

Expansion of the Stanhope Airport
Township of Algonquin Highlands
DRAFT Screening Report – June 9, 2010

Project Details													
Name of Project	Expansion of the Stanhope Airport												
Project Location	Minden, Ontario												
Proponent	Township of Algonquin Highlands												
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EA Details													
Responsible Authority	Infrastructure Canada												
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INFC Project #	BCF-CC #23926												
CEAA Trigger	Financial – s. 5(1)(b)												
CEAR Reference	09-01-46567												
EA Type Required	Screening												
EA Commencement	April 8, 2009												
Provincial EA Requirement	None												
CEAA Determination													
RA Decision under s. 20(1)	s. 20(1)(a) – Project is not likely to cause significant adverse environmental effects taking into account the implementation of mitigation measures												
Requirements associated with s. 20(1) decision	<table border="0"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Mitigation</td> <td>(<input checked="" type="checkbox"/>)</td> <td>(<input type="checkbox"/>)</td> </tr> <tr> <td>Follow-up</td> <td>(<input type="checkbox"/>)</td> <td>(<input checked="" type="checkbox"/>)</td> </tr> <tr> <td>Monitoring/reporting</td> <td>(<input checked="" type="checkbox"/>)</td> <td>(<input type="checkbox"/>)</td> </tr> </tbody> </table>		Yes	No	Mitigation	(<input checked="" type="checkbox"/>)	(<input type="checkbox"/>)	Follow-up	(<input type="checkbox"/>)	(<input checked="" type="checkbox"/>)	Monitoring/reporting	(<input checked="" type="checkbox"/>)	(<input type="checkbox"/>)
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1.0 BACKGROUND

The Township of Algonquin Highlands (the proponent) is proposing to expand the Stanhope Airport. The proponent has applied for funding under the Government of Canada's Building Canada Fund – Community Component (BCF-CC) for the project. In considering the provision of financial assistance that would enable the project to proceed, Infrastructure Canada (INFC) has identified itself as a responsible authority and must ensure that a screening level environmental assessment is conducted in accordance with requirements of the *Canadian Environmental Assessment Act (CEAA)*.

The Haliburton/Stanhope Municipal Airport is located in the Township of Algonquin Highlands between Carnarvon and Haliburton Village and provides municipal airport services to the Townships of Algonquin Highlands, Dysart et al, Minden Mills, and Highlands East in Haliburton County. It is the nearest year-round airport facility available for use by municipalities in the area of north Hastings County to the east.

The existing airport runway length is 762 m. Other existing airport facilities and services include a 100 LL Avgas and Turbo/Jet-A fuel station, a public building and several township-owned hangers. Several aviation and non-aviation businesses are located at the airport or on adjacent properties with taxiway access. The airport is generally used principally by light single engine aircraft, for recreational, business or government purposes. The airport is also used by the Ontario Ministry of Natural Resources (MNR) for forest fire suppression services.

1.1 Coordination

Project information was circulated to federal departments that may have an interest in the project, either as a decision maker or as an expert federal authority. No other federal departments were identified as having a decision making responsibility for the project. Environment Canada (EC) indicated that they may have specialist or expert information or knowledge to contribute to the environmental assessment of the project.

The project is not subject to the provincial environmental assessment process.

2.0 PROJECT DESCRIPTION

The proposed project consists of the following components:

- The construction of a new 16/34 Runway, 1,220 m paved and lighted at the existing licensed registered municipal aerodrome;
- Implementation of a GPS instrument approach for each end of runway;
- Upgrading of the existing lighting system;
- Expansion of the existing apron to accommodate more and larger aircraft and facilitate movements around the new runway; and

- The expansion and modernization of the existing public building. (cumulative effects section)

The purpose of the proposed activities includes:

- The airport will have a new runway and operating environment to remove current limitations in capacity and enhance aviation safety by providing an alternative runway alignment favourable for aircraft landing in certain wind conditions;
- The airport will be designed with a sufficient runway length capacity for the delivery of essential aviation services as provided to other populated areas of Ontario, but that are currently not available for the residents of Haliburton County including Air Ambulance, Police Services (OPP/RCMP Pilatus aircraft), and Department of National Defence Search and Rescue;
- the construction of a new runway will provide greater airport accessibility to enable / encourage tourism and other economic development opportunities to take place;
- The new GPS instrument approach will enable the airport to be more accessible during periods of reduced ceiling and visibility;
- Upgraded lighting (from low to medium intensity) will accommodate the GPS instrument approach and facilitate movement of aircraft along the new runway.
- The expansion of the existing public building will be consistent with similar sized airports and enable meetings, communications, rest areas and facility administration.

3.0 SCOPE

3.1 Scope of Project

In accordance with section 15(3) of the CEA Act, the scope of the project must include, in relation to the project components listed above, any construction, operation, modification, decommissioning, abandonment or other undertaking in relation to the physical work that is proposed by the proponent, or that is likely to be carried out in relation to that physical work. A description is required of each component of the project and associated physical works and activities.

The scope of the project is partially determined by the federal triggers. For this proposal, Infrastructure Canada has committed to provide partial funding for the project under the Building Canada Fund – Community Component. The scope of the project includes all physical works and activities associated with each component described in Table 1 and includes all project phases, from construction through to the operation and maintenance of the facility.

The project scope has been identified as the construction, operation and maintenance of a second runway including associated approaches and related work areas, accesses, storage areas or other undertakings directly associated with runway.

Table 1 summarizes the various activities required to carry out each project component and is organized by project phase. This is based on a review of the Aeronautical, Engineering, and Environmental Information Report, September 2008 (Airport Study) and additional information provided by the proponent.

TABLE 1 – SCOPE OF PROJECT	
PROJECT ACTIVITIES	DESCRIPTION OF PHYSICAL WORKS REQUIRED TO IMPLEMENT PROJECT ACTIVITIES
Construction Phase:	
Site preparation	Installation of environmental controls Vegetation clearing (includes required tree topping of approach routes to the runway) Temporary works yard and site office
Construction activities	Excavation of soils Haulage and placement of fill materials Paving of the runway / apron surfaces Construction of drainage systems and an engineered stormwater detention pond
Other activities	Installation of a new GPS approach system – no physical facilities required Installation of upgraded lighting
Ancillary Works	Construction lay-down areas Heavy equipment operation Equipment storage Materials transportation and storage Surplus materials management On site aggregate crushing and / or concrete/asphalt mixing Site restoration and revegetation Waste disposal
Operation and Maintenance Phase:	
Traffic Operations	Aircraft operation Refuelling operations
Winter Maintenance	Winter snow ploughing
Runway Maintenance / Repair	Resurfacing / line painting
Ancillary Works	Equipment maintenance and refuelling Surplus material management Landscape maintenance
Decommissioning / Abandonment Phase:	Due to the length of the anticipated lifespan of the facility (estimated in excess of 50 years), no plans for decommissioning or abandonment are anticipated

	within the current planning horizon
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3.2 Scope of Assessment

Section 16(1) of the CEA Act identifies factors that need to be considered in an environmental assessment at the screening level. These factors include:

- the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
- the significance of the effects referred to above;
- comments from the public that are received in accordance with the CEA Act and the regulations;
- measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects; and
- any other matter relevant to the screening that the responsible authority may require to be considered.

For the purpose of reviewing the effects of this project on environmental components, the scope of assessment has focused on the site study area as appropriate. The study area is generally defined as the lands bounded by the airport property.

Due to the nature of project activities, the effects of certain project components may be confined to the limits of construction (for example soils and geology), or may have the potential to cause indirect effects beyond the site study area (for example air quality). The specific spatial boundaries that will be considered for each environmental component will be defined in Section 6.

Within the study boundaries, the assessment addresses the factors in section 16(1) of the CEA Act, including consideration of the potential effects of the project on the following environmental components:

Land

- subsurface geology and soils

Water

- Surface water quality and quantity
- Groundwater quality and quantity

Natural Systems

- Vegetation and wetlands
- Fish and fish habitat
- Wildlife, including migratory birds
- Species of concern

Atmosphere

- Air quality and climate
- Noise and vibration

Taking into consideration the definition of “environmental effect”, the assessment will also address the effect of any environmental change that the project may have on:

Socio-Economic

- Transportation
- Human health

Cultural

- Aboriginal use
- Historical or archaeological sites

For the purpose of this assessment, the temporal scope includes the construction, operation and maintenance of the facility. Since this is considered a permanent facility, decommissioning and abandonment has not been considered. However, any future decommissioning will be undertaken in accordance with applicable legislation and practices at the time of decommissioning.

Table 2 examines each instance where the project activities listed in Table 1 may interact with an environment component listed above. The project-environment matrix is the first step in the screening process and is used to identify the environmental components that require further consideration, and which environmental components are not likely to be affected by the project. This table makes no assumptions regarding the significance of potential effects (i.e. magnitude, extent, duration, frequency, irreversibility, ecological context, etc). These factors are examined in Section 5 and aid in the development of environmental mitigation measures.

