APPENDIX B
SELECTED CORRESPONDENCE
AND MINUTES OF MEETINGS
Dear Mr. Korah

Re: Strasburg Road Extension- Regional Response for Proposed Alignment Alternatives

Region staff have received the recent drawing illustrating the proposed alignment alternatives for Strasburg Road Extension in Kitchener. The following are the Regional comments on the alignment alternatives that include E2, E3, E4, C2, and W1.

W1 Alignment Alternative

Although W1 is the preferred option with respect to conservation of contiguous natural heritage features and wildlife movement in the headwaters area of Blair Creek, it does not, in the opinion of Regional staff, adequately address the problem statement. It fails to achieve transportation/transit objectives, creates other environmental impacts, is the most expensive to construct and maintain, and is least compatible with Region and City of Kitchener land use policy initiatives. These issues are summarized as follows,

- Least compatible with transportation objectives including cycling, walking, least attractive for transit ridership (more walking distance from OMB-approved subdivisions for transit riders), and less attractive to traffic generated from new development in Doon South such that traffic infiltration will result on local roads. Bus Routes in the area would have to travel entirely on local roads as well.

- Most expensive, requiring extension and additional utility infrastructure to properly serve the Doon South community, more construction and operating costs for greater length of services carried in those corridors (Robert Ferrie Drive and Street A in Doon South).

- W1 will fragment the landscape between the headwaters of Blair Creek and South Strasburg Creek.

- W1 is the least compatible with the Regional Official Plan in that it intrudes into the Protected Countryside and fragments farmland. This has the potential to build pressure to expand the Urban Area into the Protected Countryside.
E3 and C2 Alignment Alternatives

Alignment alternatives E3 and C2 pose the similar issues as described above but not to the same degree as W1.

- Both C2 and especially E3 will intrude into the Protected Countryside and potentially induce development pressure west of Reidel Drive.
- E3 and C2 will add more construction and operating costs for the extension of Robert Ferrie Drive and Street A.
- The topography along the C2 alignment within the Blair Creek corridor is rather flat, so some sort of long span over the creek and associated wetland would be required to maintain connectivity along the creek corridor. The crossing of the small tributary to the south would be downstream of the marsh pond on the southern boundary of the mapped salamander habitat. As this feature is relatively narrow and deeply incised, it would be amenable to the placement of a short span from which a watermain could probably be hung.
- E3 crosses the Blair Creek Corridor at a narrower location than the E2 alignment alternative.
- At the south of Stauffer Road, E3 is not optimal from a servicing perspective.
- Both E3 and C2 will be less attractive to future transit riders from new development in the adjoining Doon South subdivision.

E4 and E2 Alignment Alternatives

It is the opinion of Regional staff that both alignment alternatives E4 and E2 best address the issues and meet the Regional transportation and servicing objectives as follows.

- Both E2 and E4 will be more compatible for transportation objectives, more attractive to traffic and transit riders from future new development in Doon South.
- E2 has a very minor intrusion into the Protected Countryside and would therefore be the most compatible with ROP policy.
- E4 arcs out into the Protected Countryside to an extent that is somewhat problematic.
- E2 crosses the Blair Creek and Provincially Significant Wetland corridor on the existing Reidel Drive alignment, but at a relatively wide location. A four-lane crossing has the potential to further fragment the corridor and identified salamander habitat. If this alignment were to be selected, it is anticipated that a span would be required to minimize impacts to the wetland and enhance connectivity along the corridor.
- E4 crosses the Blair Creek Corridor at a relatively narrow location at which it would be feasible to design a span that would maintain connectivity, but it would nevertheless be a new crossing.
• E2 would affect the Endangered Butternut tree, if it is determined to warrant preservation.

• South of Stauffer Road, E4 is not optimal from a servicing perspective compared to E2 alignment alternative.

• Both E2 and E4 are economical compared to alignment alternatives (E3, W1, and C2) since they do not require lengthy extensions of Robert Ferrie Drive and Street A and their associated watermain and sanitary services. However, E2 is relatively more economical than E4 with greatest use of an existing road allowance of Reidel Drive.

• Both E2 and E4 also have potential to create the highest degree of change in sound levels, impacting the adjacent homes and their outdoor living areas.

Summary

Based on the foregoing, Regional staff are of the opinion at this time that alignment alternative E2 would be most consistent with the policies of the ROP to contain urban development within the designated Urban Area, provide infrastructure and transit service in an efficient manner, and minimise further fragmentation of Core Environmental Features. Before making a formal statement in favour of E2, however, Regional staff would need to confirm/clarify the following issues,

• The consultant needs to do a detailed check and confirm there are no sightline deficiencies at any of the proposed intersections with New Dundee Road.

• Regional staff would also need to confirm the anticipated traffic control type (traffic signal, stop control, or roundabout) at New Dundee/Strasburg Road Extension intersection under assumed interim and full build-out horizon years of 2016 and 2031, respectively. Please provide traffic signal warrant and roundabout screening tool analyses.

• Proper sound control measures should be adopted to keep the indoor and outdoor sound levels within the Region’s specified limits.

• The alignment might have to be fine-tuned to avoid the endangered Butternut tree and its habitat, if it is assessed as warranting preservation. Mitigation measures acceptable to the Province would be required in the detailed design of this segment of the road.

• Alignment alternative E2 would cross the Blair Creek corridor on the existing Reidel Drive right-of-way, but at a location where the corridor is relatively wide. The design of a potential four-lane crossing would have to maintain or enhance the connectivity of the salamander habitat and Provincially Significant Wetland to the satisfaction of the Ministry of Natural Resources.

• Regional Staff would require a Technical Memo for any and all watermain crossings through environmentally sensitive areas. The memo would look at four options to the
watermain crossings: open cut, suspending the watermain from a bridge, tunnelling, and horizontal drilling. The four options would evaluate the following factors,

- Environmental Impacts,
- Technical Issues/Constructability,
- Approvals/Property Requirements, and
- Costs and Risks.

Regional staff would be willing to meet with you and the City’s consulting team to discuss the above comments in further detail.

Yours truly,

Atif Mehmood
Transportation Planning Engineer

/AM.

cc.

Steve van De Keere, Region of Waterloo
Kevin Eby, Region of Waterloo
Paula Sawicki, Region of Waterloo
John Holowackyj, Region of Waterloo
Chris Gosselin, Region of Waterloo
Kevin Dolishny, Region of Waterloo
October 5, 2011

Binu Korah
Development Engineering
Development and Technical Services Department
City of Kitchener
200 King Street West, 6th Floor
P.O. Box 1118
Kitchener, ON N2G 4G7

RE: Draft Evaluation Matrix
Strasburg Road Extension Class EA
From 500m North of Stauffer Drive to New Dundee Road

Dear Binu,

GRCA staff have received summaries of the technical information used in the assessment of Terrestrial Vegetation, Aquatic Ecosystems, and Surface Water Criteria as part of the evaluation of alternatives for the Class Environmental Assessment of the Strasburg Road Extension from 500m North of Stauffer Drive to New Dundee Road. GRCA staff are generally satisfied with the explanations provided and the relative ranking proposed for these criteria within the draft evaluation matrix provided. The following comments are provided for your consideration:

1. Based solely on the environmental criteria provided, GRCA staff are in agreement that Option W1 is the preferred alternative and C2 and E2 are the least preferable alternatives.

2. In the evaluation of Aquatic Ecosystems it is unclear why E3 is ranked lower than E4 when the quantity of indirect fish habitat loss is less for the E3 than for the E4 option. If there is another reason why the environmental impact created by this option is more than E4, then this differentiation should be more clearly documented or corrected in the final evaluation.

3. In the evaluation of Surface Drainage the number of culverts required to maintain the existing drainage are in some cases identified as new crossings of a tributary of Blair Creek, but in actual fact they are not tributary crossings. The type of crossing should be clearly stated to provide an

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indication of the relative sensitivity of the type of crossing and accurately represent the actual purpose of the crossing/culvert as part of the evaluation.

4. In the evaluation of Surface Drainage, it is noted that there will be 'some potential disruption to wetland' for the W1 Option, whereas the Terrestrial Vegetation evaluation indicated that there would be no wetland removals associated with this option. Please ensure this inconsistency is addressed in the final report.

5. GRCA staff request that the complete reports and data collected as part of the analyses carried out to reach the conclusions found in each of the evaluation discussions for the Environmental Evaluation Criteria be circulated to us for our reference and review. Although the evaluation summaries are useful in providing the justification for the provided ranking, the data that is the basis for these discussions should also be made available to the reviewing agencies.

Engineering Comments pertaining to Surface Drainage Evaluation

6. The analysis indicates that water quantity control is not required for areas less than 5 hectares according to the stormwater management criteria. Where did this criteria come from? Attempts should be made to include quantity control, and justification given where control is not possible.

7. Provision of adequate legal outlet should be considered as part of the evaluation process for each of the outlet locations proposed.

8. Grassed swales are listed as a possible mitigation measure. It should be demonstrated how swales can be incorporated, and an estimate of the extent grassed swales are expected to be feasible (locations and lengths). This could affect the impacts of the alternatives and therefore the ranking.

9. The 'potential disruption to wetlands' should be quantified where possible to provide a better understanding of the source and significance of the potential impact. This would allow the significance of this to the ranking of each option more transparent.

10. Flow diversions will need to be looked at during design stage for mitigation, but should be addressed as potential impacts as part of the ranking process.

11. What possibilities exist for treatment of runoff in stormwater management ponds in proposed development areas? What possibilities exist for creation of stormwater management ponds for quantity control?

Detailed Design

12. It is our understanding that the alternatives that have been presented are still subject to refinement in their exact alignment and are meant to only generally represent the pathway of the proposed roadway. As such we recommend that during detailed design, consideration be given to ensure
that the final road alignment minimizes any impacts to natural heritage features such as wetlands and creek crossings.

13. GRCA staff understand that the evaluation of the alternatives was based on the use of culverts for the creek crossings. GRCA staff strongly recommend that during detailed design a variety of crossing alternatives be assessed including a clear span bridge and other open bottom structures.

Advisory

14. We understand that the Ontario Ministry of Natural Resources (OMNR) will be evaluating several of the wetlands currently identified as ‘unevaluated’ in the current report. GRCA staff recommend that the OMNR be contacted to verify the status of the wetlands and that the mapping in the final report be updated to reflect their updated status.

We trust that these comments are of assistance. If you have any questions or concerns regarding their content, do not hesitate to contact the undersigned.

Sincerely,

Lisa-Beth Bulford
Resource Planner
Grand River Conservation Authority
519-621-2763 x2292

cc. Ian Upjohn, Principal Planner, SNC-Lavalin Inc., 185 The West Mall, Toronto, ON, M9C 5K1
November 23, 2011

Ms. Lisa-Beth Bulford
Resource Planner
Grand River Conservation Authority
400 Clyde Road
Box 729
Cambridge, ON N1R 5W6

VIA COURIER/EMAIL

RE STRASBURG ROAD EXTENSION
FROM NORTH OF STAUFFER DRIVE TO NEW DUNDEE ROAD
CLASS ENVIRONMENTAL ASSESSMENT
ASSESSMENT OF SHORT-LISTED ALIGNMENT ALTERNATIVES

Dear Ms. Bulford,

Thank you for your correspondence of October 5, 2011 to Mr. Binu Korah in the subject regard, and for the participation of GRCA staff in the September 27, 2011 meeting, at which the Technically Preferred Alignment was identified by the Project Team. Mr. Korah has asked that we respond on his behalf. Following is our response to the points raised in your letter.

1. GRCA staff’s comments on the advantages of Alignment W1 with respect to the Natural Environment component, particularly in comparison with Alignments C2 and E2, are noted. On balance, however, the Project Team recognized the tradeoffs required to arrive at the Technically Preferred Alignment (E4 Modified) and eventually discarded Alignment W1 from further consideration.

2. You have raised the question as to why Alignment E3 is ranked lower than Alignment E4 when considering potential impacts to Aquatic Ecosystems. The two options were actually shown with similar rankings in the summary chart. We would agree that, based on the amount and type of aquatic habitat potentially affected, Alignment E3 should be ranked higher than Alignment E4 (similar to the ranking for Terrestrial (Vegetation Communities). This will be adjusted in the final documentation.

3. Your third point addresses the evaluation of Surface Water elements, specifically the number and purpose of crossing culverts with respect the sensitivity of the crossing. The following are considered as crossings of a tributary of Blair Creek: W1c (Alternative W1), C2a, C2b and C2c (Alternative C2), E3b (Alternative E3), E4c (Alternative E4) and Ex. C4 (Alternative E2). The remaining crossing culverts are considered local drain culverts.

4. GRCA staff have also identified a potential discrepancy between the Surface Water and Terrestrial assessments with respect to impacts on wetlands associated with Alignment W1. The Terrestrial assessment concludes that there will be no direct impacts to wetlands because Alignment W1 avoids encroachment on the defined wetland areas within the Blair Creek corridor. The Surface Water assessment identifies some potential impacts to the Blair Creek wetland areas because stormwater runoff discharged from west of the Blair Creek corridor will flow...
northwest-southeast through the corridor wetlands. The final documentation will include such wording in place of "potential disruption" when referring to indirect impacts to wetlands.

5. Data that form the basis for the assessment of the short-listed alignments can be provided to GRCA upon receipt of a detailed request from the Authority (some of this information was included in the material provided to GRCA staff in September 2011). Complete reports will be incorporated in the Environmental Study Report scheduled for release in Winter 2012. A draft of the ESR will be circulated to GRCA for review prior to placement in the public record.

6. You have requested the justification for statements in the assessment related to water quantity control, particularly with respect to the cited stormwater management criteria and their source. The quantity control criterion is to control flow rates under post-development conditions to flow rates under pre-development conditions using different types of quantity control measures, such as stormwater management pond, underground super pipe storage, etc. The stormwater pond option will require a relatively large land area to accommodate the facility and normally functions optimally for catchment areas more than 5 ha. The potential stormwater management measures associated with each alignment alternative will be cited in the final documentation to reflect their advantages and disadvantages in this regard.

