Water Body Environmental Impact Study
Newboro 1 Solar Energy Project
Township of Rideau Lakes, Ontario

September 2012

Prepared for:
SunEdison
595 Adelaide Street, Suite 400
Toronto, Ontario, M5A 1N8

Prepared by:
GENIVAR Inc.
1091 Gorham Street, Suite 301
Newmarket, Ontario L3Y 8X7

Project No. 111-18739-00

Distribution:
1 c Client
1 c File

GENIVAR

Project No. 111-18739-00

September 12, 2012

Robert Miller, M.Sc., P.Eng.
Director of Development
SunEdison Canada
595 Adelaide Street, Suite 400
Toronto, Ontario
M5A 1N8

Re: Water Body Environmental Impact Study
Newboro 1 Solar Energy Project
Part of Lots 25, 26 and 27, Concession 1, South Crosby Ward
Township of Rideau Lakes, Leeds County, Ontario

Dear Mr. Miller:

GENIVAR Inc. (GENIVAR) is pleased to provide you with our Water Body Environmental Impact Study for the Newboro 1 Solar Energy Project described as Part of Lots 25, 26 and 27, Concession 1, South Crosby Ward, Township of Rideau Lakes, Leeds County, Ontario.

This report has been prepared in accordance with the requirements of an Environmental Impact Study (EIS) as outlined by Ontario Regulation 359/09 Renewable Energy Approvals made under the Environmental Protection Act (2009). This report identifies potential negative impacts relating to the form and function of a watercourse located within the Project Location. Mitigative measures to eliminate or reduce impacts on this feature throughout the course of the development are also provided.

Thank you for the opportunity to complete this assignment. Please contact the undersigned if you have any questions.

Yours truly,
GENIVAR Inc.

Dan J. Reeves, B.Sc., M.Sc.
Project Biologist

EAC:nah

1091 Gorham Street, Suite 301, Newmarket, Ontario L3Y 8X7
Telephone: 905-853-3303 • Fax: 905-853-1759 • www.genivar.com

Table of Contents

Transmittal Letter

1. INTRODUCTION 1
   1.1 Project Location 1
2. WATER BODY BACKGROUND INFORMATION 1
3. ENVIRONMENTAL IMPACT STUDY 2
   3.1 Water Body EIS Report 2
   3.2 Requirements of the EIS 2
   3.3 Assessment of Potential Impacts and Mitigative Measures 2
   3.4 Environmental Effects Monitoring Plan Overview 5
   3.5 Construction Plan Report Overview 5
4. CONCLUSIONS AND RECOMMENDATIONS 6
5. LIMITATIONS AND CLOSURE 6
6. LITERATURE CITED 8

List of Tables

Table 1 Water body potential negative effects and mitigation by development phase

List of Figures

Figure 1 Water Bodies and Watercourses

Appendices

Appendix A Agency Correspondence

1. Introduction

GENIVAR Inc. (GENIVAR) has been retained by SunEdison Canada (SunEdison) to prepare a Water Body Environmental Impact Study as part of the Renewable Energy Approvals (REA) process for the proposed Newboro 1 Solar Energy Project; herein referred to as the "Project Location". The report has been prepared in accordance with Ontario Regulation (O.Reg.) 359/09 Renewable Energy Approvals made under Part V.0.1 of the Environmental Protection Act (Government of Ontario (Ontario), 2009); herein referred to as the "REA Regulation". As stated in Sections 37 and 38 of the REA Regulation an Environmental Impact Study (EIS) must be prepared for all significant natural heritage features and water features on or within 120 m of the Project Location.

1.1 Project Location

The Project Location is approximately 351 acres (142 ha) in size and can be described as Part of Lots 25, 26 and 27, Concession 1, South Crosby Ward, Township of Rideau Lakes, Leeds Country, Ontario. It is located approximately five (5) km east of the Village of Newboro and 40 km north of the Town of Gananoque. Abandoned agricultural fields dominate the Project Location, although recently logged woodlands exist to the north and east. County Road 14, also known as Narrows Lock Road, borders the Project Location to the southwest while a hydro corridor borders it to the south. A single intermittent watercourse has been identified in the western half of the Project Location. Refer to Figure 1 for site location information.

2. Water Body Background Information

A review of background information performed by GENIVAR as part of the Water Body Records Review (2012a) identified the presence of one watercourse within the Project Location. The unnamed watercourse runs roughly 500 m from the centre of the property southwest to Narrows Lock Road where it follows a meandering path west and south across farm and woodlands until it outlets into Newboro Lake approximately three (3) km southwest of the Project Location. This watercourse falls under the jurisdiction of two conservation authorities. The watercourse begins on land under the jurisdiction of the Rideau Valley Conservation Authority (RVCA), and ultimately drains into Newboro Lake, over which the Cataraqui Region Conservation Authority has jurisdiction. The Cataraqui Region Conservation Authority (CRCA) confirmed that the watercourse does not provide fish habitat but is regulated for its hydraulic function (T. Beaubiah pers. comm. April 11, 2012; refer to Appendix A).

A Water Body Site Investigation was conducted by Ecological Services during the 2011 field season. The following details have been drawn from the Water Body Site Investigation report (Ecological Services, 2012). Field visits were conducted on June 17, July 8, December 6 and December 8, 2011. Field observations made by Ecological Services (2012) suggest that the unnamed watercourse originates near the centre of Lot 26, approximately 160 m from the boundary of the Project Location. The watercourse appeared to be a farm drain that had been dug to facilitate drainage on the agricultural fields to the north and south. Land surrounding the watercourse was described as abandoned agricultural land. At the time of the site visits, the watercourse appeared to be dry and heavily overgrown with reed canary grass and it was assessed that the watercourse does not provide suitable habitat for fish (Ecological Services, 2012).

3. Environmental Impact Study

3.1 Water Body EIS Report

This report provides an assessment of the potential for negative impacts to the unnamed intermittent watercourse in the Project Location, as well as recommendations for mitigation measures to avoid, reduce or eliminate impacts of the proposed development.

3.2 Requirements of the EIS

Section 40 (1) of the REA Regulation, which specifies prohibitions associated with water bodies, prohibits the construction, installation or expansion of a renewable energy project, or part thereof, within the following locations:

- within 120 metres of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity;
- within 300 metres of the average annual high water mark of a lake trout lake that is at or above development capacity;
- within 120 metres of the average annual high water mark of a permanent or intermittent stream; and/or,
- within 120 metres of a seepage area.

Should one of these water bodies exist within 120 m of the Project Location, an EIS report must be prepared, which:

- identifies and assesses any negative environmental effects of the project on each water body and land within 30 metres of each water body;
- identifies appropriate mitigation measures to avoid, reduce or eliminate any negative environmental effects on each water body;
- describes how the environmental effects monitoring plan set out in the Design and Operations Report addresses any negative environmental effects; and
- describes how the Construction Plan Report addresses any negative environmental effects.

As identified in the Water Body Records Review (GENIVAR, 2012a) and the Water Body Site Investigation Report (Ecological Services, 2012), the Project Location overlaps with the average annual high water mark of a permanent or intermittent stream.

