bulkley valley - lakes district
airshed management society

BVLD AIRSHED MANAGEMENT PLAN: A COMMUNITY ACTION PLAN *for*

CLEAN AIR

June 21, 2012

Foreward

The Bulkley Valley Lakes District (BVLD) airshed management plan is a community action plan for clean air. Airshed management planning is a holistic, collaborative community process to address the cumulative impact of human activities on air quality. Airshed planning is ongoing. There is always a need for airshed monitoring and evaluation and research. Air pollution sources can change according to changes in human activities. New technologies and new ideas can offer opportunities for air quality improvements. And it takes time to realize air quality improvement and to recognize air quality trends and needs.

As such, this BVLD Airshed Management Plan 2012 is a living document. It builds on previous work (see acknowledgements), it provides a comprehensive documentation of current airshed planning strategies, and it offers a strong foundation on which to continuously build for the future.

The BVLD airshed management plan was first developed in 2004 by the BVLD Airshed Management Society (AMS), a non-profit society with charitable status governed by an elected board of directors. The society is responsible for overseeing all plan updates and its implementation. The Ministry of Environment (MOE) works closely with the AMS and is responsible for air quality monitoring and assessment, a critical role for supporting airshed management planning.

This living document is for all BVLD citizens who are concerned about the quality of the air we breathe and its stewardship, to stakeholder groups involved in economic and governance activities that can affect clean air, and to educators and researchers in air quality and human health.

This living document is for all BVLD citizens who are concerned about the quality of the air we breathe and its stewardship, to stakeholder groups involved in economic and governance activities that can affect clean air, and to educators and researchers in air quality and human health. We welcome your feedback and your participation in BVLD AMS activities.

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Acknowledgements

The BVLD Airshed Management Plan was originally a five year plan and has undergone three reviews to date. The first two were by the AMS board and former facilitator which resulted in the 2006 revision and the 2009 addendums to the plan, and the third was by Levelton (2010). These reviews were used as the basis for this revision to the airshed plan, with the analysis in the 2009 addendums as the starting point.

This revision was done by Cariboo Environmental Quality Consulting Ltd. in conjunction with the BVLD Clean Air Plan Update Committee of the BVLD Airshed Management Society. The Clean Air Plan Update Committee consisted of the following members: AJ Downie, Ben Weinstein, Dave Duncan, Barbara Oke, Doug Bysouth, Paul Schwarz, and Garth Ehalt. Mike Van Arem, (Canfor), Colin Vandergaag (HFP, West Fraser), and Gary Quanstrom (West Fraser, PIR Division) provided valuable feedback to an earlier draft of the revised plan.

The revision process began with recommendations by Cariboo Environmental Quality Consulting Ltd. that were presented at stakeholder workshops held in the area from February 29, 2012 to March 2, 2012 (Cariboo Environmental Quality Consulting Ltd., 2012). There were four workshops, organized by sector: Open Burning, Industrial Sources, Transportation, and Woodstoves/Community Planning. The feedback arising from the workshops has strengthened the revised plan.

Overall this review of the BVLD airshed management plan has determined that the previous plan was well thought out during its development. There have been many successes through the implementation of the plan and several areas where leading edge work has been done, such as custom venting forecasting, an excellent woodstove exchange program, annual burn operator's forums, and woody debris management.

Overall this review of the BVLD airshed management plan has determined that the original plan was well thought out during its development. There have been many successes through the implementation of the plan and several areas where leading edge work has been done such as custom venting forecasting, an excellent woodstove exchange program, annual burn operators forums, and woody debris management. Given the plan's basic strengths and success to date, the emphasis of the revision was therefore on updating and improvement rather than a major review of the plan's fundamentals.

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Community Action Plan for Clean Air

The BVLD Airshed Management Plan aims to improve air quality in the corridor that stretches from Kitwanga to Endako. This area has a population of approximately 25,000 people[1] and covers 35,000 square kilometers.

