



Chapter 10: Road Dust **2009 Addendum**

Chapter 10 of the BVLD Clean Air Plan addresses road dust emissions. These emissions tend to be localized and seasonal in nature, but they continue to contribute to spring air quality episodes in the BVLD Airshed. The Plan recognizes that implementing Best Management Practices is likely the best approach for reducing impacts from road dust, and the 2006 update describes a number of techniques and practices already employed by some local road maintenance operators. Table 10.1 describes specific strategies that were implemented since the plan was written in 2004, and Table 10.2 reports back on the indicator listed in *Section 10-6* of the Plan.

Table 10.1: Update of Strategies Implemented 2004-2008

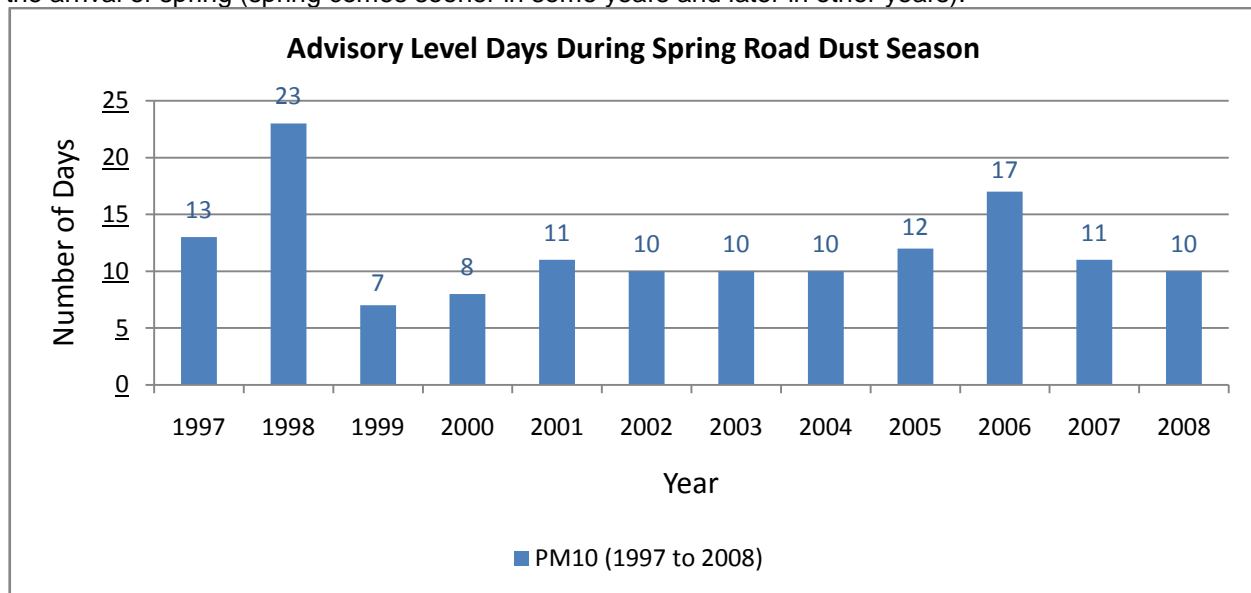
Goals	Strategies
<p>1. Reduce or eliminate air quality episodes attributable to road dust (during late winter / early spring period)</p>	<p>Collaborate efforts with municipality and highway crews to develop a proactive approach to road maintenance</p> <p>On January 12th, 2004 the AMS held a road dust meeting in Smithers. Attendees included representatives from the Ministry of Transportation and Infrastructure, local government Works Departments, Ministry of Environment and the BVLD Airshed Management Society. Meeting topics included: significance of road dust to air quality, best practices in Prince George; current practices across the BVLD and a wish list for improving road dust management. Many next steps were recorded, however this was the one and only meeting of the 'Road Dust Subcommittee'. It is unclear how many action items were followed through.</p> <p>Promote Best Management Practices for use in highways maintenance contracts that include air quality as a consideration</p> <p>On highways, the Ministry of Transportation and Infrastructure has avenues within their Maintenance Agreements to immediately address isolated situations where abrasive/aggregate material deposits on the hwy create unsafe situations for highway users. Air quality issues are addressed within 7 days of detection, where the situation conflicts with local bylaws.</p> <p>In July 2004 the Ministry of Transportation and Infrastructure released a document called <i>Best Management Practices for Highway Maintenance Activities</i>. This document identifies environmental issues related to highway surface maintenance and dust management, and outlines BMPs that can be taken to lessen the impacts from these activities. It is unclear how this document has been promoted and used during the implementation of the Clean Air Plan given that the only Road Dust Subcommittee meeting occurred prior to the release of the document.</p>

