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Supporting the Use of IT & Broadband in Elgin County - Executive Summary -

Prepared for: Province of Ontario's Management Board Secretariat (MBS)
Elginconnects and Elgin Community Futures Development
Corporation (ECFDC)

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Submitted: September 10, 2004

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This report is a summary of the three-phase project carried out by Strategic Networks Group. For a detailed report on the project or any of the individual phases, please contact:

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INTRODUCTION

Elginconnects, part of the Elgin Community Futures Development Corporation (ECFDC), and the Province of Ontario's Management Board Secretariat engaged Strategic Networks Group in February 2004 to conduct an analysis of Elgin County, Ontario, in terms of its economy and the current state of Information Technology (IT) awareness and usage, and develop a strategic plan for economic development focused on IT. The aim was to determine the economic drivers and gaps within the community and create a basis for a future economic growth strategy with IT as a means to that end.

In May 2003, the Province of Ontario announced that it was to invest \$900,000, as part of its \$55 million Connect Ontario: Broadband Regional Access (COBRA) program, to assist in the establishment of high-speed Internet access in Elgin County. In conjunction with its partners, Elginconnects expects to match these funds to provide a total investment of \$1.8 million.

This project was conceived of and carried out in a three stage process:

- **Phase One:** to determine the current state of IT usage and awareness within the county.
- **Phase Two:** to carry out an economic gap analysis of the community.
- **Phase Three:** to develop a strategic, IT based, development plan for a key economic cluster within the community.

PHASE ONE¹

Elginconnects, under the guidance of SNG, surveyed businesses and organizations throughout the county. Elginconnects provided the contact information for businesses and organizations which were to be surveyed. SNG provided the survey tools and methodology to identify the state of IT usage and awareness in different industry sectors and for different sized organizations.

In February and March 2004, businesses and organizations in Elgin County were surveyed about their Internet usage. A total of 1,733 surveys were faxed or mailed and follow-up phone calls made. In total 816 responses were received, a response rate of 47%.

¹ See "**Awareness and Usage of IT and Broadband in Elgin County**" submitted to the Province of Ontario's Management Board Secretariat (MBS), Elginconnects and Elgin Community Futures Development Corporation (ECFDC) April 14, 2004.

Statistics Canada collects data on IT usage by businesses in its 'Survey of Electronic Commerce & Technology', but excludes the agricultural sector.² In order to keep comparisons as close as possible, the survey analysis in this study has been divided into two categories: 'Business sectors' (i.e. all industry sectors except agriculture) and 'Agricultural sector'.

A note on comparisons with national average: the national average necessarily includes urban, semi-rural and rural areas. Rural and semi-rural areas, as found in Elgin County, traditionally have a lower level of connectivity and thus are not expected to equal the national average in terms of IT usage. However, comparisons to that average allow one to assess the relative strengths and weaknesses of different industry sectors with regards to connectivity and provide a baseline for future performance measurement.

Business Sectors

Of the 438 organizations who responded to the survey:

- 53% of respondents indicated business use of the Internet compared to the Canadian average of 76%.
- 14% of respondents reported maintaining a business website compared to the Canadian average of 31%.

Of the 232 respondents who noted Internet use:

- 36% indicated a broadband connection compared to the Canadian average of 58%
- 64% indicated a dial-up connection compared to the Canadian average of 37%

Sectors with a high percentage of respondents reporting Internet usage:

- Real Estate 93% (Canadian Average 65%)
- Finance & Insurance 90% (Canadian Average 79%)
- Manufacturing 79% (Canadian Average 88%)

Sectors with a low percentage of respondents reporting Internet usage or a wide discrepancy between Elgin County and national percentages:

- Wholesale Trade 57% (Canadian Average 86%)
- Retail Trade 51% (Canadian Average 72%)
- Professional & Technical Services 45% (Canadian Average 92%)
- Accommodation & Food Services 17% (Canadian Average 58%)

Broadband Usage:

- Transportation & Warehousing is the only sector which has a percentage of broadband use higher than the national average.
- Finance & Insurance, Accommodation & Food Services, Construction & Retail Trade are 15% - 20% below the national average.
- Professional & Technical Services, Wholesale Trade and Real Estate are more than 30% below the national average.

