Cluster Atlas of Canada

A data profile of resource, manufacturing, and service clusters in Canadian provinces using data from the 2011 Census and National Household Survey

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Prepared by:

Gregory M Spencer, M.Sc. Pl., Ph.D.
Manager of Local IDEAs
Munk School of Global Affairs
University of Toronto

greg.spencer@utoronto.ca
Report Highlights

This report identifies where the major industrial clusters exist within Canada and provides indicators of their relative performance. The purpose is to provide a comprehensive overview of the economic landscape of the country and map areas of strengths and weakness in order to inform decisions concerning allocation of public resources. A well-established methodology for identifying and mapping clusters is derived from the work of Spencer et al (2010). The main data sources are the 2011 National Household Survey and a 2011 universal business establishment database acquired from Dun & Bradstreet.

Key highlights include:

- 230 cases of clusters identified in Canada
- Ontario leads with 86, followed by British Columbia (43), Québec (39), and Alberta (30)
- There is a general lack of clusters in Atlantic Canada
- Oil & gas and mining have been the best performing sets of clusters between 2001 and 2011 in terms of employment growth and incomes
- Service clusters such as business services, finance, ICT services, and creative & cultural industries tend to be located in the largest urban areas and are experiencing high levels of growth
- More traditional manufacturing clusters such as auto manufacturing, steel, plastics & rubber have generally been struggling over the past decade
- The previous two points suggest that there is a growing prosperity gap between smaller/mid-sized urban regions and the largest urban regions
- Knowledge intensive manufacturing clusters such as ICT and life sciences (including pharma) have shown somewhat mixed performance
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1.0 Introduction

1.1 Aims of the report

The purpose of this report is to provide a complete overview of the industrial cluster landscape in Canada. By doing so, specific areas of strength are identified within the national economy. This knowledge can help to inform strategic investments made by the public sector in areas such as infrastructure, education and training, and research and innovation. Clusters are broadly defined as sets of interrelated industries, firms, and institutions, which benefit from being in close physical proximity. A well-established and consistent quantitative methodology developed by Spencer et al. (2010) is used to identify clusters in Canada. The report is data-driven and presents indicators such as employment, growth, and incomes in order to assess the relative performance of each identified cluster.

The remainder of this section provides an overview of the cluster concept, its criticisms, and recent developments. Section 2 presents the methodology of identifying clusters in greater detail as well as explains the data sources and how they should be interpreted. The third section gives a national overview of the number of clusters identified by type and geography. Section 4 contains comparative data on the 20 types of clusters identified. The fifth section presents profiles of 32 specific clusters that are intended to provide a comprehensive cross-section of cluster types and locations. The final section discusses overall cluster trends in Canada and interprets them within a pro-active policy framework.

1.2 A brief survey of cluster theory

There is now widespread understanding that the geographical clustering of related industrial activity within particular places provides the basis for their economic prosperity and growth. Policy-makers often apply the analysis of academics or consultants in order to determine the presence of specific clusters within their jurisdictions, and to benchmark their performance relative to competing clusters in other regions or countries. The model developed by Harvard business strategist Michael Porter (1990) (1998) (2003) provides the benchmark for the field, having been propagated by his own company, as well as affiliated organizations outside the United States. This approach has also been replicated and adapted by many other consultants providing similar analyses worldwide.

The literature on clusters exists within a much broader body of work on the relationships between innovation processes and geography, including clusters, industrial districts, local production systems, and other similar concepts, which has been thoroughly reviewed in recent years (Moulaert & Sekia, 2003; Simmie, 2005; Lagendijk, 2006). For the purposes of this report, the following discussion focuses on the literature that is specific to clusters.

Porter (1998) defines clusters as: geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (for example, trade associations, universities, standards agencies) in a particular field that compete but also cooperate. (pp. 197–198) The fundamental theory of clusters suggests that interrelated firms and industries achieve a measure of competitive advantage by being geographically concentrated in certain locations. Economists have seized upon Marshall’s (1927) original beliefs on the nature of
agglomeration economies by generally agreeing on three types of supply-side externalities that contribute to the growth of clusters. The sources of these externalities include:

- large, deep pools of specialized labour generated by the concentration of firms within related industries in the same location;
- the support that firms in the same industry illicit from a large number of specialized local providers of intermediate inputs and services; and,
- the positive technological externalities or spillovers that flow more easily among co-located firms than over longer distances (Krugman, 1991; Cortright, 2006).

The advantages enjoyed by firms in such agglomerations include traditional external economies of scale, such as shared physical infrastructure, in addition to efficiency gains from reduced transaction costs and access to specialized labour. Other advantages are based on the transfer of knowledge, including the movement of skilled labour as well as inter-firm collaboration and networking (Porter, 1998). Clusters have also been widely adopted as a policy mechanism for economic development based on the conviction that they provide a foundation for economic growth for local and regional economies. Furthermore, they have attracted the attention of policy-makers based on the belief that public institutions and regulations have a strong influence on cluster dynamism, thereby having a discernible and measurable impact on the prosperity of local economies (Information Design Associates with ICF Kaiser International, 1997; Organization for Economic Cooperation & Development (OECD), 1999; Porter, et al., 2001; Andersson, et al., 2004).

2.2 Criticisms of the cluster concept

Direct evidence of the tangible impact of clusters on economic growth remains somewhat scarce. Despite their widespread popularity with policymakers, clusters pose challenges that make their systematic identification and measurement difficult. This difficulty in turn contributes to scepticism with which cluster analyses and policy prescriptions are treated. Specific criticisms of the cluster concept are articulated by (Martin & Sunley, 2003) and (Asheim, et al., 2006), among others, who raise a number of conceptual and empirical questions about the validity of the cluster construct. For example, they note the vague and inexact definition of the geographical extent of the cluster concept, noting that it is applied at a range of spatial scales. Moreover, they question the extent to which the supposed beneficial impact of clusters on firm innovativeness and regional economic performance has been confirmed on a systematic basis across different locations and industries. Similarly, Wolfe and Gertler (2004) provide empirical evidence that questions the universality of some of the standard claims made in the cluster literature, for example, concerning local competition as a driver of firm performance (see also (Breschi & Malerba, 2005)). Wolfe and Gertler conclude that national and local contexts are central in shaping distinctive evolutionary trajectories that do not necessarily conform to Porter's US-based cluster norms. For this reason, it makes little sense to apply a conceptual and methodological framework – based as it is on the specificities of the American context – in other empirical settings without significant reflection, modification or adaptation. These critiques bring to the fore an inherent tension between the desire to develop and implement a conceptual framework that has widespread applicability (thereby facilitating comparative analysis) and the need for
an analytical approach that is sufficiently supple to accommodate regional and national variations in economic structure, inter-sectoral relationships, and historical context.

2.3 Recent developments on clusters

The cluster concept has endured and thrived despite criticisms that it is overly vague and difficult to implement in a systematic manner. These criticisms have led to more detailed research that focuses on better ways to identify clusters, analyse their impact, and recognize best practise. Notably, Muro and Katz (2010) from the Brookings Institution outline what they believe to be a new ‘cluster moment’ by stating that recent research has added a significant amount of validity to the concept. Furthermore, effective clusters are tangible and ‘real’ initiatives that enable both public sector policy but also private sector strategies for innovation and growth. This thinking is also reflected in the Canadian context by the recent report published by the Toronto Board of Trade (2012) that compares the performance of selected city-regions with their American counterparts. The report heavily relies on and promotes clusters as a way forward to enhancing growth in the local economy. Also, in the Canadian context Spencer et al (2010) provides both a detailed methodology and a clear evaluation of the economic benefits of clusters to local economies. The methodology addresses the distinct nature of the Canadian economy and departs somewhat from the standard cluster definitions provided by Porter (discussed in greater detail in the next section). Using this methodology Spencer et al identified 263 individual clusters in Canada using data from the 2001 Census and show that incomes were nearly $10,000/year higher in industries that are geographically clustered. This work helps to provide a comprehensive analytical framework for the analysis in this report.

This section has been adapted from: Spencer, GM, Morales, J. and Wolfe, DA. 2012. Locating high growth firms within Canadian industrial clusters. Industry Canada.
2.0 Data & Methods

2.1 Cluster identification

One of the difficulties of performing cluster analysis is developing a systematic methodology for identifying when and where they occur. Different types of industries cluster for different reasons in different places. The main goal of this report is to look at the Canadian economy as a whole through a cluster lens. Thus, the methodology adopted is broad and inclusive in nature rather than tailored to any one specific case. Specifically, this report uses the methodology created by Spencer et al (2010) as it is well established in the academic literature and has been used in a number of policy reports for Industry Canada, various Ontario Ministries, and other public sector institutions. It has the benefit of being comprehensive in terms of both industries and geography while taking into account the particular structure of the Canadian economy (as opposed to Porter’s methodology which is based on the US economy). The methodology is based on geographic patterns co-location of employment in specific industries (4-digit NAICS) in Census Metropolitan Areas (CMAs) and Census Agglomerations (CAs) using the 2001 Census of Population and the 2011 National Household Survey (NHS). Ideally the methodology would also include input-output linkages as well as labour flows but these data are not available at the level of disaggregation required for the detailed analysis to follow.

There are three main steps to the methodology. The first is to isolate the industries that display a propensity to be geographically ubiquitous. These industries tend to be things such as retail and local government that are correlated to residential populations. They are also non-basic industries (non-exporting) and are therefore not of interest to the analysis. The second step maps the geographic pattern of the remaining industries in order to determine which groups tend to commonly locate together in the same city-regions. At this point 19 cluster types (groups of 4-digit NAICS industries) are identified. Aluminium has been added at the behest of Industry Canada for the purpose of this report for a total of 20 cluster types. The third and final step involves identifying the city-regions where each of these cluster types are strongly evident. Individual cases of clusters are identified if they meet all three of the following criteria:

- **SCALE**: the sum of local employment must be greater than 1,000;
- **SPECIALIZATION**: the percent share of local employment in the defined industries must be greater than the percent share of these industries (location quotient > 1); and,
- **SCOPE**: the location quotient at least half of the component industries must be greater than 1.

These criteria are relatively strict and are intentionally designed to segment out only the strongest cases of clustering. The binary nature means that some industry groups in some places that just fall short of meeting the criteria will not be included in the analysis but it should not be interpreted that there is ‘nothing’ in such places. Applying these steps to the 2011 NHS results in the identification of 225 cases of clusters in Canada.

2.2 Cluster indicators

Indicators are created for each identified cluster based on cross-tabulated data between the sets of 4-digit NAICS codes and CMA/CA in which they are located. As such cross-tabulations are very finely
grained they require very large datasets in order to populate them and thus, the scope of indicators is somewhat limited. The National Household Survey (NHS) is used for labour market indicators including incomes, employment growth, demographics of the labour force, educational attainment, and occupational structure. Firm data is obtained from Dun & Bradstreet including the precise locations of business and the number of employees at each site.

2.3 Primary data sources

The original cluster study by Spencer et al (2010) used the 2001 Census of Population to map out Canadian clusters. This report relies on the NHS in the same manner but it must be noted that the differences between the two pose a few issues. One is that change between the 2001 and 2011 time periods cannot be measured exactly as the data come from different research instruments. The second is that the response rates are inconsistent across geography (and likely industry) and so there is more data suppression issues with the NHS. In practical terms this means that smaller industries in smaller city-regions (CAs) are likely undercounted somewhat in this study. Further to the point smaller clusters in smaller city-regions may be going unrecognized and the overall number of clusters is possibly underreported.

The firm level data is provided by Dun & Bradstreet in the form of a universal file for 2011 (approximately 1.3 million firms) in order to coincide with the 2011 Census and NHS. D&B tracks all firms (and organizations) in all industries that they find to be financially active. Much of their information is derived from financial transaction data (their core business is credit rating) obtained from partner organizations. D&B claims that they capture around 97-98% of firms. Any firm is able to opt out of their dataset but reportedly few do so. The data is supplemented and updated through direct inquiries from D&B to the firms themselves. This process is done on a rolling basis and most firms are up-to-date with six months.

