

IPD ISSUES FROM IAA – RESPONSE SUMMARY

September 14, 2021

Waterloo Airport Runway Project - Summary of Issues Received From IAAC

This document provides a high-level summary of the issues submitted to the Impact Assessment Agency of Canada (the Agency) regarding the Waterloo Airport Runway Project (the Project) during the comment period on the Initial Project Description submitted by the Region of Waterloo International Airport (the proponent). The issues highlight information needs to support the Agency’s decision on whether an impact assessment is required under section 16 of the *Impact Assessment Act* and— if an assessment is required—to inform the planning phase documents and further assessment. Original submissions are posted on the Canadian Impact Assessment Registry (Reference Number #81452). Categories are listed in alphabetical order.

The following “COMMENTS” column provides a summary of how each issue is being addressed in the Detailed Project Description

No.	Accidents and Malfunctions	Comments
1	Potential effects—including effects to groundwater and surface water quality, soils, and wildlife and wildlife habitat—of accidents or malfunctions—including spills of hazardous substances or uncontrolled release of pollutants to the environment—and potential for residual effects following an accident or malfunction	The Emergency Operations Procedures and Spill Response procedures that are already in place at the Region of Waterloo address accidents or malfunctions, including spills of hazardous substances or uncontrolled release of pollutants to the environment. This document is regulated and approved by Transport Canada and is a condition of our airport certificate. This procedure does not change with the Runway Extension. (Section 14.1 P 61)
2	Need for robust accident response procedures which include trajectory modelling, fate analysis, mapping of wildlife values and environmental sensitivity mapping for nearby waterbodies	The Emergency Operations Procedures and Spill Response procedures already in place at the Region of Waterloo address accidents or malfunctions, including spills of hazardous substances or uncontrolled release of pollutants to the environment. This document is regulated and approved by Transport Canada and is a condition of our airport certificate. This does not change with the Runway Extension. (Section 14.1 P 61)
3	Need for further information on potential effects and benefits of fluorine-free firefighting foam over traditional aqueous film forming foams	The benefits and effects of fluorine-free firefighting foam over traditional aqueous film forming foam are mainly due to the elimination of PFA’s (polyflouroakyl or fluorine substances) that at certain concentrations are hazardous. YKF is already switching to fluorine-free firefighting foam. Fluorine-free foam protects against high challenge flammable liquid fires, while minimizing fluorine or PFA impacts to the environment. The use of firefighting foam is also regulated and approved by Transport Canada. The amount of firefighting foam used will not change with the Runway Extension Project. (Section 14.1 P 62)

	Acoustic Environment	Comments
4	<p>Potential for disturbance, human health impacts, and disruption of recreational activity from stationary or mobile ground-level sources of noise during construction and operations</p>	<p>The Runway Extension Project is located on airport lands, with no residential areas in immediate vicinity of construction. Construction timing is also controlled by the Township of Woolwich by-laws to minimize construction noise at critical times. The airport will comply with all municipal by-laws, noise and construction timing.</p> <p>The airport already has a system in place for receiving any comments/feedback, which is regularly monitored. Any noise concerns that result from construction will be addressed in an appropriate and timely manner through our existing system.</p> <p>Noise Exposure Forecast (NEF) contours account for noise during operation, which is regulated by Transport Canada. The Detailed Project Description (DPD) provides results on the future NEF analysis.</p> <p>For Ground Noise, an adaptive management approach will be taken including monitoring noise to guide the development of mitigative measures. Construction noise is regulated through local municipal bylaws which will be followed during construction.</p> <p>(Section 15.3 P 153)</p>
5	<p>Potential for disturbance, human health impacts, and disruption of recreational activity associated with aircraft noise over residential areas, particularly Breslau</p>	<p>Airport noise is regulated by Transport Canada. The airport has a system already in place to receive noise complaints that is regularly monitored by airport staff. Any noise complaints are addressed appropriately and in a timely manner. The DPD provides guidance for impacts on sensitive land uses in the vicinity. NEF analysis included in the DPD shows a reduction in noise impacts on the surrounding communities. High sensitivity neighbours, such as residents, senior's homes and schools will be not be adversely impacted more than present circumstances.</p> <p>(Section 15.3 Table 15.3.1, P 131)</p>
6	<p>Need for further information on proposed noise mitigation measures during the construction phase, including detail of the complaint resolution process and information on noise monitoring and follow-up measures</p>	<p>The project is located on airport lands. There are no residential areas in the vicinity of the project. Construction will take place within working hours, as specified by the Township of Woolwich by-laws, which minimizes construction noise at critical times.</p> <p>The airport already has a comment/feedback system in place that is regularly monitored and concerns are addressed in a timely manner. Noise complaints are on YKF's website: https://www.waterlooairport.ca/en/about-ykf/submit-a-noise-concern.aspx# (Section 15.3 P 135)</p>

	Acoustic Environment	Comments
7	<p>Need for further information on noise abatement policies and measures to mitigate aircraft noise during the operations phase—such as the use of curfews or takeoff and landing paths to avoid residential areas—including information on noise monitoring and follow-up measures</p>	<p>Noise abatement policies and measures will be reviewed following design of the project and in accordance with Transport Canada regulations. YKF is committed to implementing reasonable noise mitigation measures as recommended through the Transport Canada process.</p> <p>YKF has a comment/feedback system in place that is monitored regularly by airport staff. Comments are assessed and followed up in an appropriate and timely manner. (Section 15.3 P 134)</p>
8	<p>Clarity on whether the proponent has considered Transport Canada Advisory Circular 302- 002 in development of noise abatement policies and measures and whether the proponent intends to request that Transport Canada provide a technical review of its noise exposure forecast</p>	<p>YKF regularly works with Transport Canada to develop and implement noise abatement policies and measures in accordance with AC 302-002, including a review of the NEF contours.</p> <p>YKF will request Transport Canada provide technical review or assistance at the appropriate time. (Section 15.3 P 127)</p>
9	<p>Recommendation that the noise assessment be conducted in accordance with Health Canada's <i>Guidance for Evaluating Human Health Impacts in Environmental Assessment Noise</i>, including consideration of potential cumulative effects with reasonably foreseeable projects in the area such as the expansion of the airport terminal building</p>	<p>Airport noise is regulated by Transport Canada. YKF is committed to implementing reasonable noise mitigation measures as recommended through Transport Canada policies and procedures. (Section 15.3 P 135)</p>

	Acoustic Environment	Comments
10	<p>Clarity on whether provincial regulatory mechanisms have been considered for noise assessment, including NPC-300 for stationary sources, and NPC-115 and NPC-118 for construction equipment</p>	<p>YKF is committed to implementing reasonable noise mitigation measures as regulated by Transport Canada. Stationary, ground and construction noise has been addressed in Section 15.3 (P 130, P 135)</p> <p>For construction noise, the applicable Provincial regulatory mechanisms (NPC-115 and NPC-118) detail limits for equipment and best practice in terms of sound emissions. These regulatory documents do not provide assessment guidance on the levels at the noise sensitive receptors. Generally, municipalities control construction noise through time restrictions, not in terms of noise impact, and the municipal noise bylaws will be followed.</p> <p>The applicable regulatory document (NPC-300) does not require assessment of ground noise, but rather provides guidance criteria to limit noise impacts at sensitive receptors. The Waterloo Airport intends to take an adaptive management approach (similar to other airports) whereby monitoring is undertaken to guide the development of mitigation actions should airport activity materially increase or change otherwise.</p>