Since smoke and road dust have the largest impacts on local air quality, this plan primarily targets a pollutant known as particulate matter, (PM).[2] The Plan presents a set of goals, indicators and strategies that together provide a roadmap to achieving better air quality (with respect to PM) through both continuous improvement and by reducing the frequency, severity and duration of periods of poor air quality, also known as an air quality episodes.

Plan development has involved industry, health officials, Non Government Organizations (NGOs), concerned citizens and government (local, regional and provincial) officials. There is common recognition that PM pollution is a public health concern and can affect economic opportunities in the airshed. In searching for a balance between environmental, social and economic concerns, it became apparent that with improved education, planning and coordination among stakeholders, the goal of improved air quality is achievable.

At the beginning of this planning process it was made clear by the various stakeholders that for the plan to succeed clear goals, indicators, and strategies for each emission source needed to be identified. In order for this emission-specific work to be accomplished, it was also realized that general goals, indicators and strategies for the entire airshed also needed to be set. The BVLD Airshed Management Society's mission is to facilitate clean air solutions in the Bulkley Valley - Lakes District for the Protection and Improvement of the Health of BVLD Residents by Continuously Improving Air Quality. As part of this 2012 update, the two original goals were expanded and enhanced to become five goals:

1. Maintain and improve our understanding of air quality science in the BVLD
2. Meet ambient air quality targets at Ministry of Environment monitoring stations in the airshed
3. Improve stakeholder awareness of and participation in airshed management activities
4. Reduce emissions in all sectors
5. Strengthen the linkage between air quality and human health by identifying specific goals, indicators and strategies as appropriate

These general goals form the basis of discussion at the BVLD Airshed Management Society's Annual General Meeting. Table A elaborates on these overall Goals by presenting their associated Strategies and Indicators in the context of the AMS mission. Table B is a summary of Goals, Strategies, and Indicators by emission sector and includes the key stakeholders responsible for implementing each strategy.

[1] Canadian Census Data 2011: www.bcstats.gov.bc.ca
[2] Chapter 9 introduces more recent AMS work directed to pollutants related to vehicle emissions.

Table A: General Goals, Strategies and Indicators

GENERAL GOAL	STRATEGIES	INDICATORS
1. Maintain and improve our understanding of air quality science in the BVLD	• Maintain ambient monitoring for PM and meteorology • Update micro emission inventory (MEI) • Consider future impact assessment studies • Encourage academia to conduct relevant and local research	• Number and % of instruments that pass MOE audits • MEI not more than 10 years old • Others as developed and suggested by AMS and stakeholders
2. Meet ambient air quality targets[3] at MOE monitoring stations in Smithers, Telkwa, Houston, BL: a. PM_{10} – 50 (24hr Avg) b. PM_{10} – 15 (Annual Avg) c. $PM_{2.5}$ – 25 (24hr 98%ile) d. $PM_{2.5}$ – 8 (Annual Avg) e. $PM_{2.5}$ – 6 (Long-term goal for 2020, confirmed after careful review in 5yrs once new instruments in place: 2017)	• MOE Meteorologist collects, analyzes and annually reports out on data	• Statistics (identifying attainment of 5 targets), as calculated for 4 monitoring stations
3. Improve stakeholder awareness of and participation in Airshed Mgmt activities	• Hire a coordinator • Maintain an updated website • Maintain board representation for the following stakeholder groups: provincial government, industry, local government, heath and the general public (NGOs, etc.) • Develop and deliver community presentations • Develop and implement an annual reporting procedure to track plan implementation	• Number of community presentations delivered • Website updated at least semi-annually • Number of entities reporting annually (at AGM or other venue) • Number of partners contributing to implementation, both financially and in-kind
4. Reduce emissions in all sectors	• See chapters 4-9 for detailed sector-specific strategies	• See chapters 4-9 for detailed sector-specific indicators
5. Strengthen linkage between air quality and human health by identifying specific goals, indicators and strategies as appropriate	• Invite NHA health experts to a board meeting to discuss options • Strike committee to review options and prepare recommendation to board	• Incorporation of health information and/or indicators in an update by June 2013

