



# **Sustainable Winemaking Ontario:** An Environmental Charter for the Wine Industry

## **A Newcomer's Primer - The Environment and the Wine Industry in Ontario**

**2007**

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**Disclaimer:** While every attempt has been made to make this information as accurate as possible, the Wine Council of Ontario and the authors assume no responsibility for decisions based on the contents of this document. Legal requirements can change rapidly and readers are encouraged to seek additional information.

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## Introduction

This guide has been developed for those people who are thinking about setting up a winery or moving into commercial grapegrowing for the wine industry.

It is one part of a series of publications and systems developed as part of *Sustainable Winemaking Ontario: An Environmental Charter for the Wine Industry*. This is a proactive program initiated by the Wine Council of Ontario. Partners for the development of *Sustainable Winemaking Ontario* include the Grape Growers of Ontario and Niagara College, and substantial input was received from organizations across Ontario. The goal of the program is to continuously improve the environmental performance of the wine industry in Ontario.

The wine industry in Ontario comprises a very small quantity of the land mass in Ontario. There are many areas in Ontario where it is too cold to successfully grow grapes. In the Niagara Region, the relationship between the Niagara Escarpment and Lake Ontario allows grapes to be grown. In other wine regions in Ontario, the impact of lakes and the relatively southern location of wineries and grape growing areas are important in permitting the wine industry to establish and thrive.

This comparatively attractive climate also makes many of these areas attractive for development, particularly for residential development. One of the challenges facing the wine industry is to be able to preserve the areas that might be able to be used for agriculture and grape production. This is currently being actively addressed by the Ontario provincial government.

Another challenge is the relationship between the wine industry and the people who have been attracted to move into areas abutting vineyards and wineries. In some cases, developments have marketed themselves as being attractive because they lie next door to vineyards.

People who move into these areas from other parts of the country or province may be surprised to note all of the activity needed to ensure that good quality grapes and wines are produced.

The wine industry is intimately connected to the natural environment. It is dependent on soil, water and sunshine, and good management. This guide is one of a series of documents and programs being produced by the Wine Council of Ontario that ensures that as the industry continues to grow, the environment on which it depends is protected and enhanced.

## Acknowledgements

This document has been produced by the Wine Council of Ontario. The input of staff from the Ontario Ministry of the Environment, the Ontario Ministry of Agriculture and Food and Brock University is gratefully acknowledged. The guide developed by the Mornington Peninsula Wine Industry of Australia provided a model that was used in the development of this document. Other models from Australia, California and New Zealand were also examined and the insights provided by the wine industries in those countries are also gratefully acknowledged.

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## **The Wine Industry in Ontario**

The wine industry in Ontario is expanding rapidly. It is located in areas that are visually attractive and comparatively warm. Both factors also mean that the locations are attractive for other uses, both for tourism and for residential development.

As the wine industry expands, it in turn is also attracting additional businesses. Hospitality is an important aspect, with winery tours, restaurants and accommodation being developed. While some of these hospitality businesses are directly owned or operated by wineries or vineyard operators, an increasing number have been drawn to these areas because of the wine industry.

### ***The Industry at a Glance***

The wine industry in Ontario is clustered around four geographical areas. These are:

- The Niagara Peninsula
- Lake Erie North Shore and Pelee Island
- Prince Edward County
- Toronto.

The Wine Council of Ontario has 65 members representing 75 winery properties. There are 497 growers in Ontario, covering 17,102 acres.<sup>1</sup>

Vintners Quality Assurance (VQA) sales have increased from \$5 million in 1990 to \$130 million in 2006. In 2006, there were approximately 750,000 visitors to wineries, and 6,000 jobs in the industry.<sup>2</sup> The vision for the Ontario wine industry is that it will be a “thriving \$1.5 billion business in 2020, one that employs 13,500 people and provides close to \$1 billion annually in benefits to the province’s economy.”<sup>3</sup>

The industry is actively pursuing further expansion.

# **A Guide to Vineyard and Winery Ownership**

## **What You Need to Know Before Buying Land, a Vineyard or a Winery**

### ***Step 1: Investigate and Research***

Your first step is to identify whether the land that you are interested in is suitable, and whether the activity is permitted. This should be done well before contracts are signed. You also need to consider the adjoining land uses, and whether it is appropriate to build a winery or develop a vineyard in a particular area.

If you are considering purchasing an existing vineyard, you should also consider the vineyard's soils, water, drainage, size and ability to contain effluent. You should also consider whether there is enough space to build should you wish to add a winery, retail area or restaurant.

