

# OPEN BURNING SMOKE CONTROL REGULATION

## INTENTIONS PAPER FOR CONSULTATION

### *SUMMARY OF PUBLIC COMMENT*

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# Open Burning Smoke Control Regulation – Intentions Paper for Consultation

## *Summary of Public Comment*

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# Open Burning Smoke Control Regulation

## *Summary of Public Comment*

### 1. Introduction

#### 1.1 Background to the consultation process

This report provides a summary of stakeholder comments received as part of the consultation process for review and revision of the Open Burning Smoke Control Regulation under British Columbia's *Environmental Management Act*.

An intentions paper ("Intentions Paper") was posted for public review and comment on the ministry's website ([www.env.gov.bc.ca/epdiv/ema\\_codes\\_of\\_practice](http://www.env.gov.bc.ca/epdiv/ema_codes_of_practice)) in June and July of 2008. The intentions paper provided a summary of ministry and government goals, background information regarding open burning smoke control and its regulation in B.C., and a discussion of the ministry's proposed revisions to the regulation. A separate response form for providing comments or suggestions to the ministry was also posted on the website.

#### 1.2 Purpose and format of the *Summary of Public Comment* document

This document has been prepared for the Ministry of Environment by C. Rankin & Associates, contracted by the ministry to independently receive, compile and review comment on the proposed revisions to the Open Burning Smoke Control Regulation. The summary does not reflect the ministry's position on any issue. It provides a synopsis of the responses that are being considered by the ministry in revising the regulation – without specific attribution, except to the extent required to provide context for the comments. This summary of public comment does not include all detailed comments, rather it attempts to capture the tenor and content of comments through summarization and specific excerpts from representative submissions.

The complete set of responses received through the consultation process has been compiled and passed to the ministry for detailed review and consideration. All comments and references submitted through this process, through independent submissions and through direct consultations with stakeholders, will be reviewed and carefully considered by the ministry in revising the regulation.

The summary of responses is arranged by topic as presented in the intentions paper. Direct excerpts from submissions are included in quotation marks (" "). Square brackets ([ ]) indicate inferred or contextual terms.

#### 1.3 Description of responses received

Close to one hundred responses to the intentions paper were received (by e-mail, fax and attached file), and have been reviewed for this summary of stakeholder comments. Over half of the respondents identified themselves as representatives of an association or business. Other respondents included representatives of government agencies, First Nations and environmental and community groups. Many of the responses included substantive comments or submissions to supplement responses to discussion topics set out in the intentions paper.

## 2. Objectives guiding the proposed revisions

The ministry has developed a set of objectives to guide consideration of revisions to the regulation that include: measures that reduce or minimize impacts to human health, enable and encourage compliance with the regulation, do not impose undue costs on government agencies or burn operators, and are equitable and consistent (see intentions paper section 4.1).

**Response Form Question 1.1: Do you have any comments or suggestions regarding these objectives and how the ministry uses them to guide proposed revisions to the regulation?**

While a number of respondents commented that the proposed objectives were “reasonable” – sometimes with conditional statements, such as “as long as they are followed and are measurable” – many expressed concern that the objectives are “unachievable” and/or “contradictory”. The most common concern among respondents was that the stated objectives appeared to be “in conflict with the objectives of Protection Branch of the Ministry of Forests and Range...to reduce fire hazard” and that the proposed revisions to the regulation would “impose undue costs” on government agencies or burn operators.

Among the respondents who expressed support for the set of objectives being used by the ministry in considering revisions to the regulation, comments included: “cost should not play a factor when it comes to people’s health”; “human health impact minimizing and cost effectiveness for government agencies and burn operators should be the cornerstones”; and “[our district] supports the objectives...[we] encourage property owners/developers to use alternatives to burning for disposal of land clearing debris”.

Several respondents noted that “the largest and most deadly cause of air particulate is from forest fires” and that the proposed revisions would limit the ability of forest companies, government agencies and communities to undertake controlled burning and “fire proofing” programs, and would “drastically increase treatment costs for the [wildland/urban] interface”. Numerous respondents also pointed to the “burden [faced by]... municipalities striving to mitigate the possibility of an interface fire as a direct result of the Mountain Pine Beetle infestation” in many areas of the province.

A number of respondents questioned the “fairness” of the proposed revisions. One respondent, for example, felt that the majority of emissions in Prince George “come from the pulp mills”. Another respondent felt that the proposed revisions “will significantly impact the rural areas of this province [in a manner that is] disproportional to the urban dwellers”.

Several respondents expressed concern that the proposed revisions to the regulation could restrict land clearing and consequently limit or eliminate “the creation of new farmland” or negatively impact the agricultural sector. One respondent, for example, recommended “expansion of the exemptions [from regulatory requirements and that the proposed revisions]...will consider the language and intent of the *Farm Practices Protection Act* and ensure the provisions of the small business lens contained in the provincial Regulatory Criteria checklist are considered with respect to cost-benefit analysis, competitive analysis, and time and cost of compliance”. The respondent noted that fire and burning have traditionally had an important role in “ecosystem

management and agricultural development". Another respondent recommended that Agricultural Land Reserve lands be excluded from the high smoke sensitivity zone.

Finally, several respondents suggested the proposed regulatory revisions (and the associated objectives for the regulation) would best be considered "in concert with other policy changes and actions being considered by the Ministry of Forests [and Range], BC Hydro and provincial government". For example, one respondent noted that "changes to forest policy which reduce the focus on managing forests for the production of sawlogs in favour of managing for a wider range of biomass products could create economic conditions that favour the utilization of fibre that is now...dealt with by burning, landfilling or other disposal measures".

### **3. Proposed approach to smoke control and the regulation of open burning**

The ministry intends to revise the regulation to establish a comprehensive province-wide framework of three "smoke sensitivity zones" (high, moderate and low). Each zone will have specified and consistent standards for parties considering the open burning of vegetative debris (see intentions paper section 4.2).

*Response Form Question 2.1: Do you have any comments regarding the ministry's proposed approach to smoke control and the regulation of open burning?*

Many respondents expressed support for the ministry's proposed approach, commenting, for example, that "we support generally the desire to prioritize areas in which human health is vulnerable to open burning" and "establishing smoke sensitivity zones is useful for health protection". A number of respondents also included conditional statements with their support, such as "as long as the development of the zones [is] based on scientific principles", or "[as long as] remote burning locations from human habitation are recognized as low smoke sensitivity zones".

Several respondents noted that they could not provide comment until detailed maps of the proposed smoke sensitivity zones and/or details about how the revised regulation would be implemented are available. Other respondents felt that additional consultation with affected parties is needed. Additional related comments included: "mapping needs to be defensible"; and "I assume the [ministry] has explored the full legal implications of these regulations".