	Air Quality	Comments
11	<p>Need for air quality assessment including baseline sampling and dispersion modelling, for all substances or air pollutants generated during each phase of the Project: nitrogen dioxide, Sulphur dioxide, dust, particulate matter, carbon monoxide, ozone, volatile organic compounds, polycyclic aromatic compounds, metals and other substances that may be released</p>	<p>The Runway Extension Project will not generate additional flights, and therefore air quality is not expected to change.</p> <p>(Section 15.2 P 28, and Section 23.0 P 166)</p> <p>Extending Runway 14-32 will not materially change airport operations other than allow AGN IIIB aircraft to use an alternative runway when weather conditions and crosswinds are unsuitable for landing on Runway 08-26. Although larger aircraft (AGN IIIB) will be able to use Runway 14-32 once it is extended, overall there will not be larger aircraft using YKF, as AGN IIIB aircraft can currently land on Runway 08-26. The Runway 14-32 Extension Project will not generate additional flights, and therefore air quality is not expected to increase.</p> <p>As such, detailed air quality assessments are not warranted for this project. However, it is acknowledged that air quality analysis (including sampling and modelling) will assist in management of emissions should airport activity increase. The Airport intends to take an adaptive management approach for GHG emissions as well as other regulated emissions, similar to that taken recently at other airports whereby monitoring is undertaken to guide the development of mitigation actions should airport activity materially increase or change otherwise. It is noteworthy that Waterloo Airport GHG emissions are under the Strategic Assessment for Climate Change (SACC) threshold of 500 kt CO₂e for an upstream assessment, and will continue to be under the threshold in 2050.</p> <p>In addition to greenhouse gas emissions of carbon dioxide, methane and nitrous oxide, the “other regulated emissions” for which an adaptive management approach will be used to manage include criteria air contaminants (CAC); nitrogen dioxide and particulate matter less than 2.5 µm (PM_{2.5}). These CACs are emitted from combustion sources under direct control of the airport authority which include boilers, heaters, and generators. These types of emission sources have provincial and federal regulated emission limits which allows these emissions to be assessed as part of the adaptive management plan.</p>

	Air Quality	Comments
12	<p>Need for ambient air quality monitoring to confirm results of modelling and assess air quality against the Canadian Ambient Air Quality standards to assess potential effects to human health from air pollutants, based on predicted concentrations</p>	<p>The Runway Extension Project will not generate additional flights, and therefore air quality is not expected to change.</p> <p><i>(Section 15.2 P 28, and Section 23.0 P 166)</i></p> <p>Extending Runway 14-32 will not materially change airport operations other than allow AGN IIIB aircraft to use an alternative runway when weather conditions and crosswinds are unsuitable for landing on Runway 08-26. Although larger aircraft (AGN IIIB) will be able to use Runway 14-32 once it is extended, overall there will not be larger aircraft using YKF, as AGN IIIB aircraft can currently land on Runway 08-26. The Runway 14-32 Extension Project will not generate additional flights, and therefore air quality is not expected to increase.</p> <p>As such, detailed air quality assessments are not warranted for this project. However, it is acknowledged that air quality analysis (including sampling and modelling) will assist in management of emissions should airport activity increase. The Airport intends to take an adaptive management approach for GHG emissions as well as other regulated emissions, similar to that taken recently at other airports whereby monitoring is undertaken to guide the development of mitigation actions should airport activity materially increase or change otherwise. It is noteworthy that Waterloo Airport GHG emissions are under the Strategic Assessment for Climate Change (SACC) threshold of 500 kt CO₂e for an upstream assessment, and will continue to be under the threshold in 2050.</p> <p>In addition to greenhouse gas emissions of carbon dioxide, methane and nitrous oxide, the “other regulated emissions” for which an adaptive management approach will be used to manage include criteria air contaminants (CAC); nitrogen dioxide and particulate matter less than 2.5 µm (PM_{2.5}). These CACs are emitted from combustion sources under direct control of the airport authority which include boilers, heaters, and generators. These types of emission sources have provincial and federal regulated emission limits which allows these emissions to be assessed as part of the adaptive management plan.</p>

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13	<p>Need for further information on mitigation measures for air pollutants</p>	<p>The Runway Extension Project will not generate additional flights, and therefore air quality is not expected to change.</p> <p>(Section 15.2 P 28, and Section 23.0 P 166)</p> <p>Extending Runway 14-32 will not materially change airport operations other than allow AGN IIIB aircraft to use an alternative runway when weather conditions and crosswinds are unsuitable for landing on Runway 08-26. Although larger aircraft (AGN IIIB) will be able to use Runway 14-32 once it is extended, overall there will not be larger aircraft using YKF, as AGN IIIB aircraft can currently land on Runway 08-26. The Runway 14-32 Extension Project will not generate additional flights, and therefore air quality is not expected to increase.</p> <p>As such, detailed air quality assessments are not warranted for this project. However, it is acknowledged that air quality analysis (including sampling and modelling) will assist in management of emissions should airport activity increase. The Airport intends to take an adaptive management approach for GHG emissions as well as other regulated emissions, similar to that taken recently at other airports whereby monitoring is undertaken to guide the development of mitigation actions should airport activity materially increase or change otherwise. It is noteworthy that Waterloo Airport GHG emissions are under the Strategic Assessment for Climate Change (SACC) threshold of 500 kt CO₂e for an upstream assessment, and will continue to be under the threshold in 2050.</p> <p>In addition to greenhouse gas emissions of carbon dioxide, methane and nitrous oxide, the “other regulated emissions” for which an adaptive management approach will be used to manage include criteria air contaminants (CAC); nitrogen dioxide and particulate matter less than 2.5 µm (PM_{2.5}). These CACs are emitted from combustion sources under direct control of the airport authority which include boilers, heaters, and generators. These types of emission sources have provincial and federal regulated emission limits which allows these emissions to be assessed as part of the adaptive management plan.</p>
14	<p>Potential contribution of the Project to light pollution</p>	<p>Visual aid requirements are prescribed by Transport Canada to ensure aircraft see the runway on approach, including the number of lights, location characteristics, angles, intensity etc.</p> <p>Lights associated with the Runway 14-32 Project are generally shielded by surrounding trees. The angle for approach lights is dictated by Transport Canada.</p> <p>The airport will commit to working with Township of Woolwich and Region of Waterloo to minimize lighting impacts while maintaining Transport Canada Standards. (Section 15.7 P 153)</p>

	Climate Change and Greenhouse Gas Emissions	Comments
15	Need for further information on potential project effects to carbon sinks, such as the Kossuth Wetland Complex	<p>The Airport has modified the Runway Extension Project to eliminate the direct impacts to the Kossuth Wetland Complex, resulting in no significant change to the carbon sink effect of the Kossuth Wetland Complex.</p> <p>(Section 14.1 P 59)</p>
16	Need for further study on the resilience of the Project to climate change including possible effects that may be associated with climate change, mitigation measures and potential for residual effects after mitigation has been applied	<p>The Runway Extension Project will increase climate change resilience by increasing usability. It will provide a second option for narrow body aircraft to land in inclement weather, without being diverted to other airports. It will also include improved navigational and visual aids to increase aircraft visibility and safety in poor weather.</p> <p>The length of the runway has been designed to permit airlines operations in a wide range of temperatures and weather conditions. Stormwater management will consider the Regional storm, and pavements have been designed to accommodate frost protection. (Section 23.0 P 166)</p>
17	Consideration of potential greenhouse gas emissions associated with alternative means of carrying out the Project and a description of whether greenhouse gas emissions were considered as a criterion in the alternatives selection	<p>As per the RWDI report, the project is a net benefit to climate change and greenhouse gases, considering a future scenario comparison of vehicles travelling to Toronto Pearson International Airport (YYZ). The Region is committed to reducing greenhouse gas emissions and is a leader in environmental planning. (Section 23.0 P 166)</p>
18	Consideration of measures to reduce the Project's greenhouse gas emissions to ensure net-zero emissions by 2050	<p>The Project is considered a net benefit to climate change and greenhouse gases as per the RWDI report provided in the Detailed Project Description. The Project will reduce the number of diversions, such that aircraft will not need to fly back to their place of origin, divert to another airport or coordinate vehicles to shuffling passengers around.</p> <p>The Region is committed to its objectives as a leader in environmental planning. However, the broader issue of airport operations and net-zero emissions by 2050 is beyond the scope of this Project.</p> <p>(Section 23.0, P 167)</p>

