8.0 ASSESSMENT OF IMPACTS

8.1 Potential Impacts

Ontario Regulation 359/09 made under the Environmental Protection Act states that:

- **20.** (1) A person who proposes to engage in a renewable energy project shall consider whether engaging in the project may have an impact on any of the following:
 - 1. An archaeological resource at the project location.
- 2. A heritage resource at the project location, other than at a part of the project location that is on a property described in Column 1 of the Table to section 19. [see Table 1 of this report, p. 5]
- 3. A property described in Column 1 of the Table to section 19 [see Table 1 of this report p. 5] that abuts the parcel of land on which the project location is situated.

This is also reflected in the Provincial Policy Statement notes that "any impact (direct or indirect, physical or aesthetic) of the proposed development or site alteration on a cultural heritage resource must be identified." (PPS, 2005, InfoSheet #5, 3)

InfoSheet #5 in Heritage Resources in the Land Use Planning Process identifies a list of negative impacts that should be considered in preparing a heritage assessment.

Direct Impacts

- Destruction of any, or part of any, significant heritage attribute or feature.
- Alteration that is not sympathetic, or is incompatible, with the historic fabric or appearance.

Indirect Impacts

- Shadows created that alter the appearance of a heritage attribute or change the visibility of a natural feature or plantings, such as a garden.
- Isolation of a heritage attribute from its surrounding environment, context or a significant relationship.
- Land disturbance such as a change in grade that alters historic patterns or topography or drainage.
- A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces.
- Obstruction of significant views or vistas from, within, or to a built and natural feature.

The Draft Project Description Report for the East Durham Wind Energy Centre (prepared by GENIVAR, February 2012) outlined the potential impact of the wind energy project on the cultural resources – archaeological, built and landscape.

Potential effects from the construction phase of the Project may include:

- Disturbance or displacement of archaeological resources which may be identified through a Stage 2 archaeological assessment by any below grade construction activity.
- Minimal visual effects to built heritage resources and cultural heritage landscapes due to construction activity; however, disturbance and displacement are not anticipated as the design of the wind energy centre will attempt to avoid any such features or landscapes.

Potential effects during the operation phase of the Project may include:

• Alteration of the visual character of a built heritage feature or cultural heritage landscape due to the presence of the turbines.

Potential effects during the decommissioning phase of the Project may include:

 Temporary visual effects on the built heritage resources and cultural heritage landscape due to the presence of cranes during the removal of turbines and ancillary electrical equipment.

(GENIVAR 2012:13).

For purposes of the heritage impact assessment for this project, the impact of the proposed development was assessed on each of the landscape features and built features that were deemed to have cultural heritage value or interest. The primary infrastructure elements are the turbines, the transmission lines, the meteorological towers and the electrical substation that will connect to the Hydro One distribution system. Where these infrastructure elements are on properties or adjacent to properties with built heritage or heritage landscapes, there was an assessment under the heading "Potential Impacts". If the heritage resources were not on or adjacent to the property the Potential Impact in the inventory showed simply as "none". In cases where the infrastructure was on the same property or on an adjacent property that were noted as having heritage resources, the potential impact was noted and also if any mitigation was being recommended under "Mitigation Recommended". The details are recorded in the inventories beginning on page 45.

8.2 Assessment of Impacts to Heritage Landscape Features

Figure 2b illustrates the location of the landscape features in relation to the proposed development – see the map #s relating to each of the landscape features. The impacts on the landscape features will be very limited. The locations of the turbines are a minimum of 500 metres away from any of the landscape features and the impact will be minimal. The access roads will not have any impact on the identified landscape features.

The McKechnie Cemetery (LF#9, Map# 174) is located on property adjacent to the proposed location of the laydown area and the second meteorological tower. Since the laydown area will only be in operation during the construction phase whatever impact it may have will not be direct and will only be short term assuming that the laydown area is returned to its present (or better) condition. The met tower will be located approximately 400 metres north of the closest part of the cemetery and will have little or no impact.

Because the collection lines will be buried, they will have no impact on the identified landscapes. In the event that new poles need to be erected to connect the substation with the Hydro One grid, the impact on the landscapes will be minimal, no more than is currently in place throughout the study area where utility poles are erected along the municipal roadways.

