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INDUSTRY CLUSTER ANALYSIS – YORK REGION

The Planning and Economic Development Committee recommends the adoption of the recommendations contained in the following report, August 3, 2006, from the Commissioner of Planning and Development Services:

1. RECOMMENDATIONS

It is recommended that:

1. Staff report back to Regional Council on the findings of the Phase 2 Analysis in Spring 2007.

2. This report be circulated to the area municipalities, the Provincial Government, and the Federal governments for their information and comment.

2. PURPOSE

The purpose of this report is to present to Regional Council the findings of the Quantitative Analysis – Phase 1 of the Industry Cluster Analysis.

3. BACKGROUND

York Region has a diverse economic base characterized by a wide variety of industry sectors. Earlier analysis of the Region's employment and company concentration indicated that there may be established or emergent industry clusters. It is becoming increasingly important to understand the critical factors that will sustain the competitiveness of these industry clusters, and what the Region and its public and private sector partners can do to ensure that they continue to thrive and create employment opportunities.

During the Economic Strategy consultation process, the business community had suggested that the Region take an active role in the identification and evolution of industry specific cluster groups to create new opportunities for business development.

In order to build on the work that was started with the Economic Strategy, it was decided that staff would undertake a more in-depth economic structural analysis of the high performance industry clusters. An industry cluster analysis provides important data about the Region's economic structure and is a powerful tool to develop cluster-based economic development strategies. The analysis will provide the basis for the Region to initiate a multi-year business cluster building initiative for each of the major sectors in collaboration with industry, education and other levels of public and private sector partners.

4. ANALYSIS AND OPTIONS

4.1 Industry Clusters and the Regional Economy

An industry cluster is a group of companies with related products or services that interact with each other and with their suppliers to develop innovative products and processes. Clusters are defined by the linkages which exist between core firms, suppliers and intermediaries, and the economic infrastructure that support them.

> "An industry cluster is a group of firms that, through their interactions with each other and with their customers and suppliers, develop innovative, cutting-edge products and processes that distinguish them in the market place from firms in the same industry found in other places." (Heike Mayer, "Cluster Monitor" in IEDC Journal).

Companies within a cluster often compete against each other. At the same time, they share common input factors such as workforce skills, technology, infrastructure, and support services. Companies in a cluster benefit by collaborating on information sharing, market intelligence, access to specialized skills and training, co-operative marketing and purchasing, research and development, joint production and processes, advocacy, and access to business and technology networks. Through the sharing of knowledge and information between firms, clusters provide an environment for competition and collaboration, increase productivity and efficiency, encourage innovation, stimulate entrepreneurial activities, and increase the overall competitive advantage of all the firms. The relationship across firms and associated institutions within the industry is what characterizes and distinguishes a cluster, and a cluster strategy should focus on the linkages among firms and not just on individual companies.

Industry clusters play a key role in a regional economy. Within an industry cluster, firms work together to create jobs, attract investment, and evolve over time as they respond collectively to changes in the global and domestic markets. Since the economy is becoming increasingly interdependent and affected by global changes, understanding how industry clusters work is a broader and more integrated approach to monitoring and influencing a regional economy.

4.2 Methodology and Timeframe

The following is the methodological framework for the industry cluster analysis:
Phase 1 - Quantitative Analysis (completed)
Phase 2 - Qualitative and Competitive Analysis (Spring 207)
Phase 3 - Action Plan Development. (Fall 2007)
Details of the Methodological Framework is presented in *Attachment 1*.

4.3 Results of Quantitative Analysis

The consulting firm of Community Benchmarks was retained to assist with the quantitative analysis of industry concentration and growth of enterprises in the Region.

4.3.1 Location Quotient and Enterprise Growth

As part of the quantitative analysis, Location Quotients (LQ) were calculated for business enterprise data broken down by the North American Industry Classification System (NAICS). The enterprise data is the most comprehensive count of York Region's enterprises provided by Statistics Canada's *Canadian Business Patterns*, which identifies the number of enterprises by employee size range within an industry. The *Canadian Business Patterns* database is derived from Canada Revenue Agency business numbers and from payroll remittance numbers.

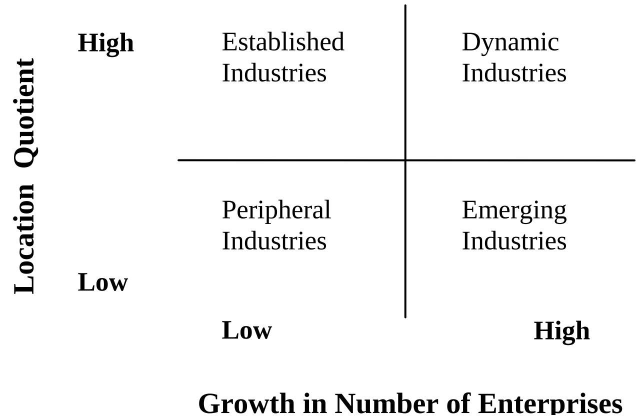
The Location Quotient produces an index that indicates the relative presence of a specific economic activity in York Region relative to the Province of Ontario. A LQ greater than 1.0 indicates that the Region has a higher concentration of a given industry compared to Ontario. If the Location Quotient is equal or close to 1.0, York Region has the same or similar concentration for an industry as that of the Province. A LQ of less than 1.0 suggests that York Region has less than its proportionate share of an industry sector compared to Ontario. For the purpose of this research, a Location Quotient threshold of 1.25 or greater is used to identify the industries in which York Region has a significant concentration of economic activities.