Respondents often commented that there is a need for flexibility in the regulation to reflect, for example: "conditions that may allow a different approach to burning"; "pine beetle and local problems"; and/or "topography, past history [and] typical seasonal wind patterns". Respondents also requested clarification or further definition of specific terms, such as: "smoke release"; "[the scientific rationale and criteria for establishing] high smoke sensitivity zones"; and "[appropriate] ash disposal".

Additional specific comments and questions included:

- "The current system would be adequate if there was more control of large pile debris burning from developers";

- “There used to be a requirement to have burning sites inspected ... proper piling and drying of piles could be ensured”;
- “The proposed legislation regarding category 3 fires in high and moderate sensitivity areas will negatively impact Forest related operations”;
- “The ministry’s approach creates huge inequities to those operators who are unfortunate enough to have their operations confined to the high OBSCR risk zones”;
- “I applaud the process which prioritizes the zones of sensitivity for “human health” as it relates to forest management practices, while I am at the same time concerned by the lack of consideration given to woodlot licence operations”;
- “I believe it is the ministry’s responsibility to set out the sensitive areas and air quality targets to support best management practices – it is not in the best interest of the ministry...to take a ‘spell-it-out & how-to’ approach to disposing of waste materials”;
- “Before any regulations are changed, a total cost to the environment from the carbon footprint perspective must be calculated”;
- “In all three smoke sensitivity zones, there must be allowance for farmers to be able to burn diseased or insect infested plants and invasive plants”;
- “Why are revisions of the regulation necessary?”;
- “The added administrative requirement and fiscal burden placed on operators to comply with the proposed Regulation are likely to prove onerous, as will the short transition period for compliance”; and
- “It is unclear whether the existing requirements set out in the current regulations ... (providing general restrictions on burning where doing so is likely to negatively impact human health) will be maintained for allegedly low risk zones”.

**Response Form Question 2.2: Do you have any suggestions that would support effective implementation of this approach?**

Respondents who commented on this question frequently recommended additional consultation with specific sectors and parties that are affected by the regulation, including: “the agricultural industry”; “[rural and other] property owners”; “local government”; “forest licensees”; “Ministry of Forests and Range officials”; “land developers”; and “utility companies”. One respondent, for example, summed up with the comment that “at this point in time, the notion of effective implementation of this regulatory approach is very premature”.

Many respondents emphasized the need for flexibility in management options (including the option of open burning), recommending, for example, “local government input into the determination of ‘zones’ within their jurisdictions”; the need for “more fire on the landscape not less”; and/or “[better] enforcement of current regulations by the ministry”. Several respondents recommended a “phased approach” to ensure that disposal options are available prior to implementation of the regulations and incorporation of learning through the implementation period.

Specific comments or recommendations from respondents included:

- “Work with the agricultural industry to adopt Best Management Practices on land within the Agricultural Land Reserves”;
- “The MOF Appraisal Manuals can be amended to add waste disposal as a ‘specified operation’ ”;
- “New infrastructure such as pellet plants, composting, or bioenergy could cover the incremental costs of moving waste materials off-site”;
- “MoE (and/or Ministry of Health and/or Ministry of Agriculture and Lands) could provide seed funding and technical information to local governments and industry sectors to develop alternatives to open burning”;
- “Public consultation and education is key”.

#### 4. Scope, exemptions and changes to definitions

The ministry intends to amend definitions in the Open Burning Smoke Control Regulation to support consistency with related legislation, and to clarify the scope of provisions in the regulation (see intentions paper section 4.3).

*Response Form Question 3.1: Do you have any comments or suggestions regarding the proposed definitions and categories of open fires used in the regulation?*

Respondents commonly expressed support for consistency of definitions with the *Wildfire Act* – as “a good approach” or “a welcome idea”. Respondents commented, for example, that “integration/correlation between the OBSCR and the Wildfire Regulation is necessary for consistent open burning requirements” and that “this will ensure there is understanding and consistency between users and those who are empowered to enforce the rules”.

Several comments or questions were received regarding the proposed categories and the size of burn piles in each, for example: “2 metres high by 3 m wide is too restrictive for category 3 rated burns”; “it appears the disposing of slash piles (fire hazard abatement) greater than 2 m high by 3 m wide (i.e., forest industry slash piles) are not intended to be covered by OBSCR” [Editor’s Note: ministry intentions are that both category 2 and category 3 fires would be subject to the revised regulation.]; “why are you penalizing people who are hand-piling fuel for burning... while allowing larger machine piles to be burned?”; “[a] two by three meter pile is almost useless in any forestry related activity...too restrictive for category 3 rated burns”; “category 1 is for backyard burning of permitted material – there should be another category for campfires for cooking, warmth and ceremonial [purposes]”; and “category 1 fires will probably cause a lot of false alarm and smoke complaint calls for local Fire Departments”.

Additional specific questions raised by respondents included:

- “Wood stoves are one of the largest producers of smoke within the high sensitivity zones. How does the ministry plan to deal with these?”; and
- “Why [do] open fires (category 2 and 3) have restrictions whereas Resource Management Open Fires are exempt under this regulation?”.

***Response Form Question 3.2: Do you have any comments or suggestions regarding open burning activities that would be exempt from the regulation?***

Among respondents in favour of including broad categories of exemptions from requirements of the revised regulation, recommendations included: “well-cured woody debris”; “dry woody debris from the creation of farmland [and] agricultural development”; “category 2 or 3 fires resulting from resource management activities – piling and burning the slash created in slashing or tree cutting operations...burning of Mountain Pine Beetle wood”; “material pruned from vines, orchard trees, fruit bushes and canes, or other woody, agricultural material including from renovation of a crop [as well as]... diseased or insect-infested vegetative material [and] invasive plants”; and “land management [strategies that are intended] to reduce the risk of urban-wildland interface fires [or conducted with area based burning plans and communications plans]”.

Some respondents felt that exemptions should be limited. Sample comments included: “there should be NO EXEMPTIONS”; “backyard fires [should be exempted]”; and “all burning should be in the regulation, however campfires may need a [distinct] category [under the regulation]”. Other recommendations included: “all open burning [should be exempted] – more emphasis should be placed on proper venting [with] fuel [that is] dry enough to burn cleanly”; and “responsible industrial operators should be able [to burn] once per year in the winter [when ground is covered by snow]”.

## **5. Map of open burning sensitivity zones**

The ministry will develop a provincial map with three defined zones (high, moderate and low) of smoke sensitivity, built on a science-based approach to define risk to human health. It is the ministry’s intention to develop and maintain a current smoke sensitivity zone map that will be easily accessible to the public using web-based formats (see intentions paper section 4.4).

***Response Form Question 4.1: Do you have any comments or suggestions regarding the proposed provincial map of open burning sensitivity zones and delineation of these zones in the regulation?***

The initial absence of the map in the Intentions Paper caused a great deal of concern to stakeholders reviewing the Intentions Paper. Respondents felt it “difficult...to provide full and meaningful comments on this intentions paper without having opportunity to review the location of the proposed zones”. Other early responses included the recommendation that the map of sensitivity zones “should be subject to a peer review process ... well in advance of the finalizing of the new regulation”.

