

AGENCY COMMENT SHEET



Trillium Line Light Rail Transit Extension Addendum Ellwood Diamond, Walkley Yard, Bowesville Station, Limebank Extension
Agency Consultation Comment Summary

Source	Comment	How it was Addressed
Ministry of Environment, Conservation and Parks (MECP) July 4, 2018 - Amanda Graham		
	<p>The Noise, Vibration and Air Quality Report (Air Quality Report) appended to the original Environmental Project Report (EPR) should be revised to assess air quality impacts for the project changes proposed in the Addendum. The proposed project changes include:</p> <ul style="list-style-type: none"> '-Ellwood Diamond grade separation: the preferred alternative is the "Trillium Line Over/Under a modified VIA Alignment", which involves separate crossing alignments for the O-Train trains and freight traffic. '-Walkley Yard: a newly constructed maintenance facility that will accommodate up to 18 trains. '- Bowesville Station: a new alignment and location of the Trillium Line Bowesville Station and Park and Ride that includes a bus loop and bus layup area, a relocated and enhanced 10 m wide multi-use (active transportation and ecological crossing) overpass, an additional 800 m of rail corridor, and a 2819 slot parking lot. '- Limebank Extension: a 3 km extension of the rail corridor, an additional station west of Limebank Road and a passenger pick-up and drop-off location. 	<p>An air quality impact assessment has been undertaken to determine the potential impact from construction and operation of the two new transit stations and the diesel rail line extension. The relevant assessment guidelines and methodologies are outlined in this report, along with the predicted air quality impacts and preliminary discussion on requirements for mitigation during construction of the new transit stations and the rail line extension.</p> <p>These results will be included in the updated EPR.</p>
	<p>The revised assessment should be completed using air dispersion modelling and should include/assess the following:</p> <ul style="list-style-type: none"> '-Maximum emissions from all train, car and bus activities including activities on the rail corridor, acceleration and deceleration at the Stations, vehicle activities in the parking lot, overpass, and passenger pick-up and drop-off areas, and bus activities in the bus loop and layup areas. '- Maximum emissions for the contaminants of concern assessed in the initial Air Quality Report as well as the following additional contaminants: PM2.5 VOCs (benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein) benzo(a)pyrene (as a surrogate for PAHs) '- Cumulative impacts at sensitive receptor locations by summing the predicted maximum emissions with the 90th percentile existing background concentrations for each contaminant of concern and for each averaging period for which the contaminant of concern has a standard or guideline. '-Comparison of maximum cumulative concentrations against relevant standards and guidelines for all averaging periods. 	
	<p>Although the Ministry of Transportation's Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects (June 2012) was developed for transportation projects, the general principles can also be applied to transit project air quality impact assessments. For example, local air quality impacts from transportation corridors are typically assessed within 500 m of the corridor. For transit projects, the study area is typically 300 m on either side of the corridor and 1 km on either side of a Station to account for emissions from the acceleration and deceleration of trains.</p>	
	<p>It is also standard practice for locomotives to comply with the United States (US) Environmental Protection Agency (EPA) Regulations for Emissions from Locomotives. This is indicated in the Memorandum of Understanding between the Railway Association of Canada and Transport Canada, as well as in the associated annual Locomotive Emissions Monitoring Program reports. The revised assessment should clarify why European Union Regulations were used as opposed to the US EPA locomotive standards. The assessment should also demonstrate how the current and proposed O-Train emissions compare with the US EPA standards.</p>	<p>An air quality impact assessment has been undertaken to determine the potential impact; The study area includes all sources and receptors within a one (1) kilometre radius around each transit station, and within a 300 metre radius from the proposed rail extension. The relevant assessment guidelines and methodologies are outlined in this report, along with the predicted air quality impacts and preliminary discussion on requirements for mitigation during construction of the new transit stations and the rail line extension.</p>
	<p>The revised assessment should include the CAL3QHCR receptor grid for the Ellwood Diamond, Walkley Yard, Bowesville Station and Limebank Extension areas, as well as a revised Figure 1. These figures should indicate the locations of the selected sensitive and critical receptors, as well as the most impacted receptors. Please note that both current and future sensitive and critical receptors (including but not limited to schools, hospitals, and daycares) should be assessed.</p>	
	<p>The revised assessment should also use the most recent meteorological data set provided on the ministry's website for the study area.</p>	<p>These results are included in the updated EPR.</p>

