

A Comparative Assessment of the Capacity of Canadian Rural Communities to Adapt to Uncertain Futures

COMMUNITY BACKGROUND PAPER Edwardsburgh/Cardinal, Ontario

**FINAL DRAFT
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NOTE:

A first draft of this paper was used as basis for discussion at a workshop held in Spencerville on April 27th, 2006 at the local Township Office. A revised draft was also discussed at a follow-up workshop that took place on September 26th, 2006. This final draft incorporates many of the suggestions given by workshop participants at these times, and information provided by them in subsequent correspondence; it remains a draft document and further comments/suggestions are welcomed.

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Community Background Paper: Edwardsburgh/Cardinal, Ontario

1 Introduction - Geographic Location and Governance

1.1 GEOGRAPHIC LOCATION

Edwardsburgh/Cardinal is a mainly rural Township located in Southeastern Ontario, with its southernmost boundary bordering the St. Lawrence River Seaway.¹ The Township covers an area of 312 km² and is located within the Great Lakes-St. Lawrence Lowlands region; the area is relatively flat with some rolling plains, and the topography consists of forested areas with pockets of agricultural land. The headwaters of the South Nation river are located southwest of the Township, placing it near to the westernmost boundary of the watershed (*Figure 1*).

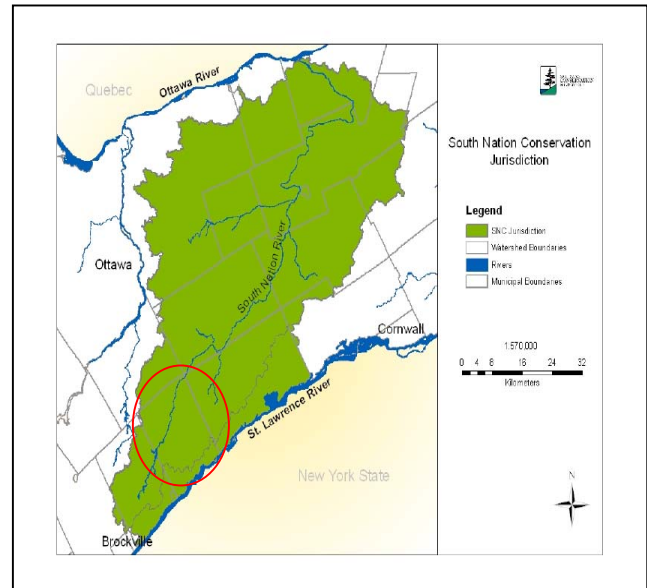
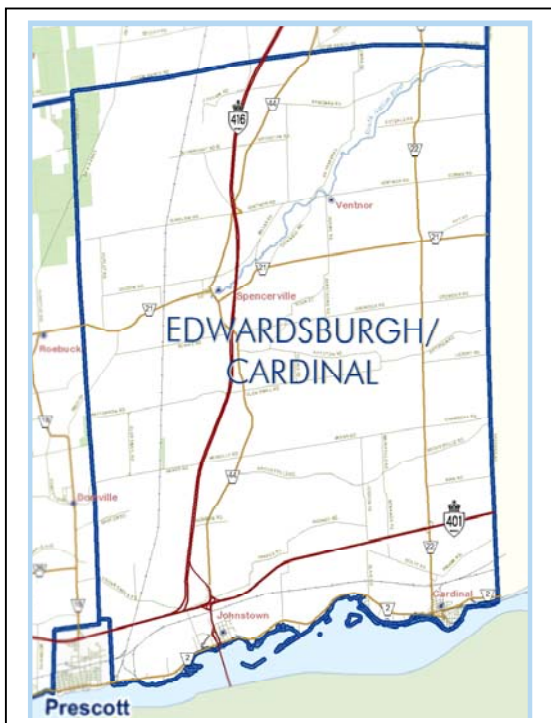


Figure 1 Edwardsburgh/Cardinal (circled) within the Context of the South Nation Watershed (Modified from SNC 2006a)



Two major provincial highways intersect the Township – Highway 416 runs north-south almost directly through the centre of the Township and provides a link to Ottawa, the nearest major urban centre (1 hour drive north), which is the destination for numerous commuters who live in the area. Highway 401 runs east-west through the southern part of the Township, linking it with Toronto and Montreal (4 hours drive west and east, respectively) (*Figure 2*).

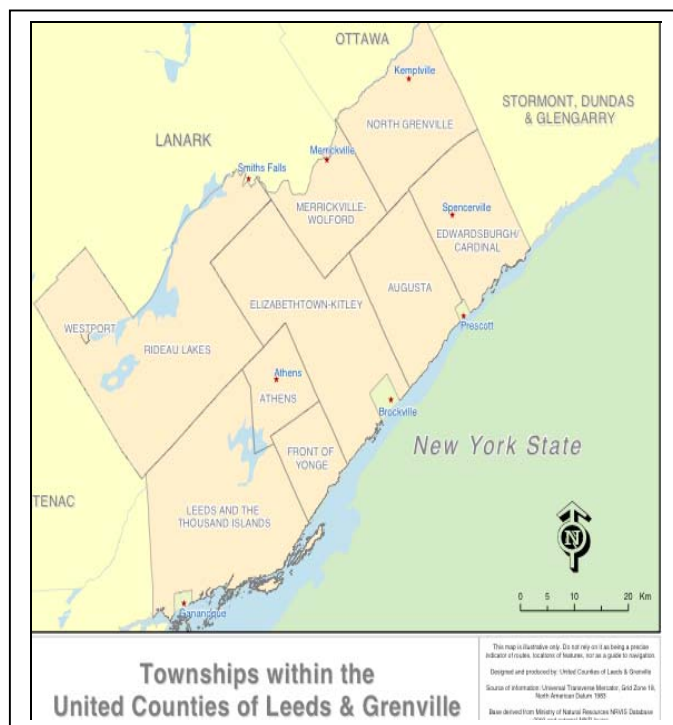
Figure 2 Major Roads/Settlements in Edwardsburgh/Cardinal (Township of Edwardsburgh/Cardinal 2006e)

¹ The St. Lawrence Seaway is a waterway that connects the Atlantic Ocean with the Great Lakes through a lock system that was constructed between 1954-1959. The Seaway has opened up the industrial and agricultural regions around the Great Lakes and Upper St. Lawrence to deep-draft ocean vessels and is therefore one of the most important domestic and international transportation systems in the world (MAH 2002).

As pointed out in the Official Township Plan (Tunnock Consulting Ltd. 2003), Highway 401 demarcates two distinct sections within the Township: the waterfront area south of the 401 is the older, industrial core that includes Cardinal and Johnstown, whereas the area north of the 401 is the ‘rural heartland’ of the Township and includes Spencerville and numerous smaller hamlets. There is also railway, airport² and waterway access to the area, which afford proximity to major Canadian and American markets (SGEDC 2005).

1.2 GOVERNANCE

The Village of Cardinal and the Township of Edwardsburgh were amalgamated in January 2001 as part of the provincial program of municipal restructuring. The Township of Edwardsburgh/Cardinal is now responsible for delivery of all municipal services in both of the former municipalities (Tunnock Consulting Ltd. 2003). These services include local planning/zoning, site plan control, local streets and sidewalks, refuse collection, by-law enforcement, fire protection, parks and recreation, tax collection, building inspection/permits, municipal economic development and promotion, library facilities, road networks, as well as providing water and sewer services to certain areas³ (Township of Edwardsburgh/Cardinal 2006b)



Edwardsburgh/Cardinal is one of several lower-tier municipalities that make up the United Counties of Leeds and Grenville (UCLG), which is the upper tier governance body (*Figure 3*). Edwardsburgh/Cardinal is governed by a Municipal Council, which consists of the elected Mayor and six Councillors whose decision-making is informed by several standing committees that represent various sectors (e.g., environment services/public works, parks and recreation, planning advisory, economic development, community festivals). The Mayor represents the Township within the UCLG (Township of Edwardsburgh/ Cardinal 2006a).

Figure 3 Edwardsburgh/Cardinal within the Context of UCLG
(Source: UCLG 2006c)

² There are three airports near to Edwardsburgh/Cardinal – there are two smaller airports in nearby Iroquois and Brockville, and the larger International Airport in Ottawa.

³ Planning within the Township differs for more urbanized areas that have full (i.e., Cardinal) or partial (i.e., Spencerville) water and waste treatment systems, and the more dispersed or rural areas (i.e., Johnstown, New Wexford) that have private wells and septic systems (Tunnock Consulting Ltd. 2003).

2 Getting to 2006 – A Historical Overview

2.1 SOUTHEASTERN ONTARIO AND THE SOUTH NATION WATERSHED

Iroquois tradition states that the St. Lawrence Valley (i.e., current-day southeastern Ontario and southern Quebec) was originally inhabited by a single (Iroquoian) tribe, whose members eventually moved south into New York in order to escape Algonkin domination (date unknown).⁴ Although the Algonkin maintain that their ancestors migrated from the east to inhabit the Upper St. Lawrence River as early as 1400, there is evidence that when Jacques Cartier first explored the St. Lawrence River in 1534, he came across Iroquois-speaking peoples living in the area (i.e., along the river, in settlements between Quebec and Montreal). However, when the French returned to the area seventy years later (i.e., in 1603) to establish their first permanent settlement, the Iroquois villages were no longer there and the area had been taken over by the Montagnais and Algonkin peoples. Today, although the Algonkin make up ten separate First Nations in Canada – nine in Quebec and one in Ontario – their reserves are generally located north of the St. Lawrence River (Sultzman 1999a and 1999b). However, the Mohawk⁵ reserve of Akwesasne is located on an island in the middle of the St. Lawrence, straddling the Canadian-American border southeast of Cornwall (i.e., southeast of the South Nation watershed) (Mohawk Council of Akwesasne 2006).

