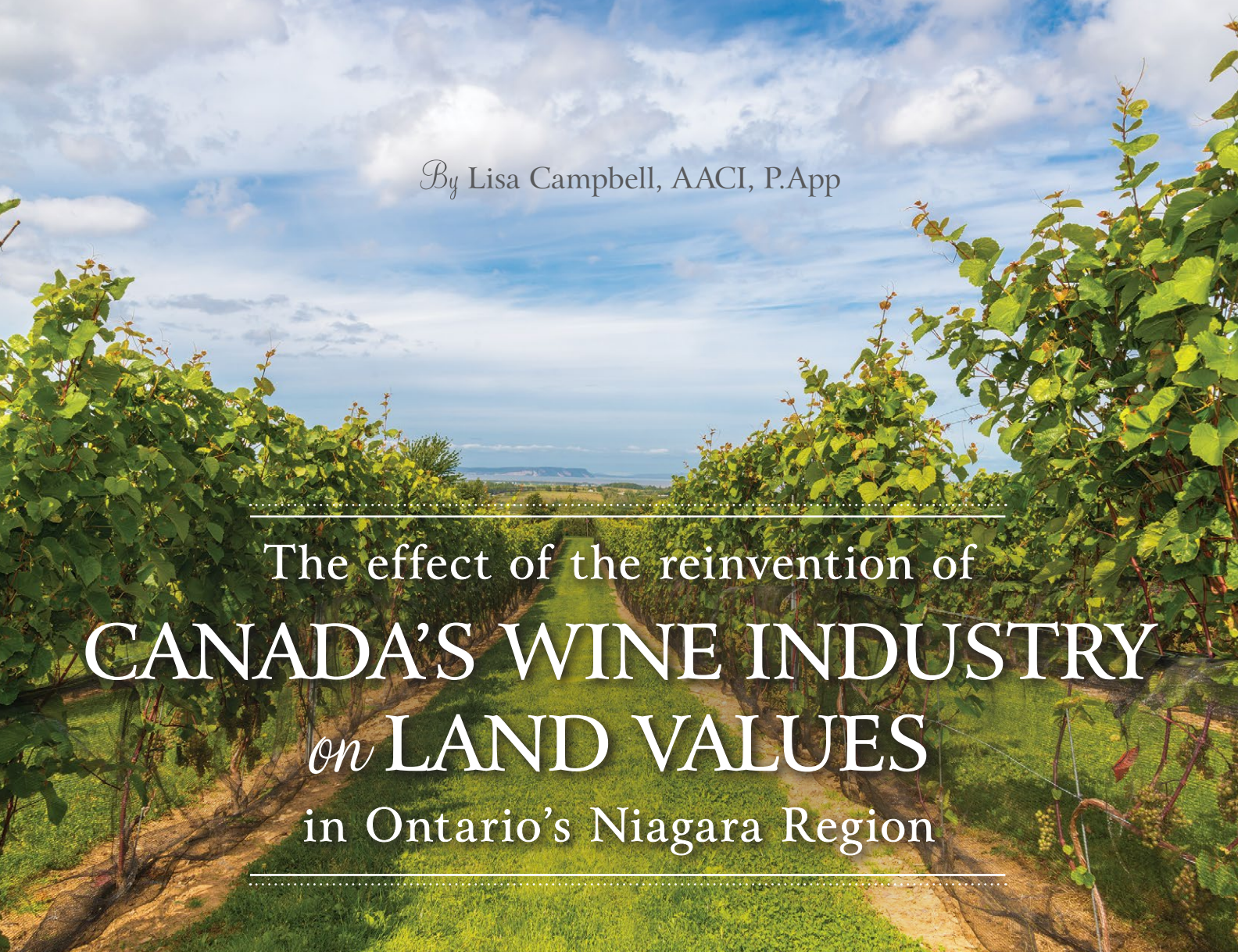


By Lisa Campbell, AACI, P.App



The effect of the reinvention of
CANADA'S WINE INDUSTRY
on **LAND VALUES**
in Ontario's Niagara Region

"The Study Area has historically been considered conducive to the construction of greenhouse space due to its moderated climate (which lowers energy costs), its close proximity to Toronto, and its close proximity to the US."