TABLE 2 – POTENTIAL PROJECT-ENVIRONMENT INTERACTION MATRIX

Project Phases / Components	Environmental Components												
	Direct Environmental Effects									Indirect Environmental Effects			
	Land	Water		Natural Systems			Atmosphere			Socio-Economic		Cultural	
	Subsurface Geology and Soils	Surface Water Quality and Quantity	Groundwater Quality and Quantity	Vegetation and wetlands	Fish and Fish Habitat	Wildlife including Migratory Birds	Species of Concern	Air Quality and Climate	Noise and Vibration	Transportation	Human Health	Aboriginal Use	Historical / Archaeological Use
Construction Phase:													
- Site preparation	X	X	X	X		X	X	X	X		X		
- Construction activities	X	X	X	X	X	X	X	X	X		X		X
- Other activities													
- Ancillary works	X	X		X				X	X		X		
Operations and Maintenance Phase:													
- Traffic operations		X				X		X	X				
- Winter Maintenance		X						X	X				
- Runway maintenance / repair		X				X		X	X				
- Ancillary works		X											
Accidents and Malfunctions		X	X										

3.3 Spatial Boundaries

In general, the spatial extent for the assessment of environmental effects corresponds to the proposed footprint of the project, plus adjacent areas where direct and indirect effects may occur. These boundaries may vary with each environmental component, but are generally described by the footprint of the existing airport property.

3.4 Temporal Boundaries

The temporal boundaries for the scope of assessment include the timeframe from just prior to construction to the extent of when the project is complete, and extends to include the operation and use of the facility. Construction is anticipated to commence in the summer of 2010 and take approximately six months to complete.

There are no plans at this time for decommissioning the airport, and therefore the decommissioning phase is not considered in the scope of the assessment. Should decommissioning be contemplated at a later time, the proponents will be required to comply with applicable legislation and best management practices of the day, including the conduct of a separate environmental assessment, if required.

4.0 EXISTING ENVIRONMENT

4.1 General Description of Site

The airport property is approximately 100 ha in size and is located in Lots 31 and 32, Concessions 5 and 6, in the Geographic Township of Stanhope, at the corner of Green Lake Road and Stanhope Airport Road. The site was originally developed as an airport in the late 1960's with a turf runway 808 m in length. The site was upgraded to a paved runway, 762 m in length, in 1989 with lighted standards.

The existing runway is located at the south end of the airport property, and runs in a roughly east to west direction. The southern part of the property is cleared. The site currently includes the existing single runway, hanger and terminal buildings and other smaller buildings. Except for the existing developed areas of the site, the majority of the remaining airport property is tree covered.

From the existing developed airport area, the ground level rises to the north and east. Along the new runway corridor from the existing runway out to approximately 350 m, the land is relatively flat and poorly drained. Beyond this point, the ground rises steeply to a height of approximately 360 m ASL, or 30 m above the level at which the proposed runway will be constructed.

An existing gravel pit is located adjacent to the northeast corner of the airport property.

4.2 Geology / Soils

The project area is part of the Algonquin Highlands physiographic region. Lands in this area are characterized by shallow acidic soils over granite and other Precambrian Rock. Although there are outcrops of bedrock, these make up approximately five percent of the total area of the region. There are a number of glacial outwash channels in the river valleys. This outwash is composed of sand and gravel. The Gull River valley from Redstone Lake to Maple Lake is one of these outwash channels, and includes the southern part of the airport project area.

A report titled “*Aggregate Resources Inventory of Part of Haliburton County, Southern Ontario, Ontario Geological Survey, Aggregate Resources Inventory Paper 141*”, 1998 was reviewed during the preparation of a geotechnical investigation for this project and summarized the geological conditions as follows:

- The higher portion of the runway corridor, north of station 1+350, lies within a lacustrine delta which is comprised of undifferentiated ice contact stratified drift. Within the lower portion of the runway, south of Station 1+350, the geology is comprised of a lacustrine plain.
- During the geotechnical investigation, a number of test pits were dug along the new runway corridor, near the site of the stormwater management pond and the borrow areas. Results showed there was a superficial topsoil layer overlying major deposits of sand or sand and gravel with localized deposits of silty clay and silt. Bedrock was also encountered in some areas.
- The superficial topsoil layer was generally found to contain dark brown sandy silt with organics and rootlets and varied in depth from 200 to 450 mm.
- Beneath the topsoil, the sand layers were found to be coarser towards the north and became finer towards the south. The test pits to the north frequently contained sand and gravel layers while those to the south (towards the existing runway), contained silt and sandy silt deposits.

4.3 Sensitive Natural Areas

Policy 2.3 of the Provincial Policy Statement (MMAH 2005) provides direction to municipalities regarding their planning policies with respect to the protection and management of natural heritage features and resources. The Natural Heritage Reference Manual (MNR 1999) is a technical document used to help assess the following natural heritage features:

- Significant wetlands;
- Habitat of endangered and threatened species;

- Fish habitat;
- Significant woodlands;
- Significant valleylands;
- Significant Areas of Natural and Scientific Interest (ANSI's); and,
- Significant wildlife habitat.

A review for sensitive natural areas was completed by Beacon Environmental as part of the Natural Heritage Assessment during the preparation of the Airport Study. The Township's Official Plan (2005) represents the primary source of information for this part of the review. The Official Plan's section on environmental management identifies natural areas of the following types:

- Habitat of endangered and threatened species, as identified by MNR;
- Fish habitat, as identified by MNR as spawning areas or fish sanctuaries;
- Provincially Significant Wetlands, as identified by MNR;
- Other potentially significant wetlands;
- Moose and deer wintering areas / yards as identified by MNR; and
- ANSI's.

The Natural Heritage Assessment indicated there were no natural heritage features located within the corridor where the new runway is proposed. Although there are airport lands to the south of the existing runway which are identified as Waterfront, this designation does not extend to the lands where the new runway is proposed. The land where the new runway is proposed is designated as Rural in the Township's Official Plan.

4.4 Surface and Groundwater Resources

Surface Water Resources

There are two watercourses which are located in the area of the proposed project. The Redstone River is a small river which cuts through the south-east corner of the airport property, and the Gull River, which is to the south of the airport property, approximately 100 m from the property line. Neither watercourse will be directly affected by this project.

There are no other creeks, streams or watercourses which occur in the area where the new runway is proposed.

Surface drainage which is associated with the existing airport runway is conveyed by shallow ditches which are located in sandy soils. Most of the existing drainage for the airport lands is eastward towards the Redstone River, which is located directly to the east of the existing runway. Surface drainage west and south of the airport drains towards the Gull River.

Groundwater Resources

The airport's source of potable water is an existing drilled well which is located on the west side of the terminal building. The well system will not be affected by and no changes are required as a result of this project.

Wastewater treatment at the existing airport site is provided by an existing septic system which is located south of the terminal building. The septic system will not be affected by and no changes are required as a result of this project.

Groundwater observations were also done at the same time as the test pit excavations. It was found that free water was measured at depths of zero to sixty centimetres in the low lying areas between station 1+350 and the existing runway. In the higher lying areas beyond this station the groundwater table was located beyond the depth of excavation.

4.5 Vegetation - Existing Habitat

A Natural Heritage Assessment (NHA) was prepared for the Township as part of the Airport Study. A summary of the vegetative portion of this assessment, which was completed by Beacon Environmental, follows:

- The Township lies within an Ontario Eco-Site Region 5E (Burger 1993). Forests of this region include the Sugar Maple / American Beech deciduous forest, White Pine / White Spruce / Eastern Hemlock coniferous forest and White Pine-Spruce-Hemlock / Sugar Maple-Beech mixed forest. These are forest types which dominate the lands where the airport site is located.
- A field assessment showed there were six vegetative communities which occurred along the proposed runway corridor, these being:
 - Mineral Cultural Meadow Ecosite – These are lands which are adjacent to the existing runway and consists primarily of grasses and clovers along the maintained corridor and outside the maintained zone, a mixture of grasses and field weeds including Goldenrod, Oxeye Daisy, Great Mullein, and Milkweed;
 - Moist-Fresh Sugar Maple-Yellow Birch Deciduous Forest Type – This forest type is found to occur along the southern section of the new runway alignment that supports a mix of tree species (Sugar Maple, Yellow Birch, White Birch, American Beech, etc), a shrub layer that is not well developed (Service Berry, Choke Berry, Mountain Maple, Honey Suckle, etc), some forest floor flora (includes Red Trillium, White Trillium, Blue Cohosh, Large-flowered Bellwort), and some fern species;
 - Black Ash Mineral Deciduous Swamp Type – There is a small pocket of mature Black Ash Swamp approximately 2 ha in size which lies 100 m north of the forest edge along the existing runway. Its swamp canopy consists primarily of Black Ash but also contains Red Maple, American Basswood, Yellow Birch and Balsam Fir. The site also contains a shrub