	Cumulative Effects	Comments
19	<p>Potential for cumulative effects to wetlands and wetland functions due to historical development and wetland removals in the Grand River Watershed</p>	<p>The Runway Extension Project proposes the enhancement of existing wetland and creation of new wetland, which is expected to more than offset impacts and result in a net benefit. The appropriate approval agencies have been consulted, including the Grand River Conservation Authority and the Ministry of the Environment, Conservation and Parks, and construction will not proceed until all permits and approvals are in place.</p> <p>A review of historical air photos from the 1940's and 1950's indicates any initial land clearing for farming predates this time period and the majority of wetland and woodland areas have remained similar in size and vegetation structure for the last 80 years.</p> <p>The surrounding land use designation within the Breslau PSW catchment area is Agricultural (Woolwich Official Plan 2021). The surrounding land use designations within the Kossuth PSW catchment area are Agricultural, Rural Residential, Open Space, and small area of Institutional (City of Cambridge Official Plan 2012). Wetland removals in these PSW areas from the airport expansion are a single, isolated event and cumulative impacts do not warrant consideration given the lack of changes in the last 80+ years and protected status of these features in the Agricultural landscape (airport expansion being the exception). The function of the wetland hydrology has been considered and addressed through a water balance analysis to ensure remaining wetland areas and downstream aquatic habitats are maintained. Habitat function has been addressed through proposed wetland habitat enhancements and compensation planning. (Section 14.1 P 72)</p> <p>The design of the project will be subject to the GRCA's Schedule A –Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Permits (pursuant to Ontario Regulation 150/06). Initial background information already submitted to the GRCA for comment include:</p> <ul style="list-style-type: none"> • Scoped EIS (Section 14.1, Appendix IV) • Randall Drain Preliminary Design (Section 14.3, Appendix VI) • Stormwater Management Memo (Section 14.4, Appendix VII) • Hydraulic Assessment Memo (Section 14.5, Appendix VIII) • Water Balance Memo (Section 14.6, Appendix IX) • Hydrogeological Study (Section 14.8, Appendix XI)

	Cumulative Effects	Comments
20	Cumulative effects on Indigenous peoples, including the cumulative effects of impacts on their Aboriginal and/or treaty rights due to continuous development and urbanization in the traditional territories of potentially affected Indigenous groups	No impacts on Indigenous peoples, including the cumulative effects of impacts on their Aboriginal and/or treaty rights have been stated to date. <i>(Section 4.0, P 16-P 24)</i>

	Fish and Fish Habitat	Comments
21	Need for further information to determine potential for effects to fish and fish habitat	A complete Request for Review submission has been submitted to DFO, and additional information is provided in Section 14.1 P 67 .
22	Potential effects on fish and fish habitat in Randall and Breslau Drains from construction dewatering and culvert installation	<p>Environmental monitors will be onsite to complete a fish salvage program. The appropriate approval agencies have also been consulted, including the Grand River Conservation Authority and Fisheries and Oceans Canada (DFO). Construction will not proceed until all permits and approvals are in place. Much of the Randall Drain diversion can be constructed in the “dry”, while maintaining flows in the current Randall Drain Channel.</p> <p>A complete Request for Review submission has been submitted to DFO (see response to comment 21). Mitigation measures include bypass pumping, fish salvage and relocation, in-water work timing windows, sediment and erosion control.</p> <p>(Section 14.1 P 67)</p> <p>The design of the project will be subject to the GRCA’s Schedule A –Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Permits (pursuant to Ontario Regulation 150/06). Initial background information already submitted to the GRCA for comment include:</p> <ul style="list-style-type: none"> • Scoped EIS (Section 14.1, Appendix IV) • Randall Drain Preliminary Design (Section 14.3, Appendix VI) • Stormwater Management Memo (Section 14.4, Appendix VII) • Hydraulic Assessment Memo (Section 14.5, Appendix VIII) • Water Balance Memo (Section 14.6, Appendix IX) • Hydrogeological Study (Section 14.8, Appendix XI)
23	Need for a clear map identifying names and locations of watercourses, waterbodies, and proposed in-water works	<p>Watercourses (Breslau Drain and Randall Drain) and wetland complexes are identified on a map to be provided in Figure 14.1.1 entitled “RMOW International Airport, Runway 14-32 Extension Study Area and Significant Natural Features.” (Section 14.1 P 52)</p> <p>In-water works will only occur in the Breslau Drain for the culvert installation and in the Randall Drain for the realignment when connecting to the existing Randall Drain.</p>

	Fish and Fish Habitat	Comments
24	<p>Need for further information on potential effects to open water wetland areas; potential effects to fish and fish habitat in wetlands</p>	<p>The water balance in the wetland will be monitored during and post construction. The Grand River Conservation Authority and the Ministry of the Environment, Conservation and Parks have also been consulted to review and provide the appropriate approvals. Construction will not proceed until all permits and approvals are in place.</p> <p>No open water areas within wetland areas were identified as fish habitat. They are not connected to any surface watercourses and are ephemeral. A complete Request for Review submission has been submitted to DFO (see response to comment 21). Mitigation measures include bypass pumping, fish salvage and relocation, in-water work timing windows, sediment and erosion control. There are minimal open water wetland areas within the impacted areas and none are online. (Section 14.1 P 63)</p> <p>The design of the project will be subject to the GRCA's Schedule A –Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Permits (pursuant to Ontario Regulation 150/06). Initial background information already submitted to the GRCA for comment include:</p> <ul style="list-style-type: none"> • Scoped EIS (Section 14.1, Appendix IV) • Randall Drain Preliminary Design (Section 14.3, Appendix VI) • Stormwater Management Memo (Section 14.4, Appendix VII) • Hydraulic Assessment Memo (Section 14.5, Appendix VIII) • Water Balance Memo (Section 14.6, Appendix IX) • Hydrogeological Study (Section 14.8, Appendix XI)

	Fish and Fish Habitat	Comments
25	<p>Clarity on the specific timing windows being considered to avoid or mitigate potential effects to fish</p>	<p>The Grand River Conservation Authority and Fisheries and Oceans Canada have been consulted to provide the appropriate approvals. Construction will not begin until all permits and approvals have been obtained.</p> <p>Construction timing windows have been considered to avoid or mitigate potential effects to fish and is included in the detailed report. For the Randall Drain and Breslau Drain - construction schedules will adhere to in-water work timing windows such that no in water work will occur between March 15-June 30. (Section 14.1 P 67)</p> <p>The design of the project will be subject to the GRCA's Schedule A –Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Permits (pursuant to Ontario Regulation 150/06). Initial background information already submitted to the GRCA for comment include:</p> <ul style="list-style-type: none"> • Scoped EIS (Section 14.1, Appendix IV) • Randall Drain Preliminary Design (Section 14.3, Appendix VI) • Stormwater Management Memo (Section 14.4, Appendix VII) • Hydraulic Assessment Memo (Section 14.5, Appendix VIII) • Water Balance Memo (Section 14.6, Appendix IX) • Hydrogeological Study (Section 14.8, Appendix XI)