Every agricultural property is part of an agricultural industry – e.g., field crops (wheat, corn, soybean, etc.), dairy, tender fruit or horticulture. Each agricultural industry has a history, which has had a direct effect on the market values (past and present) of the properties related to that industry. This article endeavours to study the reinvention of Canada's wine industry over the 24-year period of 1989 to 2012, and the effect that this industry's history has had on the affected agricultural land values in the Niagara Region of Ontario over that time period.

Canada's wine industry is fairly small in the world theatre, comprising only about 30,000 acres of vineyard area in 2006,¹ compared, for instance, with France, which had roughly 2 million acres under vine in 2012. While numerous provinces have significant amounts of vineyard area, Ontario has the most acreage under vine, with approximately 17,000 acres in 2013. Although Canada's place in the world wine marketplace is quite small, grapes comprise Ontario's highest farm gate value of any of its fruit industries on an annual basis, comprising 43% of the provincial farm gate value for commercial fruit production in 2012. In 2013, grape sales exceeded \$100 million.² Of the total 2013 production, 97% was reportedly used for the creation of wine products, with the remaining 3% used for juice, jams and other grape products. Ontario has numerous grape-growing locales, the largest of which is the Niagara Region, with approximately 13,600 acres of vineyards, or somewhat less than half of Canada's total, according to the Grape Growers of Ontario.

Many fruits are native to North America. Among these is the *vitis labrusca*, or wild *labrusca* grape. Historically, these have been used in North America to derive numerous *labrusca* and hybrid grape cultivars for commercial purposes. *Labrusca* cultivars today include, but are not limited to, Niagara, Concord and Catawba, and they are quite suitable for the production of juice and jams. However, these cultivars were also used for wines throughout portions of North America, including Canada, many years ago (Catawba is still used in New York State). The fermentation of these grapes results in wines generally described as 'foxy' (i.e., having a musty odour and flavour) and considered by many wine enthusiasts to be less desirable than wines without this musty characteristic. *Labrusca* grapes are found in much of Canada as they are quite winter-hardy and can withstand Canadian winters and spring frosts with little or no damage to the vine or bud, resulting in more reliable yields on a year-to-year basis. As far back as the 19th century, the Canadian wine industry relied heavily upon hybrid grape cultivars, i.e., grapes derived from breeding programs that use *labrusca* and other species crossed with European *vinifera* grapes to create cultivars with better wine characteristics, improved hardiness and less 'foxy' characteristics. These hybrid cultivars included DeChaunac, Seyval Blanc, Villard Noir and Vidal, to name a few.

Forty years ago, these *labrusca* and hybrid vines had low risk for production, resulting in reliable profit margins to the farmer. When product prices were high enough, the greater reliability in profit margins from these varieties resulted in a lucrative business model for farmers. Until the late 1980s, Canadian tariffs on international products protected Canadian wines from direct market competition and kept prices for *labrusca* and hybrid grapes in Canada artificially high. This enabled *labrusca* and hybrid grape farms to remain more profitable during this period than they would have otherwise been under a purely market-derived price structure.

Canada's grape and wine industry during this time featured popular wines

that were derived from *labrusca* and hybrid grapes, such as Moody Blue and the iconic Baby Duck. While some of the original wines of the old Canadian wine industry are still on the shelves today, the *Free Trade Agreement (FTA)* between Canada and the US in 1988 rang the death knell for the old Canadian wine industry by removing trade barriers to US product.

Among other changes that occurred in federal legislation in the industry shortly after the *FTA*, *labrusca* grapes were banned from use in the production of Ontario wine. This was because the market for sweeter high-alcohol wines made from *labrusca* grapes had decreased dramatically by this time, while drier low-alcohol wines made from European-derived *vinifera* grapes had become far more popular in Ontario. To build a wine industry that could compete in the post-*FTA* market, legislation was necessary to induce growers to change from a business model based on *labrusca* grapes to one based upon the increasingly popular *vinifera* grape. Meanwhile, the Canadian and Ontario governments sought to aid farmers in the midst of this government-instituted industry change and implemented an extensive vine removal program throughout the 1989-1993 period, wherein the federal and provincial governments paid farmers to remove their *labrusca* grape plantings. More than 8,500 acres of vines were removed through this program. As a result of these government-instituted changes, farmers began to experiment in earnest with the cultivation of higher-quality *vinifera* grapes.