- layer (Black Ash saplings, Dwarf Raspberry, Prickly Gooseberry, Wild Black Current), and a ground layer that supports a diverse community of ferns (Cinnamon Fern, Interrupted Fern, Sensitive Fern, et al) and forbs (Bishop's-cap, Goldthread, Clinton Liliy, et al);
- Dry-Fresh White Pine Forest Type – The White Pine stand is found along the central portion of the runway alignment and is associated with a sand ridge that runs perpendicular to the proposed runway alignment. The forest is mature with a number of large specimen trees. White spruce and Balsam fir are also found in this stand. The shrub and ground flora are not well developed;
 - Pine Plantation and Cultural Thicket – This is found along the northern section of the runway alignment and represents the establishment of a Pine Plantation in what was once old field habitat. Trees found here are primarily White Pine with some Red Pine. The Cultural Thicket community consists of shrubs (Pin Cherry, Choke Cherry, Blue Berry, Raspberry, etc and field weeds (Strawberry, Norwegian Cinquefoil, Goldenrod); and,
 - Dry - Fresh White - Sugar Maple Mixed Forest Type – This is found at the northern most end of the runway alignment. It consists of a mature White Pine canopy over Sugar Maple. The Shrub layers are dominated by young Sugar Maple and Balsam Fir and other shrub species while the ground layer is well developed with ferns and forbs.

A total of 199 plant species were identified during the field surveys for the NHA, including 53 species of trees and shrubs. In general, the vegetative communities at the location of the proposed project are typical of the forested areas for the Township of Algonquin Highlands. No species were identified on or adjacent to the lands where the new runway would be constructed that would be considered to be sensitive or rare.

No species, as listed in Schedule 1 to the *Species at Risk Act*, were identified during the field surveys.

In 2008, a consultant from Glenside Ecological Services Limited (GESL), at the request of the proponent, met with the owner for the property in which tree removal would be required as a result of the new runway construction. Approximately 10 trees had been identified for removal because they extend well above the average canopy and were considered to be hazardous to aircraft approaching from the south of proposed new runway.

All of the affected trees were identified as white spruce and all were mature specimens with diameters ranging from 35 to 50 cm. The trees were located in a lowland area with pockets of standing water. Forest composition in this area consisted of white elm, black ash, white birch, yellow birch, and balsam fir.

GESL concluded that removal of the trees would not significantly affect the immediate habitat, as long as a road network was not developed to access the trees. In a letter to the project consultant, it was recommended that the trees be cut down and left on the ground to enhance the available wildlife habitat by providing large diameter downed woody debris. Alternatively, it was also indicated that the trees could be topped. Although this would eventually kill the tree, it would provide wildlife with feeding and nesting opportunities until such time that the trees fell naturally. A copy of the GESL's letter is included in the appendices to the Airport Study. Recent correspondence from the Township's consultant indicated that most of these trees will be cut down and left on the ground as recommended.

In addition to the trees being removed along the runway approaches, three trees are to be removed at a high spot on property owned by the provincial Ministry of Natural Resources (located approximately 1.76 km north of the new runway) and from private property located near the airport boundary southeast of the intersection of the existing and new runways.

General Conclusions Regarding Vegetation:

Based on the findings of the NHA, the following conclusions can be drawn with respect to vegetation in the vicinity of the project:

- No SARA Schedule 1 plant species are known to inhabit the study area;
- No provincially significant plant species are known to inhabit the study area;
- Mature trees are more sensitive to development than younger trees, shrubs or other existing vegetation. Efforts should be made to retain mature trees during construction where practical; and,
- The affected plant species are abundant and common in the area.

4.6 Wildlife Resources

The NHA that was prepared for the Township as part of the Airport Study, also included sections on wildlife resources. A summary of the wildlife resources found as a result of this assessment follows:

Birds:

Two site surveys were completed in June and July of 2008, a time period which represents the breeding bird season for birds in Central Ontario.

A total of 64 species were recorded during the surveys. Of these, 59 were considered to be breeding on or adjacent to the airport lands where the new runway is proposed. All species recorded are common to Ontario and no provincially rare species or species at risk were identified.

No large stick nests, indicating the presence of raptors such as owls or hawks, were found during the surveys.

No species, as listed in Schedule 1 to the *Species at Risk Act*, were identified during the field surveys.

Mammals:

The NHA stated that a total of 13 species of mammals were identified either visually of through tracks or scat, while conducting the survey. All of the identified species are common to the local area and Ontario and include: Snowshoe Hare; Eastern Chipmunk; Deer Mouse; Red Fox; White-tailed deer; and, Moose.

No species, as listed in Schedule 1 to the *Species at Risk Act*, were identified during the field surveys.

Herpetofauna:

The NHA identified a total of five reptiles and amphibians in the study area. These were: American Toad; Springer Peeper; Wood Frog; Northern Leopard Frog; and, Common Garter Snake. All of the identified species are common to Ontario and the local area.

The assessment also noted that the field surveys did not identify any ephemeral ponds along the alignment of the new runway that would provide important breeding habitat for the frog or salamander.

No species, as listed in Schedule 1 to the *Species at Risk Act*, were identified during the field surveys.

Lepidopterans:

Although not identified during the field surveys, the Monarch is *Species at Risk Act* Schedule 1 (Special Concern) species that has a possible range in the study area. Monarchs can exist in Canada primarily where Milkweed and wildflowers (such as Goldenrod, Asters, and Purple Loosestrife) exist. This includes abandoned farmland, along roadsides and other open spaces where these plants grow.

General Conclusions Regarding Wildlife:

Based on the findings of the NHA, the following conclusions can be drawn with respect to wildlife in the vicinity of the project:

- No SARA Schedule 1 species are known to inhabit the study area;
- No provincially significant species are known to inhabit the study area; and,
- The affected habitats are abundant and common in the area and are not considered significant for wildlife species.

Wildlife Hazard Assessment

A Wildlife Hazard Assessment (WHA) was completed as part of the Airport Study. A summary of this assessment, which was completed by Beacon Environmental, follows:

- Transport Canada has identified species, mammals and birds, which should be of primary concern to airport operators, and have been ranked from most hazardous to least hazardous.
- Site surveys were conducted in June and July 2008. Of the species identified as being primary hazard species with respect to higher risks for a significant wildlife strike at the airport, the following species were noted:
 - Mammals – Moose, White-tailed deer, Black Bear, and Gray Wolf;
 - Birds - Herring Gull, Red-tailed Hawk, Great Horned Owl, Rock Pigeon, American Crow, and Turkey Vulture.
- With respect to the mammals noted, the WHA indicated that the local abundance of these species in the local area was low, and therefore the risk of an aircraft striking these larger mammals is low.
- With respect to the bird species noted, the WHA indicated that the Red-tailed Hawk and the Great Horned Owl are associated with local forests and occur in very low numbers, with only a few breeding pairs in the area of the airport. These species can be expected to hunt over the grassed lands associated with the airport lands. The report also noted that the Turkey Vulture is not attracted to the airport, but does use a large hunting territory during the summer months.
- The other three bird species (Rock Pigeon, American Crow and Herring Gull) were found to occur in small flocks of up to 10 birds at various times on the airport lands, and could represent a significant hazard to airport operations. Rock pigeons are most commonly associated with being in and around the airport hangers while the crows and gulls are more likely to be around the runways. Both adult and first year birds for both the crow and gull were seen during the surveys, which indicated that the birds are part of the local breeding populations.
- In the local area, there are three small landfills that are found within approximately 6 km of the airport lands: the Hawk Lake Landfill site (6.1 km in a straight-line distance northwest of the airport); the Maple Lake Landfill site (4 km west of the airport); and the West Guilford Landfill in Dysart Township (4 km east southeast of the airport).
- These landfills have a small working face and have soil applied to the compacted waste on a regular basis. A one hour survey at two of these sites found only two Herring Gulls at each site.
- Since these landfills are not located under the typical flight path of aircraft that are approaching or departing from the proposed new runway, the potential for bird hazards associated with these landfills is low.

In its summary, the WHA indicated that no bird hazard which would represent a high level of risk was found to occur for aircraft operations that would be associated with the new runway.

5.0 ASSESSMENT OF POTENTIAL ENVIRONMENTAL EFFECTS

5.1 Approach

5.1.1 *Defined Valued Ecosystem Components*

The identification of Valued Ecosystem Components (VEC's) for the screening report followed an assessment of information gathered from various sources including background reports and studies, public consultation, and consultation with government review agencies. The VEC's selected represent those considered of significance for this project and which could be adversely affected by the project's construction and operational activities.