A very good resource for those thinking of developing a winery is the document [Starting a Winery in Ontario](#) produced by the Ontario Ministry of Agriculture, Food and Rural Affairs.<sup>4</sup> That document includes more detailed suggestions in planning your winery business, including financial aspects.

### **Climate**

A significant factor will be whether the area that you are looking at is able to grow grapes. In Ontario, the lands where wine grapes can be grown successfully are comparatively limited. You should check with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) for any detailed information on the experience of successfully growing grapes in a new area.

### **Location – Planning Approvals**

It is critical that you have the appropriate approvals for your new business. Municipalities have a series of planning regulations that identify the permitted uses in different locations. You should talk to the local municipality very early in your planning process to check whether the winery or vineyard is a permitted use.

As well as checking whether the property has the appropriate zoning for your activity, you should also research the neighbouring properties. Checking in advance if nearby land is likely to be residential subdivisions, a hospital or industrial area may have an impact on your decision. This needs to be considered from two angles – how might new neighbours or a hospital impact on your business, and how might your business and

operations impact on them. At the least, if you have a residential development abutting your property you will need to take care to build in buffers to reduce the impact of any spray drift, noise from your operations and potential odour. These considerations may also have an impact on your siting of buildings and car parks.

If you are purchasing an existing operation, you may wish to ask about the relationship with neighbours. How many (if any) complaints have been received in the past and how have these been managed?

Councils will take into account a series of factors before they decide whether to approve the development. These can include:

- impact on adjoining uses
- any potential impact of runoff from the property, particularly the storm drainage of the urban portion of the property
- impact on the amenity of the area
- suitability of access
- management of lighting to reduce off-site impacts, and upward light pollution
- building construction standards, as part of the building approval process, managed through the municipality.

In addition, municipalities may consider the design of the envelope of the building. For example, in Niagara-on-the-Lake a municipal design committee considers the design of the building.

The local municipality will refer your application to other organizations for comment, such as the Ministry of the Environment, the local Conservation Authority and, where appropriate, the Niagara Escarpment Commission. Applications are likely to require all approvals from the Ministry of the Environment before they are considered formally by council.

All of these consultations will require time. You must allow a long period from the submission of applications for approval before construction can be undertaken and completed.

Waste management and methods of disposal will also need to be considered and covered with the appropriate Regional Municipality. In some cases, waste collection will need to be undertaken by private contractors. Water and wastewater issues will need to be negotiated with the Regional Municipality when such services are available to the site.



## Special Locations – Niagara Escarpment

In addition to Municipal approvals, in some parts of the province, you may also need approvals from the Niagara Escarpment Commission (NEC). The Niagara Escarpment, which stretches 725 kilometres from Queenston to Tobermory, has been identified as a World Biosphere Reserve.<sup>5</sup> In 1973 the *Niagara Escarpment Planning and Development Act* was passed. The purpose of the Act "...is to provide for the maintenance of the Niagara Escarpment and land in its vicinity substantially as a continuous natural environment, and to ensure that only such development occurs as is compatible with that natural environment."<sup>6</sup> In 1986 the Niagara Escarpment Plan was established, and amended in 2005. A copy of the 2005 Niagara Escarpment Plan is available at [http://www.escarpment.org/Publications/plan\\_intro.htm](http://www.escarpment.org/Publications/plan_intro.htm). If your land is within the Niagara Escarpment Plan then you need to contact the NEC and confirm if you need approval from NEC. The NEC produces a document "Do I Need a Niagara Escarpment Permit,"<sup>7</sup> which provides further background. This is available at <http://www.escarpment.org/publications/permitbooklet.htm>.

## Ministry of the Environment

The Ministry of the Environment must be consulted as you develop your plans. A number of approvals must be obtained from the Ministry of the Environment before the winery is operating. These include:

- permit to take water
- Certificate of Approval for wastewater
- Certificate of Approval for air emissions
- Certificate of Approval for disposal of solid waste
- approvals for storage and management of hazardous waste.

More detailed information on these permits and approvals and other requirements for protecting the environment are available in the document [Sustainable Winemaking Ontario: An Environmental Charter for the Wine Industry. Eco-Winegrowing 101](#), available through the Wine Council of Ontario. The following is a very brief outline of things to consider. You should obtain further information from the Ministry of the Environment.

## Permits to Take Water

Both wineries and growers that take more than 50,000 litres or 11,000 imperial gallons of water per day must have a **Permit to Take Water**. This includes water from wells or surface supply, but does not occur if the winery is serviced through piped water from a municipality.