After the ministry posted a draft map of open burning sensitivity zones on the ministry website, several respondents commented that the map was “too restrictive” – for example: “it [would] severely restrict forestry activities in remote areas within our operating area”. Respondents also raised a number of questions or concerns regarding criteria used to establish the zones, for example: “there is limited evidence that meteorological or geographic criteria have been applied

in setting high sensitivity zones”; and “there is no science based approach – air moves, conditions change – science is based on facts”. There was also a request from several respondents for GIS ‘shapefiles’ of the map to enable more detailed review and comment.

Additional questions and comments pertaining to map criteria included:

- “Each polygon designated high sensitivity needs to be designed with local input with regards to prevailing winds and air channeling”;
- “We are presuming that there is some sort of population threshold at play, in addition to population density”;
- “[We are] puzzled by the concept of ‘drainage’ with regard to smoke”;
- “[How/why is] the word ‘never’ [used] to define low zones?”;
- “How is a ‘major highway’ [corridor] defined?”; and
- “Medium sensitivity zones have not been defined”.

A number of respondents expressed desire for “local level” consultation. For example: “the boundaries of high and moderate sensitivity zones need to be assessed at a local level in consultation with municipalities and local land managers and forest tenure holders to ensure the boundaries are appropriate”; and “we would appreciate receiving further information on the determination of ‘zones’ and to have an opportunity to review the ‘zones’ proposed for our jurisdiction before they are finalized”.

Additional comments included:

- “Difficult to comment fully ... without more information on the methodology and thresholds that will be used to identify high and medium risk zones”;
- “Recommend that the information be in a format that makes it easily understood by all potential users ... that fits the ‘real world’ and local factors of venting”;
- “The ‘high’ sensitivity zones in the Lower Mainland, east side of Vancouver Island, and the Thompson-Okanagan might be very limiting for agriculture unless exemptions are provided”;
- “There does not appear to be any recognition or inclusion of government objectives other than air quality in this process (i.e., social and economic objectives have not been considered)”;
- “There is no provision made to allow ecologically sensitive areas to obtain a more restrictive ‘smoke sensitivity’ classification...[the approach and classification] should be expanded to include an assessment of the smoke on critical habitat of at risk species, major parks and protected areas and other ecologically significant features”.

## 6. Use of forced air technology

The ministry wishes to encourage the use of “forced air technology” (i.e., air curtain incinerators, or other appropriate air-assist technology approved by the director) as this technology can substantially reduce emissions when used properly (see intentions paper section 4.5).

**Response Form Question 5.1: Do you have any comments or suggestion regarding the use of forced air technology and its application in open burning of vegetative material?**

Many respondents (in particular those from the forestry and agriculture sectors) expressed concern regarding the feasibility and effectiveness of forced air technology in the context of their operations. Concerns raised by respondents included: accessibility (road access, terrain, sensitive areas); “carbon footprint” (of trucking burners to sites and of operating diesel generators and gas-fired burners); cost (quoted as “\$30 000 to \$120 000” for forced air technology); and “proven” effectiveness. A number of respondents commented that feasibility of the technology would be dependent on availability and cost, and several recommended financial or other incentives to encourage adoption of forced air technology. Individual respondents also suggested, for example, that the ministry: “support uses for the biomass that produce value rather than impose costs”; “pursue not only smoke reduction, but also a possible reduction in greenhouse gases”; or “consider removing or modifying the rule of requiring debris to be managed on the property where it was generated”.

Comments in support of encouraging the use of forced air technology included:

- “Our Council has supported the use of forced air burning within our community”;
- “[Use of the technology has] the potential to substantially reduce emissions from burning vegetative debris, as the technology allows better combustion conditions to be established relative to open pile burning – for high smoke sensitivity zones, it is not sophisticated enough to be a substitute for open burning as emissions are still significant – the use of this technology as an interim measure in such zones during the 2-year phase-out of open burning is appropriate”;
- “When any company spends the time and money to ensure the latest and best methods are available to incinerate vegetation wastes, they should be acknowledged for this effort – their equipment should be rated and designated (when applicable) as a preferred choice for use in the smoke sensitive zones... the incinerator market is very new and therefore all efforts should be made to encourage advancement in both design and incinerating workmanship – to ensure that these advancements take place they must be recognized and listed by the Ministry just as equipment like earth moving equipment is listed by the government... [our company, ABY-2 environmental, has] spent a great deal of money and time to achieve what the world needs – efficient and safe incinerators”; and
- “Appropriate forced air technology to burn vegetative matter can be very effective in reducing smoke emissions – their use should be more than just encouraged – an incentive system would be desirable”.

**Response Form Question 5.2: Do you have any comments regarding the proposed standards and requirements for the use of forced air technology?**

Respondents who addressed this question often reiterated their thoughts on the use of forced air technology (summarized in question 5.1 above). Respondents commented, for example, that “due to cost and environmental impact, I believe this technology has limited application” and

“this will result in additional unrecoverable costs making harvesting operations uneconomic and ultimately possible mill closures due to lack of economic wood fibre”.

Several respondents requested “consultation and input before these are finalized” in order to “develop standards based on best practices”. Respondents also suggested contractor training, with the contractor being held liable if they “fail to meet standards of particulates out put grossly because of ill trained workers” and “at a minimum, operator training and certification, in addition to opacity training is needed”. A number of respondents also expressed concern about the ministry’s ability to assure compliance with any standards that might be developed and the need to “expand [compliance and enforcement] resources for inspection of forced air technology burning events”.

Additional comments included:

- “There are too many ‘weasel’ words such as ‘encouraged’ used in this section”;
- “This option [- forced air technology - may not be] viable in all areas of the province”;
- “The use of such systems [may be] cumbersome and of little value to operators with large scale operations”; and
- “Standards for fuel content, ash disposal, and reporting appear to be adequate”.

***Response Form Question 5.3: Do you have any comments or suggestions regarding best options for establishing and managing operator training, as well as certification requirements, for the use of forced air technology under terms of the regulation?***

Comments from respondents included: “government should provide training free of cost”; “would be most appropriate for an independent body to undertake the training and certification requirements”; and “more efficiently implemented and administered in the hands of industry”. A number of respondents also advised caution, for example: “a quick lesson does not, a burner operator nor an incinerator operator make”; “guarantee that the operator or company cares about a clean burn”; and “there [will also need to be] an audit mechanism set up to inspect operations and ensure compliance”.

Additional specific recommendations from respondents included: “[recognizing] experience and dedication”; “grandfathering’ of experienced individuals”; “including video link and web-based training [options] to reduce costs”; “certification of operators and full training for all workers, including WorkSafe BC requirements”; “[ensuring that] certification and training [is] a requirement”; “[establishing] a list of recommended companies [that] adhere to clean burning practices”; and “[utilizing] unions like the Operating Engineers [that] often do member training and coordination of hiring”.

