

REVIEW OF OPEN BURNING BYLAWS ON VANCOUVER ISLAND

February 2011

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EXECUTIVE SUMMARY

This report provides information regarding the current status of municipal bylaws that regulate open burning in Vancouver Island districts and municipalities. It serves as an update to the open burning information for Vancouver Island included within the report, “Inventory of Air Quality Bylaws in British Columbia for Anti-Idling, Open-Burning, and Wood-Burning-Appliances,” by Jennifer Alderson (2007).

Since that report, out of 33 municipalities on Vancouver Island, 13 have instituted new or amended open burning bylaws, and a number of other municipalities are currently in the process of doing the same. One regional district is looking at unifying and embedding an air quality bylaw at the regional level. A brief description of each new bylaw is included in Section 2, What’s New?

Municipal websites were searched for air quality bylaw documents and related information that is summarised in table form in Appendix A.

Appropriate municipal contacts were sought out and invited to share information and experience regarding the development, enforcement, and maintenance of their air quality bylaws. Contact information is included in Appendix B.

Advice, trends, examples, and other useful information gleaned from the respondents are summarised in Section 3, Managing Air Quality Bylaws: A Synthesis of Participant Feedback.

The open burning bylaws from 33 municipalities within the seven regional districts of Vancouver Island were examined with the following results:

- Municipalities reviewed: 33
- New or updated open burning bylaws since 1997: 13
- Burning bans (4 confined to the urban containment): 18
- Campfire bans (specified within the 18 bans, above): 9
- Campfires allowed, with regulations: 15
- Incinerator bans: 12
- Incinerator allowed (with and without permission): 9
- Partial bans (for most or part of the year with specified times for regulated burns): 17
- Burning by permit only: 13
- Land clearing burn bans: 12
- Land clearing burn allowed with regulation: 12

This report was produced with funding support from the BC Ministry of Environment. It is intended as a resource for any community that is planning to initiate, review, or update bylaws that effect air quality management in their area.

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1.0 REVIEW OF OPEN BURNING BYLAWS ON VANCOUVER ISLAND — BACKGROUND

1.1 History and Purpose

Airborne particulate matter that is 2.5 microns or less in diameter ($PM_{2.5}$) is defined and regulated as a toxin under the Canadian Environmental Protection Act. There is no safe level for $PM_{2.5}$. These tiny particles cause lung and heart disease, and are the cause of thousands of deaths in Canada every year.

For many communities on Vancouver Island, smoke is often a significant source of $PM_{2.5}$ pollution. Wood smoke from backyard burning is particularly harmful as it is emitted where people live, right at breathing level, potentially resulting in acute exposures.

Relatively simple smoke reduction measures can yield dramatic air quality improvements. Embedding burning regulations in bylaws is one way of ensuring the longevity of those improvements. The development, maintenance, enforcement, and effectiveness of such bylaws on Vancouver Island is the focus of this work.

This project began with a specific need within the region of Port Alberni. Air quality data collected by a Beta Attenuation Monitor located on top of the Alberni Elementary School clearly indicated that air quality in the region was compromised by wood smoke during the winter months. This period is characterised by thermal inversions that can trap air in the valley bottom. During some months, $PM_{2.5}$ increased to levels that were above the provincial air quality objective of $25\mu\text{g}/\text{m}^3$ up to 40% of the time.

In 2009-2010, the Air Quality Council (AQC) of Port Alberni conducted a woodstove exchange program in the area to help reduce smoke from residential wood heating. In early 2011, it was planning to present a request to both the City of Port Alberni and the Alberni-Clayoquot Regional District (ACRD) to help reduce smoke from open burning.

The city has a bylaw that regulates open burning for allowable time, fuel material, set backs, safety and surveillance. Councillors would now be asked to consider banning backyard burning with the exception of food or campfires.

The ACRD has no air quality bylaws. Directors would be asked to consider putting at least some basic open burning regulations in place.

The AQC determined that a comparative analysis of what other Island communities were doing in this regard would be useful for decision makers. This report is the result. It provides a synopsis of bylaws on Vancouver Island that relate to open burning with back yard burning being the primary focus.

Although Port Alberni will be the first community to use this report, it is intended to be a useful resource for any community planning to initiate, review, or update bylaws that affect air quality management in their area.

1.2 Government Regulations Pertaining to Open Burning

When developing and enforcing air quality bylaws, it is important to understand related regulatory frameworks.

The federal government does not directly regulate local bylaw development, but has set national air quality objectives, guidelines, and standards. Under the Canadian Environmental Protection Act (CEPA), $PM_{2.5}$, which is the main pollutant of concern in smoke, is considered toxic (i.e. poses a threat to human health or the environment) and can be regulated. The Canada Wide Standard for $PM_{2.5}$ is $30\mu\text{g}/\text{m}^3$ (24 hour averaging time), based on the annual 98th percentile ambient measurement. Measurements are averaged over a three consecutive year time period and the standard was set to be achieved by the year 2010.

In British Columbia, the Environmental Management Act (EMA) enables the Ministry of Environment to develop air quality standards and guidelines, regulate point and area sources, and require the preparation of an area based management plan.

On April 9 2009, recognising the significant health benefits associated with decreasing ambient PM_{2.5} levels, the Province updated the ambient air quality criteria for PM_{2.5}:

- 25 ug/m³ (24 hour averaging time)
- 8 ug/m³ (annual averaging time)
- 6 ug/m³ (annual planning goal Objective).

Under EMA, the province has instituted the Open Burning Smoke Control Regulation (OBSCR), which oversees the burning of land clearing debris. The purpose of the OBSCR is to mitigate the negative effects of smoke on human health and property from large scale burning. Its regulations include:

- Minimum fire set-back distances from hospitals, schools and other residences.
- Allowable times and frequencies for ignition, burning and smoke release.
- A list of prohibited materials including plastics, rubber, garbage, paint, treated wood, roofing materials and drywall.
- A burning prohibition unless the venting index is “good” on the day of ignition, and “good” or “fair” on the following day.