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Air	The Addendum should be revised to include more detailed discussions of the potential air quality impacts in the Ellwood Diamond, Walkley Yard, Bowesville Station and Limebank Extension areas. For example, Section 5.2.8 states that the “assessment determined that the O-Train extension will have a negligible impact on the local air quality. The closest sensitive receptor to the Limebank Extension is approximately 195 m south of the proposed track alignment...”. Please clarify this statement as an air quality assessment was not completed for the Limebank Extension as part of the Addendum. Furthermore, it is unclear whether future sensitive receptors will be situated closer to the proposed rail extension.	
	Please confirm if the additional stations at Gladstone Avenue and Walkley Road mentioned in the initial Air Quality Report are being constructed under this Environmental Assessment (EA). If so, air quality impacts from these stations should also be addressed.	
	Please note that in addition to the Ambient Air Quality Criteria there are Canadian Ambient Air Quality Standards, which have replaced the Canada Wide Standards, for PM2.5 and NO2. These standards should be included in the revised assessment for comparison against the cumulative concentrations.	
	Please ensure that the 90th percentile existing background concentrations added to the maximum predicted concentrations have been calculated for each relevant averaging period.	
	Please note that standards and guidelines are available for NO2 only. Therefore, background concentrations, modelled concentrations and cumulative concentrations should be presented for NO2 rather than NOx.	
	Please confirm the version of AERMOD that was used in this assessment and submit the benzo(a)pyrene model input and output files for review.	We can confirm that AERMOD v. 16216R was used for the modeling.
	Future Air Quality Assessments should include a Current and Future No-Build scenario for comparison against the Future Build scenario results. Future Air Quality Assessments should also assess particulate resuspension emissions in parking lot and pick-up/drop-off areas using the US EPA AP-42 methodology. If this methodology were to be applied to the current report, a slight increase in predicted particulate concentrations would be expected.	During the conference call meeting with MECP representatives on July 31, this item was discussed. Considering the relative lack of existing air quality contributing sources within the study area, it was concluded that the existing and future no-build conditions would not be necessary for the purposes of direct comparison in this air quality assessment. In addition, with the nature of the few existing air quality sources in the study area, it could be reasonable to assume these emissions would be more than conservatively captured within the background air quality data derived from the Ottawa area monitoring stations. It is understood that other future air quality assessments should include existing and future no-build conditions for comparison.