## **Wastewater**

All wastewater from wineries must be managed to reduce the impact on the environment and to comply with legislation. Where the service is available, wastewater from the winery processes and any on-site facility, such as restaurants or accommodation, may be sent by pipes to the municipal treatment plant. In these cases you will need to organize approvals with the municipality. They will be interested in the amount of wastewater generated, and the quality of the wastewater.

If you are interested in treating wastewater on-site, then you may require either municipal approvals or approvals from the Ministry of the Environment. If the disposal system has a design capacity of up to 10,000 litres per day then approval must come through the Municipality. If capacity is over that figure, then the approval must be obtained through a Certificate of Approval from the Ministry of the Environment.

There are significant opportunities at the design stage to identify ways to reduce the use of water, and also wastewater, and to ensure that monitors are put in place to identify usage. If you are interested in purchasing an existing facility, you should also identify opportunities to increase efficiencies in water use.

## **Air Emissions**

In wineries, potential sources of air emissions may be from boilers, emergency generators and some parts of the laboratories, for example air hoods. Depending on the size of the boilers or other equipment, you may require a Certificate of Approval from the Ministry of the Environment.

## **Solid Waste**

As in many other businesses, there can be waste generated. In wine production, stems and skins from grapes are left after the grapes are pressed. This is called pomace, or marc. Pomace may be sent to companies that convert it to compost, or used as a soil conditioner on vineyards. In all cases, the Ministry of the Environment and Ministry of Agriculture, Food and Rural Affairs regulations and guidelines must be followed. In situations where pomace is applied to properties not part of the winery, then Certificates of Approval may be needed. Care will also need to be taken in terms of the impact of nutrients. The Ministry of the Environment and the Ministry of Agriculture, Food and Rural Affairs should be contacted to determine the appropriate approvals that may be needed before production can take place.

## **Hazardous Waste**

Wineries have some materials that are defined in the legislation as hazardous waste. These may include some chemicals used in laboratories for testing, as well as propane gas bottles. Once a winery gets to be a particular size, the quantities of chemicals used may trigger legislation that will require that the wineries and the transporters comply

with the hazardous waste transportation requirements. Further details are available at the Ministry of the Environment, and outlined in Sustainable Winemaking Ontario: An Environmental Charter for the Wine Industry. Eco-Winegrowing 101 available through the Wine Council of Ontario.

### **Conservation Authorities**

Conservation Authorities in Ontario are community-based organizations that have powers under the Conservation Authorities Act. They are concerned with watershed and water management. Part of their mandate is with environmental protection, with a focus on natural resources such as land water and ecosystems. They also have responsibilities with streams and wetlands, water quality and flooding management. As such, as you consider your plans for a winery you should talk to the Conservation Authority in your area to identify any special features on your land that may need protecting, such as rare vegetation, and obtain information on flooding and water quality. Conservation Authorities will also be interested in how you propose to manage your storm water, and can provide a range of resources to assist.

Conservation Authorities can also be a source of funding to assist with rehabilitation work, for example in revegetating streamside areas, or erosion protection.

### **Relationship with Existing Vegetation**

When you are planning your vineyard and winery, it is helpful to pay attention to the existing vegetation. Wherever possible, try to maintain woodlands and focus new development on land that is already cleared or used to be cleared, rather than old growth forest and woodland.

## ***Step 2: Planning for Wineries and Vineyards***

If you have found the right location and decided that this is the business and location you wish to be in, you must obtain a series of certificates and approvals.

Alcohol is a regulated product. There are extensive regulations in place before you can commence production.<sup>8</sup> **Appendix One** outlines the approval steps needed in starting a winery.

A major component of your work will now be in planning your business. The business components will include a Strategic Plan, Feasibility Analysis and a Business Plan. In addition you should clearly identify the environmental elements of your business from the start. This can be undertaken in a Site Master Plan. Proper planning and research will assist in avoiding costly mistakes, while also enabling the identification of best practice in both design and operation of your winery or vineyard.

Your Site Master Plan should include information on vegetation and landscape, water and wastewater, siting information, operations, and future developments.

### **Vegetation and Landscape<sup>9</sup>**

- Identify any vegetation that is to be retained, enhanced or removed.
- Identify areas where new native vegetation is to be planted.
- Consider linkages between vegetation that is to be retained and other blocks of vegetation off-site. Making connections can assist in wildlife movement.
- Consider the use of vegetation as buffers, particularly if there are neighbours. Vegetation can act as buffers for any potential pesticide drift, as well as assisting in noise reduction.
- Consider planting native vegetation near waterways in riparian zones to assist in maintaining water quality. Keeping grasses, shrubs and trees near waterways assists in taking up nutrients, as well as reducing erosion and sedimentation.
- If information is available, map frost drainage lines.
- Identify high and low points on the site.