The full OBSCR and the Venting Index forecast for the day can be found at www.bcairquality.ca. For the Venting Index, click on “BC’s Air Quality Readings,” then on “What are indexes and advisories?” then scroll down to “Venting Index.” The Venting Index can also be accessed seven days a week by phoning 1-888-281-2992.

The OBSCR does not apply to backyard burning situations. EMA exempts the domestic burning of leaves, weeds, and foliage and does not provide a direct means with which to address garbage burning. To fill this gap, the Ministry of Environment has encouraged municipalities and regional districts to institute their own bylaws regulating backyard burning.

Regional Districts accomplish this under Section 725 (nuisances and disturbances) of the “Local Government Act.” Municipalities accomplish this under Section 8 and Section 64 of the “Community Charter.”

2.0 WHAT'S NEW? AIR QUALITY BYLAW CHANGES ON VANCOUVER ISLAND SINCE 2007

Since the “Inventory of Air Quality Bylaws in British Columbia,” was compiled by Jennifer Alderson (April 2007), 13 communities on Vancouver Island have changed or adopted new bylaws regarding open burning. Following is a brief description for each one, with notable bylaw features included in a text box.

2.1 Tofino

In 2008, Tofino’s Outdoor Burning Bylaw #4457 was revised, resulting in the new consolidation, Outdoor Burning Bylaw #1071. Its intent is to “reduce the amount of outdoor burning allowed in the municipality by introducing a chipping program for residential garden waste, in an effort to improve air quality, reduce the number of burning complaints and uphold the environmental and waste management policies within the Official Community Plan.”

At the time the bylaw was accepted, there was also a plan to invest in a community incinerator, which has not happened yet. The rationale was that one efficiently operating unit would eliminate numerous smoky backyard burns.

- Outdoor fires are banned and illegal.
- There is provision for regulated incinerator and campfires.
- Burning beach wood is prohibited.
- Burning anything else but seasoned firewood and clear construction material in an indoor fire is prohibited.
- Responsibility for fires includes anyone who starts, maintains, or gathers around them.

Bylaw #1071 includes a new ticket adjudication system. So far, all tickets have been paid. Enforcement has not been difficult or costly.

2.2 City of Colwood

In January 2008, Colwood adopted Bylaw #931. It is “A Bylaw of the City of Colwood to Restrict and Regulate Outdoor Burning.” The bylaw begins with its rationale:

“The City of Colwood recognises the importance of a healthy community and the benefits of improving air quality for both its residents and the environment. The City desires to take appropriate measures that will positively impact the environment and the health of its residents by improving the air quality in the City and the region as a whole.”

- No open air burning.
- No incinerator burning.
- No beach fires or campfires
- No land clearing or, construction fires

2.3 Highlands

Fire Services Bylaw #9, 1994, was amended and repealed resulting in the new Emergency Services Bylaw #264. It was adopted in March 2010, after a 5-year hiatus between the 2nd and 3rd reading.

This bylaw was developed to “Regulate Emergency Services within the District of Highlands, including the Prevention and Extinguishment of Fires and For the Preservation of Life and Property.”

- Open air burning is banned unless a permit is issued by the Fire Chief or unless the Fire Chief designates a period when permits are not required for Class B fires (1mx1m).

2.4 Sooke

The Fire Department Establishment and Operation Bylaw #64, 1991, and the Sooke Fire Regulations Bylaw #69, 1993, were repealed and replaced with the Fire Protection Services Bylaw #292. It was adopted in September 2009, after a two year hiatus between the second and third reading.

- No open burning from May to October except for a special ceremony or event under the terms and conditions of a valid permit obtained from the Fire Department.
- No open burning from October to May, except under the terms and conditions of a valid permit obtained from the Fire Department.
- No incinerator or burn barrel fires.
- Exceptions to the above 2 features include: regulated outdoor cooking fires and pit fires, and regulated garden debris fires if there are no alternatives. Regulations include size, setbacks, supervision and venting.

2.5 Comox

The Fire Prevention and Regulation Bylaw #865, 1988, and the Comox Residential Backyard Burning Bylaw, 2005, were repealed and replaced by The Comox Fire Prevention and Regulation Bylaw #1556, which was adopted in October 2007.

- No open burning within the town except for regulated beach fires in the Point Holmes boat launch area.

Garden refuse fires were causing a smoke problem in the area. The new bylaw was instituted in conjunction with a year-round curbside yard waste pick up program. The organic material is ground at the landfill, mixed with sewage sludge, and sold as a very popular soil amendment product called Skyrocket.

Residents with larger lots (2.5 acres or more) in the boundary extension area requested that the new bylaw be amended to allow them to burn. They were denied.

There have been no problems with infractions. The Fire Department provides an effective interface during complaint responses where information and compliance reminders tend to cancel the need to issue tickets.

2.6 Courtenay

The Fire Protective Services Bylaw #2290, 2004, was repealed and replaced with Fire Protective Services Bylaw #2556, adopted in October 2008. There have been no problems enforcing this bylaw. Zero tolerance and cost recovery have been effective.

- No open burning within the city except under special circumstances approved by the Fire Chief or unless a burning permit with specified conditions is obtained.
- Burning permits regulate fire location, size, time, materials burned and supervision – including the placement of a competent person in charge of the fire at all times.
- Campfires are banned unless a burning permit is issued by the Fire Chief.
- Land clearing burning is prohibited.
- Very clear cost recovery schedule included within the bylaw.

2.7 Campbell River

Fire Services Bylaw #2612, 1997, was amended and #'s 3293 and 3338 were consolidated, resulting in the new Clean Air Bylaw #3293, adopted in May 2007.

The name clearly indicates the main intention of the bylaw. It was inspired by the number of complaints generated by garden debris fires.

- Open burning ban within the urban containment, save for food fires.
- Restricted burning (size, set backs, supervision) in the more sparsely populated area outside of the city.
- Clear schedule of cost recovery and administration fees.