With the condition that the area being used as a laydown area adjacent to McKechnie Cemetery be returned to its current (or better) condition, there are no landscape features that will be significantly impacted by the development of the East Durham Wind Energy Centre.

8.3 Assessment of Impacts to Built Heritage Features

Figure 2b illustrates the location of the built features in relation to the proposed development – see the map #s relating to each of the built heritage features.

The impacts on the built heritage features will be very limited. The location of the turbines is a minimum of 400 metres away from any of the built features and in some cases substantially more. The access roads will not have any impact on the built heritage features.

The collection lines will be buried and will have no impact on the identified built heritage features. In the event that new poles need to be erected to connect the substation with the Hydro One grid, the impact on the features will be minimal, since they will only be erected on the municipal roadways and will have no more impact than those that are currently in place throughout the study area where utility poles are erected along the municipal roadways.

The impact of the proposed project on the identified built heritage features is insignificant. There are no built heritage features that will be impacted by the development of the East Durham Wind Energy Centre.

8.4 Summary Assessment of Direct and Indirect Impacts

The potential impacts outlined in InfoSheet #5 in Heritage Resources in the Land Use Planning Process, were examined in the context of this project.

Direct Impacts

- Destruction of any, or part of any, significant heritage attribute or feature.
 - No heritage features will be demolished
- Alteration that is not sympathetic, or is incompatible, with the historic fabric or appearance.
 - There will be no alteration of the historic fabric or appearance.

Indirect Impacts

 Shadows – created that alter the appearance of a heritage attribute or change the visibility of a natural feature or plantings, such as a garden.

- All features are more than 400 metres from the turbines; shadows are not anticipated as an indirect impact.
- Isolation of a heritage attribute from its surrounding environment, context or a significant relationship.
 - The installation of the turbines and the transmission lines from the substation will not isolate any heritage features.
- Land disturbance such as a change in grade that alters historic patterns or topography or drainage.
 - o There will be no changes to the historic patterns or topography.
- A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces.
 - Agriculture is the primary land use. This will not be changed, although some land (approximately 0.6 hectares per turbine) may be removed from agricultural use. This will be relatively insignificant in comparison with the land that has been taken out of agricultural use for other purposes, say for the construction of new homes.
- Obstruction of significant views or vistas from, within, or to a built and natural feature.
 - The inventory does not contain any significant views.

There will be short term reduction (not permanent) in the aesthetic qualities of the area during the construction and decommissioning phase. The operational phase will be long term and the major impact will be visual but this is subjective on the part of the viewer and not a formal part of this assessment. However, in this instance, because of the distance from the turbines, there was not considered to be any visual impact on the built features nor on the landscape features.

There are no potential impacts from the construction and decommissioning phase to the built or landscape feature that will be long term. There are no potential direct effects from the construction, operational or decommissioning phases to the built or landscape features. With the condition that the area being used as a laydown area be returned to its current (or better) condition, there are no landscape features that will be significantly impacted by the development of the East Durham Wind Energy Centre.

9.0 MITIGATION RECOMMENDATIONS

As per the Environmental Protection Act – O. Reg. 359/09 (Government of Ontario 2009:22), the heritage assessment must include an evaluation of any impact of the renewable energy project on any heritage resources which may exist at the project location or on any protected properties that abut the parcel of land on which the project is located. If impacts are identified, measures to avoid, eliminate or mitigate the impact must be proposed. This report recognizes how impacts can extend beyond the immediate area on which infrastructure is proposed and assesses the impact to heritage resources located on *all* abutting properties as well as on the participating properties.

In the case of the East Durham Wind Energy Centre, there is one recommendation. The area adjacent to McKechnie Cemetery will be used as a laydown area during the construction phase. In order to ensure that the cemetery's heritage values are preserved, it is recommended that the laydown area be returned to its present (or better) condition.

Other than the recommendation with respect to McKechnie Cemetery, there are no further recommendations with respect to the heritage impact assessment of the East Durham Wind Energy Centre.

10.0 IMPLEMENTATION AND MONITORING SCHEDULES

During the construction phase the area adjacent to McKechnie Cemetery will be used as a laydown area for the project. It has been recommended that the laydown area be returned to its present (or better) condition. The pre-construction and post-construction condition of the laydown area should be photographed by the proponent to record the condition and to ensure that there are no impacts to the cemetery.