² As part of its 2001 Agricultural Census, Statistics Canada did ask some questions about computer usage but, being a census, all farm businesses, including sole-proprietorships were included. This study focussed only on businesses with employees. As such, the two populations are not comparable and the study population has a higher rate of connectivity than the census population.

Agricultural Sector

Of the 378 organizations who responded to the survey:

- 59% of respondents indicated business use of the Internet
- 4% indicated maintaining a business website

Of the 222 Internet users:

- 12% indicated having a broadband connection

PHASE TWO³

This section provides an overview of the business sectors active within Elgin County. This analysis is done using SNG's proprietary small business database based, which has been derived and compiled from Statistics Canada data. The economic gap analysis provides a number of unique analytic views of the structure and organization of business and commercial activity within Elgin County. The value of this analysis lies in the information it provides to economic development professionals about the relative importance of individual industries within the County as compared to other, similarly sized Census Subdivisions (CSDs) across Canada.

Economic Gap Analysis provides a profile of Elgin County that highlights the economic drivers within the community/region. This data allows us to determine how much more (or less) employment an industry provides relative to what would be expected for this industry in a similarly sized CSD, based on national averages. In this context, the economic drivers are those sectors that employ more labour than expected, while the industries that are not drivers are those that provide less employment than would be expected.

Overall Employment

The economic make-up of Elgin County is quite heavily concentrated among several industries. The top 10 industry sectors account for 41% of the county's total employment. The single largest employing sector, Automobile and Light-Duty Motor Vehicle Manufacturing, accounts for 18.07% of all employment, followed by Tobacco Farming at 4.4%

Actual vs. Expected Employment

Positive gaps imply that the industry⁴ has more employment positions than would be expected based on information about employment in similar CSDs. Negative gaps imply the industry has fewer employment positions than would be expected.

³ See "Elgin County Economic Gap Analysis" submitted to the Province of Ontario's Management Board Secretariat (MBS), Elginconnects and Elgin Community Futures Development Corporation (ECFDC) June 30, 2004.

⁴ Throughout this report industries are identified using the North American Industry Classification System (NAICS) at the six-digit level. The NAICS provides a consistent system for economic analysis across the three North American Free Trade Agreement partners – Canada, Mexico and the United States.

Positive Employment Gaps⁵

#	Industry	Number of Establishments With Positive Employment	Positive Employment Gap (Over-employment)	Share of Positive Employment Gap	Average Positive Employment Gap Per Establishment with Positive Employment ⁶
1	Automobile and Light-Duty Motor Vehicle Manufacturing, 336110	1	2,210.19	20.95%	2210.19
2	Tobacco Farming, 111910	155	651.43	6.17%	4.20
3	Psychiatric and Substance Abuse Hospitals, 622210	1	442.80	4.20%	442.80
4	Other Millwork, 321919	5	435.80	4.13%	87.16
5	Limited-Service Eating Places, 722210	29	320.39	3.04%	11.05

Automobile and Light-Duty Motor Vehicle Manufacturing has an average of 2,210 more employment positions per establishment than expected. Similarly, sectors in transportation and other forms of manufacturing also show employment levels greater than expected. Industries with more employment than expected are the economic drivers in Elgin County and the comparative 'over-employment' in these industries is an indicator of their importance in the local economy.

Negative Employment Gaps

#	Industry	Number of Establishments with Less Employment than Expected	Negative Employment Gap (Under-employment)	Share of Negative Employment Gap	Average Negative Employment Gap Per Establishment ⁷
1	Supermarkets and Other Grocery (except Convenience) Stores, 445110	9	-256.52	4.52%	-28.50
2	Nursing Care Facilities, 623110	1	-241.39	4.25%	-241.39
3	Elementary and Secondary Schools, 611110	3	-194.14	3.42%	-64.71
4	Full-Service Restaurants, 722110	26	-183.06	3.22%	-7.04
5	Other Local, Municipal and Regional Public Administration, 913910	6	-147.06	2.59%	-24.51

A general review of the industries that have less employment than expected (negative employment gap) reveals that there are about 5,681 employment positions missing from Elgin County. Closing this under-employment gap would add roughly 5,600 positions to the county's employment base. What is clear from the list of negative employment gaps is that, on a per establishment basis, most gaps are small (in the range of 10 to 20 positions), which suggests that the enterprises being affected are small businesses. In this case, the negative employment gaps may be the result of factors that particularly affect small business (i.e., access to capital, access to markets, business skills of the operators, challenges of single owner/operator business models, etc.).