3.3 Assessment of Potential Impacts and Mitigative Measures

According to the requirements outlined within O.Reg 359/09, Section 38, an Environmental Impact Study (EIS) is required prior to approval of this project. The purpose of an EIS is to identify the presence of natural heritage features and water bodies on or adjacent to the proposed development, and to identify potential impacts relating to the loss of ecological form or function of these features. Mitigative measures to eliminate or reduce impacts on identified natural heritage features or functions must then be developed.

This report has been prepared to address the requirements for the construction of the proposed Newboro 1 Solar Energy Project within 120 m of an unnamed intermittent watercourse. This watercourse runs roughly 500 m from the centre of the property southwest to Narrows Lock Road and eventually outlets into Newboro Lake approximately three (3) km southwest of the Project Location. Although the watercourse was dry at the time of the site investigation, it may convey water at certain times of the year. The presence of hydrophilic vegetation (Reed Canary Grass) suggests the soils are moist, but due to the absence of standing water for most of the year, the watercourse does not constitute fish habitat. Given the limited ecological value of this watercourse, the CRCA has confirmed that it is regulated for its hydraulic function only (T. Beaubiah pers. comm. April 11, 2012; refer to Appendix A)

Potential impacts to the hydrological form and function of the unnamed intermittent watercourse are most likely to occur during the construction and decommissioning phases of the project. During the construction phase, impacts may arise due to vegetation removal, grubbing and grading, and resulting changes to surface water drainage, increased sedimentation, erosion and dust generation. Potential impacts to water features associated with the construction, operation and decommissioning phases of the project are outlined in detail within Table 1 along with standard mitigative measures.

The watercourse currently functions as a drainage ditch. Based on the information from the Water Body Site Investigation report (Ecological Services, 2012), the function of this watercourse is likely to divert spring runoff from agricultural fields, as there was no water observed during site visits in the summer and winter.

Table 1 Water body potential negative effects and mitigation by development phase

Activity	Potential Physical Impact	Potential Impact on Water Body Form and/or Function	Potential Mitigation Measures
Construction Phase			
Road construction, land grading, ditching and land clearing	Changes in surface water run-off, natural drainage and altered stream flow due to grading changes and soil compaction	- alterations to water body hydrology and geomorphology	- maintain a minimum 15 m vegetated buffer from waterbodies; enhance vegetation within buffer zone where deficient (use native species) - minimize changes to land contours and natural drainage through appropriate rehabilitation following construction operations
Land clearing and vegetation removal	Increased erosion, sedimentation and turbidity due to exposed soil and/or generation of dust and particulate matter	- alterations to surface water quality - decreased photosynthesis and loss of productivity	- minimize area of disturbance on the construction site - implement an erosion and sedimentation control plan - minimize dust generation through standard best management practices

Activity	Potential Physical Impact	Potential Impact on Water Body Form and/or Function	Potential Mitigation Measures
Accidental fuel spills	Surface water and groundwater contamination due to fuel and/or chemical spills	- lethal or sublethal toxic effects on aquatic, wetland and terrestrial biota	- ensure site plan comments incorporate a designated area for equipment maintenance and fuelling -storage of fuel should not be permitted on-site - maintain an emergency spill kit on site in case of emergency
Operations Phase			
Long-term changes to surface water drainage	Increased area of impervious or less pervious surfaces	- changes in surface water run-off are expected to be negligible	- no mitigation required
Routine maintenance activities	No physical impacts with the potential for adverse effects are anticipated	- no adverse effects on surface water features are anticipated	- no mitigation required
Decommissioning Phase			
Removal of panels and land grading	Increased erosion, sedimentation and turbidity due to exposed soil and/or generation of dust and particulate matter	- alterations to surface water quality - decreased photosynthesis and loss of productivity	- minimize area of disturbance and period soils are exposed - implement an erosion and sedimentation control plan - minimize dust generation through standard best management practices
Accidental fuel spills	Surface water and groundwater contamination due to fuel and/or chemical spills	- lethal or sublethal toxic effects on aquatic life - changes in aquatic species composition and wetland and riparian plant communities	- ensure the site plan incorporates a designated area for equipment maintenance and fuelling -storage of fuel should not be permitted on-site - maintain an emergency spill kit on site in case of emergency

The OMNR recommends the establishment and/or retention of natural vegetated cover for the protection of surface water features. Recommended buffer widths range from 15 m to 30 m depending on the proposed development and the nature of the ecological system in question (OMNR, 2010). The Township of Rideau Lakes Official Plan prohibits development within 30 m of a water feature providing fish habitat (Township of Rideau Lakes, 2004) while, O.Reg. 148/06 (Ontario, 2006) under the Conservation Authority Act (1990) specifies a 15 m setback from river or stream valleys within the jurisdiction of the Cataraqui Region Conservation Authority. In some cases, the CRCA may approve a 5 m buffer from the floodplain boundary, provided the floodplain is delineated by the proponent (T. Beaubiah pers. comm. April 11, 2012; refer to Appendix A).

According to the existing design footprint, approximately 15 m exists between the fence line and the watercourse and 20 m between the watercourse and the development footprint (refer to Figure 1), thereby satisfying the minimum 15 m setback required by the CRCA. In order to ensure that the form and function of this surface water feature is not negatively impacted by the proposed development, the following detailed mitigation measures are recommended:

- Temporary siltation fencing should be utilized during the construction and decommissioning phases of the project between the areas of proposed development and the watercourse to reduce or eliminate the transport of sediments, nutrients, contaminants, and increased turbidity within the feature. Siltation fencing should be installed before any work on the Project Location begins, and removed after the threat of siltation effects has ceased. The siltation fencing should be checked periodically during the construction and decommissioning phases to ensure it remains in good condition.

- A naturally vegetated buffer should be established or maintained between the proposed development and the watercourse to reduce or eliminate increased turbidity due to the transport of sediments, nutrients and contaminants into this feature. Buffer zones could be enhanced through plantings to ensure that changes to surface water run-off, water temperature and overall productivity are minimized. Appropriate native plants should be used in conjunction with existing habitat.

- If removal of vegetation within the vicinity of the unnamed watercourse is necessary, it should be conducted when the channel is dry, thereby reducing the potential for increased erosion and sediment transport into the watercourse.

- Grading activities should aim to minimize changes in land contours and natural drainage in order to reduce the potential for changes to hydrological patterns.

- The Construction Plan Report (GENIVAR, 2012b) should identify control measures for appropriate equipment maintenance and fuelling during the construction and decommissioning phases of the project. Storage of fuel should not be permitted on-site. Emergency spill kits should be maintained on-site in case of emergency.

3.4 Environmental Effects Monitoring Plan Overview

The Draft Design and Operations Report (GENIVAR, 2012c) outlines the mitigation measures and environmental monitoring associated with potential negative impacts of the proposed development. As per the REA Regulation, this Environmental Effects Monitoring Plan identifies:

- performance objectives in respect of negative environmental effects;
- mitigation measures to assist in achieving the performance objectives; and
- a program for monitoring negative environmental effects for the duration of the project which includes a contingency plan in the event specified mitigation measures fail.

The Environmental Effects Monitoring Plan outlined within the Draft Design and Operations Report (GENIVAR, 2012c) will facilitate the identification of any problems with the existing mitigation measures and their effectiveness in meeting the specified performance objectives. In the event that routine monitoring indicates performance objectives are not being met, the contingency measures will be adopted to ensure actions are taken to meet the performance objectives.