Vinifera grapes include a number of high-quality grape varieties that originated in Europe, including Sauvignon Blanc, Chardonnay, Pinot Gris, Merlot, Cabernet Sauvignon and Cabernet Franc, among others. While cultivation of these varieties was attempted in Canada during the 19th century, the presence of a serious grape pest, cold Canadian winters and late Canadian spring frosts resulted in significant damage/death to these vines, and the practice was abandoned. The *FTA* and the expanding Canadian market for high-quality wines resulted in an earnest revisiting of the practice of cultivating

vinifera grapes in Canada in a search for the economic viability of Canada's wine industry in the post-*FTA* economy.

As noted earlier, Canada's climate is by and large not suited to the cultivation of cold temperature sensitive *vinifera* grapes. With few exceptions, Canada's winters are far too harsh, resulting in high vine mortality rates in these varieties. One of the few areas in Canada with a climate more amenable to the cultivation of *vinifera* grapes is the Niagara Region of Ontario.

A small portion of the Niagara Region has a moderated climate that is highly influenced by Lake Ontario along its northern border. Meanwhile, the Niagara Escarpment is located along the southern edge of Niagara's wine producing lands. These features of the topographical layout protect this unique area of land in two ways: the area receives warming breezes during winter from Lake Ontario, as it does not freeze over; and a northern slope from the escarpment to Lake Ontario slows vine development in the spring and reduces the risk of spring frost. Warmer air masses circulate between these geographic bodies from north to south, resulting in a convection effect in wind currents at and above ground level, which causes a moderating climatic influence on the affected area and moderates both summer and winter temperatures. This land area is quite small and somewhat pie shaped, extending some 40 km from east to west along the shore of Lake Ontario. The escarpment slope is furthest from Lake Ontario at its east end (approximately 10-12 km). The affected area narrows towards the west end, where it is 1-3 km wide. This climatically moderated area tends to have fewer incidences of -20 to -25C air temperatures than the areas above the escarpment to the south and other areas nearby. This temperature range is relevant to the area's wine industry, due to the fact that it is generally considered to be the temperature at which significant damage and potential mortality can be caused to *vinifera* vines. In this article, the affected rural area will be referred to as the Study Area. Note that, while the above-noted

pie-shaped area includes numerous urban and semi-urban communities, the Study Area refers solely to the small amount of rurally-located agricultural acreage within the affected area's limits.

Of this rather small acreage, the area's convection effect moderates certain portions of the Study Area more so than others. In areas where the convection effect moderates air temperature significantly, the climate is considered fairly suitable to the cultivation of vinifera vines, while those areas that receive less moderation (and lower temperatures, particularly during winter and early spring months) are considered less suitable. In the case of the latter, this is due to the fact that these pose higher risk when contemplating a parcel in that area for the cultivation of these plantings. Since the climatic areas affected by this convection effect are so small, the various areas are generally referred to as 'meso-climates.'

The cost to construct a vinifera vineyard was recently estimated at approximately \$29,000 per acre, not including the cost of the land (as per 2009 figures from the Ontario Ministry of Agriculture Food and Rural Affairs). This figure also includes a four-year waiting period until vines are generally considered to be near full maturity. Construction