## **7. Rules governing open burning**

### **A. General rules (applicable in all zones)**

The ministry is proposing general rules setting out the nature of material that is allowed to be burned, minimum distances of burns from residences, schools, hospitals and care facilities, and

requirements for obtaining a “custom ventilation forecast” from the ministry (see intentions paper section 4.6 A).

**Response Form Question 6.1: Do you have any comments or suggestions regarding the proposed general rules?**

Most commonly, respondents counseled the ministry to ensure that the regulations contain “latitude for management and practitioner expertise” and enable “common sense decision making”. Specific comments are summarized by topic area below.

Very few comments were received with regard to “*only vegetative debris is allowed to be burned*”. Several respondents however, suggested clarifying the application of the regulation to “reservoir debris” - recommending that this type of material be categorized in a similar manner to “debris from primary wood manufacturing facilities” (as able to be burned away from its site of origin - as it is washed into reservoirs “from all over the watershed”).

Several respondents provided comment or expressed concern regarding *the ban of open burning within 150 m with forced air or 500 m without forced air of residences*. Several respondents noted that preventive measures for “FireSmart and fuel management work is generally completed within 100m from residences” and that “as the space available in these interface areas is limited, implementing the ban would increase costs drastically”. Some respondents commented that “the setbacks appear to be inadequate” recommending, for example, that there should be “no open burning, only forced air burning, within city limits”. Others, in contrast, felt that “the proposed set back distances are too restrictive” commenting, for example that “under good venting conditions, the distances to structures is not important as the smoke rises and disperses as it should” or that “these fires are of such short duration [that] regulations regarding distances [are] totally unnecessary”.

The ministry’s intention to *ban open burning within 500 m with forced air or 2 km without forced air of a school ground, hospital or continuing care facility* generally received support from respondents. Several respondents also suggested that the listing be expanded to include playgrounds, churches, community centres and summer camps. One respondent, for example, commented that: “I support the idea of keeping fires away from population centers and especially schools and hospitals, etc.”.

Some respondents however, felt that the setback requirements from schools, hospitals and care facilities may not be needed, commenting, for example that: “[the proposed] setbacks are over-kill since OBSCR zones should have covered off air quality objectives sufficiently enough to protect [human health]”. A number of respondents also pointed out potential conflicts that the provision might engender. For example, “the setbacks from residences, school grounds, hospitals, and continuing care facilities may be limiting on farms where the local government and/or Agricultural Land Commission has permitted such structures in or near farm land”. Another respondent felt that the setback would be “prohibitive to any of our efforts to do fuel mitigation practices within [our] Village as the areas of concern are within the Village boundaries and within the immediate distances of school grounds, hospitals and continuing care facilities”.

Respondents also commented that burning beyond the proposed setback requirements could still have an “adverse impact on the health of patrons and employees” of businesses and “that the ministry [should] retain a residual discretion to require larger setback or setbacks from social/cultural or ecological features that are not listed in the regulation in individual cases”.

Numerous comments were received regarding *category 3 fires and the requirement to obtain “open burning authorization” from the Ministry of Environment*. A number of respondents commented on the role and importance of “custom ventilation forecasts”. Respondents expressed concern regarding: the (potential) cost of obtaining venting forecasts; the ability to access forecasts in a timely manner; “approval from remote locations that may be neither accessible to internet nor cell phones requiring advance permission to burn”; and the inadequacy or inaccuracy of forecasts for such reasons as “the horizontal and vertical resolution limitation of Environment Canada’s atmospheric models”.

Additional comments included:

- “We recommend 24/7 access to forecast services and approvals”;
- “From a risk management perspective, we believe these forecasts do not need to be applied to low & moderate zones – freeing up company and ministry staff to focus on high risk areas”;
- “Meteorological ventilations conditions can change rapidly – allowing 96 hours for smoke release for fires is much too long – it should not exceed 48 hours”;
- “This requirement assumes that technology is readily available to obtain this information”;
- “Custom ventilation forecasts can only be effective if the person or group designing it has a very good and continuous understanding of the airshed and the smoke being released into it”;
- “Index numbers should be allocated well ahead of time to individual operators based on need, possibly with opportunity for transfer to other operators should needs change”;
- “Currently, the smoke ventilation index is provided by Environment Canada and in my experience is reasonably accurate and is easily obtainable”.

There were also numerous comments regarding the proposed *10 km radius burning ban around communities in high sensitivity zones*. A number of respondents expressed concern, for example: “[the ban] will interfere with the production practices of local agricultural producers [and future development of] both private and Crown arable land [for] agricultural production to meet the growing demands of sustainable, locally produced beef... [many] farms are continually...managing their associated forestlands [and have] no effective alternatives to open burning of our land clearing woody debris – we request that this legislation be put on hold until a complete study is done on what affects this would have on our farms and ranches”.

Several respondents identified themselves as woodlot owners and expressed concern about the implications of the 10 km radius ban, noting that “woodlots are intentionally located in close proximity to population centers and this policy will have significant cost implications” for woodlot owners. Respondents raised specific local examples of limitations to complying with the proposed revisions to the regulation, for example: “[in Smithers] there is no injected burn box service nor is there a chipper large enough to chip debris piles – the bottom line is that the

10 km rule will not significantly improve air quality in Smithers and Woodlots should be exempted from the 10 km requirement". Another respondent pointed out that "the real problem in our valley is the almost continual amount of smoke in winter months drafting down the valley from Houston and points east [areas outside of the proposed 10 km radius]".

Additional general comments from individual respondents included:

- "Terms that need further definition include 'residence', 'category 2 & 3' (and their associated risk levels and requirements), 'custom ventilation forecast', 'primary wood manufacturing facility' and 'campfire'";
- "Smoke release periods defined within the Open Burning Decision Matrix are unrealistic and cost prohibitive";
- "[The revision of the regulation needs to incorporate] recognition of [the] cooperative, multi-agency work being done on southeast Vancouver Island [that] is developing management practices and a plan for successful [resource and smoke management]"; and
- "Flexibility and local adaptation to changing conditions and circumstances is essential".

### B. Open burning in a high smoke sensitivity zone

The ministry intends to prohibit open burning of category 2 and 3 fires in high sensitivity zones, either on enactment of the regulation or within two years of the regulation's enactment for specified situations (see intentions paper section 4.6 B).

*Response Form Question 6.2: Do you have any comments or suggestions regarding the provisions for restricting and prohibiting open burning in high smoke sensitivity zones?*

Many respondents addressing this question reiterated their concerns regarding the proposed revisions to the regulation. For example, one respondent felt that "this is completely ill-conceived without providing any alternatives to those operators who MUST operate within these zones".

