

## 5. COMMITMENT TO MITIGATION AND IMPACT MANAGEMENT

### 5.1 SUMMARY OF IMPACTS, MITIGATION AND NET EFFECTS

Table 5.1 summarizes the mitigation and impact management measures that TransCanada commits to implementing as part of the construction and operation of the NGS, beyond those already discussed as part of the design and technology choices detailed in Chapter 3. Table 5.1 also provides the effects of the construction and operation phases after mitigation (i.e., net effects).

**Table 5.1 Summary of Potential Effects, Mitigation and Net Effects**

Potential Effects	Mitigation/Impact Management	Net Effect
<b>Construction Phase</b>		
Disturbance to residents and wildlife due to construction dust	<ul style="list-style-type: none"> <li>Best management practices to manage dust</li> </ul>	Negligible effect
Effects to air quality from construction vehicle emissions	<ul style="list-style-type: none"> <li>Use of well-maintained equipment to minimize emissions</li> </ul>	Negligible effect
Soil erosion and stormwater runoff from construction site	<ul style="list-style-type: none"> <li>Implementation and adherence to Erosion and Sediment Control Plan and SWM Plan</li> </ul>	Negligible effect
Incidental spills of oil, gasoline and other liquids	<ul style="list-style-type: none"> <li>Implementation and adherence to Hazardous Materials Management Plan, Waste Management Plan and Spills Emergency Preparedness and Response Plan</li> </ul>	Negligible effect
Disturbance of aquatic habitat in intermittent creek from construction of temporary road	<ul style="list-style-type: none"> <li>Appropriate placement and removal of culvert in adherence to CRCA permit conditions</li> <li>Appropriate maintenance of culvert during construction</li> </ul>	Negligible effect
Loss of vegetation communities and associated wildlife habitat	<ul style="list-style-type: none"> <li>Two restoration areas identified to mitigate loss of vegetation communities and associated wildlife habitat. The total area would be 0.58 ha in extent, located to maximize benefits to wildlife</li> <li>Active agricultural land will be restored upon construction completion</li> </ul>	Negligible effect in context of surrounding area or region
Potential for loss of snake hibernacula	<ul style="list-style-type: none"> <li>Prior to construction, survey of area by ecologist for snakes and/or hibernacula.</li> <li>During construction, Project Manager to contact ecologist if snakes are observed and to take appropriate action in conjunction with MNR.</li> <li>In the event snakes are observed, they will be moved by an ecologist to similar suitable habitat outside of the construction area.</li> </ul>	Negligible effect in context of surrounding area or region
Wetland Loss (0.29 ha)	<ul style="list-style-type: none"> <li>Reconstruct approximately 0.29 ha of wetland in re-routed drainage channel</li> </ul>	Negligible effect

**Table 5.1 Summary of Potential Effects, Mitigation and Net Effect (Cont'd)**

Potential Effects	Mitigation/Impact Management	Net Effect
<b>Construction Phase (Cont'd)</b>		
Disturbance of nesting birds	<ul style="list-style-type: none"> <li>Vegetation clearing must not disturb nesting birds and to be undertaken outside the migratory bird breeding season (April 15 to August 15)</li> </ul>	Minor effect in context of surrounding area or region
Disturbance of habitat for endangered species: loss of Barn Swallow territory and partial loss of habitat for one pair of eastern meadowlark	<ul style="list-style-type: none"> <li>Mitigation to be demonstrated and approved through the <i>Endangered Species Act</i> permitting process</li> <li>Mitigation must result in an overall positive effect</li> </ul>	Positive effect
Disruption of landscape connectivity for wildlife movement	<ul style="list-style-type: none"> <li>Detailed design to incorporate measures to deter road crossings and encourage small mammals and herpetofauna to cross under the road that crosses the riparian corridor</li> <li>The 15 m riparian buffer along the northside of the lay down area will also assist in maintaining north – south connectivity</li> <li>After construction removal of access road and culvert and restoration of disturbed areas with planting of appropriate native vegetation</li> </ul>	Negligible effect
Disturbance of wildlife due to construction noise and blasting	<ul style="list-style-type: none"> <li>Best management practices to diminish blasting and other noise</li> <li>Where possible avoid blasting March 30 to July 15 or monitor wildlife response and be prepared to further mitigate blasting</li> <li>Provide alternate Osprey nesting platform to west</li> <li>Move and maintain Purple Martin boxes to west side of Lennox GS station</li> </ul>	Negligible effect
Disturbance to residents due to construction noise and blasting	<ul style="list-style-type: none"> <li>Observe the equipment noise emission standards from MOE publication NPC-115 (Construction)</li> <li>Observe the requirements of the Town of Greater Napanee By-Law No. 04-60 (time prohibitions)</li> <li>Ensure construction equipment is equipped with appropriate muffling devices</li> <li>Vibration levels from blasting not anticipated to be perceptible at residences; sound from blasting will be perceptible and may be source of annoyance however, residents will be advised of blasting schedule in advance to minimize disturbance</li> </ul>	The sound of blasting (air blast) will be perceptible and may be a source of annoyance for some residents however, it will be limited and of short duration.