The remaining elements of the project will have no impact on the historic values associated with the cultural heritage in the study area, and therefore, for those elements no implementation and monitoring schedule is required.

11.0 SUMMARY STATEMENT AND CONSERVATION RECOMMENDATIONS

The project is seeking a Renewable Energy Approval according to Ontario Regulation 359/09 issued under the Environmental Protection Act. Landscape and built features were evaluated using the criteria for determining cultural heritage value or interest, from the Ontario Heritage Act, Ontario Regulation 9/06. The Ontario Heritage Act, its Regulations and the Ontario Heritage Toolkit were consulted for this project, in addition to O. Reg. 359/09 of the Environmental Protection Act.

There are no properties or buildings designated as heritage properties/protected properties, nor are any properties within the project area currently recognized for their heritage or cultural value by the Municipality of West Grey, or the Ontario Heritage Trust. None of the properties are, or have ever been, on any heritage list.

As part of the assessment, 181 built features were considered, along with 28 landscape features. These features were assessed for potential cultural heritage value or interest. When the criteria in Regulation 9/06 of the Ontario Heritage Act are applied to the landscapes and built features found within the study area and along the transmission route, there were 42 structures and 7 landscapes that were evaluated as having cultural heritage value or interest.

The impacts on the landscape features will be very limited. The locations of the turbines are a minimum of 500 metres away from any of the landscape features and the impact will be minimal. The access roads will have some minimal impact on the landscape but not on any of the identified features. The transmission lines will be buried and will have no impact on the identified landscapes.

The McKechnie Cemetery is located on property adjacent to the proposed location of the laydown area and the second meteorological tower. Since the laydown area will only be in operation during the construction phase whatever impact it may have will not be direct and will only be short term assuming the area is returned to its present (or better) condition. Although the meteorological tower is located on the lot adjacent to the McKechnie Cemetery, it is sufficiently far from the cemetery that it will have little or no impact.

Except for the McKechnie Cemetery there are no landscape features that will be significantly impacted by the development of the East Durham Wind Energy Centre.

The impacts on the built heritage features will be very limited. The location of the turbines is a minimum of 400 metres away from any of the built features and in most cases substantially more. The impact will be minimal. The transmission lines will be buried and will have no impact on the identified built heritage features.

The impact of the proposed project on the identified built heritage features is insignificant. There are no built heritage features that will be impacted by the development of the East Durham Wind Energy Centre.

There is one mitigation recommendation for the East Durham Wind Energy Centre. During the construction phase the area adjacent to McKechnie Cemetery will be used as a laydown area for the project. It has been recommended that the laydown area be returned to its present (or better) condition. The pre-construction and post-construction condition of the laydown area should be photographed by the proponent to record the condition and to ensure that there are no impacts to the cemetery.

Other than the mitigation recommendation with respect to McKechnie Cemetery, there are no further recommendations with respect to the heritage impact assessment of the East Durham Wind Energy Centre.

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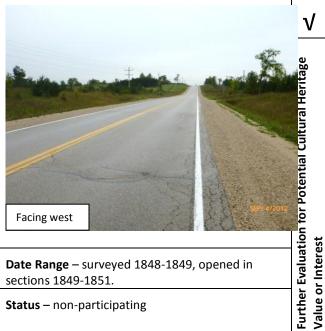
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INVENTORY A – LANDSCAPE FEATURES

LF#1 – Durham Road, now Grey Road 4, Map #216





Description - This roadscape, appears to have been cut through some hills in this area, 2 lane paved black top, wide gravel shoulders, moderate to deep ditches. See section 3.6 for historical information and section 3.7.1 for the Ontario Heritage Trust's plaque text.

Date Range - surveyed 1848-1849, opened in sections 1849-1851.

Status - non-participating

LF#1 – Durham Road, now Grey Road 4, Map #201





Description - hilly road with approximately 1.5 metre gravel shoulder, 2 lane paved black top, shallow ditch. Road follows across top of hills but has been cut into part of the hill in some areas.

LF#1 - Durham Road, now Grey Road 4, Map #202





Description – 2 lane pave blacktop with approximately 1.5 m gravel shoulder, shallow ditch, some berms on side of roads, rolling hill landscape in area of pasture and small treed areas.