The need for a phase in period was brought forward by many respondents. Sample comments included: "[our municipal district] would encourage the Province to provide lead time before implementing restriction/prohibition on burning, and that the terms be clearly explained to the public before implementation"; and "I think it is appropriate for a transition phase of two years before severe limitations are in place".

A commonly expressed concern among respondents was the availability of alternatives (to burning) in many areas where open burning may be restricted or banned. For example, "technology is not available to the extent that [our company] can meet the requirements of the *Wild-fire Act* and the Open Burning Regulation for category 3 fires"; "[the proposed provisions] are too restrictive... [we] do not have a viable alternative for our location"; and "farmers have budgeted costs and if the piles are already made and the bioenergy industry is years away, what's the answer?".

Several respondents also expressed concern regarding potential fuel loading in populated areas. Sample comments included: "this will lead to increased fuel loads around populated areas and

an increased amount of debris sent to already overburdened landfills”; and “with regards to interface hazards prevalent in many northern communities, we feel that the amount of material that may require disposal could be substantial...we therefore believe that the smoke sensitivity zones should reflect the opportunity to utilize the waste material in a bio-energy facility”; and “[the] proposed distance you are recommending will effectively shut down our fuel mitigation activities”. A respondent from the Okanagan area expressed concern that restriction of open burning “will serve to further remove fire from the ecosystem types which are dependent upon it [and we] are just starting to see the pine beetle effects – eliminating burning will [result in] large areas of extreme fire hazards because there will be no cost effective way to get rid of the material”.

Several respondents recommended exempting category 2 or 3 open fires associated with Resource Management activities and/or “normal farm practices” from the proposed revisions “until such a time as practical alternatives are available”.

Comments regarding the proposed smoke release period included: “why [has] the time limit for burning using forced-air technology in high sensitivity zones been set at 96 hours [when] the current regulations limit burning in category ‘A’ areas to 72 hours?”; “the smoke release period of 96 hours is counter-intuitive”; and “[the proposed] 96 hour review on burns is not appropriate”.

Additional comments or suggestions from respondents included:

- “If there are no viable options for the public, then enforcement is going to be a challenge”;
- “Flexibility must be included to address extraordinary issues”;
- “If the Ministry of Environment is proposing a ban on open burning within 20 km of towns ...our [forestry] business would be significantly impacted at these locations”;
- “The ban on open burning in high smoke sensitivity zones is supported by [our regional district]”;
- “With proper venting burning in these zones is not a health hazard”;
- “A 4 km no open burning zone around high smoke sensitivity zones rather than 10 km would reduce some of the potential impacts to agricultural land clearing”;
- “Only forced air burning should be allowed”; and
- “Limiting the amount of burning would suffice...there should not be a total prohibition of burning”.

***Response Form Question 6.3: Do you have any comments regarding circumstances where open burning in a high smoke sensitivity zone may be appropriate for recognition and authorization in the regulation?***

Many respondents who addressed this question reiterated their concerns that burning is an essential tool for fire hazard abatement, managing pine beetle infestations, and/or agriculture and range management.

Individual respondents commented that open burning should be allowed in a high smoke sensitivity zone:

- “As tool for disposal following best management practices”;
- “[If] there is full agreement between provincial and local authorities”;
- “Where public will be put at risk [from fuel buildup and catastrophic forest fires, so long as there are] reasonable notification and provisions for providing alternative safe environments, surveillance of illness and monitoring of air quality for exposed populations”;
- and/or
- “[So long as] proper venting [is ensured]”.

### C. Open burning in a moderate smoke sensitivity zone

For “*category 2 fires*” in moderate smoke sensitivity zones, the ministry proposes that open burning would be allowed under specified ventilation conditions, and with the smoke release period also dependent on the technology used for the burn (see intentions paper section 4.6 A and C).

**Response Form Question 6.4: Do you have any comments or suggestions regarding the proposed requirements for open burning of category 2 fires in a moderate smoke sensitivity zone?**

Respondents provided a number of specific comments in answer to this question, including:

- “[There should be] no open burning wood with high moisture content or [at] low temperature”;
- “There are many agricultural/nursery properties with[in] those limits – yearly green waste burn[ing] is an important monitoring procedure...[as well, there may be a need] for burning of agricultural wastes at times when diseases, insects, and invasive species are identified [at any time through the year]”;
- “Setback requirements to residences pretty much eliminate the ability of property owners to conduct burning”;
- “Sufficient number of inspection/monitoring staff must be available to ensure compliance”;
- “There must be more science based criteria [for defining the ‘moderate zone’] than ‘the area in between High and Low zone’ ”; and
- “Larger piles will burn cleaner and hotter once they get going”.

Specific comments regarding proposed revisions concerning ventilation forecasts and smoke release periods included:

- “[The proposed] smoke release period is not enough time ”;
- “We recommend that the length of smoke release period for category 2 fires without forced air should be 120 hours and longer if suitable venting indices are present”;
- “Reduction of the permissible burn time from 96 to 48 hours for open burns which do not use forced-air technology is a positive step”;

- “[Requirements for a] smoke free period and a limited number of days per year when smoke can be released ...should continue”;
- “[The] ventilation index forecast should be ‘good’ for both the first and second day”; and
- “Ventilation forecasts are only available and required for 2 days (48 hours), but the smoke release period with forced air is 96 hours – this implies that smoke may continue to be released even under low ventilation conditions”.

**Response Form Question 6.5: Do you have any comments or suggestions regarding the proposed requirements for open burning of category 3 fires in a moderate smoke sensitivity zone?**

Many respondents referred to previous answers (e.g., requesting clarification of ministry intention or expressing concern regarding potential limitation of opportunity to burn) with regard to this question. A number of respondents commented on the importance of ventilation forecasts and/or the allowable duration of burns. Several respondents felt that the burn duration “should be limited to 48 hours regardless of the technology used” while others commented, for example, that “if smoke release period is 48 or 96 hours [and the burn is] not complete by this time...this could mean that burn operators could be required to obtain 5-10 custom forecasts for one burn”. One respondent noted that “land debris fires can burn though the winter months with little or no smoke”. Another commented that “a fire will burn until it is out of fuel or put out – smoke times and venting depend on clean, proper pile construction and drying [much more than size]”.

With respect to ventilation forecasts, respondent comments included: “the requirement to obtain a custom ventilation forecast is a good one provided that these forecasts can be provided effectively and accurately without undue cost to the government agencies”; “[they] should include provisions for multiple burns occurring in close proximity over time and space”; and “we recommend that the requirement for the custom ventilation process be revisited – we do not believe the custom ventilation forecast will provide significant value due to the variables in place – it may take time for any forecaster to become knowledgeable on local conditions”.