**Table 5.1 Summary of Potential Effects, Mitigation and Net Effect (Cont'd)**

Potential Effects	Mitigation/Impact Management	Net Effect
<b>Construction Phase (Cont'd)</b>		
Job creation	<ul style="list-style-type: none"> <li>600 – 750 construction related jobs created over a 32 month construction period</li> <li>Anticipated that most workers will commute to site so there will be limited effects to community services and infrastructure as a result of transient workers moving into the area</li> </ul>	<p>Positive effect to economic base related to job creation and local expenditures</p> <p>Negligible effect to community as a result of workers</p>
Construction traffic will result in intersection delays for the northbound left turn lane at the intersection of County Road 4 and the intersection with the eastbound ramps on Highway 401	<p>Two mitigation options to be discussed with and approved by MTO:</p> <ul style="list-style-type: none"> <li>Convert the intersection to All-Ways Stop Control for the duration of the NGS construction period and then revert to the existing Two-Way Stop Control when construction is complete and traffic volumes are reduced; <u>or</u></li> <li>Pave the right shoulder of the northbound lane to provide a temporary slip-around lane to accommodate any northbound through traffic encountering a left-turning vehicle. This slip around lane could be removed following completion of construction of the NGS</li> </ul>	Negligible effect
<b>Operation Phase</b>		
Changes to air quality as a result of operation	<ul style="list-style-type: none"> <li>Use of SCR and other state-of-the-art equipment to minimize emissions</li> <li>Emergency diesel generator will only be tested will only be tested for one hour per week, under normal plant operations</li> </ul>	Negligible effect
Negligible change to health and ecological risk as a result of changes to air quality	<ul style="list-style-type: none"> <li>No mitigation</li> </ul>	Negligible effect
Potential for fogging of 5-20 hours per year and icing 2- 10 hours per year over Loyalist Parkway if NGS is operated continuously 365 days per year	<ul style="list-style-type: none"> <li>NGS will only operate 11-67% of the time therefore, these effects are likely to be much less</li> </ul>	Negligible effect
Stormwater runoff	<ul style="list-style-type: none"> <li>Implementation and adherence to SWM Plan</li> </ul>	Negligible effect

**Table 5.1 Summary of Potential Effects, Mitigation and Net Effects (Cont'd)**

Potential Effects	Mitigation/Impact Management	Net Effect
<b>Operation Phase</b>		
Wastewater discharges	<ul style="list-style-type: none"> <li>• Treatment to meet regulatory limits</li> <li>• Use of existing Lennox GS sanitary sewer collection and treatment system (i.e., sewage lagoons) and discharge channel</li> <li>• Removal of turbine washwater and oil contaminated wastewater to approved off-site disposal</li> </ul>	Negligible effect
Incidental spills of oil, gasoline and other liquids	<ul style="list-style-type: none"> <li>• Implementation and adherence to Hazardous Materials Management Plan, Waste Management Plan and Spills Emergency Preparedness and Response Plan</li> </ul>	Negligible effect
Use of chlorination for biofouling and quagga mussel control	<ul style="list-style-type: none"> <li>• Dechlorination system will reduce TRC to acceptable levels</li> <li>• Continuous TRC monitoring during chlorination/dechlorination procedures</li> </ul>	Negligible effect
Impingement and entrainment of fish and other aquatic biota	<ul style="list-style-type: none"> <li>• Low approach velocity at intake to be protective</li> <li>• Incremental flow of water is less than 1% of Lennox GS volume</li> </ul>	Negligible effect
Thermal loadings	<ul style="list-style-type: none"> <li>• Use of tempering water, if necessary</li> <li>• In-line monitoring</li> </ul>	Negligible effect
Bird Strikes	<ul style="list-style-type: none"> <li>• No stacks should be lit with continuous lighting, rather, strobe lights should be used with a maximum admissible off-period</li> <li>• Other external lighting should be down facing and shielded to the maximum extent practicable.</li> <li>• Lighting should be provided only as required and efforts should be made to minimize both the number of external lights and their luminosity.</li> <li>• No tree or shrub landscaping should be placed within 30 m of reflective glass windows, or non-reflective glass should be used.</li> </ul>	Negligible effect
Disturbance of wildlife due to operational noise	<ul style="list-style-type: none"> <li>• Provide alternate Osprey nesting platform to west</li> <li>• Maintain and move Purple Martin boxes to west side of Lennox GS</li> </ul>	Negligible effect