### **Water Management**

- Rivers, streams, wells and low swampy areas should be mapped.
- Map any drains and drainage lines. Where possible, identify who owns and is responsible for different drains (for example, whether the drain is a municipal drain).

- Identify contours on the property. This will have an impact on how you design the vineyard, taking into account drainage lines, potential erosion and cold frost pockets.
- Identify the location of any pipelines for water coming into the site, or wastewater pipes if these are applicable.
- Identify sites for a wastewater treatment plant or plants. Allow sufficient space for the capture and treatment of wastewater.
- In design of wastewater treatment areas, remember to design for maximum loads during crush and during the tourist season, particularly if you offer accommodation or hospitality. You should also include plans to expand the treatment works as the business expands.
- Consider in your design how to ensure that washwater from the plant, from washing of trucks or from fruit spills, will be managed and contained on-site. It is important to make sure no material can get into natural watercourses.
- Identify any areas where there may be oils, gas or other potentially polluting material stored and ensure that they are in a contained area where they cannot escape into the natural environment.

## **Cold Management**

- Identify storage areas for equipment needed to manage winter conditions. Ensure that design for footpaths and car areas allow for salt to be contained on-site and does not impact native vegetation and waterways.

## **Site Design**

- Include a topographic plan locating the site of all proposed buildings, including winery, sales, hospitality, accommodation facilities and any machinery sheds, along with the location of storage areas, waste storage areas and water treatment plants. Also identify buildings and sites of importance, for example, walking trails or parks in neighbouring properties.
- Map access roads and car park areas.
- In identifying locations for built structures, consider how you can minimize noise for any neighbours.
- Identify proposed vineyard locations, allowing for appropriate headlands for machinery turning.
- Identify easements such as hydro, gas or drains. Note that easements can allow different organizations access onto the property and possible removal of vines if they are in the way. This should be considered as part of the mapping and identification phase.

- Identify not only what is to be built in the short term, but identify long-term plans for the site, for example restaurant or accommodation facilities.

## **Wind Machines**

- Consider in your planning if you are likely to need a wind machine to reduce the risk of cold damage. Identify within your vineyard plan the potential sites, being aware of the need to minimize the impact of noise on neighbours.

## **Legal Requirements**

- Ensure that as you are developing your Master Plan, you are fully informed about the environmental requirements for the operation of wineries and vineyards. For an outline, see the document produced by the Wine Council of Ontario – Sustainable Winemaking Ontario: An Environmental Charter for the Wine Industry, Eco-Winegrowing 101.<sup>10</sup>

## **Think Cleaner Production (Pollution Prevention) in Your Design**

- Wineries consume energy, water and produce waste, including water and waste from pressings (pomace). By considering ways to reduce energy and streamlining processes at the design stage, you can identify ways to improve air quality, reduce energy use and the associated costs, reduce water use and save money in the longer term.
- In your design stage it is also helpful to install meters to allow the efficient tracking of the use of energy, water and other materials at different points of the operation. This allows efficient tracking of the quantity and costs of different parts of the operation, as well as identifying future savings as technologies become more efficient.
- Consider whether your building can be orientated to reduce the amount of energy used, or generate some of its power. Solar power, geothermal power and wind power provide opportunities for wineries and associated buildings and operations.
- The design stage provides considerable opportunity for reducing costs over time. Information on ways to consider energy efficiency opportunities are outlined in the document Sustainable Winemaking Ontario – Energy Best Practice for Wineries available through the Wine Council of Ontario.
- Another excellent design resource is available through the Canada Green Building Council, and particularly the LEED program. The Canada Green Building Council website is available at <http://www.cagbc.org/>.
  - “LEED® Canada (Leadership in Energy and Environmental Design) is designed to accelerate the development and implementation of green building practices. It is the national

rating system standard for the design, construction, and maintenance of sustainable design & construction of new buildings and major retrofits. This rating system recognizes leading edge buildings that incorporate design and construction practices that combine healthy, high-quality and high-performance advantages with reduced environmental impacts.”<sup>11</sup> Stratus is an example of a winery that has achieved LEED accreditation. Further information on the LEED program is available at [http://www.cagbc.org/green\\_building\\_projects/leed\\_certified\\_buildings.php](http://www.cagbc.org/green_building_projects/leed_certified_buildings.php).

## **Environmental Management Program**

The Wine Council of Ontario and the Grape Growers of Ontario have developed an environmental program, Sustainable Winemaking Ontario, for wineries and vineyards. In essence, this program assists those in the industry to identify best practice and continuous improvement. Contact the Wine Council of Ontario and the Grape Growers of Ontario for further information.