Additional comments included:

- “We would like to better understand the [ministry’s] expectations”;
- “As urban centres push outward on surrounding farmlands (generally in valley bottoms), we are concerned that burning will be banned in those areas that benefit the most, since the majority of agriculture burning is not done on the marginal, higher rangelands”;
- “How do we remain competitive and address forestry requirements in these areas?” ; and
- “A sufficient number of inspection / monitoring staff must be available to ensure compliance”.

**Response Form Question 6.6: Do you have any comments or suggestions regarding the proposed requirements for open burning of wood waste from primary wood manufacturing facilities in a moderate smoke sensitivity zone?**

In response to this question, a number of respondents questioned the appropriateness and/or the feasibility of “singling out” primary wood manufacturing facilities for specific requirements under the regulation. Several recommended “direct consultation with primary processing facilities within these zones” or with the local governments and communities prior to establishing specific requirements. Respondents raised concerns about “a competitive cost advantage to operators in moderate zones”; the potential cost of moving waste beyond high sensitivity zones; and the need to “subject the concept to a cost-benefit test (are you imposing undue costs for the benefits achieved?)...how will [equity] be measured and applied?”. A number of respondents also pointed to the importance of “developing alternatives to open burning” (such as agricultural and bioenergy uses).

#### D. Open burning in a low smoke sensitivity zone

*Response Form Question 6.7: Do you have any comments or suggestions regarding the proposed requirements for open burning in a low smoke sensitivity zone?*

In response to this question, several respondents questioned the need for a custom ventilation forecast in low smoke sensitivity zones, commenting, for example, that “common sense and safety should prevail”. Respondents also commonly repeated comments regarding the need for a common cost-benefit test (across all zones), “competitive cost advantages” to existing operators in different zones that would result from delineating the zones, and the need for clarification of intent and terminology.

Specific comments included:

- “[The proposed provisions do] not encourage the adoption of forced-air technologies which would substantially reduce emissions from open burns – this also contradicts the Canada Wide Standards which [should] form a basis for these proposed revisions [and] provide a clear message regarding existing pristine areas, focusing upon a mandate to ‘keep clean areas clean’ ”;
- “120 hours is too long to preauthorize”;
- “This requirement may result in a direct conflict with the *Wildfire Act* – the favourable ventilation requirement could force [our group] to burn when it is unsafe from a fire hazard stand point”;
- “The availability of this information at the location of the burns generally will not be easy to get”;
- “Unless the general setback requirements are reduced, the allowance to open burn in even low smoke sensitivity zones is not really available”;
- “It is essential to take not only human health, which is an undoubtedly crucial purpose, into account, but also to consider the impact of these changes on the health of ecosystems which may come under these ‘low smoke sensitivity zones’ ”.

## 8. Process for assessing and authorizing an open burn

The ministry is presently exploring operational and cost considerations involved in providing custom ventilation forecasting (CVF) and custom ventilation tracking numbers in partnership

with the Ministry of Forests and Range – with the intention of meeting the ministry’s objectives for the regulation (e.g., efficient, cost-effective, equitable – see intentions paper sections 4.1 and 4.7).

**Response Form Question 7.1: Do you have any comments or suggestions for establishing a process for assessing and tracking an open burn that would be efficient, cost-effective and equitable?**

Respondents who commented on this question commonly and strongly encouraged adoption of “a single point-of-contact approval and reporting process...that addresses [common] requirements”. Respondents commented, for example, that “a double registration process [between the ministries of Forests and Range and Environment] ... is totally unacceptable” and “just adds to the bureaucratic nightmare that has contributed directly to the demise of the forest industry...a one-window approach [would] eliminate confusion on behalf of [both] the burn operator and government agencies”. Respondents commonly noted that “cost effective is important” and “[the new process should not require] industry [to] incur additional costs”.

Specific suggestions from respondents included:

- “One web-based application for multiple agencies”;
- “Allow for disposal methods in areas where the climate has few periods when the Ventilation Index is OK for a few days in a row”;
- “[Provide the custom ventilation forecast] through an Internet and/or telephone service that presents the determination of whether to burn in a certain area in easily-understandable, everyday language”; and
- “Field operation tracking of burns and ventilation will bring in the required accuracy to forecasting, and should be understanding of remote locations, even though it may not be practical to study the same in remote operations”.

## 9. Powers and penalties

The ministry intends to add or strengthen provisions in the regulation to improve enforceability, as recommended in previous reviews of the regulation (see intentions paper section 4.8).

**Response Form Question 8.1: Do you have any comments or suggestions regarding effective enforcement of the regulation and appropriate provisions for the regulation?**

Many respondents who commented on this topic supported implementation and enforcement of the regulation provided that “there are suitable and economically feasible alternatives” and that enforcement is “consistent and fair”. One respondent commented, for example, that “accountability should be on all levels [and] equal – that means corporations, natives, and government should all be able to be prosecuted if found to be breaching the rules and regulations”. A number of respondents however, expressed concern regarding the content and intent of the proposed revisions. For example, one respondent commented that “this smacks of the command and control mentality that was associated with the Forest Practices Code”. Several re-

spondents cautioned the ministry to ensure that the proposed revisions are well understood and broadly accepted among stakeholders, for example, “to talk of powers and penalties at this time is premature, given that the regulation is not well thought out”.

Several respondents commented that “public education is the key to gaining compliance” or that “there should be alternative options in place for the public prior to enactment of the regulation”.

Respondents also raised such questions as: “Who will administer the cease and desist orders or suspend authorization?”; and “Who will provide assurance in advance of the ability to contain and extinguish fires?”.

Additional comments included:

- “The MOE will have nobody to police if the rules and alternatives are so restrictive that they eliminate all forestry activities in High Risk zones”;
- “Local enforcement resources [need to be] available and a means for the public to report on potential violations [to] respond to requests [and] monitor permits issued”;
- “A system of administrative penalties and random inspections should be included in the enforcement strategy”;
- “If the existing rules were properly enforced, this... wouldn’t be required”; and
- “Effective enforcement is mandatory even though there may be significant costs involved”.

## 10. Addressing key coordination and implementation issues

### A. Control of wildfires and managing interface burns

The Open Burning Smoke Control Regulation is intended to complement and act in concert with the objectives of the *Wildfire Act* and Regulation, administered by the Ministry of Forests and Range. Most community interface areas will be captured within high smoke sensitivity zones where open burning will be phased out – with limited exceptions. It should be noted however, that resource management open fires, which are exempt from the provisions of the Open Burning Smoke Control Regulation, would be allowed for slash or other vegetation and woody debris that is dispersed over an area (see intention paper section 4.9 A).

**Response Form Question 9.1: Do you have any comments or suggestions regarding provisions of the Open Burning Smoke Control Regulation in relation to the control of wildfires and management of interface burns?**

Respondents commonly noted the importance of consistency in government regulations – and in particular, the importance of resolving any real or perceived differences in government or ministry objectives between “smoke control” and “fire and fuel hazard abatement”. Many respondents commented that “fire is a tool that should be retained when...dealing with reduction of fuel build-up in interface or intermix areas” and is “necessary for the protection of safety”. Respondents also commented on the importance of open burning for particular industrial operations.

