the air quality and health of themselves and their neighbours.

The 2003 Great Okanagan Wood Stove Exchange Program was built on the success of the 2001 and 2002 programs. By drawing on this previous experience the project team was able to take the "Burn It Smart" concept to another level. The overall objectives of the Great Okanagan Wood Stove Exchange Program were:

- to raise awareness of and educate the wood burning public about, the importance of efficient, safe, smoke-free wood burning
- To help those who heat with wood to improve their burning practises and make them aware of the advantages of new technology appliances
- To provide incentives to homeowners to replace their conventional old technology wood heating appliances, with new higher-efficiency / lower emissions EPA appliances

## 2.0 Program Partners

The Central Okanagan Regional District Air Quality Program with the help of staff from the North Okanagan and Okanagan Similkameen Regional Districts managed the Great Okanagan Wood Stove Exchange Program.

Hearth product industry participants included sixteen retailers, nine manufacturers and six distributors, who worked together to share the 15% discount offered to customers involved in the change out program.

Also participating as strategic allies and sponsors were:

- Wood Energy Technicians of BC (WETBC)
- The Hearth Patio and Barbecue Association of Canada
- The Western Hearth Patio and Barbecue Association of Canada
- Interior Health Authority
- BC Lung Association
- BC Gas Utility

### 3.0 Changeout Incentives

A major aspect of the changeout portion of the program was the willingness of industry to offer rebates or trade-in allowances on new EPA stoves. This rebate was shared among the manufacturer, distributor and the retailer and in this particular changeout, a 15% trade-in allowance off the price of the stove was available to consumers. The changeout allowance was available when an appliance was traded in and recycled and was not to be seen as a sales promotion.

This year no exchange was required for customers purchasing ultra clean options such as pellet, electric or gas inserts for open-hearth fireplaces. The no trade in clause did not include wood inserts because invariably wood burning would dramatically increase if a wood insert was placed in an open-hearth fireplace. Since this is a clean air program, co-ordinators did not want to see wood burning stove inserts put into fireplaces that were previously rarely used.

### 4.0 Changeout Results

Sixteen retailers participated in the program from towns throughout the Okanagan Valley. Each retailer displayed the program banner, poster and brochures and brought their knowledge and experience to the workshops as a resource for participants.

In total 138 stoves were “changed out” during the campaign, which is an average of 9 changeouts per retailer. The number of changeouts per retailer actually varied from 0 to 27. The Central Okanagan region had 66 changeouts, which makes up 48% of the total. In the Northern Okanagan region 34 changeouts took place and 38 changeouts took place in the Okanagan Similkameen Region.

The following table breaks down the number of changeouts that occurred within each region and at each participating store:

Central Okanagan		North Okanagan		Okanagan Similkameen	
Store	# of Changeouts	Store	# of Changeouts	Store	# of Changeouts
Okanagan Barbe Clean	27	Shepherd's Hardware	12	The Heat Source	14
Okanagan Rockworld	25	Greenwood Energy Services	11	Home Hardware	9
OK Builders	6	Vernon Home Building Centre	10	Okanagan Home Centre	9
A.R. Dyck Heating	4	Central Hardware (Armstrong)	1	Princeton Builders	3
Okanagan Home Centre	4	Central Hardware (Enderby)	0	Okanagan Falls Red Barn	3
				Guardian Heating	0
<b>TOTAL</b>	<b>66</b>	<b>TOTAL</b>	<b>34</b>	<b>TOTAL</b>	<b>38</b>

Of the 138 changeouts, 109 were changed out for wood burning appliances, 2 for pellet stoves, 26 for gas appliances and 1 for an electric insert. The tracking forms indicated the factors that influenced people to participate in the Wood Stove Exchange Program:

	<b>Respondents</b>	<b>%</b>
Efficiency	82	73%
Environment	79	70%
Safety	71	63%
Money	64	57%
Energy	61	54%
Aesthetics	50	44%
Price	47	42%
Convenience	49	43%

The estimated total cords of wood previously used annually by those who changed out their stoves was 440. Twenty-nine participants who had consumed 74 cords of wood converted to other fuel sources, such as gas, electric and pellet. The estimated savings in cords of wood over and above the 74 cords were 110 cords for a total reduction of 184 cords of wood being burned annually. From this we estimate the reduction in smoke particulate matter (PM<sub>10</sub>) entering the Okanagan's atmosphere to be approximately 5213 Kilograms per year (Source: 1995 Criteria Contaminants Emissions Inventory Guidebook). This reduction in smoke particulate will translate into improved air quality for many neighbourhoods throughout the Okanagan Valley.