⁵ Throughout this report employment gaps, positive and negative, are expressed in terms of FTEs.

⁶ Average positive employment gap is calculated only for those establishments with a positive employment gap.

⁷ Average negative gap is calculated for only those establishments with a negative employment gap.

Focus on Negative Gap Industries (Small Business)

In this particular study, the purpose of the economic gap analysis conducted by SNG is to identify industries with over-employment (economic drivers) and under-employment; industries which have the potential for high productivity growth or production output, coupled with a highly receptive capacity for broadband Internet use. Through this unique approach to identification of regional gaps, which represent employment growth opportunities, it is possible to target individual industries for broadband initiatives to ensure high return on investment (ROI) results.

In the case of Elgin County, the majority of the over-employment is located within the larger industrial sectors, such as manufacturing and transportation. Although continued support of these larger industries is indeed important, it is unlikely that a locally based economic development strategy will easily influence these larger and well established economic drivers, for which corporate decisions are typically made in other jurisdictions. It may also be argued that it is not an effective use of development resources to bolster what is already thriving.

On the other hand, the majority of the negative employment gap exists among smaller establishments (fewer than 20 employees per establishment). Further analysis of the attributes of these small businesses may be necessary. However it is likely that they exhibit the typical challenges of small businesses (i.e. many functions under the responsibility of a single owner/manager) and that introducing the efficiencies of broadband Internet access will increase productivity. The resulting industrial growth will in turn lead to increased employment opportunities.

These smaller firms present a more significant development opportunity because, in general, small establishments are:

- more easily influenced by locally based development projects (such as the introduction of broadband);
- more receptive to, if not in search of, avenues for increased efficiency;
- able to respond more quickly to a broadband roll out;
- receptive to opportunities that will improve control over their businesses; and
- receptive to tools that will assist them in maintaining contact with customers.

Furthermore, the locally based decision-making typical of small establishments points to the likelihood of achieving high take-up rates of broadband services more rapidly in these businesses than in larger businesses where decision-makers tend to be located outside Elgin County.

It is particularly interesting to consider those industries that provide the goods and services used in some of Elgin County's larger scale establishments. Consider, for example, an industry that provides a good or service known to be an input into the automotive parts industry. To the extent that there is a negative employment gap (less employment than expected based on the average), this may imply that this good or service is being supplied from outside Elgin County. Thus, an examination of the production chain for some of Elgin County's higher-value, high-volume output, may indicate service gaps within Elgin County and, therefore, opportunities for strategic industrial / commercial development.

PHASE THREE⁸

The final phase of the project takes the information from the previous two phases and the decision by key stakeholders in Elgin County to focus on the county's agricultural sector, and develops a strategic economic development plan. This plan is designed to assist in the use IT to create stronger business linkages within the agricultural sector, thereby promoting the economic development of this sector and that of the community as a whole.

The principle method used in describing and analysing the economy of Elgin County, as presented at the April 2004 workshop, is termed 'cluster analysis'. This type of analysis groups industrial sectors in terms of their supply and distribution lines. The idea behind this is to view the economy as a system, or a series of systems, whose efficiencies can be enhanced through the use of IT, rather than treat each industrial sector independently.

The cluster analysis, carried out using the results of Phase Two, determined that the overall state of the economy in Elgin County is quite good, though much opportunity for further development remains. There is a considerable degree of mutual support across the clusters, e.g., machinery capability supports agriculture and manufacturing clusters, construction is strong regarding residential/small agricultural buildings, etc. However, the analysis also showed a lack of apparent IT and IT support functions as well as intellectual up-grading capability. There also seems to be limited internal value-added production and end-product diversity / quality.

Two conclusions were drawn from the cluster analysis. First, there is a need to create a targeted development strategy that can capitalize on Elgin's usually strong inputs. Secondly, there is a need for an IT development strategy to support economic progress.