7. The need for consideration of the provision of adequate legal drainage outlets as part of the assessment of the alignment alternatives is also included in your letter. Stormwater outlets would be located at the sag locations under each alternative. Appropriate stormwater quality measures would be incorporated at each storm outlet, if feasible. We will document the consideration of the provision of adequate "legal" outlets as part of the evaluation process.

8. The letter also suggests that the feasibility of implementing grassed swales as a mitigation measure for potential stormwater discharge impacts should be included in the assessment of the alignment alternatives. Enhanced grass swales will be incorporated for these five alternatives to provide water quality control. Enhanced swales will be recommended for a minimum distance of 150 m at the downstream section of ditches. The swales would have a minimum of 0.75 m flat bottom and 2:1 side slopes. The longitudinal swale slope will be designed to achieve a maximum flow velocity of 0.5 m/sec under the 25 mm storm event. The potential stormwater management measures associated with each alignment alternative will be cited in the final documentation to reflect their advantages and disadvantages in this regard.

9. You have suggested that "potential disruption to wetlands" should somehow be quantified, where possible, to provide a better understanding of the source and significance of the potential impact. This will be addressed as part of the indirect impacts noted in Point 4.

10. The issue of flow diversion and the need to incorporate this in the evaluation is raised in Point 10. Flow diversions are already included in the matrix table for alternative comparison. During the design stage, flow diversion will be incorporated and included in the final documentation.

11. In Point 11, you have inquired about the possibilities for treating Strasburg Road runoff in stormwater management ponds in proposed development areas, and the possibilities of creating new stormwater management ponds for quantity control. The runoff quantity control issues are already addressed under Point 6 above. The assessment material and September 27 presentation to the Project Team addressed this with respect to the possibility of using the proposed stormwater management pond in the Doon South Community for the most easterly alignment options.
Quality control concerns will be addressed through one of the following measures: oil/grit separators, enhanced grass swales or wet pond. The quality control measures will be designed to achieve Level 1 protection due to the sensitivity of the adjacent natural features. If the preferred alternative ultimately selected for the road alignment is close to a future development area, the stormwater wet pond of this future development area can be utilized to accept runoff from the road pavement, if feasible. If the preferred alternative for the road alignment is remote from the future development area, an individual stormwater wet pond can only be created if there is enough land within the right-of-way limits, or the City acquires additional property to accommodate the new stormwater management pond.

12. Your recommendations for refinement of the preferred alignment during Detail Design as part of considerations to minimize and impacts to natural heritage features is noted, and will be included in the ESR as a commitment to further work.

13. Your recommendations with respect to investigations of watercourse crossing methods other than culverts (bridge and other open-bottom structures) is noted and will be included in the ESR as a commitment to further work, or as an element of the refined (preliminary) design scheme. GRCA staff will be consulted on this matter during the refinement of the Technically Preferred Alignment.

14. Your advisory with respect to the possibility of MNR evaluating heretofore unevaluated wetlands in the study area is noted. The Project Team is committed to tracking such additional investigations by MNR, as well as keeping abreast of the current MNR draft regulation for Jefferson salamander habitat in the study area. The final documentation will reflect any updates on these matters that are available at the time of preparing the ESR.

We trust that this will be satisfactory and again thank GRCA staff for participating in the Project Team meeting to select the Technically Preferred Alignment (Alignment E4 Modified).

Sincerely,

SNC-Lavalin Inc.

[Signature]

Ian K. Upjohn, RPP, CIP
Principal Planner

cc: B. Korah - Qty of Kitchener
    S. Lawson - GRCA
    B. Wong, S. Kothari, I. Upjohn - SLI

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Further to my email below, I have spoken with Binu Korah and we have agreed on the following actions:

1. Cancel the meeting at 2pm Oct 26.
2. SNC to arrange a technical meeting with the appropriate staff as soon as possible after the PIC to resolve this issue prior to the next Project Team Meeting.

Appropriate staff would be SNC road design staff, a rep from Region transportation (Bob H. to assign as necessary), SVDK, Frank Kosa, Paula Sawicki and City staff as Binu deems appropriate. The issue to discuss is that the Region does not believe at this time that signs are an appropriate countermeasure to address a sightline deficiency for a new road intersection, regardless of the type of traffic control. We request the consultant to bring to the meeting the following information (sending out in advance would be even better):

1. Detailed review of the actual sightline deficiency.
2. Road design modifications to properly address the issue and a preliminary cost estimate of the road design options. Signage to reduce posted speed or prohibit turns are considered a last resort and normally reserved for existing intersections, not new ones.
3. A review of sightline issues at the other possible intersections with New Dundee should also be confirmed, as per the Region’s request: many months ago.

I am hopeful that we can develop a solution that addresses this problem without having to look at a different location for this intersection.

Steve van De Keere, P.Eng.
Head, Transportation Engineering - Expansion
Design and Construction, Transportation and Environmental Services
Phone: 519 575 4792
All,

The following summarizes the discussions at yesterday's meeting with the City/Region (Binu, Barry and Steve, and Bing, Norton and Catherine from SNC), and actions to be taken following the meeting:

Strasburg/Robert Ferrie Intersection

- City preferred roundabout design. SNC to review which option (1 or 2) is most technically preferred and in particular, not impacting the pond of the Rutkowski’s property.

- Review reverse curve design and whether the approaches can be done without the reverse curves. Region’s current design of roundabouts is straight without curves and seems to work well. Andy – please review and revise design if agreed.

- Life cycle cost analysis should be based on construction quantities and property impact costs (rather than the generalized cost estimates being used). Norton – please revise estimates as discussed. Property unit cost = $0.4M per acre.

Strasburg/Blair Creek Drive Intersection

- Insert a curvature of Blair Creek Drive and connect it with Strasburg Road at 90 degrees (for both alternatives – signal control or roundabout design)

- Reidel to be closed – EA report should mention this

- Review reverse curves (as above)

- Review and revise life cycle cost analyses (as above)

Note to Andy and Norton - revised design and cost estimates for the above two intersections to be re-submitted to the City by end of the first week of January.

Strasburg/New Dundee Intersection (sight line issues)

- SNC presented 3 options for the vertical alignment corrections: 1. combination of lowering grade of existing intersection approximately 4m and raising the sag east of the intersection, 2. raising existing grade of the sag by approximately 4m (K = 150) and 3. raising existing grade of the sag by approximately 8m (K = 260).

- Cost for the sag curve correction (options 2 & 3) is in the range of $0.8 to $1.1M approximately (not including property costs).

- Region undertook to review these options internally by Region’s staff and provide comments by mid-January. Steve indicated that any reduction in standards, such as lowering speed at the intersection and other traffic measures may be considered, but these can only be done with his director’s approval.
Bing and Binu,
Happy Holidays to you both.

Further to our meeting this week regarding the sight distance issue at the intersection of Strasburg/New Dundee, I briefly reviewed your plan and profile drawings and the TAC manual and Regional standards. I also discussed this briefly with our head of design.

I offer the following comments:

1. We concur with using a design speed of 100km/h for now. We will check if we have any recent speed studies (Mike J: Do we have any recent speed studies on New Dundee in the vicinity of Reidel Drive? Can we get one sometime in the near year?) and if the speed studies show a lower 85th percentile speed we may consider using something lower.

2. For the signalized design, we suggest that you consider using a decision sight distance of 300m. This would be considered a minimum decision sight distance in a "rural" type of application such as this. Also we are assuming the new intersection will be illuminated so you can use an object height of 1.05 m instead of 0.38 m to calculate the minimum crest K value. This should help to reduce but not eliminate the profile correction requirements along New Dundee.

3. As a design control for either the signalized or roundabout intersections, we strongly suggest that you hold the road elevation at the driveway at the existing house east of Reidel Drive. Due to the proximity of the house to the road, any significant grade change at that location would surely trigger a full buyout of that property, and as a result, would add another $0.5 million to the intersection cost.

4. For the roundabout option, we suggest that you use a minimum stopping sight distance of 200m and object height of 0.15m for the westbound drivers to see the end of the splitter island as long as the splitter island is extended as far to the east as possible without impacting the existing driveway. From this point a reduced design speed can be used as our experience shows that vehicles are travelling at 80km/h or less by the time they reach the end of the splitter island. Using a design speed of 80 km/h and a minimum stopping sight distance to an object of 0.15m height should help to reduce the profile correction requirements.

5. From a review of the existing road profile, it appears there is a tangent to the west that is several hundred metres long. We suggest that for both the roundabout and signalized intersections, you consider options for shifting the intersections to the west approximately 200m (there may be a range of locations that you should investigate) to see if there is an opportunity to improve the sightlines without extensive re-grading of New Dundee Road.

6. For the roundabout concepts, we suggest that you consider NOT using the reverse-curve designs on the approach as an alternative. Also, please consider using flatter exits as these will assist you in getting proper deflection on the adjacent approaches. We assume that any roundabout designs would have been adequately checked for speed control. Please confirm. In addition, for the roundabout at the existing intersection location, we suggest that you consider shifting the roundabout a bit to the west and slightly north to minimize impacts to the existing house on the SE corner. I am available during the first week of January if your roundabout designer has any questions.

7. It would be very helpful for our next meeting if you could prepare the following:
a. Functional designs (plan and profile) of the four (or more) options discussed above with cost estimates to implement including all property and utility costs.
b. A brief table outlining the pros and cons of each option using criteria such as operations, expected injury collisions, property impacts (such as noise, driveways, etc.) and cost. (Binu: This documentation will be useful for your ESR).

To make best use of staff’s time at the next meeting, it would be very helpful if all this information was sent at least one week in advance of the meeting.

Binu: I know this work will take some time to do and to review; however, we believe it is absolutely necessary. The Region will not agree to an intersection location or design until all reasonable alternatives have been considered and evaluated. Should this location prove to be too costly to implement, we may be forced to consider another connection point further to the west associated with another one of the route alternatives.

Steve van De Keere, P.Eng.
Head, Transportation Engineering - Expansion
Design and Construction, Transportation and Environmental Services
Phone: 519 575 4792
On January 25, 2012, SLI met with City and Region staff to go over the various intersection configuration options at New Dundee Road / Strasburg Road, as well as briefly discuss the intersections at Robert Ferrie Drive and Blair Creek Drive. The following project team members were in attendance:

- City of Kitchener (City): Binu Korah (BK), John McBride (JM), Barry Cronkite (BC)
- Region of Waterloo (Region): Steve Van de Keere (SVdK)
- SNC-Lavalin Inc. (SLI): Bing Wong (BW), Sunil Kothari (SK), Andy Tam (AT) by teleconference, Victor Wang (VW) by teleconference.

NEW DUNDEE ROAD

SK noted that the sight distance criteria provided in SVdK’s December 23, 2011 email to BW was reviewed and accepted for New Dundee Road (design speed of 100 km/h). As a result, several options were developed. Each option was analyzed as a rural cross-section, but this can be refined for the preferred option to reduce actual impacts. All options will require property at all four quadrants of the intersection.

Signalized Intersection Options:

Signals are warranted as per TAC requirements. Region requested that the analysis be re-done using OTM methodology.

For signalized intersection, a decision sight distance of 300 m, with a 1.05 m object height (i.e., intersection will be illuminated) is required to eliminate any turning movement restrictions. This distance is measured from the intersection (departure), with the critical movements requiring this decision sight distance being the EB right turn on red and NB left turn on green. The required sight distance translates to a crest curve K = 115.

A Synchro analysis has been completed and has confirmed the following functional requirements for minimum satisfactory volume/capacity ratio for all of the signalized intersection options: EB/WB: Left Turn; Through; Shared Right Turn/Through.

Options are listed in order of lowest capital/property cost to highest capital cost:

No Profile Correction Option (K = 70)

- Assumption that the existing pavement can be rehabilitated and not require full reconstruction, makes this option a more economical solution.
- EB right turn on red would be acceptable as there will be an additional through lane at the intersection, and therefore a lane for on-coming traffic to overtake accelerating vehicles (i.e., stopping sight distance criteria can be used rather than decision sight distance). NB left will still be restricted to an advance green signal, based on the decision sight distance.
Profile Correction Option (K=115)

- Grade raise introduced, and two vertical curves combined to improve vertical curve. There are less grading impacts because the surrounding lands are higher than the road. However, road to be completely reconstructed due to the grade raise.
- No sight distance issues, therefore no restrictive movements.
- Only reason to consider this option is to allow left turn on green, or if full reconstruction is required.

Intersection Shift (Staggered)

- Intersection of Strasburg Rd shifted 200m west to provide adequate decision sight distance.
- Location of Cameron Road to remain (staggered intersection), means additional set of signals, as well as extension of Blair Creek Drive, which will increase capital costs.
- Functional requirements are same as other options, therefore, there is no savings in this option.
- Shift requires realignment of the Technically Preferred Alignment of Strasburg Rd to an alignment similar to Option E3 that was eliminated through the EA process.

Relocated Intersection

- SVdK noted that the Region would like to see an option in which the entire intersection is shifted (including a realignment of Cameron Rd).
- It was acknowledged that this option will be a higher capital cost due to realignment of Cameron Drive, and extension of Blair Creek Drive.

The No Profile Option was carried forward to compare with the roundabout option in the roundabout screening analysis.

Roundabout Options

Roundabout options were reviewed as an alternative to signalized intersections.

For roundabout, a stopping sight distance of 200 m, with object height of 0.15m was used. This distance is measured for traffic approaching the intersection to see the raised separator island. No profile corrections are required to achieve this sight distance. At the intersection, the profile is adjusted to provide proper cross-fall of the roundabout, designed at 50 km/h.

Two options were reviewed: one with reverse curves at the intersection approach, and one without. Region prefers that no reverse curves are provided. However, the separator islands should be extended (this can be determined in detail design).

Roundabout Screening

Capital costs between the signalized option and roundabout option are similar, but Injury Collision Costs (ICC) of roundabout is much lower. The overall lifecycle cost of roundabout is lower, and is therefore the roundabout is the preferred option.