After several decades of inter-tribal warfare, fur trade, missionary activity and struggles between colonial powers, both Iroquois and Algonkin peoples ended up fighting alongside the British during the American Revolution (1775-1783). Although the Proclamation of 1763 and the Quebec Act of 1774 ensured protection of Algonkin homeland from settlement, thousands of United Loyalists moved into the St. Lawrence Valley area after the Revolution ended. The British government signed Treaties with Aboriginal peoples that led to the establishment of reserves on small parcels of land, and sold off the rest of the land to newcomers (Sultzman 1999a and 1999b). Initial settlement by Loyalists was followed by a ‘second wave’ of immigrants from Europe (i.e. British, Dutch, German, Irish, Scottish) in the early 1800s, and French Canadians who moved into the area in the late 1800s when the manufacturing industry developed in the Cornwall area. Migration to the area continued in the following decades, alongside the development of logging, agricultural and industrial activities (Diogo & Jeena 1995).

As demand for lumber grew in Britain, the U.S.A. and locally (i.e., as settlements were established by first- and second-generation settlers), much of the land in the South Nation watershed was deforested and commercial lumbering ensued: local sawmills were built and logging operations were established throughout the area. Steamboats traveled the South Nation River to link the area with trade on the Ottawa River, and after the 1850s a railroad network was expanded and improved access to/from the region. By 1920 there

⁴ Although the Algonkin did not have permanent settlements or a centralized political system (as the Iroquois did) they used their transportation and woodland skills to dominate the Iroquois prior to the establishment of the Iroquois League in the 1570s (Sultzman 1999a).

⁵ The Mohawk are the largest group of Iroquois, and their population of approximately 35,000 is spread throughout New York, Quebec and Ontario (Sultzman 1999b).

was little original forest remaining in the area and agriculture took over as the main economic activity (Coyne 2001).

During the days of early settlement, farming was carried out mostly for subsistence purposes; however, as more land was cleared farmers started to plant commercial crops. Wheat was the first crop grown in the area, and supported the local economy until the 1840s when the wheat midge destroyed crops and farmers were forced to diversify their farming practices (i.e., livestock husbandry, coarse grain cultivation, dairying). Dairying became the main agricultural activity after 1870 and production expanded during the early 1900s as demand for milk and butter increased: this in turn sparked an increase in the production of winter feed and mixed grains to feed to livestock. As improved technologies allowed for increased food production – the steam engine was introduced to the area in 1910 and the tractor in 1918 – settlements sprang up throughout the watershed to provide goods and services to farmers and their families. Several mills and dams were constructed throughout the watershed, which also tended to attract more industry, supply shops, services, and hence more people into the area (Coyne 2001).

The introduction of electricity to rural areas in the 20th Century brought many changes to the area: power lines were constructed in the 1930s and 1940s and electrical motors allowed for increased agricultural production, since farmers could expand their output without a huge increase in labour (Coyne 2001). The construction of the St. Lawrence Seaway in the 1950s also brought about many changes as huge tracts of land were inundated with water: communities were relocated, farmlands were flooded, and the area was opened up to increased shipping and trade activity. Also, as new agricultural industries set up in the area, farming became more efficient and the economies and activities in rural areas were restructured (Diogo & Jeena 1995).

Overall, a history of deforestation combined with increasingly intensive farming practices, wetland conversion and the establishment of villages have affected the natural character of the South Nation river and have contributed to increased incidences of spring flooding and summer drought. Deforestation and flooding have also caused mass erosion of topsoil on agricultural lands and of riverbanks, from as early as the 1860s. These problems remain to this day – the South Nation river basin is susceptible to summer droughts, spring flooding, wind and water erosion. A few natural occurrences that have affected the watershed in recent years include Ice Storms in 1942 and 1998, and two landslides that occurred in 1971 and 1993 that moved 70 acres and 50 acres of land, respectively (Coyne 2001).

2.2 TOWNSHIP OF EDWARDSBURGH/CARDINAL

The area currently known as Edwardsburgh/Cardinal has a long history of settlement – surveyors laid out the township boundaries for Edwardsburgh in 1783 (incorporated in 1850) along the St. Lawrence, for United Empire Loyalists and their families. The first settlers arrived in the area in 1784 and soon set up farms, mills and basic infrastructure. The first saw and gristmill was built in 1790 near the Galops Rapids, where the Village of Cardinal is presently located. English and Irish immigrants moved into the area in the 1800s and Dutch immigrants settled in the area more recently in the 1950s (ECBA 2006a; Grenville Historical Society 2006).

Settlement was initially focused along the St. Lawrence seafront: Johnstown was founded in 1789 and Cardinal in 1790, and various industries (i.e., lumber mills, flour grinding, wool carding) drew people to the area. Rail service was expanded into Edwardsburgh in the mid-1800s, which eased accessibility into the interior of the Township for settlement of agricultural lands. Spencerville was named the administrative centre of the Township in 1846 and for a while agriculture became the primary employer for residents in the area. However, rail and canal improvements in the early 1900s facilitated the continued development of manufacturing, service and retail industries in Edwardsburgh/ Cardinal, which remain a key aspect of economic activity to this day (Tunnock Consulting Ltd. 2003; SGEDC 2005).

In Cardinal, economic development was linked to the establishment of the Canada Starch Company (CASCO) from the mid-1850s. Prosperity in the area was also due to the abundance of nearby water, rail and seaway access. Cardinal Village became incorporated in 1880 and the need for municipal services soon followed; sidewalks and roads were built, the first water system was installed in 1895 and the first sewer system in 1934. As Cardinal became increasingly urbanized during the late 1800s it became governed separately from Edwardsburgh, where economic activity remained focused on rural development activities (e.g., agriculture). The Village of Cardinal and the Township of Edwardsburgh were re-amalgamated in 2001 a part of a provincial restructuring program (Tunnock Consulting Ltd. 2003).

The St. Lawrence Seaway was opened in 1958 and replaced the Galops Shipping Canal that had been built in Cardinal in 1901, allowing for a substantial increase in shipping activity. In 1960 the Prescott-Ogdensburg International Bridge that links Canada with the U.S. was opened in Johnstown, and in 1961 the Edwardsburgh section of Highway 401 was opened. The passenger train that had been running on the Ottawa-Prescott line ceased in 1957. All of these events affected the ‘geography of movement’ within the Township (Tunnock Consulting Ltd. 2003).

Changes also began to occur within the agricultural sector – for example, a Milk Marketing Board was established in the area in the 1960s and their quota system had an impact on the dairy industry within the Township. More broadly, farming within UCLG has undergone some significant changes over the last fifteen years as the role of traditional family farming has shifted and there has been an overall decline in the number of farms for almost all product types (e.g., hog farms, poultry/egg farms, grain/oilseed farms, dairy farms, fruit/veggie farms, beef cattle farms). At the same time, there has been an increase in the number of farms producing field crops and specialty products (Economic Growth Solutions Inc. 2002).

3 Current Community Well-Being

3.1 SOCIAL CONTEXT

3.1.1 Population and Demographic Trends

Population characteristics are important to consider when assessing the social, economic and health status of a community. The Township of Edwardsburgh/Cardinal has a population of approximately 6,600 people who are dispersed between the urban-industrial Village of Cardinal (approximate population of 1,800), the historic Villages of Johnstown (approximate population of 800) and Spencerville (approximate population of 300), as well as several smaller, rural hamlets (i.e., Ventnor, Shanly, Hyndman, Pittston, Brouseville and Groveton – see map 1.2 above) (Tunnock Consulting Ltd. 2003). The Township can therefore be considered a ‘multi-nodal’ community that encompasses a widely scattered and mixed (urban/rural) population.

Residents of Edwardsburgh/Cardinal are predominantly English-speaking and the Township has a low foreign-born population – only 4.8% of the total population are, or have been, landed immigrants (vs. 26.9% in Ontario) and most of these people moved to the Township before 1991 (i.e., minimal increase in immigrant population over last 15 years). Few residents are of visible minority (0.75% of the total population) or identify as aboriginal (2.2% of the total population). In terms of religion, the majority of the population in Edwardsburgh/Cardinal identify as Protestant (59.9%) and Catholic (24.2%) (Statistics Canada 2002b).

Edwardsburgh/Cardinal has been experiencing ‘stable growth’ for several years, in that the population has not increased or decreased significantly (*Figure 4*). For instance, between 1991-1996 the total population increased by 6.3% and then decreased by 0.6% between 1996-2001, which could partially be due to slow growth rates resulting from an ageing population.