	Follow-up and Monitoring	Comments
26	<p>Where mitigation measures are proposed—need for information on the proponent's plans for monitoring and active management to ensure effectiveness of mitigation measures</p>	<p>Anticipated mitigation measures are included in Section 14.1, Table 14.1.2, P 73. YKF has a comment/feedback system in place that is monitored regularly by airport staff. Comments are assessed and followed up in an appropriate and timely manner. This system can be utilized for noise complaints as well as other comments and questions that are airport related.</p> <p>Sediment and Erosion Control measures will be checked daily to ensure they are functioning as intended. Bi-weekly reports will be submitted to the GRCA for review.</p> <p>A short (>5 years) and long-term (20 years) monitoring program is being developed for the impacted Flight Pathway Areas where canopy reduction is required in wetland areas.</p>

	Human Health and Well-Being	Comments
27	<p>Potential effects on the quality of mental and physical health for residents and visitors in the area near the Project, particularly from the loss of trees in the forest adjacent to the Kossuth Wetland Complex</p>	<p>Trees in the Kossuth Wetland are no longer being removed. However, the Health and Social Analysis provided in Appendices of the DPD, examined the link between changes in the biophysical environment and potential implications on health and community well-being. The analysis concluded that the direct and indirect impacts on the biophysical environment are not likely to be of sufficient magnitude to have any impact on health or community well-being. All impacts are well within regulatory limits established for the protection of human health; are well-understood and can be readily mitigated by existing technology, construction best-practices and aviation industry best practices (e.g., stormwater management, sedimentation and erosion controls, Species at Risk management, etc.). (Section 14.1 P 59, & Section 15.2 P 123)</p>
28	<p>Need for information on monitoring potential effects to the social determinants of health and residual effects</p>	<p>The Region of Waterloo's Department of Public Health has as its goal to build healthy and supportive communities, in partnership with others and to promote Ontario's Public Health Standards. The Region's Public Health strategy is integrated into the Region's Strategic Plan. As part of its strategic planning process, the Region of Waterloo has been conducting research regarding health and social determinants of health in particular since at least 2011 (See https://www.regionofwaterloo.ca/en/regional-government/health.aspx#). The Region will continue to monitor issues and trends related to public health, including environmental health and social determinants as part of its overall strategic planning processes. (Section 15.2 P 125)</p>
29	<p>Need for information on potential effects to drinking water sources and associated human health effects</p>	<p>A Hydrogeological Report by Golder for the runway extension project states that drinking water sources will not be impacted. (Section 14.8 P 114)</p>

	Indigenous and Stakeholder Engagement	Comments
30	<p>Recommendation that Indigenous and public engagement be undertaken with diverse subpopulations to ensure diverse perspectives are heard and understood</p>	<p>The Region commits to ongoing indigenous engagement should an Impact Assessment be required. The DPD details the Indigenous engagement undertaken with Six Nations of the Grand River, Mississaugas of the Credit First Nations and the Metis Nation of Ontario (MNO).</p> <p>The Region is working with Archaeological Research Associates Ltd. and three indigenous groups, Haudenosaunee Development Institute, Six Nations of the Grand River Elected Council and Mississauga of the Credit First Nation (MCFN), who were onsite to review and monitor the Stage 2 Archaeological assessment. The Region has an ongoing relationship with the Six Nations. Regular meetings are held between Six Nations and the Region of Waterloo, and this Runway Extension Project will be a future agenda item. The Region will also explore opportunities for engagement with the MCFN and MNO.</p> <p><i>(Section 21.0 P 164)</i></p>
31	<p>Need for further information on opportunities for on-going Indigenous engagement in the development and implementation of mitigation measures for the Project, including during the construction and operation phases of the Project</p>	<p>The Region has an established process for engagement with Indigenous groups and is working with these groups throughout the Runway Extension Project. Items to be discussed will be mitigation measures during construction and operation phases.</p> <p><i>(Section 21.0 P 164)</i></p>

	Indigenous and Stakeholder Engagement	Comments
32	<p>Need for further information on how the proponent has incorporated input provided by public stakeholders including the Cambridge Butterfly Conservatory and the Kossuth Bog Foundation</p>	<p>Preliminary information on the Project was provided in two Public Consultation Centre (PCC) meetings on June 20 and October 24, 2019. As part of the IAAC process, two virtual information sharing sessions were held in September 2020. The objective of the sessions was to help better understand how to participate in the upcoming impact assessment process, and to provide any comments on the Project. Representatives from the IAAC and YKF presented information about the Project and the assessment process. Participants also had the opportunity to ask questions during these sessions.</p> <p>In response to recent public comments, the Region has engaged Transport Canada to modify the Runway 32 approach slope regulations, as described in the DPD. If permitted, this will eliminate the impacts to the Kossuth Wetland Complex and trees within the Cambridge Butterfly Conservatory property. If this modification is not permitted by Transport Canada, then the airport commits to modifying the Project to minimize impacts to the Kossuth Wetland Complex. These modifications generally consist of additional runway constructed to the north, and decreased aircraft usability for the Runway 32 approach. The additional runway length will not increase the overall footprint of the Project.</p> <p><i>(Section 14.1 P 72)</i></p>

	Indigenous Peoples' Current Use of Lands and Resources for Traditional Purposes	Comments
33	Need for further information on traditional food/harvesting activities and whether there are potential effects to wildlife used as food sources	No effects have been noted to date. The Region has established relationships with Indigenous groups in the area, and will continue to work with these groups throughout the Project. (Section 4.0 P 16 – P 24)

	Indigenous Peoples' Health and Well-being	Comments
34	<p>Potential effects to drinking water sources such as the Grand River, and associated effects on Indigenous peoples' health</p>	<p>Drinking water sources will not be impacted, as stated in the Golder Hydrogeological report. (Section 14.8 P 114)</p>

	Indigenous People's Social and Economic Conditions	Comments
35	<p>Clarity on the intent to support diversity and inclusion through the proponents hiring and training strategies; need for a better understanding of the target percentage for hiring Indigenous people and if Indigenous people who live near the Project will receive priority employment and training opportunities</p>	<p>Hiring of additional staff within the Region is not required for this Project. The Region is an equal opportunity employer committed to diversity, inclusion, and supporting the well-being of our employees. We encourage qualified applicants to apply and will accommodate the needs of qualified applicants under the Human Rights Code in all parts of the hiring process.</p> <p><i>(Section 22.0 P 164)</i></p>

	Indigenous Peoples' Spiritual, Physical, and Cultural Heritage	Comments
36	<p>Potential presence of archaeological values near the Project and need for a Stage 2 Archeological Assessment; clarity on approach to on-site monitoring during construction and plans if historical sites or objects of importance to Indigenous peoples are discovered</p>	<p>The Region is currently in the archaeological assessment process for the Project, and commits to completing this process. Stage 2 archaeological assessment results are included in the DPD. As noted in Comment No. 23, on site monitors from three Indigenous Groups were involved with the Stage 2 Archaeological investigation, and will be involved with a Stage 3 Investigation.</p> <p>(Section 21.0 P 164)</p>

	Migratory Birds and their Habitat	Comments
37	<p>Potential effects on migratory birds, eggs and nests from habitat removal, bird strikes, sensory disturbance due to noise and infrastructure lighting</p>	<p>Approval agencies have been consulted, including the Grand River Conservation Authority and the Ministry of the Environment, Conservation and Parks.</p> <p>Construction will be completed during approved timing windows and will not proceed until all permits and approvals are in place. Vegetation clearing and grubbing will be outside the active breeding bird period (April 1 to August 30) which will protect birds, eggs, and nests. Seasonal and daytime work timing windows will reduce construction related disturbances such as noise. Lighting associated with the Runway Extension Project is directional and focused on the runway, not the adjacent natural areas. (Section 14.1 P 71)</p> <p>The design of the project will be subject to the GRCA's Schedule A – Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Permits (pursuant to Ontario Regulation 150/06). Initial background information already submitted to the GRCA for comment include:</p> <ul style="list-style-type: none"> • Scoped EIS (Section 14.1, Appendix IV) • Randall Drain Preliminary Design (Section 14.3, Appendix VI) • Stormwater Management Memo (Section 14.4, Appendix VII) • Hydraulic Assessment Memo (Section 14.5, Appendix VIII) • Water Balance Memo (Section 14.6, Appendix IX) • Hydrogeological Study (Section 14.8, Appendix XI)

