

December 22, 2016

File 24561-3-1450

Troy Northrup, President/CEO
Horizon Management Ltd.
479 Rothesay Ave, NB E2L 4G7

Mr. Northrup:

RE: (EIA) Registration #4561-3-1450 Ashburn Road Development – “The Crossing”:

Members of the Technical Review Committee (TRC) have reviewed the registration document dated November 23, 2016. Upon completion of its review, the TRC has generated the following list of questions/concerns which must be addressed before a decision can be made regarding this project. Please refer to the date of this letter, and the following number scheme when providing your response.

1. The proponent will be required to submit the following studies to the undersigned for review by the Technical Review Committee: Traffic Impact Study, Site Servicing Study and Stormwater Management Study.
2. The proponent mentions that an Open House was held in March of 2016. In addition, the proponent will be required to complete all the minimum public involvement requirements specified in Appendix C of the *Guide to Environmental Impact Assessment in New Brunswick* (<http://www2.gnb.ca/content/dam/gnb/Departments/env/pdf/EIA-EIE/GuideEnvironmentalImpactAssessment.pdf>). Upon completion of this requirement, the proponent must submit a Public Involvement Summary Report to the undersigned for review and approval. This summary report should include the results of the March 2016 Open House events.
3. The proponent must contact the Atlantic Coastal Action Program (ACAP) Saint John (contact information below) as part of public consultation. The community group has invested time and funding into restoration efforts for Marsh Creek over the last several years and will likely be interested in the project.



Atlantic Coastal Action Program – Saint John
Graeme Stewart-Robertson, Executive Director
Mailing address:
139 Prince Edward Street, Suite 323
Saint John, New Brunswick
E2L 3S3
Tel/Tél: (506) 652-2227
Fax/Télé: (506) 801-3810
Email/Courriel: office@acapsj.org

4. Based on the information provided, the Aboriginal Affairs Secretariat (AAS) offers the initial view that there will be no obligation regarding the Crown's Duty to Consult as there is no apparent adverse impact to Aboriginal or treaty rights as a result of this project however; should additional information on potential impacts to Aboriginal or treaty rights be brought forward, AAS requires notification. AAS also requests the proponent to respond to the following questions:
 - a. Were any First Nations notified of the Open House?
 - b. Is there potential for this project to impact Aboriginal fisheries in the Bay of Fundy and surrounding areas?
5. Although there is no apparent adverse impact to Aboriginal or treaty rights, the proponent may provide project information to First Nation communities. For more information, please contact AAS at (506) 462-5177.
6. The proponent should be made aware that migratory birds, their eggs, nests, and young are protected under the Migratory Birds Convention Act (MBCA). Migratory birds protected by the MBCA generally include all seabirds (except cormorants and pelicans), all waterfowl, all shorebirds, and most landbirds (birds with principally terrestrial life cycles). The list of species protected by the MBCA can be found at: <https://www.ec.gc.ca/nature/default.asp?lang=En&n=496E2702-1>. Bird species not listed may be protected under other legislation.
7. Please note that under Section 6 of the *Migratory Birds Regulations* (MBR), it is forbidden to disturb, destroy, or take a nest or egg of a migratory bird; or to be in possession of a live migratory bird, or its carcass, skin, nest or egg, except under authority of a permit. It is important to note that under the MBR, no permits can be issued for the incidental take of migratory birds caused by development projects or other economic activities.
8. Furthermore, Section 5.1 of the MBCA describes prohibitions related to deposit of substances harmful to migratory birds:
 - a. "5.1 (1) No person or vessel shall deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or an area

frequented by migratory birds or in a place from which the substance may enter such waters or such an area.

- b. (2) No person or vessel shall deposit a substance or permit a substance to be deposited in any place if the substance, in combination with one or more substances, results in a substance — in waters or an area frequented by migratory birds or in a place from which it may enter such waters or such an area — that is harmful to migratory birds.”
9. It is the responsibility of the proponent to ensure that activities are managed so as to ensure compliance with the MBCA and associated regulations.
 10. The proponent should be aware of the potential applicability of the Canadian Environmental Protection Act (CEPA). CEPA enables protection of the environment, and human life and health, through the establishment of environmental quality objectives, guidelines and codes of practice and the regulation of toxic substances, nutrients, emissions and discharges from federal facilities, and disposal at sea.
 11. It is not possible to adequately evaluate the potential effects of the project on migratory birds, species at risk, and species of conservation concern, based on the limited information provided. The proponent has undertaken the first step in obtaining information on species at risk (SAR) and species of conservation concern potentially occurring in the area by obtaining information from the Atlantic Canada Conservation Data Centre (AC CDC). The proponent should additionally contact provincial wildlife biologists, as well as local naturalists. The proponent should also obtain data from Nature Counts (Website: <http://www.birdscanada.org/birdmon/default/searchquery.jsp>) which provides location data for certain migratory bird species at risk and colonial nesters, which was collected during field work for the 2nd Maritimes Breeding Bird Atlas (MBBA): <http://www.mba-aom.ca>). It should be noted that this more specific data is not directly available on the website of the MBBA, and that not all MBBA SAR data is yet available from the AC CDC, so must be ordered from Nature Counts. By contacting Nature Counts, the proponent may therefore be able to obtain data that is much more site-specific than the more general information in the MBBA square if data was collected from their project area during the field work of the MBBA.
 12. Desktop information should then be supplemented by field surveys by professional biologists (with expertise at conducting the types of surveys required) at the appropriate time of year in habitats potentially harbouring species at risk and species of conservation concern. The fact that a species has not been confirmed in an area does not necessarily mean that it does not occur there, especially if habitat appropriate for that species is available. The results of the surveys, as well as detailed mitigation measures with special emphasis on avoidance of impacts, should be provided to the appropriate regulatory agencies for review.

13. It is recommended that a detailed description of wildlife use of the project area be provided, along with the results of the desktop review, field survey methodology, and field survey results. These can then be used to evaluate the potential effects, including potential cumulative effects of the proposed project on birds, and to develop mitigation measures.
14. Clearing vegetation may cause disturbance to migratory birds, and may inadvertently cause the destruction of their nests and eggs. Many species use trees, as well as brush, deadfalls and other low-lying vegetation for nesting, feeding, shelter and cover. This would apply to songbirds throughout the region, as well as waterfowl in wetland areas. Disturbance of this nature would be most critical during the breeding period. The breeding season for most birds within the project area occurs between April 5th and August 30th in this region, however some species protected under the MBCA do nest outside of this time period. Please see the webpage "General Nesting Periods of Migratory Birds in Canada" (Website: <http://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=4F39A78F-1>) for more specific information concerning the breeding times of migratory birds. This project area falls within or near zones "C3" and "C4".
15. Environment and Climate Change Canada provides the following recommendations:
 - a. To avoid the risk of nest destruction, the proponent should avoid vegetation clearing and field burning during the most critical period of the migratory bird breeding season (see above).
 - b. To develop and implement an environmental management plan that includes appropriate preventive measures to minimize the risk of impacts on migratory birds (See "Planning ahead to reduce risks to migratory bird nests", PDF: <http://www.ec.gc.ca/Publications/default.asp?lang=En&xml=50C4FE11-801E-4FE3-8019-B2D8537D76CF>). It is the responsibility of the individual or company undertaking the activities to determine these measures. For guidance on how to avoid the incidental take of migratory birds nests and eggs, please refer to the *Avoidance Guidelines* (Website: <http://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=AB36A082-1>). The management plan should include processes to follow should an active nest be found at any time of the year.
16. A variety of species of plants native to the general project area should be used in revegetation efforts. Should seed mixes for herbaceous native species for the area not be available, it should be ensured that plants used in revegetation efforts are not known to be invasive.
17. Certain species of migratory birds (e.g. Bank Swallows) may nest in large piles of soil left unattended/unvegetated during the most critical period of breeding season (April 5th through August 30th). To discourage this, the proponent should consider measures to cover or to deter birds from these large piles of unattended soil during the breeding

season. If migratory birds take up occupancy of these piles, any industrial activities (including hydroseeding) will cause disturbance to these migratory birds and inadvertently cause the destruction of nests and eggs. Alternate measures will then need to be taken to reduce potential for erosion, and to ensure that nests are protected until chicks have fledged and left the area. For a species such as the Bank Swallow, the period when the nests would be considered active would include not only the time when birds are incubating eggs or taking care of flightless chicks, but also a period of time after chicks have learned to fly, because Bank Swallows return to their colony to roost.

18. See also the attached guidance concerning beneficial management practices that should be considered for implementation when designing mitigation measures for Bank Swallows.
19. Measures to diminish the risk of introducing invasive species should be developed and implemented during all project phases. These measures could include:
 - a. Cleaning and inspecting construction equipment prior to transport from elsewhere to ensure that no vegetative matter is attached to the machinery (e.g., use of pressure water hose to clean vehicles prior to transport).
 - b. Regularly inspecting equipment prior to, during and immediately following construction in areas found to support Purple Loosestrife to ensure that vegetative matter is not transported from one construction area to another.
20. Attraction to lights at night or in poor visibility conditions during the day may result in collision with lit structures or their support structures, or with other migratory birds. Disoriented migratory birds are prone to circling light sources and may deplete their energy reserves and either die of exhaustion or be forced to land where they are at risk of depredation.
21. To reduce risk of incidental take of migratory birds related to human-induced light, ECCC-CWS recommends implementation of the following beneficial management practices:
 - a. The minimum amount of pilot warning and obstruction avoidance lighting should be used on tall structures. Warning lights should flash, and should completely turn off between flashes.
 - b. The fewest number of site-illuminating lights possible should be used in the project area. Only strobe lights should be used at night, at the lowest intensity and smallest number of flashes per minute allowable by Transport Canada.
 - c. Lighting for the safety of the employees should be shielded to shine down and only to where it is needed.
 - d. LED lights should be used instead of other types of lights where possible. LED light fixtures are less prone to light trespass (i.e. are better at directing light where it needs to be, and do not bleed light into the surrounding area), and this properly reduces the incidence of migratory bird attraction.

22. The following species at risk (as listed on Schedule 1 of the Species at Risk Act) may occur within the project area: Canada Warbler (Threatened), Olive-sided Flycatcher (Threatened) and Common Nighthawk (Threatened). Though unlikely to be found within the project footprint, these species may occur within the project area and we request that sightings be reported to ECCC-CWS.
23. There have been sightings of SARA-listed Wood Turtle (Threatened) in the area. Wood Turtle Critical Habitat is in the project watershed. Wood turtle are unlikely to be in the project area if the project is to proceed in Fall/Winter. If operations proceed in the Spring, Wood Turtle are more likely to be in the project area and further mitigation may be required.
24. ECCC-CWS recommends that the Province of New Brunswick be consulted with respect to specific Wood Turtle mitigations and beneficial management practices.
25. Prior to commencing the project, the proponent will be required to prepare and submit an Environmental Protection Plan (EPP) to the Project Manager, Environmental Assessment (EA) Section, Department of Environment and Local Government (DELG) for review and approval.
26. The EPP should include a Contingency Plan that ensures all precautions will be taken by the proponent and contractors to prevent fuel leaks from equipment and oil spills. Furthermore, the proponent should ensure that contractors are aware that under the MBR, “no person shall deposit or permit to be deposited oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds.” Biodegradable alternatives to petroleum-based chainsaw bar oil and hydraulic fluid for heavy machinery are commonly available from major manufacturers. Such biodegradable fluids should be considered for use in place of petroleum products whenever possible, as a standard for best practices. Fueling and servicing of equipment should not take place within 30 meters of environmentally sensitive areas, including shorelines and wetlands.
27. Provisions for wildlife response activities should be identified in the Oil Spill Prevention and Response Plan to ensure that pollution incidents affecting Wildlife are effectively and consistently mitigated. The document “*Birds and Oil - CWS Response Plan Guidance*” is attached and is provided to offer guidance on the development of wildlife response activities.
28. The following information should be included in any Oil Spill Prevention and Response Plan:
 - a. Mitigation measures to deter migratory birds from coming into contact with the oil.