Since business enterprises come in various sizes, Location Quotients were also calculated for the following six different employee size ranges within each industry:

- Owner operated
- 1 to 9 employees
- 19 to 49 employees
- 50 to 99 employees
- 100 to 499 employees
- 500+ employees.

Business enterprises in the Region are then grouped based on their Location Quotients and growth relative to Ontario. The result is a classification of industry sectors into the following categories, as illustrated in *Figure. 1*.

Figure 1
Approach to Classifying Industry Clusters



The classification scheme is as follows:

- Established Industries – Sectors with a high Location Quotient and low growth represent segments of the economy that already have a stronghold in the Region.
- Dynamic Industries – Industries with a high Location Quotient and high growth are important growth industries. Their concentration in the Region has given them a competitive advantage over other parts of the Province.
- Emerging Industries – Industries with a low Location Quotient but high growth have the potential to develop a strong market presence. High growth indicates that their products or services are in demand.
- Peripheral Industries – Sectors with a low Location Quotient and low growth could be important support industries.

4.3.2 Key Findings

The analysis has identified the strong and potential sectors as well as the support industries that will drive the growth of the Region’s economy.

4.3.2.1 Analysis of 3-digit Industries

A complete listing of Location Quotients and enterprise growth of York Region industries broken down by 3-digit NAIC codes is shown in *Attachment 2*.

As of June 2005, York Region had 86,101 business establishments operating across 103 different 3-digit industries. Location Quotients were calculated based on the total number of enterprises in each 3-digit industry. Overall, 19 different 3-digit industries were found to have high concentrations of businesses. These 19 industries accounted for a combined 14,647 enterprises, or 17.0 percent of the total number of businesses in the Region.

Table 1 presents the 19 3-digit industries in which York Region has a significant concentration of business enterprises (defined by Location Quotient values of 1.25 or greater). The Management of Companies and Enterprises industry accounted for the most enterprises with 4,392; followed by the Machinery, Equipment and Supplies industry with 1,550 businesses; the Heavy and Civil Engineering Construction industry with 1,491 enterprises, the Miscellaneous Wholesaler-Distributors with 1,415 companies; and the Personal and Household Goods industry with 1,363 business enterprises.

Table 1
York Region's 3-digit Industries with
High Concentration of Enterprises
June 2005

NAICS Code	Industry Description	Location Quotient	Total No. of Enterprises
414	Personal & Household Goods Wholesaler-Distributors	1.82	1,363
334	Computer and Electronic Product Manufacturing.	1.54	282
418	Miscellaneous Wholesaler-Distributors	1.54	1,415
237	Heavy and Civil Engineering Construction	1.51	1,491
335	Electrical Equipment and Appliance Manufacturing	1.47	140
526	Funds and Other Financial Vehicles	1.45	237
323	Printing and Related Support Activities	1.43	580
337	Furniture and Related Product Manufacturing	1.43	401
417	Machinery, Equipment & Supplies Wholesaler-Distributors	1.42	1,550
419	Wholesale Agents & Brokers	1.40	697
326	Plastics and Rubber Products Manufacturing	1.38	235
322	Paper Manufacturing	1.35	79
413	Food, Beverage & Tobacco Wholesaler-Distributors	1.35	548
416	Building Materials & Supplies Wholesaler-Distributors	1.35	776
533	Lessors of Non-Financial Intangible Assets (except copyrighted works)	1.34	63
518	Internet Service Providers, Web Search and Data Processing	1.30	143
551	Management of Companies and Enterprises	1.29	4,392
315	Clothing Manufacturing	1.28	203
313	Textile Mills	1.26	52

Source: Statistics Canada and Community Benchmarks

When employee size ranges are taken into account, although only 19 different 3-digit industries had a Location Quotient of 1.25 or higher based on the total number of business enterprises in each 3-digit industry, a total of 61 different 3-digit industries had Location Quotients of 1.25 or higher in at least one employee size range.

Five industries had high Location Quotients in every employee size range, indicating a significant concentration of economic activity. These five 3-digit industries include:

- Heavy and Civil Engineering Construction
- Computer and Electronic Product Manufacturing
- Personal and Household Goods Wholesalers and Distributors
- Machinery, Equipment and Supplies Wholesaler and Distributors
- Wholesale Agents and Brokers.

Attachment 3 shows the details of enterprise concentration by employee size ranges.

Based on the Location Quotients and the growth in the number of enterprises, industry sectors in the Region can be classified in the following four categories.