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	Please clarify how the Plume Width for running trains provided in Table 2.10 was determined. Please also clarify why the initial vertical dimension was calculated by dividing the vehicle height by 2.15 (Table 2.11).	<p>The plume width for trains was estimated using the 'Haul Roads Volume Source Calculator' two-lane estimation tool which notes a plume width should be equal to the width of the road plus an additional six (6) metres. The distance between the east-bound and west-bound tracks was measured to be 13 metres, giving a total plume width of 13 + 6 = 19 metres.</p> <p>Initial vertical dimension was provided for stationary idling (area) sources in AERMOD, following guidance from the U.S. EPA AERMOD User Guide (page 3-89), noting that the 'Szinit' parameter (initial vertical dimension) may be applied to area sources in cases where "emissions may be turbulently mixed near the source by the process that is generating emissions, and therefore occupy some initial depth." It is suggested this parameter be applied similar to the volume source, which is estimated using the plume height divided by 2.15. In this case, it was assumed that vehicle height would be approximately interpreted as 'plume height' for the application of this formula.</p>
	During construction, please apply BMP to mitigate any air quality impacts caused by construction dust. Please note that the ministry recommends that non-chloride dust suppressants be applied.	These practices will be incorporated into the Dust Management Plan for the construction phase.
July 6, 2018 - M. Phillips		
Dewatering Management Plan	No groundwater from an area of known or suspected groundwater contamination should be discharged to the environment without the completion of an impact assessment and the appropriate approvals.	Recommendation has been added to Section 1.3 under <i>Dewatering Management Plan</i> .
Erosion and Sediment Control Plan	I recommend that a site specific erosion and sediment control plan be developed for all project components located within an identified floodplain or within 30 m of the high water mark of a surface water feature (wetland, watercourse) or where there is a risk that erosion may result in downstream surface water impacts. Erosion and sediment control plans shall be prepared and inspected by an appropriately qualified inspector of erosion and sediment controls. A surface water monitoring program shall be implemented for all works which take place below the high water mark and shall include, as a minimum, daily turbidity readings until such time as the qualified inspector determines that the risk of erosion and sedimentation is negligible. The results of the monitoring program shall be kept on site during the monitoring period and made available to a provincial environmental officer upon request.	All aspects of this recommendation have been included in Section 1.3 under <i>Erosion and Sediment Control Plan</i> with the exception of the specific details regarding daily turbidity monitoring. The need for such specific monitoring requirements will need to be determined on a site by site basis based on the level of anticipated impacts to surface water features.
Spills Response and Action Plan	I recommend that hazardous chemicals, including fueling stations, not be located within an identified flood plain or within a minimum of 30 metres from a surface water feature.	Text has been added to Section 1.3 under <i>Spills Response and Action Plan</i> .
Stormwater Management Plans	I recommend that Stormwater Management Plans shall consider, among other matters, the maintenance, restoration, and protection of downstream aquatic ecosystems. Stormwater management works shall conform to aquatic/stream rehabilitation plans and maintain and enhance existing aquatic ecosystems, including thermal regimes.	A general statement about considering aquatic ecosystems has been added to Section 1.3 under <i>Stormwater Management</i> to address this recommendation adequately.
Geo-Environmental	The EPR focuses on sediment removal as the main contaminant of concern, however, the addition of extensive infrastructure, included large parking facilities may result in substantial increases in the use of road salt, and the risk of road salt impacts on adjacent waterways. This issue has not been addressed in the EPR.	<p>The shift to rail transit, has overall benefits of reductions for salt contamination in the local environment. The City of Ottawa winter maintenance program reduces the use of salt to the extent possible by:</p> <ul style="list-style-type: none"> - rock salt is sprayed with a liquid de-icer as it is spread. This speeds up ice melting by making the salt sticky so it can adhere to the road. -Anti-icing is used before or at the beginning of freezing rain or other winter precipitation. The de-icing solution consists of pre-wetted salt or a liquid solution. It is applied to the Transitway and Highway 174 to prevent ice from forming and bonding to the pavement. -Abrasive materials such as sand are used to increase traction in colder temperatures when salt is not effective.
Aquatic Habitat	In some cases, the proposed undertaking(s) will involve extensive modifications to and loss of aquatic habitats. It would be appropriate for the EPR to include a commitment to provide similar or enhanced habitats as part of their restoration plans. Perhaps an addition to Section 1.3 of the EPR addressing this issue would be appropriate.	A new section was added under Section 1.3 titled <i>Aquatic Habitat</i> to include a generic statement about enhancement/restoration of aquatic habitats and how this will only be completed should compensation/offsetting be deemed required through agency permit/approval processes.

