

Ministry of the Environment,
Conservation and Parks
Drinking Water and Environmental
Compliance Division
West Central Region

119 King Street West, 12th Floor
Hamilton, Ontario L8P 4Y7
Tel.: 365 889-1553
Fax: 905 521-7820

Ministère de l'Environnement de la
Protection de la nature et des Parcs
Division de la conformité en matière
d'eau potable et d'environnement
Direction régionale du Centre-Ouest

119 rue King Ouest, 12^e étage
Hamilton (Ontario) L8P 4Y7
Tél.: 365 889-1553
Télééc.: 905 521-7820



April 11, 2021

MEMORANDUM

TO: Joan Del Villar Cuicas
Environmental Resource Planner & Env'l Assessment Coordinator
Project Review Unit, Environmental Assessment Branch
Ontario Ministry of the Environment, Conservation and Parks

FROM: Mohammad Sajjad Khan
Surface Water Specialist, Technical Support Section, West Central Region
Ontario Ministry of the Environment, Conservation and Parks

**RE: WATERLOO AIRPORT RUNWAY PROJECT – SURFACE WATER
REVIEW**

1 BACKGROUND

The Region of Waterloo International Airport is proposing to extend runway 14-32 from the current length of 1250 metres to a final length of 2134 metres, construct new access roads and a parallel taxiway, modify the runway approach lighting, and expand or relocate the terminal building. The Project also includes Runway End Safety Areas, perimeter roads and fencing, stormwater management, realignment of a municipal drain (Randall Drain) and environmental controls.

The Project will result in increased safety and level of service for passengers and airlines. Currently AGN IIIB aircraft, such as the Boeing 737 and Airbus 320 series, can only operate on Runway 08-26. Extending Runway 14-32 will provide these aircraft with an alternate runway to use during poor weather and high crosswind conditions. This will increase safety and reduce delays, cancellations and the need to divert aircraft to alternate airports during inclement weather.

The airport is located in a mainly rural area of Woolwich Township, just north of Cambridge and east of Kitchener and approximately 100 metres east of the Grand River.

Ministry's Environmental Assessment Branch (EAB) was recently informed that the Impact Assessment Agency of Canada (Agency) accepted the Initial Project Description (IPD) for the Waterloo Airport Runway Project on March 19, 2021, which triggered the Planning Phase of the Impact Assessment process and a 30-day comment period on the initial Project Description, which is available on the Agency's registry at: <https://iaac-aeic.gc.ca/050/evaluations/proj/81452>.

The Agency has invited MECP to review the initial Project Description and provide comments and advice with regard to the Project, and on potential project effects via an Agency's prescribed comment form (a templated table in Enclosure 2 attached with the Agency's communication with the ministry). As a result, EAB is collecting comments from various sections of the ministry, which will be compiled into a single submission to the Agency. This review is related to surface water impacts.

2 SURFACE WATER SETTING

The airport is located within the Randall Drain sub-watershed, a sub-watershed in the Grand River Watershed. The airport lands include the east and west branches of the Randall Drain. The west branch originates north of Menno Street, and flows south and west, through the Breslau Provincially Significant Wetland (PSW) complex and through the west side of the airport lands, under Runway 14-32.

The east branch of the Randall Drain originates northeast of Cober Road and flows west through the Kossuth PSW complex south of the airport lands. The two branches converge approximately 400 m upstream from Fountain Street before flowing under Fountain Street, through agricultural lands, under Fairway Road and Riverbank Drive, and into the Grand River.

The East Branch of the Randall Drain is being impacted by the Runway 14-32 Extension Project due to realignment of a section of the drain. The Randall Drain within the airport lands is classified as a Type E drain. Type E Municipal Drains are defined as having permanent flow, with a spring spawning period, and having potentially sensitive species present. More than 18 fish species were identified in the drain.

Randall Drain's baseflow is supplied by localized groundwater discharges from the sand and gravel deposits with water levels being moderated by the wetland complexes.

The Randall Drain has been altered historically, through drain maintenance, straightening, loss of riparian cover, addition of culverts, as well as through the addition of stormwater. A maintenance project within the Randall Drain, covered under a Class E1 Authorization, is currently underway, and scheduled to be

completed prior to March 15, 2021. This maintenance project includes full bottom cleanouts within the majority of both branches within the airport lands. Fish refuge pools are also to be included within the cleaned-out sections of the drains.

Anthropogenic barriers to fish movement, forming a permanent or seasonal barrier to upstream fish migration has been identified throughout the Randall Drain. Most of the barriers are perched or blocked crossing or drainage culverts, with a few rock check dams also creating seasonal barriers.

Water quality of Randall Drain ranges from 'impaired' to 'good', provides direct fish habitat, and coolwater and warmwater fish species present in the watercourse.