- b. Mitigation measures to be undertaken if migratory birds and/or sensitive habitat become contaminated with the oil.
 - c. The type and extent of monitoring that would be conducted in relation to various spill events.
29. In addition to Section 5.1 of the MBCA, ECCC administers and enforces the pollution prevention provisions of the Fisheries Act. Subsection 36(3) of the Fisheries Act prohibits “anyone from depositing or permitting the deposit of a deleterious substance of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter such water”.
30. It is the responsibility of the proponent to ensure that all reasonable measures are conducted to prevent the release of substances deleterious to fish from their proposed activities. In general, compliance is determined at the last point of control of the substance before it enters waters frequented by fish, or, in any place under any conditions where a substance may enter such waters.
31. Provisions for the management of hazardous materials (e.g. fuels, lubricants) and wastes (e.g. contaminated soil, sediments, waste oil) should be identified and implemented in order to ensure compliance with Section 36 (3) of the Fisheries Act, and with the Canadian Environmental Protection Act and the Migratory Birds Convention Act and their Regulations. Hazardous materials and wastes should be managed so as to minimize the risk of chronic and/or accidental releases. For example, refuelling and maintenance activities should be conducted on level terrain, at a suitable distance from environmentally sensitive areas including watercourses and wetlands, and on a prepared impermeable surface with a collection system.
32. The proponent is encouraged to prepare Contingency Plans that reflect a consideration of potential accidents and malfunctions and that take into account site-specific conditions and sensitivities. The Canadian Standards Association publication, *Emergency Preparedness and Response, CAN/CSA-Z731-03*, is a useful reference.
33. All spills or leaks, such as those from machinery, should be promptly contained and cleaned up (sorbents should be available for quick containment and recovery), and reported to the 24-hour environmental emergencies reporting system (Maritime Provinces 1-800-565-1633).
34. The proponent should note that Courtney Bay Environmentally Significant Area (ESA) is located downstream of the project area. How will the proponent prevent sedimentation runoff and other substances such as hydrocarbons from entering the watercourse within the project site that drains into Courtney Bay during construction and once the proposed development is in operation?

35. Archaeological Services has completed its review of EIA registration 4561-3-1450. The proponent should note that any area within 80 meters of a watercourse (or former watercourse) contains elevated archaeological potential and therefore requires an Archaeological Impact Assessment (AIA) conducted by a professional archaeologist before any ground disturbing activities are permitted in the area. In addition, there is a known archaeological site (BhDm-24) located at N45 19' 53.89 W66 1' 59.69" which has a 100m buffer zone around it where ground disturbing activities would not be permitted without an *Archaeological Site Alteration Permit* (SAP). From the plans provided, Archaeological Services was unable to determine whether the proposed development would encroach on this archaeological site or its buffer zone. Could the proponent provide a shape file of the proposed development's footprint?
36. The proponent should be aware that as part of its commitment to wetlands conservation, the Federal Government has adopted *The Federal Policy on Wetland Conservation* (FPWC) with its objective to "promote the conservation of Canada's wetlands to sustain their ecological and socio-economic functions, now and in the future." In support of this objective, the Federal Government strives for the goal of No Net Loss of wetland function on federal lands or when federal funding is provided. Though this project does not take place on federal lands, ECCC-CWS recommends that the goals of the policy be considered in wetland areas as a beneficial management practice. A copy of the FPWC can be found at: <http://publications.gc.ca/pub?id=9.686114&sl=0>.
37. ECCC-CWS recommends using a 30 meter buffer from the high water mark of any water body (1:100 year Flood Zone) in order to maintain movement corridors for migratory birds. Please see https://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=8D910CAC-1#_03_1_1 for further information concerning buffer zones.
38. In order to promote wetland conservation EC-CWS recommends the following:
- Developments in wetlands should be avoided.
 - Where development does occur in the vicinity of wetlands, a minimum vegetation buffer zone of 30 m should be maintained around existing wetland areas.
 - Hydrologic function of the wetland should be maintained.
 - Runoff from the development should be directed away from wetlands.
39. Is avoidance of the wetlands or portions of any regulated and unmapped wetlands possible with this development?
40. Under the Description of the Existing Environment, Physical and Natural Features, Section 3.0 i, (Page 14), the *Preliminary Watercourse and Wetland Assessment Report* was based on field work completed in excess of ten years ago. Please be advised that a more recent assessment of the wetland boundaries and the functions of the wetlands will be required. The typical time frame for a wetland assessment is June – September.

Should the proponent wish to complete a wetland assessment outside of this time frame please contact the Provincial Wetland Biologist at (506) 453-2480 to discuss potential additional requirements.

- a. The wetland assessment will need to include the boundaries of the mapped wetlands on the property and the location/extent of unmapped wetlands.
- b. Information regarding the functions/benefits that these mapped and unmapped wetlands provide.
- c. The total proposed impact area within the regulated wetland and unmapped wetlands?

41. Please provide additional information regarding the following statements:

- a. It is stated that the banks of the Little Marsh Creek will be expanded to create and urban wetland throughout the commercial site. What is the construction methodology for this process? Has it been successful in the past?
- b. It is stated that "Efforts to enhance amphibian and reptile habitat in the Urban Wetland will also be explored". What efforts will be explored?
- c. In Figure 3 from the *"Preliminary Watercourse and Wetland Assessment of the Ashburn Lake Road Site"*, it states that the 38 acres to the north end of Ashburn Lake road exhibits wetland characteristics. It also states in the borehole analysis that there is peat within the soils. What measures will be done to offset potential flooding from the loss of wetland habitat and hydric soils which are currently retaining water?
- d. It is stated that run-off waters will be directed further down marsh creek. This area is currently being used for several existing commercial developments in which there have been flooding issues in the past. There are recorded flooding problems immediately downstream and in nearby tributaries of Marsh Creek (see <http://www.elgegl.gnb.ca/0001/en/Flood/Search>). Increased volume (i.e. from paved areas) would likely aggravate the problem. This is particularly true during high tides, when drainage through the Courtenay Bay Causeway is an issue. Is the proponent aware of the present flooding issues?
- e. While they are older, the provinces flood hazard maps of the area do show the site to be located in a flood zone, which should be addressed by the proponent.
- f. Given the history of flooding in the surrounding area what is being proposed to mitigate any further flooding issues or any loss of wetland function as a result of this project? Please include additional information regarding the proposed summary of wetland mitigation (i.e. diagram, maps, proposed projects with DUC, etc.).

42. With regards to Appendix 1, the *2005 Watercourse and Wetland Assessment Report*, TAP Environmental Resources conducted electrofishing and there were minimal species identified (three). It is important to note that the City of Saint John completed a major harbor clean-up in 2014. In other words, raw sewage is no longer being released in the Marsh Creek watershed where "The Crossing" is being proposed. Thus with the improvement in water quality, it is possible that there are more fish species present in

this watershed. Since this report is over a decade old, a new watercourse and wetland assessment should be completed.

43. There was no scale provided in any of the report's figures. For Figure 1, please provide a scale, location of current watercourses (it appears as the rerouted watercourse), wetlands, names of roads / streets as well as a legend and the phases of development. For Figure 3, please provide a revised map of the proposed green space site in relation to the proposed development site and include the property boundaries and PIDs as well as a scale, location of current watercourses, wetlands, names of roads as well as a legend.
44. Under the Summary of the Environmental Impacts, Section 4.0 (Page 15), the Hydraulics and Hydrology Report was produced in 2008. Marsh creek has been subject to a lot of attention and remediation efforts since then. The hydraulics report should be reassessed/updated, or new study initiated based on current conditions and current climate data.
45. What is the length of channel to be cut off and the number of square meters this equates to with regard to the straightening of the "loop" in Marsh Creek between Ashburn Road and HWY 1?
46. What is the linear length and square meters of the tributary to be realigned as part of the development project?
47. Can the proponent provide photos depicting the habitat in the reaches of the watercourse to be altered?
48. Has the proponent determined what species are in the lake/wetland area upstream of the project locations and thus what fish may use this section of the watercourse as a corridor to the upstream environment? This can vary from the species found in the creek during spot check electrofishing.
49. Does the proponent plan on studying existing drainage systems to insure that they are capable of handling climate change impacts in addition to the impacts of the proposed development (or any others added since the latest studies)?
50. If storage techniques for flood water are to be used, design has to be adequate to ensure that flooding is not induced or aggravated downstream or upstream of the site.
51. The 2008 modeling study by Terrain may have been adequate at the time however; the size of the proposed development has increased significantly since Terrain completed its draft report in 2008. According to the EIA document, the proposed development will span 49 hectares and will be comprised of business, commercial as well as residential. Terrain's report states that "The Crossing" would consist of a 46,500 square meters

(4.65 hectares) of commercial/business development (no residential) on 41 hectares of land. Furthermore, in Terrain's report, there is no indication that Little Marsh Creek is being realigned. This proposed realignment could change flow dynamics which in turn, would impact the accuracy of the model used in 2008. Therefore, further study will be needed to determine if the conclusion on page 18 of Terrain's report *"The results obtained from the stormwater models indicate that development of The Crossing will not have a negative effect on flooding in the Marsh Creek watershed"* would still apply to the updated project scope.

52. The use of a 24-hour flood storm example may not accurately represent the potential for flooding to occur on the project site. This is a small, flat watershed with poor drainage capacity. It may be more prone to flash flooding from a brief, intense rain event. Does the proponent plan on studying this type of flooding event?
53. On preparation of a Storm Water Management Plan, it is recommended that the proponent consider examples from across Canada to determine the best storm water management techniques using such approaches as naturalized storm water basins, rain gardens, landscape designs, and other modifications or installations used to reduce surface water flow rates, and increase retention, infiltration, and sediment catchment.
54. ELG recommends the proponent review the most recent AR5 New Brunswick climate change projections data and maps of 29 climate variables on the following site: <http://acasav2.azurewebsites.net/> in order to consider any projected climate change impacts on the design and build of infrastructure associated with the project. Please note that data is available for the climate meteorological station Saint John in the Excel tables.
55. The proponent is advised to apply the IDF Climate Change curves that reflect future trends of extreme rainfall patterns, referencing future climate scenarios to all infrastructure design specifications. Tools available for these calculations include the IDF Climate Change Tool produced by the University of Western Ontario. <http://www.idf-cc-uwo.ca/>. Use of the UWO IDF tool is an acceptable approach for IDF development under future climates.
56. In order to reduce risk, liability, and responsibility, the developer is advised that all infrastructure be installed at a minimum elevation that mitigates any and all possibility of flooding, contamination, and safety risks in the future. Design and installation specifications should ensure that infrastructure and other items are located completely above projected future flood elevations so that:
 - a. Septic systems/municipal wastewater infrastructure remains functional at all times, and does not create any discharges into the immediate environment.
 - b. Potable water wells are not inundated and at risk of contamination.
 - c. Storm water basins do not discharge any accumulated sediments.