2.4 How to read and interpret the results

The Spencer et al (2010) methodology was originally intended to assess the overall impact of clustering within a Canadian context. Therefore, it is best suited to addressing similarly broad questions. While it is not intended for detailed case-studies it can still be useful in this regard. The primary datasets are also large and universal and so best suited to bigger questions. Using the NAICS system is somewhat restrictive and there will always be issues about what to include/exclude. The methodology uses a common algorithm for all cluster types in order to maintain consistency. Each cluster type has core industries as well as secondary/supportive industries that are included in the definition. It is probable that some of the individual firms but not all within the secondary industries are actively related within each cluster. The potential drawback of using aggregate industry data is that the size of clusters can be overstated. Overall, the choice has been made to be broad and inclusive with definitions rather than narrow and restrictive and the reader should keep this in mind when interpreting the results of the analysis.
3.0 National Overview

Applying the Spencer et al (2010) methodology to the 2011 NHS led to the identification of 230 clusters across 21 types (please see Table 3.0.1). In describing the overall national picture, it is best to speak in terms of resource, manufacturing and services clusters.

Resource clusters, which include agriculture, forestry, mining, and oil & gas tend to be found in smaller urban areas that support large surrounding hinterlands. The location of such clusters follow a relatively straightforward logic of being where the resources are. That being said the necessary physical infrastructure required to bring the resources to market need to be well-developed. While the fortunes of such clusters are highly dependent on global commodity prices, efforts to innovate in processing and logistics can reap rewards. Canada should be a world leader in this area due to its abundance of resources.

Manufacturing clusters tend to be located in mid-sized city-regions in Southern Ontario and Quebec. These clusters are often closely linked with one another as well as similar ones in the United States. Innovation is key to the long-term survival of many of these clusters as global competition is intense. For relatively low knowledge intensive clusters such as...
textiles the future will depend on highly specialized niche firms. For more knowledge intensive clusters such as ICT manufacturing strong innovation ecosystems need to be built and maintained. This means the active management of linkages between firms, universities, research labs, governments and various community partners.

The majority of service clusters are located in large urban areas. While many of these clusters have key anchor firms they tend to have high numbers of small firms as well as a significant amount of self-employment. Service clusters have generally been faring well over the past ten years showing clear patterns of employment growth. The health of these clusters is strongly tied to the health of the urban environment in which they inhabit. Liveability factors are key and in particular urban transportation systems are emerging as a major issue in the largest urban areas in Canada.

Ontario (86) and Quebec (39) are the provinces with the most clusters as they possess the vast majority of manufacturing clusters as well as many resource and services clusters (please see Figure 3.0.1). British Columbia (43) and Alberta (30) are next with the former home to many forestry & wood clusters and the latter with oil & gas. These are the fastest growing areas of the country and thus also have an abundance of construction activity. The Atlantic Provinces generally have a dearth of clusters as they do not possess either large city-regions or a wealth of resources.

The fastest growing types of clusters are generally in service-based industries or mining and oil & gas (please see Figure 3.0.2). The latter two boast the highest average full-time employment incomes. Most of the types of manufacturing clusters have seen employment declines between 2001 and 2011. This trend has meant trouble for mid-sized urban areas in Ontario and Quebec. It also underscores the general shift in economic output in Canada from east to west.

**Figure 3.0.1**
National Cluster Count Map
Figure 3.0.2
Average Full-time Incomes, Growth, and Employment by Cluster Type

Note: Size of bubbles refers to number of employed persons
4.0 Cluster Types

This section provides general information about clusters according to type. Clusters are mapped by location and employment and differentiated by incomes and growth rates. These cluster types are groups of related 4-digit NAICS industries identified by the Spencer et al (2010) methodology (see Appendix A for specific definitions). The exceptions to this are aerospace and aluminum which were added at the request of Industry Canada. These did not come out of the original methodology as they are not found to be systematically associated with additional industries. Part of the reason for this is that they are concentrated in only a few locations (aerospace = 2; aluminum = 3) and are therefore somewhat special cases in the Canadian context.
4.1 Agriculture

Figure 4.1.1
Agriculture Clusters Comparison

Note: Size of bubbles refers to number of employed persons

Figure 4.1.2
Agriculture Cluster Map
4.2 Maritime

Figure 4.2.1
Maritime Clusters Comparison

Note: Size of bubbles refers to number of employed persons

Figure 4.2.2
Maritime Cluster Map

Legend
Employment
- 1,000
- 5,000
- 10,000
4.3 Forestry & Wood

Figure 4.3.1
Forestry & Wood Clusters Comparison

Note: Size of bubbles refers to number of employed persons

Figure 4.3.2
Forestry & Wood Cluster Map

Legend
Employment
3,000
4.4 Mining

Figure 4.4.1
Mining Clusters Comparison

Figure 4.4.2
Mining Cluster Map

Note: Size of bubbles refers to number of employed persons
4.5 Oil & Gas

Figure 4.5.1
Oil & Gas Clusters Comparison

Note: Size of bubbles refers to number of employed persons

Figure 4.5.2
Oil & Gas Cluster Map
4.6 Construction

**Figure 4.6.1**
Construction Clusters Comparison

**Figure 4.6.2**
Construction Cluster Map

Note: Size of bubbles refers to number of employed persons

---

**Legend**

<table>
<thead>
<tr>
<th>Employment</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000</td>
<td>Small</td>
</tr>
<tr>
<td>10,000</td>
<td>Medium</td>
</tr>
<tr>
<td>100,000</td>
<td>Large</td>
</tr>
</tbody>
</table>
4.7 Logistics

Figure 4.7.1
Logistics Clusters Comparison

Figure 4.7.2
Logistics Cluster Map

Legend

Employment
- 1,000
- 10,000
- 100,000

Note: Size of bubbles refers to number of employed persons
4.8 Textiles

**Figure 4.8.1**
Logistics Clusters Comparison

**Figure 4.8.2**
Logistics Cluster Map

*Note: Size of bubbles refers to number of employed persons*
4.9 Food & Beverage

Figure 4.9.1
Food & Beverage Clusters Comparison

Note: Size of bubbles refers to number of employed persons

Figure 4.9.2
Food & Beverage Cluster Map
4.10 Aluminum

Figure 4.10.1
Aluminum Clusters Comparison

Figure 4.10.2
Aluminum Cluster Map

Note: Size of bubbles refers to number of employed persons
4.11 Steel

Figure 4.11.1
Steel Clusters Comparison

Figure 4.11.2
Steel Cluster Map

Note: Size of bubbles refers to number of employed persons
4.12 Auto Manufacturing

Figure 4.12.1
Auto Manufacturing Clusters Comparison

Note: Size of bubbles refers to number of employed persons

Figure 4.12.2
Auto Manufacturing Cluster Map
4.13 Plastics & Rubber

**Figure 4.13.1**
Plastics & Rubber Clusters Comparison

**Figure 4.13.2**
Plastics & Rubber Cluster Map

*Note: Size of bubbles refers to number of employed persons*
4.14 Life Sciences

Figure 4.14.1
Life Sciences Clusters Comparison

Note: Size of bubbles refers to number of employed persons

Figure 4.14.2
Life Sciences Cluster Map

Legend
Employment
- 1,000
- 5,000
- 10,000

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4.15 Aerospace

Figure 4.15.1
Aerospace Clusters Comparison

Figure 4.15.2
Aerospace Cluster Map

Note: Size of bubbles refers to number of employed persons
4.16 ICT Manufacturing

Figure 4.16.1
ICT Manufacturing Clusters Comparison

Note: Size of bubbles refers to number of employed persons

Figure 4.16.2
ICT Manufacturing Cluster Map
4.17 ICT Services

Figure 4.17.1
ICT Services Clusters Comparison

Note: Size of bubbles refers to number of employed persons

Figure 4.17.2
ICT Services Cluster Map
4.18 Finance

Figure 4.18.1
Finance Clusters Comparison

Note: Size of bubbles refers to number of employed persons

Figure 4.18.2
Finance Cluster Map
4.19 Business Services

Figure 4.19.1
Business Services Clusters Comparison

Figure 4.19.2
Business Services Cluster Map

Note: Size of bubbles refers to number of employed persons

Legend

<table>
<thead>
<tr>
<th>Employment</th>
<th>10,000</th>
<th>50,000</th>
<th>100,000</th>
</tr>
</thead>
</table>

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4.20 Creative & Cultural

Figure 4.20.1
Creative & Cultural Clusters Comparison

Note: Size of bubbles refers to number of employed persons

Figure 4.20.2
Creative & Cultural Cluster Map
4.21 Higher Education

Figure 4.21.1
Higher Education Clusters Comparison

Note: Size of bubbles refers to number of employed persons

Figure 4.21.2
Higher Education Cluster Map

Legend
Employment
- 1,000
  - 10,000
  - 100,000

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5.1 Atlantic Canada

There is a relative lack of clusters present in the Atlantic Provinces. Much of this is due to the lack of larger urban areas. Halifax is the largest CMA with a population of 390,000 which ranks it 13th in Canada. St. John’s is the next largest at just under 200,000 which puts it in 20th place. Significant service clusters are not likely to be well-developed in smaller cities and the region does not have a strong tradition of manufacturing largely due to its lack of proximity to markets and supply chains. This leaves resource based clusters (fishing is included in maritime) which account for 7 of the 18 clusters on the east coast. The majority of these have experienced employment declines in the period between 2001 and 2011 (please see Table 5.1.1).

The relatively few bright spots include business services in St. John’s, Fredericton, and St. John along with ICT services in Fredericton and Moncton. These clusters all grew significantly in employment between 2001 and 2011 and provide relatively good incomes for the region. Higher education clusters in Charlottetown, Fredericton, and St. John’s (Halifax narrowly misses meeting the criteria) are key sources of human capital that support the previously mentioned business services and ICT clusters. While the higher education clusters show very rapid rates of growth, there are concerns that the demographic picture in the Atlantic Provinces will present problems in the future in terms of providing a growing supply of students. It is essential that these provinces find ways of attracting and retaining immigrants in post-secondary education and beyond.