[3] All targets should be reviewed as part of a plan review in 5 years (2017)

A total of six emission source categories are targeted in this revised plan. These categories are:

- Open Burning
- Industrial Sources
- Wood Burning Appliances
- Backyard Burning
- Transportation – Road Dust
- Transportation – Vehicle Emissions

Detailed information relating to the six sources, along with source-specific Goals, Strategies and Indicators can be found in their respective chapters. A summary of these is included in Table B below.

Since the implementation of the 2004 *Community Action Plan for Clean Air* much progress has been made towards improved air quality. Many of these successes are documented in the source-specific chapters and even more information is available in addendums found online at www.cleanairplan.ca . By updating and enhancing our goals and implementing new strategies, the AMS believes that air quality can be improved even further.

Table B: Summary of Goals, Strategies, and Indicators by Emission Sector

Chapter 4: Open Burning			
GOAL	**STRATEGIES**	**KEY STAKEHOLDERS**	**INDICATORS**
1. Reduce emissions and impacts associated with all kinds of open burning	Continue Annual Burn Operators Forum and promotion of BMPs to all stakeholders.	All stakeholders	Number of Advisory Level Days in fall burn season (Oct-Dec) Average $PM_{2.5}$ over 3-month burning season
	Annual sector stakeholder reports to the AMS via Burn Operators Forum	All stakeholders	
	Conduct OBSCR compliance activities	MOE	Number of OBSCR tickets issued to forest sector
1a. Reduce emissions and associated impacts from open burning in forestry sector	Develop and implement Smoke Management Plans (primarily for use by large licensees). Include requirements to use the following Best Management Practices (Custom Venting Forecasts, Piling techniques and seasoning, Smoke release periods, and communication/reporting)	MOE, Large Licensees, BCTS, Woodlots	Number of SMPs developed and signed off by MOE; Number of signatories to the plans (including small operators)
	Promote small operator participation in Smoke Management Planning by conducting outreach seminar	BCTS, Woodlot Associations, AMS	Number of attendees at SMP outreach seminar
	Prepare, publish and distribute an Information Brochure on the OBSCR and BMPs, tailored to small operators	MOE, AMS, BCTS, Cattlemen's and Dairymen's Associations	Number of small licensees receiving brochure

Table B: Summary of Goals, Strategies, and Indicators by Emission Sector

Chapter 4: Open Burning (continued)			
GOAL	**STRATEGIES**	**KEY STAKEHOLDERS**	**INDICATORS**
1b. Reduce emissions and associated impacts from open burning related to Community Wildfire Protection burning	Develop, publish and distribute information about BMPs for reducing debris burning associated with Wildfire Protection activities, and for minimizing impacts from burning that must occur.	AMS, FLNRO, Local/Regional Governments	Number of communities receiving BMP information
	Review and comment on Draft Community Wildfire Protection Plans	AMS	Number of plans in place and number and % of plans commented on
1c. Reduce impacts from agriculture and land development debris burning	Prepare, publish and distribute an Information Brochure on the OBSCR and BMPs, tailored to agriculture and land development	AMS	Brochure posted online and provided to agriculture associations
	Deliver educational presentation at Cattlemen's/Dairymen's meeting	AMS	Number of educational presentations given
2. Provide a proactive response when air quality is deteriorating by stopping open burning	Use Pollution Prevention Notices (PPNs) as a tool to initiate a burn ban that stops open burning before air quality deteriorates to advisory threshold	MOE	Number of PPN's vs Number of Episodes where advisories were issued during fall open burning season
3. Maintain visibility in BVLD during burn season	Improve two-way communication between burn operators and aircraft operators by inviting aircraft operators to participate in Smoke Management Planning and Burn Operator Forums.	Large licensees, Aircraft Operators	Attendance of aircraft operators at burn operators forum.
	Issue daily burn notifications via email	Licensees	Percent of licensees emailing burn notification.