Several respondents spoke to the challenges resulting from the Mountain Pine Beetle epidemic. One respondent noted, for example, that “theses areas include properties around municipalities [as well as] rural neighborhoods that are located in high, moderate and low smoke sensitivity zones – provisions must be made to allow for the effective removal of Mountain Pine Beetle impacted wood debris in all areas”.

Specific comments included:

- “Specific criteria should be established to permit burning for fire prevention purposes under the *Wildfire Act*... such burning, if determined not [to] be needed for emergency purposes, should be subject to the same ventilation index and other requirements as burning captured by the OBSCR”;
- “Fires in Agricultural Development Areas in land and Resource Management Plans and sub-plans could also be exempt, in order to encourage expansion of agriculture” ;
- “If you [value human life and health] you will set proper guidelines [for] forced air burning... and moisture content in areas that can’t use forced air”;
- “Burning slash over an area that is not piled will create more smoke than if it was piled and burned”; and
- “These [open-burning restrictions pertaining to interface areas] may have significant impacts on community forests, woodlot licensees and other tenure holders attempting to address the potential impacts of an urban-wildland interface fire – it may result in an unintended consequence of land managers taking no action due to the challenges of complying with new burn regulations, resulting in higher risks within interface zones as a result”.

## B. Encouraging alternatives to open burning

The ministry is supportive of any efforts to reduce contaminant levels associated with open burning. For example, the ministry is seeking comments and suggestions for encouraging alternatives to open burning (such as chipping, composting, or co-generation). Any comments regarding additional appropriate incentives (under the Open Burning Smoke Control Regulation or by other regulatory means) to reduce stressors to air quality are welcome (see intentions paper sections 4.1 and 4.9 B).

**Response Form Question 9.2: Do you have any advice or suggestions for the ministry to encourage alternatives to open burning – in keeping with objectives and intent of the regulation?**

Many respondents first and foremost stressed the importance of having viable alternatives to open burning available prior to implementing the proposed revisions. One respondent commented that “a regulation put in force before a practical and economical alternative is available is unacceptable” while others noted that “it is imperative that substantial funding be made available to subsidize the cost of alternatives to open burning”. Several respondents recommended that “these regulation changes be withheld until new economical technology or financial assistance is available for alternative wood waste management methods”.

One hurdle that several respondents commented on was the transportation of waste wood to alternate facilities. For example, one respondent felt that “thought has to go into transportation feasibility – are existing road systems suitable for alternative waste management systems?”. Acknowledging transportation and other differences, one respondent recommended that the regulation (and the ministry) “treat high risk zones differently throughout the province”.

A number of respondents commented that appropriate incentives could be used to support the ministry’s objectives – and would ensure that “all new costs [are not] shifted to industry”. Comments and suggestions included: “government must realize its responsibility to assist with funding alternatives to burning”; “something similar to the wood stove change out program ... would be beneficial”; “require permit fees for open burning – the permit fee would naturally be less for forced air technology fires”; and “establish incentives (e.g., reduced stumpage) for the use of alternative methods”.

Respondents pointed to a number of specific alternatives to open burning, including:

- “Allow[ing] wood waste to be removed from one parcel in ‘high’ to be burned on a parcel in ‘moderate’ ”;
- “The ‘Bonanza Blade’ ...able to crush, spilt, mulch and mix slash stumps and wood waste back to the soil without taking anything away and finally grading it out evenly”; and
- “Miniature biomass generators...able to burn the wood with low emissions and get some value from the wood in the form of electricity or hot water – they are portable and could be taken into areas temporarily when needed then move to a new site”.

Specific comments regarding “chipping” as an alternative included:

- “[Utility is] limited in dry ecosystems where deep chips layers can lead to soil degradation, fire hazard and aesthetic issues within parks”;
- “Only feasible where access is good and machinery won’t cause soil compaction”;
- “Involves the cost of chipping for shredding (\$600/h), the time to find a market ... and most importantly the cost of hauling the chips away”;
- “Currently the cost of chipping etc. is PROHIBITIVE”;
- “Chippers also cannot deal with some waste materials like roots and stumps”;
- “Wood produces the same amount of CO<sub>2</sub> whether it is burnt or left to rot, the difference being when it is burnt it releases the gas all at once like a balloon popping”;
- “Have you ever seen a cost effective way of chipping stumps from land clearing?”;
- “Incentives and technology towards agricultural chipping need to be developed”; and
- “Fire departments do not encourage chipping. This simply moves the fire hazard from one area to another”.

Specific comments regarding “cogeneration” as an alternative included:

- “A great idea provided that the facility would pay enough to offset the cost of loading and shipping it there”;
- “We ship 85 – 90% of our waste to the co-generation plant in Williams Lake”;

- “Some community forests are researching local options, yet actual financial viability is still years away – transportation to existing facilities is not a viable option for much of the province”;
- “While we do send some chips to our local licensee for their co-gen plant, we have been told that they will not be able to handle all of our waste and they prefer the clean white wood waste”; and
- “Consumers have to balance supply, demand and seasonal fluctuations in inventories and quality characteristics ... central collection and processing points can be very beneficial”.

Additional specific comments and suggestions included:

- “The purchase price of \$100,000 [for forced air technology] is out of reach for a community-based small licensee”;
- “More burning with proper conditions is the answer”;
- “By all means, encourage alternative procedures for disposal that are economically feasible, but if they do not exist in a given area, then do not impose this regulation onto forest licensees”;
- “Ensure that regulations ... are simple and clearly outline to allow for business development – provide a realistic phase in period to allow for business development to occur”;
- “Increasing regulatory requirements will force development by the private sector of innovative methods for vegetative waste disposal”;
- “The recognition of the feasibility and desirability of alternatives to open burning is itself an argument in favour of a stringent open burning regulation”;
- “To take away the tools we have to deal with these major issues [forest pest coupled with the effects of climate change] when a viable option is not fully developed is too restrictive”;
- “Regional or District exemptions to the Provincial Regulatory requirements should be allowed”; and
- “Go back to the ‘old system’ where somebody would come out and inspect their piles before they were allowed to burn – combined with venting index information...this system worked well to encourage good, clean burning practices that resulted in fewer complaints”.

### C. Cumulative effects

The zoning approach being proposed by the ministry, with open burning requirements targeted to smoke sensitivity zones, is intended to address cumulative effects of air emissions in more densely populated airsheds (see intentions paper section 4.9 C).

*Response Form Question 9.3: Do you have any comments or suggestions regarding cumulative effects and open burning smoke control?*

Most respondents who commented on this topic expressed concern regarding maintenance of air quality and the interaction of factors that affect air quality. One respondent, for example, noted that “it is important to consider harmful effects from all [emission sources] and cost effective ways to control them”.