### Table 5.1.1
Atlantic Canada clusters and key indicators

<table>
<thead>
<tr>
<th>City Region</th>
<th>Prov</th>
<th>Cluster Type</th>
<th>Employment 2011</th>
<th>Employment Change 2001-2011</th>
<th>Average Annual FT Income</th>
</tr>
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<tbody>
<tr>
<td>Fredericton</td>
<td>NB</td>
<td>Business Services</td>
<td>8,084</td>
<td>16.8%</td>
<td>$61,927</td>
</tr>
<tr>
<td>Moncton</td>
<td>NB</td>
<td>Business Services</td>
<td>9,213</td>
<td>14.0%</td>
<td>$46,581</td>
</tr>
<tr>
<td>St. John’s</td>
<td>NL</td>
<td>Business Services</td>
<td>14,193</td>
<td>46.0%</td>
<td>$66,535</td>
</tr>
<tr>
<td>Moncton</td>
<td>NB</td>
<td>Food &amp; Beverage</td>
<td>3,036</td>
<td>-12.8%</td>
<td>$40,977</td>
</tr>
<tr>
<td>St. John’s</td>
<td>NL</td>
<td>Food &amp; Beverage</td>
<td>2,937</td>
<td>-6.9%</td>
<td>$47,189</td>
</tr>
<tr>
<td>Edmundston</td>
<td>NB</td>
<td>Forestry &amp; Wood</td>
<td>1,028</td>
<td>-21.8%</td>
<td>$57,738</td>
</tr>
<tr>
<td>Saint John</td>
<td>NB</td>
<td>Forestry &amp; Wood</td>
<td>1,796</td>
<td>6.6%</td>
<td>$88,377</td>
</tr>
<tr>
<td>Charlottetown</td>
<td>PE</td>
<td>Higher Education</td>
<td>2,066</td>
<td>92.2%</td>
<td>$58,099</td>
</tr>
<tr>
<td>Fredericton</td>
<td>NB</td>
<td>Higher Education</td>
<td>3,939</td>
<td>49.5%</td>
<td>$61,226</td>
</tr>
<tr>
<td>St. John’s</td>
<td>NL</td>
<td>Higher Education</td>
<td>6,308</td>
<td>57.5%</td>
<td>$68,350</td>
</tr>
<tr>
<td>Fredericton</td>
<td>NB</td>
<td>ICT Services</td>
<td>4,785</td>
<td>48.4%</td>
<td>$63,166</td>
</tr>
<tr>
<td>Moncton</td>
<td>NB</td>
<td>ICT Services</td>
<td>4,152</td>
<td>45.4%</td>
<td>$56,048</td>
</tr>
<tr>
<td>Moncton</td>
<td>NB</td>
<td>Logistics</td>
<td>5,061</td>
<td>0.9%</td>
<td>$49,908</td>
</tr>
<tr>
<td>Cape Breton</td>
<td>NS</td>
<td>Maritime</td>
<td>2,053</td>
<td>-8.3%</td>
<td>$49,434</td>
</tr>
<tr>
<td>Halifax</td>
<td>NS</td>
<td>Maritime</td>
<td>3,300</td>
<td>12.4%</td>
<td>$60,905</td>
</tr>
<tr>
<td>St. John’s</td>
<td>NL</td>
<td>Maritime</td>
<td>1,728</td>
<td>-28.1%</td>
<td>$74,270</td>
</tr>
<tr>
<td>Bathurst</td>
<td>NB</td>
<td>Mining</td>
<td>1,363</td>
<td>91.9%</td>
<td>$95,174</td>
</tr>
<tr>
<td>Cape Breton</td>
<td>NS</td>
<td>Mining</td>
<td>1,024</td>
<td>-23.0%</td>
<td>$64,211</td>
</tr>
</tbody>
</table>
5.1.1 St. John’s Food & Beverage

The food & beverage cluster in St. John’s employed 2,937 people in 2011. This made St. John’s the 8th largest food & beverage cluster in Canada (out of 15). Between 2001 and 2011 employment shrank by 6.9%. The labour force was 71.6% male and 28.4% female. 42.6% of the labour force was over the age of 44.

In 2011 39.1% of the cluster labour force held post-secondary qualifications with 6.7% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the St. John’s food & beverage cluster was $47,189 per year. This ranked the cluster 8th out of 15 food & beverage clusters in Canada.

In 2011 Dun & Bradstreet identified 124 business establishments in the St. John’s food & beverage cluster. The average establishment size was 29 employees. Key firms of at least 100 employees in 2011 included: Quinlan Brothers Limited; Country Ribbon Inc; Ocean Choice International L.P.; Barry Group Inc; Labrador Sea Products Inc; Molson Canada; Furlong Brothers Limited; Independent Dockside Grading Inc; Labatt Brewing Company Limited.

Figure 5.1.1.1
Size and location of business establishments, 2011
5.1.1 St. John’s Food & Beverage

Figure 5.1.1.2  
Labour force demographics, 2011

Figure 5.1.1.3  
Educational attainment of labour force, 2011

Figure 5.1.1.4  
Occupational structure of labour force, 2011
5.1.2 St. John’s Business Services

The business services cluster in St. John’s employed 14,193 people in 2011. This made St. John's the 8th largest business services cluster in Canada (out of 10). Between 2001 and 2011 employment grew by 46%. The labour force was 56.5% male and 43.5% female. 42% of the labour force was over the age of 44.

In 2011 81.1% of the cluster labour force held post-secondary qualifications with 42.4% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the St. John's business services cluster was $66,535 per year. This ranked the cluster 7th out of 10 business services clusters in Canada.

In 2011 Dun & Bradstreet identified 1,017 business establishments in the St. John's business services cluster. The average establishment size was 11 employees. The largest firms in core business services industries in 2011 included: Shannahan’s Investigation Security Limited; Fortis Properties Corporation; Canadian Corps Of Commissionaires (Newfoundland); Amec Inc; Production Services Network Canada Inc; The Responsive Marketing Group Inc.; Cabot Call Centre; Call Centre Inc; Oceaneering Canada Limited; John C Crosbie P.C. O.C. Q.C.; SNC-Lavalin Inc.

Figure 5.1.2.1
Size and location of business establishments, 2011
5.1.2 St. John’s Business Services

Figure 5.1.2.2
Labour force demographics, 2011

Figure 5.1.2.3
Educational attainment of labour force, 2011

Figure 5.1.2.4
Occupational structure of labour force, 2011
5.1.3 Charlottetown Higher Education

The higher education cluster in Charlottetown employed 2,066 people in 2011. This made Charlottetown the 13th largest higher education cluster in Canada (out of 13). Between 2001 and 2011 employment grew by 92.2%. The labour force was 41.9% male and 58.1% female. 52.3% of the labour force was over the age of 44.

In 2011 78% of the cluster labour force held post-secondary qualifications with 58.8% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Charlottetown higher education cluster was $58,099 per year. This ranked the cluster 13th out of 13 higher education clusters in Canada.

In 2011 Dun & Bradstreet identified 51 business establishments in the Charlottetown higher education cluster. The average establishment size was 31 employees. The University of Prince Edward Island and Holland College were the two main employers in 2011.

Figure 5.1.3.1
Size and location of business establishments, 2011
5.1.3 Charlottetown Higher Education

**Figure 5.1.3.2**  
Labour force demographics, 2011

**Figure 5.1.3.3**  
Educational attainment of labour force, 2011

**Figure 5.1.3.4**  
Occupational structure of labour force, 2011

5.1.3 Charlottetown Higher Education

**Figure 5.1.3.2**  
Labour force demographics, 2011

**Figure 5.1.3.3**  
Educational attainment of labour force, 2011

**Figure 5.1.3.4**  
Occupational structure of labour force, 2011
5.1.4 Halifax Maritime

The maritime cluster in Halifax employed 3,300 people in 2011. This made Halifax the 3rd largest maritime cluster in Canada (out of 8). Between 2001 and 2011 employment grew by 12.4%. The labour force was 75.6% male and 24.4% female. 50.8% of the labour force was over the age of 44.

In 2011 62.8% of the cluster labour force held post-secondary qualifications with 17.4% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Halifax maritime cluster was $60,905 per year. This ranked the cluster 4th out of 8 maritime clusters in Canada.

In 2011 Dun & Bradstreet identified 109 business establishments in the Halifax maritime cluster. The average establishment size was 25 employees. The largest firms in core maritime industries in 2011 included: Ultra Electronics Canada Inc; Clearwater Seafoods Income Fund; Irving Shipbuilding Inc; Halterm Limited; Northern Transportation Company Limited; Atlantic Pilotage Authority; Bakers Point Fisheries Limited; and Halifax Port Authority.

Figure 5.1.4.1
Size and location of business establishments, 2011
5.1.4 Halifax Maritime

Figure 5.1.4.2
Labour force demographics, 2011

Figure 5.1.4.3
Educational attainment of labour force, 2011

Figure 5.1.4.4
Occupational structure of labour force, 2011
5.1.5 Cape Breton Mining

The mining cluster in Cape Breton employed 1,024 people in 2011. This made Cape Breton the 16th largest mining cluster in Canada (out of 16). Between 2001 and 2011 employment declined by 23%. The labour force was 90.2% male and 9.8% female. 52.6% of the labour force was over the age of 44.

In 2011 79.1% of the cluster labour force held post-secondary qualifications with 4.1% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Cape Breton mining cluster was $64,211 per year. This ranked the cluster 16th out of 16 mining clusters in Canada.

In 2011 Dun & Bradstreet identified 10 business establishments in the Cape Breton mining cluster. The average establishment size was 50 employees. The largest firms in core mining industries in 2011 were Nova Scotia Power Incorporated and Municipal Capital Incorporated.

Figure 5.1.5.1
Size and location of business establishments, 2011
5.1.5 Cape Breton Mining

Figure 5.1.5.2
Labour force demographics, 2011

Figure 5.1.5.3
Educational attainment of labour force, 2011

Figure 5.1.5.4
Occupational structure of labour force, 2011
5.1.6 Moncton Logistics

The logistics cluster in Moncton employed 5,061 people in 2011. This made Moncton the 9th largest logistics cluster in Canada (out of 10). Between 2001 and 2011 employment grew by 0.9%. The labour force was 66.9% male and 33.1% female. 47.2% of the labour force was over the age of 44.

In 2011 54.4% of the cluster labour force held post-secondary qualifications with 10.0% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Moncton logistics cluster was $49,908 per year. This ranked the cluster 10th out of 10 logistics clusters in Canada.

In 2011 Dun & Bradstreet identified 53 business establishments in the Moncton logistics cluster. The average establishment size was 19 employees. The largest firms in core logistics industries in 2011 included: Canada Post Corporation; Matrix Logistics Services Limited; Day & Ross Inc; Midland Transport Limited; Coca-Cola Bottling Company; Armour Transport Inc; and Greater Moncton International Airport Authority.

Figure 5.1.6.1
Size and location of business establishments, 2011
5.1.6 Moncton Logistics

Figure 5.1.6.2
Labour force demographics, 2011

Figure 5.1.6.3
Educational attainment of labour force, 2011

Figure 5.1.6.4
Occupational structure of labour force, 2011
5.1.7 Fredericton ICT Services

The ICT services cluster in Fredericton employed 4,785 people in 2011. This made Fredericton the 6th largest ICT services cluster in Canada (out of 7). Between 2001 and 2011 employment grew by 48.4%. The labour force was 62.7% male and 37.3% female. 36.2% of the labour force was over the age of 44.

In 2011 83.5% of the cluster labour force held post-secondary qualifications with 58.6% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Fredericton ICT services cluster was $63,166 per year. This ranked the cluster 6th out of 7 ICT services clusters in Canada.

In 2011 Dun & Bradstreet identified 102 business establishments in the Fredericton ICT services cluster. The average establishment size was 35 employees. The largest firms in core ICT services industries in 2011 included: Cendant Canada Inc; Universal Systems Ltd; Provinent Corp; Groupe CGI Inc; Bell Aliant Regional Communications Inc; Astral Media Radio Atlantic Inc; and Unisys Canada Inc..

Figure 5.1.7.1
Size and location of business establishments, 2011
5.1.7 Fredericton ICT Services

Figure 5.1.7.2
Labour force demographics, 2011

Figure 5.1.7.3
Educational attainment of labour force, 2011

Figure 5.1.7.4
Occupational structure of labour force, 2011
5.2 Québec

Québec has a wide range of clusters and is third to Ontario (86) and British Columbia (43) with 39. Of these clusters 12 are focused in resources with five agriculture, four forestry & wood, and three mining. The mining clusters provide the highest incomes and two of three (Rouyn-Noranda and Val-d’Or) have seen significant growth between 2001 and 2011. The forestry & wood clusters have experienced the greatest difficulty over this period with three of four losing significant amounts of jobs.

Québec is the only province to report at least one cluster of each manufacturing type suggesting that there is a broadly diversified industrial base. Aluminum and aerospace are specific specializations that Québec possesses that are limited in the rest of Canada. All four food & beverage clusters experienced employment growth between 2001 and 2011. The results for plastics & rubber (6), auto manufacturing (3), aluminum (3), steel (3) were mixed on this measure. For the more knowledge intensive manufacturing clusters ICT (2) reported significant declines although this can be attributed to the timeframe and the results of the dot-com crash in the early 2000s. The two life sciences (Montréal and Québec) both grew by about 25%.