	Migratory Birds and their Habitat	Comments
38	<p>Need for a list of migratory bird species potentially occurring on the project site and seasonal surveys to adequately capture habitat use</p>	<p>Approval agencies have been consulted, including the Grand River Conservation Authority and the Ministry of the Environment, Conservation and Parks.</p> <p>Seven bird species at the airport have been identified and surveyed by Natural Resource Solutions Inc. A list of migratory birds known from the study area based on available background information and observed by NRSI.</p> <p>Construction will be completed during approved timing windows and will not proceed until all permits and approvals are in place.</p> <p>(Section 14.1 P 71)</p> <p>The design of the project will be subject to the GRCA's Schedule A – Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Permits (pursuant to Ontario Regulation 150/06). Initial background information already submitted to the GRCA for comment include:</p> <ul style="list-style-type: none"> • Scoped EIS (Section 14.1, Appendix IV) • Randall Drain Preliminary Design (Section 14.3, Appendix VI) • Stormwater Management Memo (Section 14.4, Appendix VII) • Hydraulic Assessment Memo (Section 14.5, Appendix VIII) • Water Balance Memo (Section 14.6, Appendix IX) • Hydrogeological Study (Section 14.8, Appendix XI)

	Migratory Birds and their Habitat	Comments
39	<p>Clarity on the specific timing windows being considered to avoid or mitigate potential effects to migratory birds</p>	<p>Approval agencies have been consulted, including the Grand River Conservation Authority and the Ministry of the Environment, Conservation and Parks. Construction will be completed during approved timing windows and will not proceed until all permits and approvals are in place.</p> <p>Vegetation clearing and grubbing will be outside the active breeding bird period (April 1 to August 30) which will protect birds, eggs, and nests. Any individual trees or “simple” habitat areas requiring removal during the active breeding period will be cleared by a qualified biologist within 48hrs of any disruptive activities to ensure no migratory birds, their nests, or eggs are present.</p> <p>(Section 14.1 P 71)</p> <p>The design of the project will be subject to the GRCA’s Schedule A – Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Permits (pursuant to Ontario Regulation 150/06). Initial background information already submitted to the GRCA for comment include:</p> <ul style="list-style-type: none"> • Scoped EIS (Section 14.1, Appendix IV) • Randall Drain Preliminary Design (Section 14.3, Appendix VI) • Stormwater Management Memo (Section 14.4, Appendix VII) • Hydraulic Assessment Memo (Section 14.5, Appendix VIII) • Water Balance Memo (Section 14.6, Appendix IX) • Hydrogeological Study (Section 14.8, Appendix XI)

	Social and Economic Conditions	Comments
40	<p>Concerns around the use of public funds for a capital expenditure of this magnitude in consideration of historical service levels and economic uncertainty due to COVID-19 and the proliferation of virtual work practices</p>	<p>The Region is confident that air service will return as pandemic restrictions are relaxed. YKF has already experienced an increase in air service in 2021 through Flair Airlines, with more destinations to be announced by Flair. Sunwing also recently announced it will resume operations later this year and WestJet is planning on increasing flights.</p> <p>Regional council has approved the Airport Master Plan and budgets for the Project. However, approval of the construction tender for the Project is still subject to Regional council approval. The Project is also dependent on sufficient funding from the federal and provincial governments. The Project will not increase the current airport tax of \$23/household.</p> <p>(Section 15.5 P 136)</p>
41	<p>Potential indirect effects to agricultural lands and activities surrounding the runway 14 extension during construction and operations</p>	<p>The Agriculture Impact Assessment (AIA) report developed by MacNaughton Hermsen Britton Clarkson Planning Limited provides details about indirect effects to agricultural lands and activities surround the runway extension. (Section 15.8 P 155 – P 159)</p>
42	<p>Potential adverse social and economic effects in communities near the Project, particularly Breslau, including impacts to the standard of living of nearby residents, property values, and impacts to nearby businesses</p>	<p>The Runway Extension Project will not have adverse social and economic effects to the community. The Health and Social Analysis provided in the DPD examined potential impacts near the project site, including Breslau. The analysis of key socio-economic features in relation to project impacts was examined and also illustrated in Figure 15.2.1 that analyzes the implications for health and community well-being.</p> <p>The analysis shows that when comparing the two sets of NEF contours (2000 versus 2035) that noise impacts will be similar, with increases in some areas and decreases in others. In general, noise in Kitchener and Breslau is not expected to increase beyond the current 2000 NEF. Specifically, northwest of the airport, towards Breslau, the updated 2035 NEF contour is slightly shorter than the 2000 NEF contour. At the same time, close to the threshold of Runway 14, the contour is wider. However, the area of minor contour growth seems to only impact commercial / industrial lots south of Fountain Street. Given this context and the magnitude of changes in noise levels, property values are not likely to be affected over baseline conditions. The airport will continue to track and investigate every noise and other airport-related complaints received. (Section 15.2, P 126)</p>
43	<p>Need for information on employment opportunities and economic growth for nearby rural municipalities, such as the Townships of Woolwich, North Dumfries, Wellesley and Wilmot</p>	<p>The Runway Extension Project will not result in additional air traffic and will not result in the Region hiring additional Region staff. However, construction activity for the runway extension will create opportunities for initial temporary employment for construction contractors.</p> <p>(Section 15.5 P 126)</p>

	Social and Economic Conditions	Comments
44	<p>Need for information on the proponent's hiring strategy, including anticipated training opportunities, description of the skills that may be required for potential candidates and whether there are employment barriers for under-represented groups in the labour market, such as Indigenous peoples, women, and persons with disabilities</p>	<p>The Economic Case for Airport Investment report (PWC, 2021) provided in Appendix F and the Health and Social Analysis (SLR, 2021) in Appendix E in the IPD, conclude that</p> <ul style="list-style-type: none"> • The beneficial impacts on overall employment and labour force are a positive influence on economic development, contributing to their anticipated employment growth during both the construction phase and the operations phase. • New employment opportunities (see Appendix F) will likely be greatest within the cities of Kitchener, Waterloo and Cambridge. • Beneficial impacts will also likely be experienced by individuals entering the work force or seeking employment, YKF employees and labour organizations. <p>The Region's commitment to diversity, equity and inclusion through the implementation of the Region's "Diversity, Equity and Inclusion Policy" has been incorporated and continues to be implemented in its hiring and management practices. See https://www.regionofwaterloo.ca/en/regional-government/diversity-equity-and-inclusion.aspx for further information on the Region's hiring strategies and approaches to training.</p> <p>(Section 15.5, P 139 and P 143)</p>
45	<p>Need for further information on the direct and indirect economic benefits to the broader regional economy, including the current economic context; need for further information on direct project benefits on the facilitation of trade, increased tourism, and improved business investment and innovation</p>	<p>The Economic Case for Airport Investment report (PWC, 2021) provided in Appendix F and the Health and Social Analysis provide information on the broader regional economy and assess the impacts of the project on trade, tourism and business investment. Key conclusions are:</p> <ul style="list-style-type: none"> • The beneficial impacts on income and social status will likely be experienced by few individuals, families and households gaining Project related employment or income from increased business activity for construction and aviation related businesses; • The beneficial impacts on employment and labour force are a positive influence on local and regional economic development; • The Project will likely enable a wide range of catalytic benefits related to improved aviation connectivity, including: <ul style="list-style-type: none"> ○ facilitating trade by reducing time and costs of trade and by providing better reliability; ○ business investment and innovation are improved by greater connectivity, with many business surveys reporting that international transport links are an essential factor in location decisions (PWC, 2021). <p>(Section 15.5, P 144)</p>
46	<p>Potential effects of the project on inter-regional transportation connectivity</p>	<p>The Runway Extension Project will not result in additional air traffic and therefore will not impact inter-regional transportation connectivity.</p> <p>(Section 15.5, P 125)</p>

