

**1. RWDI Summary of Comments from Nov. 29, '09 Meeting**

Comment	Addressed / Response
Contaminants to be measured -- MOE and at least one other party requested that the target compound list for method TO-15 be expanded to include aldehydes.	But EC wanted scaled back list??
Data recovery rate -- the plan should specify minimum data recovery rates. The MOE indicated that their practice is a minimum of 75% season-by-season and annually. The MOE operations manual should be consulted in this regard.	Added to QA section
Data availability -- the MOE indicated that the data submitted to the MOE will be housed in their database and will be publicly available as with all of their data. Can state this in the plan.	Added to Reporting
Equipment type for PM2.5 is unspecified but should conform to a US EPA approved method.	Specified that the equipment used must conform to a U.S. EPA equivalent method.
The datalogger approach may vary, depending on the ultimate contractor and should not be specified; RWDI's approach is one datalogger per trailer.	Updated text to refer generally to the Data Acquisition System, and left it to contractors discretion.
For the source apportionment modelling, the plan should be revised to indicate that the contaminant screening provided is preliminary and will be reviewed at the start of the modelling work, in light of available monitoring data. Requests were made to include benzo(a)pyrene in the preliminary screening list.	Added to S. 2.4.1, Pollutants of Concern
Of the site options identified by MRC, the preferred ones based on the meeting were locations 2, 6 and 10. They were considered the best in terms of being downwind of the corridor for prevailing winds, away from major structures that might affect local wind flow, and relatively well separated from residences that might be impacted by the noise. These sites also cover a range of rail traffic volume conditions on the corridor.	Updated the text
EC suggested that shorter periods of paired upwind-downwind sampled be considered.	Not considered at this time

## 2. Environment Canada Comments (E-mail from Dave Broadhurst)

Comment	Addressed / Response
<p><i>1. Introduction:</i> Such a follow-up program should include a clear statement of issues and objectives to provide overall direction to the program such as:</p> <ul style="list-style-type: none"> <li>- Assess whether there are any exceedances of Ambient Air Quality Criteria or Canada-wide Standards</li> <li>- Evaluate the effectiveness of any measures taken (such as the use of tier 4 complaint trains) to mitigate adverse environmental effects</li> <li>- Verify the accuracy of the results of the air quality dispersion modelling within the environmental assessment</li> </ul>	<p>Objectives added to end of introduction.</p> <p>Taken directly from MOE <i>Operation Manual for Air Quality Monitoring in Ontario</i>.</p>
<p><i>2.0 Scope:</i> Environment Canada notes that, if additional meteorological data is desired, the standard meteorological tower height is 10m.</p> <p>The expected duration of the monitoring program is difficult to estimate based on the Project Conditions alone. Environment Canada requests that the Plan include some indication of the timeframes in which the various components of the program are expected to occur. <b>Environment Canada also requests that this be discussed at the working group meeting on December 8, 2009.</b></p>	<p>Prefer a shorter meteorological tower, closer to height of air quality measurements, to determine localized wind effects at air quality measurement point. Helpful for source apportionment work. Added a comment about the duration of the program to be assessed annually via the annual report.</p>
<p><i>2.1 Continuous Monitoring:</i> Environment Canada recommends that the PM<sub>2.5</sub> monitors selected for continuous monitoring meet the United States Environmental Protection Agency FEM designation (Federal Equivalency Method).</p>	<p>Added FEM designation</p>
<p><i>2.2.2 Polycyclic Aromatic Hydrocarbons (PAHs):</i> The list of PAHs to be monitored is very extensive. There are more species on this list than the standard suite of 16 PAHs routinely measured by the National Air Pollution Surveillance (NAPS) stations in Toronto. It would be acceptable to Environment Canada for the list of substances to be pared back to B(a)P and any other PAHs identified as notable components of diesel locomotive exhaust.</p> <p>One of the listed PAH species, naphthalene, is not well-captured by the sampling methodology that is proposed. NAPS treats it as a VOC by determining concentrations based on canister sampling.</p> <p>The first compound in the second column of PAHs should be benzo(a)fluorene.</p>	<p>From a laboratory cost perspective there is no savings by scaling back the PAH list. PAHs included in summary reporting could be limited to notable components.</p> <p>We have removed naphthalene as it is not a notable component of diesel locomotive exhaust.</p> <p>Spelling corrected</p>
<p><i>2.2.3 Volatile Organic Compounds:</i> Acrolein and formaldehyde are also substances of interest and were included in the short list of substances within the original Air Quality Assessment. Environment Canada suggests that they be included in the Plan.</p>	<p>TO-14/15 list included in reporting includes contaminants of interest</p>