The Grand River Conservation Authority has identified Randall Drain generally as a coolwater thermal regime (the ones having summer water temperatures suitable for both coldwater and warmwater species). The west branch was identified as having coolwater characteristics close to the headwaters, warmwater at Lonsdale Road, and coolwater adjacent to the airport buildings. The east branch was identified as having temperature measurements in all three thermal regimes (cold, cool and warm) with the highest proportion of measurements being in the warmwater thermal regime.

A branch of the Breslau Drain is also located within the airport lands. The Breslau Drain watershed is mainly rural and agricultural in nature, and generally drains in a westerly direction. Most of the natural areas within the watershed are wetlands with some forest units associated with these features. Fountain Street bisects the Breslau Drain into the east and west drainage areas and an access road is proposed to cross to the west of Fountain Street.

In this area Breslau is a first order stream and is intermittent in nature. The branch of Breslau Drain from the confluence of the main branch to within the Breslau PSW is an unclassified type drain according to the Ministry of Agriculture, Food and Rural Affairs—Ag Maps 2020. As this branch is intermittent in nature, it will likely be considered a Type F Drain. Type F drains have a restricted timing window during periods of flow and work should be done in the dry if possible. The branch of Breslau Drain within the airport lands provides direct and indirect habitat for fish.

Stormwater from the airport lands is conveyed through storm sewers and ditches and discharges into Randall Drain to the Grand River. Runoff from the northern portion of the Subject Lands flows into the west branch. The west branch, as well as stormwater runoff from the remainder of the Subject Lands, flows into a stormwater management pond in the south of the Subject Lands. No ECA (Environmental Compliance Approval) was found in the ministry's database for this pond, however an ECA for an Oil Grit Separator to manage stormwater from the Combined Services Facility at the airport was found (ECA # 3583-88EJWM, issued on August 30, 2010).

This review covers impacts related to the surface water resources. The following two documents and a memo of Michael Spencer dated July 13, 2020 (MECP's previous surface water reviewer) were considered to complete my review:

- (1) Initial Project Description Summary, dated March 9, 2021
- (2) Initial Project Description detailed report, dated March 9, 2021.

3 COMMENTS

- (1) The proposed work will impact the Breslau and Kossuth Provincially Significant Wetland (PSW) Complexes, expansive areas of treed swamp and marsh, present to the north and south of the airport. These features are within the GRCA's jurisdiction, necessary regulatory approvals will be required from GRCA and/or MNRF for alteration of these sensitive features. Mitigation measures have been identified that will be reviewed by those agencies.
- (2) The project will impact Breslau Drain and Randall Drain due to installation of a culvert in the Breslau Drain and realignment of Randall Drain. Necessary approvals will be required from GRCA and/or DFO for these works. Both agencies are onboard for reviewing impacts of these works.
- (3) Groundwater dewatering will be required to construct the project's civil work. It should be noted that the construction dewatering requirements and methods should be compared against the MECP's water taking legislation and guidance including permit exemptions (Ontario Regulation 387/04) and water taking Environmental Activity and Sector Regulation (Ontario Regulation 63/16) under *Ontario Water Resources Act*, R.S.O. 1990 to determine the appropriate authorizations. The dewatering strategy should assess any potential impacts and control measures including water quantity, water quality, existing Permit to Take Water holders and existing Environmental Compliance Approval holders. As well, the discharge of the construction dewatering may require an Environmental Compliance Approval depending on the quality of the dewatered water.
- (4) The report identified that a stormwater management strategy will be developed to ensure that changes to surface water flow, groundwater and surface water quality are minimized. The stormwater management strategy should detail existing stormwater management controls and assess any proposed changes and additions. The stormwater management strategy should be completed in accordance with the MECP document "Stormwater Management Planning and Design Manual, March 2003." Proposed works in the stormwater management strategy will likely require an Environmental Compliance Approval.

- (5) Road salt is not used for winter de-icing; however, urea and potassium acetate are used on access roads within the airport. However, runway and plane de-icing activities were not identified. The existing and proposed de-icing activities plan and control measures for all airport operations to protect surface water quality should be detailed. The proponent may wish to include this assessment in the stormwater management strategy or under a separate report because the project area is located within a Surface Water Intake Protection Zone.

The surface related water issues which are within the mandates of the ministry's regulatory authority are also summarised in the Agency's prescribed table attached herewith. Should you require any clarifications to any of my comments provided above or in the enclosed table, please do not hesitate to contact me.

With regards,

<Original signed by>

Mohammad Sajjad Khan, Ph.D., P.Eng.

Encl. Enclosure 2

cc. WCR Tech Support Paper File [E 06 MG-34-06](#)
Abdi Hussein, Hydrogeologist, WCR, MECF
Jenny Archibald, Special Project Officer, EAB, MECF