However, this is subject to Regional council approval. Therefore, both the roundabout and signalized intersection will be presented as alternate intersection control options, with the final decision made during detail design.
To prepare to take this option for council approval, the Region requested some refinement of the analysis, as well as some additional information in lieu of a formal Intersection Control study.

- Include relocated intersection as a reviewed option.
- Reduce ICC for roundabouts to 25% of signalized ICC. It was noted that the injury dollar cost will not change at this time.
- Provide cost estimate details for all options.
- Region will provide additional comments after one week (previously agreed review time)

OTHER INTERSECTIONS

Roundabout screening was also prepared at Blair Creek Drive and Robert Ferrie Drive, for which the roundabout is determined to be the preferred option.

- Robert Ferrie Drive location is subject to further planning studies.
- Blair Creek Drive should be centred on right-of-way determined in the site plan approvals.

Prepared by
SNC-Lavalin Inc.

Sunil Kothari

Attachments:

- Roundabout Screening (revised from meeting version)
- Pros/Cons Table (revised from meeting version)
- OTM Signal Warrants (revised from meeting version)
Minutes No.: MNR-3
Prepared by: Ian Upjohn
Meeting date: January 18, 2012
Location: MNR Offices, Guelph

Subject:
- Strasburg Road Extension
- Environmental Assessment – From 500 m North of Stauffer Drive to New Dundee Road
- Detail Design and Contract Administration – From Rush Meadow Street to Robert Ferrie Drive

Present:
- MNR Guelph District
  - David Marriott (DM)
  - Graham Buck (GB)
  - Al Murray (AM)
- MOE West Central Region
  - Barb Slattery (by telecon) (BS)
- City of Kitchener
  - Grant Murphy (GM)
  - Binu Korah (BK)
- SNC-Lavalin Inc. (SLI)
  - Ian Upjohn (IU)
- LGL Limited (LGL)
  - Allison Featherstone (AF)

Distribution:
- All Present
- Bing Wong
- Sunil Kothari
- Adam Sanzo
  (Transmitted via e-mail)

MINUTES

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<td>1.0</td>
<td>Introduction</td>
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<td>1.1</td>
<td>DM provided an overview of the agenda and round table introductions were made.</td>
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<td>2.0</td>
<td><strong>Purpose of Meeting</strong></td>
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<td>2.1</td>
<td>The purpose of the meeting was to discuss Species at Risk in general, and Jefferson Salamander in particular. The City was also seeking approval to show Jefferson Salamander regulated habitat mapping in its study documentation.</td>
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<td>3.0</td>
<td><strong>Project Status</strong></td>
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<td>3.1</td>
<td>IU provided an update on the status of the project since the last meeting with MNR (February 2011), including screening of the long list of 9 alignment alternatives (Spring 2011) and the more detailed assessment of the 5 short-listed alternatives (Summer 2011) to arrive at the Technically Preferred Alignment (TPA) (Alignment E4 Modified). The TPA, and the short-listed alternatives on the Natural Heritage Features background, were shown on display boards at the meeting and used in the discussion.</td>
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<td>3.2</td>
<td>BK summarized the public consultation process to date (3 PICs rather than the conventional 2 PICs, to provide more comprehensive opportunities for stakeholder input).</td>
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<td>3.3</td>
<td>AF summarized all of the wildlife survey work and analyses completed by LGL to date, including the requisite SAR surveys requested by MNR to date based on communications from MNR (June 24, 2010) and through subsequent meetings. IU advised that the SAR work also included floral/vegetation communities and has identified one SAR (butternut) within the study area.</td>
<td>Info</td>
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<td>4.0</td>
<td><strong>Recommended Approach for Demonstrating Absence of SAR Habitat in the Project Area</strong></td>
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<td>4.1</td>
<td>MNR advised that the SAR list for Waterloo is to be updated by the end of January 2012 (SARO - Ontario Regulation 230/08 has been updated with barn swallow, meadowlark, etc.) and NHIC will be updated accordingly. MNR further advised that there is no ‘grandfathering’ under the ESA, and if new species are uplisted they must be considered, even with an approved EA. [Post-meeting note: MNR provided SLI with the updated Waterloo Region SAR list on February 1, 2012].</td>
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<td>4.2</td>
<td>The ESR will commit to additional SAR survey work in future design phases, as required. MNR would like to review the Draft ESR prior to filing. CoK intends to provide the draft to MNR in February, prior to filing scheduled for March 2012 (refer to Item 8).</td>
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<td>4.3</td>
<td>LGL requested clarity on Blanding’s turtle in the Detail Design (North Section) of the project area, as their surveys have indicated that records for the species occur in the project area, yet has not been re-confirmed by various consultants for the CoK in the project area (GB 2011 statement re species being extirpated vs another MNR SAR biologist’s (Karolyne Pickett) suggestion that species is present in project area). GB stated that current information suggests only that this species is not present in Battler’s Pond; MNR is not in a position to conclude that species is extirpated from the entire project area. Suitable habitat is known to exist along Strasburg Creek corridor. BK suggested that other CoK infrastructure EAs (Ward’s Pond, Huron Road widening, Strasburg Creek Flood Control) have demonstrated absence.</td>
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<td>4.4</td>
<td>MNR is developing a Blanding’s turtle survey protocol (2011 draft) and wishes to see LGL methodology for project area to date – general timing windows and methodologies were shared with LGL at the meeting, although they are still considered draft and not for public release at this time. LGL will include additional discussion on turtle survey methodology that was employed during LGL field work in 2010 and 2011 and how it compares against the draft methodologies that were reviewed, for inclusion in the ESR and the EIS for the Detail Design section (prepared in support of GRCA work permit; available within the next month). SLI/CoK will also provide MNR with a copy of the EIS.</td>
<td>Info LGL CoK/SLI</td>
<td>Feb-2012</td>
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<td>4.5</td>
<td>MNR is also preparing a draft description of Blanding’s turtle habitat (draft expected in February 2012).</td>
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<td>4.6</td>
<td>GB suggested that one (1) season of appropriate surveys (Mar-15 to Jun-15 and/or Sep 15 to Oct-15), preferably using non-invasive methodology (basking survey) will be sufficient to demonstrate absence of Blanding’s turtle. DM reiterated that the ESA and SAR work is a proponent-driven process and the onus is on the proponent to demonstrate absence.</td>
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### 5.0 Overview of SAR Work Completed to Date by Project Team

<p>| 5.1 | Refer to Item 3.3 above.                                                                                                                                  | Info |            |
| 5.2 | AF stated that targeted turtle basking surveys were conducted in the project area and confirmed the presence of 2 species (non-SAR). LGL will review their field effort against the recently provided information on methodology | Info LGL |            |</p>
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<td>for Blanding’s turtle to address wildlife SAR in the EA and Detail Design study areas.</td>
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<td><strong>6.0 Updated Jefferson Salamander Regulated Habitat Mapping</strong></td>
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<td><strong>6.1</strong> MNR provided attendees with a copy of the January 9, 2012 edition of the draft Jefferson Salamander (JESA) Regulated Habitat Mapping for the Class EA study area, which has been prepared (in part) on the basis of LGL 2011 survey results. There was some discussion on the rationale for the changes made to the September 2010 mapping.</td>
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<td><strong>6.2</strong> In response to the City of Kitchener’s request to show this mapping in public documents (i.e., the Environmental Study Report) DM stated that MNR cannot give permission to go public at this time. This is the same message conveyed to the Project Team in September 2010 and February 2011 meetings with MNR staff.</td>
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<td><strong>6.3</strong> BK reminded MNR of Karolyne Pickett’s concern that the City had not shown the mapping publicly at the October 26, 2011 Public Information Centre.</td>
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<td><strong>6.4</strong> The City expressed concern that there are members of the public who are following the Jefferson Salamander habitat regulation process, and who have been provided with the opportunity to view JESA habitat mapping on the River Road project (in proximity to the Strasburg Road project area), but are being advised that they are currently not being provided with the same opportunity on this project. This has become an issue that has triggered public contact with both MNR and MOE.</td>
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<td><strong>6.5</strong> There were further questions from the City as to how MNR will complete the regulatory process to the point where the mapping can be made public (e.g., meetings with affected property owners). MNR District staff at the meeting referred to MNR SAR Branch staff protocol and were unable to provide a clear indication of how this will be achieved (GB stated that MNR is currently consulting only with public sector proponents on the mapping). In the interim, the City is still in the position of being able to state only that the mapping exists, that one or more alignment alternatives will cross the regulated area (MNR requested that no quantification of affected habitat be included in the ESR), and that MNR has not provided permission to show the mapping publicly.</td>
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<td><strong>6.6</strong> [Post-meeting note: In response to SLI’s Jan-20 email further stating the City’s concerns with not being able to]</td>
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show the draft JESA mapping publicly, MNR prepared draft JESA mapping for only the study area, including various disclaimers and explanatory notes, and on Jan-24 granted the City written permission to incorporate this mapping in the ESR.]

7.0 Discussion on ESA Section 17(2)(c)

7.1 Ministry staff advised of the dynamic nature of the Endangered Species Act with respect to habitat projection, and that the Project Team should be aware of any changes to the legislation during the life-cycle of the project. For example, species that currently receive individual species protection (e.g. Blanding’s Turtle) under the legislation, which may be relevant to the project area, will also receive general habitat protection under Section 10 (1) in June 2013 (Section 10 (4) (c) of the Act). MRN also advised that habitat protection for specific species may occur sooner than June 2013, if a habitat regulation is finalized by the Ministry.

IU stated the Project Team’s expectation that an ESA permit will be required for the Class EA section.

7.2 DM stated MNR’s distinction between the EA Act and ESA requirements, and MNR’s holistic approach to the project. MNR will consider the full length of the Strasburg Road Extension (North and South Sections) under the ESA, as opposed to just the Class EA (South Section) for permitting purposes (i.e., North and South Sections not mutually exclusive). Therefore, MNR will require information on how the North Section alignment has been established, including how alternatives considered “avoidance” of SAR habitat, and how this has influenced development of “reasonable” alignment alternatives in the South Section.

7.3 Ministry staff will consider the planning history associated with the northern portion of the road extension (Detail Design – North Section) when determining if the reasonable alternatives test under Section 17(2)(c) of the legislation has been met. However, a clear rationale discussing how alternatives were considered to avoid the regulated habitat for the entire project (North and South Sections holistically), or why alternatives were not or cannot be considered for the North Section, will be required to support an alignment that impacts the habitat for the species.

In this regard, MNR Guelph District wishes to satisfy itself that this first test of avoidance has been met before addressing overall benefits and would like the City to complete parts of the ESA Information Gathering Form (Sections 4, 5, 10 and 11) prior to filing the ESR. MNR will
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<td>provide the IGF to SLI. DM stated that MNR recognizes and will take into account that the ESA and PSW designations and requirements were not in place at the time that alignment alternatives for the North Section were being assessed. [Post-meeting note: MNR provided the IGF to SLI on Jan-19].</td>
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<td>7.4</td>
<td>GM stated the City’s sensitivity to reopening the EA process for the North Section since MOE has provided concurrence that the City has met the requirements/intent of the Municipal Class EA with respect to provisions for completing the process under the Planning Act.</td>
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<td>7.5</td>
<td>IU also stated concerns with providing the IGF material prior to filing of the ESR with respect to timing constraints. BK stated that the Project Team will endeavour to assemble an information package for MNR.</td>
<td>CoK/SLI</td>
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<td>8.0</td>
<td><strong>Next Steps in the Class EA Process</strong></td>
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<td>8.1</td>
<td>The Draft ESR is being prepared and will be distributed for review by select study participants in February 2012.</td>
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<td>8.2</td>
<td>CoK intends to take the ESR to Council and, subject to Council approval, file it in the public record in March 2012.</td>
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<td>9.0</td>
<td><strong>Open Discussion</strong></td>
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<td>9.1</td>
<td>IU requested an update on whether MNR is considering any changes to the PSW designation in the Class EA study area (upper Blair Creek corridor section of the Roseville Swamp – Cedar Creek wetland complex) based on current thinking by GRCA that unevaluated wetlands in the area should be added and the PSW boundary should be contiguous. DM stated that MNR has no such plans, but GRCA can recommend additional complexing.</td>
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If there are any errors or omissions, please contact Ian Upjohn at 416.679.6289 or by e-mail: ian.upjohn@sncalavalin.com.
Good morning, Dave.

Thank you for providing the updated Jefferson Salamander Regulated Habitat Mapping at our meeting on Wednesday. At the meeting, in response to the City of Kitchener’s request to show this mapping in public documents (i.e., the Environmental Study Report) you stated that MNR cannot give permission to go public at this time. This is the same message conveyed to the Project Team in September 2010, with MNR stating its intention to consult with affected property owners in Fall 2010 and complete the regulated habitat process in the study area by the end of 2010. This did not happen and the Project Team received the same message regarding not showing the mapping publicly at its February 2011 meeting with MNR staff.

At our meeting this week, there were further questions from the City as to how MNR will complete the regulatory process to the point where the mapping can be made public (e.g., meetings with affected property owners). MNR District staff at the meeting referred to SAR Branch staff and were unable to provide a clear indication of how this will be achieved. In the interim, the City is still in the position of being able to state only that the mapping exists, that one or more alignment alternatives will cross the regulated area, and that MNR has not provided permission to show the mapping publicly.

The City has serious concerns over the fact that the mapping process remains open-ended, and the implications for the Class EA process, which is intended to be transparent and traceable. This concern arises from two perspectives:

1. The transparency of the process is compromised by an edict that is outside the City’s control. This situation is exacerbated by the fact that there are members of the public who are following the Jefferson Salamander habitat regulation process, and who have been provided with the opportunity to view JESA habitat mapping on the River Road project (in proximity to the Strasburg Road project area), but are being advised that they are currently not being provided with the same opportunity on this project. This has become an issue that has triggered public contact with both your ministry and MOE.

2. The City feels that the transparency gap increases the potential for objections to the ESR, including the potential for Part II Order requests. These are administrative, financial and political burdens to the process, and the City would like to minimize this potential.