**Table 5.1 Summary of Potential Effects, Mitigation and Net Effects (Cont'd)**

Potential Effects	Mitigation/Impact Management	Net Effect
<b>Operation Phase (Cont'd)</b>		
Disturbance of residents due to operational noise	<ul style="list-style-type: none"> <li>• Noise mitigation has been incorporated into the design of the NGS such that noise from operations will be compliant with the MOE criteria</li> <li>• Testing of emergency standby diesel generator between 8 a.m. and 7 p.m. under normal plant operations</li> </ul>	Negligible effect
Effects to existing land uses, community services and tourism and recreation	<ul style="list-style-type: none"> <li>• Effects associated with operation of the NGS will not alter existing land uses, community services or tourism and recreation</li> </ul>	Negligible effect

As noted in Chapter 4, the final step in an effects assessment is to address the significance of the net effects of the projects. Significance is assessed by determining:

- the value of the resource affected;
- the geographic extent of the net effect;
- the duration and frequency of the net effect;
- if the net effect represents a substantive or order of magnitude negative change in the baseline condition;
- if the net effect reflects a substantive public or agency concern (ecological/social context); and
- the irreversibility of the net effect.

The characteristics listed above have been assessed in the determination of net effects in Table 5.1 above. The net effects of construction and operation are not considered to be significant. Any measurable effects are short in duration, localized in effect, or do not represent a substantive or order of magnitude change from existing ambient conditions. It is recognized that effects related to air quality, human health and noise have been raised as concerns by the public and agencies.

## **5.2 MONITORING**

All monitoring programs dealing with air, water, wastewater and stormwater will be done in accordance with the appropriate approval specifications and requirements, particularly the terms and conditions of approval for the respective MOE ECA or permits. All monitoring will be conducted according to the standard accepted methods for sample collection and analyses. Monitoring will be part of an overall Environmental Management Plan for the NGS. Table 5.2 summarizes monitoring efforts described in Chapter 4 of this ERR.

**Table 5.2 NGS Environmental Monitoring Summary**

Monitoring Location	Collected Media	Parameters of Interest
<b>Construction</b>		
Water crossing at Intermittent Creek	Observational monitoring (during construction period)	Objective is to ensure the efficacy of the implemented erosion and sediment control plan.
Locations of heronry breeding	Observational heronry monitoring (during pre-construction and construction)	Objectives are to: <ul style="list-style-type: none"> <li>• Ensure that construction operations will not result in measurable disturbance to the nesting herons and their young; and</li> <li>• Provide a basis to issue a stop work notice should the need arise.</li> </ul>
Locations of other breeding birds	Observational monitoring of other breeding birds such as nesting swallows (during pre-construction and construction), if blasting is to occur during the breeding season	Objectives are to: <ul style="list-style-type: none"> <li>• Ensure that construction operations will not result in measurable disturbance to the breeding birds and their young; and</li> <li>• Provide a basis to issue a stop work notice should the need arise.</li> </ul>
Stormwater Discharge	Containment loadings from outlets of temporary siltation basins	Samples to be analyzed for oil and grease and TSS.
Gas turbines	Air concentrations (Continuous Emissions Monitors)	Parameters to be monitored continuously throughout NGS operation and reported on as required: NO <sub>x</sub> , CO, O <sub>2</sub>
Water crossing at Intermittent Creek	Surface water (during operational period, after the removal of the temporary crossing)	Water chemistry parameters similar to those in the existing environment monitoring program would be used to determine if there are any effects on the creek from NGS operation
Intake for NGS	Fish: eggs, larvae, juveniles and adults (during the first year of the operational period)	Presence and abundance of different fish stages impinged and/or entrained during NGS operation to confirm significance of losses.
Waste water discharge	Contaminant and thermal loadings	Water chemistry parameters, including temperature, similar to those in the existing environment monitoring program will be used to confirm discharge concentrations and model predictions.
Stormwater Discharge	Contaminant loadings from Stormceptors and prior to leaving site.	Bi-annual samples to be analyzed for TSS, oil and grease, and heavy metals.