3.5 Construction Plan Report Overview

The REA Regulation requires proponents of Class 3 solar projects to prepare a Construction Plan Report which outlines:

- details of the construction and installation activities;
- the location and timing of any construction or installation activities;
- any negative environmental effects that may result from the construction or installation activities; and
- mitigation measures in respect of any negative environmental effects.

A Draft Construction Plan Report has been prepared by GENIVAR (2012b). Mitigation measures outlined within the Construction Plan Report are the same as those discussed within this EIS. The Construction Plan Report and all EIS documents should be read in conjunction with each other to ensure that all necessary measures are taken to reduce impacts to water bodies, and other natural heritage features and socio-economic considerations not discussed within this report.

4. Conclusions and Recommendations

The following conclusions and recommendations are provided based on the findings presented in this report:

- An unnamed intermittent watercourse exists within the northwest quadrant of the Project Location. This watercourse appears to be a man-made farm drain dug to facilitate drainage on the adjacent fields. This watercourse is approximately 15 m from the fence and 20 m from the development footprint (refer to Figure 1). Based on a review of available information, consultation with regulating agencies and results of a site investigation (Ecological Services, 2012), this watercourse does not provide fish habitat and is thought to provide little ecological value. This watercourse is under the jurisdiction of the Cataraqui Region Conservation Authority (CRCA) and is regulated for its hydraulic function.

- As outlined within the Draft Design and Operations Report (GENIVAR, 2012c) there are no development activities scheduled within 15 m of the unnamed watercourse, thereby satisfying the regulatory requirements outlined by the CRCA.

- Mitigation measures identified under Section 3.3 of this report should be reviewed and appropriately implemented.

5. Limitations and Closure

This report has been prepared by GENIVAR Inc. The assessment and recommendations within are based solely on the information referenced and contained within the report. GENIVAR does not assume responsibility for the accuracy of material presented within the information sources used in the preparation of this report. GENIVAR has not been to the Project Location, and was not involved in any of the field components of this study. While we have outlined the best management practices for dealing with surface water features within the area of influence of a solar energy project, we cannot conclude unequivocally that there will be no negative impact to the ecological form or function of these features.

Thank you for the opportunity to complete this report. We trust that this information is satisfactory for your current requirements. Please contact us if we can be of further assistance.

Report Prepared by:
GENIVAR Inc.

Erin Corstorphine, M.Sc.
Biologist

Reviewed by:

Dan Reeves, M.Sc.
Project Biologist

6. Literature Cited

Ecological Services. 2012. Draft Water Body Site Investigation Report: SunEdison Newboro 1 Solar Energy Project.

GENIVAR Inc. 2012a. Water Body Records Review: Newboro 1 Solar Energy Project.

GENIVAR Inc. 2012b. SunE Newboro 1 Solar Farm Draft Construction Plan Report.

GENIVAR Inc. 2012c. SunE Newboro 1 Solar Farm Draft Design and Operations Report.

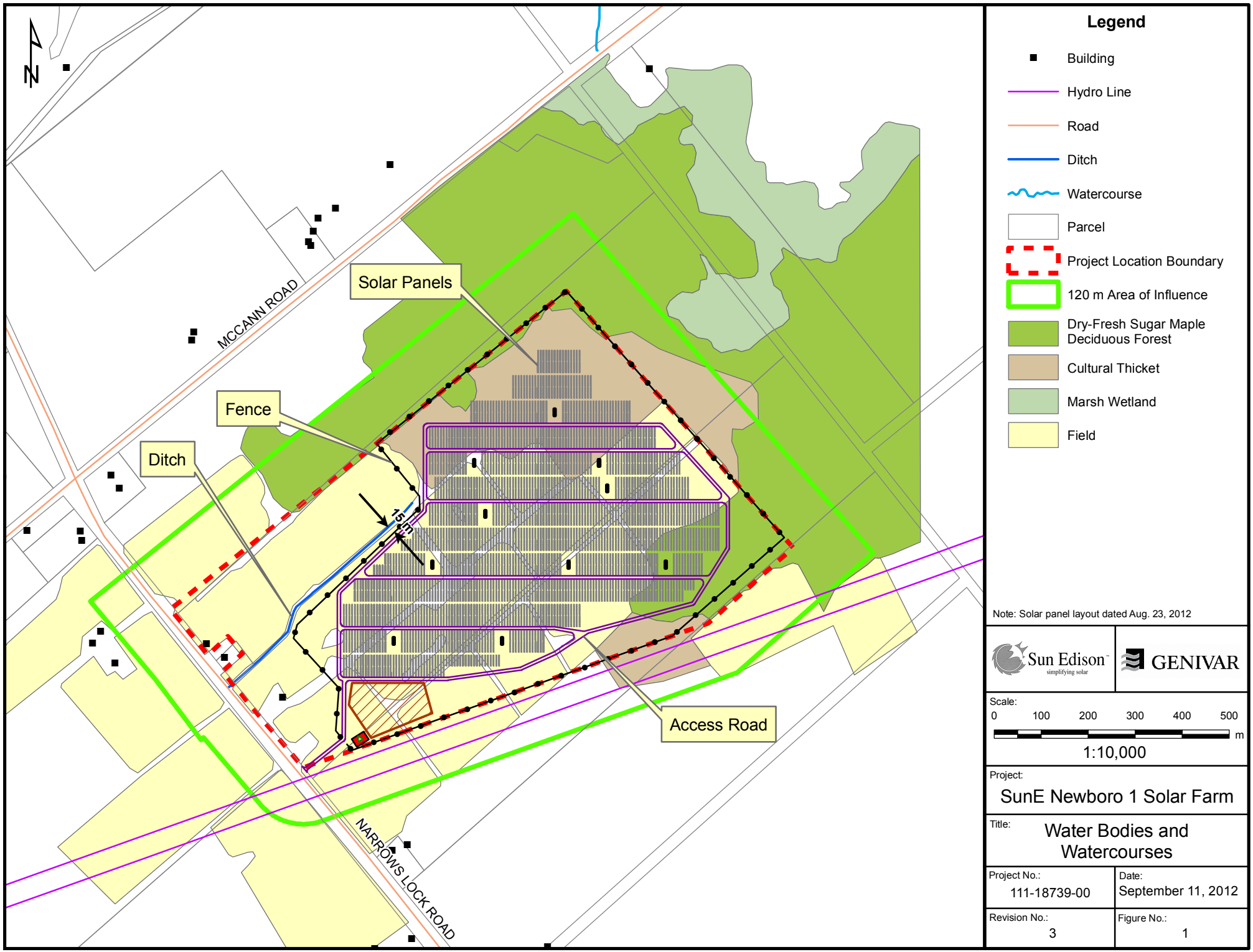
Government of Ontario (Ontario). 2009. Ontario Regulation (O.Reg.) 359/09. Renewable Energy Approvals under Part V.0.1 of the Environmental Protection Act. Available online: http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_090359_e.htm#BK53.

Government of Ontario (Ontario). 2006. Ontario Regulation (O.Reg.) 174/06: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation. Available online: http://www.e-laws.gov.on.ca/html/source/regs/english/2006/elaws_src_regs_r06174_e.htm.

Ontario Ministry of Natural Resources. 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement. Second Edition. Queens Printer for Ontario.