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Approvals	The assessment identifies the types of impacts which are likely to result from the construction and on-going operation of the preferred alternatives as noted above. It is likely that some of the proposed undertakings will require Federal and/or Provincial approvals.	An Environmental Effects Evaluation under Section 67 of Canadian Environmental Assessment Act (CEAA) has been completed and approved. Additional permits/approval are outlined in the EPR.
MECP July 10, 2018 - Jennie Weller		
Section 1.2.2 Background Report	This section needs to clarify how the background reports have fully assessed the proposed changes, including moving a maintenance and facility yard, station relocations and additions, the inclusion of an overpass, and a 3km track extension, as per section 9.(2) 5 i. and ii. of O.Reg. 231/08.	The background reports address the original EPR recommendations. The subsequent Addendum information addresses the impacts of the proposed changes.
Section 2: Ellwood Diamond	The change needs to better describe the proposed undertaking as per 9. (2) 2 of O.Reg. 231/08. Please distinguish between the undertaking being proposed in the Addendum and any possible future freight track work which would be completed under a separate regulatory process.	Appropriate federal approvals will be sought at that time for the freight line and approval of the freight line is not being sought in this EPR.
Section 3: Walkley Yard	Please distinguish the descriptions in the document to better clarify where you are referring to the current existing yard, the expanded yard from the original EPR or the newly proposed yard in the addendum as per 9. (2) 2 of O.Reg. 231/08. Additional clarifications requested August 30, 2018.	Clarifications added.
Section 4: Bowesville Station	This change includes relocating a station, as well as a track realignment and potential underpass. The focus of this section is on the relocation of the station, however, the track realignment and the underpass are potentially environmentally significant, as per section 15. (3) of O. Reg. 231/08 and need to be better addressed and described. Additional clarifications requested Aug 30 regarding the location of the changes.	As outlined on page 58 "There were several environmental advantages to relocating the station and associated approach track. The currently proposed underpass ecological crossing will be relocated and enhanced via a 10 metre wide multi-use (active transportation and ecological crossing) overpass crossing at the former High Road alignment (CTP2, 2017b). The new Bowesville alignment will take advantage of an existing rail corridor, ultimately reducing land costs and simplifying construction for an additional 800 metres of rail. It also avoids environmentally sensitive lands in the vicinity of the original station location." The track alignment has been considered in the evaluation of impacts. Figures have been added for clarification. <i>Page reference corrected to page 58.</i>
Section 5: Limebank Extension	The proposed 3km extension needs to be more fully described in the EPR addendum. It is not clear where the proposed extension will be located in relation to existing road infrastructure. Given the significance of this change, we recommend that a more detailed description of the preferred undertaking is added to the addendum in accordance with Section 9. (2). 2 of O. Reg. 231/08, including: where at-grade or grade-separate crossings will be located; a larger map with road names and cross-streets; and, more details to distinguish between the undertaking proposed in the Addendum and potential future options that could be added at a later date under separate regulatory processes.	Additional text and figures have been added.
Maps and Drawings	Changes and improvements to the maps and drawings are required to further illustrate the proposed undertaking throughout the document and to ensure you are in compliance with Section 9. (2). 3, and Section 9. (2). 4 of O. Reg. 231/08 including: '-A more detailed drawing or drawings of the proposed alignment for the Ellwood Diamond overpass/underpass. '-Larger (one page) and clearer maps throughout the document that include legible street names. '-Maps that include notable features around each of the proposed changes. '-Ensuring the maps differentiate between existing proposed and approved lines and roads. Maps are blurry.	Additional text and figures have been added. Maps have been updated.
Consultation	As per section 9. (2). 10 and Section 9. (2). 11 of O. Reg. 231/08 you must include a summary of the consultation, outreach and comments heard to date on the Addendum. The summary must include comments from Indigenous communities, members of the public and all agency and government review team members, including Ministry of Tourism, Culture and Sport, Conservation Authority, Ministry of Environment, Conservation and Parks, Ministry of Natural Resources and Forestry and any other reviewer who has submitted comments. The summary must also include a table with comments received and how they were addressed in the report.	Additional information has been added to the consultation report.
MECP July 12, 2018 and August 30, 2018 - M Herringa		

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Noise	The district has some concerns with the limited information provided about mitigating noise and vibration during construction and long-term operation. Comments reflect the focus on ensuring that the City has appropriately considered potential impacts on nearby residents. Specifically, entries concerning "Walkley Yard", "Bowesville" and "Limebank" on page 8 of 11 do not adequately address the District's concerns about expected elevated noise from full time operations at Walkley Yard or whether noise may affect the new stations. If you could please include further details or any updates in your comment and response table.	Please refer to responses below. Air-borne and Ground-borne Noise and Vibration Performance Limits pertaining to the entire project have been included in the BMPS.
	The Addendum appears to have been prepared with assumptions about the potential impacts of noise and vibration during construction and permanent operations at locations which were not contemplated in the original Trillium Line South (TLS) EPR. Updated noise and vibration assessments completed for the proposed modifications should be included and clearly referenced in the Addendum.	Noise and vibration reports were undertaken for the proposed modifications and are summarized in the Addendum. Copies of the reports will be added to the appendices.
Notice of Addendum	Please be aware that I will need to review the Notice of EPR Addendum prior to issuing, given our new ministry name changes. A final draft of the EPR addendum will also need to be made available at our offices for public review prior to the notice being issued.	Notice was sent and MECP comments incorporated.
BMPs	The Addendum should be updated to reflect provincial regulatory requirements for Environmental Compliance Approvals for all design features proposed including, but not necessarily limited to, the "Stormwater Management" features and infrastructure described on page 14.	Approvals, different than those noted in the original EPR were not anticipated. The requirements for subsequent approvals will be added.
Ellwood Diamond	Table 2-3 identifies that Predicted Construction Noise Levels will be above applicable noise standards. The Addendum then assumes that all construction equipment will not run simultaneously and therefore, noise will not likely exceed applicable limits. The Addendum should include a review of mitigation measures that will be implemented in the event that the assumptions about environmental conditions during construction staging are incorrect and do, in fact, result in exceedances of applicable noise limits.	Construction noise will be governed by the City of Ottawa Noise Bylaw (2004-253) as noted in the BMPs.
Walkley Yard	The relocated Walkley Yard is proposed to be significantly closer to residential receptors than the location originally proposed in the TLS EPR. The Addendum notes that "results of the noise analysis indicated that the (operational) noise levels are predicted to range from 55 dBA to 59dBA at the worst case receptor location, exceeding the base noise level limits in all time periods". The corresponding noise analysis and modelling data for the relocated Walkley Yard is not clearly referenced in the Addendum. The Addendum identifies that long term operation will require mitigation measures at Walkley Yard. The Addendum also identifies potential noise and vibration impacts from construction activities, however, the Addendum does not adequately consider the need for mitigation from impacts during construction at the Walkley Yard.	Construction noise will be governed by the City of Ottawa Noise Bylaw (2004-253) as noted in the BMPs.
Bowesville	The Addendum notes that "no significant air quality, noise or vibration impacts to existing sensitive developments are anticipated." As noted previously, the Noise and Vibration Assessment Report does not contemplate development of the relocated Bowesville Station. Updates to the Noise and Vibration Assessment Report are required for the proposed modifications.	Additional noise studies will be required by the development as applications for permits are received.
Limebank	The Addendum notes that "the noise, vibration and air quality report (GWE, 2016) prepared for the approved Trillium EPR used a 200m radius to define the Study Area. The assessment determined that the extension will have a negligible impact on the local air quality. " As noted previously, the referenced Noise and Vibration Assessment Report does not contemplate development of the Limebank Station or future station locations between the relocated Bowesville and Limebank Stations. Updates to the Noise and Vibration Assessment Report are required for the proposed modifications.	Additional noise studies will be required by the development as applications for permits are received.