Therefore, the City is still seeking clarification on both the rationale for not being able to show the JESA mapping, as well as certainty as to what process is involved in finalizing the mapping, and how long that process will take.

Your efforts in consulting the appropriate MNR staff and providing a response in these regards at your earliest convenience would be greatly appreciated.

Ian K. Upjohn, MCIP, RPP
Principal Planner
Environment Division
SNC-Lavalin Inc.
195 The West Mall
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Ian Upjohn, Principal Planner
Environment Division
SNC-Lavalin Inc.
195 The West Mall
Toronto, Ontario
M9C 5K1

January 24, 2012

Re: Jefferson Salamander Regulated Habitat - Strasburg Road Municipal Class
Environmental Assessment, Schedule C Project – City of Kitchener, Region of
Waterloo - MNR Comments January 2012

Dear Mr. Upjohn,

The Ministry of Natural Resources (MNR) is in receipt of your email correspondence (dated January 20th, 2012), requesting further clarification on Jefferson Salamander regulated habitat following the meeting held with Ministry staff on January 18th 2012.

Ministry staff can offer the following information for your consideration, regarding the process of finalizing the regulated habitat mapping for the species, and the proponent’s request to publish the information in the Environmental Study Report (ESR).

Jefferson Salamander is listed as endangered under Ontario Regulation 230/08. The species receives individual species protection and regulated habitat protection (as of February 2010) pursuant to Sections 9 (1) and 10 (1) of the Endangered Species Act.

As discussed in our meeting, regulated habitat mapping within the Environmental Assessment (EA) project area has been updated based on the Ministry’s review of the consultant’s (LGL Limited) Summary Reports for the species. These reports were required to update the mapping, and were circulated to the Ministry on November 28 and 29, 2011.

The authorization issued under Section 17 (2) (b) of the legislation allowed the consultants to review potential habitat for the species in the northern portion of the road extension (subject to detailed design) that originally had not been surveyed for. In addition, field work was completed to ground-truth the original draft habitat mapping within the EA project area (potential breeding pond suitability).

The hardcopy map provided to the Project Team (dated January 9th 2012) during the meeting represents the regulated habitat for Jefferson Salamander used to implement the legislation. The above mentioned map should be used internally by the Project Team to advance the process of the EA.
Strasburg Road EA - Jefferson Salamander Regulated Habitat

Legend

- Approx. Strasburg EA Study Area
- Jefferson Salamander Regulated Habitat
- Ontario Road Network

Notes: Only regulated habitat within the EA Study Area is shown on the map

Data Sources:
- ESA Habitat Data Class, NRVIS Database, Ontario Ministry of Natural Resources, January 2012.
- SWOOP II Orthophotography, Ontario Ministry of Natural Resources, Spring 2010.

Additional Notes:
- This map is for illustrative purposes only and is not intended to define legal boundaries. For an accurate reference and the most recent version of the regulation, please view Ontario Regulation 242/08 on e-laws at www.e-laws.gov.on.ca/index.html.
- Habitat boundaries were interpreted from Ontario Regulation 242/08 pursuant to the Endangered Species Act.
- Habitat boundary lines were digitized by airphoto interpretation, and were not derived from field surveys.

Spatial Reference: UTM Zone 17N

This mapping is reviewed and maintained on an ongoing basis, and is subject to change at any time.

© Queen's Printer for Ontario, 2012.
Please be advised that the mapping is considered to be up-to-date. However, regulated habitat mapping, much like provincially significant wetlands, are considered open files. If new information becomes available for the species (e.g., suitable breeding pond is discovered to be an active breeding bond etc.), or the species specific regulation is amended, the regulated mapping may have to be updated to reflect this new information.

The Ministry appreciates the City’s request to publish the regulated habitat mapping in the ESR to ensure transparency in the EA process. Due to the sensitive nature of species at risk information, requests to make regulated habitat publicly available must be reviewed for each case on a need-to-know basis. In this case, we generally agree that the regulated habitat for the species can be disclosed to the general public to inform decision-making. However, the Ministry is of the opinion that only the regulated habitat within the EA project area is required and appropriate in this regard. Please refer to the attached map (dated January 24, 2012) for the portion of the regulated habitat within the approximate EA project area that can be published in the ESR.

Please note that the disclaimers and explanatory notes on the attached map are important to ensure the regulated habitat mapping is interpreted correctly. Any reproduction of this mapping must also use this information.

Please contact the undersigned if further comment or clarification is required.

I trust this information will be of assistance.

Regards

Dave Marriott (District Planner)
Ministry of Natural Resources, Guelph District
1 Stone Road West
Guelph, ON, N1G 4Y2
Phone: (519) 826-4926

CC: Al Murray, MNR
    Ian Hagman, MNR
    Barb Slattery, MOE
March 23, 2012

Binu Korah, MBA, P.Eng.
Manager, Development Engineering
City of Kitchener
200 King Street West
Kitchener, Ontario,
N2G 4G7

Re: Draft Environmental Study Report (Dated February 2012) – Strasburg Road Extension
Municipal Class Environmental Assessment (Schedule C) – City of Kitchener, Region of Waterloo - MNR Preliminary Comments March 2012

Mr Korah.

The Ministry of Natural Resources (MNR) is in receipt of the draft Environmental Study Report (ESR) and supporting Appendices, dated February 2012. The draft ESR was completed in accordance with the requirements of a Municipal Class Environmental Assessment (EA) – Schedule C Project, pursuant to the Environmental Assessment Act.

Ministry staff appreciates the opportunity to review the draft ESR prior to filing the report, and offer the following preliminary comments for your consideration.

The Ministry understands that the technically preferred alignment (alignment E4 modified) will be a four lane urban cross-section road (30 meter right-of-way), including: 3.5 meter wide lanes, a 7.0 meter wide boulevard, and 3.0 meter wide multi-use pathways on each side of the alignment. The preliminary design (Section 5.1) also includes 5 culvert crossings. A 6.0 x 3.0 meter box culvert (crossing culvert ID E4c) is specifically recommended for the required crossing of upper Blair Creek.

Ministry staff notes that alternative W1 would most effectively avoid or mitigate adverse environmental impacts associated with the proposed extension of Strasburg Road. In principle, the Ministry supports alternative W1 as the preferred alignment based on environmental considerations (e.g. protection of Jefferson Salamander habitat).

Jefferson Salamander Regulated Habitat

The draft ESR (Section 3.3.8) identifies regulated habitat for Jefferson Salamander as an overarching constraint to the project. Jefferson Salamander is listed as endangered under Ontario Regulation 230/08. The species receives individual species protection and regulated habitat protection pursuant to Sections 9 (1) and 10 (1) of the Endangered Species Act.
Sections 3.3.8 and 6.3.2 correctly acknowledge that an authorization under Section 17 (2) (c) of the legislation is required to lawfully proceed with the implementation of an alternative that would kill, harm, harass or capture an individual of the species, or destroy or damage its habitat. Ministry staff notes that regulated habitat for Jefferson Salamander would be damaged and destroyed if the technically preferred alignment (E4) is implemented.

Please be advised that the Minister may issue an authorization under section 17 (2) (c) of the *Endangered Species Act*, if the Minister is of the opinion that the main purpose of the activity is not to assist in the protection or recovery of the species, but is of the opinion that:

i. an overall benefit to the species will be achieved within a reasonable time through requirements imposed by conditions of the permit,

ii. that reasonable alternatives have been considered, including alternatives that would not adversely affect the species, and the best alternative has been adopted; and

iii. that reasonable steps to minimize adverse effects on individual members of the species are required by conditions of the permit.

As noted in the minutes of the January 18, 2012 meeting with Ministry staff, it was requested that additional information be provided for the entire Strasburg Road Extension project (referred to as Part A and B) in support of sub-clause 17 (2) (c) (ii) of the Act. To-date this information has not been circulated for review. Ministry staff are not in a position to provide comment on the EA alternatives with respect to the legislation at this time, and would appreciate if this information could be made available prior to the filing of the ESR.

The concept of overall benefit under sub-clause 17 (2) (c) (i) of the Act involves undertaking outcome-orientated actions that contribute to improving the circumstances for the species, and must include more than steps to minimize impacts. The degree of overall benefit required is a function of the projected adverse impacts to the species. It is important to note that the extent to which adverse impacts are mitigated will influence requirements of the overall benefit plan.

Ministry staff have completed an initial review of the technically preferred alignment’s preliminary design (Section 5.0 and Appendix E). The impacts of this design would include, but may not be limited to: the direct removal of habitat within the alignment right-of-way footprint, and eliminating the function of suitable breeding ponds and over-wintering habitat west of the alignment. It is MNR Guelph District’s opinion that it would be challenging for the City of Kitchener to achieve overall-benefit for this degree of habitat damage and destruction.

Mitigation measures that maintain access to suitable breeding ponds west of the alignment will be required to support an authorization at the District level. The draft ESR (Section 5.2.3 and Table 5.4) references ‘ecopassages’ as a potential mitigation measure to address species at risk requirements. However, it is recommended that this requirement be clearly stated, and that the report acknowledge that significant modifications to the preliminary design and implementation details in Sections 4.0, 5.0, 6.0 (e.g. capital costs) and the Appendices may be required to satisfy sub-clause 17 (2) (c) (iii) of the Act.

Ministry staff recommends that the potential for the technically preferred alignment to damage and destroy regulated habitat for the species outside of the EA study area also be referenced in the draft ESR. For example, the Hydrogeology Report (Appendix D) identifies the potential for development to
impact the hydrology (e.g. restrict recharge, cumulative loading of road salt etc.) of down-gradient receivers outside of the EA study area. Figure 3.5 of the report indicates that the groundwater flow direction across the EA study area is in a west-to-east direction. Ministry staff notes that ponds located in Stauffer Woods (ESPA #33) and the Caryndale Woodlot are currently being used for breeding by Jefferson Salamanders. These ponds are sited to the east of the EA study area, and are also protected as regulated habitat for the species.

Please be advised that additional studies may also be required in support of detailed design for any alternative that will damage and destroy habitat. This may be necessary to ensure impacts to the individuals of the species and habitat are fully understood, and to articulate appropriate mitigation measures and an overall benefit plan (noted in Section 5.2.3). It is recommended that this potential requirement also be referenced in the draft ESR as appropriate to inform decision-making.

Regulated Habitat Mapping

Sections 3.0 and 4.0 of the draft ESR include the up-dated regulated habitat mapping for Jefferson Salamander, provided by the Ministry as an attachment to the January 24, 2012 correspondence. Ministry staff are in agreement that the regulated habitat boundary for the EA project area has been appropriately interpreted on the maps. However, the Ministry has concerns with the overall approach to integrate this information in the draft ESR, in context to the direction provided in the January 24, 2012 correspondence. This includes the following:

i. Figures 3.7, 4.3a, and 4.5a of the draft ESR identify the regulated habitat mapping as ‘draft JESA regulated area.’ As noted in the January 24, 2012 correspondence, the regulated habitat mapping provided is considered up-to-date. The addition of the qualifying term ‘draft’ to describe the regulated habitat for the species in the above noted figures is misleading and should be removed; and

ii. The Ministry agreed that the regulated habitat mapping could be disclosed to the general public to inform decision-making, subject to the provided disclaimers and explanatory notes (original map) be applied to any reproduction of the mapping. The reproduction of the regulated habitat boundary on Figures 3.7, 4.3a and 4.5a of the draft ESR does not appear to address this direction.

Ministry staff acknowledges that the original map has been attached to Appendix B (page 29), and general recognition of the disclaimers and explanatory notes has been provided in Section 3.3.8 (footnote 16). However, the above noted figures are considered standalone documents, and must include this information to be consistent with the direction provided.

Ministry staff requests that these mapping issues be addressed prior to finalizing the ESR. Please refer to the January 24, 2012 correspondence in Appendix B of the draft ESR for reference.

Additional ESR Comments

As a general comment, it is recommended that the provincial and municipally confirmed natural heritage features documented in the draft ESR (including the Appendices) be reviewed for accuracy. Please refer to the below for more detailed comments.
Provincial natural heritage feature mapping is available from Land Information Ontario (LIO). LIO manages key provincial datasets, and is responsible for housing most of the Ministry's digital natural heritage and resource data. It is recommended that the provincial mapping available from LIO be accessed to support the review of the natural features referenced. The link to the LIO website is as follows: [http://www.mnr.gov.on.ca/en/Business/LIO/index.html](http://www.mnr.gov.on.ca/en/Business/LIO/index.html).

Section 3

i. Section 3.3.1 provides a brief description of the Environmentally Sensitive Policy Areas (ESPA) that are within and proximal to the EA study area. The description of the Stauffer Woods ESPA (#33) and the Doon South Woods ESPA (#34) indicate that the Ministry has identified these areas as locally significant life science areas/sites.

Ministry staff notes that the closest confirmed Area of Natural Scientific Interest (ANSI) is the Roseville Swamp regionally significant life science ANSI. This natural heritage feature is approximately 1 kilometre east of the EA study area; as such, it is unclear what Ministry identified features the draft ESR is referencing. It is recommended that the above noted ESPA descriptions be reviewed.

ii. Section 3.3.6 (Wetlands) notes that the Blair Creek provincially significant wetland (PSW) complex extends directly through the EA study area. Ministry staff notes that the Roseville Swamp - Cedar Creek PSW complex is the wetland of interest within the EA study area. Please refer to the Ministry correspondence dated June 24, 2010 (Appendix D) and January 19, 2012 (email). It is recommended that the entire draft ESR and the supporting Appendices (e.g. Appendix D technical studies) be reviewed to ensure the correct PSWs are appropriately referenced throughout the report(s).

iii. Please be advised that wetland evaluations are open files, where new wetlands are evaluated and existing wetlands re-evaluated under the Ontario Wetland Evaluation System (OWES) by Ministry staff when new information becomes available. Ministry staff have reviewed the information in the draft ESR, and the previously unevaluated wetland north of Stauffer Drive is now considered provincially significant. This wetland is identified on Figure 3.9 as MAM3-6 and SAM1-4 under the Ecological Land Classification (ELC) for Southern Ontario.