Appendices Three and Four are checklists for establishing a vineyard or a winery. These checklists have been established as part of Sustainable Winemaking Ontario, and have benefited from direct industry input at workshops and pilots with wineries and vineyard owners.

## **Conclusion**

Establishing a winery or vineyard can be the culmination of many years of dreaming and planning. Having a clear understanding of the environmental opportunities and requirements will assist in the successful achievement of your business. The wine industry in Ontario is dependent on the physical environment and interacts with it on a daily basis. The wine industry is very conscious of the need to continuously improve environmental performance and encourages new industry players to be fully informed as they embark on their winegrowing adventure.

## Appendix One – Steps in Starting a Winery

Activity	Document	Agency
Examine the Concept	Decide business organization type Strategic plan Conduct feasibility study and analysis Develop business plan	Owner Owner Owner Owner
Develop the Business	Register the business Request business number Zoning, building, occupancy, etc. permits	MGS CRA Municipality
Prepare to Manufacture Wine	License to process grapes License to process tender fruit Establish quality control process	OFPMC OFPMC Owner
Sell Wine	Manufacturer's Liquor License application Ontario Vendor's Permit Product management policies and procedures	AGCO  MOF LCBO
Manufacturing Procedures	VQA Late Harvest Product Monitoring Form LCBO Site Inspection application Laboratory Guidelines for Chemical Analysis	VQAO  LCBO LCBO
Warehousing	Policy for off-site warehousing	LCBO
Winery Retail Store	Winery Retail Store (WRS) authorization Retail guidelines Direct Delivery to Licensees Authorization	AGCO AGCO LCBO
Hire an Agent	Representative's License	AGCO
VQA Approval	VQA Membership application	VQAO
Design Labels	Request for Label Examination	LCBO
Product Listing (LCBO)	Application for listing	LCBO
Tied House	Application and Guide for a New Liquor Sales License (Tied House) Food Premises Regulation approval Smart Serve® Training	AGCO  MOH
Marketing	Advertising guidelines Pricing information Signage and entrances	AGCO LCBO Municipality
Delivery	Direct Sales to Licensee authorization	LCBO



	(Winery Only) Direct Delivery to Licensees authorization (WRS) Third Party Carrier authorization	LCBO AGCO
Reporting	Monthly Statement of Holder of Wine License Annual Statement of Holder of Wine License Winery audit	AGCO AGCO AGCO
Levies	Bottle levy Environmental fee Gallonage fee WRS administration fee	LCBO LCBO AGCO AGCO
Taxes and Duties	Application for Excise Tax License Excise Remittance Form Goods and Services Tax (GST) Ontario Retail Sales Tax (ORST) ORST Vendor Permit and Purchase Exemption Permit	CRA CRA CRA CRA MOF

Source: Table 1-1: Steps in Starting a Winery in Ministry of Agriculture and Food, Starting a Winery in Ontario, pages 3-4.

AGCO: Alcohol and Gaming Commission of Ontario

CRA: Canada Revenue Agency

LCBO: Liquor Control Board of Ontario

MGS: Ministry of Government Services

MOH: Ministry of Health

MOF: Ministry of Finance

VQAO: Vintners Quality Assurance of Ontario

*Note that the requirements continue to change, and as such readers are encouraged to seek additional information.*

## **Appendix Two – Resources**

Alcohol and Gaming Commission of Ontario (AGCO)  
90 Sheppard Avenue East  
Suite 200  
Toronto ON M2N 0A4  
Ph: 416 326-8700/1-800-522-2876  
Fax: 416 326-5555  
<http://www.agco.on.ca>

Canadian Vintners Association  
Suite 200-440 Laurier Avenue West  
Ottawa ON K1R 7X6  
Ph: 613 782-2283  
Fax: 613 782-2239  
<http://www.canadianvintners.com>

Liquor Control Board Ontario (LCBO)  
1 Yonge Street, 13<sup>th</sup> Floor  
Toronto ON M5E 1E5  
<http://www.lcbo.com/askus/index.shtml>

Ontario Farm Products Marketing Commission (OFPMC)  
Ontario Ministry of Agriculture and Food  
1 Stone Rd. West, 5<sup>th</sup> Floor  
Guelph ON N1G 4Y2  
Ph: 519 826-4210  
Fax: 519 826-3400  
<http://www.gov.on.ca/OMAF/farmproducts>

Grape Growers of Ontario (GGO)  
P.O. Box 100  
Vineland ON L0R 2E0  
Ph: 905 688-0990  
Fax: 905 688-3211  
<http://www.grapeandtenderfruit.com>