## **5.0 Recycling Old Stoves**

A successful program can result in a considerable number of appliances being traded in. To ensure cleaner air these stoves were disabled and recycled. Retailers were required to make a declaration and provide their signature confirming that the changeout stove was disabled and recycled. They were also required to state in what manner the appliance was disabled and where it was recycled. Changeout stoves that were not disabled and recycled were not eligible for the rebate and were not counted in the changeouts.

## **6.0 Burn It Smart Education Workshops**

Three Burn It Smart workshops for the general public were held throughout the Okanagan Valley, with an industry expert, WETT-certified technician, chimney sweeps, hearth product retailers, politicians and local government staff in attendance. The workshops provided tips on installation safety, burning without smoke, firewood, maintaining a system, locating a chimney, planning a system and wood heat options. Each workshop also featured a retailer showcase, which allowed residents to look at a myriad of EPA emission approved wood, gas, pellet and electric heating appliances from various retailers and manufacturers involved in the Great Okanagan Wood Stove Exchange Program. The burn display was also set up at each workshop to demonstrate the value in burning smart.

Other highlights of the workshops included firewood moisture testing and awarding of door prizes to thank the participants for attending. The workshops were scheduled in one three-day swing, as follows:

<b>Date</b>	<b>Location</b>	<b>Attendance</b>
February 25	Kelowna	60
February 26	Vernon	74
February 27	Penticton	80
		214

With an average of 71 participants at each workshop and a total of 214 attendees, we feel we were quite successful in promoting the series of workshops. Feedback from workshop attendees indicated that the workshops were very informative and enjoyable.

## **7.0 Burn Display**

An important feature of the Exchange program was the burn display, which is a dramatic and effective way to demonstrate the vast improvement in wood heat technology. The burn display was created and mounted on a trailer that was taken to all planned public events to highlight the differences between old and new technology appliances. The burn display was very effective and graphically conveyed the improved efficiency of EPA certified wood burning appliances. It was used at the Burn It Smart public workshops and was the focus of several news items in the newspapers and Shaw Television.

## **8.0 Promotional Strategy**

The promotional strategy was to publicise the program through advertising and public relations efforts. The advertising plan was comprised of an extensive media schedule and included radio and print ads with coverage in all areas of the Okanagan Valley. The ads promoted the program and the workshops. The news releases on the program formed the basis of nine print articles in Kelowna plus, numerous radio talk shows, and two television news articles on CHBC TV and Shaw Cable (a copy of the press releases are included in the appendix). News releases were also distributed to the North Okanagan and Okanagan Similkameen Regional Districts; however, government staff in those areas did not tabulate the number of articles generated in those areas.

One of the successes was an ad placed in the City of Kelowna 2003 Living Greener Calendar which features ways for consumers to be more environmentally friendly. This program was put together by a co-op student and featured important homeowner tips on a monthly basis. The calendar was distributed to all households in the Central Okanagan (see the appendix).

A mobile sign display was placed in front of each workshop location to promote the “Burn It Smart Workshops” to the general public. For a modest amount of money, the program had a great opportunity to reach a lot of folks passing by on their daily business.

Results from the 2002 workshop Participant Surveys showed that 64% of respondents learned about the program through a poster or newspaper ad and 27% heard about it on radio or television.

Posters, banners, brochures, and publications were distributed to the 16 participating retailers. In addition to our advertising budget, several participating retailers placed ads in their local newspapers promoting the program.

## **9.0 Information Hotline and Web site**

Detailed Wood Stove Exchange program information was provided through a phone in hotline and a web site. Central Okanagan Air Quality staff handled 100 phone calls from the public over the six-week period of the Exchange Program. Information on the number of hits to the program web site was unavailable.