Ministry staff will provide an updated map of the Roseville Swamp - Cedar Creek PSW complex under separate cover. It is recommended that the draft ESR be updated as appropriate to reflect this new information.

iv. Section 3.3.6 (Blair Creek Swamp PSW and ESPA) states that the Ministry has designated the area bisecting the EA study area as a local life science area. As noted above, the closest Area of Natural Scientific Interest (ANSI) confirmed by the Ministry is the Roseville Swamp regionally significant life science ANSI. It is recommended that this reference be reviewed.

v. The Existing Conditions Report – Wildlife (Appendix D) confirmed that Barn Swallow (threatened) was observed breeding and foraging within the EA study area. The species received individual and general habitat protection at the time of listing (January 2012). Ministry staff notes that this species does not appear to be referenced in Section 3.3.8 (species at risk).
vi. Ministry staff notes that footnote 16 (Section 3.3.8) refers to the regulated habitat mapping provided to the project team on January 9, 2012 as draft. As noted above, the regulated habitat mapping provided is considered up-to-date. Please refer to the January 24, 2012 Ministry correspondence for reference on the status of the regulated habitat mapping.

Section 4

i. Ministry staff would appreciate further clarification on the evaluation process for alternatives, based on the information summarized in Tables 4.3 and 4.4, and detailed in Appendix C. For example, the Groundwater Resources evaluation criterion for alternative E3 in Table 4.3 was 'scored' as low-to-moderate, but revised to moderate-to-high (Table 4.4) through the detailed assessment of the short-listed alternatives.

A cursory review of Appendix C appears to indicate that the eastern alternatives (E2-4) have a low-to-moderate compatibility (e.g. groundwater quality - least preferred) with groundwater resources; as such, it is unclear how alternative E3 was deemed to have a higher preference in Table 4.4. It is recommended that additional detail be amended to the draft ESR to clearly summarize the results of the detailed assessment (e.g. evaluation scores that change significantly from the screening phase).

ii. Section 4.6.1 provides a discussion on potential refinements to the technically preferred alternative, and states that the pond identified on Figure 4.9 is not considered a significant environmental feature. This statement appears to be consistent with the scope of the Hydrogeological Report (Appendix D). Ministry staff notes that Sections 3.1.2 and 3.1.3 of the Existing Conditions Report – Wildlife (Appendix D) notes that a Snapping Turtle (special concern) occurrence was identified in the subject pond during the 2011 field investigations, and the feature represents suitable over-wintering habitat for the species. The occurrence of the species is also noted in Section 3.3.8 of the draft ESR.

The Natural Heritage Reference Manual (NHRM, 2010) provides a detailed description of factors that may be considered when determining significant wildlife habitat, including: seasonal concentrations of animals, rare vegetation communities or specialized habitats for wildlife, habitats of species of conservation concern, and wildlife movement corridors. The Existing Conditions Report – Wildlife (Appendix D) notes that the pond meets the criteria of specialized habitat and species of conservation concern; as such, the pond is identified as candidate significant wildlife habitat.

The draft ESR does not appear to provide any additional assessment of the pond and its status as candidate significant wildlife habitat. Based on the studies completed in support of the draft ESR (Appendix D), further rationale is required to support the statement that the pond is not considered a significant environmental feature. If the pond is considered significant wildlife habitat, further discussion should be amended to the draft ESR (e.g. Section 5.0) as appropriate.

Section 5.0

i. Section 5.1.2 states that the culvert crossing dimensions over upper Blair Creek (6.0 x 3.0 meter box culvert) were determined based on wildlife crossing requirements. The Ministry notes that the Draft Drainage and Stormwater Management Report (Section 6.2.2 –
Appendix D) provides a detailed assessment of HEC-RAS modelling (hydrology), but only generally references wildlife passage considerations. An assessment of wildlife crossing requirements does not appear to be included in the report to support this statement. Ministry staff recommends that additional detail be amended to the draft ESR to describe how wildlife-crossing requirements were evaluated.

ii. Table 5.4 (column 3) states that the potential impact of the technically preferred alternative on the regulated habitat of Jefferson Salamander is the crossing of the habitat. It is recommended that this be amended to include that impacts will result in damage and destruction of regulated habitat to be consistent with the language of the Endangered Species Act.

Appendix B – Minutes of January 18, 2012 Meeting

i. A cursory review of the attached minutes of the January 18, 2012 meeting with Ministry staff do not appear to be consistent with the review provided to the Project Team in the email correspondence dated February 1, 2012 (e.g. Point 6.5). Ministry staff requests that the minutes be amended to reflect the comments provided.

Appendix D – Terrestrial Vegetation Communities Report

i. Section 2.6 of the Terrestrial Vegetation Communities Report identified a single Butternut tree adjacent to Blair Creek. Butternut is listed as endangered under Ontario Regulation 230/08, and is protected if determined to be retailable. The report does not appear to state whether a Butternut Health Assessment was completed to assess if the tree is retailable. If the tree is not retailable it should not be a factor for evaluating alternatives.

The Ministry recommends that if development or site alteration is proposed within 25 meters of a Butternut tree (measured from the stem), the tree should be assessed to understand the potential implications of the legislation. It is recommended that the Butternut Health Assessment process be acknowledged within the report when discussing potential requirements under the legislation for the species.

ii. Sections 2.2 and 2.6 of the Terrestrial Vegetation Communities Report notes that 251 flora species were identified and incidental wildlife observations (including evidence of nesting) were recorded during site investigations. Ministry staff notes that these species lists do not appear to be attached to the report, as referenced in Section 2.6 (e.g. Appendix 1).

iii. It is recommended that additional detail be included in the report, describing how the ELC vegetation communities were surveyed specifically for species of plants at risk. Ministry staff would also appreciate if additional descriptions can be provided on the agricultural (e.g. crop type) and cultural fields within the EA study area.

iv. Section 2.4 states that the Blair Swamp ESPA runs directly through the study area. Based on a cursory review of the Region of Waterloo’s ESPA mapping (dated 2010), it appears that the Blair Swamp ESPA is to the east of Highway 401. It is recommended that the Region’s ESPA mapping be reviewed.

Appendix D – Existing Conditions Report - Wildlife
i. Ministry staff would appreciate if further clarification and detail can be provided on the field investigation methodologies afforded to species at risk. This includes the following:

a) Ministry staff understands that reptiles were surveyed for by placing 48 cover boards throughout the EA study area, in accordance with Figure 1. Ministry staff would appreciate if further detail can be provided on when the cover boards were deployed (e.g. dates), and when the cover boards were inspected.

b) The Ministry notes that there appears to be some inconsistencies between Table 3 (including Section 2.12.1) and Table 4, with respect to the survey methodology for Blanding’s Turtle.

Table 3 acknowledges that Blanding’s Turtle specific surveys were not conducted at the recommended time of year, and Section 2.12.1 states that not all surveys were timed at ideal weather events. Table 4 however states that surveys were completed under optimal weather conditions. It is recommended that Table 4 be reviewed to ensure consistency with the information referenced in Table 3 and Section 2.12.1.

c) Section 2.6 states that all mammal observations were incidental. Ministry staff notes that Table 4 refers to ‘area searches’ to detect the presence of potential American Badger (endangered) den sites. The Ministry would appreciate if additional information could be provided detailing the search methodology.

d) Ministry staff would appreciate if further detail can be provided on the methodology for the daytime and crepuscular breeding bird surveys (e.g. survey start and end times, weather conditions etc.).

e) It appears that birding stations were not located in the agricultural and cultural fields within the EA study area. Ministry staff would appreciate if further comment can be provided on the survey effort afforded to these areas, in context to species at risk that may be relevant to the study area (e.g. Bobolink and Eastern Meadowlark).

f) Table 4 indicates that Whip-poor-will (threatened) was detected as a migrant during the 2010 field investigations. The Ministry would appreciate if additional detail on the observation location can be provided.

ii. As a minor point of clarification, Ministry staff notes that Jefferson Salamander is listed as threatened under Table 4 (Region of Waterloo Known Species at Risk) and Appendix B. Please be advised that the species is now listed as endangered under Ontario Regulation 230/08.

iii. Ministry staff notes that further sampling of Jefferson Salamander is scheduled for 2012, in accordance with the Section 17 (2) (b) permit issued under the legislation. It is recommended that the draft ESR note that additional information on the species may be forthcoming.

iv. Ministry staff would appreciate if additional information could be provided on Little Brown Bat (Little Brown Myotis) referenced in Appendix B. Please be advised that the species
was designated as endangered by COSEWIC in an emergency assessment on February 3, 2012. The species has also been added to the ‘Priority List of Candidate Species at Risk’ expected to be assessed by COSSARO.

The Ministry appreciates your attention to the above comments. Please contact Dave Marriott, District Planner at 519-826-4926 if further comment of clarification is required.

Regards,

[Signature]

Ian Hagman
District Manager
Ministry of Natural Resources, Guelph District
1 Stone Road West
Guelph, ON, N1G 4Y2
Phone: (519) 826-4931

Cc: Al Murray, MNR
    Barb Slattery, MOE
    Ian Upjohn, SNC-Lavalin Inc.
MNR Preliminary Comments from March 23, 2012 have been summarized with responses in Table 1.

Table 1: MNR Preliminary Comments and Project Team Response

<table>
<thead>
<tr>
<th>Section</th>
<th>Summary of Comments/Concerns</th>
<th>Response</th>
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<tbody>
<tr>
<td><strong>Jefferson Salamander Regulated Habitat</strong></td>
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<tr>
<td>3.3.8 and 6.3.2</td>
<td>The draft ESR (Section 3.3.8) identifies regulated habitat for Jefferson Salamander as an overarching constraint to the project. Jefferson Salamander is listed as endangered under Ontario Regulation 230/08. The species receives individual species protection and regulated habitat protection pursuant to Sections 9 (1) and 10 (1) of the Endangered Species Act. Sections 3.3.8 and 6.3.2 correctly acknowledge that an authorization under Section 17 (2) (c) of the legislation is required to lawfully proceed with the implementation of an alternative that would kill, harm, harass or capture an individual of the species, or destroy or damage its habitat. Ministry staff notes that regulated habitat for Jefferson Salamander would be damaged and destroyed if the technically preferred alignment (E4) [sic] is implemented.</td>
<td>Noted. The City confirms its intention to pursue an authorization under Section 17 (2) (c) of the Endangered Species Act, as required.</td>
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<td>As noted in the minutes of the January 18, 2012 meeting with Ministry staff, it was requested that additional information be provided for the entire Strasburg Road Extension project (referred to as Part A and B) in support of sub-clause 17 (2) (c) (ii) of the Act. To-date this information has not been circulated for review. Ministry staff are not in a position to provide comment on the EA alternatives with respect to the legislation at this time, and would appreciate if this information could be made available prior to the filing of the ESR.</td>
<td>The sections of the Information Gathering Form requested by MNR at the January 18, 2012 meeting will be provided on a preliminary basis prior to formal filing of the ESR.</td>
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<td>The concept of overall benefit under sub-clause 17 (2) (c) (i) of the Act involves undertaking outcome-orientated actions that contribute to improving the circumstances for the species, and must include more than steps to minimize impacts. The degree of overall benefit required is a function of the projected adverse impacts to the species. It is important to note that the extent to which adverse impacts are mitigated will influence requirements of the overall benefit plan.</td>
<td>Noted.</td>
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<tr>
<td>5.0 and Appendix E</td>
<td>Ministry staff has completed an initial review of the technically preferred alignment’s preliminary design (Section 5.0 and Appendix E). The impacts of this design would include, but may not be limited to: the direct removal of habitat within the alignment right-of-way footprint, and eliminating the function of suitable breeding ponds and over-wintering habitat west of the alignment. It is MNR Guelph District’s opinion that it would be challenging for the City of Kitchener to achieve overall-benefit for this degree of habitat damage and destruction.</td>
<td>It is acknowledged that the Technically Preferred Alignment footprint will cross and result in direct removal of habitat within the area identified and regulated by MNR as habitat for Jefferson Salamander. However, we believe it is premature to state that the function of suitable breeding ponds and over-wintering habitat west of the alignment would be “eliminated”, firstly, since “function” implies use, and use of the area west of the alignment by the species has not been demonstrated (the City will continue survey the area over the next couple of years to gather information in this regard); and, secondly, since the effectiveness of mitigation measures to enable use of the area west of the alignment (e.g., ecopassage) have not been fully assessed. Statements below in the January 23 letter suggest that MNR staff believe that the introduction of such mitigation measures is possible.</td>
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<td>5.2.3 and Table 5.4</td>
<td>Mitigation measures that maintain access to suitable breeding ponds west of the alignment will be required to support an authorization at the District level. The draft ESR (Section 5.2.3 and Table 5.4) references ‘ecopassages’ as a potential mitigation measure to address species at risk requirements. However, it is recommended that this requirement be clearly stated, and that the report acknowledge that significant modifications to the preliminary design and implementation details in Sections 4.0, 5.0, 6.0 (e.g. capital costs) and the Appendices may be required to satisfy sub-clause 17 (2) (c) (iii) of the Act.</td>
<td>Noted. LGL has provided input to the Project Team to address this comment in the final ESR document.</td>
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<td>Figure 3.5</td>
<td>Ministry staff recommends that the potential for the technically preferred alignment to damage and destroy regulated habitat for the species outside of the EA study area also be referenced in the draft ESR. For example, the Hydrogeology Report (Appendix D) identifies the potential for development to impact the hydrology (e.g., restrict recharge, cumulative loading of road salt, etc.) of down-gradient receivers outside of the EA study area. Figure 3.5 of the report indicates that the groundwater flow direction across the EA study area is in a west-to-east direction. Ministry staff notes that ponds located in Stauffer Woods (ESPA #33) and the Caryndale Woodlot are currently being used for breeding by Jefferson Salamanders. These ponds are sited to the east of the EA study area, and are also protected as regulated habitat for the species.</td>
<td>MNR indicates that they interpret the hydrogeological report as indicating that downgradient hydrology may be impacted and then lists two examples (infiltration for recharge and cumulative salt loading) that may be experienced by accepting the technically preferred alternative. MNR has also indicated a preference for Alignment W1 based on considerations related to the protection of Jefferson Salamander habitat. It should be noted that under Alignment W1, the requirement to extend the connecting collector roads to W1 would result in the same overall impacts. In fact, for cumulative salt loading in particular, it is likely that W1 would result in an overall higher impact, as road runoff from W1 would presumably be directed into the wooded area that acts as</td>
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<td>the headwaters for Blair Creek, which would result in impacts to a larger overall area of the PSW (as it would commence further upgradient), while the extension of the two collector roads would have an additional additive impact to both the east and west sides of the PSW in various locations. Therefore, it is unlikely that selecting W1 would reduce overall projected impacts to downgradient areas, and would, in fact, most likely result in additional impacts.</td>
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<td>Regarding recharge impacts, on a straight one-to-one comparison, there would be lower impact to the regional recharge zone from Alignment W1. However, it has been noted that introducing a new roadway on Alignment W1 would likely result in moving the urban boundary to the eastern edge of W1, ultimately resulting in the potential for development over the entire recharge zone. If movement of the urban boundary were to occur, as has been posited, and reinforced by the fact that almost all properties in this area are owned by developers, in the long term, this would result in a substantially higher impact to recharge.</td>
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<td>5.2.3</td>
<td>It is unlikely that the ponds located in Stauffer Woods (ESPA #33) and the Caryndale Woodlot that are currently being used for breeding by Jefferson Salamanders would be damaged or destroyed with respect to hydrogeological linkages, since roadway runoff is being captured in sewers within the paved area and discharged to stormwater management ponds.</td>
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<td>Please be advised that additional studies may also be required in support of detailed design for any alternative that will damage and destroy habitat. This may be necessary to ensure impacts to the individuals of the species and habitat are fully understood, and to articulate appropriate mitigation measures and an overall benefit plan (noted in Section 5.2.3). It is recommended that this potential requirement also be referenced in the draft ESR as appropriate to inform decision-making.</td>
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<td>Noted. LGL has provided input to the Project Team to address the matter of more detailed investigations during subsequent design phases in the final ESR document (Table 5.5).</td>
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### Regulated Habitat Mapping