Established Industries (High LQ and Low Growth) – These are mature and stable industries which will continue to contribute significantly to the Region's economy. The three industries in this category include:

- Computer and Electronic Product Manufacturing
- Funds and Other Financial Vehicles
- Lessors of Non-Financial Intangible Assets

Dynamic Industries (High LQ and High Growth) - A total of 16 industry sectors can be found in this category based on their growth and concentration compared to the Province. It is anticipated that these industries will continue to grow and expand in the Region. The notable industries in this group include:

- Heavy and Civil Engineering Construction
- Furniture & Related Product Manufacturing
- Electrical Equipment, Appliance & Component Manufacturing
- Internet Service Providers, Web Search Portals, & Data Processing Services
- Management of Companies and Enterprises

Emerging Industries (Low LQ and High Growth) - The largest group comprising of 59 industries encompasses a wide variety of sectors, which is representative of the diverse nature of the Region's economy. These industries have experienced above-average growth and represent important areas of focus for the Region's cluster-based strategy. Among the high growth sectors are:

- Beverage & Tobacco Product Manufacturing
- Chemical Manufacturing
- Professional, Scientific & Technical Services
- Performing Arts, Spectator Sports & Related Industries

- Truck Transportation

Peripheral industries (Low LQ and Low Growth) – There are 25 industries in this category and include the low concentration and declining/low growth sectors, but they could be important support industries for more developed clusters. The declining industries in this category include:

- Broadcasting (except Internet)
- Primary Metal Manufacturing
- Petroleum Product Wholesaler-Distributors
- Securities, Commodity Contract, & Other Financial Investment & Related Activities
- Telecommunications

A complete classification of industry sectors by 3-digit NAIC codes is presented in *Attachment 4*.

4.3.2.2 Analysis of 4-digit Industries

Considering the range of activity and specialization within each 3-digit industry, it is also appropriate to examine the concentration of enterprises at a more detailed industry level. The 303 industries of the 4-digit NAICS provide a more in-depth understanding of York Region's industry concentrations.

Similar to the approach used to examine the Location Quotients for the 3-digit NAICS industries above, Location Quotients were calculated for each 4-digit industry based on the total number of enterprises within each industry. *Attachment 5* presents the 4-digit industries that have high Location Quotients (values equal to or greater than 1.25). In total, 68 4-digit industries showed significant concentrations within the Region. The 68 industries identified with significant enterprise concentration represent a total of 20,716 of York's businesses.

Among these industries, the greatest number of establishments were found in the Computer Systems Design and Related Services industry (5,282 enterprises), followed by the Management of Companies and Enterprises industry (4,392 enterprises).

Analysis at the 4-digit level has found industries with high Location Quotients that were not identified at the 3-digit analysis. Significant sub-sectors showing high concentration at the 4-digit level include:

- Sugar and Confectionery Product Manufacturing
- Bakeries and Tortilla Manufacturing
- Spa, Cleaning Compound and Toilet Preparation Manufacturing
- Footwear Manufacturing
- Glass and Glass Product Manufacturing
- Forging and Stamping
- Industrial Machinery Manufacturing
- Motor Vehicle Parts Manufacturing

- Software Publishers
- Computer Systems Design and Related Services.

When growth is taken into account, most of these industries are found to be high growth and Dynamic sectors that merit attention.

A complete Location Quotient and enterprise growth analysis, together with a breakdown by employee size ranges and an industry classification are available for further perusal in the Planning and Development Services Department.

4.4 Next Steps

With the results of the quantitative analysis, the next step is to proceed to Phase 2 with the qualitative and competitive analyses starting in the Fall. Focus group sessions and interviews with businesses and external stakeholders will be undertaken to obtain an in-depth perspective on the industries, cluster connections and relationships, potential for collaboration, cluster drivers, support services, new knowledge and innovation, skills and labour force, competing jurisdictions, challenges, etc. At the same time, consultations will be held with Area Municipalities and Regional departments to examine the availability of resources to address some of the gaps identified through the interview process.

4.5 Relationship to Vision 2026

The industry cluster analysis will increase the understanding of the Region's economic structure. Development of an Action Plan to support cluster growth and development will contribute towards the Vibrant Economy Goal as set out in Vision 2026.

5. FINANCIAL IMPLICATIONS

The total cost of the Quantitative Analysis, including consulting fees and data purchase, was approximately $10,000 plus tax. Funds are available in the 2006 approved Economic Development budget to cover the expenditure. Provision for Phases and 3 will be included in the proposed Economic Development budget for 2007.

6. LOCAL MUNICIPAL IMPACT

Area municipal staff will be engaged in Phase 2 of the Industry Cluster Analysis, as well as throughout the Action Plan development process. A Cluster Strategy focuses on economic linkages, and the prosperity of the Region as a whole will translate to economic benefits for all local municipalities.

7. CONCLUSION

Clusters play a key role in making a regional economy more dynamic and adaptable. Companies within a cluster share knowledge and ideas which in turn will increase their individual competitiveness. A cluster-based approach to economic development will be to develop and build on existing clusters and promote the linkages and factors that contribute to the growth of individual firms and the cluster as a whole. It is recommended that this report be received and that staff proceed with Phases 2 and 3 of the project.

The Senior Management Group has reviewed this report.

(The attachments referred to in this clause are attached to this report.)