Figure 4: Historic Population Data for Edwardsburgh/Cardinal (E/C)

Year	E/C Population	Pop % change from previous year (E/C)	UCLG Population	Pop % change from previous year (UCLG)	Ontario Population	Pop % change from previous year (Prov)
1951	4,492	-	55,876	-	4,597,542	-
1956	5,290	17.7	63,640	13.9	5,404,933	17.6
1961	5,590	5.7	69,753	9.6	6,236,092	15.4
1966	5,773	3.3	72,558	4.0	6,960,870	11.6
1971	5,779	0.1	74,409	2.5	7,703,106	10.7
1976	6,140	6.3	78,604	5.6	8,264,465	7.3
1981	6,142	0.03	80,941	3.0	8,625,107	4.4
1986	6,141	-0.02	84,582	4.5	9,101,694	5.5
1991	6,315	2.8	90,235	6.7	10,084,885	10.8
1996	6,715	6.3	96,284	6.7	10,753,573	6.6
2001	6,674	-0.6	96,606	0.3	11,410,046	6.1

Sources: Statistics Canada 1951-2001

As indicated in *Figure 4*, in general population growth rates in the Edwardsburgh/Cardinal area have been significantly lower than those in the United Counties and those in Ontario overall since the early 1960s. Some adjacent municipalities (i.e., North Grenville, Merrickville/Wolford, Augusta) have been experiencing higher rates of growth as the population of Ottawa and Brockville expand,⁶ but to date this has not significantly affected growth rates in Edwardsburgh/Cardinal (Tunnock Consulting Ltd. 2003).

Understanding the age structure of a place is also key to gaining insight into likely current and future needs and pressures on a community. In general, the population of Edwardsburgh/Cardinal is ageing (*Figure 5*). In 2001, there were proportionally more people over the age of 65 in the Township than in 1996; also, the median age in 2001 was 39.8 as compared to 37.3 in 1996. More broadly, when compared with provincial figures, the population in Edwardsburgh/Cardinal is also older on average: for example, in 2001 people in the 65+ age category represented 13.8% of the population in Edwardsburgh/Cardinal, whereas this same age group represented 12.9% of the total population in Ontario. This trend can be partially attributed to the fact that in recent years there has been an increase in the number of retirees moving to the area from urban centers such as Ottawa.

Figure 5: Age Distribution in Edwardsburgh/Cardinal and Ontario (1991-2001)

Age Distribution	Edwardsburgh	Cardinal	Edwardsburgh/Cardinal	Ontario
2001				
% pop 0-14	-	-	19.7	19.6
% pop 15-44	-	-	38.9	43.9
% pop 45-64	-	-	27.6	23.6
% pop 65+	-	-	13.8	12.9
Median Age	-	-	39.8	37.2
1996				
% pop 0-14	20.2	21.2	20.5	20.6
% pop 15-44	42.6	39.9	41.9	45.5
% pop 45-64	25.6	22.9	24.8	21.5
% pop 65+	11.7	15.9	12.8	12.4
Median Age	36.6	38.0	37.3	36.9
1991				
% pop 0-14	20.3	17.4	19.6	20.4
% pop 15-44	43.8	39.2	42.7	48.0
% pop 45-64	25.1	24.1	24.8	19.9
% pop 65+	10.8	19.3	12.9	11.7
Median Age	-	-	-	

Source: Statistics Canada 1991, 1996 and 2002b

As pointed out in the UCLG Economic Development Strategic Plan (Economic Growth Solutions, Inc. 2002), this age profile indicates that existing and new companies operating in the area will need to develop strategies to attract and retain a younger, skilled workforce. In addition, it is projected that the elderly segment of the population (65+)

⁶ This can be attributed to relatively low costs for land, development and housing in rural municipalities as compared to Ottawa and other urban centers (MAH 2002).

will continue to grow, which may increase demand for social and recreational opportunities (Economic Growth Solutions Inc. 2002). An ageing population also has implications for health services in the area, since seniors tend to use a greater proportion of health care resources.

3.1.2 Health and Health Services

Most of the health care facilities for residents of Edwardsburgh/Cardinal are located in neighbouring communities, although there is one **doctor's office** in the Township (in Cardinal).⁷ There are also three hospitals nearby – the **Brockville General Hospital** (20 km southeast of Edwardsburgh/Cardinal), the **Kemptville District Hospital** (25 km north of Edwardsburgh/Cardinal) and the **Winchester District Memorial Hospital** (50 km northeast of Edwardsburgh/Cardinal) – that offer emergency medical services and walk-in clinics to residents of the Township (Tunnock Consulting Ltd. 2003; SGEDC 2005).

Edwardsburgh/Cardinal is also serviced by the **Leeds, Grenville and Lanark (LGL) District Health Unit**, which offers a variety of services – including home care to residents of Edwardsburgh/Cardinal – and has offices throughout the region in Brockville, Smiths Falls, Kemptville, Almonte and Gananoque. The LGL Health Unit website is comprehensive and provides information about issues ranging from reproductive health to food safety, infectious disease, cancer, sewage/land control and West Nile virus. The Health Unit espouses a 'population health' approach, meaning that 'health' is broadly defined as encompassing biological, social, political, economic and environmental factors. From this perspective, determinants of health can include a wide range of variables such as age, gender, lifestyle, social support networks, education, income, air and water quality (LGL Health Unit 2006).⁸ Although some health-related trends and statistics are available for the Township of Edwardsburgh/Cardinal, most analysis has been carried out for the combined Counties of Leeds, Grenville and Lanark.

Life expectancy for both men and women is slightly lower in LGL as compared to provincial and national statistics, although this gap lessened between 1997-2001 (LGL Health Unit 2004). Life expectancy at birth has increased in LGL during recent years (following provincial and national trends) and fertility rates in LGL have been higher than Ontario every year between 1981-1996. However, there was a continuing decline in the annual number of live births in LGL between 1996-2000; the majority of these births have come from the 20-29 year age group. In addition, there is a much lower rate of teenage pregnancy in LGL than in the rest of Ontario (LGL Health Unit 2000, 2004) – this may be related to the effectiveness of the 'Healthy Lifestyles Programs' being taught in local schools by the LGL Health Unit.

⁷ There are also medical clinics in Iroquois and Prescott, located to the east and west of Edwardsburgh/Cardinal, respectively.

⁸ Although not all of these variables are discussed within the 'health and health services' section of this paper, most of them are covered in other parts of it.

Mortality rates in LGL are relatively high when compared to Ontario overall, and the death rate for both male and female residents has increased steadily every year from 1981-1996. This is likely related to the ageing population trend in the area. The principal causes of death are similar for men and women in LGL, and include circulatory/respiratory diseases (i.e., heart disease, stroke, hypertension), cancer, infectious diseases (i.e., tuberculosis, pneumonia, influenza,) and injuries (i.e., bicycle accidents, boating injuries, drowning) (LGL Health Unit 2000). A survey of adult residents in LGL who were asked about the prevalence of chronic disorders reveals that 16.5% of the surveyed population has problems with high blood pressure, and 11.9% suffer from asthma (LGL Health Unit 2004). Among children (i.e., people under 19) in LGL, asthma is one of the leading causes of hospitalization. The closest air quality monitoring stations for the Townships are found in Kingston and Ottawa (LGL Health Unit 2000).

The leading causes of death in LGL as reported in 2000 and 2004 were linked to cardiovascular problems. Cancer is the second leading cause of death in LGL; major cancer types are lung, colo-rectal, breast and prostate. In addition, between 1997-2000 there was a significantly higher incidence of melanoma of the skin (skin cancer) in LGL than in the province overall (LGL Health Unit 2000, 2004). Indeed, an analysis of information from the Ontario Cancer Registry indicates that the overall incidence of cancer and cancer mortality is higher in LGL as compared to the rest of the province, and cancer rates within LGL were 20% higher during 1992-1995 than they were from 1982-1986 (LGL Health Unit 2000).

A 1996 survey carried out with residents from the Counties of Leeds-Grenville, Lanark, Kingston-Frontenac, Lennox-Addington and Hastings-Prince Edwards, measured self-rated/self-perceived health (i.e., physical and mental health as perceived by an individual based on their own experiences, values and beliefs). This survey indicated that 66% of residents in these Counties older than 12 felt their health was very good or excellent. This was true for both males and females, but differed amongst age groups – as expected, fewer elderly people reported very good or excellent health (LGL Health Unit 2000).

Finally, when assessing the health and well-being of a certain population it is important to consider social environments (e.g., social support systems, household composition and socioeconomic status). In the LGL District, almost 90% of residents aged 12 and older have reported high levels of social support, based on networks developed through community groups, schools and workplaces (LGL Health Unit 2000). In terms of household composition, 88% of families in Edwardsburgh/Cardinal are headed by married or common law couples (*Figure 6*). However, there has been an increase in the number of lone parent families in the Township over the last few years – which represented 8.7% of the total number of families in 1996 and increased to 12% in 2001 – mirroring the national trend of changing family structure. The majority of these single parent households (80 %) are headed by women. Average family incomes vary significantly by family type, with couple families having on average more than two times the income than lone-parent families (Statistics Canada 2002b).

3.1.3 Education

Education is another important socio-economic factor that is positively associated with healthy lifestyles and community well-being. There are four elementary schools within the municipality – **Benson Public School** in Cardinal, **Centennial 67** in Spencerville, **North Edwardsburgh School** in Shanly and **South Edwardsburgh Public School** in Johnstown – that are run by the Upper Canada District School Board. Also, the Catholic District School Board of Eastern Ontario runs two elementary schools in nearby Prescott. The nearest secondary schools to Edwardsburgh/Cardinal are **South Grenville District High School** in Prescott, **St. Mary Catholic High School** in Brockville and **St Mike’s Catholic High School** in Kemptville (SGEDC 2005).