The VEC's selected for this project are:

- Soils and sediments
- Surface water quantity and quality
- Ground water quality
- Vegetation
- Fish and fish habitat
- Wildlife
- Migratory birds
- Species at Risk
- Air quality
- Noise

The following sections identify the potential environmental effects and associated mitigation measures for the environmental components that may be affected by this project, as shown in Table 3.

5.1.2 *Standard Construction Mitigation Measures*

Table 3 summarizes a series of standard mitigation measures which will be incorporated into the contract specifications of the project. Implementation of these measures serves to minimize the adverse effects of the project on the identified VEC's (as discussed throughout this section of the report).

Table 3
Standard Construction Mitigation Measures

Activity	Impact Mitigation
Refuelling and Maintenance	<ul style="list-style-type: none"> - Identify suitable locations for designated refuelling and maintenance areas (e.g., away from watercourses, storm inlets, and natural areas). - Refuelling or maintaining equipment will not occur within 30 m of a watercourse. - Cleaning of equipment is not to occur in watercourses or in locations where debris can gain access to watercourses. - Prepare to intercept, clean-up, and dispose of any spillage which may occur (whether on land or water). - Appropriate spills containment and clean-up materials are to be available at the site, and contractors are required to develop spill prevention and response procedures. - Immediately clean and contain spills in accordance with provincial regulatory requirements (MOE Spills Action Centre: 1 (800) 268-6060).
Disposal	<ul style="list-style-type: none"> - All demolition debris and other material that is unsuitable for reuse is to be disposed of at an approved facility. - Implement all reasonable measures to prevent the emptying of fuel, lubricants or pesticides into sewers or watercourses (e.g., maintain a minimum 30 m separation from all watercourses and drainage systems, do not clean equipment in watercourses).
Pesticides	<ul style="list-style-type: none"> - Coordinate the use of pesticides and herbicides with affected landowners and the local pesticide control officer.
Drainage and Water Control	<ul style="list-style-type: none"> - All portions of the work should be properly and efficiently drained during construction. - Provide temporary drainage and pumping to keep excavation and site free from water. - Control disposal or runoff or water containing suspended materials or other harmful substances in accordance with approval agency requirements. - Provide settling ponds and sediment basins as required.
Dust Control	<ul style="list-style-type: none"> - Cover or wet down dry materials and rubbish to prevent blowing dust and debris. - Avoid the use of chemical dust control products adjacent to watercourses. - Hours of construction are to be limited to reduce the impact of dust, etc on surrounding land uses - Avoid excavation, and other construction activities with potential to release airborne particulates, during windy and prolonged dry periods. - Cover or otherwise contain loose construction materials that have potential to release airborne particulates during their transport, installation or removal. - Spray water to minimize the release of dust from gravel, paved areas and exposed soils. Use chemical dust suppressants only where necessary on problem areas.
Site Clearing	<ul style="list-style-type: none"> - Protective measures shall be taken to safeguard trees from

Activity	Impact Mitigation
	construction operations. - Equipment or vehicles shall not be parked, repaired, refuelled near the dripline area of any tree not designated for removal. Construction and earth materials shall also not be stockpiled within the defined dripline areas. - Restrict tree removal to areas designated by the Contract Administrator. - Minimize stripping of topsoil and vegetation. - Restore disturbed areas as soon as possible to minimize the duration of soil exposure - Upon completion of construction, the disturbed areas will be restored with seed and mulch that will maintain or enhance the local habitat - Avoid vegetation clearing during the breeding bird season (mid-April to mid-July)
Sedimentation/ Erosion Control	- Use of appropriate erosion and sediment control measures (silt fences, filter bags, etc.) should be implemented prior to work and maintained during the work phase and beyond, as necessary to prevent run off from the construction site and the movement of re-suspended sediment. - Protect watercourses, wetlands, catch basins and pipe ends from sediment intrusion. - Complete restoration works following construction. - Install straw bale check dams in ditchlines following rough grading of ditches.
Noise Control	- Site procedures should be established to minimize noise levels in accordance with local by-laws and the Occupational Health and Safety Act - Provide and use devices that will minimize noise levels in the construction area. - Maintain equipment in proper working order and minimize idling to reduce noise impacts - Hours of construction are to be limited to reduce the impact of noise on surrounding land uses - Night time or Sunday work shall not be permitted, except in emergency situations.

5.2 Evaluation of Environmental Effects

The following sections of the screening report provide a summary of the potential environmental impacts of the projects on the selected VEC's.

For each VEC, the analysis of effects is arranged in the following framework:

- Potential environmental effects
- Measures to mitigate effects
- Residual effects
- Significance of residual effects

5.2.1 Soils and Sediments

Description of Effects

Soils in the project study area, during the construction phase, could be contaminated by fuel spills while re-fuelling construction equipment. The soils may also be contaminated from chemical spills during the construction or operational phases of the project. The removal of topsoil and excavation activities associated with construction, as well as vegetation removal, required for the construction of the new runway and storm water facilities, will disrupt soils, may increase sediment loading in surface runoff, and may increase airborne particulates.

Measures to Mitigate Effects:

Measures to mitigate the effects of the project to soils and sediments during the construction phase include those for sediment and erosion control, dust control, and refuelling and maintenance (as summarized in Table 3). In addition, the following mitigation measures also apply:

- Filter fabric and silt fencing should be installed along forest habitats to define the construction limits prior to site alteration and should be maintained during construction;
- All disturbed areas should be stabilized and re-vegetated as required upon completion of work.

Residual Effects:

The project will require the levelling, by excavation and / or infilling of an area approximately 100 m in width along the 1340 m length of the new runway, as well as the excavation and placement of materials required in order to construct the stormwater management pond.

Significance of Residual Effects:

With the implementation of the identified mitigation measures, including monitoring and any necessary adaptive management, implementation of the project is not expected to have a significant adverse environmental effect on this VEC.

5.2.2 Surface Water Quality and Quantity

Description of Effect:

An increase in paved areas (new runway) on the airport property will result in an increase in surface runoff. Site grubbing, excavation and infilling for the new runway have the potential to indirectly impact on Redstone River through the movement of sediment and soils during the construction phase.

Operation and maintenance activities, such snow removal activities and pavement repairs, may potentially impact surface water quality. Since aircraft de-icing activities currently do not occur at the airport and there are no plans to do this in the foreseeable future, there are no effects to surface water quality or quantity from the use of de-icing chemicals.

Measures to Mitigate Effects:

Measures to mitigate the effects of the project to surface water quantity and quality during the construction phase include those for sediment and erosion control, refuelling and maintenance, drainage and water control, and disposal (as summarized in Table 3). In addition, the following mitigation measures during the operation of the facility also apply:

- All designs must comply with Municipal Design Guidelines, Ontario Provincial Standards, Transport Canada TP312 – Aerodrome Standards and Recommended Practices, as well as accepted engineering best practices;
- Drainage ditches on both sides of the new runway should be directed to the new stormwater management pond whenever possible;
- Work should be scheduled during the drier months to minimize the potential for silt migration into watercourses;
- All disturbed areas should be stabilized and re-vegetated as required upon completion of work and restored to a pre-disturbed state or better;
- Repairs to pavement and concrete should be undertaken in a manner that prevents the release of deleterious substances into surrounding water bodies.

Residual Effects:

Due to the distance of the site from surface waters, the Redstone River is located approximately 85 m east of the existing runway and 200 m from the proposed runway, the planned use of sediment and erosion control measures, no residual effects to surface water quantity and quality is anticipated as a result of this project.

Significance of Residual Effects:

With the implementation of the identified mitigation measures, including monitoring and any necessary adaptive management, implementation of the project is not expected to have a significant adverse environmental effect on this VEC.

5.2.3 Groundwater Quality

Description of Effect:

Environmental effects to groundwater quality relate to the possible contamination of the groundwater, which is a source of drinking water for the airport site as well as local residents downgrade from the airport, during construction because of chemical or fuel spills, or during the operation of the upgraded facility because of chemical or fuel spills. Aircraft de-icing activities currently do not occur at the airport and there are no plans to do this in the foreseeable future. In addition, clearance of the runways during the winter months is accomplished only by ploughing – no salts or other chemicals are used. As a result, there will be no effects to groundwater quality from the use of de-icing chemicals or other de-icing compounds.

Measures to mitigate effects:

Measures to mitigate the effects of the project to ground quality during the construction phase include those for refuelling and maintenance, pesticides, drainage and water control, and disposal (as summarized in Table 3).

Residual Effects:

With the implementation of mitigation measures above, no residual effects to groundwater quality is anticipated as a result of this project.

Significance of Residual Effects:

With the implementation of the identified mitigation measures, including monitoring and any necessary adaptive management, implementation of the project is not expected to have a significant adverse environmental effect on this VEC.