Potential Cultural Heritage Value or Interest (O.Reg 9/06)

Design Value or Physical Value – none **Historical Value or Associative Value** – Directly associated with the mid-19th century colonization and settlement of Grey and Bruce Counties

Contextual Value – Closely linked to the development of the small 50 acre farm lots along the Durham road and the rural landscape of the Municipality of West Grey

Heritage Attributes – provides a view-point for the rural landscape of the Municipality of West Grey, original fifty acre lots increase the number and frequency of the rural houses along the road

Potential Impacts – transmission line uses the road allowance; turbines are located on adjacent lots but are more than 500 metres back from the road; no impact

Mitigation Recommended – none required

LF#2 – St. John Catholic Cemetery, 384256 Concession Road 4, Map #18



Description - St. John Catholic Cemetery is still an active cemetery. See section 3.5.5 for historical information.

Date Range – 1893 to present

Status - non-participating

Further Evaluation for Potential Cultural Heritage Value or Interest

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Potential Cultural Heritage Value or Interest (O.Reg 9/06)

Design Value or Physical Value – none Historical Value or Associative Value – Directly associated with the religious life of the Municipality of West Grey. Contributes to an understanding of the history, especially at the family or individual level, of the Municipality of West Grey.

Contextual Value - none

Heritage Attributes – original grave markers locate graves and provide historical information, relatively isolated and reflective nature of the property, direct association with St. John's Catholic Church, cemetery in continuous use since 1893

Potential Impacts - none

Mitigation Recommended – none required

LF#3 - Glenelg Heritage Road, Sideroad 40, north of Concession Road 4, Map #33



Description - This is a single lane dirt road with no shoulders or ditches. It has a covered arbor effect from the trees lining the sides of the road. This road runs north-south, parallel to and east of Grey Road 23. It is marked as Sideroad 40.

Potential Cultural Heritage Value or Interest (O.Reg 9/06)

Design Value or Physical Value – none
Historical Value or Associative Value - none
Contextual Value – Contributes to the romantic and picturesque notion of the rural landscape of the Municipality of West Grey



Date Range –

Status - non-participating

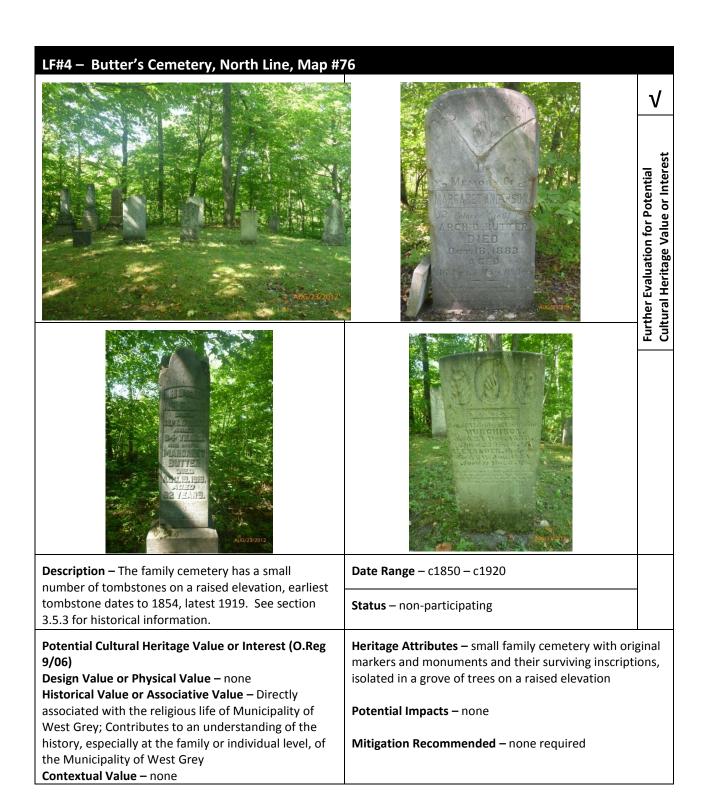
Heritage Attributes – narrow, tree-lined road with limited access and traffic