	<p>This document was updated in January 2009 and is called: <i>Environmental Best Practices for Highway Maintenance Activities</i>, and is available online at: http://www.th.gov.bc.ca/publications/eng_publications/environment/references/Best_Practices/Best_Practices_Manual_Complete.pdf</p> <p>Continuous improvement of operations</p> <p>In March 2005 the Ministry of Environment (formerly the Ministry of Water, Land and Air Protection) released <i>Best Management Practices to Mitigate Road Dust from Winter Traction Materials</i>. This document contains BMPs related to material selection, application and cleanup which can assist in reducing impacts of road dust on communities across B.C.</p> <p>This document was passed to road maintenance crews at two 'Road User Meetings', Nov 17th, 2005 and May 23rd, 2006. Both meetings were held in Houston.</p>
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Table 10.2: Indicator Results

Goals	Indicators
<p>1. Reduce or eliminate air quality episodes attributable to road dust (during late winter / early spring period)</p>	<p>Number of potential episode days during spring road dust season.</p> <p>This indicator has been replaced with "Number of Advisory-Level Days". Figure 10.1 illustrates the number of advisory-level days (based on PM₁₀ concentrations) during the spring road dust season, which is defined as February to April for the purpose of this indicator (since other PM₁₀ emission sources are not as active during these months).</p> <p>There has been no improvement in the number of "Advisory-Level Days" for PM₁₀ or PM_{2.5} in the past five years during the spring road dust season. The average number of Advisory-Level Days prior to 2004 was 11.7 and the average from 2004-2008 was 12 (almost identical).</p> <p>The largest issue preventing clean-up of road traction material (sand and gravel) which causes road dust is the uncertainty of the timing of the final snowfall of the year; if a municipality cleaned up all traction material and then it snowed there would be considerable cost:</p> <ul style="list-style-type: none"> a) putting down more material, and then b) cleaning it up again. <p>For this reason, municipal and highway crews wait until they are certain that it won't snow again until autumn. The length of time in spring that a municipality waits to clean up road traction material coupled with the specific meteorology of that spring (how dry it is) determines the severity of the 'road dust season'.</p>

Figure 10.1 – Advisory Level Days During the Spring Road Dust Season. This figure shows the number of days during the spring road dust season (defined as February to April) when the 24-hour average concentration of PM₁₀ exceeded 50 µg/m³ in Burns Lake, Houston or Smithers. There is no improvement in the number of Advisory Level Days over the past five years. The results are strongly influenced by meteorological patterns and the arrival of spring (spring comes sooner in some years and later in other years).



Future Direction:

Despite road dust being less of a health concern than smoke or other combustion sources because of its larger particle size range, road dust is a nuisance which can affect the health and well being of BVLD residents. During the road dust season the Ministry of Environment does occasionally receive air quality complaints. Furthermore, a prolonged road dust season can skew annual air quality statistics.

More work is needed to address springtime road dust. Another meeting hosted by the AMS which reviews and explores technological improvements over the past 5 years would allow local municipalities and road crews to share ideas and stories and could lead to eventual improvements in road dust management. Also, this chapter should be expanded to include road dust from unpaved roads (municipal and forestry roads) as complaints are also registered from these areas, especially during dry summers.