<p>Acrolein is routinely measured by the NAPS network, but not using the canister method.</p> <p>As noted for PAHs, the list of VOCs to be monitored is also very extensive. It would be acceptable to Environment Canada for the list of substances to be pared back to the VOCs included in the dispersion modelling within the project Air Quality Assessment (benzene, 1,3 butadiene, acrolein, acetaldehyde and formaldehyde) plus any others identified as notable components of diesel locomotive exhaust.</p>	<p>Included acrolein in TO-15 (canister) method, as per MOE requirements.</p> <p>MOE requires TO-15 method, so full list of compounds has been included, but ideally report result summaries would cover only notable emissions to reduce reporting confusion of so many parameters.</p>
<p><i>2.3 Siting Requirements:</i> Environment Canada supports the siting conditions proposed in this section. The MOE <i>Operations Manual for Air Quality Monitoring in Ontario</i> notes that site selection must consider locations where the highest concentrations of contaminants are anticipated. Environment Canada expects that this will result in monitors placed within 30m of the edge of the rail corridor. Environment Canada also recommends that monitors be placed on the northeast side of the corridor so that the wind directions producing project impacts will also be likely to support elevated ambient concentrations. Consideration should also be given to factors that would affect locomotive emissions at points along the corridor such as grade and acceleration / deceleration areas.</p>	<p>Added some wording strengthening location siting.</p>
<p><i>2.4.1 Pollutants of Concern:</i> Benzo(a)pyrene data has been collected for several years at stations in Toronto and points to ambient concentrations in excess of the proposed new 24-hour B(a)P AAQC. Environment Canada recommends that benzo(a)pyrene 24-hour averages be added to the highlighted suite of pollutants of concern in table 2.4.1.1.</p>	<p>Table 2.4.1.1 cannot be updated with 24-hour BAP at this time as we currently have no background data for the 24-hour averaging period. However, we have highlighted annual benzo(a)pyrene in the table to indicate that this pollutant should be carried forward in the modeling.</p>
<p><i>3. Quality Control / Assurance:</i> Environment Canada recommends that the Plan include specifications for minimum temporal data coverage. Some sparing of instrumentation may be necessary to ensure that coverage targets are met.</p>	<p>Contractor required to meet 75 % data recovery (whether he have to rent equipment or have a spare is contractor responsibility)</p>
<p><i>4. Reporting and Deliverables:</i> This program will produce a wealth of high temporal resolution observational data that could be extremely valuable for studies of air quality and health impacts along the corridor. Environment Canada recommends that the Plan include provision to archive and back-up the high resolution data (1-minute averages) so that it will be accessible for potential future investigations.</p> <p>Environment Canada suggests that the statistical results for each measured pollutant (page 15) include the frequency of exceedances (if any) of the AAQC and Canada-wide Standards (PM<sub>2.5</sub>).</p> <p>Environment Canada suggests that this section identify any links between the Ambient Air</p>	<p>Incorporated into MOE database</p> <p>Exceedances added to reporting</p> <p>Mitigation recommendations added to annual</p>

<p>Monitoring and Reporting Plan and the revised mitigation plan specified in Condition 7. The revised mitigation plan could include mitigation options should the monitoring program identify exceedances of criteria or standards.</p>	<p>reporting.</p>
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### 3. MOE Comments (E-mail from Dan Orr)