- d. Habitable spaces are not impacted by water infiltrating via surface runoff, ground saturation, or septic back up, and
 - e. Electrical and plumbing systems are unaffected by projected water levels.
57. ELG recommends the proponent review the sea level rise information for Zone 12, Saint John County in the Updated Sea-Level Rise and Flooding Estimates for New Brunswick Coastal Sections – Based on the *IPCC 5th Assessment Report 2014* by Réal Daigle (R. J. DaigleEnviro)
<http://www2.gnb.ca/content/dam/gnb/Departments/env/pdf/SeaLevelRiseAndFloodingEstimates.pdf>.
58. The proponent is advised to review the recently published '*Implementation Framework for Climate Change Adaptation Planning at a Watershed Scale*'. The Framework lists seven steps through which a group of individuals can come together to assess and manage vulnerabilities and risks stemming from climate change at a watershed level.
http://www.ccme.ca/files/Resources/climate_change/Climate%20Change%20Adaptation%20Framework%201.0_e%20PN%201529.pdf.
59. Please identify the intended types of climate change adaptation strategies and actions that will help to manage and reduce risks/vulnerabilities associated with inland flooding to the built infrastructure associated with the project.
60. While it is understood that the proponent may not be the sole developer, the proponent is uniquely positioned to enable a low-carbon development (through covalence, contracts and marketing, or other such means) for all businesses and residential buildings in "The Crossing" development.
61. In November 2016, the Government of New Brunswick released its new *Climate Change Action Plan "Transitioning to a Low-Carbon Economy"*. The Plan is ambitious and designed to respond to greenhouse gas (GHG) emissions and climate change adaption while taking advantage of opportunities for potential long-term job creation and stimulating investment in innovation and business development. Land-use planning and development has an important role to play in New Brunswick's transition to a low-carbon economy by reducing GHG emissions in communities through smart growth-oriented (which includes mixed-use) development patterns. Urban form and spatial planning measures can also cause transportation emission reductions and can facilitate improvements in low-carbon building construction/operation and compact design. It is well documented that the cost of inaction (i.e. not incorporating climate change into decisions); is greater than the cost of progressive action, and will be greater when a price on carbon emissions is in place in 2018. This development has the opportunity to be progressive in areas such as conservation design, energy efficiency, renewable energy and alternative transportation and that this could be a significant life-cycle cost saving and selling feature for The Crossing development. That being said, the proponent is requested to consider all beneficial greenhouse gas reduction measures

and incorporate such features into the development. In cases where this is not possible, the proponent should justify the exclusion.

- a. The proponent should reduce greenhouse gas emissions during construction with measures such as limiting vehicle idling.
- b. The proponent should strive for no net loss of carbon sinks in the development area. This could be achieved through measures such as: planting tree species which sequester relatively higher quantities of carbon; increasing use of structural and appearance wood products, and incorporating green roofs.
- c. The proponent should take steps to incorporate alternative transportation in the design of the development to allow for, and encourage, use of public transit, biking, walking, electric vehicles, etc.
- d. Provinces and territories have established a goal of adopting a “net-zero energy ready” model building code by 2030. We strongly encourage all new development to strive for this goal in advance of codes, or at least improve energy performance by incorporating features which would 1) improve energy efficiency and 2) source renewable energy.
- e. To assist the proponent, the following suggestions are provided (although not exhaustive): achieve more ambitious R-values (i.e. increased insulation, triple-pane windows); use heating sources which achieve the highest level of efficiency that is economically achievable (i.e. high efficiency heat pumps); build with passive solar heating and orient structures to take advantage of the sun’s energy (which in turn reduces heating demand); incorporate renewable or reduced-emission energy sources such as geothermal, solar, biomass, wood pellets, or natural gas.

62. Has the proponent considered snowmelt, frozen ground or ice effects in any of the modeling or designs?

Finally, some members of the TRC requested more time to review the registration document therefore; a second letter containing any remaining questions will be forthcoming in the New Year. Should you have any questions regarding this letter, please feel free to contact me at (506) 444-3382.

Sincerely,



Crystale Harty, B.Sc.
Project Manager, Environmental Assessment Section

C. Technical Review Committee

COURTNEY BAY

SITE ID 782

PARISH : SAINT JOHN CRITERION1 : 2 CATEGORY1 BIRD IBP :
COUNTY : J CRITERION2 : 12 CATEGORY2 CNA :
REGION : SJ CRITERION3 : CATEGORY3 DOE :
37
NTS : 21-G/8 NBMAPS : 86 UTME : 731800 LAT
: 4517
ORTHO : 10 452500 66000 FDS : 5164 UTMN : 5017800
LONG : 6603

LOCATION : In East Saint John.

DESCRIPTION : A tidal bay and sewage mud flat known for fall concentrations of shorebirds, especially Semipalmated Plover. It is also used as a winter feeding area by Gulls and Ducks - mainly Black Ducks and Common Goldeneyes. Six species of Gulls, including Iceland, Glaucous and Black-headed, may be seen.

The area's attractiveness for birds is diminished by oil pollution. The presence of sewage may encourage worms and other invertebrates.

NAT_REG : 10 FOREST ADMIN : 3-6 OWNTYPE :
ECOTYPE1 : ESTFLAT WATERSHED : 1-02
ECOTYPE2 : ELEVATION : 0
SOURCES : CHOATE (1978)
 CHRISTIE (1978)
 STOCEK (1984)
 CWS. CRITICAL MIGRATORY BIRD HABITAT (NEWBRUN.DBF)

CONTACTS : DOE. ESA'S(1982):CHRISTIE; HICKLIN

LEGAL :

AGENCY :

COMPILER : CHIASSON/CRIGHTON

DATE : 12-May-1995

Report Date : 29-Nov-2016

Birds and Oil - CWS Response Plan Guidance

In all circumstances where a polluter is identified the burden of cleanup and response lies with the polluter. However, responsibility for government overview of a response to an oil spill depends on the source of the spill. The identified **lead agency** has responsibility to monitor an oil spill response and to take control if an appropriate response is not undertaken by a polluter or their agent.

Lead agency responsibilities lie with:

- **Environment Canada**
 - For spills and incidents on federal lands and from federal vessels
 - Potentially for land-based incidents in waters frequented by fish
 - May take lead if environment is not being protected by other leads, Cabinet Directive 1973
- **Canadian Coast Guard**
 - For spills from ships
 - All spills of unknown sources in marine environment
- **Provincial Department of Environment**
 - For spills from land-based sources
- **Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) and Canada-Nova Scotia Offshore Petroleum Board (C-NSOPB)**
 - For spills related to offshore oil and gas exploration and production
- **Transport Canada**
 - To investigate ship source and mystery spills in the marine environment

The Canadian Wildlife Service has the responsibility for licensing activities which involve the handling or disturbance of birds, and of providing advice and often direction to other agencies, responders and the polluter during oil spill incidents.

1. Hazing¹

Purpose: Prevent birds from coming in contact with oil

Options:

- Hazing by helicopter
- Hazing by FRC or other watercraft
- Release of scare devices (e.g. Breco Buoys, Phoenix Wailer)
- Use of hazing sound makers: propane cannons, whizzers, bangers, pyrotechnic devices etc.

Scare devices have a limited range of influence and likely are not a viable option with a large slick. Use of Breco Buoys and Phoenix Wailers can be used but we consider them to be largely ineffective in the situation of a large slick. Logistically, helicopter hazing would be difficult unless it was possible for a helicopter to remain on a platform offshore overnight. Hazing by FRC or other vessels would be ideal.

¹ There are several scare techniques which may be effective and do not require a permit, however a permit under the Migratory Bird Regulations **is required** for the use of aircraft or firearms (defined as capable of emitting at projectile at more than 495 feet per second). Propane cannons, blank pistols or pyrotechnical pistols firing crackers shells with **less than 495fps are legal without a permit**. Most scare tactics are relatively short lived in terms of effectiveness as birds acclimatize to the disturbance so scare techniques should be alternated to be effective.

Short-term focused hazing by the most expedient means should be attempted to move the birds away from the slick, if logistical conditions permit. Vessels at the site should have the ability to use sound makers (propane canons, pyrotechnic devices) to disperse birds in local areas. Such equipment should be deployed immediately to these ships with trained personnel to operate them. The vessels on site should be tasked to actively search and monitor for congregations of birds which could be vulnerable to oiling. If such groups are found then attempts should be made to disperse the birds away from the oil.

2. Disperse oil

Purpose: Prevent birds from contacting oil by getting oil off the surface of the water as soon as possible.

Options:

- Dispersants
- Mechanical dispersal with FRCs or other vessels
- Natural dispersal by environmental conditions

For small spills, mechanical dispersal would be the preferred method.

3. Bird Collection²

Purpose: Implement a humane response to oiled birds as required by Environment Canada's National Policy on Oiled Birds and Oiled Species At Risk (<http://www.ec.gc.ca/ee-ue/default.asp?lang=En&n=A4DD63E4-1>)

Options:

- The only option would be a ship-based effort to detect and collect dead and live oiled birds, both within the slick and adjacent to it.

All vessels in or near the slick should understand the need to collect birds. All vessels should have dip-nets, large plastic collecting bags to hold dead birds, and cloth bags or cardboard boxes in which to hold live oiled birds. Efforts should be made to retrieve live oiled birds to ensure they are dealt with humanely.

4. Wildlife monitoring

Purpose: Determine potential impact of spill

Options:

- Ship-based surveys for oiled and unoiled wildlife
- Aerial surveys for oiled and unoiled wildlife. Will require structured surveys (e.g. strip or transect surveys of spill area)
- Placement of CWS staff on vessels and aircraft

² Only those individuals authorized to do so (nominee on an existing federal salvage permit) can be involved with the collection of migratory birds.

Dedicated ship-based bird surveys should be initiated immediately. Ideally arrangements should be made to have a CWS observer on vessels or flights. In addition trained seabird observers need to be placed on all vessels monitoring a slick. This should continue until the slick is dispersed.

5. Beached Bird Surveys

Purpose: Determine impact of spill on wildlife and retrieve any live oiled wildlife on beaches.

Options:

- Conduct daily beached bird surveys during the incident and until one week after slick has been removed or dissipated.

CWS or other government officials (CCG, Enforcement Officers) will oversee the collection of dead and live oiled birds³ as instructed in CWS' protocol for collecting birds during an oil spill response. This would only be required in circumstances where a large number of birds are potentially oiled or if the spill occurs in a sensitive area.

6. Drift Blocks

Purpose: Drift blocks may be deployed in slick to provide an estimate of bird mortality.

Options:

- Release from vessel
- Release from aircraft

The deployment of drift blocks would only be expected if there was a large spill and blocks should be released as soon as possible after a spill (CWS should be consulted to determine protocol for drift block deployment and tracking). The polluter or their agent would be expected to ensure drift blocks are tracked and collected as appropriate.

7. Live oiled bird response

Purpose: Implement a humane response to oiled birds as required by Environment Canada's National Policy On Oiled Birds And Oiled Species At Risk

Options:

- Rehabilitation
- Euthanization

CWS will be consulted to determine the appropriate response and treatment strategies which may include cleaning and rehabilitation or euthanization. CWS policy specifically requires that species at risk or other species of concern be rehabilitated.

³ Only those individuals authorized to do so (nominee on an existing federal salvage permit) can be involved with the collection of migratory birds.



Photo: John Reaume

BANK SWALLOWS in Pits & Quarries Guidance for Aggregate Producers

With habitats around the world, the bank swallow population in Canada is in decline, with an estimated drop of over 95 per cent since 1970 in Ontario alone. While the exact reason for this decline is unknown, loss of nesting sites and young broods as a result of habitat destruction/disturbance has been cited as a possible reason.

BACKGROUND:

The bank swallow (*Riparia riparia*), can nest in colonies from 3 to about 2,000 burrows and average about 70 burrows. Sand and gravel pits often provide suitable habitats for bank swallow colonies and have become important nesting sites for this species.

The bank swallow eats flying insects and spends the winter in South America. It returns to Canada between late April and May to breed. Burrow numbers generally continue to increase until mid-to-late June and colonies often remain active until mid-August.

BANK SWALLOWS IN PITS & QUARRIES

- Bank swallows are attracted to pits and quarries. They build nests in stockpiled product or banks and they prefer sand or silty sand.
- Breeding season is early May to mid-August in southern Ontario and late-May to mid-August north of Sudbury.
- Excavation or construction during the spring and summer can negatively affect bank swallows or their nesting sites (Environment Canada, 2011).
- These birds will take advantage of stockpiled product and small banks up to large extraction faces offering suitable habitat within a pit, which has the potential to reduce operational access to these areas during the breeding season.



Photo: Mark Browning

The nest is built at the end of a burrow dug mostly by male bank swallows into a vertical bank of sand or silt, or similar material.