5.2.4 Vegetation

Description of effect:

As discussed in section 4.5 of this report, vegetation features within the study area are not considered sensitive to development and are commonly found in the local area. Construction activities will result in the removal of approximately 48.1 ha of trees, shrubs, vegetation, including grasses and other ground flora for the construction of the new runway. Of this, 48.1 ha, 2.9 ha will become paved surface and 4.1 ha will remain free of trees and shrubs within the runway strip but will be revegetated with grasses and ground flora. The remaining 41.1 ha will be revegetated with grasses and ground flora, and tree growth will be permitted with controlled tree heights to meet the Obstacle Limitation Surface height constraints.

Measures to Mitigate Environmental Effects:

Measures to mitigate the effects of the project to vegetation during the construction phase include those for site clearing (as summarized in Table 3). In addition, the following mitigation measures also apply:

- Tree removal restricted to those trees identified for removal on the contract drawings;
- Stripping of topsoil and vegetation will be restricted to designated areas;
- Operations shall not cause damage to trees or result in flooding or sediment deposition in areas where trees are not designated for removal;
- Excavated material stockpiles shall not be placed within driplines of trees not designated for removal;
- Damaged branches and roots of trees not designated for removal shall be cut back cleanly;
- All disturbed areas shall be restored with topsoil, hydroseeding or sod as soon as possible.

Residual Effects:

Construction of the project requires site clearing which will result in the permanent removal of approximately 2.9 ha of trees and shrubs, and other ground flora. These

activities will also result in the permanent removal of trees and shrubs from an additional 4.1 ha within the runway strip.

Significance of Residual Effects:

Given the limited scale of the project, as well as the characteristics of the affected vegetation (i.e. – common, non-sensitive species), and with the implementation of the identified mitigation measures, including monitoring and any necessary adaptive management, implementation of the project is not expected to have a significant adverse environmental effect on this VEC.

5.2.5 Fish and Fish Habitat

Description of Effect:

The impacts to fish and fish habitat are the same as those mentioned previously for surface waters. The greatest potential for impacts will occur during the construction phase of the project when bare ground is exposed to weather conditions which could result in erosion and sediment movement. The construction contract will include the installation and maintenance of sediment and erosion control measures to minimize off-site impacts. Since the closest sensitive surface waters are located more than 150 m from the closest area of the construction activities, no significant impacts to fish or fish habitat is anticipated.

Operation and maintenance activities, such snow removal activities and pavement repairs, may potentially impact surface water quality. Aircraft de-icing currently does not occur at the airport and there are no plans to do this in the foreseeable future.

Measures to Mitigate Environmental Effects:

Measures to mitigate the effects of the project to fish and fish habitat during the construction phase include those for sediment and erosion control, refuelling and maintenance, drainage and water control, and disposal (as summarized in Table 3). In addition, the following mitigation measures during the operation of the facility also apply:

- All designs must comply with Municipal Design Guidelines, Ontario Provincial Standards, Transport Canada TP312 – Aerodrome Standards and Recommended Practices, as well as accepted engineering best practices;
- Drainage ditches on both sides of the new runway should be directed to the new stormwater management pond whenever possible;
- Work should be scheduled during the drier months to minimize the potential for silt migration into watercourses;
- All disturbed areas should be stabilized and re-vegetated as required upon completion of work and restored to a pre-disturbed state or better;
- Repairs to pavement and concrete should be undertaken in a manner that prevents the release of deleterious substances into surrounding water bodies.

Residual Effects:

Due to the distance of the construction activities from the local surface waters, the planned implementation of sediment and erosion control measures, and the planned implementation of measures during the operational phase, the project is not expected to generate any residual effect on this VEC.

Significance of Residual Effects:

With the implementation of the identified mitigation measures, including monitoring and any necessary adaptive management, implementation of the project is not expected to have a significant adverse environmental effect on this VEC.

5.2.6 Wildlife

Description of Effect:

The construction of the new runway will require the clearing of trees, shrubs, and vegetation in an area approximately 48.1 ha in size. Clearing and grubbing could disturb the habitat of common wildlife species identified in section 4.6.

Sensory disturbance to wildlife resulting from construction noise, air emissions, and other construction activities may result for a distance of approximately 200 m from the areas where construction is taking place. This could result in the permanent displacement of some species and the potential reduction of nesting activities for some bird species both during and after construction. None of the existing habitat being removed or altered as a result of this project has been identified as critical habitat for rare species.

The presence of wildlife on the airport property is discouraged in order to minimize hazards to wildlife and aircraft. The construction of wildlife/security fencing could assist in preventing wildlife the new airport runway, the construction of such fencing is not part of the project at this time.

The project will result in an overall increase in grassland habitat on the airport property, increasing habitat preferred by some grassland birds.

Measures to Mitigate Environmental Effects:

Measures to mitigate the effects of the project to wildlife during the construction phase include those for sediment and erosion control and site clearing restrictions (as summarized in Table 3). In addition, the following mitigation measures during the operation of the facility also apply:

- Implementation of measures to reduce wildlife hazards/risks to aircraft must comply with the *Wildlife Planning and Management Regulation to the Canadian Aircraft Regulations, Part III, Subpart 2 – Airports*;
- Light duty filter fabric or silt fencing should be installed along forest and wetland habitat to define the development limit prior to site alteration and should be maintained during the development process. All silt fencing should be removed when development work is completed and exposed soils stabilized.

Residual Effects:

Construction of this project will result in the permanent removal of approximately 2.9 ha of trees, shrubs, vegetation, and ground flora. Approximately 4.1 ha will remain free of trees and shrubs within the runway strip but will be revegetated with grasses and ground flora, and the remaining 41.1 ha will be revegetated with grasses and ground flora, and tree growth will be permitted with controlled tree heights to meet the Obstacle Limitation Surface height constraints, helping to restore some wildlife habitat.

Significance of Residual Effects:

With the implementation of the identified mitigation measures, including monitoring and any necessary adaptive management, implementation of the project is not expected to have a significant adverse environmental effect on this VEC.

5.2.7 Migratory Birds

Description of Effect:

The construction of the new runway will require the clearing of trees, shrubs, and vegetation in an area approximately 48.1 ha in size. Migratory birds that use this area may be disturbed. This could result in direct impacts on bird nests, eggs, or young. None of the existing habitat being removed or altered as a result of this project has been identified as critical habitat for rare species.

Measures to Mitigate Environmental Effects:

Measures to mitigate the effects of the project to migratory birds include:

- Construction activities with the potential to destroy migratory birds, such as vegetation clearing, should not take place in migratory bird habitat during the breeding season for the project area. If the proponent must conduct works within breeding bird habitat during the identified breeding season for migratory birds, a nest survey should be conducted by a qualified avian biologist prior to commencement of the works to identify and locate active nests of species covered by the Migratory Birds Convention Act 1994. A mitigation plan (which may include establishing appropriate buffers around active nests) should then be developed to address any potential impacts on migratory birds or their active nests, and should be reviewed by Environment Canada-Ontario Region prior to implementation;
- Implementation of measures to reduce migratory bird hazards/risks to aircraft must comply with the *Wildlife Planning and Management Regulation to the Canadian Aircraft Regulations, Part III, Subpart 2 – Airports*.

Residual Effects:

Construction of this project will result in the permanent removal of approximately 2.9 ha of trees, shrubs, vegetation, and ground flora. Approximately 4.1 ha will remain free of trees and shrubs within the runway strip but will be revegetated with grasses and ground flora, and the remaining 41.1 ha will be revegetated with grasses and ground flora, and tree growth will be permitted with controlled tree heights to meet the Obstacle Limitation Surface height constraints, helping to restore migratory bird habitat.

Significance of Residual Effects:

With the implementation of the identified mitigation measures, including monitoring and any necessary adaptive management, implementation of the project is not expected to have a significant adverse environmental effect on this VEC.

5.2.8 Species at Risk

Description of Effects:

The Species at Risk Act (SARA) was promulgated in June 2003. Schedule 1 to the SARA lists all species that are considered to be endangered, threatened or of special concern. As noted in Chapter 4, no listed species at risk were found during field surveys that were undertaken in 2008. Although not noted in the surveys, one species that is known to inhabit this part of Ontario is the Monarch Butterfly. Clearing of vegetation during this project will temporarily remove the butterfly's habitat (milkweed and wildflowers) for approximately one year. The airport site does not have any extensive areas that support milkweed plants, the host plant for caterpillars. In addition, the site does not have extensive fields with wildflowers that would provide feeding habitat for adult monarchs, either during the summer months or during the fall migration season. Critical habitat is only identified along the shores of the Great Lakes, or in areas that support extensive fields of milkweed. Neither of these conditions apply at the airport site.

Measures to Mitigate Environmental Effects:

Standard measures to mitigate the effects of the project to species at risk include those for pesticides, drainage and noise controls (as summarized in Table 3).

Residual Effects:

Given the minimal interaction between the various project components and species at risk in terms of magnitude, frequency and geographical extent, the project is not expected to generate any residual effect on this VEC.