Potential Impacts - none

Mitigation Recommended – none required



Further Evaluation for Potential Cultural Heritage Value or Interest



LF#5 – Gravel Pit, 324088 The Glen Road, Map	#127				
		×			
AUG/23/2012		Further Evaluation for Potential Cultural Heritage Value or Interest			
Description – active gravel pit	Date Range	er Evali age Val			
	Status – non-participating	Furth			
LF#6 – Brock Aggregates, 324142 The Glen Road, Map #130					
LF#6 - Brock Aggregates, 324142 The Gien Ko	ad, Map #130				
LF#6 - Brock Aggregates, 324142 The Gleff Ro	ad, Map #130 Description	×			
No photos available					
		Further Evaluation for Potential Cultural X Heritage Value or Interest			

LF#7 - Smellie's Cemetery, corner of Grey Road 4 and County Road 23, Map #144



Description - This is a small cemetery with both tombstones of limestone and granite. See section 3.5.1 for historical information.

Potential Cultural Heritage Value or Interest (O.Reg 9/06)

Design Value or Physical Value – none Historical Value or Associative Value – Directly associated with the religious life of Municipality of West Grey; Contributes to an understanding of the history, especially at the family or individual level, of the Municipality of West Grey

Contextual Value - none



Date Range - 1859-1958

Status – non-participating

Heritage Attributes – small pioneer cemetery associated with the Presbyterian Church with original markers and monuments and their surviving inscriptions, closed but preserved and maintained by the community for more than 50 years

Potential Impacts – transmission line runs along lot boundary; turbine #6 is located on an adjacent lot, more than 500 metres from the cemetery; no impact

Mitigation Recommended – none required

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Further Evaluation for Potential Cultural Heritage Value or Inter<u>e</u>st

LF#8 - Ebenezer Cemetery, 303831 South Line	(Baptist Church Rd & South Line), Map #158	3
No photo available		Further Evaluation for Potential Cultural Heritage Value or Interest
Description - Ebenezer Cemetery is not visible from the roadway. The cemetery has 47 memorial stones with 107 names. There is also a pad with 9 displaced stones with 13 names. There is known to have been other burials that are not recorded. See section 3.5.4	Date Range – 1859 to 1973 Status – non-participating	Further Cultural
for historical information. Although not visible from the road allowance, historical information (see section 3.5.4) indicates - Potential Cultural Heritage Value or Interest (O.Reg 9/06) Design Value or Physical Value – none Historical Value or Associative Value – Directly associated with the religious life of Municipality of West Grey; Contributes to an understanding of the history, especially at the family or individual level, of the Municipality of West Grey Contextual Value – none	Heritage Attributes – unknown Potential Impacts – none Mitigation Recommended – none required	

LF#9 – McKechnie Cemetery, 404543 Grey Road 4, Map #174				
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AUS/23/2012		Further Evaluation for Potential Cultural Heritage Value or Interest		
Description – McKechnie Cemetery was established in 1889. It contains 27 stones with 64 names but there are others buried there that are unlisted. See section 3.5.2 for historical information.	Date Range – 1889 to 20 th Century	Furth		
	Status – non-participating			
Potential Cultural Heritage Value or Interest (O.Reg 9/06) Design Value or Physical Value – none Historical Value or Associative Value – Contributes to an understanding of the history, especially at the family or individual level, of the Municipality of West Grey Contextual Value – none	Heritage Attributes – small pioneer cemetery with original markers and monuments and their surviving inscriptions, commitment from the community to preserve and maintain the cemetery Potential Impacts – cemetery is adjacent to the laydown area which will be in use during construction phase; meteorological tower located 400 metres north of the cemetery Mitigation Recommended –the laydown area be returned to its current (or better) condition following the construction phase; no mitigation is sufficiently far from the cemetery (more than 400 metres) that no mitigation is needed			

LF#10, Boot Jack Ranch Road, Map #203		×
Facing south		Further Evaluation for Potential Cultural Heritage Value or Interest
Description - 2 lane gravel road with narrow	Date Range – surveyed c1850	her Ev tage V
shoulders and shallow ditch.	Status – non-participating	Furt
LF#11 – Boot Jack Ranch Road, Map #207		
		×
Facing south		Further Evaluation for Potential Cultural Heritage Value or Interest
Description - 2 lane gravel road with narrow	Date Range – surveyed c1850	er Eval ge Val
shoulders and shallow ditch on either side, treed on either side providing an aesthetic element to the roadscape.	Status – non-participating	Furthe Herita