Comments from respondents included: “PM<sub>2.5</sub> can be carried long distances, so exemption for remote burning should only be practiced with caution”; “additional pollution may occur within municipalities due to increased truck traffic (vehicle emissions and road dust) as a result of hauling of wood debris to disposal facilities”; “[there is a] need to consider the local weather/prevaling wind conditions which can cause smoke to travel and settle in different areas...particularly in complex mountainous terrain such as the southern interior” and “except for forestry, open burning is a very small part of smoke emissions in the Prince George area – much more attention should be directed to the major pulp mills in the area”.

Respondents suggested that “there needs to be a regular review of the zones in order that they can be modified easily as required based on cumulative burning experience”; or that “the impact of cumulative effects should be monitored through annual mean concentrations reductions in particulate matter”. One respondent recommended “calculat[ion of] the cumulative effects, and publish[ing] them daily and with each application to burn, so that applicant knows the full picture and that his fire may be limited”.

Other comments in response to this question included:

- “It is not clear if the forest industry will be ‘penalized’ (e.g., unable to burn) by the actions of other industries that are not subject to this regulation”;
- “The smoke from wood stoves and burning barrels are the biggest contributors of smoke”;
- “The ministry has...defin[ed] far too much of the province as sensitive to smoke effects”;
- “Why can’t [the ministry] use city limits and list the cities and towns where regulations would apply?”;
- “Cumulative effects and open burning smoke control go hand in hand – we must ensure that there is good scientific based information stating what the cumulative effects may be and rationalize what when telling proponents that other systems than burning need to be employed”;
- “We support allowing less densely populated communities to ‘opt in’ to higher levels of regulation – we also feel that the current zoning ignores the ecological impacts of cumulative effects of air emissions”; and
- “The scope, specifically exclusion of selected burning activities (e.g., resource management open fires, burning for agricultural purposes) limits its ability to protect against cumulative exposures occurring from burns exempt from the regulation”.

## 11. Climate change and open burning

The ministry acknowledges that some alternatives to open burning may generate more greenhouse gases than open burning. The protection of public health from the impacts of inhalable particulates is an equal priority for government (see intentions paper section 4.10).

*Response Form Question 10.1: Do you have any comments regarding climate change and open burning and/or provisions in the proposed regulation to protect human health to generation of greenhouse gases?*

Several respondents who commented on this topic noted that “inhalable particulate matter emissions are at least as important as greenhouse gas emissions” and that “government must frame this regulation in the context of risks and benefits to human health from one policy action versus another”, commenting, for example, that “the effects of open burning on health [are] minimal compared to many other ‘acceptable’ forms of air pollution”. Several respondents commented that much of the open burning that occurs in the province is in “remote” and unpopulated areas, limiting health impacts.

With respect to GHG emissions, some respondents noted that the transport and machinery operation emissions from chipping and trucking vegetative debris may be as great as or greater than CO<sub>2</sub> emissions from burning or decaying material. One respondent, for example, commented that “the proposed changes to the OBSCR, at least in the rural areas of the province, where viable alternatives are not currently available, seem contradictory [to government objectives to reduce the province’s carbon footprint]”. Respondents also commented or raised questions regarding potential GHG emissions from burning relative to other sources, for example: “does more GHG from secondary life-cycle emissions provide a net benefit that is higher than smoke particulates?”; “wood or any other biomass, creates the same amount of CO<sub>2</sub> when it rots as if it were burnt, burning releases the gas instantly”; and “wood burning is only greenhouse neutral if the wood results from sustainable forest management practices”. Recommendations for the ministry included:

- “[The ministry should] emphasize programs that re-use vegetative material (e.g., wood pellets, processes that stress natural decomposition)... for slower release of GHG and/or processes which capture the energy or heat or gases – co-generation, gasification”;
- “At some point a balance must be struck that accommodates both [immediate human health and greenhouse gas emissions] and also factors in economic impacts”; and
- “We believe that open-burning practices must be considered within the context of overall carbon sequestration and proper land management practices to establish healthy forests that are carbon sinks as opposed to decadent timber areas that are emitting carbon”.

## 12. Protection of human health and the environment

*Response Form Question 11.1: Are there any aspects of the regulation and management of open burning and smoke control that could significantly affect human health or the environment that are not, in your view, sufficiently addressed in the proposed revisions to the regulation?*

Respondents who addressed this question were almost equally divided in their opinion of whether the proposed revisions to the regulation adequately addresses human health or environmental concerns related to open burning and smoke control. Many respondents pointed to their previous comments for additional details. Specific concerns identified by respondents included: “overall burden of illness associated with open burning”; “the total ignorance of pulp mill smoke and chemical emissions in Prince George”; “moisture content [as it] determines [the effectiveness of] the combustion process”; and “unintended consequences of fire risk at the urban interface”.

Additional specific comments or suggestions included:

- “Regulatory incentive (fines, administrative penalties) should be provided”;
- “Exempted burns (i.e., interface burns) should be responsible to a set of rules that protect health issues”;
- “Implementation of a more refined system to determine if the venting and other indexes are appropriate for burning”;
- “Measures...to alert persons with health issues and particular sensitivities to smoke – local communication channels could be set up to ensure the high risk public knows when burning is going to happen in the area – [those undertaking burns should] work with local health professionals when they have plans to burn slash”;
- “[Closer consideration of the environmental impacts of] larger forest fires [as well as] of forced air technology”;
- “Unauthorized materials [‘finding’] their way into waste piles...result[ing] in toxic emissions”;
- “[The current system of burning only when air quality and venting index is good] seems to work fairly well for everyone”; and
- “[Our organization is] receiving increasing number of calls from individuals suffering from domestic fireplaces – provincial regulations standardizing this requirement [wood stove certification], as well as dealing with the impacts of poor burning existing fireplaces and stoves, would be a significant tool in addressing the human impacts of air pollution”.

**Response Form Question 11.2: Do you have any other comments or suggestions for the ministry?**

Many respondents provided extensive supplementary comments or additional information (such as burn or smoke management plans) in separate submissions or accompanying documentation to the response form. Detailed submissions were received, for example, from a number of provincial and regional organizations, including forestry and cattleman’s associations, B.C. Transmission Corporation, the Business Council of B.C., the Private Forest Landowners Association, the B.C. Fruit Growers Association and the B.C. Wildlife Federation. These comments and materials have been compiled for review by ministry staff. Information from submissions that is relevant to specific response form questions has been included under the relevant sections of this summary document wherever appropriate.

Many of the respondents addressing this question suggested that the ministry undertake additional consultation and communication effort prior to implementing proposed revisions to the regulation. Respondents commented that the regulatory changes may have significant financial ramifications if implemented, hence broad understanding and acceptance of the ministry’s intention is imperative in moving forward with regulatory development.