Township of Rideau Lakes. 2004. Township of Rideau Lakes Official Plan. Available online: http://www.twprideaulakes.on.ca/development/official-plan-2004.html.

Figures


N
MCCANN ROAD
Solar Panels
Fence
Ditch
15 m
Access Road
NARROWS LOCK ROAD
Legend
Building
Hydro Line
Road
Ditch
Watercourse
Parcel
Project Location Boundary
120 m Area of Influence
Dry-Fresh Sugar Maple Deciduous Forest
Cultural Thicket
Marsh Wetland
Field
Note: Solar panel layout dated Aug. 23, 2012
Sun Edison
simplifying solar
GENIVAR
Scale:
0 100 200 300 400 500
m
1:10,000
Project:
SunE Newboro 1 Solar Farm
Title:
Water Bodies and Watercourses
Project No.:
111-18739-00
Date:
September 11, 2012
Revision No.:
3
Figure No.:
1

Appendices

Appendix A

Agency Correspondence

Erin Corstorphine

From: Jaclyn Rodo
Sent: Friday, September 16, 2011 8:33 AM
To: Erin Corstorphine
Subject: FW: Re: Newboro 1 - Proposed Solar Farm

Erin,

I figure you may want to keep this email on file regarding the Newboro 1 solar farm. This property falls within both the Cataraqui Region and Rideau Lakes CA's jurisdiction so I emailed both authorities with the same request.
Below is the CRCA's response.

Thanks,
Jaclyn

From: Christie MacIsaac [mailto:macisaac@cataraquiregion.on.ca]
Sent: Thursday, September 15, 2011 11:16 AM
To: Jaclyn Rodo
Cc: beaubiah@cataraquiregion.on.ca
Subject: RE: Re: Newboro 1 - Proposed Solar Farm

Hi Jaclyn,

I have reviewed our watershed map for this property – and it appears that the majority of this property is in RVCA's jurisdiction. The minute portion that is within our jurisdiction consists of fields and 'wooded areas' in the south east corner – nothing that our regulation would cover. We suggest that RVCA holds most of the information that you require for the purposes of information gathering for this project. We will not require review of the project.

Thank you,

Christie

Christie MacIsaac
Environmental Planner
Cataraqui Region Conservation Authority
Tel: 613-546-4228 ext. 236
Fax: 613-547-6474
macisaac@cataraquiregion.on.ca
www.cataraquiregion.on.ca

From: Sukriti Agarwal [mailto:sagarwal@cataraquiregion.on.ca]
Sent: Thursday, September 15, 2011 10:40 AM
To: 'Christie MacIsaac'
Subject: FW: Re: Newboro 1 - Proposed Solar Farm

From: Jaclyn Rodo [mailto:Jaclyn.Rodo@genivar.com]
Sent: Thursday, September 15, 2011 10:24 AM
To: kellie.adams@rvca.ca; jennifer.lamoureux@rvca.ca; sagarwal@cataraquiregion.on.ca; beaubiah@cataraquiregion.on.ca
Subject: FW: Re: Newboro 1 - Proposed Solar Farm

Hello,

We are currently trying to compile information pertaining to a proposed solar farm development located on Part of Lots 26, 27, and 28, Concession 1 within the Township of Rideau Lakes (South Crosby Ward). Interestingly, the property falls within both the Cataraqui and Rideau Lakes CA jurisdiction, so I'm passing this email to both authorities.

I have attached a figure to better assist in locating the property of interest. We are seeking information pertaining to development constraints located on-site, including the wetland, Significant Forest (?), as well as the small watercourse which exists east of the site.
Do you have any records of species at risk on or within the vicinity of the project area?

In regards to the watercourse on-site, we have been provided with minimal information thus far. Are you able to provide us with the name, species present, key spawning or habitat areas and any other crucial information we should be aware of.

If you could provide a map outlining the "adjacent lands" for these features and / or hazard lands, that would be great.

I appreciate your assistance!

Thanks,

GENIVAR

Jaclyn Rodo, B.Sc. | Biologist
GENIVAR | *Constructive people*
294 Rink Street Suite 103, Peterborough, ON K9J 2K2
T 705-743-6850 | F 705-743-6854 | www.genivar.com
C 705-991-1881

CONFIDENTIALITY WARNING:
This message is intended only for the use of the individual or entity to which it is addressed, and may contain information which is privileged, confidential, proprietary or exempt from disclosure under applicable law. If you are not the intended recipient or the person responsible for delivering the message to the intended recipient, you are strictly prohibited from disclosing, distributing, copying or in any way using this message. If you have received this communication in error, please notify the sender, and destroy and delete any copies you may have received.

AVERTISSEMENT:
Ce message est destiné uniquement à la personne ou à l'organisation à laquelle il est adressé et il peut contenir des informations privilégiées, confidentielles ou non divulgables en vertu de la loi. Si vous n'êtes pas le destinataire du présent message ni la personne chargée de remettre le présent message à son destinataire, il vous est strictement interdit de le divulguer, de le distribuer, de le copier ou de l'utiliser de quelque façon que ce soit. Si vous avez reçu la présente communication par erreur, veuillez en aviser l'expéditeur et détruire ou effacer tous les exemplaires que vous avez reçus.

Erin Corstorphine

From: Jaclyn Rodo
Sent: Friday, September 16, 2011 8:26 AM
To: Erin Corstorphine
Cc: Terence Rasmussen
Subject: FW: Re: Newboro 1 - Proposed Solar Farm (Lots 25 - 27, Conc 1, South Crosby - now Rideau Lakes Twp.
Attachments: Lots 25, 26 & 27, Conc 1, S.Crosby.pdf; Newboro 1 Figure 1.pdf

Erin,

Please see RVCA's response (below) regarding the proposed Newboro 1 solar farm.

Jaclyn

From: Kellie Adams [mailto:kellie.adams@rvca.ca]
Sent: Thursday, September 15, 2011 4:08 PM
To: Jaclyn Rodo
Cc: Jennifer Lamoureux; Kellie Adams
Subject: FW: Re: Newboro 1 - Proposed Solar Farm (Lots 25 - 27, Conc 1, South Crosby - now Rideau Lakes Twp.

Good Afternoon Jaclyn,

Please find attached the RVCA's regulation limit map. It would appear that the property in question (Lots 25, 26 & 27, Conc 1, S.Crosby) is not within a regulated limit or flood plain area and therefore from a regulations perspective written approval would not be required.

This being said however, please note that if there are any watercourses on the property or within the 120 metre buffer that you have identified on your Natural Heritage Features map, the Authority would require appropriate development setbacks and that any alteration to a waterway including shoreline work and crossing structures requires written approval from the Conservation Authority.

Please note that I have also been in contact with the Authority's Planner and Biologist who had the following comments to offer.

The Conservation Authority does not have any fish and fish habitat information for the tributary watercourse at this time. The area in question does likely have fish habitat, however this would have to be assessed in the Spring. We strongly recommend that prior to completing a fish and fish habitat assessment that you contact our Aquatic Biologist, Jennifer Lamoureux so that she can determine study requirements based on potential impacts from the proposed project.