All four of the Québec services clusters are located in Montréal. All four, including ICT services, finance, business services, and creative and cultural experienced growth of around a third between 2001 and 2011. This trend is in line with similar clusters in the other major urban areas of the country. It exemplifies the overall trend of employment shifts to service industries (and away from manufacturing). While this may provide an aggregate benefit to the economy it poses somewhat of a conundrum for policy makers as the largest cities tend to be the primary drivers of this growth. A gap is emerging with mid-sized and smaller urban areas that have economies with resource and manufacturing histories. Attempts to geographically spread such growth is not likely to succeed, yet smaller communities need to find ways to be prosperous in the 21st century global economy.
<table>
<thead>
<tr>
<th>City Region</th>
<th>Prov</th>
<th>Cluster Type</th>
<th>Employment 2011</th>
<th>Employment Change 2001-2011</th>
<th>Average Annual FT Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montréal QC</td>
<td>QC</td>
<td>Aerospace</td>
<td>24,390</td>
<td>-8.4%</td>
<td>$72,786</td>
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<tr>
<td>Drummondville QC</td>
<td>QC</td>
<td>Agriculture</td>
<td>4,525</td>
<td>83.6%</td>
<td>$35,970</td>
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<tr>
<td>Granby QC</td>
<td>QC</td>
<td>Agriculture</td>
<td>2,836</td>
<td>57.1%</td>
<td>$52,203</td>
</tr>
<tr>
<td>Saint-Hyacinthe QC</td>
<td>QC</td>
<td>Agriculture</td>
<td>2,863</td>
<td>2.1%</td>
<td>$42,169</td>
</tr>
<tr>
<td>Saint-Jean-sur-Richelieu QC</td>
<td>QC</td>
<td>Agriculture</td>
<td>2,061</td>
<td>8.7%</td>
<td>$42,025</td>
</tr>
<tr>
<td>Victoriaville QC</td>
<td>QC</td>
<td>Agriculture</td>
<td>1,925</td>
<td>8.2%</td>
<td>$39,942</td>
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<tr>
<td>Saguenay QC</td>
<td>QC</td>
<td>Aluminum</td>
<td>3,687</td>
<td>-27.9%</td>
<td>$87,418</td>
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<td>Baie-Comeau QC</td>
<td>QC</td>
<td>Aluminum</td>
<td>1,621</td>
<td>-7.7%</td>
<td>$78,210</td>
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<tr>
<td>Sept-Îles QC</td>
<td>QC</td>
<td>Agriculture</td>
<td>1,137</td>
<td>92.6%</td>
<td>$96,230</td>
</tr>
<tr>
<td>Montréal QC</td>
<td>QC</td>
<td>Automotive</td>
<td>2,157</td>
<td>12.3%</td>
<td>$41,529</td>
</tr>
<tr>
<td>Drummondville QC</td>
<td>QC</td>
<td>Automotive</td>
<td>3,332</td>
<td>-21.1%</td>
<td>$47,832</td>
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<tr>
<td>Granby QC</td>
<td>QC</td>
<td>Food</td>
<td>2,421</td>
<td>46.3%</td>
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<td>Montréal QC</td>
<td>QC</td>
<td>Food</td>
<td>56,946</td>
<td>9.1%</td>
<td>$48,374</td>
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<td>Saint-Hyacinthe QC</td>
<td>QC</td>
<td>Food</td>
<td>2,461</td>
<td>5.9%</td>
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<td>Saint-Jean-sur-Richelieu QC</td>
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<td>Food</td>
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<td>Dolbeau-Mistassini QC</td>
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<td>Forestry</td>
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<td>Forestry</td>
<td>1,695</td>
<td>-49.5%</td>
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<td>Saint-Georges QC</td>
<td>QC</td>
<td>Forestry</td>
<td>1,242</td>
<td>46.9%</td>
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<td>Shawinigan QC</td>
<td>QC</td>
<td>Forestry</td>
<td>1,254</td>
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<td>Granby QC</td>
<td>QC</td>
<td>ICT Manufacturing</td>
<td>2,547</td>
<td>-19.5%</td>
<td>$48,253</td>
</tr>
<tr>
<td>Montréal QC</td>
<td>QC</td>
<td>ICT Manufacturing</td>
<td>25,341</td>
<td>-37.5%</td>
<td>$66,828</td>
</tr>
<tr>
<td>Montréal QC</td>
<td>QC</td>
<td>ICT Services</td>
<td>133,473</td>
<td>32.0%</td>
<td>$66,403</td>
</tr>
<tr>
<td>Montréal QC</td>
<td>QC</td>
<td>Logistics</td>
<td>131,793</td>
<td>8.2%</td>
<td>$58,611</td>
</tr>
<tr>
<td>Rouyn-Noranda QC</td>
<td>QC</td>
<td>Mining</td>
<td>2,964</td>
<td>72.3%</td>
<td>$79,237</td>
</tr>
<tr>
<td>Sept-Îles QC</td>
<td>QC</td>
<td>Mining</td>
<td>1,247</td>
<td>-5.5%</td>
<td>$95,246</td>
</tr>
<tr>
<td>Val-d'Or QC</td>
<td>QC</td>
<td>Mining</td>
<td>2,593</td>
<td>52.1%</td>
<td>$86,253</td>
</tr>
<tr>
<td>Montréal QC</td>
<td>QC</td>
<td>Plastics &amp; Rubber</td>
<td>2,586</td>
<td>17.5%</td>
<td>$43,829</td>
</tr>
<tr>
<td>Drummondville QC</td>
<td>QC</td>
<td>Plastics &amp; Rubber</td>
<td>2,086</td>
<td>14.3%</td>
<td>$41,530</td>
</tr>
<tr>
<td>Granby QC</td>
<td>QC</td>
<td>Plastics &amp; Rubber</td>
<td>46,866</td>
<td>-26.8%</td>
<td>$49,593</td>
</tr>
<tr>
<td>Sherbrooke QC</td>
<td>QC</td>
<td>Plastics &amp; Rubber</td>
<td>3,789</td>
<td>-20.2%</td>
<td>$45,009</td>
</tr>
<tr>
<td>Trois-Rivières QC</td>
<td>QC</td>
<td>Plastics &amp; Rubber</td>
<td>1,402</td>
<td>-9.5%</td>
<td>$46,627</td>
</tr>
<tr>
<td>Victoriaville QC</td>
<td>QC</td>
<td>Plastics &amp; Rubber</td>
<td>1,152</td>
<td>14.1%</td>
<td>$44,687</td>
</tr>
<tr>
<td>Drummondville QC</td>
<td>QC</td>
<td>Steel</td>
<td>1,354</td>
<td>27.1%</td>
<td>$45,308</td>
</tr>
<tr>
<td>Sorel-Tracy QC</td>
<td>QC</td>
<td>Steel</td>
<td>1,930</td>
<td>-25.3%</td>
<td>$70,903</td>
</tr>
<tr>
<td>Trois-Rivières QC</td>
<td>QC</td>
<td>Steel</td>
<td>2,222</td>
<td>-15.0%</td>
<td>$80,992</td>
</tr>
<tr>
<td>Montréal QC</td>
<td>QC</td>
<td>Textiles</td>
<td>25,106</td>
<td>-60.5%</td>
<td>$45,039</td>
</tr>
</tbody>
</table>
5.2.1 Saguenay Aluminum

The aluminum cluster in Saguenay employed 3,687 people in 2011. This made Saguenay the largest aluminum cluster in Canada (out of 3). Between 2001 and 2011 employment declined by 27.9%. The labour force was 90.0% male and 10.0% female. 63.9% of the labour force was over the age of 44.

In 2011 84.8% of the cluster labour force held post-secondary qualifications with 18.0% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Saguenay aluminum cluster was $87,418 per year. This ranked the cluster 2nd out of 3 aluminum clusters in Canada.

In 2011 Dun & Bradstreet identified 20 business establishments in the Saguenay aluminum cluster. The average establishment size was 134 employees. The largest firms in core aluminum industries in 2011 included: Rio Tinto Alcan Inc; Alfiniti Inc; Spectube Inc; Novelis Inc; and Fonderie Saguenay Ltée.

Figure 5.2.1.1
Size and location of business establishments, 2011
5.2.1 Saguenay Aluminum

Figure 5.2.1.2
Labour force demographics, 2011

Figure 5.2.1.3
Educational attainment of labour force, 2011

Figure 5.2.1.4
Occupational structure of labour force, 2011
### 5.2.2 Rouyn-Noranda Mining

The mining cluster in Rouyn-Noranda employed 2,964 people in 2011. This made Rouyn-Noranda the 6th largest mining cluster in Canada (out of 16). Between 2001 and 2011 employment increased by 72.3%. The labour force was 83.7% male and 16.3% female. 43.6% of the labour force was over the age of 44.

In 2011 66.3% of the cluster labour force held post-secondary qualifications with 12.7% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Rouyn-Noranda mining cluster was $79,237 per year. This ranked the cluster 13th out of 16 mining clusters in Canada.

In 2011 Dun & Bradstreet identified 42 business establishments in the Rouyn-Noranda mining cluster. The average establishment size was 54 employees. The largest firms in core mining industries in 2011 included: Xstrata Canada Corporation; Agnico-Eagle Mines Limited; Les Mines D'argent ECU Inc; Gestion Iamgold-Québec Inc; Services d'Entretien Miniers Industriels R.N. 2000; and Bradley Frères Ltée.

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**Figure 5.2.2.1**
Size and location of business establishments, 2011

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**Legend**

**Business Establishments**

- Employees:
  - 1 - 10
  - 11 - 50
  - 51 - 100
  - 101 - 500
  - Over 500

---

*Cluster Atlas of Canada*
5.2.2 Rouyn-Noranda Mining

Figure 5.2.2.2 Labour force demographics, 2011

Figure 5.2.2.3 Educational attainment of labour force, 2011

Figure 5.2.2.4 Occupational structure of labour force, 2011
5.2.3 Québec Life Sciences

The life sciences cluster in Québec employed 5,542 people in 2011. This made Québec the 4th largest life sciences cluster in Canada (out of 7). Between 2001 and 2011 employment increased by 24.0%. The labour force was 53.0% male and 47.0% female. 31.8% of the labour force was over the age of 44.

In 2011 83.6% of the cluster labour force held post-secondary qualifications with 37.5% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Québec life sciences cluster was $62,815 per year. This ranked the cluster 6th out of 7 life sciences clusters in Canada.

In 2011 Dun & Bradstreet identified 189 business establishments in the Québec life sciences cluster. The average establishment size was 14 employees. The largest firms in core life sciences industries in 2011 included: Olympus NDT Canada Inc; ABB-Bomem Inc; GeneOhm Sciences Canada Inc; General Electric Canada Company; Pharmalab Inc; Multitel Inc; Orthofab Inc; Optel-Technologies Inc; Laboratoire Dentaire Morisset Inc; and DiagnoCure Inc.

Figure 5.2.3.1
Size and location of business establishments, 2011
5.2.3 Québec Life Sciences

Figure 5.2.3.2
Labour force demographics, 2011

Figure 5.2.3.3
Educational attainment of labour force, 2011

Figure 5.2.3.4
Occupational structure of labour force, 2011

Cluster Atlas of Canada
5.2.4 Montréal Finance

The finance cluster in Montréal employed 137,348 people in 2011. This made Montréal the 2nd largest finance cluster in Canada (out of 5). Between 2001 and 2011 employment increased by 29.8%. The labour force was 44.0% male and 56.0% female. 41.8% of the labour force was over the age of 44.

In 2011 79.5% of the cluster labour force held post-secondary qualifications with 42.4% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Montréal finance cluster was $67,867 per year. This ranked the cluster 5th out of 5 finance clusters in Canada.