YOUR LEGAL RESPONSIBILITY

Bank swallows and their nests are protected under the federal *Migratory Birds Convention Act, 1994*. It is an offence for anyone to kill, hunt, capture, injure, harass, take or disturb a migratory bird nest or eggs. Offenders are liable to a fine or imprisonment. A review is currently underway to determine whether the bank swallow should be declared a species at risk in Ontario.

WHAT YOU CAN DO

- Pre-plan in March to late April (or mid-May north of Sudbury) by altering working faces and stockpiles to prevent harassment or harm to bank swallows. Manage these areas throughout the breeding season to make these potential nesting sites unattractive. See next page for details.
- Provide alternate nesting sites in an inactive portion of your pit or quarry. See next page for details.

HOW TO CREATE & PROTECT HABITAT

✓ **DO** set aside pre-existing suitable habitat or create new habitat in inactive area(s) of a pit or quarry before the breeding season begins by creating vertical faces of 70 degrees or more in piles or banks. These areas should be off-limits to excavation for the duration of the breeding season from May - August. Heavy machinery near colonies is likely to disturb the swallows and reduce nesting productivity.

✓ **DO** cordon off these areas and inform all pit employees of the location of the colony and to avoid disturbing the colony until further notice when bird colonies are established, or suitable faces are created. This will help conserve active colonies. (Using sand piles, or pylons with or without police tape, are easy and effective ways to cordon off nesting sites.)

HOW TO DISCOURAGE BANK SWALLOWS FROM NESTING

✓ **DO** discourage bank swallows from nesting in areas that will be excavated over the breeding season by contouring faces to have a less vertical slope (either by sloping off or piling material on the face to create a slope that is less than 70°). Vertical faces located high up on a slope may have to be altered from above if possible, or extraction in these areas should be scheduled for after mid-August when the birds have left.



Photo: Charles M. Francis

✓ **DO** install bird deterrent devices before breeding season starts, such as plastic owls (Great Horned Owls), to discourage bank swallows from establishing a colony in suitable banks.

✗ **DON'T** use deterrent devices (e.g. plastic owl) once a colony has been established since this could interfere with the bank swallow's ongoing nesting activities.

OTHER GENERAL CONSIDERATIONS

✓ **DO** secure access to your stockpiled material throughout the season by ensuring no vertical faces remain in the stockpile. (Slopes less than 70 degrees will prevent birds from nesting.)

✓ **DO** extract material ahead of the breeding season and create suitable habitat in the process by creating vertical faces greater than 70 degrees.

✓ **DO** devote a few minutes to removing vertical faces at the end of the work day so that bank swallows don't begin to build in these faces overnight or over a weekend.

✗ **DON'T** operate heavy machinery or excavate material within 50 metres of a colony. However, moving heavy equipment past a colony once is unlikely to cause any problems.



Photo: Robert McCaw

RESOURCES:

Environment Canada. 2011. *Bank Swallow (Riparia riparia) Know Your Legal Obligations (CW66-297/1-2011E-PDF)*. Retrieved from http://publications.gc.ca/collections/collection_2011/ec/CW66-297-1-2011-eng.pdf

Quarry Products Association Northern Ireland. *Biodiversity Advice Notes Sand Martin Riparia riparia*. Retrieved from <http://www.qpani.org/pdf/sandmartinadvicenotes.pdf>

DATE: April 26, 2013

January 20, 2017

File 24561-3-1450

Troy Northrup, President/CEO
Horizon Management Ltd.
479 Rothesay Ave, NB E2L 4G7

Mr. Northrup:

RE: (EIA) Registration #4561-3-1450 Ashburn Road Development – “The Crossing”:

Remaining members of the Technical Review Committee (TRC) have reviewed the Registration Document dated November 23, 2016. Upon completion of its review, the following list of questions/concerns was generated, which must be addressed before a decision can be made regarding this project. **Please refer to the date of this letter, and the following number scheme when providing your response.**

63. In 2016, the proponent made an application to the City of Saint John (CoSJ) to amend the Municipal Plan designation of the subject site, and to rezone the subject site to allow for the proposed development to proceed. On April 18, 2016, Common Council gave third reading to the Municipal Plan Amendment and rezoning, and imposed a number of conditions on the rezoning of the subject lands.

- a. Please note that should a *Certificate of Determination* be issued following the EIA review of this project, the proponent will be required to satisfy the conditions imposed by the CoSJ Common Council and successfully obtain any required rezoning designation prior to commencing the project.

Stormwater Management

64. The EIA Registration Document contains a *Hydraulics and Hydrology Report* prepared by Terrain Group, dated March 6, 2008. This document relates to the hydrotechnical and stormwater management impacts of the development, which were identified as important considerations by CoSJ “City Staff” in the planning approvals process. Upon reviewing this document, City Staff note the following:



- a. This document is dated 2008, was stamped “draft” and is not sealed by a Professional Engineer. The document must therefore be updated to reflect current conditions. For example the site plan for the proposed “The Crossing” development contained in the 2008 report is different from the current proposal contained in the main EIA Registration Document and submitted as part of the 2016 planning approvals process. In addition to the differences pointed out in question 51 from the December 22, 2016 TRC letter, the following major differences are noted between the two site plans:
- i. The recent layout contains a residential component on the north side of Ashburn Road which is not shown in the 2008 site plan.
 - ii. The stream alignment / realignment shown on the 2016/2017 concept is different than that shown on the 2008 document.
 - iii. The 2016/2017 development concept appears to have more impervious area (roofs and paved parking) as compared to the 2008 development concept.
 - iv. Additional information is required relating to the Terrain Report to allow for City Staff to fully understand the stormwater modelling that was done as part of this exercise. This would include: assumptions made for the modelling; additional details regarding the scenarios modelled; results at different locations and different times of the year (winter vs. summer – frozen ground impacts) and for different tidal conditions. It is noted that supporting information on the sub-watersheds that were analyzed with the model are not provided with the report. In addition, the assumptions relating to land use and the corresponding runoff coefficients made by the consultants may no longer be valid given the change in future land use outlined in new *Municipal Plan* and *Zoning By-law* that have been enacted by the City since 2012.
 - v. No detailed discussion was provided regarding the calibration of the model, specifically how the modelled water elevations compare with data observed from field monitoring and how the modelled water levels compare with the Procter and Redfern mapping.
 - vi. Responsibility for maintenance of any stormwater retention/detention ponds needs to be understood. In particular one of the scenarios modelled includes use of a City-owned parcel of land for additional water storage capacity: is there compensation for this use of City lands? Are there implications for adjacent properties?
 - vii. How will a phased approach be taken with respect to stormwater management as the development proceeds in order to manage the stormwater requirements of the current site, phased development and adjacent impacts both upstream and downstream?

65. The phasing of the site preparation (mentioned on Page 10 of the Registration Document) should be better understood, as well as the implications on water levels downstream.

- a. For example, what are the stormwater management impacts for if the entire site is grubbed and trees removed but no further development occurs?

CoSJ Flood Risk Area By-Law

66. Portions of the proposed development site are within areas that are subject to regulation through the CoSJ's *Flood Risk Area By-law* which seeks to regulate development in the Marsh Creek Watershed in order to prevent flooding. This by-law requires that additional flood storage be developed to offset flood storage that is lost as development occurs within the Flood Risk Area. The EIA Registration Document indicates that the proposed work plan is to start in the spring of 2017 (section 2(vii) of Registration Document) by realigning the stream through straightening the loop in the watercourse on PID 00432203. It is also stated that initial development of the project will take place with this parcel of land being the hub of the development and that the infilling of lands with local aggregate to form an "aggregate mattress" will be undertaken on several parcels of land that are subject to the City of Saint John Flood Risk Areas By-law.

- a. The City of Saint John notes that this work cannot occur until the studies required by the Section 39 conditions have been completed by the developer and reviewed and approved by City staff, the City's Planning Advisory Committee and Common Council through an amendment to the conditions attached to the rezoning.
- b. As the placement of the aggregate materials constitutes a "development", permits for this work (including filling, excavating, relocating, altering land levels, etc.) such as Flood Risk Area permits cannot be issued until the required studies including the traffic impact study, servicing study, and stormwater management study are completed, a *Certificate of Determination* is issued by the Province relating to the EIA, and all other required Section 39 conditions are fulfilled through an amendment to the Section 39 conditions.

67. How will existing compensatory storage provided by ponds across from Jones Road be affected by the development?

68. The *Flood Risk Area By-Law* requires compensatory flood storage for projects that occur within the Flood Risk Area. The report prepared by Terrain Group and attached to the Registration Document indicates there are a few ways of providing compensatory storage for this development, however; the proposal does not indicate that compensatory storage creation will initially take place and it seems that the requirements of the by-law will not be immediately addressed.

- a. Based on the information provided in the Terrain report (Section 5), it appears that compensatory storage may possibly be addressed through the eventual development of an urban wetland and a naturalized storm water pond, however, this section also indicates that it will be some time before this work will be undertaken and it seems to be connected to developing in the regulated wetland area. The *Flood Risk Areas By-law* is not based upon development of Provincially Designated Wetlands and any compensatory storage required for the flood risk area is separate from compensation required through Provincial Legislation for impacts in Provincially Designated Wetlands. *The Flood Risk Area By-law* requires that compensatory storage be provided at the same time as development occurs within the Flood Risk Areas and any such development is subject to a *Flood Risk Area Permit*.
- b. The Terrain Report presents 4 different scenarios that were assessed with a hydraulic model. Scenario 3 involves the lower Marsh Creek parcel of land to be excavated (it is assumed that this is the parcel designated as the Eco-Park in the planning application, PID 55189385, however; it is not confirmed in the report). The scenario indicates that the proposal is to remove and dispose of 356,000 m³ of soil to create about 400,000 m³ of compensatory storage. The report does not favor this option due to the cost of excavation and disposal of soil. Another scenario, Scenario #2, involves developing "The Crossing" project but no creation of compensatory storage (the report indicates that about 17,000 m³ of storage is required) and the last scenario, Scenario #4, seems to indicate that City-owned land (PID 55024921) could also be used to provide compensatory storage. Please be advised that Scenario #2 does not meet the requirements of the *Flood Risk Area By-Law* as no compensatory storage is provided to offset that lost by the development. Scenario 4 would also not be considered at this time as it would require a decision of Common Council to provide compensatory storage on City-owned land in lieu of the proponent providing it on their land.
- c. The Terrain report does not contain a recommended approach, based on a thorough assessment, to provide for the 17,000 cubic metres of compensatory flood storage that will be lost with completion of the development. The City requires this assessment in order to understand the impacts of the development on upstream and downstream areas of the Marsh Creek watershed and its flood storage capacity.
- d. The *Flood Risk Area By-Law* must be reviewed thoroughly by the developer's consultants and Flood Risk Areas permits must be obtained, following the required Section 39 Amendment, prior to the commencement of any development on project lands within the flood risk area. The requirements for the permit application are clearly outlined, as are the need for plans showing draining patterns in the City's *Flood Risk Area By-Law*. The applicant is required to provide the City with a proposed approach to provide the required compensatory storage. Upon receipt of this, it will be evaluated by City Staff to determine its compliance with the by-law and form part of the necessary

information, in addition to the required stormwater modelling and other supporting studies, for the required amendment to the Section 39 conditions.