As compared to Ontario overall, a lesser proportion of young residents in Edwardsburgh/Cardinal (i.e., aged 20-34) have completed high school and/or some other form of post-secondary. However, amongst the older segment of the population (i.e., aged 35-64) there are in fact a higher proportion of people in Edwardsburgh/Cardinal who have attained these levels of certification (Statistics Canada 2002b). This trend may be partially explained by a tendency for people in Edwardsburgh/Cardinal to return to school to complete these requirements at a later time in life. The **T.R. Leger School for Adult, Alternative and Continuing Education** is based out of nearby Prescott and offers a wide variety of credit and upgrading courses.

Further, a significantly higher proportion of the population in Edwardsburgh/Cardinal have trades certificates and college diplomas as compared to Ontario overall. In contrast, there are a considerably lower proportion of people in Edwardsburgh/Cardinal with University degrees as compared to provincial averages (*Figure 6*).

Figure 6: *Educational Profile of the Edwardsburgh/Cardinal and Ontario Populace*

Levels/Types of Schooling (2001)	Edwardsburgh/Cardinal	Ontario
% Adults 20-64 with high school graduation and/or some post-secondary	26.1	27.2
% Adults 20-64 with college graduation	21.2	18.9
% Adults 20-64 with trades certificate/diploma	17.5	10.4
% Adults 20-64 with university grad	8.4	23.7

Source: Statistics Canada 2002b

There are two post-secondary institutions in close proximity to Edwardsburgh/Cardinal: the **University of Guelph Kemptville Campus** is located approximately 30 km north of the Township and is dedicated to education and research on agriculture and the agri-food industry (Kemptville College 2006). **St. Lawrence College** has campuses in Brockville (30 km southeast of Edwardsburgh/Cardinal) and Cornwall (70 km east of Edwardsburgh/Cardinal) and offers a range of degree and applied trades programs, ranging from health sciences to computer studies, animal science and motorcycle training (St. Lawrence College 2006).

3.2 ECONOMIC CONTEXT

3.2.1 Economic Development Committees and Associations

There are several groups in Edwardsburgh/Cardinal and UCLG that have emerged in recent years to promote economic development in the area. The **Edwardsburgh/Cardinal Economic Development Committee** is run by the Township Council (Township of Edwardsburgh/Cardinal 2006c). Another local group is the **Edwardsburgh-Cardinal Business Association (ECBA)**. The ECBA is a registered corporation and is made up of local business owners in the Cardinal area, who have formed to “promote the use of existing businesses within the Cardinal area and to actively search for and develop new business opportunities” (ECBA 2006b). The group is reaching out to the broader Township, but membership at this time is mostly limited to Cardinal-area business owners.

More broadly, the Township of Edwardsburgh/Cardinal has linked up with the adjacent Township of Augusta and the Town of Prescott to collectively promote economic growth and to deliver government services effectively in the area. The collective effort of these independent jurisdictions is referred to as the **South Grenville Economic Development Committee** (SGEDC 2006).⁹ There is also a **Chamber of Commerce** based out of Prescott, made up of volunteers from Prescott and surrounding areas who are working together to direct growth, economic development, tourism and to improve quality of life in the area (Prescott District Chamber of Commerce 2006).

In general, these Township-level groups work in collaboration and also function within the larger Leeds and Grenville County system. For example, the South Grenville Economic Development Committee works in partnership with the **Leeds and Grenville Economic Development Office** (UCLG 2006a)) and the **Grenville Community Future Development Corporation** (GCFDC). GCFDC is a community-based, nonprofit organization with a mission to collaborate with regional partners and invest in sustainable economic development in Grenville county and surrounding areas. GFDC provides numerous programs and services to local residents, including business financing, business consulting, and a self-employment benefit program (GFDC 2006).¹⁰ Finally, the county-level **Joint Services Economic Development Committee** is a partnership between UCLG, Brockville, Prescott and Gananoque.¹¹ This group is mandated with economic development at a more regional scale and also works to coordinate social services, social housing, land ambulances and provincial offences administration (UCLG 2006b).

⁹ It is important to point out that ‘South Grenville’ is not an official political formation (i.e., municipality), but is rather a name that the three member municipalities have given to themselves.

¹⁰ GCFDC is funded by Industry Canada as part of a network of 61 community future development corporations across Ontario that deliver financial services and support regional economic development initiatives.

¹¹ At the time of the follow-up workshop in September 2006, the future of the Joint Services Committee was up in the air as some member municipalities had decided to withdraw from the committee. In October 2006 the Committee met and decided to remain intact at least for the short term (Lawless 2006). If the Committee does not continue to function, this would have implications for determining a regional vision for economic development, which could in turn impact local level development priorities as well (since these tend to be nested within the broader context).

3.2.2 Labour Force, Employment and Income

There is a stable and experienced labour force of approximately 3,200 people in Edwardsburgh/Cardinal. However, in the Official Township Plan it is indicated that only 11% of this workforce is employed within Edwardsburgh/Cardinal, with the majority of the labour force working outside of the Township (Tunnock Consulting Ltd. 2003). This helps to explain why 93% of the working population in Edwardsburgh/Cardinal uses cars, trucks or vans to get to work, as either drivers or passengers (Statistics Canada 2002b). This indicates the importance of maintaining the road network in the area, since such a large proportion of the population commute to/from their places of employment.

The most common occupation for residents in Edwardsburgh/Cardinal involves working in trades, transport and equipment operation (23% of the experienced labour force), followed closely by sales and service (22.5%) and to a lesser extent business, finance and administration (15.5%). Approximately 6% of the total experienced labour force is involved with occupations unique to primary industry (i.e., agriculture, forestry) (Statistics Canada 2002b).

In terms of employment by industry, the manufacturing and construction industry employs 26.7% of the experienced labour force in Edwardsburgh/Cardinal, which can be attributed to the Township's largest industrial employer – **Casco** (see below for more details). Other significant industries in the area include business (19% of the experienced labour force) and 'other' services (20%), wholesale and retail trade (14.5%), health and education (12%), agriculture and other resource-based industries (4.5%), as well as finance and real estate (3.5%) (Statistics Canada 2002b).

Figure 7: Selected Economic Indicators of Community Well-Being (2001)

	Edwardsburgh/Cardinal	Ontario
Employment		
Employment Rate	58.4	63.2
Participation Rate	62.0	67.3
Unemployment Rate	5.9	6.1
% population with earnings working FT all year	55.7	55.8
Income (2000)		
Average Earnings ¹²	\$29,080	\$35,185
Median Household Income	\$49,312	\$53,626
Median Total Income (15+)	\$21,675	\$24,816
Earnings as % of Income	71.5	78.7
Government Transfers as % of income	14.4	9.8
Housing		
% owned dwellings	79.8	67.8
% dwellings constructed before 1991	87.5	85.7
Avg. gross monthly payment for rent	\$567	\$753
Avg. monthly payment for owned dwellings	\$698	\$964

Source: Statistics Canada 2002b

¹² All persons with earnings

As indicated in *Figure 7*, average earnings in Edwardsburgh/Cardinal are lower than those for Ontario overall. Government transfers account for approximately 14% of peoples' total income as compared to 9.8% in Ontario overall, which indicates that a higher percentage of the population in Edwardsburgh/Cardinal is dependent on some form of government support than the provincial average. However, the unemployment rate for the Township in 2001 was 5.9, slightly lower than the provincial average and also significantly lower than the 1996 unemployment rate in Edwardsburgh/Cardinal of 10.6. Participation rates within the Township (i.e., those employed or searching for employment) have been steady at about 62% since 1996, slightly lower than in Ontario overall (Statistics Canada 1996, 2002b). According to the 1996 Health Report, approximately 12% of residents living in private households within the Leeds-Grenville-Lanark districts live below the low-income cut-off, up from 1991 when only 9% of the population lived below this cut-off. The majority of people living below the low-income cut-off at this time were living in urban areas (LGL Health Unit 2000).

3.2.3 Key Economic Sectors

The key economic sectors in Edwardsburgh/Cardinal as outlined in the Official Township Plan (Tunnock Consulting Ltd. 2003) are agriculture, private industry, tourism/recreation and retail/service.

A. Agriculture

Although agriculture and other resource-based activities (e.g., forestry, fishing, hunting) currently account for only 4.5% of employment within Edwardsburgh/Cardinal, agriculture remains a central component of the municipality's economic base and identity. There are several active groups in the region, who represent the various agricultural sectors. For instance, the **Grenville Federation of Agriculture** – a local affiliate of the Ontario Federation of Agriculture (OFA) – is a lobby group for farmers in Prescott, Merrickville-Wolford, North Grenville, Augusta and Edwardsburgh-Cardinal. The **Grenville Dairy Producers Committee** is a group that represents dairy producers in Grenville County, and the **Grenville Holstein Club** is a support/advocacy group for Holstein farmers in the area (UCLG 2006d). There is also an active **4H network** in the area for young people.