In 2011 Dun & Bradstreet identified 6,263 business establishments in the Montréal finance cluster. The average establishment size was 16 employees. The largest firms in core finance industries in 2011 included: RBC; Bank of Montréal; Fédération Des Caisses Desjardins Du Québec; Financière Banque Nationale & Cie Inc; Sun Life Assurance Company Of Canada; Sécurité Nationale Compagnie D'Assurance; Valeurs Mobilières Desjardins Inc; Les Associés Services Financiers du Canada Ltée; Banque Laurentienne Du Canada; Power Financial Corporation; Ernst & Young Inc; INTRIA Items Inc; The Manufacturers Life Insurance Company; and Ernst & Young LLP.

Figure 5.2.4.1
Size and location of business establishments, 2011
5.2.4 Montréal Finance

Figure 5.2.4.2
Labour force demographics, 2011

Figure 5.2.4.3
Educational attainment of labour force, 2011

Figure 5.2.4.4
Occupational structure of labour force, 2011
5.2.5 Montréal Creative & Cultural

The creative & cultural cluster in Montréal employed 94,427 people in 2011. This made Montréal the 2nd largest creative & cultural cluster in Canada (out of 3). Between 2001 and 2011 employment increased by 31.8%. The labour force was 51.6% male and 48.4% female. 35.5% of the labour force was over the age of 44.

In 2011 80.7% of the cluster labour force held post-secondary qualifications with 40.5% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Montréal creative & cultural cluster was $55,215 per year. This ranked the cluster 3rd out of 3 creative & cultural clusters in Canada.

In 2011 Dun & Bradstreet identified 7,059 business establishments in the Montréal creative & cultural cluster. The average establishment size was 9 employees. The largest firms in core creative & cultural industries in 2011 included: Canadian Broadcasting Corporation; Académie de Coiffure Laval Inc; Cirque Du Soleil Inc; L’Arena des Canadiens Inc; L-3 Communications MAS (Canada) Inc; Bellevue Pathe Holdings Ltd; Zone3 Inc; Cossette Inc; Corus Entertainment Inc; Cogeco Inc; and Astral Media Inc.

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**Figure 5.2.5.1**
Size and location of business establishments, 2011
5.2.5 Montréal Creative & Cultural

**Figure 5.2.5.2**
Labour force demographics, 2011

**Figure 5.2.5.3**
Educational attainment of labour force, 2011

**Figure 5.2.5.4**
Occupational structure of labour force, 2011
5.3 Ontario

Ontario has the most clusters of any province with 86 in total. They are also quite varied by type with 16 in resources, 49 in manufacturing, 14 in services, as well as 7 in construction and logistics. Mining in the north and agriculture in the south make up the majority of the resource clusters. The four mining clusters in Ontario experienced healthy growth rates between 2001 and 2011 while the agriculture clusters show mixed results.

Manufacturing remains a very important part of the Ontario economy. In particular auto manufacturing is the backbone of many local economies, particularly from the GTA to the southwest of the province. The methodology identified 16 auto manufacturing clusters in Ontario. Worryingly the vast majority of these endured significant employment decline between 2001 and 2011. The picture was fairly similar for the nine steel clusters in the province as well as the seven plastics & rubber clusters. The picture was somewhat better for the more knowledge intensive manufacturing clusters. The Kitchener-Waterloo ICT cluster grew rapidly between 2001 and 2011 although the Ottawa-Gatineau and Toronto clusters declined. This is likely due to the relative performance of key anchor firms in each instance. Life sciences performed somewhat better with two of three (Toronto and Hamilton) growing by roughly 25%.

There were 14 service clusters identified in Ontario. These clusters tend to be large, rapidly growing and located in the major urban centres. The only service cluster to experience decline between 2001 and 2011 was ICT in Ottawa-Gatineau, and this was a marginal amount at 3.4%. As with Québec there is a fairly clear pattern of overall employment shifting from manufacturing to services. The related pattern is that new employment opportunities are being creating predominantly in the largest cities. This poses a problem for many of the smaller and mid-sized urban areas, particularly in the southwest of the province, that are seeing their industrial base erode. It is not clear what types of jobs will replace the ones being lost to automation and off-shoring. Pitfalls exist with trying to retain manufacturing employment just as they exist with trying to compete with big cities for service industry jobs. Such places must navigate this issues with determination if they are to prosper going forward.
<table>
<thead>
<tr>
<th>City Region</th>
<th>Prov</th>
<th>Cluster Type</th>
<th>Employment 2011</th>
<th>Employment Change 2001-2011</th>
<th>Average Annual FT Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brantford</td>
<td>ON</td>
<td>Agriculture</td>
<td>3,377</td>
<td>62.4%</td>
<td>$49,878</td>
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<tr>
<td>Centre Wellington</td>
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<td>1,387</td>
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<td>Chatham-Kent</td>
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<td>5,330</td>
<td>-14.4%</td>
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</tr>
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<td>Agriculture</td>
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<td>$24,777</td>
</tr>
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<td>Agriculture</td>
<td>9,449</td>
<td>0.3%</td>
<td>$55,159</td>
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<tr>
<td>Leamington</td>
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<td>Agriculture</td>
<td>3,844</td>
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</tr>
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<td>-31.3%</td>
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</tr>
<tr>
<td>St. Catharines - Niagara</td>
<td>ON</td>
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<td>Chatham-Kent</td>
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<td>Automotive</td>
<td>7,238</td>
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</tr>
<tr>
<td>Hamilton</td>
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<td>Automotive</td>
<td>10,523</td>
<td>-35.3%</td>
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<td>Ingersoll</td>
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<td>Automotive</td>
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<td>Automotive</td>
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<td>-42.1%</td>
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<td>Automotive</td>
<td>75,280</td>
<td>-26.9%</td>
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<tr>
<td>Windsor</td>
<td>ON</td>
<td>Automotive</td>
<td>19,902</td>
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<tr>
<td>Woodstock</td>
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<tr>
<td>Hamilton</td>
<td>ON</td>
<td>Life Sciences</td>
<td>4,021</td>
<td>31.4%</td>
<td>$76,883</td>
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<tr>
<td>Kitchener - Waterloo</td>
<td>ON</td>
<td>Life Sciences</td>
<td>2,522</td>
<td>-1.7%</td>
<td>$66,334</td>
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<tr>
<td>Toronto</td>
<td>ON</td>
<td>Life Sciences</td>
<td>43,810</td>
<td>23.1%</td>
<td>$72,704</td>
</tr>
<tr>
<td>Hamilton</td>
<td>ON</td>
<td>Business Services</td>
<td>37,150</td>
<td>37.3%</td>
<td>$68,709</td>
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<tr>
<td>Ottawa - Gatineau</td>
<td>ON</td>
<td>Business Services</td>
<td>80,365</td>
<td>0.6%</td>
<td>$75,758</td>
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<tr>
<td>Toronto</td>
<td>ON</td>
<td>Business Services</td>
<td>378,458</td>
<td>29.1%</td>
<td>$79,178</td>
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<td>ON</td>
<td>Construction</td>
<td>2,057</td>
<td>12.1%</td>
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<tr>
<td>Toronto</td>
<td>ON</td>
<td>Creative &amp; Cultural</td>
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<td>37.8%</td>
<td>$64,115</td>
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<tr>
<td>Hamilton</td>
<td>ON</td>
<td>Finance</td>
<td>25,357</td>
<td>27.4%</td>
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<td>ON</td>
<td>Finance</td>
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<td>47.3%</td>
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<tr>
<td>Toronto</td>
<td>ON</td>
<td>Finance</td>
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<td>ON</td>
<td>Food &amp; Beverage</td>
<td>1,400</td>
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<td>$45,449</td>
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<tr>
<td>Brantford</td>
<td>ON</td>
<td>Food &amp; Beverage</td>
<td>2,804</td>
<td>103.2%</td>
<td>$46,263</td>
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<td>Hamilton</td>
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<td>Food &amp; Beverage</td>
<td>11,138</td>
<td>-3.9%</td>
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<tr>
<td>Kitchener - Waterloo</td>
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<td>Food &amp; Beverage</td>
<td>9,494</td>
<td>15.1%</td>
<td>$52,296</td>
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<td>London</td>
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<td>Food &amp; Beverage</td>
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<td>-5.0%</td>
<td>$48,513</td>
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<td>Toronto</td>
<td>ON</td>
<td>Food &amp; Beverage</td>
<td>94,010</td>
<td>23.3%</td>
<td>$57,230</td>
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<tr>
<td>Thunder Bay</td>
<td>ON</td>
<td>Forestry &amp; Wood</td>
<td>1,706</td>
<td>-67.0%</td>
<td>$65,795</td>
</tr>
</tbody>
</table>
Table 5.3.1
Ontario clusters and key indicators

<table>
<thead>
<tr>
<th>City Region</th>
<th>Prov</th>
<th>Cluster Type</th>
<th>Employment 2011</th>
<th>Employment Change 2001-2011</th>
<th>Average Annual FT Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamilton</td>
<td>ON</td>
<td>Higher Education</td>
<td>13,894</td>
<td>68.3%</td>
<td>$67,821</td>
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<tr>
<td>Kingston</td>
<td>ON</td>
<td>Higher Education</td>
<td>8,165</td>
<td>51.5%</td>
<td>$71,435</td>
</tr>
<tr>
<td>London</td>
<td>ON</td>
<td>Higher Education</td>
<td>11,987</td>
<td>50.4%</td>
<td>$68,259</td>
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<tr>
<td>Ottawa - Gatineau</td>
<td>ON</td>
<td>Higher Education</td>
<td>30,389</td>
<td>20.8%</td>
<td>$74,893</td>
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<tr>
<td>Toronto</td>
<td>ON</td>
<td>Higher Education</td>
<td>106,354</td>
<td>85.8%</td>
<td>$70,429</td>
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<tr>
<td>Guelph</td>
<td>ON</td>
<td>ICT Manufacturing</td>
<td>1,361</td>
<td>-15.7%</td>
<td>$71,938</td>
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<tr>
<td>Hamilton</td>
<td>ON</td>
<td>ICT Manufacturing</td>
<td>4,486</td>
<td>-5.9%</td>
<td>$72,803</td>
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<tr>
<td>Kitchener - Waterloo</td>
<td>ON</td>
<td>ICT Manufacturing</td>
<td>11,371</td>
<td>58.7%</td>
<td>$76,933</td>
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<tr>
<td>Oshawa</td>
<td>ON</td>
<td>ICT Manufacturing</td>
<td>3,047</td>
<td>10.6%</td>
<td>$76,800</td>
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<td>ICT Manufacturing</td>
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<td>$95,423</td>
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<td>ON</td>
<td>ICT Manufacturing</td>
<td>54,805</td>
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<td>Ottawa - Gatineau</td>
<td>ON</td>
<td>ICT Services</td>
<td>44,033</td>
<td>-3.4%</td>
<td>$80,144</td>
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<tr>
<td>Toronto</td>
<td>ON</td>
<td>ICT Services</td>
<td>192,759</td>
<td>34.1%</td>
<td>$78,364</td>
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<tr>
<td>Barrie</td>
<td>ON</td>
<td>Logistics</td>
<td>5,442</td>
<td>14.6%</td>
<td>$69,067</td>
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<td>Brantford</td>
<td>ON</td>
<td>Logistics</td>
<td>3,819</td>
<td>84.5%</td>
<td>$51,366</td>
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<td>Hamilton</td>
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<td>Logistics</td>
<td>21,506</td>
<td>10.8%</td>
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<td>13,438</td>
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<td>ON</td>
<td>Logistics</td>
<td>215,599</td>
<td>14.8%</td>
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<td>ON</td>
<td>Maritime</td>
<td>2,068</td>
<td>5.5%</td>
<td>$57,222</td>
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<td>Greater Sudbury</td>
<td>ON</td>
<td>Mining</td>
<td>8,057</td>
<td>35.9%</td>
<td>$85,842</td>
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<td>ON</td>
<td>Mining</td>
<td>1,230</td>
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<td>Thunder Bay</td>
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<td>1,963</td>
<td>26.2%</td>
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<td>Timmins</td>
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<td>3,547</td>
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<td>Barrie</td>
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<td>7.6%</td>
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<td>ON</td>
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<td>-25.0%</td>
<td>$58,683</td>
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<td>Kitchener - Waterloo</td>
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<td>Plastics &amp; Rubber</td>
<td>6,846</td>
<td>-38.5%</td>
<td>$53,744</td>
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<td>Oshawa</td>
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<td>2,273</td>
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<td>12,463</td>
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<td>Norfolk</td>
<td>ON</td>
<td>Steel</td>
<td>1,525</td>
<td>-27.4%</td>
<td>$71,810</td>
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<td>8,175</td>
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<td>4,891</td>
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<td>Steel</td>
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<td>18,115</td>
<td>-47.9%</td>
<td>$45,041</td>
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</table>
5.3.1 Sudbury Mining

The mining cluster in Sudbury employed 8,057 people in 2011. This made Sudbury the 3rd largest mining cluster in Canada (out of 16). Between 2001 and 2011 employment increased by 35.9%. The labour force was 93.4% male and 6.6% female. 43.9% of the labour force was over the age of 44.