Vintners Quality Alliance Ontario (VQAO)  
1 Yonge St., Suite 1601  
Toronto ON M5E 1E5  
Ph: 416 367-2002  
Fax: 416 367-4044  
<http://www.vqaontario.com>

Wine Council of Ontario (WCO)  
110 Hannover Drive, Suite B205  
St. Catharines ON L2W 1A4  
Ph: 905 684-8070  
Fax: 905 684-2993  
<http://www.winesofontario.org/>

## Appendix Three – Evaluation Sheets: Establishing a Vineyard

How do you score? This section is designed for newcomers to the wine industry. For people involved in the industry, separate checklists have been developed as part of *Sustainable Winemaking Ontario*. Three documents have been produced: one for wineries, one for vineyard operations and the third for the hospitality industry associated with the wine industry. The vineyard document has been developed as an adjunct to The Canada-Ontario Environmental Farm Plan Program. Both the winery and winery related hospitality document is also available in an electronic, spread sheet format.

### Checklist 1: Establishing a Vineyard

Topic 1	Picking the Right Land	Yes	No
1-1	Did you undertake research before you committed to contracts to purchase land?		
1-2	Have you identified if the land is suitable to grow grapes by consulting with OMAFRA?		
1-3	Have you considered how your neighbours might impact your new business?		
1-4	Have you considered how you might impact your neighbours?		

Topic 2	Obtaining Approvals	Yes	No
2-1	Have you identified all of the stages in setting up a vineyard?		
2-2	Have you allocated enough time to obtain all approvals from all levels of government? For example, Conservation Authority, Municipality and the Niagara Escarpment Commission?		
2-3	If needed, have you received your permit to take water?		
2-4	Have you investigated the requirements for dealing with wastewater?		
2-5	Have you considered how you will manage your waste, including solid waste and any possible hazardous waste, for example propane bottles?		

Topic 3	Planning	Yes	No
3-1	Have you considered all aspects of your business, including financial planning?		
3-2	Have you established a Master Plan for the site?		

<b>Topic 4</b>	<b>Vegetation Management</b>	<b>Yes</b>	<b>No</b>
<b>4-1</b>	Have you identified all vegetation that is to be retained, enhanced or removed?		
<b>4-2</b>	Have you identified areas where new, native vegetation is to be planted?		
<b>4-3</b>	Have you considered linkages between vegetation to be retained and vegetation off-site to assist in wildlife movement?		
<b>4-4</b>	Have you considered the use of vegetation as buffers, particularly for neighbours?		
<b>4-5</b>	Have you considered planting native vegetation near waterways to assist in water quality and maintaining fish habitat?		

<b>Topic 5</b>	<b>Water Management</b>	<b>Yes</b>	<b>No</b>
<b>5-1</b>	Have you mapped any streams, wells and low, swampy areas?		
<b>5-2</b>	Have you mapped and identified ownership of any drains and drainage lines on your property?		
<b>5-3</b>	Have you identified locations of any pipelines for water coming onto the property, or wastewater pipes if applicable?		
<b>5-4</b>	Have you identified sites for future wastewater management?		
<b>5-5</b>	Have you identified and mapped contours on your property so that these can be taken into account in design of the vineyard?		
<b>5-6</b>	Have you identified an area for the contained storage of potentially polluting material, such as fuel, oils or other material?		
<b>5-7</b>	Wherever possible, have you kept buffers of un-mown native vegetation alongside waterways?		

<b>Topic 6</b>	<b>Cold Management</b>	<b>Yes</b>	<b>No</b>
<b>6-1</b>	Have you identified and mapped cold air paths?		
<b>6-2</b>	Have you researched the effectiveness of wind machines for your location?		
<b>6-3</b>	If wind machines are to be installed, have you identified locations for wind machines that will minimize nuisance to neighbours?		
<b>6-4</b>	Have you identified storage areas for machinery, such as snow blowers and materials to manage winter conditions?		

<b>Topic 7</b>	<b>Site Design</b>	<b>Yes</b>	<b>No</b>
<b>7-1</b>	Have you developed a topographic plan showing on the site all proposed buildings, where relevant, including machinery sheds, winery, sales, hospitality, accommodation facilities, any water treatment plants, access roads and car parks?		
<b>7-2</b>	In your site plan, have you considered ways to minimize noise and light for neighbours?		
<b>7-3</b>	Have you identified all easements, such as hydro, gas and drains?		
<b>7-4</b>	Have you considered the risks and ramifications of planting vines on easements?		
<b>7-5</b>	Have you identified proposed vineyard locations, allowing for sufficient headlands for machinery turning?		