#### Sections 3.0 and 4.0 (Figure 3.7, 4.3a, 4.5a)

Sections 3.0 and 4.0 of the draft ESR include the up-dated regulated habitat mapping for Jefferson Salamander, provided by the Ministry as an attachment to the January 24, 2012 correspondence. Ministry staff are in agreement that the regulated habitat boundary for the EA project area has been appropriately interpreted on the maps. However, the Ministry has concerns with the overall approach to integrate this information in the draft ESR, in context to the direction provided in the January 24, 2012 correspondence. This includes the following:

i. Figures 3.7, 4.3a, and 4.5a of the draft ESR identify the regulated habitat mapping as ‘draft JESA regulated area.’ As noted in the January 24, 2012 correspondence, the regulated habitat mapping provided is considered up-to-date. The addition of the qualifying term ‘draft’ to describe the regulated habitat for the species in the above noted figures is misleading and should be removed; and

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<td>Noted. The word “draft” was initially retained because there seemed to be some uncertainty amongst MNR staff at the January 18 meeting as to finalizing the mapping process. However, in light of the March 23 MNR comments, the 'draft' label will be removed from the JESA regulated area mapping included in the ESR. LGL has updated Natural Sciences Report (NSR) mapping to reflect these comments.</td>
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#### Figures 3.7, 4.3a and 4.5a

The Ministry agreed that the regulated habitat mapping could be disclosed to the general public to inform decision-making, subject to the provided disclaimers and explanatory notes (original map) be applied to any reproduction of the mapping. The reproduction of the regulated habitat boundary on Figures 3.7, 4.3a and 4.5a of the draft ESR does not appear to address this direction.

Ministry staff acknowledges that the original map has been attached to Appendix B (page 29), and general recognition of the disclaimers and explanatory notes has been provided in Section 3.3.8 (footnote 16). However, the above noted figures are considered stand-alone documents, and must include this information to be consistent with the direction provided.

Ministry staff requests that these mapping issues be addressed prior to finalizing the ESR. Please refer to the January 24, 2012 correspondence in Appendix B of the draft ESR for reference.

Noted. The JESA mapping used in the ESR will include the disclaimers and explanatory notes. LGL updated Natural Sciences Report (NSR) mapping to reflect these comments.
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<td>3.3.1</td>
<td>As a general comment, it is recommended that the provincial and municipally confirmed natural heritage features documented in the draft ESR (including the Appendices) be reviewed for accuracy. Please refer to the below for more detailed comments.</td>
<td>Noted. The text has been modified to include the appropriate references (designation by the regional municipality, exclusive of MNR).</td>
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<td>Provincial natural heritage feature mapping is available from Land Information Ontario (LIO). LIO manages key provincial datasets, and is responsible for housing most of the Ministry’s digital natural heritage and resource data. It is recommended that the provincial mapping available from LIO be accessed to support the review of the natural features referenced. The link to the LIO website is as follows: <a href="http://www.mnr.gov.on.ca/en/Business/LIO/index.html">http://www.mnr.gov.on.ca/en/Business/LIO/index.html</a>.</td>
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<td>Noted. References to Blair Creek PSW, which was obtained from other published studies in the project area, has been changed to read “Roseville Swamp-Cedar Creek PSW”. LGL has updated the Natural Sciences Report (NSR) on page 1.</td>
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<td>Noted. It should be noted that the unevaluated wetlands were essentially considered as part of the PSW during the assessment of alignment alternatives. The ESR has been updated to reflect the change to the status of the previously unaevaluated wetland north of Stauffer Drive.</td>
</tr>
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<td>3.3.6</td>
<td>iv. Section 3.3.6 (Blair Creek Swamp PSW and ESPA) states that the Ministry has designated the area bisecting the EA study area as a local life science area. As noted above, the closest Area of Natural Scientific Interest (ANSI) confirmed by the Ministry is the Roseville Swamp regionally significant life science ANSI. It is recommended that this reference be reviewed.</td>
<td>Noted. The text has been modified to include the appropriate references (designation by the regional municipality, exclusive of MNR).</td>
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<td>Appendix D and 3.3.8</td>
<td>v. The Existing Conditions Report – Wildlife (Appendix D) confirmed that Barn Swallow (threatened) was observed breeding and foraging within the EA study area. The species received individual and general habitat protection at the time of listing (January 2012). Ministry staff notes that this species does not appear to be referenced in Section 3.3.8 (species at risk).</td>
<td>LGL has provided input to the Project Team to address this comment in the final ESR document (Section 3.3.8). LGL has added information to the NSR.</td>
</tr>
<tr>
<td>3.3.8</td>
<td>vi. Ministry staff notes that footnote 16 (Section 3.3.8) refers to the regulated habitat mapping provided to the Project Team on January 9, 2012 as draft. As noted above, the regulated habitat mapping provided is considered up-to-date. Please refer to the January 24, 2012 Ministry correspondence for reference on the status of the regulated habitat mapping.</td>
<td>Noted. The word “draft” has been removed from footnote 16.</td>
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<td>i. Ministry staff would appreciate further clarification on the evaluation process for alternatives, based on the information</td>
<td>This was based on a change in the reference point of comparators and which alternatives were being compared.</td>
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<td>Section and Appendix C</td>
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<td>Section 4.6.1 and Appendix D (Wildlife – Figure 4.9)</td>
<td>summarized in Tables 4.3 and 4.4, and detailed in Appendix C. For example, the Groundwater Resources evaluation criterion for alternative E3 in Table 4.3 was ‘scored’ as low-to-moderate, but revised to moderate-to-high (Table 4.4) through the detailed assessment of the short-listed alternatives. A cursory review of Appendix C appears to indicate that the eastern alternatives (E2-4) have a low-to-moderate compatibility (e.g., groundwater quality - least preferred) with groundwater resources; as such, it is unclear how alternative E3 was deemed to have a higher preference in Table 4.4. It is recommended that additional detail be amended to the draft ESR to clearly summarize the results of the detailed assessment (e.g., evaluation scores that change significantly from the screening phase).</td>
<td>Noted. The text in Section 4.6.1 relative to the significance of the pond has been modified to reflect that the pond is considered to be Candidate Significant Wildlife Habitat (SWH). Although the pond is considered Candidate SWH, the additional distance would not reduce the potential for turtles to attempt to continue to use the pond. Turtle movements to and from the pond would still be impacted by the road and should be addressed through mitigation treatments, such as the introduction of ecopassage, during Detail Design.</td>
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Section 4.6.1 provides a discussion on potential refinements to the technically preferred alternative, and states that the pond identified on Figure 4.9 is not considered a significant environmental feature. This statement appears to be consistent with the scope of the Hydrogeological Report (Appendix D). Ministry staff notes that Sections 3.1.2 and 3.1.3 of the Existing Conditions Report – Wildlife (Appendix D) notes that a Snapping Turtle (special concern) occurrence was identified in the subject pond during the 2011 field investigations, and the feature represents suitable overwintering habitat for the species. The occurrence of the species is also noted in Section 3.3.8 of the draft ESR. The Natural Heritage Reference Manual (NHRM, 2010) provides a detailed description of factors that may be considered when determining significant wildlife habitat, including: seasonal concentrations of animals, rare vegetation communities or specialized habitats for wildlife, habitats of species of conservation concern, and wildlife movement corridors. The Existing Conditions Report – Wildlife (Appendix D) notes that the pond meets the criteria of specialized habitat and species of conservation concern; as such, the pond is identified as candidate significant wildlife habitat. |
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<td>5.1.2</td>
<td>The draft ESR does not appear to provide any additional assessment of the pond and its status as candidate significant wildlife habitat. Based on the studies completed in support of the draft ESR (Appendix D), further rationale is required to support the statement that the pond is not considered a significant environmental feature. If the pond is considered significant wildlife habitat, further discussion should be amended to the draft ESR (e.g. Section 5.0) as appropriate.</td>
<td>LGL provided input to general guidance of culvert sizing to maximize the opportunity to accommodate for a variety of species passage in the ecopassages anticipated for the project. As a result, the ‘openness’ target of 0.6 was identified as a target minimum openness to accommodate species up to the size of deer. It is anticipated that ecopassage(s) designs will be finalize at detail design, pending additional data collection and designed specific to target species (anticipated to include Jefferson Salamander). Please note that the culvert design included in the February 2012 draft has been modified to reflect a larger structure in order avoid relocation of the existing Blair Creek channel.</td>
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<td>Table 5.4</td>
<td>Table 5.4 (column 3) states that the potential impact of the technically preferred alternative on the regulated habitat of Jefferson Salamander is the crossing of the habitat. It is recommended that this be amended to include that impacts will result in damage and destruction of regulated habitat to be consistent with the language of the Endangered Species Act.</td>
<td>Noted. The text in Table 5.5 has been modified accordingly. LGL has updated the language in the NSR.</td>
</tr>
<tr>
<td>Appendix B</td>
<td>Appendix B – Minutes of January 18, 2012 Meeting</td>
<td>Point 6.5 of the January 18, 2012 notes of meeting is considered to accurately reflect the statement made at the meeting and will be retained.</td>
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<td><strong>Appendix D</strong>&lt;br&gt;(Terrestrial - Section 2.6)</td>
<td><strong>i.</strong> Section 2.6 of the Terrestrial Vegetation Communities Report identified a single Butternut tree adjacent to Blair Creek. Butternut is listed as endangered under Ontario Regulation 230/08, and is protected if determined to be retainable. The report does not appear to state whether a Butternut Health Assessment was completed to assess if the tree is retainable. If the tree is not retainable it should not be a factor for evaluating alternatives.&lt;br&gt;&lt;br&gt;The Ministry recommends that if development or site alteration is proposed within 25 meters of a Butternut tree (measured from the stem), the tree should be assessed to understand the potential implications of the legislation. It is recommended that the Butternut Health Assessment process be acknowledged within the report when discussing potential requirements under the legislation for the species.</td>
<td>A Health Assessment has not been conducted for the butternut in question. It appears to be a healthy specimen (although a number of cankers were observed) and was, therefore, included in the evaluation of the alignment alternatives as part of the vegetation species at risk assessment. Work on the proposed alignment, including site alteration, will not occur within 25 m of the Butternut tree.</td>
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<td><strong>Appendix D</strong>&lt;br&gt;(Terrestrial – Sections 2.2 and 2.6)</td>
<td><strong>ii.</strong> Sections 2.2 and 2.6 of the Terrestrial Vegetation Communities Report notes that 251 flora species were identified and incidental wildlife observations (including evidence of nesting) were recorded during site investigations. Ministry staff notes that these species lists do not appear to be attached to the report, as referenced in Section 2.6 (e.g. Appendix 1).&lt;br&gt;&lt;br&gt;Species lists are included in Terrestrial Vegetation Report included in the current version of the ESR.</td>
<td></td>
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<tr>
<td><strong>Appendix D</strong>&lt;br&gt;(Terrestrial)</td>
<td><strong>iii.</strong> It is recommended that additional detail be included in the report, describing how the ELC vegetation communities were surveyed specifically for species of plants at risk. Ministry staff would also appreciate if additional descriptions can be provided on the agricultural (e.g. crop type) and cultural fields within the EA study area.</td>
<td>Noted. Details have been added to the Terrestrial Vegetation Report.</td>
</tr>
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<td><strong>Appendix D</strong>&lt;br&gt;(Terrestrial – Section 2.4)</td>
<td><strong>iv.</strong> Section 2.4 states that the Blair Swamp ESPA runs directly through the study area. Based on a cursory review of the Region of Waterloo’s ESPA mapping (dated 2010), it appears that the Blair Swamp ESPA is to the east of Highway 401. It is recommended that the Region’s ESPA mapping be reviewed.</td>
<td>Text has been modified to reflect appropriate mapping.</td>
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| Appendix D (Wildlife) | **i.** Ministry staff would appreciate if further clarification and detail can be provided on the field investigation methodologies afforded to species at risk. This includes the following:  
  a) Ministry staff understands that reptiles were surveyed for by placing 48 cover boards throughout the EA study area, in accordance with Figure 1. Ministry staff would appreciate if further detail can be provided on when the cover boards were deployed (e.g. dates), and when the cover boards were inspected.  
  Comment has been addressed in final Wildlife Report through inclusion of additional detail. | |
| Appendix D (Wildlife - Table 3 and Table 4) | **b)** The Ministry notes that there appears to be some inconsistencies between Table 3 (including Section 2.12.1) and Table 4, with respect to the survey methodology for Blanding’s Turtle.  
  Table 3 acknowledges that Blanding’s Turtle specific surveys were not conducted at the recommended time of year, and Section 2.12.1 states that not all surveys were timed at ideal weather events. Table 4 however states that surveys were completed under optimal weather conditions. It is recommended that Table 4 be reviewed to ensure consistency with the information referenced in Table 3 and Section 2.12.1.  
  Clarification has been provided in final of the Wildlife Report. | |
| Appendix D (Wildlife - Section 2.6) | **c)** Section 2.6 states that all mammal observations were incidental. Ministry staff notes that Table 4 refers to ‘area searches’ to detect the presence of potential American Badger (endangered) den sites. The Ministry would appreciate if additional information could be provided detailing the search methodology.  
  Comment has been addressed in the final Wildlife Report through inclusion of additional detail. | |
| Appendix D (Wildlife) | **d)** Ministry staff would appreciate if further detail can be provided on the methodology for the daytime and crepuscular breeding bird surveys (e.g. survey start and end times, weather conditions etc.).  
  Comment has been addressed in the final Wildlife Report through inclusion of additional detail. | |
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<td>Appendix D (Wildlife)</td>
<td>e) It appears that birding stations were not located in the agricultural and cultural fields within the EA study area. Ministry staff would appreciate if further comment can be provided on the survey effort afforded to these areas, in context to species at risk that may be relevant to the study area (e.g. Bobolink and Eastern Meadowlark).</td>
<td>Comment has been addressed in the final Wildlife Report through inclusion of additional detail.</td>
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<tr>
<td>Appendix D (Wildlife - Table 4)</td>
<td>f) Table 4 indicates that Whip-poor-will (threatened) was detected as a migrant during the 2010 field investigations. The Ministry would appreciate if additional detail on the observation location can be provided.</td>
<td>LGL will provide this information independent of the NSR, as it may be considered sensitive SAR information and is outside our project study area limits.</td>
</tr>
<tr>
<td>Appendix D (Wildlife - Table 4 and Appendix B)</td>
<td>ii. As a minor point of clarification, Ministry staff notes that Jefferson Salamander is listed as threatened under Table 4 (Region of Waterloo Known Species at Risk) and Appendix B. Please be advised that the species is now listed as endangered under Ontario Regulation 230/08.</td>
<td>Noted. Table 4 has been updated accordingly.</td>
</tr>
<tr>
<td>Appendix D (Wildlife)</td>
<td>iii. Ministry staff notes that further sampling of Jefferson Salamander is scheduled for 2012, in accordance with the Section 17 (2) (b) permit issued under the legislation. It is recommended that the draft ESR note that additional information on the species may be forthcoming.</td>
<td>Comment has been addressed in the final Wildlife Report through inclusion of additional detail.</td>
</tr>
<tr>
<td>Appendix D (Wildlife)</td>
<td>iv. Ministry staff would appreciate if additional information could be provided on Little Brown Bat (Little Brown Myotis) referenced in Appendix B. Please be advised that the species was designated as endangered by COSEWIC in an emergency assessment on February 3, 2012. The species has also been added to the ‘Priority List of Candidate Species at Risk’ expected to be assessed by COSSARO.</td>
<td>Noted. Natural Sciences Report (NSR) has been updated to reflect uplisting of the Little Brown Bat. Additional detail regarding location will be forwarded to the MNR independent of the NSR as it may be considered sensitive SAR information and is outside of our project study area limits.</td>
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March 19, 2012