General Comments:

69. A number of the studies attached to the EIA Registration Document (dated November 23, 2016) are either draft reports and/or between 8 and 11 years old. Updated and finalized professional reports must be prepared by the developer/applicant and provided to the undersigned for TRC review and comment.
70. Page 5 of the Registration Document mentions the economic benefits to the CoSJ. These should be evaluated in more detail once the implications for City infrastructure are better understood, and modelled for various levels of build-out.
71. Page 10 of the Registration Document mentions construction of the main access road to the development. This intersection is already a concern and it should be anticipated that there will be significant, expensive upgrades required to accommodate the additional traffic. Responsibility for construction and ongoing maintenance costs should be understood in advance of this project proceeding. The completion of a Traffic Impact Study that would address the vehicle, transit, pedestrian and active transportation impacts of the development, and on-site circulation is a requirement of the Section 39 conditions and must be completed and approved by the City prior to any development occurring on the site.
72. The Crossing is a major development application which required an amendment to the Primary Development Area (PDA) boundary. The PDA effectively represents the City's growth and servicing boundary over the horizon of the Municipal Plan and lands within the PDA are intended to accommodate the majority of future growth over the planning period. In reviewing the original Municipal Plan amendment and rezoning application, City staff noted further due diligence is required on behalf of the developer to assess the long term financial risks for the City with respect to future infrastructure requirements. Therefore Staff recommended a two stage development approvals process for the project. The first stage approval, granted in 2016 provided an "approval in principle" for the land use changes, with the second stage requiring the developer to complete the necessary due diligence to demonstrate the technical and servicing aspects of the project are able to be satisfied with minimal financial risk to the City. This stage two approval requires that the developer complete the necessary infrastructure and servicing studies through a statutory amendment process to the current application prior to any development being permitted on the site. Specific servicing considerations include:
 - a. Water Supply – Water capacity and fire flow requirements for the development must be verified by the developer's engineering consultant and submitted to the City for review and approval. This includes the expected average and peak water

consumption flows (domestic and fire) from this proposed development at full build-out and confirmation that there is enough capacity to support this proposed development. The developer has provided preliminary information that water servicing is available to support the development based on reduced demands from Kennebecasis Park however, this will need to be verified.

- b. Sanitary Sewer- Peak sanitary flows from the development at full build-out and assessment that existing sanitary sewers and wastewater pumping stations are capable of receiving this flow must be verified by the developer's engineering consultant and submitted to the City for review and approval. City staff notes the existing sanitary lift station at Drury Cove was designed to accommodate the Drury Cove residential subdivision and would not be able to support this development proposal. A detailed analysis and design is required by the developer's engineering consultant to determine what upgrades at the station and any associated piping would be necessary. Wastewater infrastructure installed to service the Drury Cove development is also subject to a development charge (lot levy) payable at the time subdivision plans are approved. The proposed development would therefore need to ensure adequate capacity to accommodate the development beyond what is required to support the Drury Cove build-out.
- c. Stormwater Management - A detailed storm water drainage plan and design report, indicating how storm water will be managed for the full build-out of the development, must be provided by the developer's engineering consultant. In addition, the Marsh Creek Watershed must be analyzed by the developer's engineering consultant to determine the impacts this proposed development (phased and full build-out) will have on the existing watershed. City staff notes the proposed Eco-Park provides the potential some additional compensatory storage associated with the Flood Risk Area.
- d. Traffic / Transportation – No information has been provided by the applicant regarding the transportation impacts of the development. City staff notes the proposed development may have significant impact on traffic flow that would add to existing heavy traffic flow between Highway 1 and the Kennebecasis Valley and the UNB/Regional Hospital primary development area. An in depth traffic study must be completed by the developer's traffic engineering consultant to assess impacts and recommend possible solutions if warranted and possible. The development will require upgrading of Ashburn Road to a full suburban standard and probable intersection improvements off-site.

73. City staff notes the recent study completed by the province regarding the function of Route 1 and future access requirements along the corridor between the Kennebecasis Valley and Foster Thurston Drive is expected to provide input into the Traffic Impact Study required from the applicant.

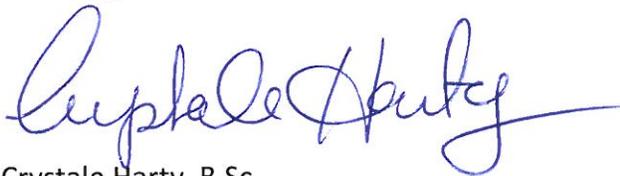
74. The TAP Report notes extensive beaver activity on the property. This is contrary to information provided elsewhere in the EIA Registration Document. In addition, this 2005

report noted beaver dams and associated activity as causing extensive back flooding of the property. Have these conditions been rectified or do these conditions still contribute to back flooding of the property?

75. The site plans from 2008 and 2016/2017 appear to show a 0.39 hectare parcel, PID 55066278, as part of the proposed development, however this parcel is not owned by the proponent nor is it listed as one of the properties to be included in the development. Also this property was not included in the 2016 planning application. Can the proponent confirm if this parcel is part of the proposed development?

Should you have any questions regarding the above, please feel free to contact me at (506) 444-3382.

Sincerely,



Crystale Harty, B.Sc.
Project Manager, Environment & Local Government

C. Technical Review Committee

February 9, 2017

File 24561-3-1450

Troy Northrup, President/CEO
Horizon Management Ltd.
479 Rothesay Ave, NB E2L 4G7

Mr. Northrup:

RE: (EIA) Registration #4561-3-1450 Ashburn Road Development – “The Crossing”:

Additional comments were brought forward by the Technical Review Committee (TRC) related to the Registration Document dated November 23, 2016. The following list of comments must also be addressed before a decision can be made regarding this project. **Please refer to the date of this letter, and the following number scheme when providing your response.**

76. Table 1 below includes a list of typical permits and legislation under the mandate of the New Brunswick Department of Transportation and Infrastructure (NBDTI). Note that Table 1 is not all inclusive, and additional permits and requirements relevant to the project may be required. The proponent is requested to review the table and speak with the appropriate contact regarding the permits/legislation which may be relevant to the project.

Table 1: Permit/Legislation Requirements by the NBDTI

Permit/Legislation Requirements	NBDTI Contact	Contact Number
<i>Access Permit/Certificate of Setback</i>	Alan Kerr	506-643-7463
<i>Highway Usage Permit</i>	Peter McDonald	506-453-6724
<u>Community Planning Act</u>	Norm Cote	506-457-7559
<u>Highway Act - Transfer of Administration and Control</u>	Colleen Brown	506-444-2047
<u>Provincial Motor Vehicle Act</u>	Permit Office	506-453-2982



77. *Special Permits* will be required for any transport on NBDTI designated roads that does not comply with Regulation 2001-67 under the NB Motor Vehicle Act. This Regulation includes the dimensions and mass information for legal operation on NBDTI designated roads. The proponent is requested to contact the NBDTI Permit Office as early as possible to discuss the transportation requirements for this project.
78. The proposed project location has been identified as near or within the vicinity of Routes 01, 100 and Ashburn and Jones Road NBDTI requests the proponent contact Alan Kerr, District Engineer in Saint John well in advance of beginning the project to ensure that all of the department's concerns are addressed.
79. NBDTI has concerns regarding the increased traffic that will result from this project as well as the potential for future flooding of NBDTI's infrastructure in the area of this proposal. NBDTI will not be responsible for any damage to infrastructure caused by this project, and may have additional questions once it has had the opportunity to review the forthcoming Traffic Impact and Storm Water Management Studies.
80. The *Work Area Traffic Control Manual (WATCM)* provides a uniform set of traffic control guidelines for all work carried out on New Brunswick provincial roads. Any work that occurs within the right-of-way of a provincial road must conform to the guidelines prescribed by this manual. A PDF version of the manual is available at <http://www.gnb.ca/0113/publications/watcm-e.asp>.
81. Trucks must adhere to legal load weight limits at all times, including spring weight restrictions when applicable. All loads are to be properly secured during transit according to the Motor Vehicle Act.
82. Any spillage of material that occurs during hauling must be kept to a minimum and promptly removed from the highway following appropriate safety procedures.
83. A *Highway Usage Permit* is required if the proponent intends to utilize NBDTI right-of-ways.
84. An *Access Road Permit* is required prior to the construction of any access roads off NBDTI road(s).
85. The proponent is advised to contact NBDTI as early as possible regarding any permits or approvals required. The process required for approvals can take up to several months to complete.
86. Is the proponent aware of any additional transportation issues?

Should you have any questions regarding the above, please feel free to contact me at (506) 444-3382.

Sincerely,

A handwritten signature in purple ink that reads "Crystale Harty". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Crystale Harty, B.Sc.
Project Manager, Environment & Local Government

C. Technical Review Committee

November 1st, 2017

File #:1450

Mr. Bill Borland
479 Rothesay Avenue,
Saint John, New Brunswick
E2L 4G7

Mr. Bill Borland,

RE: EIA Registration 4561-3-1450 Ashburn Road Development - "The Crossing"

The Technical Review Committee (TRC) has generated a second round of questions and comments which must be addressed before a decision can be made regarding this project. Please note additional comments may be submitted and they will be forwarded to you as we receive them.

1. Please note the response for TRC comment #34 in letter dated December 22, 2016 was incomplete. The proponent responded with "Noted" which only referred to the part of #34. Please submit a more detailed response.
2. Any of the proponent's responses that references "see Appendix 'X'" or "noted" must provide a more detailed reply.
3. Storm Water Management Strategy and Stream Hydraulics and Hydrology Report Section 2.2 – The report states that the project will occur in several phases over a 10 to 15 year period. Please provide more details regarding the proposed phases of the development. For example, is commercial development being completed first, followed by residential? What types of residential units are being proposed?
4. TRC comment #43 in letter dated December 22, 2016 requested a revised copy of Figure 1 depicting the wetlands, location of current watercourses (it appears as the rerouted watercourse), a legend and the phases of development (e.g. which section of the property will be developed first; type of development). Not all of the requested information was included in the revised map. Please submit another copy of this map providing all of the requested information.



5. Please provide additional information regarding the proposed watercourse realignment of Little Marsh Creek and any other watercourse alteration work associated with the proposed development (e.g. the length of the watercourse to be realigned). A map depicting the current watercourse location and the proposed realignment as well as the property boundaries, PIDs, a scale and a legend must also be included. Also, how much riparian buffer will be maintained between the watercourse and the proposed development?
6. There is potential for hydrocarbons, sediment, nutrients, etc. to enter Little Marsh Creek which could adversely impact the watercourse. Please provide details regarding stormwater management and if pollutants and sediment can be prevented from entering storm drains and runoff directly into watercourses once development is complete?
7. Was the entire project area evaluated for wetlands or was the on the ground wetland delineation completed only on the portions of the project that had highest potential for wetlands?
8. Why was the Ecological Condition (EC) chosen as the only function score to report on from the WESP-AC assessments? The EC score is determined based on the presence of invasives, species of concern, bare ground and the amount of shrub and herbaceous vegetation. WESP-AC describes 17 wetland functions and benefits which are calculated based on all 111 indicator questions. Please describe the “higher” scoring functions of the wetlands AA1 and AA2?
9. The area of wetland within AA1 and AA2 is described as over 40 hectares in size, please describe mitigation methods for the loss of these wetland functions?
10. It is stated that the project will impact more than 10 hectares of regulated wetland. All loss of regulated wetland requires wetland compensation at a 2:1 ratio. Has the exact amount/location of impacted regulated wetland area been determined? If so please provide detailed drawings and additional details regarding the impact to the wetland and what steps will be taken to compensate for the loss of the regulated wetland area at a 2:1 ratio?
11. Any required wetland compensation projects required for this project should occur within the City of Saint John.
12. Has the proponent conducted surveys in order to determine if there are unmapped watercourses which meet the watercourse definition? Any proposed work in or within 30 metres of a regulated wetland or watercourse will require a valid Watercourse and Wetland Alteration (WAWA) permit.