Regards, Kellie

Kellie Jennifer Adams, Resource Specialist
Rideau Valley Conservation Authority/LRC
Box 599, 3889 Rideau Valley Drive, North
Manotick ON K4M 1A5
613-692-3571 ext. 1128
Fax: 613-692-0831
E-MAIL: kellie.adams@rvca.ca

WEBSITE: www.rvca.ca

Please consider the environment before printing this e-mail.

This message is directed in confidence solely to the person(s) named above and may contain privileged, confidential or private information which is not to be disclosed. If you are not the addressee or an authorized representative thereof, please contact the undersigned and then destroy this message.

Ce message est destine uniquement aux personnes indiquees dans l'entete et peut contenir une information privilegiee, confidentielle ou privee et ne pouvant etre divulguee. Si vous n'etes pas le destinataire de ce message ou une personne utorisee le recevoir, veuillez communiquer avec le soussigne et ensuite detruire ce message.

From: Jaclyn Rodo [mailto:Jaclyn.Rodo@genivar.com]
Sent: Thursday, September 15, 2011 10:24 AM
To: Kellie Adams; Jennifer Lamoureux; sagarwal@cataraquiregion.on.ca; beaubiah@cataraquiregion.on.ca
Subject: FW: Re: Newboro 1 - Proposed Solar Farm

Hello,

We are currently trying to compile information pertaining to a proposed solar farm development located on Part of Lots 26, 27, and 28, Concession 1 within the Township of Rideau Lakes (South Crosby Ward). Interestingly, the property falls within both the Cataraqui and Rideau Lakes CA jurisdiction, so I'm passing this email to both authorities.

I have attached a figure to better assist in locating the property of interest. We are seeking information pertaining to development constraints located on-site, including the wetland, Significant Forest (?), as well as the small watercourse which exists east of the site.
Do you have any records of species at risk on or within the vicinity of the project area?

In regards to the watercourse on-site, we have been provided with minimal information thus far. Are you able to provide us with the name, species present, key spawning or habitat areas and any other crucial information we should be aware of.

If you could provide a map outlining the "adjacent lands" for these features and / or hazard lands, that would be great.

I appreciate your assistance!

Thanks,

GENIVAR

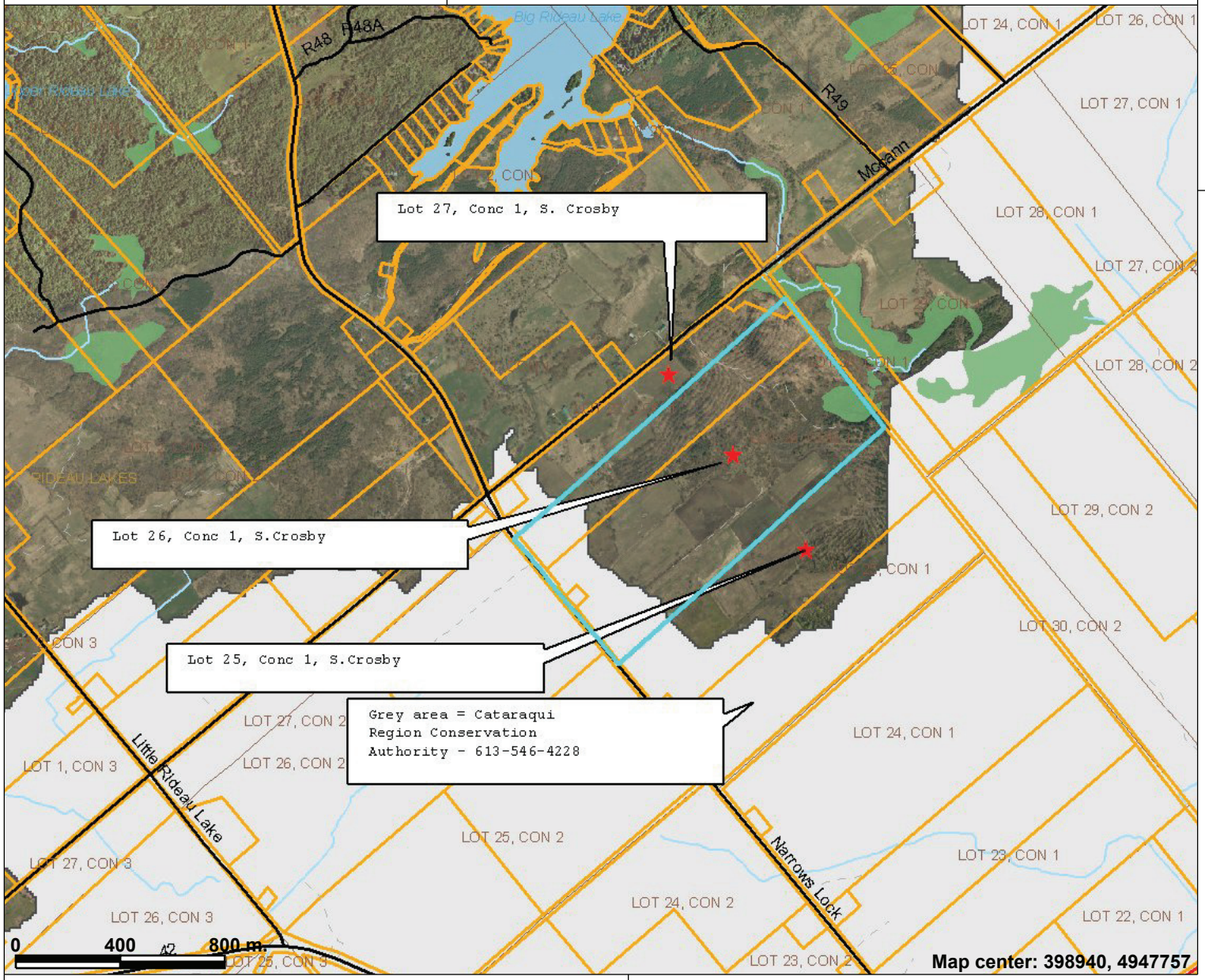
Jaclyn Rodo, B.Sc. | Biologist
GENIVAR | *Constructive people*
294 Rink Street Suite 103, Peterborough, ON K9J 2K2
T 705-743-6850 | F 705-743-6854 | www.genivar.com
C 705-991-1881

CONFIDENTIALITY WARNING:
This message is intended only for the use of the individual or entity to which it is addressed, and may contain information which is privileged, confidential, proprietary or exempt from disclosure under applicable law. If you are not the intended recipient or the person responsible for delivering the message to the intended recipient, you are strictly prohibited from disclosing, distributing, copying or in any way using this message. If you have received this communication in error, please notify the sender, and destroy and delete any copies you may have received.

AVERTISSEMENT:
Ce message est destiné uniquement à la personne ou à l'organisation à laquelle il est adressé et il peut contenir des informations privilégiées, confidentielles ou

non divulgables en vertu de la loi. Si vous n'êtes pas le destinataire du présent message ni la personne chargée de remettre le présent message à son destinataire, il vous est strictement interdit de le divulguer, de le distribuer, de le copier ou de l'utiliser de quelque façon que ce soit. Si vous avez reçu la présente communication par erreur, veuillez en aviser l'expéditeur et détruire ou effacer tous les exemplaires que vous avez reçus.