	Species at Risk, Terrestrial Wildlife, and their Habitat wildlife	Comments
47	Potential effects on species at risk including effects to individuals, residences and critical habitat	<p>Details about potential effects on species at risk, including effects to individuals, residences and habitat are included in the DPD.</p> <p>An Information Gathering Form and Avoidance Alternatives Form have been submitted to the MECP which addresses impacts to species at risk and their habitats. No critical habitat or residences for federal species at risk are identified on airport lands. It has been determined in consultation with Canadian Wildlife Service and MECP that the provincial ESA is the relevant legislation for species at risk for this project (the airport is not on federal lands and no critical habitat for SAR identified in any recovery strategies will be impacted).</p> <p>(Section 14.1, Table 14.1.2, P 73)</p>
48	Need for a list of species at risk potentially occurring on the project site, including plant species at risk	<p>A list of species at risk potentially occurring on the project site is included in the DPD. All species at risk identified during a background screening review and during field work are further detailed in the DPD.</p> <p>(Section 14.1, P 73)</p>
49	Potential for aircraft strikes to cause increased wildlife mortality	<p>The Runway Extension Project will not result in additional air traffic. The airport has procedures in place to monitor and restrict wildlife in the vicinity of the runway, which is in accordance with Transport Canada regulations.</p> <p>(Section 14.1, P 70)</p>
50	Need for further information on species at risk habitat offsetting and management or compensation plans	<p>Species at risk habitat offsetting and management or compensation plans is included in the DPD. The Region is a leader in environmental planning, and the health of our local ecosystems is a top priority.</p> <p>An Information Gathering Form and Avoidance Alternatives Form have been submitted to the MECP which addresses impacts to species at risk and their habitats. No critical habitat or residences for federal species at risk are identified on the airport lands.</p> <p>(Section 14.1, P 73)</p>

	Species at Risk, Terrestrial Wildlife, and their Habitat wildlife	Comments
51	<p>Potential destruction of wildlife habitat and displacement of wildlife</p>	<p>The DPD includes information about potential destruction of wildlife habitat and displacement. The Region is a leader in environmental planning, and the health of our local ecosystems is a top priority.</p> <p>An Information Gathering Form and Avoidance Alternatives Form have been submitted to the MECP which addresses impacts to species at risk and their habitats.</p> <p>Timing windows for migratory birds and in-water work (fish) have been identified. (Section 14.1, P 71, P 74)</p> <p>A fish salvage will be conducted prior to any in-water work (see response to comment 21). (Section 14.1, P 71)</p> <p>The Environmental Impact Statement for the GRCA recommends relocation of regionally rare plants that will be impacted by vegetation removals (to the greatest extent possible).</p>
52	<p>Clarity on the specific timing windows being considered to avoid or mitigate potential effects to species at risk and terrestrial wildlife</p>	<p>Construction will be completed during approved timing windows and will not proceed until all permits and approvals are in place. The Region is a leader in environmental planning, and the health of our local ecosystems is a top priority.</p> <p>Also see responses to comments 25, 39, and 47.</p> <p>(Section 14.1, P67, P 71, P 73)</p>
53	<p>Potential effects of de-icing activities on local terrestrial and aquatic environment components</p>	<p>The Project will not result in any additional de-icing activities. De-icing only occurs in designated areas on the apron and within a glycol containment system, such that glycol can be collected and disposed in an environmentally friendly and responsible manner. (Section 14.1 P 48)</p>

	Vulnerable Population Groups (GBA+)	Comments
54	<p>Need for any further social and economic information to be disaggregated by identity factors (for instance, by sex/gender, age and ethnicity) to identify gaps or inequities among diverse group of the population</p>	<p>Social and economic information has been provided in the Health and Social Analysis Report (Section 15.2 P 144). This information has been disaggregated by relevant identity factors to identify gaps or inequities among diverse groups of the population. The information in the Health and Social Analysis Report includes:</p> <ul style="list-style-type: none"> • Population by age and gender and study area; • Family size and characteristics by study area; • Indigenous identity by gender and study area; • Visible minority by gender and study area; • Citizen and immigration status by gender and study area; • Total income and income composition by gender and study area; • Low income earners by gender and study area; • Employment status by gender and study area; • Labour force characteristics and employment status by gender and study area; • Educational attainment and status by gender and study area; • Housing and dwelling characteristics by study area; • Commuting characteristics by gender and study area; • Access to health and recreational services by study area • Physical health conditions by gender and study area. <p>Vulnerable groups are identified throughout Section 4 and an impact assessment is provided in Section 5 of the Health and Social Analysis report. No residual adverse impacts were identified. Rather, beneficial impacts on health and community well-being are anticipated.</p>

	Water – Groundwater and Surface Water	Comments
55	<p>Need for baseline water quality data, including levels of per- and polyfluoroalkyl substances in groundwater and—if found to be present in groundwater—in surface water in the Randall and Breslau Drains</p>	<p>The Project will not change de-icing practices at the airport. Testing of the groundwater and surface water for per- and polyfluoroalkyl substances can be completed prior to construction, and additional testing will be completed during and after construction as required by approval agencies.</p> <p><i>(Section 14.1 P 48)</i></p>
56	<p>Potential effects to groundwater quality by contaminants of concern such as benzene, chlorinated solvents, and perfluorochemicals, which are commonly used at the airport</p>	<p>Any additional contaminants entering the ground water will not result as part of the Runway Extension Project. Testing of the groundwater substances such as benzene, chlorinated solvents, and perfluoroalkyl will be completed prior to construction, and additional testing will be completed during and after construction as required by approval agencies.</p> <p><i>(Section 14.8 P 109)</i></p>

	Water – Groundwater and Surface Water	Comments
57	<p>Potential effects to groundwater quality in wellhead protection areas and need for further information on mitigation and monitoring measures, and the potential for residual effects</p>	<p>Details about potential effects to groundwater quality in wellhead protection areas, mitigation and monitoring measures, as well as potential residual effects is included in Section 14.8, P 116. The hydrogeological report for proposed monitoring and mitigation during construction is included in Appendix XI.</p> <p>The proposed monitoring plan will ensure it is protective of all applicable receptors and mitigates against potential impacts.</p> <ul style="list-style-type: none"> • Prior to dewatering activities, a manual water quality sample will be collected and analyzed for compliance with the PWQO guidelines. • Measurements for field turbidity and pH should be collected and if required, additional treatment will be applied by the Contractor. • A groundwater / discharge monitoring program will be completed on a daily basis and if necessary, will refine the relationship between turbidity, TSS and any other identified parameters in order to limit the potential risk of exceeding applicable water quality criteria. • Water quality monitoring should be carried out for the abstracted groundwater at the point of discharge from the dewatering system; and within the receiving watercourse. • Measurement controls will be implemented to measure the daily volume of water discharged and flow rate to ensure compliance with dewatering permit requirements. • A record of all water quality and quantity results will be kept for the time period stipulated in the dewatering permit. • Sediment control and additional water treatment measures should be implemented to control the concentration of TSS in the discharge water such that it remains below the maximum discharge concentration. • Water quality sample results should be used to compare the concentrations of parameters in the groundwater relative to the PWQO, or background surface water quality.