13. Has the proponent incorporated watercourses into the project plans based on the new watercourse definition? Any work within 30 metres of a watercourse that meets the new watercourse definition will also require a valid WAWA permit. Watercourses in New Brunswick are defined as the following: a feature in which the primary function is the conveyance or containment of water, which includes:
- a. The bed, banks and sides of any watercourse that is depicted on the New Brunswick Hydrographic Network layer (available on GeoNB Map Viewer);
 - b. The bed, banks and sides of any incised channel greater than 0.5 metres in width that displays a rock or soil (mineral or organic) bed, that is not depicted on New Brunswick Hydrographic Network layer (available on GeoNB Map Viewer); water/flow does not have to be continuous and may be absent during any time of year; or
 - c. A natural or man-made basin (i.e. lakes and ponds).
14. Will a vegetated buffer be established along the watercourses, and if so what is the proposed width of buffer zone? Will there be established overflow areas for the watercourses?
15. Will the flood retention pond discharge directly into the watercourse? Will a vegetated buffer be established around the pond, and if so how wide will be it?
16. Will in-situ soils have to be removed for engineered fill for development purposes? If so, what is the proposed plan for dewatering and transporting this material?
17. The proponent states that the channel will be straightened by removing bends and oxbow. Bends and oxbows provide capacity and function to slow the velocity of water within the channel. Has the client considered the loss of channel capacity and how this will affect the downstream system? Will an EPP be developed for the channel isolation and re-alignment?
18. In regards to question # 42 of the TRC letter dated December 22, 2016, this question requests updated information on fish species presence following improvement to the waste water treatment in the Marsh Creek watershed in 2014, however the proponent still refers to the ACAP 2013 study. The ACAP study also refers to the removal of a barrier to upstream fish passage. A current electrofishing study of the area to be impacted by this development including the section of stream to be relocated should be undertaken.
19. A site specific EPP for the watercourse relocation portion of this project should be developed.
20. What is the length of channel to be cut off and the number of square meters this equates to with regards to the straightening of the "loop" in Marsh Creek between Ashburn Road and HWY 1.

21. What is the linear length and square meters of the tributary to be realigned as part of the development project.
22. Can the proponent provide photos depicting the habitat in the reaches of the watercourse to be altered and labeled as such to clearly demonstrate the quality of habitat to be affected.
23. Has the proponent determined what species are in the lakes/wetlands upstream of the project locations and thus what fish may use this section of the watercourse as a corridor to the upstream environment? This can vary from the species found in the creek during spot check electrofishing and may require separate habitat surveys upstream.
24. What is the duration, if applicable, in which fish passage is anticipated to not be provided during the development of this project?
25. What are the desired work windows for watercourse alterations and realignments?
26. What is the total estimated footprint for the habitat alterations and habitat destructions as part of this project?
27. DFO would like the proponent to be aware that a S. 35(2) Fisheries Act Authorization may be required based on the current information and that the proponent should consider this when discussing timelines for project completion.
28. If a S.35(2) Fisheries Act Authorization is required, the proponent will be required to conduct First Nations Consultation and this should be included in project planning and timelines moving forward
29. The proponent refers to the Endangered Species Act in the EPP, please be advised that the Endangered Species Act has been replaced by the Species At Risk Act, please change the Endangered Species Act to the Species at Risk in the EPP.
30. There is also reference to NBDNR in the EPP, please note that New Brunswick Department of Natural Resources (NBDNR) should be changed to the New Brunswick Department of Energy and Resource Development (NBERD).
31. The proponent also refers to seeding in the EPP, when seeding an area, use native seed mixes if possible. If not possible, ensure that the seed mix does not contain species that could be invasive.
32. Please be advised that the bird breeding season for the area is as follows: forest (April 8 to August 28), open (April 12 to August 28), wetland (April 8 to August 16), please refer to this link <https://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=4F39A78F-1>.
33. For the following comments 53, 54, 55, 57, 58, 59 please provide more information. If the "Storm Water Management Strategy and Stream Hydraulic Report" is cited as an

answer, please indicate in which section of the report addresses the specific comment. If “Noted” is cited as an answer please provide more information with specifics on how the proponent intends to use or address the comment.

34. When conducting adaptation planning to address potential impacts from flooding it is important to consider the type of development and associated infrastructure and its life expectancy. For the proposal in question, which involves planning for future development and major infrastructure that is expected to have a life expectancy beyond 2050; it is recommended to examine flood / rainfall levels associated with a 1 in 100 year event in 2100, which generally represents a significant storm event and accompanying significant impacts. Please provide the following information in reference to *the Storm Water Management Strategy and Stream Hydraulic Report*.

- a) In Section 2 under Effects of Climate Change - Rainfall modelling was completed for 2050 using the RCP 2.6 Scenario. Please provide the modelling for 2100 using the RCP 8.5 scenario as this is recognized as a more likely scenario for future climate condition. Tools available for these calculations include the IDF Climate Change Tool produced by the University of Western Ontario. <http://www.idf-cc-uwo.ca/>.
- b) In Section 2 under Effects of Climate Change – 2050 was used for the HHWLT scenario. Please provide modelling results for 2100 HHWLT scenario. Please refer to the Updated Sea-Level Rise and Flooding Estimates for New Brunswick Coastal Sections – Based on the IPCC 5th Assessment Report 2014 by Réal Daigle (R. J. Daigle Enviro). Also, refer to comment 57 of the original TRC submission. <https://atlanticadaptation.ca/en/islandora/object/acasa%3A731>
- c) In Section 3 under the Final Modeled Scenario -S2, please adjust for climate change to the year 2100.
- d) How does the new modeling criteria compare to the original and how does this affect the proponents storm water management planning?

35. As a Follow-up to comments 60 and 61 - The proponent should identify all beneficial greenhouse gas reduction measures they plan on incorporating or considering during the development of the project. Please refer to the original comments to review the suggestions provided and explain why or why not these will be implemented into the Project.

36. Please note the concept plan differs from that presented previously. The Section 39 conditions imposed on the original rezoning of the site require the preparation of detailed plans for the development including, but not limited to, a context plan, a site plan, typical building floor plans, typical building elevations, and a landscape plan. These plans are to

be prepared by the proponent and are subject to the approval of Common Council, as a statutory amendment to these conditions.

The Section 39 conditions also require that should a significant change be proposed in the project concept plan, an addendum is required to the market study, to be prepared by the developer that provides additional analysis of the impacts of the proposed development on the regional retail sector as a whole. This addendum to the market study is subject to the approval of Common Council, as a statutory amendment to the original Section 39 conditions imposed on the original rezoning.

Additional information will be required from the proponent to define the uses and the floor areas of the individual buildings in the development in order to understand the impacts on municipal servicing infrastructure in the area. We would also note that in accordance with the existing Section 39 conditions, the maximum floor area of a building in the rezoned area is limited to 3000 square metres.

37. Please submit additional information regarding the costs for infrastructure to support the development and provide clarity on expectations in terms of who is responsible for these costs. The reports as submitted do not mention any infrastructure costs required to support the development. The Section 39 conditions imposed on the original rezoning of the site require that any upgrades to the existing municipal infrastructure required to service this proposed development will be the developer's full responsibility and cost. In addition, should any cost sharing agreement be proposed between the developer and City, which may involve another level of Government, related to costs associated with infrastructure upgrades, servicing, transportation network improvements or development of the project, such cost-sharing agreement will be subject to the approval of Common Council, as a statutory amendment to the existing Section 39 conditions.
38. Please note that in several locations assessed in the traffic impact study there are not specific improvement options identified and future evaluation of the development's impact on the transportation network is not referenced. Please identify the required transportation network improvements for all phases of the development.
39. Please provide additional information and identify necessary pedestrian facilities to support the development.
40. Please provide additional information regarding the basis for the 20% synergy rate and 25% pass-by rate used in the assessment of trips generated by the development. The justification for these assumptions must be provided in order to fully understand the impacts of the development on the adjacent roadway network as these rates account for a significant portion of the overall traffic that will access the development site.
41. The Retail Drive / Rothesay Avenue / Ashburn Lake Road intersection will be utilized by traffic accessing the proposed development, development in the East Point Area and

development along Rothesay Avenue. The development of The Crossing, along with the provision of a new interchange has the potential to increase traffic volumes and exacerbate current issues at this location through traffic from The Crossing accessing East Point and vice versa. This should be evaluated with respect to the impact on the City's roadway network, in particular the Retail Drive / Rothesay Avenue / Ashburn Lake Road intersection.

42. The existing operation of the left turn from Rothesay Avenue to Retail Drive is shown as operating with a LOS A and maximum v/c ratio of 0.53 to 0.54. It is of the understanding that existing operations of this movement had higher delays. In addition, the description of existing traffic operations at the Rothesay Avenue / Ashburn Lake Road intersection does not accurately portray current operational deficiencies at this intersection. Please confirm calculations related to traffic operations at this location.
43. The report does not provide an overview of the impacts of vehicle queues at the study area intersections. For example, queuing along Ashburn Road from the Ashburn Road / Rothesay Road intersection currently can extend beyond Drury Cove Road in the afternoon, preventing some ease of access from Drury Cove Road. An analysis of the impacts of queueing is required to be provided by the proponent's consultant. Also please confirm if the LOS F at the Rothesay Road / Route 1 on-ramp is a result of the inability to turn left from Rothesay Road to Rothesay Avenue. Ashburn Road is a heavily travelled route for eastbound traffic accessing Rothesay Road during the afternoon hospital shift change with significant eastbound queuing from Ashburn Road to Rothesay Road. This was not noted in the report.
44. Proposed improvements at the Foster Thurston Drive / Ashburn Road intersection will require re-work if/when the interchange is built. Please identify what improvements are required if the interchange is constructed.
45. Please clarify what development related traffic will use Ashburn Lake Road / NB Route 1 Access Ramps without the interchange.
46. With respect to the proposed roundabout option at the NB Route 1 / Rothesay Avenue interchange, a concern is the introduction of a double lane roundabout as the first roundabout in the City and the possibility that this infrastructure will be overbuilt. Can the proponent's consultant comment on the potential risk of designing traffic signals for Phase 1 which will also be overdesigned for Phase 2 and 3 if/when the Interchange is constructed? This aspect is not discussed in Section 7.1.8 of the Traffic Impact Study.
47. The report notes nine accesses will be provided from the development to Ashburn Road, with five of these accesses constructed in Phase 1. It is recommended that the number of accesses be reduced to balance the role of Ashburn Road as a collector roadway with the need to provide access to the development. The development must incorporate an internal roadway network to control and distribute the traffic between a limited number of

access points to the Public Street network and points within the development. The excellent LOS of A for driveway traffic from the development accessing Ashburn Road demonstrates that access to the development is given too great a weight over traffic flow on Ashburn Road and its role as a collector street. Reducing the number of accesses will also reduce the width of a widened Ashburn Road to accommodate the left turn lanes into the development. We note the number of accesses has changed since the last site plan was provided and Section 39 conditions imposed. Please assess if the internal roadway network can be designed to function with one signalized intersection onto Ashburn Road.

48. The last sentence of Section 7.1 states “Results for the development access points will not be affected, however, intersections west of the development may change as more details for the Ashburn underpass become available.” Please provide additional information regarding this statement?
49. Section 7.1.4 – A more detailed analysis of this intersection re-alignment is required i.e. the amount and length of lanes will impact construction and land acquisition costs. This detailed analysis should build on the work that was completed by Stantec in 2008; perhaps verifying the designs proposed in the 2008 Stantec study.
50. Section 7.1.10 of the report notes “This location (Rothesay Avenue / Route 1 on-ramp intersections) should be re-evaluated in the future when more details with respect to the development become available to determine if signals are warranted.” It is our opinion that now is the time to identify likely deficiencies in the system and recommend solutions unless there is another chance at reviewing an updated study as part of the development approval process.
51. Section 7.1.11 of the report notes. “This ramp should be monitored and re-evaluated as more details about the development are finalized.” This analysis and final design of this location must be completed before the Traffic Study for the development can be finalized and approved by City Staff as part of the development approvals process.
52. Please provide additional information as it is not clear what transportation infrastructure will be required for the full build-out of the development site.
53. Several sections in the document do not identify solutions but defer to future details of development that still need to be worked out and there are many references to the need for future re-evaluations. This study must identify likely deficiencies in the system and solutions be recommended unless there is another opportunity to review an updated study before being approved as part of the development approval process.
54. The Water and Sanitary Servicing – Conceptual Design Report does not speak to any actual demand requirements based on site use. Please identify what commercial and

residential land uses will be constructed in the development in order to assess loads on the municipal infrastructure.