Campbell River conducted a pilot spring and fall yard waste pickup. It was so successful, the city will engage an 8-month curbside pickup for 2011, including a drop-off site for larger loads. The rules for curb-side loads are rigorously defined. Program costs are recovered through a green city fee. The city hopes to develop the infrastructure to deal with the collected organic material that is currently being trucked to Comox for composting and inclusion in soil amendment products.

2.8 Port McNeill

Although Port McNeill has no official open burning bylaw, it has issued a public notice, “Open Burning is now prohibited in Port McNeill Except for Small Campfires (.5m high x .5m diameter).” The town previously issued permits for open burning.

2.9 Alert Bay

The Village of Alert Bay Fire Prevention Bylaw #485 is not new, but was not included in the 2007 Air Quality Bylaw Review.

- Open burn ban within the municipality unless a permit is issued.
- Land clearing permission based upon prior site inspection

2.10 Cowichan Valley Regional District

In August 2009, the CVRD amended and consolidated, for convenience, Bylaw #3322, resulting in Bylaw #2020, “A Bylaw to Regulate Management of Land clearing Debris for the Purposes of Pollution Control in the Cowichan Valley Regional District.”

This bylaw is unique for a number of reasons, not the least of which is its emergence from the district’s Solid Waste Management Plan. The plan “identifies the regulated management of Land clearing Debris as key to the reduction of local air pollution.” The new bylaw was developed to “address the concerns of residents whose health and well-being are adversely affected by smoke pollution.”

- The new bylaw applies to electoral areas but not to municipalities. It targets the large scale burning of land clearing debris, essentially banning it unless an air curtain or trench burner is used. These technologies are permitted if no other alternative is available.

Enforcement issues are an ongoing challenge as the majority of burning occurs on weekends or evenings when the bylaw officer is not working. Only a few fines have successfully been issued to date.

2.11 Lake Cowichan

The Town of Lake Cowichan Outdoor Burning Regulation Bylaw #851, 2008, and all amendments thereto were repealed and replaced with Outdoor Burning Regulation #878, 2009.

- Special occasion and ceremonial fires must be approved by an Officer.
- Garden waste and construction waste fires are banned.
- The open burning of land clearing debris must be pre-registered with the Fire Department and can only take place with the use of an air curtain burner.
- Cooking fires are allowed at any time without a permit if they are contained within a pit or other device having a surface area not greater than four square feet.

2.12 North Cowichan

Fire Protection Bylaw #3237, 2005, was repealed and replaced with Fire Protection Bylaw #3340 in May 2008.

- Open burning, regulated for time, material, size, set-backs, supervision, and venting, is permitted from March 15 – April 15 and from Oct 15-November 15.
- Outdoor fires cannot produce heavy smoke or fumes or interfere with the normal use or enjoyment of life or property.
- Recreational fires are allowed within a regulated pit that has regulated setbacks and rests on a noncombustible foundation.
- A previous bylaw exclusion for agricultural and commercial burning was removed.

Before this bylaw was instituted, a free year-round yard and garden drop off was established (3” maximum branch diameter). The organic material goes to the transfer station and ends up as compost.

This bylaw is seen as part of an incremental process of changing burning behaviour. Public education is used as a key tool for that change. There is very little cost involved in the enforcement of this bylaw.

2.13 Parksville

The City of Parksville Outdoor Burning Bylaw #1091, 1992, and all amendments thereto were repealed and consolidated in the Outdoor Burning Bylaw #1428, adopted in July 2007.

- Open burning is prohibited at all times within the boundaries of the City.
- Exemptions include beach fires; campfires; regulated small cooking fires and those in within small outdoor fireplaces.
- Agricultural clearing waste fires must conform to the OBSCR, must be approved in writing by the Fire Chief, and can only occur from October 15 – November 15.

2.14 Qualicum Beach

The Town of Qualicum Beach Outdoor Burning Bylaw #539.02, 1996, was repealed and replaced with the Town of Qualicum Beach Outdoor Burning Bylaw #601, adopted in July 2007. It was consolidated, for convenience, to include amendments occurring in April 2009, December 2009, and September 2010, which were made in response to complaints.

The bylaw improvements were made primarily in response to the impact of smouldering yard waste fires.

- No fires anywhere, except garden refuse fires (thoroughly dry material) or agricultural waste fires.
- No garden refuse or agricultural fires within the Urban Containment Boundary.
- No garden refuse or agricultural fires outside the Containment on properties less than 2.5 acres.
- For properties larger than 2.5 acres, permitted and regulated (time, size, safety, setbacks, surveillance, smoke) burning can only occur from March 15 to April 15 and from October 15 to November 15.
- Exemptions include regulated cooking fires, campfires, outdoor fireplace fires.

The bylaw is linked to MTI and cost recovery schedules. There are very few infractions. Most people were immediately compliant. Most complaint calls are in the summer and are usually generated by a few individuals who repeatedly cause problems within the campfire category. An outright ban may be easier to deal with.

3.0 MANAGING AIR QUALITY BYLAWS: A SYNTHESIS OF PARTICIPANT FEEDBACK

A website search for open burning information and bylaws was conducted for Vancouver Island municipalities and regional districts. Each one was then contacted and asked to select an appropriate contact who could provide information regarding:

- history of air quality bylaw development in the area
- bylaw wording
- enforcement issues
- enforcement costs
- changes to air quality bylaw since 2007
- comments/recommendations/advice for communities developing similar bylaws.

The contact selection process was not always successful, and not all contacts were able to participate at this level. However, the individuals who did respond personally provided very useful information. Following is an attempt to capture their individual and collective wisdom.

3.1 Bylaw Development

Although a few Island communities have recently developed bylaws specific to air quality, most of this type of protection has evolved within the framework of fire prevention regulation. Municipal fire departments are generally stable, well organised institutions capable of providing education and enforcement for the air quality side of burning regulations.