	Water – Groundwater and Surface Water	Comments
58	<p>Potential changes to groundwater levels due to construction dewatering, or due to hydrological or land surface changes, and need for information on mitigation and monitoring measures and the potential for residual effects</p>	<p>The hydrogeological report includes details for assessment of potential dewatering effects and proposed monitoring and mitigation during construction</p> <p>(Section 14.8 P 116)</p> <p>The proposed monitoring plan will ensure it is protective of all applicable receptors and mitigates against potential impacts.</p> <ul style="list-style-type: none"> • Prior to dewatering activities, a manual water quality sample will be collected and analyzed for compliance with the PWQO guidelines. • Measurements for field turbidity and pH should be collected and if required, additional treatment will be applied by the Contractor. • A groundwater / discharge monitoring program will be completed on a daily basis and if necessary, will refine the relationship between turbidity, TSS and any other identified parameters in order to limit the potential risk of exceeding applicable water quality criteria. • Water quality monitoring should be carried out for the abstracted groundwater at the point of discharge from the dewatering system; and within the receiving watercourse. • Measurement controls will be implemented to measure the daily volume of water discharged and flow rate to ensure compliance with dewatering permit requirements. • A record of all water quality and quantity results will be kept for the time period stipulated in the dewatering permit. • Sediment control and additional water treatment measures should be implemented to control the concentration of TSS in the discharge water such that it remains below the maximum discharge concentration. • Water quality sample results should be used to compare the concentrations of parameters in the groundwater relative to the PWQO, or background surface water quality.

	Water – Groundwater and Surface Water	Comments
59	<p>Need for further information on rationale for dewatering the Randall Drain prior to diversion; need for a description of where water would be discharged and proposed measures to manage surface water quality during dewatering</p>	<p>Construction of the Randall Drain realignment will be constructed “off-line”, while the existing Randall Drain will continue flowing. Randall Drain flows will only flow through the realigned channel after construction is completed. This will be achieved by removing a natural earth plug at both the upstream and downstream ends of the realigned channel after the realigned channel is completed. Groundwater encountered during construction of the realigned channel will be removed in accordance with MECP regulations and with the approval of the GRCA. A Permit to Take Water will be obtained from the MECP.</p> <p>It is expected that the dewatering of the realigned channel during construction can be achieved through pumps outletted to a sediment trap or bag to treat any sediment, before outletting it to the Randall Drain. Additional details can be found in the Golder Hydrogeotechnical report included with the DPD. Although the Hydrogeological report addresses requirements for well points to deal with the groundwater, well points are not believed to be required as pumping will be able to deal with the anticipated groundwater.</p> <p><u>(Section 14.8 P 112)</u></p> <p>The design of the project will be subject to the GRCA’s Schedule A –Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Permits (pursuant to Ontario Regulation 150/06). Initial background information already submitted to the GRCA for comment include:</p> <ul style="list-style-type: none"> • Scoped EIS (Section 14.1, Appendix IV) • Randall Drain Preliminary Design (Section 14.3, Appendix VI) • Stormwater Management Memo (Section 14.4, Appendix VII) • Hydraulic Assessment Memo (Section 14.5, Appendix VIII) • Water Balance Memo (Section 14.6, Appendix IX) • Hydrogeological Study (Section 14.8, Appendix XI)

	Water – Groundwater and Surface Water	Comments
60	<p>Potential effects of construction dewatering on surface water quality in the receiving waterbody</p>	<p>All dewatering will be completed in accordance with the Ministry of the Environment, Conservation and Parks’ regulations and with the approval of the Grand River Conservation Authority. A permit to Take Water will be obtained from the Ministry of the Environment, Conservation and Parks.</p> <p>The hydrogeological report and DPD provide details regarding the discharge plan.</p> <p>(Section 14.8 P 116)</p> <p>The proposed monitoring plan will ensure it is protective of all applicable receptors and mitigates against potential impacts.</p> <ul style="list-style-type: none"> • Prior to dewatering activities, a manual water quality sample will be collected and analyzed for compliance with the PWQO guidelines. • Measurements for field turbidity and pH should be collected and if required, additional treatment will be applied by the Contractor. • A groundwater / discharge monitoring program will be completed on a daily basis and if necessary, will refine the relationship between turbidity, TSS and any other identified parameters in order to limit the potential risk of exceeding applicable water quality criteria. • Water quality monitoring should be carried out for the abstracted groundwater at the point of discharge from the dewatering system; and within the receiving watercourse. • Measurement controls will be implemented to measure the daily volume of water discharged and flow rate to ensure compliance with dewatering permit requirements. • A record of all water quality and quantity results will be kept for the time period stipulated in the dewatering permit. • Sediment control and additional water treatment measures should be implemented to control the concentration of TSS in the discharge water such that it remains below the maximum discharge concentration. <p>Water quality sample results should be used to compare the concentrations of parameters in the groundwater relative to the PWQO, or background surface water quality.</p>

	Water – Groundwater and Surface Water	Comments
		<p>The design of the project will be subject to the GRCA's Schedule A –Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Permits (pursuant to Ontario Regulation 150/06). Initial background information already submitted to the GRCA for comment include:</p> <ul style="list-style-type: none"> • Scoped EIS (Section 14.1, Appendix IV) • Randall Drain Preliminary Design (Section 14.3, Appendix VI) • Stormwater Management Memo (Section 14.4, Appendix VII) • Hydraulic Assessment Memo (Section 14.5, Appendix VIII) • Water Balance Memo (Section 14.6, Appendix IX) • Hydrogeological Study (Section 14.8, Appendix XI)
61	<p>Potential effects on surface water quality due to sedimentation and erosion; need for further information on sedimentation and erosion control plans</p>	<p>The successful contractor will develop an Environmental Control Plan, which will then be approved by the Contract Administrator and the Region prior to construction. The Erosion Control Plan will also be required to be submitted and approved by GRCA. The approved erosion controls will be regularly reviewed and monitored to ensure effectiveness during construction.</p> <p><i>(Section 14.1 P 70)</i></p>

	Water – Groundwater and Surface Water	Comments
62	<p>Need for further information on stormwater management strategy and how it may mitigate potential effects to surface water flow, surface water quality and groundwater</p>	<p>The Grand River Conservation Authority will review and approve the Stormwater Management Strategy prior to construction.</p> <p>In general, due to the high groundwater levels it will be difficult to provide any type of stormwater management ponds, oil-grit separators, infiltration galleries or underground storage facilities that will be effective. In addition, ponds at airports, especially close to runways, are avoided to discourage attracting birds that would become potential causes of bird strikes with aircraft.</p> <p>Although additional pavement is being added with the extended runways, the percentage of additional impervious areas to the total drainage area is very small. Similar to the rest of the existing airport, the stormwater management scheme will essentially consist of grassed swales to provide quality control and encourage infiltration. The swales will drain to either the Randall Drain or the Breslau Drain which eventually outlets to the Grand River.</p> <p>(Section 14.4, P 90 – P 91)</p> <p>The design of the project will be subject to the GRCA's Schedule A –Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Permits (pursuant to Ontario Regulation 150/06). Initial background information already submitted to the GRCA for comment include:</p> <ul style="list-style-type: none"> • Scoped EIS (Section 14.1, Appendix IV) • Randall Drain Preliminary Design (Section 14.3, Appendix VI) • Stormwater Management Memo (Section 14.4, Appendix VII) • Hydraulic Assessment Memo (Section 14.5, Appendix VIII) • Water Balance Memo (Section 14.6, Appendix IX) • Hydrogeological Study (Section 14.8, Appendix XI)