Comment	Addressed / Response
I agree with Environment Canada that the Introduction should include an objectives statement .	Addressed in EC Comments Section
The 1 minute quality assured measurements are to be made available to all data requestors should the need to examine non-standard reporting times be required.	Addressed in EC Comments Section
It should be noted that continuous monitoring data from the 4 Toronto area Air Quality Index stations (Toronto North, Toronto West, Toronto Downtown and Toronto East) can be used for comparison purposes to the Georgetown South-Union/Pearson monitoring data to assess regional air quality characterization.	Included
For the non-continuous measurements...a separate analysis shall be performed for each PAH filter and PUF plug, with individual results being reported for the filter and PUF plug as well as a combined (total) result. A review of the first six months of PAH data will determine if it is warranted to combine filter and PUF plug extracts into a combined analysis.	Included
It should be emphasized that the US EPA TO15 method identified is not limited only to reporting the 64 measurements listed in the document. This method can be used to report up to 189 `hazardous air pollutants` (VOCs), but what gets reported is dependent on the method detection limit. The VOCs reporting list should be expanded, at a minimum, to include aldehydes (e.g., formaldehyde, acetaldehyde, benzaldehyde and acrolein) or other VOCs with quantifiable detection limits.	Addressed in EC Comments Section
Page 11 indicates that the pollutants that should be carried forward for further modelling requirements are to include NOx, and NO2, PM and benzene. PM should be listed as PM10 and PM2.5, and estimates for 24-hour benzo (a) pyrene should also be included in this list.	Updated to specify PM <sub>2.5</sub> , which is considered to be adequate as a surrogate for all PM species. Benzo(a)pyrene has been added , although the 24-hour averaging time has not been explicitly identified.
Quality Control/Assurance section, please indicate that all continuous analysers must do automatic spans and zeros on a daily basis and that all instruments are to be calibrated in the field on a quarterly basis (minimally) or when control limits or normal operating conditions are exceeded.	Included

**4. Toronto Public Health Comments (E-mail from Suzanne Goldacker)**

<b>Comment</b>	<b>Addressed / Response</b>
Concrete objectives help planners to make the best decisions about the details of the project. I recommend that detailed objectives	Addressed in EC Comments Section
Site at least one low income area	TPH comments that the preferred areas do incorporate lower income areas
<i>Selection of Parameters for Monitoring and Modelling:</i> I recommend that the process and rationale for selecting chemical parameters for monitoring and modelling be documented in a way that gives assurance that all potential candidate parameters were considered (within reason), and that the selection was not made on an ad hoc basis. Expert judgement can and should be used to inform the selection of appropriate parameters, but it must be backed up with appropriate references and documentation.	Appendix to be created to show screening of notable contaminants (still in process).
<i>Locations and Receptors for Source Apportionment Modelling:</i> Some interpolation of the modelling results between the receptor locations, or generalization of the results over carefully selected zones might be more useful.	
PM0.1 Monitoring (UFP)	Not addressed as no standard ambient testing method or applicable criteria exist (MOE, EC, NIOSH, US EPA, etc.)

**5. John Sheldon's Comments**

<b>Comment</b>	<b>Addressed / Response</b>
expanding the list of pollutants to be monitored to include Acrolein, ultra fine particles and maybe others was discussed	Acrolein has been added (addressed in EC Comments Section). Regarding Ultrafines, see preceding comment in TPH Comments section.
identify emissions from other sources in the West Toronto area, such as the Canadian Pacific Railway line that goes across mid-Toronto, the Lakeshore Rail line and other sources,	Source apportionment modeling is specified to separate out increased GO traffic and UPRL trains from other rail traffic. However, the Lakeshore line is not part of the study area.
clearly identify the contribution that expanded rail service will make to overall emissions in the area,	Already addressed in the source apportionment modeling plan
be useful in determining any negative health consequences that may occur as a result of the Georgetown South Corridor project, if any, and	Plan already allows for this.
be useful for academic research.	Data will be subjected to appropriate quality control as required by MOE operations manual, will be

	archived by MOE, and will be available to public for research and other purposes.
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**6. Mount Dennis Community Association**

<b>Comment</b>	<b>Addressed / Response</b>
The MDCA expressed "surprise and concern that Metrolinx had "invited to the Working Group a resident from the Mount Dennis area who is not part of our Community Association and does not share its concerns" and suggesting that the Minister had not expected Metrolinx to hand-pick individuals, "however much their views may coincide with what Metrolinx might want to hear".	Metrolinx formed the Working Group as per MOE's conditions of approval.