## **10.0 Summary**

The 2003 Great Okanagan Wood Stove Exchange Program was built on the success of the 2001 and 2002 programs. By drawing on this previous experience the project team was able to take the “Burn It Smart” concept to another level. The overall objectives of the Great Okanagan Wood Stove Exchange Program were:

- to raise awareness of and educate the wood burning public about, the importance of efficient, safe, smoke-free wood burning
- To help those who heat with wood to improve their burning practises and make them aware of the advantages of new technology appliances
- To provide incentives to homeowners to replace their conventional old technology wood heating appliances, with new higher-efficiency / lower emissions EPA appliances

Sixteen retailers participated in the program from towns throughout the Okanagan Valley. Each retailer displayed the program banner, poster and brochures and brought their knowledge and experience to the workshops as a resource for participants.

In total 138 stoves were “changed out” during the campaign, which is an average of 9 changeouts per retailer. The number of changeouts per retailer actually varied from 0 to 27. The Central Okanagan region had 66 changeouts, which makes up 48% of the total. In the Northern Okanagan region 34 changeouts took place and 38 changeouts took place in the Okanagan Similkameen Region. As a result of the 138 stove changeouts the estimated reduction in smoke particulate matter (PM<sub>10</sub>) entering the Okanagan’s atmosphere will be approximately 5213 Kilograms per year (Source: 1995 Criteria Contaminants Emissions Inventory Guidebook).

Three Burn It Smart workshops for the general public were held throughout the Okanagan Valley, with an industry expert, WETT-certified technician, chimney sweeps, hearth product retailers, politicians and local government staff in attendance. The workshops provided tips on installation safety, burning without smoke, firewood, maintaining a system, locating a chimney, planning a system and wood heat options. An average of 71 people attended each workshop for a total of 214 attendees. Feedback from workshop attendees indicated that the workshops were very informative and enjoyable.

Overall the 2003 version of the Great Okanagan Wood Stove Exchange Program was very successful with raising awareness of and educating the wood burning public about, the importance of efficient, safe, smoke-free wood burning. The number of wood stoves changed over three Wood Stove Exchange Programs now stands at 425, which indicates how popular and successful this program has been. The amount of smoke particulate removed from the airshed each year due to the 425 changeouts is estimated to be 16,088 Kilograms (16 tonnes) of PM<sub>10</sub>. This reduction in smoke

particulate will translate into improved air quality for many neighbourhoods throughout the Okanagan Valley.

## Appendix

### 1) News Release (February 4, 2003)

#### SUCCESSFUL WOOD STOVE EXCHANGE PROGRAM EXPANDS!

The *Great Okanagan Wood Stove Exchange* returns February 7<sup>th</sup> for its third annual six-week run. This year the program is expanding to include ultra clean inserts for open-hearth fireplaces.

The wood stove exchange program gives consumers with older inefficient wood stoves the opportunity to replace them, at a 15% discount, with new EPA/CSA emission-approved wood, gas, pellet or electric appliances. Customers purchasing pellet, electric or gas inserts for open-hearth fireplaces receive the same discount.

Cash rebates offered by participating manufacturers, distributors and retailers range from \$100 to \$500. Consumers receive the rebate when they surrender their old stove for recycling. No trade-in is required when purchasing an open-hearth fireplace insert.

The past two wood stove exchange programs have seen a total of 287 old wood stoves traded in for new cleaner burning EPA emission-approved appliances, which has meant a reduction of smoke particulate of approximately six tonnes per year.

A wood stove change out program has been identified by Okanagan Valley air quality and health officials as a way to quickly move cleaner and more fuel-efficient stoves into local households.

Approximately 21% of Okanagan homes (21,654 residences) have an indoor burning appliance; 89% are inefficient conventional wood stoves or masonry fireplaces. These wood burning appliances release approximately 478 tonnes of smoke particulate into the Okanagan Valley air each year.

“Wood stove smoke is a major contributor to poor air quality,” says Corey Davis, Regional Air Quality Coordinator. “New certified stoves burn 1/3 less wood and reduce smoke and particulates by up to 90% compared with inefficient old style stoves.”