Lots 25, 26 & 27, Conc 1, S.Crosby



Legend

Drain Classification

DrainClass

- A
- B
- C
- D
- E
- F
- Abandoned
- Buried
- Not Rated
- Tile
- Regulation Limit
- 100yr Floodline
- Provincially Significant Wetland + 120m
- 100yr Floodline + 15m
- Top of Slope + 15m
- Stable Slope Allowance (where toe of slope is less than 15m from waters edge) + 15m
- Stable Slope Allowance (where toe of slope is greater than 15m from waters edge) + 15m

Evaluated Wetlands

WTLNDSIGCD

- Provincially Significant
- Other

- Freeway
- Expressway / Highway
- Collector
- Local / Street
- Private/Rural
- Ramp
- Rapid Transit
- Service
- Parcel - Assesment
- Municipal Boundary
- Lot
- Intermittent Stream
- Permanent Stream
- Seasonal Lake or River
- Permanent Lake or River
- Permanent Wetland
- RVCA Sub-Watersheds
- Other CA

N

Scale: 1:22,883

geocortex INTERNET MAPPING

Map produced by RVCA, under License with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2008. This map is the property of the RVCA, and the RVCA holds a copyright on them. These maps may be copied or reproduced, provided that the RVCA is properly acknowledged as the original source of the information and provided that no fee is charged (other than to cover handling charges). The RVCA cannot guarantee the accuracy of the mapping for all possible uses. End-users of the information contained herein must therefore determine if the information is of suitable accuracy for their purposes.

Erin Corstorphine

Subject: FW: Newboro 1 Solar Power Project - Unnamed watercourse

---

From: James Dennis
Sent: Monday, March 19, 2012 10:43 AM
To: Dan Reeves; Erin Corstorphine
Subject: FW: Newboro 1 Solar Power Project - Unnamed watercourse

---

From: Jason Messenger [mailto:jmessenger@cataraquiregion.on.ca]
Sent: Monday, March 19, 2012 10:47 AM
To: James Dennis
Subject: RE: Newboro 1 Solar Power Project - Unnamed watercourse

James,

Based on the information provided – Project: SunE Newboro 1 Solar Farm, No. 111-18739-00, Titled: Water Bodies and Watercourses, Dated: March 14, 2012, Figure No. 1 – the majority of the proposal is outside of the review area of the Cataraqui Region Conservation Authority. It appears that a small area in the northwest corner is within the review area of the CRCA, but no features trigger the jurisdiction of Ontario Regulation 148/06 in this location. Based on the site plan no permits from this office under Ontario Regulation 148/06 are required.

The majority of the subject lands are under the review of the Rideau Valley Conservation Authority and would be subject to their regulations. Please contact the RVCA to discuss their requirements.

If you have any other questions or concerns please do not hesitate to get in touch.

Thank you,

Jason Messenger
Development Technician

Cataraqui Region Conservation Authority
PO Box 160, 1641 Perth Road
Glenburnie, ON K0H 1S0
Phone: (613) 546-4228 ext 286
Toll Free: (877)956-2722
Fax: (613) 547-6474
www.cataraquiregion.on.ca

From: James Dennis [mailto:James.Dennis@genivar.com]
Sent: March-19-12 10:05 AM
To: jmessenger@cataraquiregion.on.ca
Cc: Erin Corstorphine; Dan Reeves
Subject: Newboro 1 Solar Power Project - Unnamed watercourse

Hi Jason,

Thanks for the call this morning.

Further to our conversation, I've forwarded a figure of the property that shows the watercourse that was identified in site visits (I will send pictures in another email).

The primary concern of our inquiry is the amount of buffer space the watercourse should be provided. In the figure, you will see that there is currently approximately 9 m between the development footprint and the top of bank. If the watercourse is covered under the CRCA regulation 148/06, how big should the buffer be? Notwithstanding the regulation status of the watercourse, is the CRCA satisfied with providing a 9 m buffer to the watercourse, or should the buffer be larger (and if so, what is the minimum distance the development footprint should be from the top of bank?)?

Thanks for your help.

Sincerely,

GENIVAR
James Dennis, M.Sc.F.
Biologist
GENIVAR | *Constructive people – Des gens constructifs*
1091 Gorham Street, Newmarket, ON L3Y 8K7
T 905-853-3303 ext. 231 | C 416-526-8101 | F 905-853-1759 | www.genivar.com
Please consider the environment before printing!
Avant d'imprimer, pensez à l'environment!

CONFIDENTIALITY WARNING:
This message is intended only for the use of the individual or entity to which it is addressed, and may contain information which is privileged, confidential, proprietary or exempt from disclosure under applicable law. If you are not the intended recipient or the person responsible for delivering the message to the intended recipient, you are strictly prohibited from disclosing, distributing, copying or in any way using this message. If you have received this communication in error, please notify the sender, and destroy and delete any copies you may have received.

AVERTISSEMENT:
Ce message est destiné uniquement à la personne ou à l'organisation à laquelle il est adressé et il peut contenir des informations privilégiées, confidentielles ou non divulgables en vertu de la loi. Si vous n'êtes pas le destinataire du présent message ni la personne chargée de remettre le présent message à son destinataire, il vous est strictement interdit de le divulguer, de le distribuer, de le copier ou de l'utiliser de quelque façon que ce soit. Si vous avez reçu la présente communication par erreur, veuillez en aviser l'expéditeur et détruire ou effacer tous les exemplaires que vous avez reçus.

Erin Corstorphine

From: Jennifer Lamoureux [jennifer.lamoureux@rvca.ca]
Sent: Monday, March 26, 2012 1:23 PM
To: Erin Corstorphine
Subject: RE: KP-10-710 - Proposed Newboro Solar Farm Site

The watercourse straddles the border between RVCA and CRCA. It appears to flow towards the CRCA so that is why I thought it was within their jurisdiction. I am not sure if we have more detailed flow data in that location I can check.

Jennifer Lamoureux
Aquatic and Fish Habitat Biologist
Rideau Valley Conservation Authority
3889 Rideau Valley Drive Box 599
Phone 613-692-3571 Ext 1108
Fax 613-692-0831
jennifer.lamoureux@rvca.ca
www.rvca.ca

From: Erin Corstorphine [mailto:Erin.Corstorphine@genivar.com]
Sent: Monday, March 26, 2012 1:19 PM
To: Jennifer Lamoureux
Subject: RE: KP-10-710 - Proposed Newboro Solar Farm Site

Hi Jennifer,

Thanks for this. We contacted CRCA initially but they told us to contact RVCA. We have been in touch with both Christine MacIsaac and Jason Messenger. Jason acknowledged that the northwest corner of the Project Location falls within the review area of CRCA, but "no features trigger the jurisdiction of Ontario Regulation 148/06 in this location".

We haven't spoken to Tom Beaubiah yet, so I will try him just to make sure!

Thanks again!
Erin

GENIVAR
Erin Corstorphine, BSc, MSc
Biologist
GENIVAR Inc.
1091 Gorham Street, Suite 301, Newmarket, ON L3Y 8X7
Direct: (905) 853-3303 ext. 232 | Cell: (905) 967-3330 |
www.genivar.com

Please consider the environment before printing!