Binu Korah
Development Engineering
Development and Technical Services Department
City of Kitchener
200 King Street West, 6th Floor
P.O. Box 1118
Kitchener, ON N2G 4G7

Re: Draft Environmental Study Report
Strasburg Road Extension Class EA
From 500m North of Stauffer Drive to New Dundee Road

Dear Mr. Korah,

GRCA staff have now had the opportunity to review the draft Environmental Study Report dated February 2012 pertaining to the Strasburg Road Extension Class EA from 500m north of Stauffer Drive to New Dundee Road. GRCA staff are generally satisfied with our review of the draft ESR report, with the exception of the following comments and corrections:

Engineering

1. On page 131, the statement that quantity control is not required for Strasburg Creek is incorrect. The stormwater management plan should be revised accordingly.

2. Identification of legal outlet for road culverts and ogs/swale outlets should be shown on figure 6-1 and included in the stormwater management report.

3. On page 154, Table 5.4 should include, under the environmental issues/concerns for drainage and stormwater management, increased erosion due to increased runoff volume and concentration of flows, increased peak flows, change in timing of runoff, increase in flood elevations and potential erosion due to culvert installation.

4. The use of a swale or oil grit separator does not meet enhanced quality criteria when used on their own. An oil grit separator can be combined with an enhanced swale to create a treatment

NOTE: Comments in this letter have been addressed at the March 26, 2012 Project Team Meeting and in this ESR.
train. It appears that in some areas only one of these two measures is proposed. Please correct this matter in order to meet the required stormwater management criteria.

5. Infiltration of road runoff should be included in the stormwater management plan, as per the Upper Blair Creek Functional Drainage Study, to protect Blair Creek and Strasburg Creek from increased runoff volume, to maintain groundwater input to the creeks and wetlands, and to reduce thermal impacts. The ESR should recommend how infiltration objectives can be achieved.

6. Does culvert E4a (22.5 hectare catchment) outlet into the proposed enhanced swale with a 90 degree turn? If, so we recommend reconsideration of this design so ensure the swale can be used effectively.

7. A digital copy of the revised hydraulic model needs to be submitted.

8. Page 56 of the report refers to a Hydrogeology report in Appendix A.2 Natural Environment. This should be revised to refer to Appendix D.2.

9. The hydrogeology report should provide information on the extent of dewatering that will be required for the road construction, and the potential for impacts.

10. The hydrogeology report should comment on potential challenges and impacts of the proposed directional drilling for installation of servicing.

Terrestrial and Aquatic

11. Staff note that alternative E2 would have included the replacement of a perched culvert and the removal of a v-notch weir at Reidel Road. As this structure is considered a barrier to the upstream movement of fish, regardless of the chosen preferred alternative, GRCA staff would encourage the replacement of these structures to remove fish passage barriers at this location.

12. It is noted that a water main will likely be installed across Blair Creek by horizontal directional drilling methodology. It is recommended that DFO’s Operational Statement for Punch and Bore Crossings be followed (http://www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/provinces-territories-territoires/on/os-eo16-eng.htm).

13. Blair Creek is considered intermittent above Riedel Road. However, because a detailed fish inventory was not undertaken in this section of creek, we cannot assume that there are no fish and that there is no direct fish habitat. Even if confirmed to be indirect fish habitat only, alterations to channel morphology, floodplain characteristics, and wetland communities should be avoided in order to maintain flow conditions immediately upstream and downstream of the proposed crossing. A clear-span bridge or appropriately-sized concrete box culvert is preferred over crossing structures placed within the stream bed and which would result in loss of fish
habitat or alteration of natural channel processes. In either case, the crossing structure (including bridge approaches, abutments, footings, and channel armoring) should be built entirely above the ordinary high water mark. Please consult DFO’s Operational Statement for further details (http://www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/provinces-territories-territoires/on/os-eo05-eng.htm). GRCA staff recommend that the ESR explicitly state that a clear span structure is the preferred crossing methodology to be used during detailed design.

14. A permanent crossing of Blair Creek Corridor at its narrowest point could create a new barrier for wildlife. Design details such as culvert length, diameter, and openness ratio were not discussed as part of this ESR but may be addressed during the detailed design stage. A comparison of bridge span and open box culvert design alternatives is strongly recommended to understand impacts on fish and wildlife passage along Blair Creek.

15. An increased setback from the pond located on the Rutkowski property is supported by GRCA staff given the fact that this feature was identified by LGL to be suitable habitat for snapping turtles, a species of special concern. Contrary to a statement made in the draft ESR, this pond was identified by LGL as significant wildlife habitat. A naturalized buffer between the road and pond edge is recommended in order to mitigate direct impacts on a species at risk (e.g. increased mortality rates) and indirect impacts (salt spray, stormwater runoff, noise, light, litter, etc.) identified by this study.

16. The general locations proposed for “ecological restoration plantings” along the Blair Creek corridor and “ecopassage/wildlife barriers” should be illustrated at a conceptual level within the ESR document.

17. It is recommended that plan and profile views of proposed mitigation measures be illustrated conceptually and included in the final ESR.

We trust that these comments are of assistance. If you have any questions or concerns regarding their content, do not hesitate to contact the undersigned.

Sincerely,

Lisa-Beth Bulford
Resource Planner
Grand River Conservation Authority
(519) 621-2763 x2292

cc. Ian Upjohn, Principal Planner, SNC-Lavalin Inc., 185 The West Mall, Toronto, ON, M9C 5K1
Regional staff have had the opportunity to review the draft *Strasburg Road Extension from North of Stauffer Drive to New Dundee Road Class Environmental Assessment Environmental Study Report* (SNC Lavalin, February, 2012), in light of the following:

- Regional Transportation Master Plan;
- Regional Official Plan (ROP) policy 2.D.17 concerning development requirements in Urban Designated Greenfield Areas;
- Regional Official Plan policy 7.C.12 concerning the development of infrastructure within or contiguous to designated Core Environmental Features.

1. **Regional Transportation Master Plan**

The Regional Transportation Master Plan (RTMP) guides Regional transportation network investments to 2031 to improve transportation choice, reduce the Region’s environmental impact and support economic growth. The RTMP prioritizes investments in Rapid Transit and conventional bus transit, identifies significant growth in active transportation such as walking and cycling, and proposes targeted road network improvements.

The RTMP identifies the Strasburg Road Extension (Huron Road – New Dundee Road) as a new road project undertaken by the City of Kitchener in the 5-10 year timeframe. The Strasburg Road Extension will serve a major collector function, improving connectivity between Regional roads such as New Dundee Road, Bleams Road, Fischer-Hallman Road and Homer Watson Boulevard. In addition, the road will support the growth of the surrounding residential community, accommodating public transit and active transportation.

2. **ROP Policy 2.D.17**

Polo 2.D.17 sets out some essential requirements that the Region and Area Municipalities must address in planning development within Urban Designated Greenfield Areas such as the Doon South Community in the eastern part of the study area. Section (e) of that policy requires that “the design of the road network provides for direct and efficient transit routes within and between communities.” Section (f) requires that land uses be located generally within a 450 metre distance of transit stops. In addition, section (c) requires a network of continuous sidewalks community trails and bicycle pathways to provide safe and convenient linkages to transit stops and other community amenities.
In light of this policy, Regional staff are of the opinion that alternative alignments W1, C2, and E3 intrude too far outside the Urban Designated Greenfield Area into the Protected Countryside to be consistent with the intent of this policy. They cannot, therefore, be supported by the Region. E2 has a very minor intrusion into the Protected Countryside and would therefore be the most compatible with ROP policy. E4 arcs out into the Protected Countryside to an extent that is somewhat problematic.

As stated in our previous letter dated September 6, 2011, Regional staff are of the opinion that alternative alignments E2 and E4, as well as the recently introduced E4 Modified (E4M) are “more compatible for transportation objectives, more attractive to traffic and transit riders from future new development in Doon South.” Moreover, both E2 and E4 are economical compared to alignment alternatives E3, W1, and C2 since they do not require lengthy extensions of Robert Ferrie Drive and Blair Creek Drive and their associated watermain and sanitary services.

However, E2 is relatively more economical than E4 with greatest use of the existing Reidel Drive road allowance, and E4 is not optimal from a servicing perspective south of Stauffer Road compared to E2. On the other hand, both E2 and E4 have potential to create the highest degree of change in noise levels for future adjacent homes and their outdoor living areas.

3. ROP Policy 7.C.12

The designated Core Environmental Feature at the intersection of Stauffer Drive and Reidel Drive is a composite of Stauffer Woods Environmentally Sensitive Policy Area [E.S.P.A. 33], the Roseville Swamp Provincially Significant Wetland Complex, the habitat of the Endangered Jefferson Salamander, and Significant Woodland. As such, infrastructure development within or contiguous to it is subject to ROP policy 7.C.12. This policy seeks to balance against one another the necessity for the project, the nature and significance of adverse environmental impact, the availability of other feasible alternatives, and technical and financial considerations.

Alternative W1 would be expected to result in the least amount of impact to the Core Environmental Feature, but, as mentioned above, would not be supported because it would offend against other major elements of ROP policy. E2 crosses Blair Creek and the Provincially Significant Wetland corridor on the existing Reidel Drive alignment at a relatively wide location. A four-lane crossing has the potential to further fragment the corridor and the identified salamander habitat unless a new crossing structure were to be designed to enhance connectivity along the creek corridor and mitigate the quality of stormwater being discharged into the creek.

The topography along the C2 alignment within the Blair Creek corridor is rather flat, so a long span over the creek and associated wetland would be required to maintain connectivity along the creek corridor and significant habitat. The crossing of the small tributary to the south would be downstream of the marsh pond on the southern boundary of the mapped salamander habitat. As this feature is relatively narrow and deeply incised, it would be amenable to the placement of a short span from which a watermain could probably be hung. E2 would also affect the Endangered Butternut tree.

E3, E4, and E4M cross the Blair Creek Corridor at a new location, but one which is relatively narrow where it should be feasible to design a span that would maintain connectivity.