A number of respondents noted that increasing smoke complaints are part of a cultural shift where the number of people concerned about air quality now out number the people who want to burn. Some of the larger city fire departments now find themselves having to be arbiters of social change as they try to manage an increasing number of complaint call outs.

Older open burning bylaws, focused on fire prevention, often curtail burning in the dryer months, confining it to the winter or periods thereof. From an air quality perspective, this is the worst time to burn as the fuel material is usually wet and the venting conditions are poor.

More recent bylaws effecting air quality reflect the current understanding of airshed dynamics. Their titles have shifted from 'Fire Prevention and/or Regulation' to 'Outdoor Burning' or, as in the case of Campbell River, 'Clean Air Bylaw'. They tend to minimise or remove allowable burn times. When burning is allowed, there are more specific regulations to do with the size, surveillance, setbacks, and materials permitted and/or prohibited.

Only a few outdoor burning bylaws on Vancouver Island include a prescribed consideration for venting conditions before burning.

Interestingly, eight bylaws include the rather abstract prohibition against: smoke, heavy smoke, ash, odour, noxious odour, offensive odour, nuisance smoke or odours resulting in loss of enjoyment. Only the North Saanich bylaw attempts some definition of unacceptable smoke as being greater than 20% opacity. Although this type of regulation may be difficult to uphold in court, it does address the primary reason for air quality complaints and does offer a basis for remediation and for health protection.

Tofino's Outdoor Burning Bylaw prohibits outdoor burning of garbage and yard waste and goes on to specify that these materials cannot be burned indoors either.

3.2 Bylaw Wording and Enforcement

It appears that whether burning bylaws are long or short, old or new, simply worded, or burdened by “legalese”, the intent is what is transmitted and citizens tend to respond with compliance. According to most respondents, burning bylaws are not difficult or costly to enforce.

It is, of course, preferable to have a concise and clearly stated bylaw. Ticketing and bylaw wording need to be precisely integrated to withstand the rigors of court, should the need arise.

Most outdoor burning or air quality bylaws are accompanied by a fine or ticketing schedule for specific infractions. This system seems to have worked quite well across the Island. Even more populated regions with zero tolerance for any kind of outdoor burning reported having very few infraction or collection problems.

A number of respondents representing larger territories noted the need for assistance, from time to time, in dealing with infractions. Such cases could be alleviated if provincial, regional, and local enforcement staff could develop a partnership approach to bylaw enforcement.

Non-compliant burning on weekends and holidays also presents an enforcement problem, as most staff and officials that would normally deal with infractions are not on duty.

The permitting process can help with bylaw costs and can be a useful educational tool. When burning requires a permit, and when the permit is issued in person, there is an effective interface for dialogue exactly where and when it is needed. Cumberland relies on this process and has found it effective in altering burning behaviour and in controlling smoke exposures in the community

Some respondents shared ideas for positive bylaw wording to accomplish certain goals. For example, if an outright ban is not palatable for a populated area, setback requirements or specifying a minimum lot size can effectively accomplish the same thing. Requiring that someone attend a fire constantly until it is out minimises the need to micromanage by, for example, requiring the use of a fan to speed things up.

3.3 Cost Recovery

There has been a general trend away from litigation to greater education and cost recovery measures. Although most fines are paid, the ability, under the Municipal Act, to collect unpaid amounts by simply adding them to property taxes has proven to be an effective management tool. The same process can be applied to recover administration fees, call-out expenses, equipment use, and material costs as well.

Only rarely are there challenges that end up in court. Cost recovery at this level is usually unsatisfactory due to the limits set out for that in the Municipal Act. Unfortunately, if a bylaw does not include a ticketing schedule, court is the only venue to address unresolved bylaw conflict.

3.4 Education

Although a bylaw can be put in place overnight, the necessary shift in social behaviour with regard to unnecessary burning takes time. The defense of an unseen entity is always difficult. In the case of outdoor burning, the concept of cherishing the air we breathe is up against personal attachment to the quick and cheap convenience of having things disappear in flame. Connecting the dots between these views requires patience, open dialogue, and a systematic approach to public education.

3.5 Alternatives to Burning

The biggest source of smoke and smoke complaints for many communities on the Island is the burning of leaves, branches, twigs and other garden waste. Communities that have recently instituted backyard burning or air quality bylaws typically have preceded the effort by making sure there are good alternatives in place for dealing with this waste. Some communities have created a green tax that covers the cost of regular curbside garden waste pick-up, seasonal pick-up, or a drop off location. Other communities simply encourage composting or creating garden spaces where this material will break down naturally while providing wildlife habitat. Victoria and Oak Bay manage their huge volumes of

deciduous tree leaves with an annual leaf pickup. Tofino's new Outdoor Burning Bylaw begins with a commitment to introduce a chipping program for residential waste.

There are a few bylaws that indicate tolerance for the burning of household garbage, which is prohibited under EMA. However, this should no longer be necessary if alternative programs are made available. This points to the multi-disciplinary nature of air quality management. In this case, air quality and solid waste management efforts must stream together mitigating smoke and other forms of pollution through programs designed to reduce, divert, and/or recycle waste.

3.6 Agricultural Burning

Agricultural burning and the abuse of agricultural burning rights have caused problems in some jurisdictions. A number of communities have amended their bylaws by removing exemption clauses for agricultural burning and replacing them with a set of appropriate regulations. The initial exemptions were an acknowledgement of farmers "right to farm," as set out in the "Farm Practices Protection Act." Although this provision gives farmers the right to burn certain crop residues, and to use fire to control weeds and plant diseases, it is not a blanket approval for burning. Under the Act, materials such as plant prunings and old hay are not considered to be agricultural crop residues for burning purposes.

The amended bylaws set regulations for farmers that refer them back to the requirements of the Open Burn Smoke Control Regulation (OBSCR) for larger scale burning such as land clearing, plus the observance of relevant regulation within the municipal bylaw itself (backyard burning).