In Edwardsburgh/Cardinal approximately 12,000 hectares of land – or 38% of the total land base – is currently under cultivation, with 190 farm operators in the area. Most of the agricultural activity is livestock-based and the dairy sector predominates, although major producers of beef, pork, poultry and eggs also operate in the municipality (Statistics Canada 2002a). Indeed, livestock operations are central to the municipality's economy and provide direct work on farms, as well as indirect employment by creating a demand for farm-related goods and services (Tunnock Consulting Ltd. 2003). Numerous field crops such as hay, corn, barley and oats are also grown on farms in Edwardsburgh/Cardinal, mainly to support livestock operations (i.e., animal feed). At the county level, the top five crops that are grown within UCLG (by hectares of land under cultivation) are tame hay and fodder crops, alfalfa/alfalfa mixtures, corn for grain,

soybeans and corn for silage (Statistics Canada 2002a). In addition, there are a few sugar bush operators within Township limits (Tunnock Consulting Ltd. 2003).¹³

Following provincial and national trends, there have been significant changes within the farming industry over the last fifteen years as the role of traditional farming changes. For instance, in recent years within both UCLG and Edwardsburgh/Cardinal, there has been a trend away from farming mainstream products towards specialized products (Economic Growth Solutions Inc. 2002). Indeed, most ‘full time’ farmers in Edwardsburgh/Cardinal have chosen to focus their operations on dairy, egg or pork operations with cash cropping (i.e., feed or milling grains, corn, soybeans) as a secondary pursuit. In addition, the number of independent farms operating in the area over the last twenty years has decreased, while the area of land under cultivation has generally increased (*Figure 8*).

Figure 8: Changes in the Numbers and Size of Farms in Edwardsburgh/Cardinal (1971-2001)

	1971	1991	2001
Number of farms	226	149	136
Percentage change in number of farms	-	-34%	-9%
Hectares of land under cultivation	5,390	12,070	11,759
Percentage change in hectares of land under cultivation	-	+124%	-2.5%

Sources: Statistics Canada 2002a; Tunnock Consulting Ltd. 2003

These changes can be partially attributed to the move towards more capital-intensive agriculture, which requires less labour and more land. However, within the United Counties of Leeds and Grenville, there was only a 1% decrease in jobs within the agricultural sector between 1991-1996, which is relatively minimal compared to other counties in the area. Also, gross farm receipts in UCLG increased by 127.5% between the years 1986-2001 (MAH 2002). Despite these trends, a number of smaller-scale farmers in the area engage in off-farm employment or sell off parts of their land (i.e., land severance) to supplement their incomes.¹⁴ In addition, smaller operations are having difficulty adapting and making the changes required by provincial legislation relating to biosecurity and nutrient management. This could significantly impact the number of commercial operators in the Township over the next 10-15 years (i.e., fewer operators), and the balance of agricultural production will likely be classified as hobby, lifestyle or cottage farms.

Another concern within the agricultural sector is that fewer young people are getting involved with farming. For example, in 2001 within UCLG only 180 people under the age of 35 were farm operators, whereas 1010 people between the ages of 35-54 and 760 persons aged 55+ were operating farms. The average age of farm operators at this time was 51 in UCLG and 49 in Edwardsburgh/Cardinal (Statistics Canada 2002a).

¹³ Some of the larger sugar bush operators in Edwardsburgh/Cardinal include Drummond’s, Hunters’ and Bush’s. There are also several people in the Township who tap trees for their own use.

¹⁴ Farmers who grow cash crops are more likely to have off-farm employment since cash cropping does not involve year-round work, whereas dairy farmers are less likely to work away from the farm unless one spouse has a separate profession.

Finally, although agriculture makes an important and positive contribution to the local economy, shifts in farming practices (i.e., more capital-intensive) are having an impact on the environment and can affect local surface and ground water quality (Tunnock Consulting Ltd. 2003). The **Grenville Soil and Crop Improvement Association** (GSCIA) provides information and support to commercial crop farmers (i.e., who produce cash crops and/or livestock feed crops) in the region. The focus of their events and programs is on encouraging the adoption of soil conservation techniques, nutrient management plans and best management practices regarding crop and livestock farming (UCLG 2006d).

The GSCIA is also responsible for coordinating **Environmental Farm Plan (EFP)** assessments with farmers in the area: EFPs are voluntarily prepared by farmers to highlight environmental strengths, to identify areas of environmental concern, and to set action plans to improve environmental conditions on their farms (OMAFRA 2006a). Between April 18th 2005 and September 22nd 2006, nine workshops were held in the Grenville area to introduce and explain the 3rd edition EFP program.¹⁵ In total, 108 people attended these workshops (49 ‘new’ participants and 59 ‘returning’ participants) and 81 workbooks were distributed: this indicates that approximately 16% of farm owners in the Grenville area (i.e., 81 of the 508 registered farms)¹⁶ have shown interest in the program, which is slightly higher than the provincial average of 12.2%.¹⁷ In terms of uptake, to date 56% of participating farmers/farm families from the Grenville area have submitted their workbooks for peer review and have been deemed appropriate for cost-share programs, as compared to the provincial uptake average of 72% (Graham 2006; OMAFRA 2006b).¹⁸

¹⁵ First edition EFPs were introduced in 1993, and numerous farmers have participated in the program over the past 13 years. However, in order to be eligible for current cost-share programs, farmers – whether they are new or returning participants – must complete the most recent (i.e., 3rd edition) EFP workbook.

¹⁶ At the follow-up workshop in September 2006 there was some question about the number of registered farms in Grenville, as some participants felt that 508 seemed quite high. However, this figure is based on statistics that were given by OMAFRA in June 2006 (i.e., total number of census farms in E/C = 136; in Augusta = 134; in Merrickville-Wolford = 76; and in North Grenville = 162) (OMAFRA 2006b).

¹⁷ At the provincial level during this same time period there were 454 workshops involving a total of 7328 people (3828 ‘new’ participants and 3500 ‘returning’ participants). These workshops were held in 52 districts across Ontario, and 7294 workbooks were distributed with about 72% uptake. However, uptake has not been even across the province – some counties have been more supportive/involved in the EFP program than others (Graham 2006).

¹⁸ Even when farmers are eligible for the cost-share program, the majority of costs related to implementation of EFPs must come from their own pockets. There are some agencies, such as the South Nation Conservation (SNC) that help to reduce out-of-pocket costs for farmers by offering additional funding programs (SNC 2006b).

B. Industry

Several manufacturing companies have been attracted to the South Grenville area in recent years because of its proximity to major transportation routes (i.e., Highway 401, CN railway, St. Lawrence Seaway) and urban markets (i.e., Toronto, Montreal, Ottawa and the USA) (SGEDC 2005). Within UCLG, the manufacturing industry accounted for nearly 20% of the labour force in 1996, up from 18% in 1991 (MAH 2002). In Edwardsburgh/Cardinal, the economic base of the Township has become increasingly diversified since the end of the Second World War, with industry playing a key role in local economic development. **Casco** – an incorporated company that has been operating in the area since 1858, and was the first corn refining operation in the country – is one of the largest employers for the Township (i.e., approximately 275 employees) and also provides spin-off support to retail services in the area (Tunnock Consulting Ltd. 2003; SGEDC 2005). Casco produces corn-based products and has a manufacturing facility in Cardinal that purchases approximately 20% of the local corn crop for processing (Tunnock Consulting Ltd. 2003).¹⁹

The **Port of Prescott** – a loading/unloading, transfer and storage facility adjacent to the international bridge in Johnstown and along the **St. Lawrence Seaway** – has been owned and operated by the Township of Edwardsburgh/Cardinal since 2000 (Port of Prescott 2006). The Port employs approximately 20 people directly and indirectly, in fields such as administration, maintenance/repairs, trucking, and grain elevator operations. The Port also provides a link to export-oriented businesses and industries, and as stated in the Official Township Plan (Tunnock Consulting Ltd. 2003: 6), “[t]he Port is an inland deep sea facility which offers commodity passage services, grain terminal operations as well as bulk handling of grain, salt, fertilizer, calcium chloride, coal and general cargo.” The Port of Prescott has the only major grain elevator for public use in Eastern Ontario and is also the largest agricultural port in the region (MAH 2002).

Several other **manufacturing and processing plants** are also located in Edwardsburgh/Cardinal, as well as smaller companies and individuals involved with various trades (i.e., welding, restoration, lumber milling, painting, roofing, well-drilling, installation of septic systems, plumbing and electrician) (Tunnock Consulting Ltd. 2003). Most recently, plans for the development of an **ethanol plant** at the **Industrial Park** in Johnstown have moved forward (although remain indefinite): if the plant is built it would employ about 200 people during the building phase (about 18 months) and would employ forty full-time employees once operations are underway (the plan is to hire local people). In addition, such a development would likely generate business spin-off in the local area (Taylor 2006).

¹⁹ Initially, Casco bought all of their corn from the United States because local farmers were growing corn for subsistence or to feed their cattle. However, in the 1970s Casco began to buy corn that was grown locally, and supplement their demand with corn from the U.S. (CASCO 2006).

C. Tourism

In Eastern Ontario, tourism is one of the key generators of revenue and the area attracts both domestic and international tourists. In UCLG, much tourist activity is centered around well-known regional and international attractions such as the 1000 Islands, the Rideau Canal System, and Upper Canada Village. There are also several historical sites and recreational opportunities in the area. Indeed, the area is a popular destination for outdoor enthusiasts because it is relatively close to major urban centers, the natural environment is well-maintained, there are several designated parks and walking trails, and there are numerous lakes and waterways that offer water-based recreational opportunities. There are also numerous festivals and cultural activities that take place year-round (Economic Growth Solutions 2002; MAH 2002).