The results of Phases One and Two, along with the initial cluster analysis, were presented in a workshop to a group of key stakeholders from Elgin County in April 2004. The goal of this workshop was to not only present the key findings, but to get feedback from key stakeholders as to which industry sector development efforts should be focused upon. A decision was made to focus upon the agricultural sector.

Having isolated the various agricultural industries present in Elgin County, SNG proposed to focus its analysis on those industries of particular importance to the local economy. Focusing particularly on the number of businesses present within each industry and the number of permanent employees, discussions were held with Elginconnects, which led to a decision to focus on the following industries⁹:

- Dairy & Feathers (Poultry & Egg Production)
- Beef & Hogs
- Grain (Cash Crops)

⁸ See "**Economic Development Plan for Elgin County using IT and Broadband**" submitted to the Province of Ontario's Management Board Secretariat (MBS), Elginconnects and Elgin Community Futures Development Corporation (ECFDC) September 15, 2004.

⁹ The tobacco industry was not included, despite its obvious importance to the economy, due to its limited growth potential, given recent decisions by major tobacco enterprises to limit their continued investment in the Canadian tobacco industry.

Telephone interviews with individuals involved in the above industries led to a better understanding of who was using IT, how it was being used, and how it could possibly be used in the future.

- The vast majority of farmers contacted used a dial-up connection and focus mainly on gaining information, predominantly about the weather and commodity markets.
- Their communications with suppliers and customers tended to take place over the telephone.
- A lack of knowledge, and time to gain that knowledge, was generally cited as the main reason for not making more use of the Internet.
- Most farmers were interested in learning about ways IT could assist them as long as it was kept quick, simple and practical.
- The preferred method of receiving such information was small group (10 –15 people) demonstrations with an emphasis on 'hands-on' learning.

The results of the interviews indicated a variety of ways that the agricultural community could use IT. These ways can be broken down into two categories: immediate opportunities, those that Elgin could pursue independently; and long-term opportunities, those that would require cooperation from commodity markets, large buyers (generally placed outside the county) and / or regulators.

Immediate Opportunities

- Higher-speed Internet connections
- Introduction to Computing or Introduction to the Internet sessions
- Basic / Intermediate Website Design
- Providing Agriculture-specific Information on Elgin Portal
- Computer Sales & Service (including trouble-shooting)
- Digital Photography
- Online Auction Catalogues

Long-term Opportunities

- Internet Auctions / Sales
- Online forms / communication
- Communication with Consumers

Having determined that education and awareness are the two main obstacles to the agricultural community fully leveraging IT, SNG recommends the development of an Internet Resource Centre (IRC) as a means to improve this situation. The IRC would be a focal point for IT-related education. It would consist of two components, an office, to deal with telephone and drop-in inquiries and some in-house demonstrations, and a field staff to visit farmers for onsite troubleshooting and / or IT needs assessments. The field staff could also run small group demonstrations for those farther away from the IRC office. Though perhaps initially focussed on the agricultural community, the IRC could be easily adapted to suit the needs of other businesses and business sectors within the county.

The IRC, coordinated by Elginconnects would:

- Promote the benefits of broadband.
- Demonstrate high-speed Internet applications.
- Offer trouble-shooting help.
- Offer individuals the ability to come-in and use a high-speed Internet connection.

Discussions with farmers about their relationships with suppliers and customers indicated that trusted relationships are valued very highly in the agricultural community, and that people remain very loyal to these relationships. Farmers like to deal with someone local in whom they can trust. This is particularly important when attempting to introduce new ideas or technology. An IRC would provide local support for IT needs, helping farmers leverage the capabilities they already have and are comfortable using, as well as demonstrating the advantages of new applications.

The consequence of not offering such user support is a high-speed network that is not fully utilized – this represents a significant investment with limited returns.

When delivering information, the needs and desires of the agricultural community must be taken into account. Evenings, and possibly weekends, are the most convenient times for contact, and any seasonal down times (e.g. winter for some grain farmers) should also be considered when planning dates and times for demonstrations, presentations and visits. Information should be practical and demonstrations should be short; possibly as a number of presentations, each focusing on one or two tasks. Perhaps the most important factor, expressed by almost every farmer interviewed, is that sessions should be 'hands-on' to ensure understanding. If these considerations are kept in mind, farmers will be much more receptive.