The Ministry of Agriculture has stated that "where local fire departments, municipalities, improvement districts, or regional districts may have specified bylaws on open burning, where these are more stringent, they apply over provincial regulation."

3.7 Incinerators

Nine communities still have bylaw provisions for burning materials in a backyard incinerator. Five of these are in the Capitol Regional District. Where stipulations for this kind of burning are given, they include, for example, that the incinerator be approved, or that it have a certain kind of screen over the top. Such provisions may help reduce fire risk but are completely ineffective at mitigating the health risk of the toxic smoke exposures they produce at ground level.

Historically, backyard incinerators and burn barrels were used to burn household garbage. This is no longer acceptable, and there are better ways to deal with yard waste. Incinerators remain an inefficient and outdated method of combustion. As bylaws are amended, the provision for incinerator burning should be removed.

3.8 Campfires

Most communities value the kind of convivial or family time that sitting around a campfire can provide. However, if other burning is banned, this kind of fire often evolves into a refuse fire. The City of Courtenay is one of eight communities that have chosen to avoid the grey area by banning campfires. A few other communities have indicated they may have to do the same. Ten communities allow campfires, but only under certain conditions. The City of Nanaimo still allows campfires, but they have become one of the main sources of complaints, especially in the summer, due to abuse. Qualicum advised that if campfires are allowed, they should be rigorously regulated, including an acceptable weekly or monthly frequency.

3.9 Regional District Participation

There are seven regional districts on Vancouver Island. Most of them are comprised of a few cities and/or towns and an array of outlying areas that may or may not have their own outdoor burning regulations. The sheer number of different regulations within different boundaries overseen by different officers poses logistical difficulties for residents, visitors, and enforcement officers alike.

It is usually a city or town that initiates bylaw protection within its urban containment. But this is not necessarily protective if citizens of bordering districts abuse the freedom of little to no burning restrictions. Because air has no borders, related bylaws and their enforcement would be most effective if they were developed co-operatively at the regional level. Although this is politically very complex, an attempt to do just that for backyard burning is being made this year by the Cowichan Valley Regional District (CVRD). The CVRD recently broke new ground in the realm of regional air quality management by instituting “A Bylaw to Regulate Management of Land-clearing Debris for the Purposes of Pollution Control in the Cowichan Valley Regional District.”

Even if this level of engagement is beyond the scope of a particular regional district, there is still a critical leadership role it can play in the promotion and programming of clean air education, guidelines, and services.

The Capitol Regional District (CRD), for example, has chosen not to take on a management role for burning bylaws. They do have a burning bylaw for their service agreement areas, but their main role has been one of leadership through the development and delivery of critical research, education, support, and alternatives to burning.

The simple act of presenting information on a district website and providing people with related air quality and health linkages is a good start.

4.0 OPPORTUNITIES FOR IMPROVING AIR QUALITY PROTECTION

In the process of conducting and summarising the bylaw interviews for this report, a number of opportunities were identified that could assist in strengthening regional air quality protection:

4.1 Legislation, Education, and Alternatives to Burning

On Vancouver Island, smoke is frequently a large constituent of local emissions. Diminishing its impact requires management. Fortunately, measures to accomplish this are relatively simple and inexpensive.

A commitment to airshed protection, demonstrated in bylaw development, sends a clear message. Combining that with public education and good alternatives to burning is an effective strategy for improving air quality.

A society becomes informed based on the quality and way information is shared. At the local level, air quality information is effectively delivered through brochures, newspapers, radio spots, television ads and programs, websites, and public forums.

One of the most useful actions for developing air quality awareness is conducting local air quality monitoring. Statistics become more personal and convincing when real measurements are taken in real neighbourhoods. A number of communities on Vancouver Island have done this using a portable instrument, called a nephelometer, to collect background data regarding seasonal and/or regional air quality patterns. The results can lead to the placement of more permanent air monitoring equipment. They can also help inspire and inform important air quality management decisions, including air quality bylaw protection.

Regional Districts and Municipalities have an important role to play in the development and promotion of accessible alternatives to backyard burning. This work is critical for effective smoke reduction bylaws as it facilitates public buy-in and compliance with the new requirements. Programs that alleviate the need to burn include, for example, the provision for regular garbage, yard waste, and compost pickup; free yard waste drop off sites; seasonal special offers for chipping, leaf pickup, etc.; and increased landfill capacity for handling garden debris. Some of these options are made possible through related regional planning, such as the establishment of a green fee for program cost recovery.

Regional Districts can also play a role in promoting consistency and simplicity with regard to open burning bylaws in their electoral areas.

4.2 Cooperative Approach to Compliance and Enforcement

City Fire Departments often play a key role in burning and smoke mitigation. Frequently, their complaint response and enforcement capacity is enhanced by cooperating closely with bylaw enforcement officers.

Volunteer fire departments are usually not able to respond to air quality complaints. This is a problem that could be addressed through municipal/regional district cooperation by developing, for example, a service agreement for complaint response.

City Fire Departments that already have service agreements with outlying areas could enhance compliance and enforcement by requiring bylaw unification as part of the service contract.

At the provincial level, educational and complaint response capacity has recently been enhanced by sharing resources. Pilot compliance and enforcement projects have evolved through the close cooperation of the Ministry of Environment (MOE) and the Ministry of Natural Resource Operations (MNRO). A smoke complaint may be coordinated through the MOE "Report All Polluters and Poachers" line (1-877-952-(RAPP)7277) resulting in an on site response by MNRO enforcement officers.

4.3 Building on Provincial Initiatives

4.3.1 Model Municipal Bylaw

Many municipalities have used the basic framework for bylaw wording and layout as provided in the Ministry of Environment's 1997 "Model Municipal Bylaw for Regulating Backyard Burning." The model provides three main options for regulating backyard burning:

- ban it (for example, where population densities are high);
- create a system of permits administered by fire department or bylaw officers;
- set specific regulations for what can be burned, where and how.