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General	The MECP Ottawa District Office anticipates that project-specific environmental compliance approvals (ECAs) and permits will be identified through ongoing project planning by the City of Ottawa and their contractors. The MECP's regulatory requirements will continue to be assessed as they relate to the Trillium Line South Extension project and, where necessary, addressed by the Ottawa District Office during subsequent phases of the environmental assessment and approval processes.	Acknowledged.
MECP June 26, 2018 - Angelune Des Lauriers		
	The project documentation should also include information about, "The project would be occurring within the Rideau Valley Source Protection Area in the City of Ottawa and consider applicable source protection policies established under the Clean Water Act, 2006. The Rideau Valley Source Protection Area is in the Mississippi-Rideau Source Protection Region, and falls under the Mississippi-Rideau Source Protection Plan." This information can be found in the source protection information atlas, which is publicly available and can be used to locate delineated vulnerable areas in Ontario. https://www.gisapplication.lrc.gov.on.ca/SourceWaterProtection/Index.html?site=SourceWaterProtection&viewer=SWPViewer&locale=en-US	Recommendation acknowledged and addressed with text inserted in section 1.2.1 <i>"Correspondence with staff from the Mississippi-Rideau Source Protection Region has confirmed though that activities within these areas do not pose a significant threat to drinking water. There can be moderate and low threats in the HVA however these are all associated with the establishment or maintenance of a waste disposal site as defined in Part V of the Ontario Environmental Protection Act. The activities within the LRT addendum areas as proposed herein do not include any waste disposal sites. It can therefore be concluded that there are no additional requirements under Source Protection ."</i>
	The project documentation should also include information about, "Vulnerable areas are delineated around surface water intakes for the municipal residential drinking water systems located in the Rideau Valley Source Protection Area. These vulnerable areas are known as a Wellhead Protection Areas (WHPAs), and surface water Intake Protection Zones (IPZs). Other vulnerable areas that can be delineated under the CWA for municipal drinking water systems include Significant Groundwater Recharge Areas (SGRAs), Highly Vulnerable Aquifer (HVA), Event-based modelling areas (EBAs), and Issues Contributing Areas (ICAs)." This information can be found in the source protection information atlas, which is publicly available and can be used to locate delineated vulnerable areas in Ontario. https://www.gisapplication.lrc.gov.on.ca/SourceWaterProtection/Index.html?site=SourceWaterProtection&viewer=SWPViewer&locale=en-US	Recommendation addressed as per below.
	The project documentation should also include information about, "While the EPR correctly notes that the Trillium LRT Addendum area do not intersect with WHPAs and IPZs, the proposed addendum areas intersect with two vulnerable areas: SGRA and HVA (see figures below)." This information can be found in the source protection information atlas, which is publicly available and can be used to locate delineated vulnerable areas in Ontario. https://www.gisapplication.lrc.gov.on.ca/SourceWaterProtection/Index.html?site=SourceWaterProtection&viewer=SWPViewer&locale=en-US	Refer to Section 1.2.2. Text added following Figure 1-5: Source Water Protection Ottawa
Activities	Proponents should document whether any of the project activities are a prescribed drinking water threat as per the Clean Water Act and whether they pose a risk to sources of drinking water. This is currently missing from the documentation. While the normal operation phase of the project may not pose a risk to sources of drinking water, activities occurring during the construction phase might (for example, fuel and chemical storage and handling). Where an activity poses a risk to sources of drinking water, the proponent must document and discuss how the project adheres to or has regard to applicable policies in the Mississippi-Rideau Source Protection Plan (and also list these policies) and any mitigation measures that may be proposed.	Recommendation addressed as per below. Recommendation to contact staff at the Mississippi-Rideau Source Protection Region is acknowledged. Staff from the Region were contacted and have confirmed that there are no significant threats within the HVA or SGRA vulnerable areas within the Mississippi-Rideau Source Protection Region. There can be moderate and low threats in the HVA but these are all associated with the establishment, operation or maintenance of a waste disposal site within the meaning of Part V, of the Environmental Protection Act. Revised text included in section 1.2.1.
General	If they have not done so already, the proponent should contact the Project Manager for Drinking Water Source Protection at the Mississippi-Rideau source protection authority. The source protection authority can also provide proponents with assistance in determining whether an activity associated with the construction or operation of the project may be considered a drinking water threat as per the Clean Water Act and will be able to help determine whether there are policies in the source protection plan that may apply / and how. Even if the project activities in a vulnerable area are deemed not to be a significant risk to drinking water, there may be other policies that apply (such as moderate or low threat policies) and so consultation with the local source protection authority is important.	Recommendation addressed as per above.
MECP June 27, 2018 - Robert W. Holland, P.Geo		