Significance of Residual Effects:

With the implementation of the identified mitigation measures, including monitoring and any necessary adaptive management, implementation of the project is not expected to have a significant adverse environmental effect on this VEC.

5.2.9 Air Quality

Description of Effects:

The construction related activities associated with the project will generate minor increases air pollution levels, as a result of exhaust emissions from construction equipment, and dust. The air pollution levels experienced during the construction period will be typical of road and building construction projects, are temporary in nature and are reversible. Construction activities are expected to last approximately six months.

Operation related activities associated with the project will generate minor increases to air pollution levels, as a result of exhaust emissions from aircraft and vehicles on-site and dust.

Measures to Mitigate Environmental Effects:

Measures to mitigate the effects of the project to air quality during the construction phase include those for dust control, pesticide use, and noise control (as summarized in Table 3). In addition, the following mitigation measures during the construction and operation of the facility also apply:

- Use new or well maintained heavy equipment and machinery, preferably fitted with muffler/exhaust system baffles and engine covers;
- Comply with operating specifications for heavy equipment and machinery;
- Minimize operation and idling of gas-powered equipment and vehicles, in particular, during smog advisories;
- Minimize vehicle traffic on exposed soils and stabilize high traffic areas with clean gravel surface layer or other suitable cover material;
- Avoid excavation, and other construction activities with potential to release airborne particulates, during windy and prolonged dry periods;
- On-site burning of organic materials, wood, refuse or other excavated materials from the clearing and grubbing of the site will be prohibited.

Residual Effects:

Given the minimal interaction between the various project components in terms of magnitude, frequency and geographical extent, the project is not expected to generate any residual effect on this VEC during the construction phase. The project is expected to create a small residual increase in emissions during the operation phase of the project.

Significance of Residual Effects:

With the implementation of the identified mitigation measures, including monitoring and any necessary adaptive management, implementation of the project is not expected to have a significant adverse environmental effect on this VEC.

5.2.10 Noise

Description of Effects:

Higher than normal background noise levels are expected during the construction period, especially construction equipment during the excavation and infilling operations. Due to the distance from the site of the construction activities to residents in the area, the impact from noise is expected to be negligible.

It is expected that operation of the project will result in an overall increase in air traffic. A study, *Haliburton / Stanhope Airport Runway Usability and Noise Exposure Analysis*, was completed as part of the Township's Airport Study. Part of this study required an estimate of the amount of aircraft traffic after the project was completed. The estimate was based on the following:

- A maximum of 10,000 aircraft movements (take-offs or landings) per year. This is based on usage at other small and larger community airports.
- 50% of the traffic would be local and 50% itinerant
- 50% split of traffic on each runway
- The consultant indicated that the peak planning day is generally three times the annual average (10,000 / 365).

Based on the above, the peak planning day forecast was calculated to be 84 aircraft movements, which could be split between the two runways. Since it is possible that all aircraft movements could occur on one runway or the other, the total number of movements was doubled to 168.

The results of this study show that all of the dwellings that are at or within the 30 Noise Exposure Forecast (NEF) contour are located within 100 m of the centerline of the existing runway. Being within the 30 NEF contour means that, in general, the perceived annoyance from noise would be sporadic to repeated individual complaints. As well, new residential development should not occur within the 30 NEF contour. The study also indicated that no additional dwellings would be impacted at or within the 30 NEF contour as a result of this project. To minimize the effects of noise to residents, the airport operates in accordance with the Canadian Flight Supplement, which restricts the hours in which aircraft are allowed to land at a facility, this being between the hours 7:00 am and 11:00 pm. This will not change as a result of this project. As a result, no additional mitigation is required.

Measures to Mitigate Effects:

Measures to mitigate the effects of the project to air quality during the construction phase include those for noise control (as summarized in Table 3). In addition, the following mitigation measures during the construction and operation of the facility also apply:

- Use new or well maintained heavy equipment and machinery, preferably fitted with muffler/exhaust system baffles and engine covers;
- Comply with operating specifications for heavy equipment and machinery;
- Minimize operation and idling of gas-powered equipment and vehicles, in particular, during smog advisories.

Residual Effects:

Given the minimal interaction between project components in terms of magnitude, frequency, and geographical extent, construction activities are not expected to generate a residual effect on this VEC. The expected increase in air traffic will likely result in increased residual noise levels.

Significance of Residual Effects:

With the implementation of the identified mitigation measures, including monitoring and any necessary adaptive management, implementation of the project is not expected to have a significant adverse environmental effect on this VEC.

5.3 Archaeological Resources

Description of Effects:

The Document “*Stage 1 Archaeological Assessment, Proposed Expansion, Haliburton-Stanhope Airport, Township of Algonquin Highlands, Ontario*” was completed in 2008 as part of the Airport Study.

The study noted that at the time of writing, there were no registered prehistoric period aboriginal archaeological sites located within two kilometres of the project site. The author also indicated this is likely due to limited archaeological survey of the area rather than a lack of use of the area by Aboriginal inhabitants since as late as 1850 the project property was north of the limits of lands purchased from the First Nations.

The study also indicated there were no registered historic period archaeological sites or provincially designated buildings located within two kilometres of the project site.

The study concluded that portions of the project area have an elevated potential for undiscovered archaeological resources. These areas are found within 300 m of the watercourses and oxbow ponds that are present at the south end of the project area, including the southern end of the proposed new runway.

Measures to Mitigate Effects:

Measures to mitigate the effects of finding archaeological resources at the project site include:

- A Stage 2 Archaeological Assessment, as recommended in the Stage 1 Archaeological Assessment report, is to be undertaken after tree removal but prior to construction with any follow-up recommendations implemented as required. A copy of the final report is to be forwarded to the Ontario Ministry of Culture for review;
- Should any deeply buried archaeological materials be uncovered during project activities, all work in the area should cease and the Ministry of Culture be notified immediately;
- Should any human remains be found, all work should cease and both the Provincial Ministries of Culture and Government Services (Registrar of Cemeteries Regulation Act) should be contacted.

Residual Effects:

With the planned implementation of a Stage 2 assessment after tree removal but prior to construction, and the implementation of the mitigation measures identified above, the project is not anticipated to generate any residual effect to archaeological resources.

Significance of Residual Effects:

With the implementation of the identified mitigation measures, including monitoring and any necessary adaptive management, implementation of the project is not expected to have a significant adverse effect to archaeological resources.

5.4 Accidents and Malfunctions

Description of Effects:

Chemical or fuel spills during the construction and operation of the new facility may result in the contamination of surface water, ground water, or soils.

Equipment malfunctions (for example a failed exhaust pipe) may result in elevated noise levels and/or deteriorated air quality near the project site.

Accidents and malfunctions may also cause personal injury to construction workers and airport users.

There is the potential that fire fighting services may be required a result of an aircraft related incident at the airport site. Currently, there is no fire fighting services located at the airport. In the event there is a need for these services, typical response times are as follows:

- Stanhope Fire Department 5 to 10 minutes;
- Haliburton Fire Department 20 to 25 minutes; and
- Minden Fire Department 25 minutes.

There has been no requirement for fire suppression services at the airport site since at least 1998, the time when the current Airport Manager started in this position. There has been one aircraft related incident reported off the airport property. There was no fire associated with this incident, only medical and extraction services. Based on the low likelihood of an event of this type, no additional mitigation is deemed necessary at this time.

Measures to Mitigate Effects:

The contractor will be required to provide emergency response to address the potential environmental effects which could occur during the construction phase, including those for refuelling and maintenance and noise control (as summarized in Table 3). In addition, the following mitigation measures during the construction and operation of the facility also apply:

- All heavy equipment must be operated by authorized, trained personnel in a controlled and visible manner. Signage must be in place at controlled entry points to clearly limit access to authorized vehicles and people only;

The contractor will also be required to adhere to specific health and safety protocols mandated by existing legislation and identified in the contract specifications. These include:

- Provide the necessary first aid items and equipment prescribed under the First Aid Regulations to the provincial Worker's Compensation Act;
- Adherence to the regulations issued by the Ontario Ministry of Labour under the Occupational Health and Safety Act.

Residual Effects:

Based on the above, accidents and malfunction should not generate any residual effects on the project.

Significance of Residual Effects:

With the implementation of the identified mitigation measures, including monitoring and any necessary adaptive management, accidents and malfunctions are not likely to impact on the project in a manner that could result in significant adverse environmental effects.

5.5 Effects of the Environment on the Project

Description of Effects:

Flooding and wet weather could result in project delays or the release of deleterious substances into surface water sources. Earthquakes/tremors, ice damage and erosion may impact the use of the runway surfaces.