From: Jennifer Lamoureux [mailto:jennifer.lamoureux@rvca.ca]
Sent: Monday, March 26, 2012 12:59 PM
To: Erin Corstorphine
Subject: FW: KP-10-710 - Proposed Newboro Solar Farm Site

Hi Erin,

Sorry for not getting back to you sooner. The watercourse is considered to be in the CRCA watershed. It would be best to contact my counterpart who is mentioned below. Hope this helps. J

Jennifer Lamoureux
Aquatic and Fish Habitat Biologist
Rideau Valley Conservation Authority
3889 Rideau Valley Drive Box 599
Phone 613-692-3571 Ext 1108
Fax 613-692-0831
jennifer.lamoureux@rvca.ca
www.rvca.ca

From: Megan Watters
Sent: Tuesday, October 25, 2011 12:27 PM
To: 'j.sharp@mcintoshperry.com'
Subject: RE: KP-10-710 - Proposed Newboro Solar Farm Site

Hi Jason,

After reviewing our mapping with Jennifer it would appear that it is a watercourse but we believe it likely flows into Cataraqui's watershed. Therefore it would be best to contact Tom Beaubiah (beaubiah@cataraquiregion.on.ca) at their office.

Regards,
Megan

Megan Watters
Resource Specialist
Rideau Valley Conservation Authority
3889 Rideau Valley Dr, Box 599
Manotick, ON
K4M 1A5
www.rvca.ca
(613) 692-3571 x 1132

From: Jennifer Lamoureux
Sent: Monday, October 24, 2011 10:09 AM
To: Megan Watters
Subject: FW: KP-10-710 - Proposed Newboro Solar Farm Site

Hey megan,
Can you look this one up? It might be in the Cataraqui. Do you mind getting back to him? J

Jennifer Lamoureux
Aquatic and Fish Habitat Biologist
Rideau Valley Conservation Authority
3889 Rideau Valley Drive Box 599
Phone 613-692-3571 Ext 1108
Fax 613-692-0831
jennifer.lamoureux@rvca.ca
www.rvca.ca

From: Jason Sharp [mailto:j.sharp@mcintoshperry.com]
Sent: Friday, October 21, 2011 3:48 PM
To: Jennifer Lamoureux
Cc: Adam O'Connor
Subject: KP-10-710 - Proposed Newboro Solar Farm Site

Hi Jennifer,

I wanted to follow up on my voicemail that I left you, we are performing a preliminary site investigation for a proposed solar farm in Newboro. On site there is what appears to be a man made ditch/ low lying area between two worked fields. This ditch commences further north on site and would appear to outlet to the roadside ditch at County Road 14. (Please see attached sketch)

We would like to inquire if this ditch is actually a regulated watercourse or simply a man-made ditch. Any further information regarding this ditch would be greatly appreciated.

If you have any questions or concerns please feel free to contact me.

Thanks for all your help,

Jason Sharp, EIT
McIntosh Perry Consulting Engineers Ltd.
3240 Drummond Conc 5A
Perth, ON, K7H 3C9
W.613.267.6524 x 206
C.613.812.0651
F. 613.267.7992

CONFIDENTIALITY WARNING:
This message is intended only for the use of the individual or entity to which it is addressed, and may contain information which is privileged, confidential, proprietary or exempt from disclosure under applicable law. If you are not the intended recipient or the person responsible for delivering the message to the intended recipient, you are strictly prohibited from disclosing, distributing, copying or in any way using this message. If you have received this communication in error, please notify the sender, and destroy and delete any copies you may have received.

AVERTISSEMENT:
Ce message est destiné uniquement à la personne ou à l'organisation à laquelle il est adressé et il peut contenir des informations privilégiées, confidentielles ou non divulgables en vertu de la loi. Si vous n'êtes pas le destinataire du présent message ni la personne chargée de remettre le présent message à son destinataire, il vous est strictement interdit de le divulguer, de le distribuer, de le copier ou de l'utiliser de quelque façon que ce soit. Si vous avez reçu la présente communication par erreur, veuillez en aviser l'expéditeur et détruire ou effacer tous les exemplaires que vous avez reçus.

Erin Corstorphine

From: Tom Beaubiah [beaubiah@cataraquiregion.on.ca]
Sent: Wednesday, April 11, 2012 10:53 AM
To: Erin Corstorphine
Subject: RE: KP-10-710 - Newboro Watercourse

It will be up to the proponent on how to proceed. I feel that any issue relating to the watercourse can be resolved without alteration to the layout. There is ample room to move the watercourse if necessary. If the proponent would rather not relocate the watercourse a brief hydraulic study of the floodplain could be undertaken. It will depend on what is the most cost effective means for the proponent to achieve their desired result.

Sincerely,

Tom Beaubiah
Biologist
Cataraqui Region Conservation Authority
P.O. Box 160 – 1641 Perth Road
Glenburnie, Ontario
K0H 1S0
Phone: 613-546-4228 ext 240
Fax: 613-547-6474
Webiste: www.cataraquiregion.on.ca

From: Erin Corstorphine [mailto:Erin.Corstorphine@genivar.com]
Sent: Wednesday, April 11, 2012 10:10 AM
To: Tom Beaubiah
Subject: RE: KP-10-710 - Newboro Watercourse

Hi Tom,

Thank you for getting back to me so quickly and for confirming the watercourse will only be considered for its hydraulic function. To follow-up on your earlier email and to make sure I understand correctly, I have a few questions. Are you recommending that the best course of action is for the proponent to delineate the floodplain boundary to ensure that a 5 m buffer is maintained between the development and the floodplain?

Were options discussed regarding the potential for realignment of the watercourse to achieve a 15 m buffer, or alteration of the floodplain through grading to maintain the current design footprint which currently has a 9 m buffer between the top of bank and the development zone?

Do you feel that the design plan can go to public consultation now, or will this issue have to be resolved beforehand? Is there a chance that the design footprint will have to be altered to provide a minimum buffer distance?

I just want to make sure everything is crystal clear before I approach the rest of the team with any changes.

Thanks,
Erin

GENIVAR

Erin Corstorphine, BSc, MSc
Biologist
GENIVAR Inc.
1091 Gorham Street, Suite 301, Newmarket, ON L3Y 8X7
Direct: (905) 853-3303 ext. 232 | Cell: (905) 967-3330 |
www.genivar.com

Please consider the environment before printing!

From: Tom Beaubiah [mailto:beaubiah@cataraquiregion.on.ca]
Sent: Wednesday, April 11, 2012 10:00 AM
To: Erin Corstorphine
Subject: FW: KP-10-710 - Newboro Watercourse

Below is the message that I provided to Jason Sharp. I spoke with my supervisor and the watercourse would be regulated. As per below we will try to accommodate the project to the best of our ability. Given the small watershed it should be relatively easy to distinguish the floodplain if the proponent wishes to pursue that option. The watercourse should not be an issue that would be hard to address.

Sincerely,

Tom Beaubiah
Biologist
Cataraqui Region Conservation Authority
P.O. Box 160 – 1641 Perth Road
Glenburnie, Ontario
K0H 1S0
Phone: 613-546-4228 ext 240
Fax: 613-547-6474
Webiste: www.cataraquiregion.on.ca

From: Tom Beaubiah [mailto:beaubiah@cataraquiregion.on.ca]
Sent: Thursday, November 17, 2011 1:37 PM
To: 'Jason Sharp'
Subject: RE: KP-10-710 - Newboro Watercourse

The Authority would not be supportive of piping the watercourse, we have reduced our standard setback from a watercourse of 30m to 15m for other solar projects and have suggested that it can be reduced to 5m from the floodplain (provided the floodplain is identified by the proponent). I am out for the afternoon and will be out of town most of tomorrow, if you reply to this e-mail with any questions or comments I'll try to get back to you ASAP, but I will not be available by phone unfortunately.