Table B: Summary of Goals, Strategies, and Indicators by Emission Sector

Chapter 4: Open Burning (continued)			
GOAL	**STRATEGIES**	**KEY STAKEHOLDERS**	**INDICATORS**
4. Promote and explore alternatives to all types of open burning	Include alternatives exploration as a reporting item on this sector's "AMS annual report form" Maintain Woody Debris Inventory on AMS website	AMS, Large licensees and small operators AMS	Number and % of stakeholders reporting that they seriously considered alternatives

Chapter 5: Industrial Sources (Stack Emissions)			
GOAL	**STRATEGIES**	**KEY STAKEHOLDERS**	**INDICATORS**
1. Reduce air quality impacts from industrial sources	Develop & implement Episode Management Plans (EMP) to reduce impacts during periods of poor air quality	Permittees, MOE	Number of EMPs developed and signed off by MOE; Percentage of episodes where EMPs were implemented
	Maintain compliance with permits by optimizing effectiveness and efficiency of pollution control works (e.g.: control of input temperature to ensure best combustion)	Permittees	Number of relevant non-compliances (reported to MOE or resulting from inspection)
	Conduct compliance assessment activities (e.g.: inspections)	MOE	Percent of compliance assessment activities identifying no non-compliance with air permits[4]
	Upgrade existing facilities towards Best Achievable Technology (BAT) as opportunities arise or as necessitated by environmental impact assessments.	Permittees, MOE	Number or % of BAT upgrades
	Hold annual forum to share ideas and promote continuous improvement Annual sector stakeholder reports to the AMS.	AMS, MOE, Permittees	Participation (%) in Annual Industrial Emissions forums

[4] Looking at non-compliance that directly relates to air quality protection

Table B: Summary of Goals, Strategies, and Indicators by Emission Sector

Chapter 5: Industrial Sources (Stack Emissions) (continued)			
GOAL	**STRATEGIES**	**KEY STAKEHOLDERS**	**INDICATORS**
2. Minimize the potential for impact from future growth in this sector	Consider air quality in land use and community planning initiatives	Local / Regional Governments	Number or % of OCP's that recognize air quality Number of zoning referrals and proposed projects responded to by AMS
	Carefully review proposed new projects to identify opportunities to protect air quality	MOE, Local / Regional Governments, AMS	Indicator to be developed for this with different stakeholders
	Consider AQ when reviewing options for locating potential new facilities	Permittees, Local/Regional Governments	Indicator to be developed for this with different stakeholders
	Require BAT for all new facilities	MOE	% of new facilities meeting BAT

Table B: Summary of Goals, Strategies, and Indicators by Emission Sector

Chapter 6: Wood Burning Appliances			
GOAL	**STRATEGIES**	**KEY STAKEHOLDERS**	**INDICATORS**
1. Reduce emissions and impacts associated with all wood burning appliances	Continued operation of woodstove subcommittee	AMS	Number of wintertime AQ advisory level days Wintertime average $PM_{2.5}$
	Woodstove change out program.	All stakeholders	Number of woodstoves exchanged
	Develop innovative strategy/rebate program for burning dry wood	AMS, firewood suppliers	Strategy developed, rebates issued
	Public Education campaigns (stove operation and seasoned wood)	MOE, AMS, Local Governments	Number of education campaigns undertaken, brochures, burn it smart, etc (articles, promotions) Number of participants at education campaigns
	Bylaw Development and enforcement	AMS, Local Governments, Fire Chiefs	Number of bylaws in effect Number of violation tickets issued
2. Promote more sustainable home heating systems	Require new subdivisions to have district heating potential	Local Governments, AMS	Number of new subdivisions with district heating potential
3. Improve our understanding of the health effects of wood burning to use as leverage for achieving Goal 1	Support the Woodstove Exchange Study through in-kind work	Universities, MOE, AMS, Local Governments	Studies / publications written connecting health effects of wood burning.