55. Please provide a completed hydraulic analysis to determine the flow demands and pressure requirements for full build-out of the development. Please define assumptions with respect to the full build-out projections (identified per Phase) used to determine the average and maximum daily demands.
56. Please provide further clarification on what building design (heights) and uses (residential-commercial) have been considered to determine required minimum pressures.
57. Please provide further clarification on what is needed on whether or not any water modeling has been completed to determine system adequacy of system to support the development and to size the proposed servicing.
58. At this time, the Report submitted is relatively theoretical in nature and does not contain any of the required level of detail and supporting technical information and calculations necessary to be able to review and comment on servicing the development site. A comprehensive technical design report and supporting documentation/calculations is required in order to understand the full development build out. Without a more detailed submission, an operational and professional review on the suitability of servicing for this development site is not possible.
59. Sanitary Servicing Section: Please confirm if the latest amendments in the report are accurate. Previous information provided notes the development first as 41 ha – 46,500 m²; then 49 ha - 60,000 m². This report now notes the development site as 50 ha – 79,000 m².
60. None of the required supporting calculations or sewer modeling results have been included with the servicing design report to support the numbers estimated. Please provide this information.
61. The Report notes that capacity exists in the Drury Cove WWPS and forcemain for all of the Phase 1 development and potentially most or all of Phase 2 development and that potential WWPS and force main upgrades may be required to provide sufficient capacity to service Phase 3 of the development. It was identified that the existing Drury Cove WWPS was designed to accommodate the Drury Cove residential subdivision. The existing Lift Station as is would not be able to support this development proposal. Additionally it was noted that upgrades at the station and any associated piping may be required. An additional report also indicated that upgrades to the existing Drury Cove lift station would be required. Will this be completed and if so please provide additional information?

62. The Report notes that future flow monitoring and analysis is recommended after Phase 1 development and prior to proceeding with Phase 2 to confirm existing flows and available capacities in the WWPS and forcemain although the Report indicates capacity for potentially most or all of Phase 2 development. Please indicate if any in field measurements or any flow monitoring to support the conceptual Design Report was completed. Also was there any draw down measurements in the wet well of the Drury Cove WWPS as part of the technical review. The report notes the peak hourly flows (wastewater) but does not provide design average flows, design maximum daily flows, design peak instantaneous flow and design minimum day flow.
63. The report notes that the proposed site pressure sewer system can inject wastewater into the Drury Cove Force Main downstream of the existing WWPS. Please clarify what downstream assessments were completed and if additional flows can be received downstream. Also please clarify is there were there any meetings with City operational staff to discuss this proposed approach and understand the City's system.
64. Would the proposed pressure sewer system be owned, maintained and operated by the developer or the City?
65. Phase 2 and 3 servicing indicates a most likely servicing approach. Full development build-out must be considered now, not after the development is underway. The City and the developer must understand upfront any issues or challenges to servicing this site.
66. The report mentions measures to promote water conservation such as high efficiency plumbing and commercial kitchen equipment. Please indicate what percentage of efficiency will be gained.
67. What downstream sewer analysis was conducted to determine infrastructure servicing and associated capacity? Were any restraints identified in either downstream receiving systems or downstream Lift Stations? What information was reviewed to support the conceptual design other than reviewing the Drury Cove WWPS and forcemain? Any required infrastructure upgrades necessary to support this development are the full responsibility and cost of the developer.
68. Please clarify was any hydrologic and hydraulic modeling completed for the Marsh Creek Watershed system to determine the effects on the Marsh Creek Watershed.
69. What modeling was completed to determine the effects of creating downstream storage? Were hydrographs generated to compare pre-development and post-development flow rates?
70. Where is the location of the proposed downstream (off-site) storage?

71. Is the proposed compensatory storage area within the confines of the Marsh Creek Catchment Basin or the Marsh Creek Flood Risk Area?
72. What modeling and calculations were considered for winter runoff and snow melt conditions?
73. What modelling and calculations were considered regarding climate change impacts?
74. Were any historical rainfall events/data used to calibrate the model?
75. Were any flow measurements and water levels measured to incorporate into the model?
76. What modeling checks, calculations were completed to conclude that the development will not negatively affect upstream, downstream or adjacent property or infrastructure?
77. The report notes that at each Phase of development, the associated displaced volume and compensation volume scenarios will be re-evaluated and updated to ensure a volume balance is maintained and Marsh Creek water surface elevations are not negatively affected. What is the course of action if there is not a volume balance or volumes are exceeded? It is required now, prior to commencing the next steps of the approvals process, to understand the full impacts of development relative to the watershed, upstream, downstream, adjacent lands and existing infrastructure.
78. The Report notes a 0.40m parking lot ponding depth. What is the basis of this depth? How will this be managed – will the development close for storms? How will this be affected by high tides? What are the impacts of property damage for customer / staff vehicles parked in the parking areas?
79. The report notes that 17,400 cubic metres of compensatory flood risk storage will be provided on site by voids in the rock fill. What provisions have been made to prevent eventual consolidation of the rock fill and/or the infiltration of fine material into the rock voids?
80. The Report notes all storm water storage zones are required to be above the flood plain elevation of 4.1 m? How was this elevation determined? Is this specific to the site or the drainage basin?
81. What consideration was given to the Marsh Creek System draining into Courtenay Bay and the associated high water levels in the forebay? What about high water levels during a storm surge and high tide?
82. For the stormwater analysis there are some differences between the assumptions in this report and previous studies that have been provided (i.e. the flood plain elevation, storm surge levels) – what is the rationale for the different numbers?

83. The EIA Registration Document contains a Hydraulics and Hydrology report prepared by Terrain Group, dated March 6, 2008. This document relates to the hydrotechnical and stormwater management impacts of the development, which were identified as important considerations by City Staff in the planning approvals process. Upon reviewing this document, the following can be noted:

- This document is dated 2008 and must be updated to reflect current conditions. For example the site plan for the proposed “The Crossing” development contained in the 2008 report is different from the current proposal contained in the main EIA Registration Document and submitted as part of the 2016 planning approvals process. Specifically the following major differences are noted between the two site plans:
 - The main EIA document notes the development site as 49 ha with a proposed 60,000 m² of mixed-use development. The supporting documentation (Terrain Report) prepared by the engineering consultant notes the site as 41 ha with 46,500 m² of commercial development only.
 - The recent layout contains a residential component on the north side of Ashburn Road which is not shown in the 2008 site plan.
 - The stream alignment / realignment shown on the 2016/2017 concept is different than that shown on the 2008 document.
 - The 2016/2017 development concept appears to have more impervious area (roofs and paved parking) as compared to the 2008 development concept.
- Additional information is required relating to the Terrain Report in order to fully understand the stormwater modelling that was done as part of this exercise. This would include: assumptions made for the modelling, additional details regarding the scenarios modelled, and results at different locations and different times of the year (winter vs. summer – frozen ground impacts) and for different tidal conditions. Supporting information on the subwatersheds was analyzed with the model but not provided with the report. In addition, the assumptions relating to land use and the corresponding runoff coefficients made by the consultants may no longer be valid given the change in future land use outlined in new Municipal Plan and Zoning By-law that have been enacted by the City since 2012.

84. How does the model account for Climate Change impacts and the relationship to heavy rainfall events occurring during the winter months when the ground is frozen?

85. No detailed discussion was provided regarding the calibration of the model, specifically how the modelled water elevations compare with data observed from field monitoring and how the modelled water levels compare with the Procter and Redfern mapping.

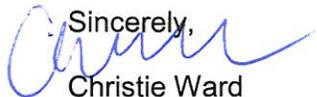
86. Responsibility for maintenance of any stormwater retention/detention ponds needs to be understood. In particular one of the scenarios modelled includes use of a City-owned parcel of land for additional water storage capacity: is there compensation for this use of City lands? Are there implications for adjacent properties?

87. How will a phased approach be taken with respect to stormwater management as the development proceeds in order to manage the stormwater requirements of the current site, phased development and adjacent impacts both upstream and downstream?
88. The phasing of the site preparation (mentioned on Page 10 of the Registration Document) should be better understood, as well as the implications on water levels downstream. For example, what are the stormwater management impacts for if the entire site is grubbed and trees removed but no further development occurs?
89. We also note that this document is stamped draft and is not sealed by a Professional Engineer.
90. Portions of the development site are within areas that are subject to regulation through the City's Flood Risk Area By-law which seeks to regulate development in the Marsh Creek Watershed to prevent flooding. This by-law requires that additional flood storage be developed to offset flood storage that is lost as development occurs within the Flood Risk Area. Specific concerns identified relating to "The Crossing Development" and the Flood Risk Area include:
- The EIA Registration document indicates that the proposed work plan is to start in the spring of 2017 (section 2(vii) of Registration Document) by realigning the stream through straightening the loop in the watercourse on PID 00432203. It is also noted that initial development of the project will take place with this parcel of land being the hub of the development and that the infilling of lands with local aggregate to form an "aggregate mattress" will be undertaken on several parcels of land that are subject to the City of Saint John Flood Risk Areas By-law.
 - This work cannot occur until the studies required by the Section 39 conditions have been completed by the developer and reviewed and approved by City staff, the City's Planning Advisory Committee and Common Council through an amendment to the conditions attached to the rezoning. As the placement of the aggregate mattress constitutes a "development", permits for this work (including filling, excavating, relocating, altering land levels, etc.) such as Flood Risk Area permits cannot be issued until the required studies including the traffic impact study, servicing study, and stormwater management study are completed, a Certificate of Determination is issued by the Province relating to the EIA and all other required Section 39 conditions are fulfilled through an amendment to the Section 39 conditions.
91. How will the existing compensatory storage provided by ponds across from Jones Road be affected by the development? The Flood Risk Area By-Law requires compensatory flood storage for projects, such as the proposal, that occur within the Flood Risk Area. The report prepared by Terrain Group and attached to the Registration Document indicates there are a few ways of providing compensatory storage for this development, however, the proposal does not indicate that compensatory storage creation will initially take place and it seems that the requirements of the by-law will not be immediately

addressed. Based on the information provided in the Terrain report (Section 5), it appears that compensatory storage may possibly be addressed through the eventual development of an urban wetland and a naturalized storm water pond, however, this section also indicates that it will be some time before this work will be undertaken and it seems to be connected to developing in the regulated wetland area. The Flood Risk Areas By-law is not based upon development of Provincially Designated Wetlands and any compensatory storage required for the flood risk area is separate from compensation required through Provincial Legislation for impacts in Provincially Designated Wetlands. The Flood Risk Area By-law requires that compensatory storage be provided at the same time as development occurs within the Flood Risk Areas and any such development is subject to a Flood Risk Area Permit.

92. The Terrain report presents 4 different scenarios that were assessed with a hydraulic model. Scenario 3 involves the lower Marsh Creek Parcel of land to be excavated (we assume this is the parcel designated as the Eco-Park in the planning application, PID 55189385, however it is not confirmed in the report). The scenario indicates that the proposal is to remove and dispose of 356,000 m³ of soil to create about 400,000 m³ of compensatory storage. The report does not favor this option due to the cost of excavation and disposal of soil. Another scenario, Scenario #2, involves developing "The Crossing" project but no creation of compensatory storage (the report indicates that about 17,000 m³ of storage is required) and the last scenario, Scenario #4, seems to indicate that City-owned land (PID 55024921) could also be used to provide compensatory storage. Option #2 does not meet the requirements of the Flood Risk Area By-Law as no compensatory storage is provided to offset that lost by the development. Option 4 would not be considered at this time as it would require a decision of Common Council to provide compensatory storage on City-owned land in lieu of the proponent providing it on their land. The Terrain report does not contain a recommended approach, based on a thorough assessment, to provide for the 17,000 cubic metres of compensatory flood storage that will be lost with completion of the development. This assessment is required in order to understand the impacts of the development on upstream and downstream areas of the Marsh Creek watershed and its flood storage capacity.
93. Please be advised The Flood Risk Area by-law must be reviewed and Flood Risk Areas permits must be obtained, following the required Section 39 Amendment, prior to the commencement of any development on project lands within the flood risk area. The requirements for the permit application are clearly outlined, as are the need for plans showing draining patterns in the City's Flood Risk Area By-law. The applicant is required to provide the City with a proposed approach to provide the required compensatory storage. Upon receipt of this, it will be evaluated to determine its compliance with the by-law and form part of the necessary information, in addition to the required stormwater modelling and other supporting studies, for the required amendment to the Section 39 conditions.