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Hydrogeology	I have reviewed the above noted June 4, 2018 updated draft report prepared by CTP2. I have no comments as proponent has provided sufficient detail concerning the subject properties and is well aware of Provincial Standards and associated permitting and approvals requirements relating to taking groundwater and the handling of contaminated soil and groundwater.	Management of Contaminated Materials BMP has been modified to include: Contaminated soil will be encountered and possibly contaminated groundwater. Groundwater supply wells that may be at risk due to construction activities should be monitored and Contingency Plans developed to provide temporary alternate water supply should the need arise."
MECP August 28, 2018 - Jennie Weller		
Noise	1. Predictable worst case scenarios regarding all construction activities must be assessed in order to justify that applicable noise limits will not be exceeded. If there will be exceedances, then noise control measures must be proposed.	Noise Control Measures are outlined in the requirements for a Noise and Vibration Control Plan in the BMP section.
	2. In Table 2-3, different construction scenarios are listed with respective noise impacts, please indicate what noise sources are operating corresponding to each scenario.	The noise sources considered are outlined in Table 2-2.

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Ministry of Natural Resources and Forestry (MNR) August 31, 2018 - Mary Dillon, District Planner		
General	We are satisfied with the impact assessment and proposed mitigation generally, but offer a few comments for your consideration.	
Ellwood Diamond	The report identified the possible presence of a reptile hibernaculum in the armour stone along Sawmill Creek, however there was no discussion of potential impacts or conclusions regarding mitigation requirements. The report should include an impact assessment for all features identified as present (or possibly present) so that it is clear if impacts will be avoided, or can be adequately mitigated.	The following has been added to the report "If the proposed final design impacts the potential Hibernaculum located in stone retaining walls along Sawmill Creek, field surveys should be undertaken to confirm or negate its presence and appropriate mitigation measures developed in consultation with the City of Ottawa and the MNR."
	We recommend that the design of the new train bridge ensures adequate, safe passage for wildlife under the bridge and exclusion fencing or other features, as necessary, to ensure wildlife are directed toward this passage and away from the tracks.	A wildlife crossing has not been proposed at this location as it would be a grade separation of two rail lines and passage under the bridge would not be feasible.
Bowesville Station	If the results of the temporary exclusion fencing monitoring indicate that turtles attempt to access the construction site then we recommend installation of permanent exclusion fencing to address long term impacts (i.e., the post-construction period when the station site becomes operational).	Added to section 4.3.6.
Limebank Extension	We understand that a number of candidate Significant Wildlife Habitats have been identified for areas adjacent to the alignment and that additional survey work is required to confirm presence/absence and necessary mitigation. We recommend that this, and all other mitigation proposed for the project, is communicated clearly in the design and other plans so that they are properly implemented.	Mitigation measures and commitments included in the Environmental Assessments and permit applications have been provided to the bidders to facilitate the recognition of additional work and commitments involved in the approvals.