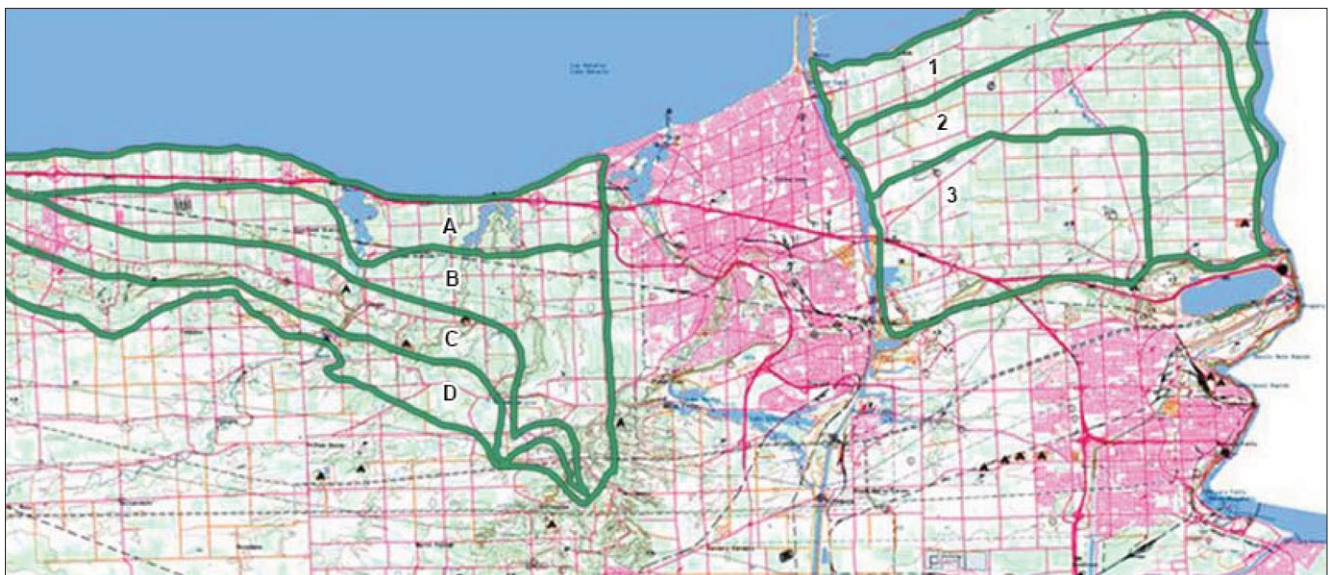
cost of a vineyard is therefore generally considered sizeable, running to over \$1 million to plant 40 acres, for instance. Considering the differences in risk of winter damage and frost damage to vines across various locales within the Study Area, the financial risk to farmers in the cultivation of vinifera grapes can vary greatly between locations that are merely a few kilometres apart. Bud damage caused by winter cold or spring frost can result in a waiting period of one year until the damaged portion of the vine is again producing; more significant damage can result in the vine needing to be cut to its base or removed altogether with a new vine being replanted, resulting in a waiting period of 3-4 years until the vine is near full production. Thus, between 1989 and 1993, a unique real estate market appeared in Ontario in the Niagara Region – one whose market values were based predominantly on climate as opposed to development potential, proximity to urban centres, or even soils.

Figure 1 is a map of the area affected by Niagara's convection effect, i.e., the Study Area. It is based upon the climatic map entitled *Site Selection for Grapes in the Niagara Peninsula*, originally generated by the Ontario Ministry of Agriculture and Food in 1976, last

revised in 2009, with some additional illustrations introduced for the sake of discussion. Zones A to D in the Study Area are located in the Town of Lincoln, while Zones 1, 2 and 3 are located in the Town of Niagara-on-the-Lake. In Lincoln, two of the zones are well-moderated: Zone A, located in close proximity to the moderating influences of the Lake Ontario shore; and Zone D, located along the 'Bench' of the Escarpment, where cold air travels quickly down the gently sloping land along the Escarpment face, to rest further north on more level land.

In the second part of this article, Zone D has been broken down into two areas – Zone D-West and Zone D-East, due to the fact that, although these areas are fairly consistent climatically, trends in unit values in the west end of Zone D have differed greatly from those in the east end of the zone throughout the study's timeframe. Meanwhile, Zones B and C have less moderation, but may still be suitable in some instances: specifically, Zone C, generally having a slight downward grade to the north, usually is somewhat superior to Zone B, which tends to have more level topography with cold air tending to rest in this area. Of the zones in Niagara-on-the-Lake, Zone 1 is generally considered to be well-moderated (being located in close

Figure 1: CLIMATIC MAP OF THE STUDY AREA



proximity to the moderating influences of the Lake Ontario shore), while Zones 2 and 3 have less moderation, but may still be suitable in some instances. The entirety of the Niagara-on-the-Lake portion of the Study Area tends to have fairly level topography.