In 2011 72.1% of the cluster labour force held post-secondary qualifications with 14.0% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Sudbury mining cluster was $85,842 per year. This ranked the cluster 12th out of 16 mining clusters in Canada.

In 2011 Dun & Bradstreet identified 72 business establishments in the Sudbury mining cluster. The average establishment size was 34 employees. The largest firms in core mining industries in 2011 included: First Nickel Inc; Layne Christensen Canada Limited; Vale Inco Limited; Technica Group Inc; Northcote Industrial Products Inc; and Ethier Sand And Gravel Limited.

Figure 5.3.1.1
Size and location of business establishments, 2011
5.3.1 Sudbury Mining

Figure 5.3.1.2: Labour force demographics, 2011

- Ages 15-24: 5.0%
- Ages 25-34: 10.0%
- Ages 35-44: 15.0%
- Ages 45-54: 20.0%
- Ages 55-64: 25.0%
- Ages 65+: 30.0%

Females: 6.6%
Males: 93.4%

Figure 5.3.1.3: Educational attainment of labour force, 2011

- No Degree: 7.4%
- High School: 20.5%
- College & Trades: 58.1%
- University: 14.0%
- Manufacturing & Utilities (NOC 9): 4.1%
- Management (NOC 0): 3.6%
- Science & Tech (NOC 2): 15.4%
- Sales & Service (NOC 6): 2.1%
- Manufacturing & Utilities (NOC 9): 4.1%

Figure 5.3.1.4: Occupational structure of labour force, 2011

- Natural Resources (NOC 8): 36.2%
- Trades & Transport (NOC 7): 31.3%
- Manufacturing & Utilities (NOC 9): 4.1%
- Management (NOC 0): 3.6%
- Science & Tech (NOC 2): 15.4%
- Sales & Service (NOC 6): 2.1%
- University: 14.0%
- College & Trades: 58.1%

Cluster Atlas of Canada
5.3.2 Hamilton Steel

The steel cluster in Hamilton employed 12,463 people in 2011. This made Hamilton the 3rd largest steel cluster in Canada (out of 14). Between 2001 and 2011 employment decreased by 44.8%. The labour force was 85.1% male and 14.9% female. 62.1% of the labour force was over the age of 44.

In 2011 61.3% of the cluster labour force held post-secondary qualifications with 17.0% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Hamilton steel cluster was $73,070 per year. This ranked the cluster 7th out of 14 steel clusters in Canada.

In 2011 Dun & Bradstreet identified 359 business establishments in the Hamilton steel cluster. The average establishment size was 51 employees. The largest firms in core steel industries in 2011 included: Arcelor-Mittal Dofasco Inc; U. S. Steel Canada Inc; Tempel Canada Company; Nalco Canada Co.; Walter’s Inc; Baycoat Limited; Harris Steel ULC; Associated Materials Canada Limited; Orlick Industries Limited; and Sobotec Ltd.

Figure 5.3.2.1
Size and location of business establishments, 2011
5.3.2 Hamilton Steel

Figure 5.3.2.2
Labour force demographics, 2011

Figure 5.3.2.3
Educational attainment of labour force, 2011

Figure 5.3.2.4
Occupational structure of labour force, 2011
5.3.3 Windsor Auto Manufacturing

The auto manufacturing cluster in Windsor employed 19,902 people in 2011. This made Windsor the 2nd largest auto manufacturing cluster in Canada (out of 19). Between 2001 and 2011 employment decreased by 45.0%. The labour force was 77.9% male and 22.1% female. 46.3% of the labour force was over the age of 44.

In 2011 56.1% of the cluster labour force held post-secondary qualifications with 15.9% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Windsor auto manufacturing cluster was $68,114 per year. This ranked the cluster 3rd out of 19 auto manufacturing clusters in Canada.

In 2011 Dun & Bradstreet identified 384 business establishments in the Windsor auto manufacturing cluster. The average establishment size was 74 employees. The largest firms in core auto manufacturing industries in 2011 included: Chrysler Canada Inc; General Motors of Canada Limited; Ford Motor Company of Canada Limited; Ventra Group Co; Magna Seating Inc; A.P. Plasman Inc; Kautex Corporation; Quality Safety Systems Company; Nemak of Canada Corporation; and A.P. Plasman Inc.

Figure 5.3.3.1
Size and location of business establishments, 2011
5.3.3 Windsor Auto Manufacturing

Figure 5.3.3.2
Labour force demographics, 2011

Figure 5.3.3.3
Educational attainment of labour force, 2011

Figure 5.3.3.4
Occupational structure of labour force, 2011
5.3.4 London Food & Beverage

The food & beverage cluster in London employed 6,972 people in 2011. This made London the 6th largest food & beverage cluster in Canada (out of 15). Between 2001 and 2011 employment decreased by 5.0%. The labour force was 60.9% male and 39.1% female. 50.9% of the labour force was over the age of 44.

In 2011 40.7% of the cluster labour force held post-secondary qualifications with 10.7% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the London food & beverage cluster was $48,513 per year. This ranked the cluster 5th out of 15 food & beverage clusters in Canada.

In 2011 Dun & Bradstreet identified 231 business establishments in the London food & beverage cluster. The average establishment size was 24 employees. The largest firms in core food & beverage industries in 2011 included: Cuddy International Corporation; Cargill Limited; Nestle Canada Inc; La Cie McCormick Canada Co.; Labatt Brewing Company Limited; Coca-Cola Bottling Company; Canada Starch Operating Company Inc; and Bonduelle Ontario Inc.

**Figure 5.3.4.1**
Size and location of business establishments, 2011
5.3.4 London Food & Beverage

Figure 5.3.4.2
Labour force demographics, 2011

- Females, 39.1%
- Males, 60.9%

Figure 5.3.4.3
Educational attainment of labour force, 2011
- No Degree, 17.1%
- University, 10.7%
- College & Trades, 30.0%
- High School, 42.2%

Figure 5.3.4.4
Occupational structure of labour force, 2011
- Management (NOC 0), 7.5%
- Manufacturing & Utilities (NOC 9), 32.1%
- Finance & Admin (NOC 1), 12.9%
- Science & Tech (NOC 2), 3.8%
- Sales & Service (NOC 6), 24.3%
- Trades & Transport (NOC 7), 19.3%
5.3.5 Kitchener-Waterloo ICT Manufacturing

The ICT manufacturing cluster in Kitchener-Waterloo employed 11,371 people in 2011. This made Kitchener-Waterloo the 4th largest ICT manufacturing cluster in Canada (out of 9). Between 2001 and 2011 employment increased by 58.7%. The labour force was 65.9% male and 34.1% female. 27.3% of the labour force was over the age of 44.

In 2011 79.5% of the cluster labour force held post-secondary qualifications with 47.8% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Kitchener-Waterloo ICT manufacturing cluster was $76,933 per year. This ranked the cluster 4th out of 9 ICT manufacturing clusters in Canada.

In 2011 Dun & Bradstreet identified 174 business establishments in the Kitchener-Waterloo ICT manufacturing cluster. The average establishment size was 52 employees. The largest firms in core ICT manufacturing industries in 2011 included: COM DEV International Ltd; Babcock & Wilcox Canada Ltd; Rockwell Automation Canada Control Systems; NCR Canada Ltd; Research In Motion Limited; Raytheon Canada Limited; Strite Industries Limited; Von Weise Of Canada Company; Unitron Hearing Ltd; Sandvine Incorporated ULC; ATS Automation Tooling Systems Inc; ATC-Frost Magnetics Inc; Siemens Canada Limited; and EGS Electrical Group Canada Ltd.

Figure 5.3.5.1
Size and location of business establishments, 2011
5.3.5 Kitchener-Waterloo ICT Manufacturing

Figure 5.3.5.2
Labour force demographics, 2011

Figure 5.3.5.3
Educational attainment of labour force, 2011

Figure 5.3.5.4
Occupational structure of labour force, 2011
5.3.6 Hamilton Life Sciences

The life sciences cluster in Hamilton employed 4,021 people in 2011. This made Hamilton the 6th largest life sciences in Canada (out of 7). Between 2001 and 2011 employment increased by 31.4%. The labour force was 38.9% male and 61.1% female. 51.7% of the labour force was over the age of 44.

In 2011 81.2% of the cluster labour force held post-secondary qualifications with 40.6% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Hamilton life sciences cluster was $76,883 per year. This ranked the cluster 1st out of 7 life sciences clusters in Canada.

In 2011 Dun & Bradstreet identified 180 business establishments in the Hamilton life sciences cluster. The average establishment size was 14 employees. The largest firms in core life sciences industries in 2011 included: ABB Inc; Patheon Inc; Rotsaert Dental Laboratory Services Inc; Cedarlane Corporation; Widex Canada Ltd; Gulfstream Plastics; Hamilton Health Sciences Corporation; and Islip Flow Controls Inc.

Figure 5.3.6.1
Size and location of business establishments, 2011
5.3.6 Hamilton Life Sciences

Figure 5.3.6.2
Labour force demographics, 2011

Figure 5.3.6.3
Educational attainment of labour force, 2011

Figure 5.3.6.4
Occupational structure of labour force, 2011
5.3.7 Toronto Finance

The finance cluster in Toronto employed 307,963 people in 2011. This made Toronto the largest finance cluster in Canada (out of 8). Between 2001 and 2011 employment increased by 35.6%. The labour force was 47.6% male and 52.4% female. 40.2% of the labour force was over the age of 44.

In 2011 80.2% of the cluster labour force held post-secondary qualifications with 52.0% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Toronto finance cluster was $89,388 per year. This ranked the cluster 1st out of 8 finance clusters in Canada.

In 2011 Dun & Bradstreet identified 12,495 business establishments in the Toronto finance cluster. The average establishment size was 16 employees. The largest firms in core life sciences industries in 2011 included: The Toronto-Dominion Bank; Royal Bank Inc; Canadian Imperial Bank Of Commerce; BMO Nesbitt Burns Inc; Intact Financial Corporation; The Bank Of Nova Scotia; The Workplace Safety & Insurance Board; Amex Canada Inc; The Great-West Life Assurance Company; The Canada Life Assurance Company; TD Securities Inc; Jones Edward D & Co. Canada Holding Co.; The Manufacturers Life Insurance Company; Citi Cards Canada Inc; RBC Insurance Holdings Inc; The Bank of Nova Scotia Trust Company; and INTRIA Items Inc.

Figure 5.3.7.1
Size and location of business establishments, 2011
5.3.7 Toronto Finance

Figure 5.3.7.2
Labour force demographics, 2011

Figure 5.3.7.3
Educational attainment of labour force, 2011

Figure 5.3.7.4
Occupational structure of labour force, 2011
5.3.8 Toronto Creative & Cultural

The creative & cultural cluster in Toronto employed 158,249 people in 2011. This made Toronto the largest creative & cultural cluster in Canada (out of 4). Between 2001 and 2011 employment increased by 37.8%. The labour force was 49.5% male and 50.5% female. 36.1% of the labour force was over the age of 44.