Measures to Mitigate Effects:

Measures to mitigate the effects of the environment on the project include those for Sediment and Erosion Control as well as Drainage and Water Control (as summarized in Table 3). In addition, the following mitigation measures during the construction and operation of the facility also apply:

- All designs must comply with: Municipal Design Guidelines; Ontario Provincial Standards; Transport Canada TP312 – Aerodrome Standards and Recommended Practices; as well as generally accepted engineering practices;
- The dry stormwater pond will be designed to accommodate the 100-year peak flow levels;
- Maintenance of paved surfaces must be undertaken in accordance with standard regulations and protocols;
- All work areas must be stabilized against the impacts of high flows and wind events at the end of each work day. Any work in a floodplain must be suspended and the work area stabilized when there is a high probability of significant rainfall or a storm event.

Residual Effects:

With the implementation of mitigation measures above, the environment is not anticipated to generate any residual effects on the project.

Significance of Residual Effects:

With the implementation of the identified mitigation measures, including monitoring and any necessary adaptive management, the environment is not expected to have a significant adverse environmental effect on the project.

5.6 Cumulative Environmental Effects

The *Canadian Environmental Assessment Act* requires that cumulative environmental effects be considered in reaching a screening decision. Cumulative environmental effects are those effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out in the project area.

The responsible authority is aware of the following additional projects/activities that have the potential to interact cumulatively with the project:

- Existing airport operations;
- Pavement rehabilitation of the airport's existing runway and taxiway

Section 5.2 of this report identified that the project has the potential to generate residual effects upon the following VEC's:

- Soils and Sediments;
- Vegetation;
- Wildlife;
- Migratory birds; and,
- Noise.

Description of Effects:

With respect to effects to vegetation, wildlife and migratory birds, neither of the additional projects/activities will generate any additional adverse environmental effects that would act in cumulative manner with this project.

Effects to Soils and Sediments - Existing Airport Operations: Since there is no additional disturbance to soils as a result of existing airport operations, existing airport operations will not generate any adverse environmental effects that would act in a cumulative manner with this VEC.

Effects to Soils and Sediments - Pavement rehabilitation of the airport's existing runway and taxiway: Soils could be contaminated while re-fuelling construction equipment and could also be contaminated from chemical spills. No other disruption to soils is expected during the runway rehabilitation.

Effects of Noise – Pavement rehabilitation of the existing runway and taxiway may overlap with construction activities associated with the new runway construction, creating additional noise.

Effects of Noise – Existing Airport Operations: The effects of noise, combined with existing airport operations, were discussed previously in Section 5.2.10. No further disruptions as a result of noise are expected beyond those identified previously.

Measures to Mitigate Effects:

Measures to mitigate the effects of the project to soils and sediments were previously identified in Section 5.2.1. With the implementation of these measures, no additional mitigation is considered necessary.

Measures to mitigate the effects of noise were previously identified in Section 5.2.10. With the implementation of these measures, no additional mitigation is considered necessary.

Residual Effects:

With the implementation of the implementation of the mitigation measures identified above, the project is not anticipated to generate any cumulative residual effects.

Significance of Residual Effects:

With the implementation of the identified mitigation measures, including monitoring and any necessary adaptive management, the project is not expected to have any significant adverse cumulative environmental effects.

6.0 PUBLIC AND ABORIGINAL CONSULTATION

6.1 Federal Consultation

6.1.1 *Public Component*

To date, the public consultation process for this screening report has incorporated the following components:

- A public registry was established for the project and is listed on the Canadian Environmental Assessment Registry (CEAR) - reference number 09-01-46567. The following documents with respect to this project are available on the CEAR site:
 - Notice of Commencement
 - List of Documents on Display at the Algonquin Highlands Municipal Office;
 - Consideration of the Project under the Canadian Environmental Assessment Act (Scoping Document);
 - Public Participation Notice;
 - Copy of Presentation at Public Meeting held July 23, 2009;
 - Questions and Answers;
 - A note to interested parties dated September 18, 2009; and,
 - A note to interested parties regarding project phasing dated October 2, 2009.

- A public information session was held by Infrastructure Canada on July 23, 2009. The session consisted of an overview by Infrastructure Canada officials of the federal environmental assessment process and how the public could get involved.

The proponent was also available to answer questions. Approximately 300 persons attended the session, a large portion of which was a question and answer period. A summary of the discussions from this session are included as Appendix A to this document.

In addition to the above, the public was given the opportunity to comment on a draft version of this screening report prior to finalization.

There has been significant public reaction to this project. Once the intentions of conducting a federal screening report for this project were posted to the CEAR site, a number of residents wrote to INFC and Industry Canada to register their concerns. Table 4 summarizes the comments received from the public during the screening process.

Table 4
Public Concerns Raised During the Federal EA Process

Public Comment / Concern	Comment
The public was not consulted with regard to the project's environmental effects and a lack of transparency in the process.	These comments were made in reference to the study process completed by the Township of Algonquin Highlands in 2008. See section 6.2 below.
There is concern with the use of de-icing fluids and the lack of a plan to deal with run-off of the fluids.	This point was addressed as part of Section 5.2.2, Surface Water Quality and Quantity, and Section 5.2.3, Ground water quality.
Mature old growth trees are to be removed or topped on private property.	This point was addressed in section 4.5, Vegetation.
The recommendation by the Township's consultant that trees not be cut during nesting season may be ignored.	This point was addressed as part of Section 5.2.6, Wildlife, and 5.2.7, Migratory Birds.
Concerns expressed that Bald Eagles that inhabit the area could be disturbed by the cutting of trees.	This point was addressed as part of Section 5.2.6, Wildlife, and 5.2.7, Migratory Birds.
Concerns regarding the loss of wildlife and bird nesting habitat.	This point was addressed as part of Section 5.2.6, Wildlife, and 5.2.7, Migratory Birds.
Concerns with the effects of the project to local water resources. This also includes the use of a catch basin (storm water management pond).	This point was addressed as part of Section 5.2.2, Surface Water Quality and Quantity, and Section 5.2.3, Ground water quality.

Public Comment / Concern	Comment
Concerns with respect to noise from aircraft (level and frequency) as a result of the construction of a new runway.	This point was addressed as part of Section 5.2.10, Noise.
Concerns expressed as the new runway is located within 3 kilometres of three separate landfills and its affect on possible bird strikes, etc.	This point was addressed as part of Section 4.6, Wildlife Resources.
Request for a public meeting as part of the federal EA process	A public information session was held by INFC on July 23, 2009.
Fiscal impacts to local ratepayers.	Direct fiscal impacts (capital and operating costs) do not fall within the scope of the environmental assessment and were not dealt with as part of the screening report.

6.1.2 *Aboriginal Component*

Prior to the commencement of the federal environmental assessment process, a letter was received from Algonquin Woodland Métis Aboriginal Tribe regarding the lack of consultation by any level of government for a project that was occurring in their traditional territories. In July 2009, an email was also received from the Alderville First Nation with an enquiry for information about this proposed project which was to occur within First Nations Traditional Territories.

Both groups were contacted by Infrastructure Canada and advised of the public information session for this project and forwarded the materials available to the public. Both were invited to attend the information session that was held on July 23, 2009. It is not known if either group had representation at the meeting. No further contact has been received from either First Nations.

In addition to the above, the two First Nations groups were given an opportunity to comment on a draft version of this screening report prior to finalization by mailing hard copies and asking them to provide any feedback in writing.

6.2 *Municipal Consultation*

As part of the Airport Study process, the Township conducted the public participation in the following manner:

- A notice was published advertising that at their Township's regular council meeting on September 18, 2008, that the Township would be receiving final technical information and specifications regarding the proposed development plans for the Haliburton Stanhope Airport. The public was invited to attend to listen to an initial presentation for the project.
- The Township conducted a public meeting on September 20, 2008 which was open to all members of the public. The meeting was taped and is available on the Township's website.
- The Township maintains a link on its website for the Airport Development Project.
- The Haliburton Stanhope Airport Aeronautical, Engineering and Environmental Information Report (Airport Study) is available on the Township's website.

7.0 FOLLOW-UP PROGRAM

Under CEAA, follow-up programs may be required to verify the accuracy of the predictions and to determine the effectiveness of any mitigation measures that have been implemented.

Based on the expectation that no significant environmental effects are anticipated as a result of this project, it is determined that a formal follow-up program is not required for this screening.

8.0 MITIGATION AND MANAGEMENT OF ENVIRONMENTAL EFFECTS

8.1 Environmental Mitigation

Measures to mitigate potential adverse environmental effects of the project were identified during the assessment and are described above.

These measures are considered to be reasonable and appropriate in relation to the nature and severity of potential adverse environmental effects that may be caused by the project. The project proponent is responsible for ensuring the timely implementation of these measures.