Please feel free to contact me if you have any questions.

Sincerely,

Christie Ward
Project Manager

January 16, 2018

File #:1450

Mr. Bill Borland
479 Rothesay Avenue,
Saint John, New Brunswick
E2L 4G7

Mr. Bill Borland,

RE: EIA Registration 4561-3-1450 Ashburn Road Development - "The Crossing"

The Technical Review Committee (TRC) has provided additional comments in addition to the TRC letter dated November 1, 2017. Please be advised that the comments contained in this letter must be addressed before a decision can be made regarding this project. Please refer to the following number scheme in providing your responses. Also please be advised that additional questions/concerns may be forthcoming in the near future.

94. Please provide a detailed construction plan for the installation of signals and the widening and addition of turning lanes at Rothesay Ave, Rothesay Road, Route 1 east bound off-ramp, and Route 1 east bound on-ramp?
95. Please be advised that in 2018, when weather permits, Gateway Operations Inc. intends to replace twin culverts located on Rothesay Road at the entrance to the Route 1 west bound on-ramp and adjacent to the proposed east entrance to the Development. This project includes potential upgrades the unsignalized intersections to signalized intersections in the area of Rothesay Ave/Rothesay Road. To avoid possible traffic congestion due to the culvert upgrades and new signage construction, this work should be coordinated with Gateway Operations Inc.



96. The document states that "The models predict that the water elevation experienced just upstream of Highway #1 culvert will be the same following development of the Crossing as compared to the existing condition." Please provide a map with the location of this culvert on Highway #1.
97. Please provide additional details with regards to the timing of the stream re-alignment along the Rothesay Road near the Route 1 west bound on-ramp?
98. Under the development's current proposed footprint it is estimated that 87500m³ of existing flood storage would be eliminated below the 100 year flood elevation. Compensatory storage will be provided for this loss of flood storage. What is the total storage of the Ashburn Road Development area pre development?
99. How close will the proposed realigned channel be to the Route 1 west bound on-ramp shoulder? Will guide rail be required?
100. Please confirm that the proponent is designing for storage to meet storm water peak flow attenuation requirements of net zero increase in Post-Development storm water discharge for the 100 year +20% return period storms which aligns with DTI storm-water management practices?
101. What will the stream elevations be relative to the three NBHC culvert locations for the following types of precipitation events:
i. 2 hour duration - 100 year return + 20%
ii. 24 hour duration - 100 year return + 20%
102. Please provide the size and type of pipes placed at the entrance to the Development at Rothesay Road?
103. What was the rationale of using a synthetic SCS type III design storm as opposed to the Chicago distribution design storm indicated in the City of Saint John's Storm Drainage Design Criteria Manual (2016)?
104. Please provide the design storm rainfall (hyetograph).
105. Which is meant when referring to the 100 year + 20% storm: 100 year (2010) + 20% or 100 year (2050, RCP2.6) + 20%?
106. Was the 100 year +20% storm used solely to determine the required attenuation or also to determine water levels? Please clarify as this storm is only mentioned at the end of the report, after the conclusions.
107. It is stated that water surface elevations will remain at or below existing levels for post-development conditions. However, it seems that scenario S6

(compensation and climate change) water levels exceed scenario S1 (existing conditions) levels. Please clarify.

108. It is stated that the development will not negatively affect upstream property or infrastructure for the modeled design storms. However, there are no upstream control points to support this conclusion. Please clarify how this conclusion is supported.

109. Will the reduction of velocity in the Little Marsh Creek result in sediments being deposited along the Urbanized Wetland or near the New Brunswick Highway Corporation (NBHC) culverts at Rothesay Road, Foster Thurston Drive, and at Route 1 – see photo below.



110. What is meant by constructed channel storage? Please clarify.

111. Please provide design details on any storage (ponds, channels, etc.) related to the project, as these are important to any hydrotechnical modeling.

112. Please be advised that once this Development starts any Food Service Establishment that is planned must go through the New Brunswick Dept of Health for approval and licensing.
113. Archaeological Service Branch has reviewed the updated EIA submission documents. As recommended by AMEC, we concur that there are no further archaeological investigations required at Area A. Area B remains an area of elevated archaeological potential and should there be plans for development in this area, the plans should be submitted for Archaeological Services to review as further archaeological work may be required. Archaeological Services suggests that an emergency plan for the accidental discovery of artifacts be drafted by the proponent and submitted for review. A reminder that any area within 80m of a watercourse/waterbody and 100m of a confluence contains elevated archaeological potential. As per Section 9 of the *Heritage Conservation Act*, any person who discovers an archaeological object, burial object, or human remains is required to report the discovery to the Minister as soon as practicable at (506) 453-2738.

Please feel free to contact me if you have any questions.

Sincerely,



Christie Ward
Project Manager

May 9, 2018

EIA File # 4561-3-1450

Larry Cain
Horizon Management Ltd.
479 Rothesay Ave.
Saint John, NB
E2L 4G7

Mr. Cain:

RE: EIA Registration 4561-3-1450 Ashburn Road Development - "The Crossing"

The Technical Review Committee (TRC) has provided comments in addition to the TRC letters dated November 1, 2017 and January 16, 2018. Please be advised that the comments contained in this letter must be addressed before a decision can be made regarding this project.

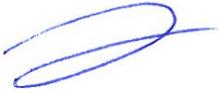
113. Following review of the traffic light proposal, impacts are anticipated at various locations, particularly at the bottom of the westbound offramp and eastbound offramp at Exit 129. It is believed that Snow and Ice Removal (SNIC) operations may be impacted (e.g., increased plow cycle time), thereby lowering the level of service at various times, including during peak traffic flows. There are safety concerns that traffic lights will cause traffic to back up onto Route 1 and increase the risk of accidents. It is suggested that the proponent perform a traffic count study of the impacted area as well as consult with local policing authorities.
114. It is anticipated that the culverts currently servicing Route 1 will be subject to higher flow rates during peak runoff, and it does not appear that they will be optimized. This increases risk for the Operations, Maintenance, and Rehabilitation (OMR) of these culverts. It seems that most of the watershed is designed to flow into the existing culverts located under the westbound on and offramps at Exit 128 and crossing the Route 1 Facility near kilometer marker 127.7. How does the proponent propose to address this concern? The type and size of the existing culverts are as follows:
 - 3 - 1.2 m dia CSP culvert under ramps
 - 1 - 3.5 x 2.5 m bolt CSP culvert under highway



115. At this time, it is expected that the proposed project would expose OMR to increased risk and costs.

Should you have any questions, please feel free to contact me at (506) 444-3820.

Sincerely,

A handwritten signature in blue ink, consisting of a stylized, cursive 'S' followed by a horizontal line.

Susan Dean
Project Manager, Environmental Impact Assessment Branch

C: John Wheatley, Northrup Group

September 13, 2018

EIA File # 4561-3-1450

John Wheatley
Horizon Management Ltd.
479 Rothesay Ave.
Saint John, NB
E2L 4G7

Mr. Wheatley:

RE: EIA Registration 4561-3-1450 Ashburn Road Development - "The Crossing"

The Technical Review Committee (TRC) has provided further comments in addition to the TRC letters dated November 1, 2017, January 16, 2018, and May 9, 2018. Please be advised that the comments contained in this letter must be acknowledged before a decision can be made regarding this project.

Environment and Climate Change Canada (ECCC)

116. In reference to the proponent's September 29, 2017 responses to the TRC's second round of comments on the proposed project, it is noted that most of ECCC's Canadian Wildlife Service's (CWS's) wildlife comments are not reflected in the Environmental Protection Plan (EPP) in Appendix #5. In general, ECCC recommends that the EPP be updated to reflect recommended mitigation measures. Specific feedback related to the EPP is outlined below.

- Section 2.1.1: The text implies that federal legislation only applies if there are federal triggers or if there is a federal decision to be made for the project. This section appears to be referencing archived law list triggers under the former *Canadian Environmental Assessment Act* (CEAA 2001). This section should be updated to clarify that compliance with applicable federal environmental protection legislation is required during all project phases, and not only when a federal authority has a federal trigger or decision-making responsibility under CEAA.



- Page 9, *Migratory Birds Convention Act*: Correction, the *Migratory Birds Convention Act* is not “international legislation”, it is Canadian federal legislation that upholds obligations under the international Migratory Birds Convention.
- Page 9, *Migratory Birds Convention Act*: The *Migratory Bird Regulations* should be added to this page. These are more applicable to the project than the *Migratory Bird Sanctuary Regulations* (MBRs) described.
- Page 11, *Species at Risk Act*: This section should be revised so that it is understood that the general prohibitions under the *Species at Risk Act* (SARA) apply to private land. The complete text of SARA, including prohibitions, is available at www.sararegistry.gc.ca.
- Section 3.1 Clearing, General Protection Measures: It is indicated that “Most clearing activities must avoid the generally accepted migratory bird-nesting period of between May 1st to August 31st”. This should be updated to reflect regional nesting periods, see https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods.html#_01_2. ECCC’s CWS recommends that vegetation clearing be conducted outside the regional nesting period for migratory birds. It should be clearly stated what mitigations will be implemented should clearing activities not avoid this time period. Compliance with the *Migratory Birds Convention Act* is expected during all project phases.
- Section 3.5.1.1 Topsoil and Section 3.5.1.3 Hydroseeding: Certain species of migratory birds (e.g., Bank Swallows) may nest in large piles of soil left unattended/unvegetated during the most critical period of the general breeding season (i.e., April 15th through August 15th). To discourage this, the proponent should consider measures to cover or to deter birds from nesting in these large piles of unattended soil during the breeding season. If migratory birds take up occupancy of these piles, any industrial activities, including hydroseeding, will cause disturbance to these migratory birds and inadvertently cause the destruction of nests and eggs. Alternate measures will then need to be taken to reduce potential for erosion and to ensure that nests are protected until chicks have fledged and left the area. For a species such as the Bank Swallow, the period when the nests would be considered active would include not only the time when birds are incubating eggs or taking care of flightless chicks, but also the period of time after chicks have learned to fly because Bank Swallows return to their colony to roost. Please consider guidance concerning beneficial management practices

when designing mitigation measures for Bank Swallows, at <https://www.canada.ca/en/environment-climate-change/services/migratory-bird-conservation/publications/bank-swallow-riparia-sandpits-quarries.html>.

- Section 3.7 Grubbing: Concerns should be updated to include potential impacts on ground nesting birds. Ground nesters may be attracted to, and nest in, a previously cleared area or in stockpiles of soil where there is a lag between clearing and construction activities.
 - Section 3.11.2 Temporary Watercourse/Wetland Crossings: Concerns should be updated to include potential impacts on birds.
 - Section 3.13.6 Vegetation Waste: Concerns should include the spread of invasive species (e.g., Purple Loosestrife).
 - Section 3.14 Work Progression: Concerns should include impacts on ground nesting birds (see above). Further information and guidance can be found at <http://www.ec.gc.ca/paom-itmb/default.asp?>.
117. As noted previously, ECCC's CWS recommends a detailed description of wildlife use of the project area be provided, along with the results of desktop review, field survey methodology, and field survey results. These can then be used to evaluate the potential effects, including potential cumulative effects, of the proposed project on birds, and assist in the development of project-specific mitigation measures.
118. With regard to the Wetland Delineation and Functional Assessment Report (Appendix 7), ECCC CWS has no further comments.

Should you have any questions, please feel free to contact me at (506) 444-3820.

Sincerely,



Susan Dean, MSc, MSc, BSc
Project Manager, Environmental Impact Assessment Branch

C: Larry Cain, Northrup Group