In 2011 76.7% of the cluster labour force held post-secondary qualifications with 46.1% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Toronto creative & cultural cluster was $64,115 per year. This ranked the cluster 1st out of 4 creative & cultural clusters in Canada.

In 2011 Dun & Bradstreet identified 12,865 business establishments in the Hamilton life sciences cluster. The average establishment size was 8 employees. The largest firms in core life sciences industries in 2011 included: Canadian Broadcasting Corporation; CTV Inc; Cinram International Inc; Woodbine Entertainment Group; Mood Media Corporation; MacLaren McCann Canada Inc; Natmar Holdings Inc; CW Media Inc; and Maple Leaf Sports & Entertainment Ltd.
5.3.8 Toronto Creative & Cultural

Figure 5.3.8.2
Labour force demographics, 2011

Figure 5.3.8.3
Educational attainment of labour force, 2011

Figure 5.3.8.4
Occupational structure of labour force, 2011
5.4 Prairies

The economic landscape of Manitoba, Saskatchewan, and Alberta is dominated by resources which account for 19 of the 41 clusters in total. Specifically, there are 11 oil & gas clusters of which 10 are in Alberta, 5 mining clusters and 3 agriculture clusters. It is important to note that this report captures economic activities that exist within city-regions and thus a great deal, particularly in resources, is not presented. Both the oil & gas and mining sectors have experienced extremely high rates of growth between 2001 and 2011. The both also boast very high average wages. It is clear that these clusters have been very important for not just local economic outcome but have had significant national implications. There are 10 construction clusters, 9 in Alberta and 1 in Saskatchewan. They tend to be co-located with rapidly growing oil & gas clusters, likely due for the expansion of infrastructure and growing demand for housing.

There is not a strong tradition of manufacturing in these provinces and thus there are only seven clusters identified. There are two well performing steel clusters (which includes metal products) in Calgary and Edmonton which are likely linked to the expansion of the oil & gas industry and its demand for new infrastructure. Winnipeg is home to a growing life sciences cluster as well as an aerospace cluster that has shown a slight decline in employment between 2001 and 2011. Calgary has the lone ICT manufacturing cluster which lost roughly one quarter of its jobs in the ten years after 2001. This is partly explained by the specific time period when the industry experienced retraction in most places.

There are four service clusters in the Prairie Provinces. Two higher education clusters are present, one in Edmonton and one in Saskatoon. Calgary is home to a business services cluster and an ICT services cluster. Both are growing at a healthy pace. If these provinces are going to diversify their economies away from being resource-dependent, building on knowledge intensive manufacturing and service industries is likely the best way forward due to the lack of an industrial heritage. This means as the key cities expand they must be able to maintain their currently very high standard of living. Public investments in infrastructure such as urban transportation system will be vital.
Table 5.4.1
Prairie clusters and key indicators

<table>
<thead>
<tr>
<th>City Region</th>
<th>Prov</th>
<th>Cluster Type</th>
<th>Employment 2011</th>
<th>Employment Change 2001-2011</th>
<th>Average Annual FT Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winnipeg</td>
<td>MB</td>
<td>Aerospace</td>
<td>3,585</td>
<td>-9.7%</td>
<td>$60,373</td>
</tr>
<tr>
<td>Brandon</td>
<td>MB</td>
<td>Agriculture</td>
<td>3,433</td>
<td>39.8%</td>
<td>$44,729</td>
</tr>
<tr>
<td>Lethbridge</td>
<td>AB</td>
<td>Agriculture</td>
<td>5,505</td>
<td>127.9%</td>
<td>$49,362</td>
</tr>
<tr>
<td>Saskatoon</td>
<td>SK</td>
<td>Agriculture</td>
<td>7,717</td>
<td>-2.4%</td>
<td>$56,351</td>
</tr>
<tr>
<td>Winnipeg</td>
<td>MB</td>
<td>Life Sciences</td>
<td>4,358</td>
<td>28.5%</td>
<td>$57,832</td>
</tr>
<tr>
<td>Calgary</td>
<td>AB</td>
<td>Business Services</td>
<td>100,406</td>
<td>36.3%</td>
<td>$88,855</td>
</tr>
<tr>
<td>Calgary</td>
<td>AB</td>
<td>Construction</td>
<td>56,358</td>
<td>52.9%</td>
<td>$91,621</td>
</tr>
<tr>
<td>Edmonton</td>
<td>AB</td>
<td>Construction</td>
<td>38,449</td>
<td>62.2%</td>
<td>$80,784</td>
</tr>
<tr>
<td>Grande Prairie</td>
<td>AB</td>
<td>Construction</td>
<td>1,796</td>
<td>49.7%</td>
<td>$65,961</td>
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<tr>
<td>Lethbridge</td>
<td>AB</td>
<td>Construction</td>
<td>2,493</td>
<td>81.3%</td>
<td>$58,511</td>
</tr>
<tr>
<td>Lloydminster</td>
<td>AB</td>
<td>Construction</td>
<td>1,097</td>
<td>213.5%</td>
<td>$71,492</td>
</tr>
<tr>
<td>Medicine Hat</td>
<td>AB</td>
<td>Construction</td>
<td>1,952</td>
<td>61.3%</td>
<td>$60,633</td>
</tr>
<tr>
<td>Okotoks</td>
<td>AB</td>
<td>Construction</td>
<td>1,072</td>
<td></td>
<td>$79,427</td>
</tr>
<tr>
<td>Red Deer</td>
<td>AB</td>
<td>Construction</td>
<td>2,559</td>
<td>30.9%</td>
<td>$66,897</td>
</tr>
<tr>
<td>Saskatoon</td>
<td>SK</td>
<td>Construction</td>
<td>7,943</td>
<td>109.6%</td>
<td>$68,529</td>
</tr>
<tr>
<td>Wood Buffalo</td>
<td>AB</td>
<td>Construction</td>
<td>2,606</td>
<td>68.7%</td>
<td>$105,810</td>
</tr>
<tr>
<td>Lethbridge</td>
<td>AB</td>
<td>Food &amp; Beverage</td>
<td>2,236</td>
<td>56.9%</td>
<td>$46,724</td>
</tr>
<tr>
<td>Edmonton</td>
<td>AB</td>
<td>Higher Education</td>
<td>27,561</td>
<td>69.4%</td>
<td>$71,847</td>
</tr>
<tr>
<td>Saskatoon</td>
<td>SK</td>
<td>Higher Education</td>
<td>9,762</td>
<td>47.3%</td>
<td>$69,871</td>
</tr>
<tr>
<td>Calgary</td>
<td>AB</td>
<td>ICT Manufacturing</td>
<td>7,853</td>
<td>-24.5%</td>
<td>$83,332</td>
</tr>
<tr>
<td>Calgary</td>
<td>AB</td>
<td>ICT Services</td>
<td>39,231</td>
<td>24.9%</td>
<td>$78,340</td>
</tr>
<tr>
<td>Calgary</td>
<td>AB</td>
<td>Logistics</td>
<td>40,817</td>
<td>16.7%</td>
<td>$66,133</td>
</tr>
<tr>
<td>Calgary</td>
<td>AB</td>
<td>Mining</td>
<td>20,918</td>
<td>42.5%</td>
<td>$122,993</td>
</tr>
<tr>
<td>Edmonton</td>
<td>AB</td>
<td>Oil &amp; Gas</td>
<td>20,580</td>
<td>55.5%</td>
<td>$92,857</td>
</tr>
<tr>
<td>Regina</td>
<td>SK</td>
<td>Mining</td>
<td>2,619</td>
<td>64.7%</td>
<td>$89,360</td>
</tr>
<tr>
<td>Saskatoon</td>
<td>SK</td>
<td>Mining</td>
<td>5,623</td>
<td>73.5%</td>
<td>$102,531</td>
</tr>
<tr>
<td>Thompson</td>
<td>MB</td>
<td>Mining</td>
<td>1,766</td>
<td>22.2%</td>
<td>$93,429</td>
</tr>
<tr>
<td>Calgary</td>
<td>AB</td>
<td>Oil &amp; Gas</td>
<td>53,707</td>
<td>64.0%</td>
<td>$142,199</td>
</tr>
<tr>
<td>Cold Lake</td>
<td>AB</td>
<td>Oil &amp; Gas</td>
<td>1,568</td>
<td>1.5%</td>
<td>$105,502</td>
</tr>
<tr>
<td>Edmonton</td>
<td>AB</td>
<td>Oil &amp; Gas</td>
<td>27,036</td>
<td>68.7%</td>
<td>$97,660</td>
</tr>
<tr>
<td>Grande Prairie</td>
<td>AB</td>
<td>Oil &amp; Gas</td>
<td>5,449</td>
<td>131.9%</td>
<td>$91,272</td>
</tr>
<tr>
<td>Lloydminster</td>
<td>AB</td>
<td>Oil &amp; Gas</td>
<td>3,780</td>
<td>58.8%</td>
<td>$113,384</td>
</tr>
<tr>
<td>Medicine Hat</td>
<td>AB</td>
<td>Oil &amp; Gas</td>
<td>3,687</td>
<td>47.8%</td>
<td>$90,985</td>
</tr>
<tr>
<td>Okotoks</td>
<td>AB</td>
<td>Oil &amp; Gas</td>
<td>1,313</td>
<td></td>
<td>$136,604</td>
</tr>
<tr>
<td>Red Deer</td>
<td>AB</td>
<td>Oil &amp; Gas</td>
<td>5,189</td>
<td>50.4%</td>
<td>$82,686</td>
</tr>
<tr>
<td>Regina</td>
<td>SK</td>
<td>Oil &amp; Gas</td>
<td>2,464</td>
<td>61.6%</td>
<td>$106,656</td>
</tr>
<tr>
<td>Sylvan Lake</td>
<td>AB</td>
<td>Oil &amp; Gas</td>
<td>1,357</td>
<td></td>
<td>$87,737</td>
</tr>
<tr>
<td>Wood Buffalo</td>
<td>AB</td>
<td>Oil &amp; Gas</td>
<td>15,069</td>
<td>99.5%</td>
<td>$156,582</td>
</tr>
<tr>
<td>Calgary</td>
<td>AB</td>
<td>Steel</td>
<td>13,315</td>
<td>31.6%</td>
<td>$115,420</td>
</tr>
<tr>
<td>Edmonton</td>
<td>AB</td>
<td>Steel</td>
<td>14,293</td>
<td>20.3%</td>
<td>$86,362</td>
</tr>
<tr>
<td>Winnipeg</td>
<td>MB</td>
<td>Textiles</td>
<td>2,026</td>
<td>-65.6%</td>
<td>$50,295</td>
</tr>
</tbody>
</table>
5.4.1 Brandon Agriculture

The agriculture cluster in Brandon employed 3,433 people in 2011. This made Brandon the 10th largest agriculture cluster in Canada (out of 18). Between 2001 and 2011 employment increased by 39.8%. The labour force was 75.6% male and 24.4% female. 28.5% of the labour force was over the age of 44.

In 2011 39.1% of the cluster labour force held post-secondary qualifications with 7.3% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Brandon agriculture cluster was $44,729 per year. This ranked the cluster 10th out of 18 agriculture clusters in Canada.

In 2011 Dun & Bradstreet identified 19 business establishments in the Brandon agriculture cluster. The average establishment size was 129 employees. The cluster is heavily dominated by Maple Leaf Foods which employs a majority of all workers.