<b>Topic 8</b>	<b>Building Envelope: Complete Only if Adding a Building to Your Vineyard</b>	<b>Yes</b>	<b>No</b>
<b>8-1</b>	Did you make reference to the Leadership in Energy and Environmental Design (LEED) program for assistance in design and construction decisions for your buildings?		
<b>8-2</b>	Have you designed energy and water systems to reduce the ongoing environmental impact and costs of the building's operation?		

<b>Topic 9</b>	<b>Establishing a Vineyard</b>	<b>Yes</b>	<b>No</b>
<b>9-1</b>	Have you identified how Global Positioning System (GPS) can assist in establishment of the vineyard?		
<b>9-2</b>	Have you undertaken soil profile testing and investigated for restricting layers, such as claypan?		
<b>9-3</b>	Have you tested for the physical properties of the soil, e.g., soil structure, before planting?		
<b>9-4</b>	Have you tested the soil for pH, organic matter, cation exchange capacity, base saturation and water holding capacity, possible soil toxicities, or deficiencies?		
<b>9-5</b>	If required, have you modified the soil through ripping or installation of subsurface drainage?		
<b>9-6</b>	If required, have you amended the soil with lime, sulphur, and/or compost or manure, or cover crops?		
<b>9-7</b>	Do you know the history of the use of the land prior to planting?		
<b>9-8</b>	Did you seek advice from the winery, OMAFRA or consultants on which variety, rootstocks and clone to use, taking into account the soil-borne pests in the region; chemical and physical soil variability to provide the optimum vigor?		
<b>9-9</b>	Did you consider the physical characteristics, including existing vegetation, drainage lines, waterways and cold drainage lines when determining row orientation and length?		
<b>9-10</b>	Did you design the vineyard to minimize equipment turnaround next to any public roadways?		
<b>9-11</b>	Did you design the vineyard to minimize erosion?		
<b>9-12</b>	Did you design the vineyard to take into account wind patterns and sun exposure?		
<b>9-13</b>	Did you consider plant health when choosing scion wood, with the scion tested for viruses?		
<b>9-14</b>	Did you choose a variety, scion or cultivar appropriate for the site location, soil and rootstock?		
<b>9-15</b>	Did you choose your trellis based solely on tradition or price?		
<b>9-16</b>	Have you chosen a trellis system to optimize canopy management through air flow and spray penetration?		
<b>9-17</b>	Have you used environmentally friendly materials wherever possible, for example, avoiding CCA pressure-treated posts?		
<b>9-18</b>	Did you protect old habitat or create new habitat when the vineyard was established?		

## Appendix Four – Evaluation Sheets: Establishing a Winery

Topic 1	Picking the Right Land	Yes	No
1-1	Did you undertake research before you committed to contracts to purchase land?		
1-2	Have you confirmed that the land has the correct zoning for the activity? E.g., is a winery a permitted use?		
1-3	Have you considered the neighbouring land use and whether it is appropriate to develop a winery at that location?		
1-4	Have you considered how your neighbours might impact your new business?		
1-5	Have you considered how you might impact your neighbours?		

Topic 2	Obtaining Approvals	Yes	No
2-1	Have you identified all of the stages in setting up a winery?		
2-2	Have you allocated enough time to obtain all approvals from all levels of government? For example, the Ministry of the Environment, Conservation Authority, Municipality and the Niagara Escarpment Commission?		
2-3	If needed, have you received your permit to take water?		
2-4	Have you investigated the requirements for dealing with wastewater?		
2-5	Have you received permits for air emissions, for example for boilers, where required?		
2-6	Have you considered how you will manage your waste, including solid waste and any possible hazardous waste, for example propane bottles?		

Topic 3	Planning	Yes	No
3-1	Have you considered all aspects of your business, including financial planning?		
3-2	Have you established a Master Plan for the site?		



<b>Topic 4</b>	<b>Vegetation Management</b>	<b>Yes</b>	<b>No</b>
<b>4-1</b>	Have you identified all vegetation that is to be retained, enhanced or removed?		
<b>4-2</b>	Have you identified areas where new native vegetation is to be planted?		
<b>4-3</b>	Have you considered linkages between vegetation to be retained and vegetation off-site to assist in wildlife movement?		
<b>4-4</b>	Have you considered the use of vegetation as buffers, particularly for neighbours?		
<b>4-5</b>	Have you considered planting native vegetation near waterways to assist in water quality and maintaining fish habitat?		