Within UCLG, Edwardsburgh/Cardinal offers a rural experience and tourism is seen as an important sector for future economic development in the Township and surrounding areas. There are many buildings and sites in Edwardsburgh/Cardinal that have historical and cultural importance: these include the Port of Prescott, heritage building frontage in Spencerville, the Galop Canal Park area along the St. Lawrence Seaway, the Battle of the Windmill site in New Wexford (a National Historic Site) and the Spencerville Mill (Tunnock Consulting Ltd. 2003). There are also recreational facilities along the St. Lawrence Seaway, including the Johnstown Marina and the Legion Park in Cardinal; also, while the Seaway is an important transportation hub, it could potentially be used to draw more tourists into the area.

The Township of Edwardsburgh/Cardinal is part of the Ontario East Tourism Area and there are several groups and committees that focus on the promotion of tourism. One of the 18 Ministry of Tourism offices is located in Edwardsburgh, situated across from the Prescott-Ogdensburg International Bridge. At the local level, the **Spencerville Mill Foundation** was founded in 1999 as a voluntary organization committed to interpreting the history of the local area, restoring the Mill to its 1908 appearance and preserving it as a heritage site that can help to draw tourists into the area (Spencerville Mill Foundation 2006).²⁰ Other groups involved with tourism promotion in the area include the **Tourism Prescott Committee**²¹ (i.e., linked to the South Grenville Economic Development Committee) and **Parks Canada** (e.g., manage Fort Wellington in Prescott and the Windmill in New Wexford as National Historic Sites). Various accommodations are available for incoming tourists, such as the **Connell Rose B & B** in Spencerville (Connell Rose 2006). There is also another B & B in Cardinal, and two others located in New Wexford by the Battle of the Windmill site. Also, there are two Motels located along

²⁰ A sawmill was first built on the south bank of the South Nation River in 1811, and by 1850 three mills were in operation (i.e., sawmill, gristmill, carding/fulling mill). After the original mill burnt down in 1859 (and again in 1884), it was rebuilt on the north side of the river where it is currently located. After switching ownership for several years, the mill came under the possession of the South Nation Conservation (SNC) in 1985. Ownership was then transferred from the SNC to the newly created Eastern Valley Heritage Foundation, which was renamed the Spencerville Mill Foundation in 1999 (Spencerville Mill Foundation 2006).

²¹ This committee is funded solely by the Municipal Council of Prescott, but promotes the South Grenville area as a whole.

County Road #2 – the Johnstown Motel and Bridgewater Inn, as well as a campground in Cardinal (KOA 2006; SGEDC 2005).

D. Retail Service/Industries

The service sector has been integral to the Township's economy since the 19th century. Currently, most local retail is based in Spencerville – which historically grew around the development of the Spencerville Mill – and in Cardinal, where there is a mini mall and other retail outlets. One industry that is becoming more significant for the local economy in Edwardsburgh/Cardinal – especially within the rural areas – is home-based businesses. Due to shifts in farming practices and a focus on economic diversification within the Township, an increasing number of people are starting up their own businesses that range from the production of farm-related goods to arts/crafts, consulting, private lessons, home industries and professional offices. Although these businesses have a minimal impact on the rural environment and residential neighborhoods, they may increase competition for local retailers and main street businesses (Tunnock Consulting Ltd. 2003).

More broadly, within UCLG the majority of towns and villages have limited retailing, which means that many residents travel to larger urban centers to purchase their goods. This has led to an increase in 'big box' developments within the area in recent years (Economic Growth Solutions Inc. 2002) – the nearest big box stores (e.g., Walmart, Home Depot) are in Brockville and Ottawa, and there are plans to build more in Kemptville as well. This will inevitably increase competition for smaller, local retailers in the Edwardsburgh/Cardinal area.

3.3 ENVIRONMENTAL CONTEXT

3.3.1 Local Climate

The climate in Edwardsburgh/Cardinal and South Grenville is continental (i.e., warm summers and cold winters), with more moderate temperatures in places bordering the St. Lawrence Seaway (i.e., Cardinal, Johnstown, New Wexford) (SGEDC 2005).

3.3.2 Land Cover and Land Use Issues

Edwardsburgh/Cardinal covers an area of approximately 312 km² (31 200 ha) that encompasses residential, industrial and natural areas. In terms of the natural environment, the Township maintains a fairly balanced mix of forested areas, agricultural land, natural pastures and wetlands. *Figure 9* provides a detailed breakdown of land cover in the Township, and *Figure 10* shows a more general overview for the area.

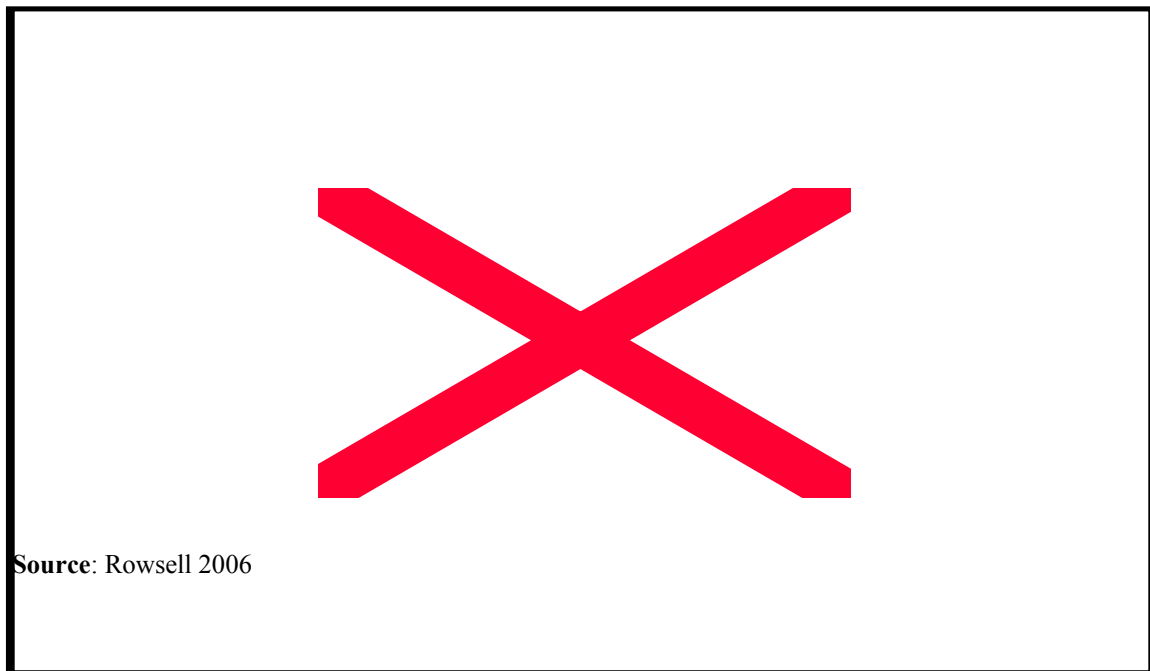
Figure 9: Detailed Land Cover Breakdown for Edwardsburgh/Cardinal²²

LAND COVER TYPE	HECTARES	% OF TOTAL LAND COVER
Dense Deciduous Forest	6856	22.0%
Cropland	6323	20.3%
Pasture and Abandoned Fields	4402	14.1%
Dense Coniferous Forest	3498	11.2%
Deciduous Swamp	3038	9.8%
Mixed Forest, Mainly Coniferous	2496	8.0%
Mixed Forest, Mainly Deciduous	1595	5.1%
Sparse Deciduous Forest	1242	4.0%
Conifer Swamp	1149	3.7%
Open Fen	276	0.9%
Freshwater Coastal Marsh/Inland Marsh	147	0.5%
Settlement and Developed Land	72	0.2%
Water	37	0.1%
TOTAL	31 130.13	100

Source: Rowsell 2006

²² This analysis does not include the St. Lawrence River.

Figure 10: Overview of General Land Cover Types in Edwardsburgh/Cardinal (%)



In 1979, the Provincial government purchased approximately 4,050 ha of land within Township boundaries (i.e., 13% of total area) and created the **Edwardsburgh Land Assembly**, which consists of several lots located just north of Highway 401. The initial purpose of setting up this land bank was to develop the area as an industrial complex, including the establishment of a penitentiary. However, a change in government meant that the project did not move forward and the land was left idle. Farms that were encompassed within the Land Assembly were left fallow or rented out to farmers who had adjacent properties; some of the houses within the Assembly were also rented or sold (Trivett 2006). The establishment of this Land Assembly had an impact on the local economy at the time, because a large tax base was lost (although the province does continue to pay a land grant to the Municipality).

In the 1980s some of the land in the Assembly was used by the Ontario Ministry of Natural Resources to grow experimental hybrid poplar plantations: these hybrid poplars were fast growing and harvestable, and the intent was to utilize abandoned cropland to produce biomass for animal feed. However, this project did not move forward either and the plantations remain unused (although there is some thinning work currently being carried out). In 2003, the provincial government informed the Municipality that they were intending to sell off the property, but due to the fact that it has not been well-maintained, this has not yet occurred and much of the land remains idle (Trivett 2006).²³

²³ Although the bulk of the Land Assembly remains under ownership of the Provincial government, some parcels are controlled by the OMNR and other parts are rented out to farmers. Also, there are some efforts underway to clean up a few of the derelict buildings (i.e., old barns) that have been left idle for 26 years.