Frequently, it is a combination of these that is most effective. Some of the newer bylaws specify a complete burning ban within the urban containment, have relatively high priced permit options for commercial or land clearing burning, and regulate burning, to varying degrees, in the less densely populated areas.

The model municipal bylaw can be viewed at:

<http://www.env.gov.bc.ca/epd/bcairquality/reports/model-bylaw-backyard-burning.html>.

A useful companion to the Model Municipal Bylaw is "The Clean Air Bylaws Guide", produced in 2006 by West Coast Environmental Law. It is available at:

<http://wcel.org/resources/publication/clean-air-bylaws-guide>.

During the course of participant interviews the following bylaw aspects were flagged for careful consideration:

- Wording regarding appropriate weather conditions for burning, including consideration for the Venting Index.
- Campfire definition and regulation, including allowable weekly frequency.
- Agricultural burning requirements and restrictions.
- Permit application in person to take advantage of instruction opportunity.
- Specific instructions to ensure qualified personal attendance for the duration of a fire not only for safety but to ensure the hottest, quickest, and cleanest burn.
- Ban garbage burning.
- Ban backyard burn barrel and incinerator burning.

4.3.2 BC Air Quality Website

This website (www.bcairquality.ca) provides a wealth of information and resources for bylaw support and airshed management. The current venting index can be accessed from this site and there is an interactive map that displays current air quality measurements.

Citizens, visitors, and enforcement officers could benefit from a similar type of map indicating which area has what bylaw enforced by whom.

4.3.3 Solid Waste Management Planning

Seeking out the best methods to reduce, reuse, and recycle garden and household waste and making them readily available to the public are critical tasks for effective air quality management. Cost effective alternatives to back yard burning are necessary for public buy-in and compliance with burning bylaws. These are best accomplished through cooperative governance and the integration of municipal and regional resources.

4.3.4 Monitoring

Air quality measurements are critical whether a community is trying to “keep clean areas clean” or is in need of significant air quality improvements. You cannot manage what you cannot measure.

The Ministry of Environment maintains a network of air quality monitors throughout the province. Current and past readings from any monitor site are available at: www.bcairquality.ca.

If necessary, the Ministry can also help coordinate preliminary testing and mobile monitoring.

4.3.5 Airshed Management

Airshed planning is a multi-stakeholder discipline and a valuable tool for enduring air quality protection. The Ministry of Environment has published a “Provincial Framework for Airshed Planning” (www.bcairquality.ca). Ministry resources and personal expertise are invaluable for any community willing to address air quality concerns at the airshed level.

Other useful resources include:

- The “Online Airshed Planning Tool” developed for the Ministry of Environment by the Sheltair Group (www.airqualityplanning.ca)
- The “Clean Air Toolkit” for local governments (www.cleanairkit.ca).

The Ministry is dedicated to providing air quality management assistance to communities who are willing to partner and work with them.

4.3.6 Continuing Research and Education

At the provincial level, doctors, scientists, community leaders, and policy makers benefit every year from two impressive air quality forums that deliver the latest research and understanding of air quality issues:

The “Air Quality and Health” seminars collaboratively delivered by BC Lung, Health Canada, Environment Canada, the BC Centre for Disease Control, the University of British Columbia, and the University of Washington and

The “BC Clean Air Forum” collaboratively delivered by the Fraser Basin Council, the Ministry of Environment, and Environment Canada.

5.0 CONCLUSION

Clean air is fundamental to healthy environments and the life they support. Airsheds everywhere are under increasing pressure from a host of local and foreign emissions. On Vancouver Island, smoke from open burning is frequently a large constituent of local emissions. Diminishing its impact requires management.

Over the last three years, a tremendous amount of care and attention has been directed toward air quality management on Vancouver Island. Since 2007, almost 40% of the Island municipalities included in the last inventory for open burning bylaws have amended or created new bylaws in that category. Over half of the municipalities have banned open burning in part or all of their territory.

Open burning bylaws on the Island range from zero-tolerance regulations put in place over 20 years ago, to brand new deliberations focused entirely on improving air quality. Although older bylaws were developed primarily with fire prevention in mind, most regulations today include aspects that acknowledge the understanding and importance of air quality and health linkages.

Airshed management is a multidisciplinary effort. Some of the newer bylaws show a fearless approach in this regard by promoting, for example, solid waste management alternatives and smoke reduction strategies within the same document.

A commitment to airshed protection through bylaw development; public education; and alternatives to burning is the core of effective air quality management. Clear, creative air quality and health messaging instils compliance which, as indicated by the majority of respondents, minimises bylaw costs and the need for enforcement.

In 2009, the provincial government made a commitment to “lead the world in sustainable environmental management with the best air and water quality...bar none.” The vibrant natural environment that characterises Vancouver Island place resident human populations in a relatively privileged position from which to approach such a goal. And the trend toward better air quality protection, represented in this report, indicates it is within reach.

6.0 DESCRIPTION OF TERMS FOR APPENDIX A

This review is confined to the municipalities of the seven regional districts on Vancouver Island. The number and complexity of open burning regulations for all of the electoral areas is beyond the scope of this report. As municipal bylaws were reviewed and interviews conducted, a number of interesting and useful categories emerged. They are presented in the following table under the categories:

Municipalities

- 33 municipalities were included in this study.

Bylaw

- The designated name and bylaw number with the year it was adopted or amended. **AQ** indicates a bylaw that is primarily dedicated to air quality concerns.

New

- These are new bylaws or ones that have been amended since 2007 when the last bylaw review was done.

Ban

- This refers to a burning ban. It may be complete or have exclusions (such as campfires) or possible permits under special conditions. **(UC)** indicates a ban within the urban containment only.

Partial Ban.

- This refers to a ban for part of the year. When burning is allowed it is usually regulated and may or may not need a permit. The main regulations are summarised under “Restricted Burn.”

Campfire Ban

- This is specified within a bylaw that bans outdoor burning. Some exceptions may apply.

Campfire Restriction

- These are conditions set for allowable campfires.