Though initially set-up with public funds, a goal of the IRC would be to become self-sustaining. Potential sources of income might include user fees, or perhaps a one-time membership fee, and sponsorships or partnerships. User fees should be considered very carefully so as not to limit the number of participants. Sponsorships and partnerships however should be pursued aggressively with ISPs, software companies, computer manufacturers, etc. who could benefit from an association with the Internet Resource Centre. As mentioned earlier, the IRC could also be used in the future to support other economic sectors, and similar initiatives or projects.

Next Steps	
Connectivity	<ul style="list-style-type: none"> • Establish high-speed Internet connections (<i>in progress - Elginconnects</i>) • Investigate other connection options, e.g. compressed dial-up, for those without access to, or unwilling to pay for, high-speed
Internet Resource Centre	<ul style="list-style-type: none"> • Demonstrate benefits of high-speed Internet connections, as opposed to dial-up, and allow farmers to ‘test-drive’ applications • Create series of demonstrations to present applications to farmers, for example: <ul style="list-style-type: none"> ○ Lessons on website creation / maintenance (<i>in progress – Elginconnects</i>) ○ Introducing the Internet (<i>in progress – Elginconnects</i>) • Identify applications useful to agricultural community, for example: <ul style="list-style-type: none"> ○ Discuss with local veterinarians possibility of using digital photography to aid in diagnosis ○ Investigate thin-client technology to allow farmers to take advantage of IT applications without having to pay for licensing fees or be responsible for computer service • Set-up and coordinate outreach activities to engage agricultural community in leveraging benefits from connectivity and IT applications (<i>in progress – Elginconnects</i>) • Initiate discussions with commodity marketing boards to better leverage connectivity and IT applications for agricultural sector in Elgin County
Portal Content	<ul style="list-style-type: none"> • Provide agricultural-specific information, such as links to current market prices, agricultural journals, commodity marketing boards, etc. • Investigate links with Data Transmission Network (or similar service) to offer their information as part of the portal, or aggregate demand and perhaps achieve a lower price for Elgin farmers, providing farmers with necessary information to improve their crops and / or sales • Identify reliable and accurate source of regional weather information tailored for needs of agricultural community • Establish a chat-room to allow farmers to share information and experience with other farmers in the region

APPENDIX ONE: SAMPLE ANALYTICAL GRAPHICS

The following four graphics are taken from the original Elgin County studies and represent visual examples of the types of analysis undertaken by Strategic Networks Group.

Figures 1-1 & 1-2 compare the level of Internet and Broadband usage of a industry sectors in Elgin County with that of the Canadian national average for that sector. Sectors with 10 or fewer respondents (Utilities, Information, Administration & Support Services, and Public Administration) have been removed as such small sample sizes cannot be said to be representative of those sectors. These charts help illustrate which industrial sectors should be targeted with efforts to promote the use of IT and broadband.

Figure 1-3 represents visually, the conceptual approach of cluster analysis. The industries in this pyramid are those considered when conducting this analysis of an agricultural sector. The top level of the pyramid, Tier 1, represents the final commodities produced by the sector. This tier is supported to varying degrees by inputs provided by industries in the lower levels. These industries provide inputs to agricultural commodity production, but are not exclusive to the agricultural sector as they provide inputs to other sectors as well. Numbers attached to each industry represent the corresponding six-digit North American Industrial Classification System (NAICS) code. These industries and the links between them are used as a framework upon which to build an analysis of an industrial sector's supply-chain.

Table 1-1 illustrates the geographical disbursement within Elgin County of key industrial sectors. It identifies employment gaps by Census Subdivision (CSD) and indicates the number of positions above (blue) or below (red) the expected employment in a similarly sized CSD. Columns on the right sum the total of positive (blue) employment gaps and the total of the negative (red) employment gaps. This gives an idea of the size of the employment gaps in each industry and their location, allowing for an effective, targeted development strategy.