As all alternatives but W1 traverse the significant habitat of the Jefferson Salamander, any work that adversely affected the habitat or the Jefferson Salamanders within it would require a permit from the Ministry of Natural Resources.
From the perspective of ROP policy 7.C.12, alternative E2 would be preferred in that it would not necessitate a new crossing of the Core Environmental Feature. Given the characteristics of the alternate E3, E4, and E4M crossing location, it is also our opinion, however, that this crossing location could also be consistent with this policy provided suitable mitigation measures were incorporated at the detailed design stage.

4. Conclusion

As the Environmental Study Report concludes by recommending an alternative that emerged from combining positive elements of two of the original alternatives, Regional staff are of the opinion that it should be included in the formal evaluation of all the alternatives.

Having reviewed the draft Environmental Study Report and considered the alternatives from the perspective of applicable Regional policies, Regional staff continue to favour alternative alignment E2. It is almost entirely within the Urban Designated Greenfield Area, it provides for the most efficient design and operation of public infrastructure, and, subject to appropriate mitigation, can minimise further fragmentation of the Core Environmental Feature.

Alternative E4M would score lower on these criteria, in our opinion, but it is our understanding that it would better address some land use compatibility issues of concern to the City. As such, Region staff would be prepared to support it as our second preferred alternative.

Region staff would need to confirm/clarify the following issues,

- At the proposed intersection of Strasburg Road and New Dundee Road, Region staff can confirm that traffic signals are warranted by the year 2031 but not in 2016 as indicated in the draft ESR. Further discussion is required between Region Transportation staff and the traffic consultant to clarify this issue. The draft ESR also cites that traffic signals are warranted on opening day (2016) at the intersections of Robert Ferrie Drive and Blair Creek Drive with Strasburg Road. Within the Traffic Report in Appendix D.1 there is no indication of the methodology used to assess the need for traffic control signals. Additionally, there is no reference to traffic volumes used to assess the warrant calculations. It is recommended that detailed calculations following the Ontario Traffic Manual methodology be submitted to Region Transportation staff for review.

- The ESR notes the vertical curvature of the existing road profile along New Dundee Road creates a deficiency in the sightlines such that insufficient sight distance is available at the newly proposed intersection. To correct the deficient sightlines at the Strasburg/New Dundee intersection, Region staff believe significant modifications are required to the New Dundee profile along the east approach to the intersection. An Intersection Control study was conducted to compare the performance, costs and adverse impacts of traffic signals vs a roundabout at this location. Region staff are in agreement that the technically preferred alternative is a roundabout and would recommend the implementation of the roundabout subject to the following:
  - The City conduct public consultation to obtain feedback from the public about the traffic control alternatives at this location;
  - The technical data as well as the public feedback received be used to develop a final recommendation;
Further preliminary design be carried out to refine the potential impacts of the roundabout grading, including consideration of an urban section and retaining walls; and

If a roundabout is recommended by staff, the final approval is subject to the approval of Regional Council.

- The alignment might have to be fine-tuned to avoid the endangered Butternut tree and its habitat, if it is assessed as warranting preservation. Mitigation measures acceptable to the Province would be required in the detailed design of this segment of the road.

- Regional Staff would require a Technical Memo for any and all watermain crossings through environmentally sensitive areas. The memo would look at four options to the watermain crossings: open cut, suspending the watermain from a bridge, tunnelling, and horizontal drilling. The four options would evaluate the following factors,

  - Environmental Impacts,
  - Technical Issues/Constructability,
  - Approvals/Property Requirements, and
  - Costs and Risks.

- The detailed design and implementation of the 600 mm trunk watermain is subject to the approval of the Region of Waterloo.

When the final draft is filed, Regional staff will follow up with further detailed comments relating to matters of Regional interest, and recommend matters to be addressed in the detailed design of the road.

While reviewing the draft document and drawings, Region staff identified a number of items to be addressed in the final draft. These are listed in the attachments to this letter.

We appreciate the City's collaborative approach in involving Region staff in this important Municipal Class Environmental Assessment.

Sincerely,

Steve van De Keere, P.Eng.
Head, Transportation Engineering - Expansion

c.c. Kevin Eby, Region of Waterloo
    Paula Sawicki, Region of Waterloo
    John Holowackyj, Region of Waterloo
    Chris Gosselin, Region of Waterloo
    Kevin Dolishny, Region of Waterloo
Comments on Draft *Strasburg Road Extension from North of Stauffer Drive to New Dundee Road Class Environmental Assessment Environmental Study Report* (SNC Lavalin, February, 2012)

Suggested edits are highlighted.

p. 14 [Regional involvement also includes Planning, Housing, and Community Services staff from the Transportation Planning and Community Planning divisions.]

p. 41 3.3.1 Designated Environmentally Sensitive Areas

A number of Regionally-designated environmentally sensitive areas are found both within and proximal to the study area (refer to Figure 3.7). These are the Stauffer Woods Environmentally Sensitive Policy Area (ESPA 33), Doon South Woods (ESPA 34), Roseville Swamp (ESPA 39), and the Strasburg Floodplain Forest (ESPA 30).

According to policy 7.C.5 of the Regional Official Plan, Environmentally Sensitive Policy Areas are regionally *significant* natural areas that comprise:

(a) Provincially *significant* Life Science Areas of Natural and Scientific Interest, regionally *significant* Life Science Areas of Natural and Scientific Interest, or provincially *significant* Earth Science Areas of Natural and Scientific Interest; or

(b) At least two of the following criteria:

i) comprise ecological communities deemed unusual, of outstanding quality or particularly representative regionally, provincially or nationally;

ii) contain critical habitats which are uncommon or remnants of once extensive habitats such as old growth forest, forest interior habitat, Carolinian forest, prairie-savanna, alvars, cliffs, bogs, fens, marl meadows, and cold water streams;

iii) provide a large area of natural habitat of at least 20 hectares which affords habitat to species intolerant of human intrusion; or

iv) provide habitat for organisms native to the region recognized as regionally, provincially or nationally significant; or

(c) fulfill one of the criteria in Policy 7.C.5 (b) and any two of the following:

i) contain an unusual diversity of native life forms due to varied topography, microclimates, soils and/or drainage regimes;

ii) perform a vital *ecological function* such as maintaining the hydrological balance over a widespread area by acting as a natural water storage, discharge or recharge area;

iii) provide a linking system of relatively undisturbed forest or other natural habitat for the movement of wildlife over a considerable distance;

iv) serve as major migratory stop-over or significant over-wintering habitat; or

v) contain landforms deemed unusual or particularly representative at the regional scale.

[This is the current wording in the Provincially-approved R.O.P.]

[The description of natural heritage features is rather fragmented, and presents them as discreet entities rather than as components of larger natural systems consisting of Environmentally Sensitive Policy Areas, Provincially Significant Wetlands, Significant Woodlands, and the habitat of Endangered and Threatened Species and. Some of the material is repeated, as for example, Roseville Swamp E.S.P.A. and Provincially Significant Wetland. It might be more appropriate to take the reader on a tour down Blair Creek pausing to describe the various significant natural]
features as they are encountered by integrating the material presented in section 3.3.7. A similar approach could be taken for the natural features associated with the reach of Strasburg Creek within and adjacent to the study area. The report does not mention Significant Woodlands designated as Core Environmental Features in the new Regional Official Plan.]

p. 44  [The description of the E.S.P.A.’s is taken from the 1984 Technical Appendix, and is rather dated. It can be updated as follows:
Stauffer Woods (ESPA 34)
Stauffer Woods is located at the southeast corner of the intersection of Reidel Drive and Stauffer Drive. It is approximately 26.2 hectares in size and is predominantly a Sugar Maple-Beech forest on hilly ground surrounding swamp depressions which provide significant amphibian breeding habitat. Numerous springs sustain its wetland features. A hydro corridor traverses this ESPA. It is a locally significant life science area according to the Ministry of Natural Resources and is designated as an ecologically significant Open Space Area by the City of Kitchener.

Doon South Woods (ESPA 34)
Located approximately 1.0 km to the east of the study area, Doon South Woods is a low-lying mixed forest along a small tributary of Doon South Creek flanked by low ridges of maple-beech forest. A nationally significant population of triploid salamanders breeds in the woodland pools of the area. It is considered a local life science site by the Ministry of Natural Resources and is designated as an ecologically significant Open Space Area by the City of Kitchener.

Roseville Swamp (ESPA 39)
This is the largest and one of the best wetland forest complexes and breeding bird areas in the Region. Although parts of it were lumbered some decades ago, it not only still contains many interesting plant and animal species but is one of the largest swamp forest complexes in the Region. Many of the significant species listed for this area are concentrated around Rainbow Lake, in a small marl meadow close by, or are within the hydro corridor which severs the E.S.P.A. - The extensive swamp forest, mainly Silver Maple-Yellow Birch-Black Ash, is impressive for its large trees, especially White Pine, and its lush growth of ferns and mosses. This swamp is an excellent breeding area for deer and is important for migrating and breeding bird species, including warblers. The northern part of the ESPA in the City of Kitchener is traversed by Blair Creek which becomes a coldwater stream in this area. Numerous springs in the southern part in North Dumfries Township serve as headwaters for Cedar Creek, the Region’s largest coldwater stream. The area is an International Biological Programme site. It is mapped by the Ministry of Natural Resources as a significant biological area for wildlife and a regionally significant life science area.

Strasburg Floodplain Forest (ESPA 30)
This large complex of swamp forest and adjoining wooded uplands occupies the Strasburg Creek floodplain and is located approximately 500 metres northeast of the northern portion of the study area. The main area of interest is the calcareous meadow alongside Strasburg Creek. This unusual habitat occurs primarily at the west end of the ESPA. The area is open, with some shrub and tree invasion becoming established at the expense of the more significant earlier successional species. [This features was destroyed years ago by inappropriate stormwater management practices on adjoining subdivisions.]
Adjacent to the east is an extensive swamp forest which contains a notable hemlock stand. Mixed Sugar Maple-Beech forest occupies the slopes away from the floodplain. The floodplain is a complex and diverse mixture of trees and shrubs interspersed with rank herbaceous growth, mainly of grasses and asters. The area is designated as an ecologically significant Open Space Area by the City of Kitchener’s Municipal Plan.]
p. 49 [“Bowman” Creek is now known as Blair Creek.]

p. 50 3.3.7 5th ¶: “The most important of these is the Blair Creek Swamp (PSW), but the associated woodlots surrounding the wetland are also of high quality and have significant ecological, aesthetic and recreational value.

6th ¶: Why are the hedgerows not delineated or assessed?

p. 82 The Regional Official Plan has a detailed definition of “adverse environmental impacts” which will be used to assess impacts on Regionally-designated Core Environmental Features. It would be helpful to incorporate some or all of the examples of adverse environmental impacts in the indicators/measures.

The criterion should address current Regional environmental designations such as Core Environmental Features, and not just E.S.P.A.’s. This would include the natural feature on the west side of Reidel Drive.

Designated Core Environmental Features / Areas of Natural and Scientific Interest

Encroachment on Core Environmental Features (area; habitat quality relative extent in relation to entire designated area)

Extent (area) and function of riparian habitat removed or degraded in quality

p. 83 Encroachment on communities/individual properties - Encroachment on individual properties (number/area/severity)

p. 84 Should operating costs be considered in that a shorter road would presumably cost less to maintain than a longer route?

Appendix D
Terrestrial Vegetation Communities Report

Fig 2. Please note that the Blair Creek corridor south of E.S.P.A. 33 is not E.S.P.A. 37. This area has been recommended for inclusion in the former E.S.P.A. as much of the intervening lands are proposed for naturalisation.

p. 6 Blair Swamp ESPA is not part of the Roseville Cedar Creek Provincially Significant Wetland, They are separated by Highway 401, with Blair Swamp on the east side.

p. 15
2.7 Significant Woodlots

The Stauffer Woods ESPA located at the south east corner of the Reidel Drive and Stauffer Drive intersection has been designated a Regionally Significant Woodland (RSW) Core Environmental Feature in the Draft Regional Official Plan (Region of Waterloo, 2009). Use the Provincially-approved version. The Draft Regional Official Plan is Regional Council’s interpretation of the Provincial Policy Statement in this matter.

p. 17 We need to look at the quality of natural area removals as well as gross area. Has the wetland pond area north of Stauffer Road been evaluated yet as part of the Provincially Significant Wetland?
Attachment B – Comments from Region Water Services Staff
Please discuss with John Holowackj for clarification.

Blair Creek Crossing
Drawing PnP 4a
(XREF drawing 6 of 17 of the appendix E and last page of appendix E)

It appears to contain the section with the Blair Creek Crossing.

Concerns:
Do we want our watermain located under the bridge structure as opposed to having it located beside it? Questions regarding maintenance come to mind? Is this the lowest point on the main? And if so should we not have a drain chamber? Also in the meeting it appear there were some concerns of creating this crossing with a box culvert re stream management and animal crossings … it sounded like a different crossing i.e. a span might be desired.

Conflicting information regarding connections of the 600 mm dia wm to the two key roundabouts with utilities located within them

Robert Ferrie Dr
- Robert Ferrie Dr sheet 8 of 17 in the appendix E has no tee or stub shown. It should have a 300 mm dia wm heading east on Robert Ferrie
- Robert Ferrie on dwg PnP 2a of the above attachments Robert Ferrie has a 600 by 600 by 600 tee with a 6000 mm stub with a 200 mm branch

Blair Creek Dr.
- Blair Creek Dr roundabout sheet 8 of 17 in the appendix E has the proper information showing the 600 mm wm does not continue on Strasburg Rd southerly to New Dundee but does not indicate the change in dia to a 450 mm dia wm on Blair Creek Dr
- Blair Creek Dr roundabout on dwg PnP 6a has a 600 by 600 by 600 tee with a 6000 mm stub with a 200 mm branch with a continuation of the watermain on Strasburg Rd which is incorrect. The watermain on Blair Creek Dr should be a 450 mm

Strasburg Rd at New Dundee
- New Dundee roundabout on dwg PnP 8a shows the watermain in the location. We have no plans to extend the watermain south of the Blair Creek Dr roundabout.

General Comment.

Page 18 road section shows a hydrant located in the profile.
No Regional watermains will have hydrants located on them as per section B.2.1.4.1 of the DGSSMS.