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Rideau Valley Conservation Authority (RVCA) June 29, 2018 and August 31, 2018 - Jamie Batchelor		
Ellwood Diamond	<p>As part of the addendum, the report has appropriately identified that the west channel bank of Sawmill Creek is unstable, while the east bank is less steep. While the Conservation Authority agrees with these observations, it should be noted that the proposed crossings may require alterations to the banks in order to render the slopes stable for the construction of the crossings. This may also have an impact to aquatic habitat depending on any recommendations made by a Professional Geotechnical Engineer at the time of detailed design. Therefore, the Conservation Authority recommends the following wording be added to Section 2.3.3 Natural Sciences -Aquatic under Potential Impacts:</p> <p>'-Possible slope stabilization as required by a geotechnical study within the banks of Sawmill Creek.</p>	Recommendation acknowledged and Environmental Project Report (EPR) addendum text updated accordingly.
Ellwood Diamond	<p>It is believed that impacts to aquatic habitat can be mitigated through appropriate design measures which minimize the disturbance at the toe of the slopes. In addition to the in water/channel timing window, any works involving the toe of the banks should be conducted during low flow conditions. However, should there be a loss of aquatic habitat as a result of stabilization works, offsetting compensation may be required. A permit from the Conservation Authority will be required for the alterations to the exiting crossings and for the construction of new crossings. The Conservation Authority recommends adding the following wording to 2.3.3. Natural Sciences -Aquatic under Proposed Mitigation:</p> <p>'-Any required alterations to the slopes/banks of Sawmill Creek shall be completed during low flow conditions. '-Any loss of aquatic habitat due to slope stabilization works may require offsetting compensation. '-Any alterations to the banks of Sawmill Creek and the creek proper require the prior written approval of the RVCA under Ontario Regulation (O.Reg.) 174/06 "Development, interference with Wetlands and Alterations to Shorelines and Watercourses Regulation" made pursuant to Section 28 of the Conservation Authorities Act.</p>	Recommendations acknowledged and EPR addendum text updated accordingly.
Walkley Yard	<p>The new proposed Walkley Yard site includes a tributary to Sawmill Creek. While the report has acknowledged the presence of the watercourse, the report has not appropriately described the potential impacts. Based on the proposed site plan, it appears that the development would be within the required 30 metre setback from the watercourse. We also note that as part of the development within the required setback is a fueling area/inspection pit. Given the sensitive use proposed within proximity of the watercourse and the minimum requirements of the City's Official Plan, it is the Conservation Authority's position that a setback of 30 metres is required.</p> <p>While there has been some good constructive dialogue with Morrison Hershfield on the possibility of relocating the watercourse further north on the City owned lands (Park) to achieve the appropriate setback, this potential mitigation measure has not been identified in the report. Therefore, a further explanation as to what the mitigation measures for the setback for the watercourse is required as what is being proposed is not sufficient.</p> <p>We also note that under "Proposed Mitigation" there is reference to any work being carried out within the floodplain must be approved under O.Reg. 174/06. While the reference to the actual regulation is correct, the RVCA regulation would only apply for any alteration, straightening, changing, diverting or interfering in any way with any watercourse. The RVCA does not have any flood risk mapping for this area and it is not currently regulated for floodplain. Therefore, the reference needs to be amended to reflect the correct activity which is regulated.</p>	Recommendation for updating the text under "Proposed Mitigation" has been acknowledge and EPR addendum text has been revised accordingly.

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Agency Consultation Comment Summary