Restricted Burn

- These are the main regulations for allowable burning. The allowable times are listed first. The abbreviations used for regulation details are:
- **S** (size), **Sv** (surveillance, i.e., safety precautions/equipment, minimum age for person tending the fire), **St** (setbacks), **V** (venting), **(V)** direction to good weather conditions without specifying venting or venting index, **M** (material burned)

Alternatives

- These are alternatives to burning that are included in or linked to the bylaw.

Enforcement

- The type of infraction penalty is included in bold. **MTI** is the abbreviation for “multiple ticketing information.” Respondents’ comments regarding the level of difficulty or cost of enforcement are included in this column.

Incinerator

- “no” in this column indicates that incinerator burning is prohibited.
- “yes”, or the conditions of approval are included for allowable incinerator burning.

Landclearing Burning

- Either “no”, or the main requirements for this kind of burning are listed.

Smoke

- This column describes specific prohibitions against producing smoke.

APPENDIX A - SUMMARY OF OPEN BURNING BYLAWS ON VANCOUVER ISLAND

Municipality	Bylaw	New	Ban	Partial ban	Campfire ban	Campfire restriction	Restricted burn	Alternatives	Enforcement	Incinerator	Land clearing burn	Smoke
Alberni Clayoquot Regional District											no	
Tofino	Outdoor Burning #1071, 2008 AQ	x	x			SSvStM		Community incinerator intended, chipping program for residential garden waste	All tickets paid. Not difficult or costly, MTI	Building Inspector approval	no	odour, smoke, res waste burned indoors prohibited
Ucluelet	Outdoor Burning #978			x		SSvStM	Apr 1st 2 weeks; Oct last 2 weeks for garden refuse, SSvSt		MTI	no	permit, SzSvStMV	
Port Alberni	Outdoor Burning #4457, 2000			x			Oct 15-Apr15, SSvStM		not difficult or costly, no ticketing	no	permit, SStM(V)	
Capital Regional District.	Fire Regulation #1 (3452), 2007							offers guide-lines, trends, alternatives				
Central Saanich	Open Air Burning, 2001					sunrise - 11pm	All Year Th/Fri (sunrise-sunset) - Sat(sunrise-noon)		Straight forward, no issues, MTI	permit Nov-Apr	permit	
Colwood	Outdoor Burning Bylaw #931, 2007/2008	x	x		x				Fines/Fees	no	no	
Esquimalt	Fire Protection & Regulation #1898 2003		x		x	permit only			Fine	no	no	smoke/ash, nuisance
Highlands	Emergency Services #264, 2010	X		x	x	grills/BBQs	permit only, unless Fire Chief declares exempt period, SSv(V)		MTI	yes	permit(V)	
Langford	Consolidated Burning Regulation #102, 2002			x		SSvSt	Oct-May15, 1st Fri&Sat of month		Very few violations. Little cost, some wording difficult - Fine/Cost Recovery.	permiss	no	noxious odour, prevent smoke

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Municipality	Bylaw	New	Ban	Partial ban	Campfire ban	Campfire restriction	Restricted burn	Alternatives	Enforcement	Incinerator	Land clearing burn	Smoke
Metchosin	#269, 1996			x		SSvSt out by midnight	Permit only			Permit, St	Permit, Oct 1-Apr 1	
North Saanich	Fire Prevention Regulation #962, 2005			x		manufactured with screens	Nov 1-May 15, 1st&3rd consec TH,Fri./Sat (sunrise-sunset-4pm Sat) Seasonal Permit Required-some exceptions & restrictions	Municipal green waste drop off	MTI	permit, ok for domestic waste	permit	noxious smoke, opacity greater than 20%
Oak Bay	Consolidated Fire Regulation #3803, 1994		X		X	council permission only		Annual Leaf Clearing	no enforcement issues, fines/costs	no	no	
Saanich	Fire Prevention # 8807, 2006		X (UC)	X		sunrise-11pm	Oct 16-Apr30 Th(sunrise-sunset) Fri (sunrise-noon)		Enforcement not difficult or costly. Permit fees=cost recovery	yes, Oct16-Apr30		
Sidney	CRD Service Agmt.		X		X				Fine			
Sooke	Fire Protection #292, 2009	x		X			Oct1-Apr30 permit only, sunrise/sunset (not for yard waste) -SSvStVM		Fine or Ticket+Costs		permit	
Victoria	#96-010, 2000		X		X			Year 'round free yard and garden waste drop; Nov-Jan leaf pick-up				
View Royal	#114m 1992(from 2007 review)		X		X							
Electoral Areas												
Comox Valley Regional District												
Comox	Fire Prevention #1556, 2007	X	X			SSvStM		Weekly curbside yard waste pickup	Fine, Cost Recovery	NO		
Courtenay	Fire Protection Regulation #2256, 2008	X	X		X	permit only			MTI, Cost Recovery-works well	no	no	

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Cumberland	Fire Prevention/Control #775, 2006			X			size, permit only,		MTI, most of the time it's just paid, court cases are usually lost			
Strathcona Regional District												
Campbell River	Clean Air Bylaw #3293, 2007, AQ	X	X(UC)	X			Oct and Apr area B daylight, SSt + permission		Fine, Cost Recovery	NO	permission	
Tahsis	2007 review			X			permit only					
Mt. Waddington Regional District												
Port Alice	Fire Prevention #509, 2005			X			permit only					
Port Hardy	Open Burning/Smoke Control #15, 2005			X			permit only					
Port McNeill	Public Directive	X	X				size (20"x20")					
Alert Bay	Fire Prevention #485			X			permit only		Fine	yes	permit	
Cowichan Valley Regional District	Landclearing Management #2020, 2010 Open Burn Reg for 2011	X					Landclearing fire Air Curtain only	Free yard and garden drop-off, chipping/grinding/mulching	Fine		permit/air curtain	
Duncan	Prohibit Outside Burning #1703, 1989		X		X			Composting System			no	
Ladysmith	Burning Regulation #1380, 2001		X				4' square			no	no	
Lake Cowichan	Outdoor Burning Regulation #878, 2009	X	X						Fine or Ticket	no	permit/air curtain	
North Cowichan	Fire Protection Bylaw #3340, 2008	X		X		SSt have lid etc.	Apr15-May15; Oct15-Nov15 SStVM	Year 'round free wood and yard waste drop off (1&3Sat; 2&4Thurs.)		NO	permit/air curtain	smoke/fumes
Nanaimo Regional District												