Currently, most of the land supports second growth forest, although much of this is flooded because beavers have moved into the area and built dams. This is problematic because the flooding extends to Highway 416 and is affecting roadbeds. The Municipality has been working with representatives of the Eastern Ontario Model Forest (see below) to discuss possibilities for future use of the Land Assembly: “The extensive provincial land assembly may be considered for future roles within the municipal economy, should it be sold at some point in time. The area is comprised of farms, forested areas and wetlands, but also includes significant frontages along Highway 401, east and west of Highway 416” (Tunnock Consulting Ltd. 2003: 14)

Another current land use issue for the Township is related to a **proposed landfill site** that is owned by the United Counties – referred to as **ED-19** – that is located in Edwardsburgh/ Cardinal. This landfill site has been approved, but has not yet been opened.²⁴ After a lengthy process that took place between 1990-1998 and involved participation from numerous agencies, organizations and individuals, the Ministry of Environment issued a certificate of approval for the use and operation of a 14-hectare landfill area within a total site area of 66 hectares. ED-19 will be located in parts of lots 14 and 15 in Concession 4 of the Township.²⁵ This approval is for the disposal of municipal, commercial, non-hazardous solid industrial and institutional waste (MOE 1998; UCLG 2006e).

3.3.3 Forested Areas: Woodlands and Woodlots

As indicated in *Figures 9 and 10*, approximately 50% of land in Edwardsburgh/Cardinal is forested: there are various woodlands (i.e., treed areas, managed forests, woodlots) throughout the Township, which vary in their use and significance (i.e., uses range from harvesting of wood products to providing habitat, wildlife corridors and protection of water resources) (Tunnock Consulting Ltd. 2003).

There are both publicly managed lands and privately owned woodlots in the area.²⁶ **Limerick Forest** is a working county community forest composed of 175 compartments that are spread throughout UCLG; the most contiguous forest compartments are located northeast of Edwardsburgh/Cardinal. This forest is publicly owned and is promoted as a multi-use area (i.e., logging, outdoor education, hiking, hunting, bird watching, cross-country skiing, snowmobiling, ATVs, cycling) (LFAC 2006). Limerick Forest covers an area of 5,788 hectares (58 km²) that were purchased by the United Counties of Leeds and Grenville in 1940 under an agreement with the Province of Ontario: the Province agreed to take on management responsibilities and reforest the land in exchange for the right to

²⁴ ED-19 has not been constructed as yet because there is currently enough capacity throughout the United Counties to dispose of waste. Also, since the study was conducted there have been efforts to reduce waste by municipalities and individuals, and some municipalities have signed contracts with private waste disposal operations. ED-19 will be developed when there are sufficient disposal needs in UCLG.

²⁵ Part of this proposed landfill site overlaps with parts of the E/C land bank (which is made up public-, private-, and SNC-owned lands)

²⁶ As of June 2006, statistics regarding forestry-based labour in the Township (i.e., how many people are involved with forestry; what types of activities; etc.) were not available. However, the Eastern Ontario Model Forest (EOMF) is currently developing these indicators for the area.

harvest and sell timber. Provincial downsizing in 1997 left the forest unmanaged until 2000, when a group of citizens and government representatives from the area formed the **Limerick Forest Advisory Committee** in an attempt to engage interested persons in the management of the forest. Five subcommittees currently undertake various roles in management of the forest, ranging from administration, resource management, recreation, ecology and outdoor education. Most recently, the Advisory Committee has been collaborating with the Grenville Land Stewardship Council and the Eastern Ontario Model Forest to develop a Forest Management Plan (Limerick Forest 2006).

Apart from Limerick Forest and the Edwardsburgh Land Assembly, most forested lands within the Township are privately owned woodlots. The **Ontario Woodlot Association (OWA)** promotes sustainable management of privately owned forests in Ontario and provides members with guidance and advice through workshops, seminars, newsletters, publications, conferences and on-line services relating to diverse aspects of forest management. Members own and manage woodlots throughout the province, and include both individuals and organizations. The OWA aims to represent the interests of its members at the provincial level by acting as a ‘common voice’ during interactions with government, forest industry and others (OWA 2006). The **Lower Ottawa Valley Chapter** of the OWA was inaugurated in March 2006, with its first Annual General Meeting. The purpose of establishing this Chapter is to address a gap in representation for woodlot owners around the National Capital, and activities will include workshops, woodlot tours and other woodlot owner-related activities. Although there are no official boundaries for the Chapter (i.e., any member of the OWA can join, but can only belong to one of the 13 OWA Chapters) membership generally extends as far west as Belleville, Smiths Falls, Richmond and Ompah, east to the Quebec border and south to the St. Lawrence Seaway. Residents of Edwardsburgh/Cardinal would therefore most likely join this Chapter, which currently has a total membership of 84 people (Leenhouts 2006).²⁷

3.3.4 Natural Resource Management and Land Stewardship

Natural resource protection and management are strong themes throughout planning documents for Edwardsburgh/Cardinal and surrounding areas. This can be linked to the fact that the population is mostly rural and has strong historical ties to the land, as well as the fact that the sustainable use of natural resources remains important for future agricultural production, tourism, recreational activity and for maintaining overall quality of life (MAH 2002). There are numerous groups and committees in Edwardsburgh/Cardinal, UCLG and Eastern Ontario who are devoted to issues of conservation, land stewardship and responsible resource use; these include the South Nation Conservation, the Grenville Land Stewardship Council, the Limerick Forest Advisory Committee (discussed previously) and the Eastern Ontario Model Forest.

As mentioned in the introduction, the South Nation River runs through the centre of Edwardsburgh/Cardinal, and the river and watershed are an important source of water for residents, agriculturists and industries in the area. The South Nation watershed covers an

²⁷ Prior to the establishment of the Lower Ottawa Valley Chapter, the Renfrew Chapter was the closest woodlot association for residents from the Edwardsburgh/Cardinal area.

area of 3,900 km² that is mostly rural, and has been identified by the province as a priority area in terms of protecting, conserving and enhancing the quality of ground and surface water resources in order to secure future water quality and quantity (Tunnock Consulting Ltd. 2003; MAH 2002). Historically, the clearing and conversion of forests and wetlands for farmland in Eastern Ontario has made the watershed more susceptible to summer droughts and spring flooding, both of which can affect water quality. The **South Nation Conservation (SNC)** group thus formed in 1947, with a mandate to help manage the effects of drought, flooding, deforestation, erosion and to improve water quality within the watershed (Coyne 2001). Currently, the critical environmental issues for residents within the South Nation watershed as identified by the SNC include water quality, wastewater management and the protection of biological diversity.²⁸ Possible future stressors for the watershed include water use (withdrawal), agricultural activity, logging, urban sprawl, peat mining and shoreline development (Haughton 2002). The SNC therefore coordinates numerous programs including a clean water program for landowners, provincial water quality monitoring networks, a riverwatch program, a tree planting program, fisheries projects, GIS and flood plain mapping, a network of parks and trails, and carry out sewage system inspections on behalf of the Eastern Ontario Health Unit (MAH 2002; SNC 2006b). In Edwardsburgh/ Cardinal, local councilors and citizens are directly involved with the programs of the SNC. However, there is limited information about water quality and quantity on rural lands within the Township, as no hydrogeological studies or groundwater mapping projects have been undertaken thus far at the Township or County levels (Tunnock Consulting Ltd. 2003).²⁹

Another active conservation group in the Edwardsburgh/Cardinal area is the **Grenville Land Stewardship Council**. This Council is a branch of the Ontario Stewardship program and is coordinated by a representative from the Ontario Ministry of Natural Resources, with active input from a council of community members and landowners, various environmental interest groups, and many volunteers. As stated on the website, the goals of the Stewardship Council are to “encourage responsible land stewardship within the county based on long term environmental sustainability, and to work toward fulfillment of our purpose by being proactive in 3 types of activities: projects, education, and through networking and affiliations” (GLSC 2006). The Council coordinates numerous and diverse projects that are all focused on increasing awareness of environmental issues and promoting sustainable land care on private lands: current initiatives include a nutrient management project, a clear cutting study, a walleye spawning project (in conjunction with SNC), a shoreline restoration project, a pond demonstration project and many more.

At a regional level, the **Eastern Ontario Model Forest (EOMF)** focuses efforts on ensuring that the environmental, economic, cultural, and social values of forests in Eastern Ontario are maintained and used sustainably. The EOMF works with

²⁸ At the local level, there is some indication that low water flow is a problem in Spencerville (rather than spring flooding, as is true for areas further upstream).

²⁹ The Eastern Ontario Water Resources Management Study (EOWRMS) is a comprehensive regional water resources report that covers the portion of Leeds-Grenville within the South Nation watershed (i.e., including Edwardsburgh/Cardinal). Although the report contains a lot of important data and makes many important and useful recommendations about water management, these data and recommendations are made on a regional basis, rather than at the Township or County levels (CH2M HILL 2001).

government, landowners, industry, First Nations and other stakeholders in the development of their projects and programs. These include monitoring and reporting on the state of Eastern Ontario's forests, using GIS technology to classify significant woodlands, promoting healthy urban forests, coordinating private woodlot certification for sustainable forest management practices, and many more (EOMF 2006). In recent years the EOMF has been working with the Township of Edwardsburgh/Cardinal to develop a **wood centre** concept as a means of promoting economic development in the area: the vision is to have several inter-related industries/businesses located in one industrial park (in Edwardsburgh/ Cardinal) that are focused on producing value-added wood products. The Wood Centre project is ongoing, and remains in the preliminary stages of development (Township of Edwardsburgh/Cardinal 2006e).³⁰ More broadly, the process of making value-added wood products involves the most efficient use of wood resources, and there is a lot of expansion potential for this industry in Eastern Ontario (MAH 2002).