Sincerely,

Tom Beaubiah
Biologist

Cataraqui Region Conservation Authority
P.O. Box 160 – 1641 Perth Road
Glenburnie, Ontario
K0H 1S0
Phone: 613-546-4228 ext 240

Fax: 613-547-6474
Webiste: www.cataraquiregion.on.ca

From: Jason Sharp [mailto:j.sharp@mcintoshperry.com]
Sent: Tuesday, November 15, 2011 4:38 PM
To: Tom Beaubiah
Cc: Adam O'Connor
Subject: FW: KP-10-710 - Newboro Watercourse

Hi Tom,

Has there been any update with regards to the Newboro site. You mentioned on the phone that you would look into it and get back to me before the end of the day yesterday.

If it is easier for you, please feel free to call me at the number below.

I would really appreciate hearing from you tomorrow morning.

Thanks,

Jason Sharp, EIT
McIntosh Perry Consulting Engineers Ltd.

From: Jason Sharp
Sent: November-14-11 3:52 PM
To: 'Tom Beaubiah'
Cc: Adam O'Connor
Subject: KP-10-710 - Newboro Watercourse

Hi Tom,

I wanted to check in and see if you had a chance to review the Newboro site with regards to our conversation this morning.

I should be here until about 430pm if you have a chance to call if not back in tomorrow at 8am.

Hope to hear from you soon – Thanks,

Jason Sharp, EIT
3240 Drummond Concession 5A, Perth, ON K7H 3C9
T. 613.267.6524 (206) | **F.** 613.267.7992 | **C.** 613.812.0651
j.sharp@mcintoshperry.com | www.mcintoshperry.com

CONFIDENTIALITY WARNING:
This message is intended only for the use of the individual or entity to which it is addressed, and may contain information which is privileged, confidential, proprietary or exempt from disclosure under applicable law. If you are not the intended recipient or the person responsible for delivering the message to the intended recipient, you are strictly prohibited from disclosing, distributing, copying or in any way using this message. If you have received this communication in error, please notify the sender, and destroy and delete any copies you may have received.

AVERTISSEMENT:
Ce message est destiné uniquement à la personne ou à l'organisation à laquelle il est adressé et il peut contenir des informations privilégiées, confidentielles ou non divulgables en vertu de la loi. Si vous n'êtes pas le destinataire du présent message ni la personne chargée de remettre le présent message à son destinataire, il vous est strictement interdit de le divulguer, de le distribuer, de le copier ou de l'utiliser de quelque façon que ce soit. Si vous avez reçu la présente communication par erreur, veuillez en aviser l'expéditeur et détruire ou effacer tous les exemplaires que vous avez reçus.

Erin Corstorphine

From: Tom Beaubiah [beaubiah@cataraquiregion.on.ca]
Sent: Wednesday, April 11, 2012 10:12 AM
To: Erin Corstorphine
Subject: RE: Newboro 1 proposed solar farm

Just as a follow up, the watercourse will be regulated for its hydraulic function not its ecological function. Under our agreement with Fisheries and Oceans Canada I can state that the feature would not be providing fish habitat. Ecological function would not be significant as standing water is not anticipated for any extended period of time. The ecology of the watercourse in my opinion would be limited to a moist environment suitable for amphibian movements, however without standing water again this would be short term habitat.

Sincerely,

Tom Beaubiah
Biologist
Cataraqui Region Conservation Authority
P.O. Box 160 – 1641 Perth Road
Glenburnie, Ontario
K0H 1S0
Phone: 613-546-4228 ext 240
Fax: 613-547-6474
Webiste: www.cataraquiregion.on.ca

From: Erin Corstorphine [mailto:Erin.Corstorphine@genivar.com]
Sent: Monday, March 26, 2012 2:04 PM
To: beaubiah@cataraquiregion.on.ca
Subject: Newboro 1 proposed solar farm

Hello Tom,

I just called and left a voice mail regarding the a watercourse that exists on the property known as Newboro 1 which is described as Part of Lots 25, 26 and 27, Concession 1, South Crosby Ward, Township of Rideau Lakes. This property is being investigated for its potential as a solar energy farm.

Due to the location of the property on the boundary between the CRCA and RVCA review areas, there has been some debate as to who should be concerned with the watercourse on the property. I have attached a copy of our site plan, two maps generated by RVCA and two photographs taken of the farm drain/ watercourse in question.

The team that conducted the site investigation felt that this watercourse did not support fish habitat, based on the fact that it didn't appear to be directly connected to any permanent water bodies and was dry at the time of the site visits in June, July and December. The channel was estimated to be approximately 2 m wide and 1.5 m deep and was likely dug to facilitate drainage on the adjacent agricultural fields. The drain appears to outlet into the roadside ditch at County Road 14 / Narrows Lock Road. At present, the development envelope is approximately 9 m from the top of bank of this watercourse.

We would like establish whether or not this drain is considered a regulated watercourse from a CRCA perspective. My colleague, James Dennis, consulted with Jason Messenger early last week and was informed that there are no features on the property that trigger the jurisdiction of O.Reg. 148/06 and as such permits from CRCA would not be required.

Jason also encouraged us to consult RVCA which we have done. RVCA has encouraged us to consult with you at CRCA, so I thought I'd follow up and make sure we had covered all bases thoroughly!

Our main concern is whether or not this drain should be classified as a watercourse (and therefore addressed in an Environmental Impact Study as part of the water body component of the REA) and/or whether or not the proposed 9 m buffer would be deemed adequate when paired with appropriate mitigation. If CRCA has no concerns then we are happy to go forward with the existing plan.

I look forward to hearing from you.

Thank you,
Erin

GENIVAR

Erin Corstorphine, BSc, MSc
Biologist
GENIVAR Inc.
1091 Gorham Street, Suite 301, Newmarket, ON L3Y 8X7
Direct: (905) 853-3303 ext. 232 | Cell: (905) 967-3330 |
www.genivar.com

Please consider the environment before printing!

CONFIDENTIALITY WARNING:
This message is intended only for the use of the individual or entity to which it is addressed, and may contain information which is privileged, confidential, proprietary or exempt from disclosure under applicable law. If you are not the intended recipient or the person responsible for delivering the message to the intended recipient, you are strictly prohibited from disclosing, distributing, copying or in any way using this message. If you have received this communication in error, please notify the sender, and destroy and delete any copies you may have received.

AVERTISSEMENT:
Ce message est destiné uniquement à la personne ou à l'organisation à laquelle il est adressé et il peut contenir des informations privilégiées, confidentielles ou non divulgables en vertu de la loi. Si vous n'êtes pas le destinataire du présent message ni la personne chargée de remettre le présent message à son destinataire, il vous est strictement interdit de le divulguer, de le distribuer, de le copier ou de l'utiliser de quelque façon que ce soit. Si vous avez reçu la présente communication par erreur, veuillez en aviser l'expéditeur et détruire ou effacer tous les exemplaires que vous avez reçus.