APPENDIX A - SUMMARY OF OPEN BURNING BYLAWS ON VANCOUVER ISLAND

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Nanaimo	AQ		X (UC)	X			Apr and Oct, 1 acre+, garden waste, permit only	No programs yet but transfer station. Encourage composting, mulching	Cook Fire abuse		no	offensive/obnoxious smoke and ash
Lantzville	Fire Protection #86, 2010			X			Oct 16-May14, small fire or permit only, size, timing		Fine	Fri/Sat or by permit		
Parksville	Outdoor Burning #1428, 2007/2010	X	X						Fine/MTI		no	
Qualicum Beach	Outdoor Burning Bylaw #106, 2007, 2010	X	X (UC)	X			Mar15-Apr15; Oct15-Nov15 2.5acre+, permit only SSvStM		Amendments due to complaints, problem recreational fires, Fine/MTI	no	no	heavy smoke, noxious odours

APPENDIX B: LIST OF CONTACTS

MUNICIPALITY	WEBSITE	CONTACT	CONTACT INFO	COMMUNICATION
Alberni-Clayoquot RD	www.acrd.ca	Don Anderson, Environmental Manager	250-720-2700	website
Tofino	www.tofino.ca	John Mezaros, Bylaw Enforcement Officer	250-725-3229 ext 34, parkoff@tofino.ca	phone
Ucluelet	www.ucluelet.ca	Building Inspector & Bylaw Officer	250-726-4776, building@ucluelet.ca	website
Port Alberni	www.portalberni.ca	Tim Pley, Fire Chief	250-724-1351 timothy_pley@portalberni.ca	phone
Capital RD	www.crd.bc.ca	Chris Robins, Environmental Protection	crobins@crd.bc.ca	email
Central Saanich	www.centrialsaanich.ca	Ken Neurauder, Bylaw Enforcement Officer	250-544-4237, ken.neurauder@saanich.ca	email
Colwood	http://colwood.ca	Kevin Atkinson, Bylaw Enforcement Officer	250-478-5999	website
Esquimalt	www.esquimalt.ca	Bob Brown, Chief Building Official	250-414-7106, bob.brown@esquimalt.ca	email
Highlands	www.highlands.bc.ca	Chris Leek, Bylaw Enforcement Officer	250-474-1773	website
Langford	www.cityoflangford.ca	Lorne Fletcher, Community & Safety Munic. Enforcement	250-474-0604, lfletcher@cityoflangford.ca	email
Metchosin	www.metchosin.ca	Rachel Parker	250-474-3167, rparker@metchosin.ca	email
North Saanich	www.northsaanich.ca		250-656-0781	website
Oak Bay	www.oakbaybc.org	Loranne Hilton, Municipal Clerk	250-598-3311	email
Saanich	www.saanich.ca	Doug Roberts, Senior Bylaw Enforcement Officer	heppell@saanich.ca	phone
Sidney	www.sidney.ca	Pearl Barnard, Administrative Assistant	pbarnard@sidney.ca	email
Sooke	www.sooke.ca	Bylaw Enforcement Officer	250-478-0624	website
Victoria	www.victoria.ca		250-385-5711	website
View Royal	www.viewroyal.ca		250-479-6800	website
Comox Valley RD	www.comoxvalleyrd.ca		250-334-6000	website
Comox	www.comox.ca	Richard Kanigan, Chief Administrative Officer	250-339-2202	phone
Courtenay	www.city.courtenay.bc.ca	Don Bardonnex, Fire Chief	250-334-2513	phone
Cumberland	www.cumberlandbc.net	Ken McClure, Manager of Protective Services, Fire Chief, Bylaw Enforcement	kmcclure@cumberlandbc.net	email
Strathcona RD	www.strathconard.ca			website
Campbell River	www.campbellriver.ca	Terri Martin, Environmental Coordinator	250-286-5711	phone
Tahsis	(info from 2007 review)			
Mt. Waddington RD	www.rdmw.bc.ca		250-956-3301	website
Port Alice	www.portalice.ca		250-284-3391	website
Port Hardy	www.porthardy.ca		250-949-6665	website
Port McNeill	www.town.portmcneil.bc.ca	Sue, Administration	250-956-3111	phone
Alert Bay	no official site	Laura Taylor	250-9475213	phone
Cowichan Valley RD	www.cvrld.bc.ca	Harmony Huffman, Environmental Technologist	250-746-2530, hhuffman@cvrld.bc.ca	phone/email
Duncan	www.duncan.ca	Lynn Ketch, Director of Corporate Services	ketch@duncan.ca	email
Ladysmith	www.ladysmith.ca		250-245-6400	

Lake Cowichan	www.town.lakecowichan.bc.ca	Joseph Fernandez, Chief Administrative Officer	jfernandez@lakecowichan.ca	email
North Cowichan	www.northcowichan.bc.ca	Andy Daniels, Engineering Tech	250-746-3103	phone
Nanaimo RD	www.rdn.bc.ca			website
Nanaimo	www.nanaimo.ca	Ron Lambert, Fire Chief	250-755-4555	phone
Lantzville	www.lantzville.ca	Twyla Graff	twyla@lantzville.ca , 250-390-4006	website
Parksville	www.parksville.ca	Doug Banks, Fire Chief	250-954-4671, dbanks@parksville.ca	email
Qualicum Beach	www.qualicumbeach.com	Don Marshall, Bylaw Enforcement Officer	250-752-6921, bylaw@qualicumbeach.com	phone