This article studies the trends in land values in the Study Area during the first 24 years of a new, somewhat experimental Canadian industry. The study explores trends in values for land purchased for the cultivation of wine grapes from the date of the reinvention of the Niagara grape and wine industry in 1989 (shortly after the passing of the *FTA*) until the end of 2012. All sales of vacant agricultural land within the Study Area were considered in the analysis; however, only those sales of parcels with an estimated highest and best use of planting to grapes were used.

To estimate highest and best use of an agricultural parcel within the Study Area, analysis of the applicable parcel size was completed. Parcels within the Study Area usually tend to be quite small, relatively speaking in the national realm. Within the Study Area, a one-acre parcel on which a rural residence may be constructed will tend to have a high unit value per acre. Thereafter, the value per acre of a parcel will usually decrease in inverse relation to its size, assuming consistent location, soils, topographical attributes and the ability to construct a rural residence. Except for throughout Zone 3, at around the 15-acre point, values per acre tend to level off (again, assuming consistent soils/location/topographical features); from this point onwards, parcel size has little effect on the unit value of a parcel in the Study Area. Thus, only parcels of 15 or more arable acres were included in the study in all areas except Zone 3, if the parcels were considered legal for the construction of a single family residence.

Meanwhile, in Zone 3, the low agricultural unit values in this area throughout the study's timeframe resulted in values levelling off at around the 25-acre point; therefore, in Zone 3, only parcels having approximately 25 or more arable acres were included in

the study. As well, a few sales of parcels with smaller acreage that were zoned for agricultural purposes only (i.e., construction of a single-family residence was not permitted on the lands) were also included in the sales data due to the quite consistent unit values found between these sales and aforementioned buildable parcel sales.

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The next step in estimating highest and best use consisted of analyzing the parcel's soils. Vinifera grapes can grow on the variety of sandy loam, silty clay loam, clay loam and heavy clay soils within the Study Area. It should be noted that vinifera vines do not tend to have any issues in attaining the area's generally agreed-upon productivity on most of the Study Area's soil types. Only the area's heavy clay soils may result in productivity that is below the local industry's standard – these heavy clay soils are found only in portions of Zone 3. Soil stoniness does not tend to be a factor in the Study Area, nor does parcel topography, as the greater portion of the Study Area has fairly level topography, while those areas considered suitable to planting on sloped areas had been cleared for agricultural use prior to the study's time frame.

The third step in estimating highest and best use of an agricultural parcel within the Study Area consisted of disqualifying agricultural parcels from the study that were considered to have had a different highest and best use than that of planting to grapes as of the time of sale. The wine industry in Niagara has

historically competed for agricultural land in the Study Area with the peach industry; thus, an alternative highest and best use of the land that required contemplation was planting to peaches. Peach and nectarine plantings tended to be quite lucrative throughout most of the study's time frame.³

Meanwhile, only parcels with very sandy soils were considered suitable for the cultivation of peaches in the Study Area. The lucrative nature of this industry, coupled with the limited supply of land suitable to this use, resulted in parcels considered suitable to the cultivation of peaches and nectarines generally selling for unit values greater than those lacking these sandy soils, during the greater portion of the study period. Therefore, throughout the study period, sales of parcels with sandy loam soils that were purchased for cultivation to peaches and nectarines within the Study Area were considered to have a different highest and best use than planting to grapes, and were not included in the dataset. If the writer became aware of a parcel having sandy soils that was purchased for the cultivation of grapes, it was included in the dataset.

The wine industry in Niagara also shares the market for agricultural land in the Study Area with the greenhouse industry. The Study Area has historically been considered conducive to the construction of greenhouse space due to its moderated climate (which lowers energy costs), its close proximity to Toronto, and its close proximity to the US. Soils are generally not a considerable issue in the decision-making process of buying a greenhouse site, unless ground crops are part of the business plan proposed by the prospective greenhouse operator. However, quasi-commercial exposure can result in increased commercial visibility and easier accessibility, and can increase the unit value paid for a greenhouse parcel. Therefore, parcels with good quasi-commercial exposure that were purchased for the construction of a greenhouse in the Study Area were not included in the dataset.

The selection of a winery site can also benefit from quasi-commercial exposure. Such exposure can increase commercial visibility, prestige and on-site sales. This can result in substantially higher unit values paid for these sites. Inclusion of parcels with good quasi-commercial exposure in the dataset would have unnecessarily skewed the study's results. Therefore, any sales of parcels with such exposure that were purchased for the construction of a winery were not included in the dataset.