Figure 1-1

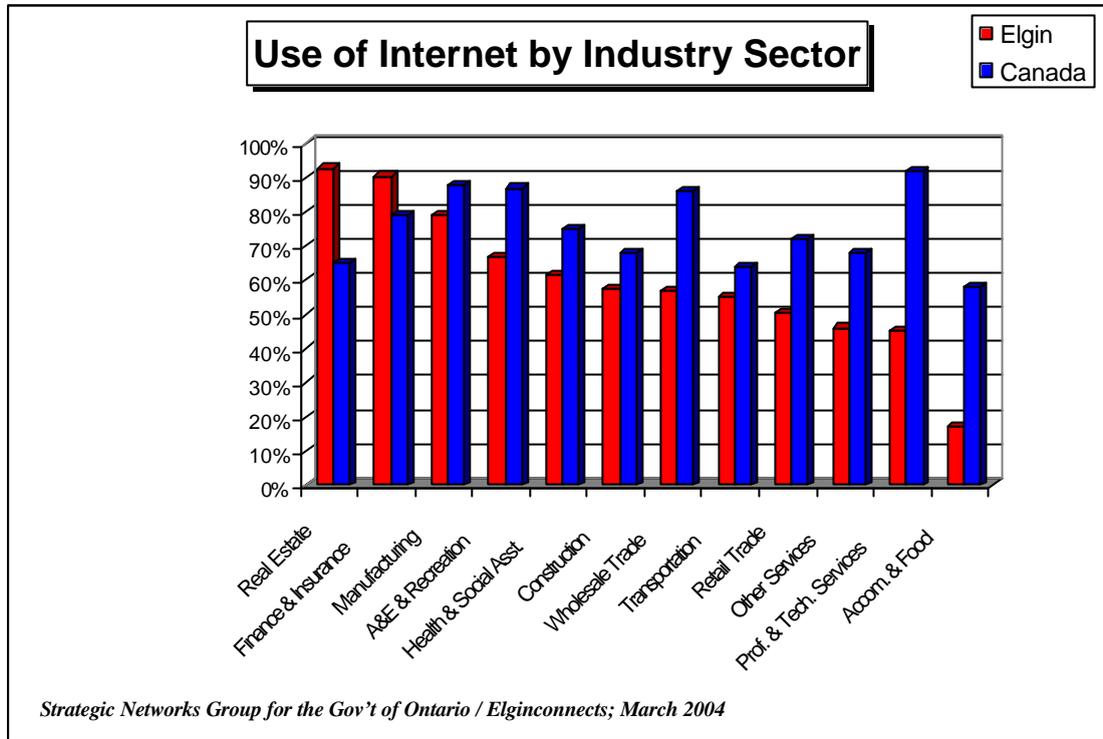


Figure 1-2

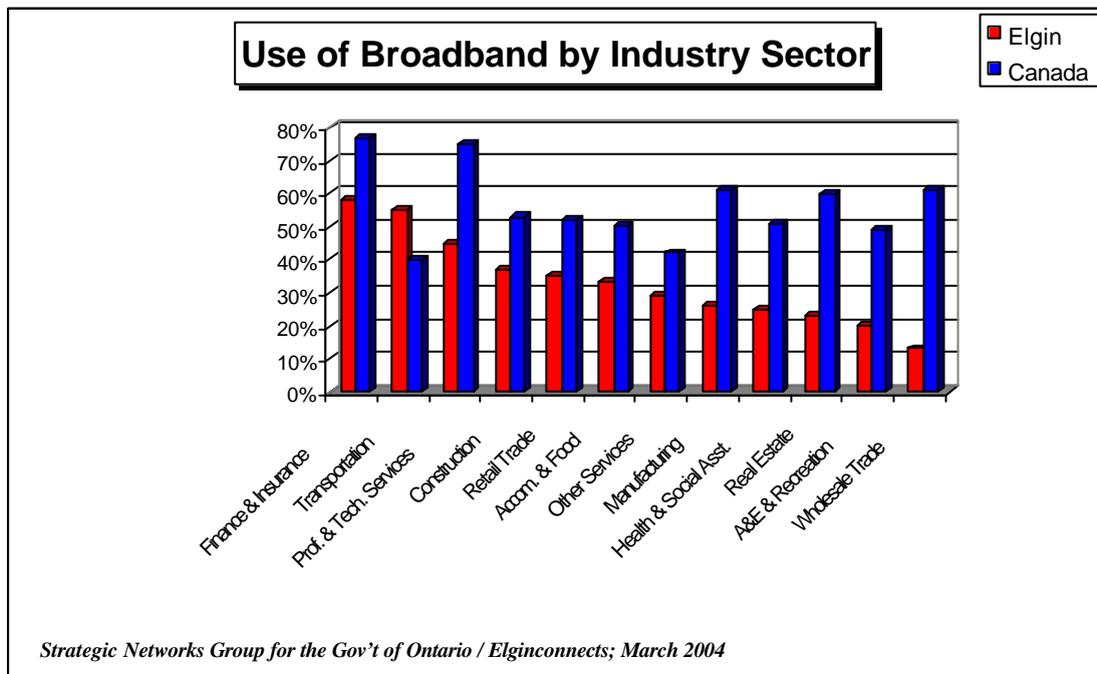


Figure 1-3: Industries in Agricultural Cluster

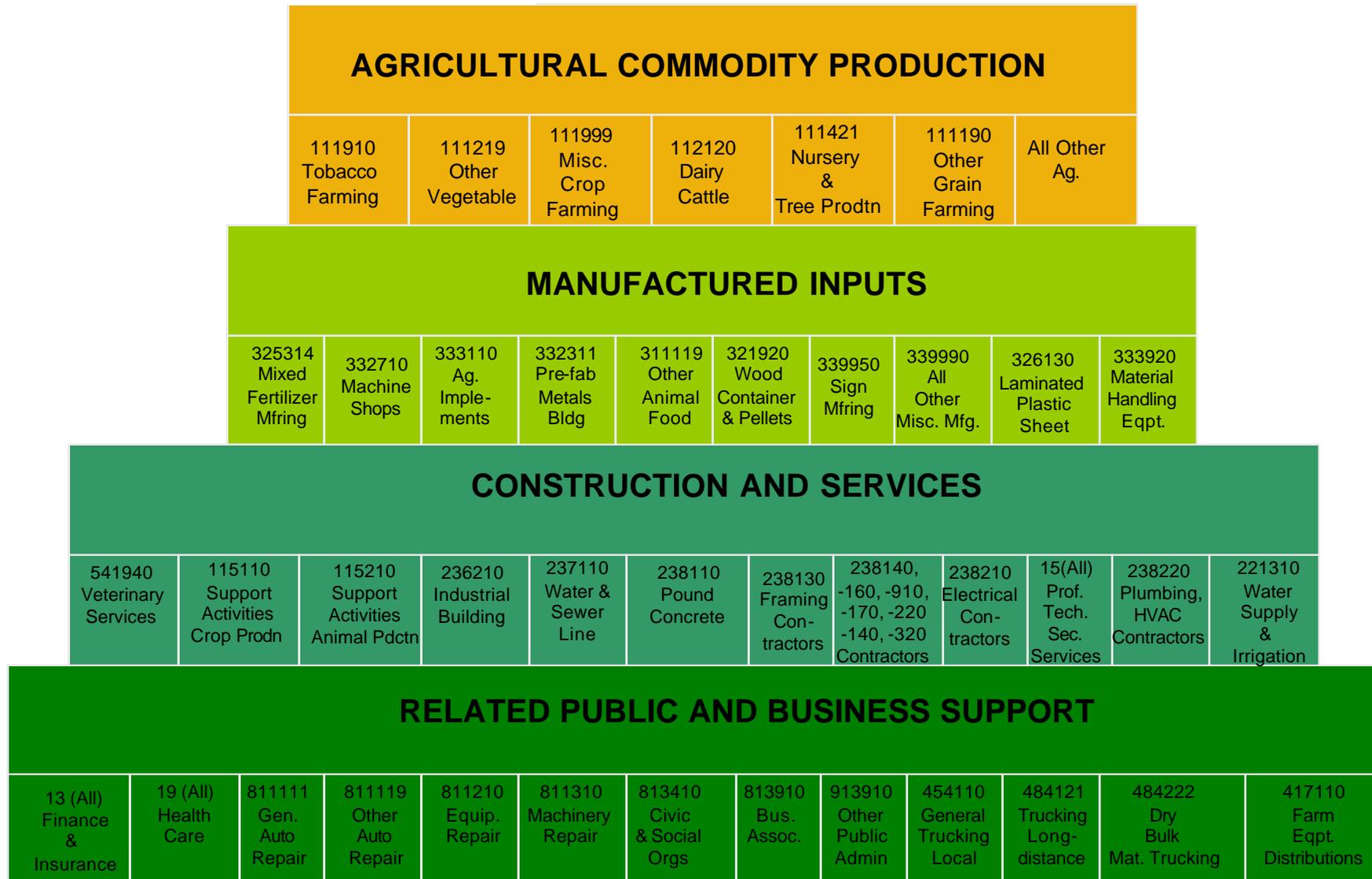


Table 1-1: Industry Gaps in Elgin County (excluding St. Thomas) – by CSD

	Aldborough	Aylmer	Bayham	Belmont	Dunwich	Dutton	Malahide	Port Burwell	Port Stanley	South Dorchester	Southwold	Springfield	Vienna	West Lorne	Yarmouth	Total of Positive Empl. Gaps	Total of Negative Empl. Gaps
Local Credit Unions	-17	-30	-20	0	0	0	-27	0	0	0	-18	0	0	0	-24	0	-136
Personal and Commercial Banking Industry	-19	3	-23	-7	0	0	-30	0	0	0	9	13	0	-5	-34	26	-119
Residential Building Construction	-19	-23	-20	62	-13	-3	3	-6	-4	-9	-1	2	-3	21	13	101	-100