Source	Comment	How it was Addressed
Bowesville	<p>A permit from the RVCA will be required for the alterations of the watercourses to facilitate the construction of the station and park and ride. Therefore, the RVCA recommends the following wording be added to Section 4.35 Natural Sciences -Aquatic, "Potential Mitigation":</p> <p>'-Any alteration, straightening, changing, diverting or interfering in any way with any watercourse requires the prior written approval of the RVCA under O.Reg. 174/06 "Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation" made pursuant to Section 28 of the Conservation Authorities Act.</p>	<p>Recommendation acknowledged and EPR addendum text updated accordingly.</p>
Bowesville Groundwater	<p>Depending on the scenario, if pumping is required, a staff hydrogeologist at the City should consider and advise the project of the following:</p> <ul style="list-style-type: none"> '-The site is located on or adjacent to an esker, at which groundwater control issues may be significant. '-There are old landfills in the vicinity, but at some distance. '-There may be private wells taking water from the local sand aquifer. <p>In addition, the City should implement best practices at the Park and Ride etc. in order to maintain groundwater recharge to the aquifer, if sufficient depth to the water table in the sand aquifer exists; and to maintain clean water discharge from this site and infiltration to the aquifer. The underlying aquifer is highly susceptible to contamination where it is exposed at the surface, such as this area.</p>	<p>Added mitigation/future investigations, as needed to addendum.</p>
Limebank	<p>As part of the proposed mitigation measures under Section 5.3.3 Natural Sciences - Aquatic, the report makes reference to a diverted segment of the unnamed tributary to be constructed within a 60 metre wide buffer. For clarification, the newly created channel will be required to have a 30 metre setback on each side of the channel measured from bankfull. The setbacks are independent of the width of the channel and therefore the actual total buffer corridor would be greater than 60 m. Typically, the average width of a channel is between 3 and 5 metres. Therefore, the reference in the report for the buffer width must be amended to a buffer corridor of 63-65 metres.</p> <p>Should there be any loss of aquatic habitat due to required changes to the floodplain area for the Mosquito Creek bridge crossing, habitat creation offsite may be required.</p> <p>There is also the potential for the proposed crossing of Mosquito Creek to require alterations and stabilization measures due to the steep slopes. This may have an impact to aquatic habitat depending on any recommendations made by a Professional Geotechnical Engineer at the time of detailed design. Any loss of aquatic habitat may require offsetting compensation. Therefore, the Conservation Authority recommends the following wording be added to Section 2.3.3 Natural Sciences -Aquatic under Potential Impacts:</p> <ul style="list-style-type: none"> -Possible slope stabilization as required by a geotechnical study within the banks of Mosquito Creek. 	<p>Recommendations acknowledged and EPR addendum text updated accordingly. Rather than changing the setback number to "63-65 m", the text was revised to include correct setback distance of 30 m from the bankfull along either channel bank.</p>

Trillium Line Light Rail Transit Extension Addendum Ellwood Diamond, Walkley Yard, Bowesville Station, Limebank Extension
Agency Consultation Comment Summary

Source	Comment	How it was Addressed
	<p>In addition, any alteration to the watercourses themselves will require a permit from the Conservation Authority. The Conservation Authority recommends the following wording be added to Section 5.3.3 Natural Sciences - Aquatic, Proposed Mitigation:</p> <ul style="list-style-type: none"> '-That should there be aquatic habitat loss as a result of alterations to the floodplain, then offsetting compensation may be required. '-Any required alterations to the slopes/banks of Sawmill Creek shall be completed during low flow conditions. '-Any loss of aquatic habitat due to slope stabilization works may require offsetting compensation. '-Any alteration, straightening, changing, diverting or interfering in any way with any watercourse requires the prior written approval of the RVCA under O.Reg. 174/06 "Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation" made pursuant to Section 28 of the Conservation Authorities Act. 	<p>Recommendations acknowledged and EPR addendum text updated accordingly.</p>
<p>General Conclusion</p>	<p>In conclusion, the Conservation Authority recommends some wording be added to the report as noted above and requires further clarification regarding the setbacks from the tributary of Sawmill Creek for the Walkley Yard.</p>	<p>The Walkley Yard design has been designed to avoid direct impacts to the tributary of Sawmill Creek. There will be no channel alteration, diverting etc. to the existing tributary. If a 30 m setback were to be achieved through realignment of the channel, it is likely that this would result in greater impacts to the instream habitat, channel banks and riparian habitat than if the Walkley Yard revised design were to remain within 30 m of the existing channel. In addition, the proposed Walkley Yard revised design layout exists on property that has already been impacted by access roads and storage areas that currently exist within 30 m of the tributary of Sawmill Creek. Therefore, the Walkley Yard is not anticipated to result in new development within 30 m of the creek, as that setback is currently not maintained. Further investigation may be required to accurately establish the current setback from the existing channel, as well as top of stable bank, and consultation with RVCA to determine whether or not an alternate setback can be developed along with addition on-site mitigations (i.e. improved spill control/response mitigations at the maintenance facility etc.).</p>
South Nation Conservation Authority (SNCA)		
<p>O.Reg. 170/06</p>	<p>SNCA has no issues with the Addendum as the proposed location has not changed for areas within our jurisdiction. Primarily, our main interest will be the proposal's potential impacts on the identified Lester and Leitrim provincially significant wetlands (PSW) and their adjacent lands. A permit under O. Reg 170/06 will be required for any work within watercourses and 120m adjacent to the PSW.</p>	<p>Acknowledged. No response required.</p>