Thus, when all of the sales of vacant agricultural parcels that had taken place during the 1989-2012 timeframe within the Study Area were considered according to the above-noted parameters, 101 sales were included in the dataset. The parcels in the dataset range in size from 2.12 to 98.96 acres, with most of the sales being in the 15 to 98.96 acre range.

The study takes into consideration typical vendors and purchasers in the marketplace. Key players in the Niagara wine industry tend to be the following: farmers wanting to expand or contract their existing farmland holdings; existing winery owners wanting to do likewise with their existing farmland holdings; and investors looking to either build a winery⁴ or invest in land. The 'investor' component of this market includes investors from throughout Ontario and those from other parts of the world, and includes both individuals and investing partnerships.

From this point in the study's methodology, adjustments were made to the sales included in the dataset for non-arable land. This is due to the fact that, in this market throughout the study period, non-arable land is generally considered to have significantly lower utility than arable land, with vendors and purchasers in the marketplace taking the lower utility of these lands into account when negotiating sale prices. In particular, Zone D in Lincoln includes a substantial amount of non-arable, heavily treed ravine land.

Adjustments were made based upon sales of similar-type non-arable land in

the Study Area on which no residence could be constructed (in other words, the utility of these lands consisted solely of recreational and environmental use). In a couple of instances, adjustments were made for small amounts of acreage planted to vinifera vines, based upon the market-derived contributory value of the vines. In one instance, an adjustment was made for a small residence, based on the market-derived contributory value of this residence.

From this point, the weighted mean sale price per acre for each Zone in each year of the study period was derived using the aggregate of the adjusted sale prices paid in the year in each Zone divided by the aggregate number of acres sold in that Zone during the year. Throughout the remainder of this article, the weighted mean is referred to as the average annual sale price per acre. The average annual sale prices per acre in the Study Area's various zones are shown in the charts in Figures 2 and 3, which reference the portions of the Study Area located in Niagara-on-the-Lake and Lincoln respectively.

Thus, the study explores the reinvention of the Niagara wine industry and its effect on agricultural vacant land values within the Study Area throughout the 24-year history immediately following the FTA. The results of the study follow roughly five stages: 1989 to 1993, 1994 to 1997, 1998 to 2002, 2003 to 2008, and 2009 to 2012.

END NOTES

- ¹ Statistics Canada, Census of Agriculture, 2006
- ² *Industry Facts*, Grape Growers of Ontario website, August 2014
- ³ Peach plantings have been considered lucrative in the Niagara area over the greater portion of the study's time frame. However, in 2008, the sole fruit canning plant in Canada east of British Columbia, located in the Village of St. David's in the Town of Niagara-on-the-Lake, shut down. This resulted in a reported ±150 farmers in Niagara losing their sole buyer for their processing

peaches and pears. This resulted in a significant amount of peach and pear plantings being pulled out due to the fact that they were no longer considered economically viable, after which some of the vacant land was reportedly replanted to grapes. If the writer became aware of a sale of a parcel that was formerly planted to processing peaches and purchased for the cultivation of grapes, it was included in the study. However, sales of this type were considered minimal during the study period.

- ⁴ Winery locations with good quasi-commercial exposure were not included in the dataset. Only sales of winery locations with no quasi-commercial exposure component were included.

NOTE TO READERS:

The balance of Lisa Campbell's article on land values in the Niagara Region is available online and can be accessed at <http://www.aicanada.ca/industry-resources/canadian-property-valuation-magazine/>



ABOUT THE AUTHOR

As a Senior Consultant at Altus Group, Lisa Campbell, AACI, P.App is responsible for providing valuation services for litigation and expropriation purposes with the Expert Services Division. Her appraisal experience includes development land as well as multi-residential, commercial, industrial and agricultural/rural properties. Ms. Campbell specializes in the appraisal of agricultural and rural property, and provides valuation assistance on matters regarding agricultural and rural property across Ontario. Prior to joining Altus Group, Ms. Campbell worked for an extended period of time in the Niagara Region of Ontario, where she appraised numerous vineyards, wineries, tender fruit orchards and greenhouses. 🌈