8.2 Monitoring Plan

The proponent must also implement the following measures to ensure responsible environmental management while undertaking the Project:

a) Site Access

If requested, the proponent must provide Infrastructure Canada or its designate(s) with access to the project site to monitor construction activity and to confirm compliance with the terms and conditions of its environmental approval.

b) Environmental Reporting and Adaptive Management

Infrastructure Canada (and the Province) must be notified in a timely manner if the following circumstances arise during project implementation:

- If there are significant changes to the project that may cause adverse environmental effects warranting additional mitigation, the proponent should describe those changes and the measures it will take to mitigate any associated potential adverse environmental effects;
- If the required mitigation measures are determined to be ineffective or if the project causes unanticipated adverse environmental effects or public concerns, the proponent will identify the measures it will take to mitigate and respond to those concerns.

At the completion of the project, the proponent is to provide a report to Infrastructure Canada, which will include the following:

- the work conforms with applicable environmental legislation;
- the mitigation measures specified in this approval have been implemented;
- if there are outstanding adverse environmental effects in respect of which the proponent intends to carry out additional remedial measures.

c) Record Keeping

Documents pertaining to the environmental review and approval of the project, such as copies of environmental authorizations and monitoring, inspection and compliance/enforcement orders from regulatory authorities, must be retained on file and made available, if required, for audit and evaluation purposes.

9.0 CEEA DETERMINATION AND SIGN-OFF

9.1 Section 20(1) Determination

On the basis of this screening, Infrastructure Canada has determined, in accordance with subsection 20(1)(a) of the CEEA, that the project is not likely to cause significant adverse environmental effects taking into account the implementation of mitigation and environmental management measures specified in this screening report. The project can proceed with implementation of these measures.

9.2 Sign-off

This screening report is approved by:

Dominic Cliche
Manager, Environmental Review and Approvals
Issues Management, Program Operations
Infrastructure Canada

Date: _____

The proponent has read and understood this environmental screening report and accepts responsibility for the implementation of the mitigation measures and any related monitoring programs that may be identified by the Responsible Authority.

Juanita Dempster-Evans
Chief Administrative Officer
Township of Algonquin Highlands

Date: _____

References:

Haliburton Stanhope Municipal Airport, Airport Development Project, Aeronautical, Engineering and Environmental Information Report (2008), Township of Algonquin Highlands

Natural Heritage Information Centre, Ontario Ministry of Natural Resources
<http://nhic.mnr.gov.on.ca/MNR/nhic/areas.cfm>

Species at Risk Public Registry
<http://www.sararegistry.gc.ca/>

Township of Algonquin Highlands Official Plan (2003)

Township of Algonquin Highlands Zoning Bylaw (No. 03-22)

Wildlife Control Procedures Manual (TP11500), Transport Canada
<http://www.tc.gc.ca/civilaviation/AerodromeAirNav/Standards/WildlifeControl/tp11500/menu.htm>

Appendix A

Summary of Discussions - Public Information Session July 23, 2009

Summary of Discussions at Stanhope Airport Upgrades and Expansion Public Information Session (July 23, 2009)

Presenters: Keith Grady (INFC), Mike Osborne (Project Manager, Richardson Foster Ltd.)

- Where to send comments on existing technical reports?
 - I.C. contact will be identified. Contact info will be posted on CEAR and placed in paper file at the municipal office.

- How will information deficiencies from existing reports be incorporated into the screening report?
 - Starting point for the screening is the existing studies. Federal Review Team and public may identify deficiencies. Additional information may be required from the proponent before the screening is finalized.

- Can the public form part of the technical (federal) review committee?
 - No, but public can form their own review teams to review documentation.

- How and why was this project selected to receive federal funding?
 - Federal/provincial priorities and categories of projects were identified for funding. Once projects were selected, they were examined for EA requirements. That is what we are here to talk about today. Any comments outside of the EA will be noted.

- Who prepares the screening report?
 - Possibly a consultant, possibly INFC/IC. INFC has to approve the screening.

- How did INFC become involved in this process?
 - Minister identified the project as a priority. INFC is considering funding the project and is an RA for the purposes of CEAA.

- The funding for the project was already announced. Is this just a rubber stamping exercise?
 - No. No funding will be provided until the EA has been completed.

- What is the difference between a screening and a comprehensive study?
 - There is more flexibility in the procedural aspects of undertaking a screening, but the factors laid out in CEAA are considered in both types of EAs.

- Will the need for firefighting equipment in case of accidents be examined in the EA?
 - Accidents and malfunctions will be examined through the screening process.

- Is it not a conflict of interest if Industry Canada is preparing the EA?
 - No.

- What is the typical timeframe for conducting an EA?
 - Timeframes vary depending on the project. For this one, timing considerations include the need to review existing information, collect new information (if required), draft a screening report, and provide the public with an opportunity to respond.
- Does the public have access to all the project information that INFC used to base its funding decision on?
 - Yes, all the information is available at the municipal office.
- How many paper copies of the technical studies are available?
 - One paper copy is available at the municipal office and the documents are also available online.
- Has the timing of the project been affected as a result of support for or against the project?
 - Can only answer from an EA perspective. The EA is a legislated requirement and would be conducted whether there is support for the project or not.
- Is the fact that people don't want the project a relevant issues that will be examined in the EA?
 - Any issue that is related to the environmental effects of the project will be considered in the EA.
- Will issues brought forward by non-scientists still be considered in the EA?
 - Yes.
- Is the provincial government going to be involved in the EA?
 - They will be invited to participate in the technical review but the province does not have any formal EA requirements in relation to this project.
- How will the approach lanes for runways affect home owners' ability to insure their property (in case of accidents)?
 - Will make a note of your question.
- How can I provide comments on the issue of project phasing?
 - Will make note of any issues raised that are not relevant to the EA.
- What is the current scope of the project that is being considered for EA purposes?
 - The current scope includes the rehabilitation of existing infrastructure and the construction of the new runway.
- How are future economic development opportunities as a result of the airport expansion examined in the EA considering that is part of the project's justification?
 - Projects that are likely to occur in the future that may have overlapping environmental effects with the current proposal may be considered in a cumulative effects assessment.

- Please consider that 80% of tax payers are seasonal residents when determining timelines for public input. It may be more difficult for these people to obtain the relevant information to participate in the EA as a result.
 - Noted.
- How will my 20 acres of environmentally protected land be impacted by the project?
 - We need to have these lands identified to us to figure out how they will be impacted by the project. Please send in comments/maps.
- Have you visited the project site?
 - Yes.
- Does the scope of the project include the existing facilities?
 - Yes.
- Is it not a waste of money to be conducting an EA on a project that no one wants?
 - EA is a legislated requirement.
- What kind of negative environmental effects need to be identified for the project to not go ahead (looking for specific examples)?
 - It is rare that a project or an EA would continue if it was found throughout the planning process/EA stage that significant adverse environmental effects that cannot be mitigated would result.
- Economic impacts and meaningful consultation all need to be considered in the EA.
 - Consultation is not always required in an EA. Economic impacts are examined to the extent that they result from an environmental effect.
- Some associations have prepared their own reports in relation to the project. Can we submit those?
 - Yes
- What is the role of Health Canada?
 - Cannot speak on behalf on HC but probably will be involved in relation to noise and accidents and malfunctions.
- Will you use the noise assessment conducted by the proponent? It is not representative of the types of planes that will be seen at Stanhope.
 - We will look at it and have our expert departments advise us on its appropriateness.
- How long does the public have to submit comments?
 - We will advise how long once we have identified the proper IC contact.
- How will the impacts of the project on individual wells be taken into account in the EA?

- We would not look at individual wells but rather at impacts on surface and groundwater, if appropriate.
- Given that the people who are preparing the studies are the same people that are building the project, how can we ensure that the information they are providing is accurate?
 - An objective review of the existing information will be conducted by the federal review team.
- Will there be a flight control tower to control air traffic?
 - Not part of current proposal. TC will advise on appropriateness of what it being proposed.
- We do not need anymore airports in Canada. Please consider global warming.
 - Noted.
- How many departments are involved in the EA and what if one of them says no to the project?
 - Only RA is INFC. We work with other departments and rely on their expertise in various subject areas. Departments will advise us if they feel there will be significant environmental effects from the project.
- Will you consider the leaching of chemicals into Gull River?
 - Impact pathways and management of operations will be taken into account.
- How much does public concern weigh into the EA process?
 - Public concerns relating to EA issues are considered in the EA. Views on whether the project should proceed, while not EA related, can still be submitted and decision makers will be informed.
- The project will require some trees to be topped which means that the proposed flight path is within 100m of people's homes.
 - The EA will examine flight path impacts on people and wildlife.
- What is the total cost of the project?
 - We will add the funding announcement to the project file.
- If this project is going to upset so many people, it can't be a good thing.
 - Noted.
- Should people who are supportive of the project participate in the EA?
 - Yes.
- Can comments be sent through some one of the associations?
 - Yes.

- Will our opinions on the project make any difference at the end of the day?
 - People's views will be fed into the decision-making process.
- Who can we direct our non-EA questions to?
 - Send to INFC for now and we will redirect where appropriate.