	Wetlands	Comments
63	<p>Potential effects on wetland communities and ecological function due to erosion and sedimentation during construction</p>	<p>Experienced environmental monitors will be on site during construction to ensure erosion and sediment controls are effective in minimizing the impact to the wetland communities and ecological function.</p> <p>A Sediment and Erosion Control Plan will be developed by the Contractor and submitted for approval to the GRCA. Fencing and other controls will be inspected regularly to ensure its functioning as intended and regular reporting will be provided to GRCA (bi-weekly and following large rain events).</p> <p>(Section 14.1 P 60)</p> <p>The design of the project will be subject to the GRCA's Schedule A –Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Permits (pursuant to Ontario Regulation 150/06). Initial background information already submitted to the GRCA for comment include:</p> <ul style="list-style-type: none"> • Scoped EIS (Section 14.1, Appendix IV) • Randall Drain Preliminary Design (Section 14.3, Appendix VI) • Stormwater Management Memo (Section 14.4, Appendix VII) • Hydraulic Assessment Memo (Section 14.5, Appendix VIII) • Water Balance Memo (Section 14.6, Appendix IX) • Hydrogeological Study (Section 14.8, Appendix XI)
64	<p>Need for further information on the potential effects of invasive species introduced through project activities on wetland habitat</p>	<p>The Region proposes to enhance the existing wetland with removal of invasive species, and project activities are not expected to introduce any invasive species into the wetland habitat.</p> <p>An invasive species management plan will be developed and implemented. This will include details such as prohibited entry of any construction equipment or persons within retained wetland areas, hosing down of all large equipment before entry to airport, etc.</p> <p>Enhancements to the Breslau PSW are proposed which includes active removal of invasives that are well established including European Buckthorn and Garlic Mustard. This will be combined with inter-planting and seeding of native species</p> <p>(Section 14.1 P 72)</p>

	Wetlands	Comments
65	<p>Concern around the effectiveness of wetland offsetting, including whether wetland offsetting would result in 1:1 replacement of ecosystem services and wetland functions of old growth wetland such as the Kossuth Wetland Complex, a Provincially Significant Wetland</p>	<p>Although wetland offsetting is not ideal, it is the best option available that also satisfies the project objectives. Off-setting of wetland removal in the Breslau PSW are proposed to be 1:1 or greater and will be implemented within the catchment area where possible, and in other nearby catchment areas if required. The team has identified 7 potential areas which are being investigated more closely. All of these areas have been chosen based on their position within a catchment area (i.e. they expand and/or connect existing areas of the PSW which are currently in agricultural production).</p> <p>Wetland impacts and mitigation strategies will be reviewed and approved by the GRCA.</p> <p>In response to recent public comments, the Region has engaged Transport Canada to modify the Runway 32 approach slope regulations, as described in the DPD. If permitted, this will eliminate the impacts to the Kossuth Wetland Complex and trees within the Cambridge Butterfly Conservatory property. If this modification is not permitted by Transport Canada, then the airport commits to modifying the Project to eliminate impacts to the Kossuth Wetland Complex. These modifications generally consist of additional runway constructed to the north, and decreased aircraft usability for the Runway 32 approach. The additional runway length will not increase the overall footprint of the Project.</p> <p>(Section 14.1, P 73)</p> <p>The design of the project will be subject to the GRCA's Schedule A –Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Permits (pursuant to Ontario Regulation 150/06). Initial background information already submitted to the GRCA for comment include:</p> <ul style="list-style-type: none"> • Scoped EIS (Section 14.1, Appendix IV) • Randall Drain Preliminary Design (Section 14.3, Appendix VI) • Stormwater Management Memo (Section 14.4, Appendix VII) • Hydraulic Assessment Memo (Section 14.5, Appendix VIII) • Water Balance Memo (Section 14.6, Appendix IX) • Hydrogeological Study (Section 14.8, Appendix XI)

	Wetlands	Comments
66	<p>Need for wetland replacement at a ratio higher than 1:1, that includes consideration of replacement and maintenance of wetland functions in the design of wetland offsets and enhancement or restoration</p>	<p>Although wetland offsetting is not ideal, it is the best option available that also satisfies the project objectives. Off-setting of wetland removal is proposed to be 1:1 or greater and will be implemented within the catchment area where possible, or in other nearby catchment areas if required. The team has identified 7 potential areas which are being investigated more closely. All of these areas have been chosen based on their position within the catchment area (i.e. they expand and/or connect existing areas of the PSW which are currently in agricultural production). Wetland impacts and mitigation strategies will be reviewed and approved by the GRCA.</p> <p>In response to recent public comments, the Region has engaged Transport Canada to modify the Runway 32 approach slope regulations, as described in the DPD. If permitted, this will eliminate the impacts to the Kossuth Wetland Complex and trees within the Cambridge Butterfly Conservatory property. If this modification is not permitted by Transport Canada, then the airport commits to modifying the Project to eliminate impacts to the Kossuth Wetland Complex. These modifications generally consist of additional runway constructed to the north, and decreased aircraft usability for the Runway 32 approach. The additional runway length will not increase the overall footprint of the Project.</p> <p>(Section 14.1, P 73)</p> <p>The design of the project will be subject to the GRCA's Schedule A –Application for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Permits (pursuant to Ontario Regulation 150/06). Initial background information already submitted to the GRCA for comment include:</p> <ul style="list-style-type: none"> • Scoped EIS (Section 14.1, Appendix IV) • Randall Drain Preliminary Design (Section 14.3, Appendix VI) • Stormwater Management Memo (Section 14.4, Appendix VII) • Hydraulic Assessment Memo (Section 14.5, Appendix VIII) • Water Balance Memo (Section 14.6, Appendix IX) • Hydrogeological Study (Section 14.8, Appendix XI)

	Other	Comments
67	<p>Need for further information on cost and frequency of aircraft diversions due to poor weather conditions</p>	<p>YKF has experienced an average of 26.4 annual diversions and cancellations of commercial aircraft due to weather over the past 10 years. This represents approximately 2% of commercial flights.</p> <p>Diversions and cancellations also have an environmental impact as passengers and crew must travel additional distances from nearby airports. A reliable air service is critical to maintain airline and customer level of service and confidence in YKF.</p> <p>Table 15.5.4 estimates the Net Present Value of diversions or cancellations is estimated to be between \$9 million and \$67 million.</p> <p>(Section 15.5, P 143)</p>
68	<p>Need for analysis on the effects of COVID-19 on regional transportation, including air travel and public transportation</p>	<p>The need for the Runway Extension Project has been established through the Airport Master Plan and approved by Regional Council. Air travel is expected to return to pre-COVID conditions in the near future.</p> <p>(Section 15.5 P 136)</p>
69	<p>Potential effects to built and cultural heritage resources, such as from vibration during construction or operations</p>	<p>There is no specific guideline or standard regarding structural damage from construction vibration that is accepted nationwide in Canada.</p> <p>For reference, the Toronto Municipal Code Chapter 363 Building Construction and Demolition Par. 363-5.2 Table 1.0 sets out PPV (mm/sec) limits for construction activities. Although not directly applicable to the project, it provides a guide on how other jurisdictions are managing construction vibration. The most stringent of the limits is 8 mm/s below 4 Hz. There are guidelines in the US (FTA), which provide a Construction Vibration Damage criteria of 3.0 mm/s for buildings extremely susceptible to vibration damage.</p> <p>The construction activities during the project will result in vibration levels below 3.0 mm/s PPV, due to the nature of vibration sources and sufficient distance between source and receptor location.</p> <p>The nearest cultural heritage structure is BHR9, 1160 Shantz Station Road at 63m. Airport operations in the project area will likely result in vibration levels below 3.0 mm/s PPV, which would not result in damage to property at the nearest cultural heritage structure. This is due to the nature of vibration sources and sufficient distance between source and receptor location.</p> <p>Cultural heritage structures that are further from the site compared to BHR9 will have lower vibration levels than this location due to the additional distance losses.</p> <p>(Section 15.7 P 153)</p>