3.3.5 Natural Heritage Features and Recreational Activities

A few natural heritage features can be found within the Township – for example, deer wintering areas have been identified in a few places in Edwardsburgh/Cardinal (i.e., areas with significant conifer cover). Eight wetland areas have also been identified within the Township, which are integral to the management of surface water and the recharge/discharge of groundwater. Within Edwardsburgh/Cardinal there are also some flood plains and organic soils that require special attention in terms of land use planning. Finally, fishing is an important aspect of tourism and recreation in Edwardsburgh/Cardinal and there are a variety of fish species found in the St. Lawrence, the South Nation river and its tributaries: these species include northern pike, walleye, sauger largemouth, smallmouth bass, and muskellunge. In the St. Lawrence River, fish species such as the brook trout, brown trout, rainbow trout, lake trout, splake, pacific salmon, Atlantic salmon and sturgeon can also be found (Tunnock Consulting Ltd. 2003). The **Grenville Fish and Game Club** is based out of Prescott and promotes recreational activities such as fishing, hunting, trapping, archery, canoeing and orienteering. The Club also runs a youth conservation program that aims to get young people involved with conservation projects and recreational activities (Grenville Fish and Game Club 2006). Diving is one recreational activity that has attracted many people to the area – one shipwreck is located in part of the Galops Canal, by the entrance to the Cardinal Legion.

3.3.6 Major Environmental Events

There have been a few major human-induced and environmental events that have affected the Edwardsburgh/Cardinal and surrounding areas in the last fifty years. During the construction of the St. Lawrence Seaway from 1955-1959 over 20,000 acres of land were flooded and 6,500 persons were moved, thus having a significant impact on the natural

³⁰ A recent wood supply study carried out by the EOMF provides information about how much wood is flowing in/out of the region, and shows how much wood is available for use by potential investors and businesses (Copestake 2005).

and social environments in the region (Woodrow and Masudi 2002). More recently, the Ice Storm in 1998 – when there was freezing rain over a period of five days – resulted in extensive damage to trees, property and power lines in Eastern Ontario, Quebec, New Brunswick and Northeastern USA. The Ice Storm also had considerable social and economic impacts in the region in terms of physical and emotional trauma, and lost income due to extensive damage to many woodlots, disruption of farming activities (especially for livestock operations) and damage to critical infrastructure, most notably power lines (MAH 2002; Woodrow and Masudi 2002). Finally, a prolonged drought in the summer of 2001 affected rural well-users (many watercourses and wetlands dried out) and crop production (i.e., corn grain industry) (MAH 2002).

According to a Hazard Identification and Risk Assessment that was carried out by the Emergency Management Committee for UCLG in 2004, the types of emergencies most likely to occur in the area include: weather-related emergencies (i.e., ice storms, snow, wind, floods), human health emergencies (i.e., epidemics, pandemics), critical infrastructure failure and fixed site emergencies (i.e., chemical spills) (UCLG 2004).

3.4 CIVIL SOCIETY, LOCAL INFRASTRUCTURE AND COMMUNITY SERVICES

In Edwardsburgh/Cardinal there are numerous volunteer organizations, recreational facilities, local services and other groups, many of which have been described in the previous sections. In addition, there are ten churches in Cardinal (many different denominations) and there is a strong United Church presence in Spencerville, associated with many active church groups. Also, there is a Legion and a Seniors group, both of whom are active within the Township.

In terms of local infrastructure, there are two arenas in Edwardsburgh/Cardinal: one in Spencerville and one in Cardinal. The Township built the Spencerville Arena in 1967 and it is the central location for the annual Spencerville Agricultural Fair, which recently celebrated its 150th anniversary (Spencerville Fair and Agricultural Society 2006). The arena in Cardinal is owned by the Township but operated by a Board of Management. There are also two pools – one in Cardinal and one in Johnstown – and both are owned and operated by the Township. The South Edwardsburgh Recreation Association (SERA) was established in 1973 and is the oldest recreational group in Edwardsburgh: SERA fundraised locally to support construction of the Johnstown community hall, pool, ball diamonds, tennis courts and volleyball court.

In addition, there are two libraries (one in Spencerville and one in Cardinal), three campgrounds, a sawmill, and a pancake house in Edwardsburgh/Cardinal. The Township also operates a number of ball diamonds and municipal parks such as Galop Canal Park, Johnstown Park, McLaughlin Memorial (Legion Park) and Meadowlands Park (Township of Edwardsburgh/Cardinal 2006d).

With regards to services, most of the social services are administered by the UCLG Community and Social Services Division: these range from financial assistance to employment services, children's services, social housing, and emergency planning (UCLG 2006e). Within Edwardsburgh/Cardinal there is an active volunteer fire department that provides emergency services and have operated in the Township since 1950; a new Fire Station was built in Spencerville in 2001 and another station is located in Cardinal. The entire South Grenville area is serviced by an Emergency 911 program (fire, police, ambulance) (Tunnock Consulting Ltd. 2003; SGEDC 2005).

3.5 OPPORTUNITIES AND CHALLENGES

In general, residents in Edwardsburgh/Cardinal appear to have a strong social support system, while experiencing a shifting economic base and indicating a widespread dedication to sustainably use and manage natural resources in the area. There is a stable but ageing population in the Township and the area is relatively well-served by local medical clinics, hospitals and the Leeds, Grenville and Lanark Health Unit. A high proportion of residents in Edwardsburgh/Cardinal have trades and college certifications: a high percentage of these people work outside of the Township, and those who do work in Edwardsburgh/Cardinal are mostly involved with agriculture, industry, tourism and retail. There are numerous groups and organizations who are supporting economic development in the area, and there seems to be a strong adaptive capacity in the community: the economic base has become increasingly diversified since the 1950s, there is a shift towards producing specialty products within the agricultural sector, and most recently there has been an increase in home-based businesses.

Overall, residents in Edwardsburgh/Cardinal experience a high quality of life that is associated with a rural lifestyle, strong historical roots, affordable housing, accessibility to urban centers, diverse health, social and educational services, as well as numerous recreational opportunities and a strong environmental awareness (Economic Growth Solutions Inc. 2002; SGEDC 2005). However, there are certain challenges to local development and some of these are outlined in the Economic Development Strategic Plan (Economic Growth Solutions Inc. 2002) produced for the UCLG. Some of these challenges include: the need for more sustainable and secure employment; a lack of jobs for youth; restricted services in some areas that may affect future industrial development;³¹ increasing market pressures on farmers; loss of farmland to housing, industrial development and other growth pressures (i.e., big-box developments); environmental impacts of urban sprawl; and the possible effects/pressures of an ageing population on local services and economies.

³¹ The Edwardsburgh/Cardinal Industrial Park currently has only partial sewage and water services.

4 Looking Forward – Where do we go from here?

4.1 RECENT CHANGES AND FUTURE CHALLENGES FOR EDWARDSBURGH/CARDINAL

The Township of Edwardsburgh/Cardinal has been presented with several challenges that require continued adaptation strategies in order to maintain community well-being. For example, recent changes in upper-tier government legislation have affected governance at the county and local municipality levels. As more services have been downloaded to lower-tier governance bodies pressures on municipalities have increased, as they are expected to provide services and maintain infrastructure (i.e., highways, water, sewer) with fewer financial resources. Limited or poorly maintained infrastructure can in turn affect local economic development, as businesses are deterred from establishing in areas that are not well-served (Economic Growth Solutions Inc. 2002). In Edwardsburgh/Cardinal the Industrial Park does have available land for sale that is relatively low cost, although water and sewage services do not currently extend the entire length of the park. As mentioned previously, the Eco-Wood Industrial Centre concept that was developed in conjunction with the Eastern Ontario Model Forest could contribute to future economic development and utilization of the Industrial Park in Edwardsburgh/ Cardinal.

Another challenge for local municipalities is the pressure of an increasingly globalized economy: there is a need to remain competitive on both a regional and global scale in order to attract and maintain populations. This may necessitate shifting or diversifying the economic base of a community beyond traditional activities such as agriculture, manufacturing, tourism and government services in order to develop new sources for income, jobs and future opportunities for development (Economic Growth Solutions Inc. 2002). For the Eastern Ontario and Ottawa region, this could include promotion of the health and life sciences industry, telecommunications, microelectronics or software development. As stated in the 2002 Ottawa Regional Analysis report, future population growth will be directly related to future job growth in sectors such as tourism, professional services and high technology (MAH 2002). In Edwardsburgh/Cardinal, local adaptation strategies to address global forces of change have included the establishment of numerous economic development departments and organizations at local, county and regional levels. Another example has been diversification within the agricultural sector, although many farmers are still struggling to compete within the global market. Within the forestry sector, a focus on producing value-added wood products may be a key strategy for remaining competitive at a regional and global level.

Other activities or issues that may impact the future well-being of the Edwardsburgh/Cardinal community, as outlined in the 2003 Official Township Plan include:

- Construction of Highway 416 – implications for land use, economic development and the role of the Township within the region;
- Development pressure – possible impacts of residential development on valuable agricultural lands;
- Improvement of municipal water and sewage services to encourage urban-based development in Cardinal, Spencerville, Johnstown and the Industrial Park;
- Adaptation to the shifting economic climate – supporting employment growth throughout the municipality

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