To take advantage of this limited time offer, which ends March 23rd, contact Corey Davis at 862-3339, local 429 for more information. You can also visit [www.regionaldistrict.com](http://www.regionaldistrict.com) for program details.

The Wood Stove Exchange is a clean air program of the Central, North and Okanagan-Similkameen Regional Districts.

### 2) News Release (February 18, 2003)

#### FREE WOOD STOVE WORKSHOP AND SHOWCASE

A free ‘**Burn It Smart Workshop and Showcase**’ is being held on **Tuesday February 25th** at the Kelowna Fire Hall on Enterprise Way.

The workshop will provide tips on:

- installing wood stoves safely
- firewood and wood heat options
- burning without smoke
- system maintenance
- locating a chimney.

If there's a lot of wood smoke coming from your chimney, or if you can smell it long after your fire has been burning, this is the opportunity to learn how to keep a wood stove fire safe and healthy. Bring a piece of your firewood and have it tested for moisture content. **The workshop begins at 7:00 p.m.**

The Showcase will feature a myriad of wood, gas, pellet and electric heating appliances. **The Showcase opens at 5:30 p.m.**

The workshop and showcase are part of the Great Okanagan Wood Stove Exchange program that's running throughout the Okanagan until March 23. The Exchange program offers monetary incentives for wood stove users to trade in their old smokers for cleaner burning appliances.

Safe and healthy wood-burning go hand-in-hand. When little or no smoke is produced, both the chimney and the air are kept clean.

"When wood is burned at high temperature, virtually nothing but carbon dioxide and water vapor are produced," says Corey Davis, Regional Air Quality Coordinator. "But when you allow your fire to smolder then blue-grey smoke is produced, which means creosote is forming at the same time."

Creosote is deposited on the inside of a chimney when wood is not burned completely and becomes the highly volatile fuel during a chimney fire.

Smokey fires are also the main cause of wood related air pollution. Wood smoke can become concentrated at ground level due to weather inversions when the smoke cannot escape to the upper atmosphere. As a result, the risk of people experiencing a harmful reaction from air pollution rises dramatically. Conditions suitable for inversions are calm days near or below freezing temperatures with high relative humidity (above 70%).

The Workshop and Showcase are organized by the Central Okanagan Regional District's Air Quality Program.

### **3) News Release (March 13, 2003)**

LAST CHANCE!

WOOD STOVE EXCHANGE PROGRAM ENDS NEXT WEEK!

Sunday March 23<sup>rd</sup> is it! That's the last day to take advantage of the *Great Okanagan Wood Stove Exchange* program. Only eleven days before it's too late to receive a discount when buying a new efficient wood stove. Act now and you can save money while improving the air we all breathe.

More than 30 wood stove distributors, manufacturers and retailers teamed up with the Central, North and Okanagan-Similkameen Regional Districts in the fight against air pollution this year, offering a trade-in allowance of 15% on new EPA/CSA emission-approved wood, electric, pellet or gas

stoves/inserts. Consumers receive the rebate, which varies between \$100 and \$500, when they surrender their old stove for recycling.

This year the program has expanded to include ultra clean inserts for open-hearth fireplaces. No trade in is required for customers purchasing pellet, electric or gas inserts for open-hearth fireplaces.

“Wood stove smoke is a major contributor to poor air quality,” says Corey Davis, Regional Air Quality Coordinator. “New certified stoves burn 1/3 less wood and reduce smoke and particulates by up to 90% compared with inefficient old style stoves.”

The past two wood stove exchange programs (in 2001 and 2002) saw a total of 287 old wood stoves traded in for new cleaner burning EPA emission-approved appliances, which has meant a reduction of smoke particulate of approximately six tonnes per year.

“We had a list of people waiting for the program to begin,” notes Davis. “Everyone who’s concerned about air quality now has an incentive to do something about it.”

A wood stove change out program has been identified by Okanagan Valley air quality and health officials as a way to quickly move cleaner and more fuel-efficient stoves into local households.

Approximately 21% of Okanagan homes (21,654 residences) have an indoor burning appliance; 89% are inefficient conventional wood stoves or masonry fireplaces. These wood burning appliances release approximately 478 tonnes of smoke particulate into the Okanagan Valley air each year.

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