<b>Topic 5</b>	<b>Water Management</b>	<b>Yes</b>	<b>No</b>
<b>5-1</b>	Have you mapped any streams, wells and low swampy areas?		
<b>5-2</b>	Have you mapped and identified ownership of any drains and drainage lines on your property?		
<b>5-3</b>	Have you identified locations of any pipelines for water coming onto the property, or wastewater pipes if applicable?		
<b>5-4</b>	Have you identified sites for future wastewater management?		
<b>5-5</b>	Have you designed your facility to keep any waste from getting into stormwater drains?		
<b>5-6</b>	Have you identified an area for the contained storage of potentially polluting material, such as fuel, oils or other material?		
<b>5-7</b>	Have you considered innovative wastewater treatment systems on your site, for example a biofilter?		
<b>5-8</b>	Wherever possible, have you kept buffers of un-mown native vegetation alongside waterways?		

<b>Topic 6</b>	<b>Cold Management</b>	<b>Yes</b>	<b>No</b>
<b>6-1</b>	Have you identified and mapped cold air paths?		
<b>6-2</b>	Have you identified storage areas for machinery, such as snow blowers and materials to manage winter conditions?		
<b>6-3</b>	Have you designed footpaths and roads to ensure that salt, if used, does not contaminate the native vegetation and waterways?		

<b>Topic 7</b>	<b>Site Design</b>	<b>Yes</b>	<b>No</b>
<b>7-1</b>	Have you developed a topographic plan showing on the site all proposed buildings, where relevant, including machinery sheds, winery, sales, hospitality, accommodation facilities, any water treatment plants, access roads and car parks?		
<b>7-2</b>	In your site plan, have you considered ways to minimize noise and light for neighbours?		
<b>7-3</b>	Have you identified all easements, such as hydro, gas and drains? <sup>2</sup>		

<b>Topic 8</b>	<b>Building Envelope</b>	<b>Yes</b>	<b>No</b>
<b>8-1</b>	Did you make reference to the Leadership in Energy and Environmental Design (LEED) program for assistance in design and construction decisions for your buildings?		
<b>8-2</b>	Have you designed energy and water systems to reduce the ongoing environmental impact and costs of the building's operation?		

## Appendix Five – References

Grapegrowers of Ontario, Ontario's Grape and Wine Industry, available at [http://www.grapegrowersofontario.com/thegrowers/ongrapewine\\_industry/index.html](http://www.grapegrowersofontario.com/thegrowers/ongrapewine_industry/index.html)

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Wine Council of Ontario, The Ontario Wine Industry 2003 Year in Review, available at <http://www.winesofontario.org/PDFs/AnnualLow.pdf>

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- <sup>1</sup> Grapegrowers of Ontario, Ontario's Grape and Wine Industry, available at [http://www.grapegrowersofontario.com/thegrowers/grape\\_facts.html](http://www.grapegrowersofontario.com/thegrowers/grape_facts.html)
- <sup>2</sup> Wine Council of Ontario, The Ontario Wine Industry 2006 Year in Review, available at <http://www.winesofontario.org/PDFs/WCO2006AnnualReport.pdf>
- <sup>3</sup> Ontario Wine Strategy Steering Committee, Poised for Greatness: A Strategic Framework for the Ontario Wine Industry, page 2, available at <http://www.winesofontario.org/PDFs/PoisedForGrtness.pdf>
- <sup>4</sup> Ontario Ministry of Agriculture and Food, Starting a Winery in Ontario, 2003.
- <sup>5</sup> Niagara Escarpment Commission, Do I need a Niagara Escarpment Permit, available at <http://www.escarpment.org/Publications/permitbooklet.htm>
- <sup>6</sup> Niagara Escarpment Commission, Protecting the Escarpment, available at <http://www.escarpment.org/About/protection.htm>, page 1
- <sup>7</sup> Niagara Escarpment Commission, Do I need a Niagara Escarpment Permit, available at <http://www.escarpment.org/Publications/permitbooklet.htm>
- <sup>8</sup> Ontario Ministry of Agriculture and Food, Starting a Winery in Ontario, 2003
- <sup>9</sup> Derived from A community guide to environmental best practice winery and vineyard management, The Mornington Peninsula Wine Industry, undated, p17.
- <sup>10</sup> Narelle Martin, Two Hemispheres Environmental Consulting, Sustainable Winemaking Ontario: An Environmental Charter for the Wine Industry, Eco-Winegrowing 101, Wine Council of Ontario, 2007
- <sup>11</sup> Canada Green Building Council, at [http://www.cagbc.org/news\\_events/news.php?id=24&press=1&draw\\_column=3:3:2](http://www.cagbc.org/news_events/news.php?id=24&press=1&draw_column=3:3:2)