Table B: Summary of Goals, Strategies, and Indicators by Emission Sector

Chapter 7: Backyard Burning			
GOAL	**STRATEGIES**	**KEY STAKEHOLDERS**	**INDICATORS**
1. Reduce air quality impacts attributable to backyard burning	Implement public communications strategy to promote local alternatives to open burning http://www.bcairquality.ca/topics/rcbc-alternatives.html	AMS	Number of new or updated bylaws with provisions relating to air quality protection
	Implement backyard burning bylaws in fringe areas. For references, see: http://www.bcairquality.ca/reports/pdfs/bylaws-2011.pdf http://www.bcairquality.ca/reports/pdfs/aq_bylaws_bc.pdf http://www.bcairquality.ca/reports/model-bylaw-backyard-burning.html	Local/Regional Governments, AMS	Public complaints to local government and/or LOE (especially in fringe areas)

Chapter 8: Transportation - Road Dust			
GOAL	**STRATEGIES**	**KEY STAKEHOLDERS**	**INDICATORS**
1. Reduce emissions and impacts associated with road dust from paved surfaces	Sweep city streets as early as safely possible in the springtime	Local government maintenance crew	Number of PM_{10} Advisory Level Days in spring road dust season (Feb-April)
	Hold annual Road Dust Operators forums and (see next page)	AMS, Local/Regional Governments & Hwy maint. crews	Date of commencement of sweeping operations in each community

Table B: Summary of Goals, Strategies, and Indicators by Emission Sector

Chapter 8: Transportation - Road Dust (continued)			
GOAL	**STRATEGIES**	**KEY STAKEHOLDERS**	**INDICATORS**
1. Reduce emissions and impacts associated with road dust from paved surfaces	Transportation stakeholders workshops to share successes and challenges as well as report on activities toward implementation of the airshed plan	AMS, Local/Regional Governments & Hwy maintenance crews	Number of attendees at Road dust forum
	Investigate opportunity for a pilot program to sweep streets twice during the spring (perhaps green bonus can factor in)	Local government maintenance crews	Pilot program investigated and commenced.

Chapter 9: Transportation – Vehicle Emissions			
GOAL	**STRATEGIES**	**KEY STAKEHOLDERS**	**INDICATORS**
1. Reduce impacts from vehicle idling	Hold stakeholder workshop to further scope the issue and develop refined strategies for raising public awareness about idling impacts	School District, Local Governments, Business Associations	Incorporation of idling strategy and indicator in an update by June 2014
2. Reduce vehicle emissions	Hold stakeholder workshop to further scope the issue and develop refined strategies for promoting low emissions options (e.g.: biking, carpooling, public transportation, etc.)	All stakeholders	Incorporation of emissions reduction strategy and indicator in an update by June 2014
	Explore opportunities for holding vehicle emissions clinics in conjunction with other airsheds	All stakeholders	Number of vehicles participating

Table B: Summary of Goals, Strategies, and Indicators by Emission Sector

Chapter 9: Transportation – Vehicle Emissions (continued)			
GOAL	**STRATEGIES**	**KEY STAKEHOLDERS**	**INDICATORS**
3. Reduce or eliminate air quality degradation attributable to rail traffic (primarily idling engines)	Engage CN Rail to identify issues and opportunities for improvement	AMS, CN Rail	Incorporation of rail traffic strategy and indicator in an update by June 2014
4. Reduce or eliminate air quality degradation attributable to trucking (primarily idling engines)	Engage Truckers Association to identify issues and opportunities for improvement	AMS, truckers	Incorporation of trucking traffic strategy and indicator in an update by June 2014