Offices of Physicians	-9	30	-10	0	-4	-1	-14	3	0	0	-7	0	0	-4	-7	33	-56
Hardware Stores	-7	1	-8	0	-4	0	-10	27	-3	0	-7	0	0	15	-12	43	-51
Electrical Contractors	-7	-13	-10	7	2	2	1	-2	0	-5	-1	3	-1	-2	-8	15	-49
Commercial and Industrial Machinery & Equipment (except Automotive & Electronic) Repair & Maintenance	-4	-8	-6	3	-3	1	30	-1	-3	7	-2	-2	0	-4	-7	41	-41
Lessors of Non-Residential Buildings (except Mini-Warehouses)	-4	-4	-4	0	-3	-2	-7	0	0	-3	-6	0	0	-1	-6	0	-40
Site Preparation Contractors	-1	-13	2	8	-5	0	-5	-2	-7	-7	54	16	2	2	9	93	-40
Insurance Agencies & Brokerages	3	19	0	0	-3	0	-10	0	-4	0	-7	4	0	-4	-9	26	-37
Plumbing, Heating and Air-Conditioning Contractors	-7	-5	-3	11	-4	-3	51	0	-3	0	-5	0	0	-2	14	75	-32
Offices of Lawyers	-3	-4	-4	0	-3	-1	-5	0	-2	0	-4	0	0	-1	-2	0	-29
Engineering Services	-4	-3	-4	0	-1	-2	-5	0	-2	0	0	0	0	0	-4	0	-25
Computer Systems Design & Related Services	-3	-3	-4	0	-1	0	-5	0	1	0	-3	0	0	-1	-5	1	-25
Administrative Management and General Management Consulting Services	-4	-3	-4	16	2	0	-6	0	0	2	-3	0	0	-1	-2	20	-24
Veterinary Services	-3	-2	-3	0	-3	0	-4	-2	-3	0	-2	0	0	0	-3	0	-23
Commercial and Institutional Building Construction	3	-6	-4	-2	0	0	-3	-1	-2	0	-5	0	0	0	2	5	-23
Lessors of Residential Buildings and Dwellings (except Social Housing Projects)	-2	-3	-3	27	-2	0	-3	0	-2	0	-2	0	0	-1	-4	27	-23
General Automotive Repair	5	12	-4	1	2	-2	26	-2	-6	-5	-1	3	-2	1	0	48	-23
Offices of Accountants	-3	-4	-4	0	-2	1	-5	0	-2	0	-1	0	0	-1	29	31	-22
Source: Strategic Networks Group 2004																	