Figure 5.4.1.1
Size and location of business establishments, 2011
5.4.1 Brandon Agriculture

Figure 5.4.1.2
Labour force demographics, 2011

Figure 5.4.1.3
Educational attainment of labour force, 2011

Figure 5.4.1.4
Occupational structure of labour force, 2011
5.4.2 Winnipeg Life Sciences

The life sciences cluster in Winnipeg employed 4,358 people in 2011. This made Winnipeg the 5th largest life sciences cluster in Canada (out of 7). Between 2001 and 2011 employment increased by 28.5%. The labour force was 39.9% male and 60.1% female. 46.4% of the labour force was over the age of 44.

In 2011 75.9% of the cluster labour force held post-secondary qualifications with 40.0% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Winnipeg life sciences cluster was $57,832 per year. This ranked the cluster 7th out of 7 life sciences clusters in Canada.

In 2011 Dun & Bradstreet identified 171 business establishments in the Winnipeg life sciences cluster. The average establishment size was 12 employees. The largest firms in core life sciences industries in 2011 included: Vita Health Products Inc; NAV Canada; Apotex Fermentation Inc; IMRIS Inc; and Rix Ltd.

Figure 5.4.2.1
Size and location of business establishments, 2011
5.4.2 Winnipeg Life Sciences

Figure 5.4.2.2
Labour force demographics, 2011

Figure 5.4.2.3
Educational attainment of labour force, 2011

Figure 5.4.2.4
Occupational structure of labour force, 2011
5.4.3 Saskatoon Agriculture

The agriculture cluster in Saskatoon employed 7,717 people in 2011. This made Saskatoon the 4th largest agriculture cluster in Canada (out of 18). Between 2001 and 2011 employment decreased by 2.4%. The labour force was 75.4% male and 24.6% female. 44.3% of the labour force was over the age of 44.

In 2011 49.1% of the cluster labour force held post-secondary qualifications with 18.7% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Saskatoon agriculture cluster was $56,351 per year. This ranked the cluster 1st out of 18 agriculture clusters in Canada.

In 2011 Dun & Bradstreet identified 113 business establishments in the Saskatoon agriculture cluster. The average establishment size was 30 employees. The largest firms in core agriculture industries in 2011 included: CNH Canada Ltd; Maple Leaf Foods Inc; New Food Classics; Prairie Machine & Parts MFG Partnership; Norseman Structures Inc; Prairie Pride Natural Foods Ltd; Vicwest Operating Limited Partnership; Dow AgroSciences Canada Inc; Wheatheart Manufacturing Ltd; JNE Welding; Advanced Ag. & Industrial Ltd; Prairie Machine & Parts Mfg (1978) Ltd; Harmon International Industries Inc; Bourgault F.P. Tillage Tools Ltd; Nutana Machine Ltd; and Supreme Steel Ltd.

Figure 5.4.3.1
Size and location of business establishments, 2011
5.4.3 Saskatoon Agriculture

Figure 5.4.3.2 Labour force demographics, 2011

Figure 5.4.3.3 Educational attainment of labour force, 2011

Figure 5.4.3.4 Occupational structure of labour force, 2011
5.4.4 Saskatoon Mining

The mining cluster in Saskatoon employed 5,623 people in 2011. This made Saskatoon the 4th largest mining cluster in Canada (out of 16). Between 2001 and 2011 employment increased by 73.5%. The labour force was 83.5% male and 16.5% female. 41.5% of the labour force was over the age of 44.

In 2011 66.2% of the cluster labour force held post-secondary qualifications with 20.9% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Saskatoon mining cluster was $102,531 per year. This ranked the cluster 2nd out of 16 mining clusters in Canada.

Figure 5.4.4.1
Size and location of business establishments, 2011
5.4.4 Saskatoon Mining

Figure 5.4.4.2
Labour force demographics, 2011

Figure 5.4.4.3
Educational attainment of labour force, 2011

Figure 5.4.4.4
Occupational structure of labour force, 2011
5.4.5 Wood Buffalo Oil & Gas

The oil & gas cluster in Wood Buffalo employed 15,069 people in 2011. This made Wood Buffalo the 3rd largest oil & gas cluster in Canada (out of 13). Between 2001 and 2011 employment increased by 99.5%. The labour force was 79.8% male and 20.2% female. 37.5% of the labour force was over the age of 44.

In 2011 73.1% of the cluster labour force held post-secondary qualifications with 18.6% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Wood Buffalo oil & gas cluster was $156,582 per year. This ranked the cluster 1st out of 13 oil & gas clusters in Canada.

In 2011 Dun & Bradstreet identified 45 business establishments in the Wood Buffalo oil & gas cluster. The average establishment size was 88 employees. These figures suggest that the D&B data is not capturing many of the firms in this instance. The largest firms in core oil & gas industries in 2011 included: Syncrude Canada Ltd; Landing Trail Petroleum Co; Matthews Equipment Limited; Big Eagle Limited Partnership; Cardium Vac Services Ltd; Myshak Crane and Rigging Ltd; BP Canada Energy Company; Brandt Tractor Ltd; Inter Pipeline (Corridor) Inc; Ameco Services Inc; and ATCO Gas And Pipelines Ltd.

Figure 5.4.5.1
Size and location of business establishments, 2011
5.4.5 Wood Buffalo Oil & Gas

Figure 5.4.5.2
Labour force demographics, 2011

Figure 5.4.5.3
Educational attainment of labour force, 2011

Figure 5.4.5.4
Occupational structure of labour force, 2011
5.4.6 Calgary Oil & Gas

The oil & gas cluster in Calgary employed 53,707 people in 2011. This made Calgary the largest oil & gas cluster in Canada (out of 13). Between 2001 and 2011 employment increased by 64.0%. The labour force was 60.9% male and 39.1% female. 40.3% of the labour force was over the age of 44.

In 2011 83.4% of the cluster labour force held post-secondary qualifications with 50.8% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Calgary oil & gas cluster was $142,199 per year. This ranked the cluster 2nd out of 13 oil & gas clusters in Canada.

In 2011 Dun & Bradstreet identified 2,826 business establishments in the Calgary oil & gas cluster. The average establishment size was 27 employees. The largest firms in core oil & gas industries in 2011 included: Imperial Oil; Cenovus Energy Inc; BP Canada Energy Company; Canadian Natural Resources Limited; ConocoPhillips Canada Resources Corp; Talisman (Asia) Ltd; Nexen Holdings (USA) Inc; Shell Canada Limited; Husky Oil Operations Limited; Trican Well Service Ltd; and CGG Veritas.

**Figure 5.4.6.1**
Size and location of business establishments, 2011
5.4.6 Calgary Oil & Gas

Figure 5.4.6.2
Labour force demographics, 2011

Figure 5.4.6.3
Educational attainment of labour force, 2011

Figure 5.4.6.4
Occupational structure of labour force, 2011
5.4.7 Calgary Logistics

The logistics cluster in Calgary employed 40,817 people in 2011. This made Calgary the 4th largest logistics cluster in Canada (out of 10). Between 2001 and 2011 employment increased by 16.7%. The labour force was 65.4% male and 34.6% female. 40.3% of the labour force was over the age of 44.

In 2011 55.2% of the cluster labour force held post-secondary qualifications with 20.8% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Calgary logistics cluster was $66,133 per year. This ranked the cluster 3rd out of 10 logistics clusters in Canada.

In 2011 Dun & Bradstreet identified 541 business establishments in the Calgary logistics cluster. The average establishment size was 17 employees. The largest firms in core logistics industries in 2011 included: SCM Supply Chain Management Inc; Sears Canada Inc; HBC Logistics; Borek Kenn Air Ltd; Sunwest Aviation Ltd; Bison Transport Inc; Canada Safeway Limited; Horizon North Logistics Inc; Borek Kenn Air Ltd; Avmax Group Inc; United Parcel Service Canada Ltd; and Matrix Logistics Services Limited.

Figure 5.4.7.1
Size and location of business establishments, 2011
5.4.7 Calgary Logistics

Figure 5.4.7.2
Labour force demographics, 2011

Figure 5.4.7.3
Educational attainment of labour force, 2011

Figure 5.4.7.4
Occupational structure of labour force, 2011
5.5 British Columbia

The British Columbia economy is characterized by many resource clusters as well as a strong set of service clusters. Forestry & wood clusters are plentiful with 11 cases. Unfortunately, all 11 experienced employment declines between 2001 and 2011. Trade issues particularly with the United States as well in slumping demand from the housing crash are likely key reasons for these problems. BC also has four maritime clusters (includes fishing), two agriculture, two mining, and one oil & gas. Construction is also prominent with 11 clusters in the province. This is likely largely due to housing demand driven by population gains.

The only manufacturing clusters in British Columbia are two in food & beverage (Abbotsford-Mission and Vancouver) and one life sciences (Vancouver). All of these clusters have shown strong growth over the 2001 to 2011 time period. The general lack of manufacturing clusters in the province is a sign of the limited industrial history. There are likely some emerging technologies such as fuel cells and other environmental technologies that do not yet show up in the data due to the legacy of the industrial classifications systems.

British Columbia possesses eight service clusters, five of which are located in Vancouver. There are also higher education clusters in Victoria and Nanaimo which have grown at very high rates. Victoria additionally is home to a business services cluster that grew by 30% between 2001 and 2011. All five types of service clusters are found in Vancouver. Each of these clusters employ at least 50,000 people and have grown by substantial amounts of the ten year period. As with other large cities, maintaining liveability is an important factor to these clusters as they are essentially driven by human capital. A serious concern for Vancouver is affordability which may crimp its ability to attract and retain younger workers.
## Table 5.5.1
British Columbia clusters and key indicators

<table>
<thead>
<tr>
<th>City Region</th>
<th>Prov</th>
<th>Cluster Type</th>
<th>Employment 2011</th>
<th>Employment Change 2001-2011</th>
<th>Average Annual FT Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbotsford - Mission</td>
<td>BC</td>
<td>Agriculture</td>
<td>8,027</td>
<td>-5.0%</td>
<td>$45,239</td>
</tr>
<tr>
<td>Chilliwack</td>
<td>BC</td>
<td>Agriculture</td>
<td>3,191</td>
<td>1.6%</td>
<td>$44,155</td>
</tr>
<tr>
<td>Vancouver</td>
<td>BC</td>
<td>Life Sciences</td>
<td>11,910</td>
<td>34.8%</td>
<td>$63,727</td>
</tr>
<tr>
<td>Vancouver</td>
<td>BC</td>
<td>Business Services</td>
<td>155,022</td>
<td>38.0%</td>
<td>$74,328</td>
</tr>
<tr>
<td>Victoria</td>
<td>BC</td>
<td>Business Services</td>
<td>22,334</td>
<td>30.8%</td>
<td>$67,368</td>
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<tr>
<td>Abbotsford - Mission</td>
<td>BC</td>
<td>Construction</td>
<td>4,139</td>
<td>62.3%</td>
<td>$53,930</td>
</tr>
<tr>
<td>Chilliwack</td>
<td>BC</td>
<td>Construction</td>
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<td>$47,976</td>
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<tr>
<td>Courtenay</td>
<td>BC</td>
<td>Construction</td>
<td>1,375</td>
<td>120.0%</td>
<td>$51,668</td>
</tr>
<tr>
<td>Kamloops</td>
<td>BC</td>
<td>Construction</td>
<td>2,314</td>
<td>52.3%</td>
<td>$59,965</td>
</tr>
<tr>
<td>Kelowna</td>
<td>BC</td>
<td>Construction</td>
<td>5,981</td>
<td>86.3%</td>
<td>$58,642</td>
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<tr>
<td>Nanaimo</td>
<td>BC</td>
<td>Construction</td>
<td>2,468</td>
<td>82.8%</td>
<td>$53,246</td>
</tr>
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<td>Penticton</td>
<td>BC</td>
<td>Construction</td>
<td>1,083</td>
<td>76.0%</td>
<td>$45,313</td>
</tr>
<tr>
<td>Prince George</td>
<td>BC</td>
<td>Construction</td>
<td>1,959</td>
<td>30.6%</td>
<td>$59,979</td>
</tr>
<tr>
<td>Vancouver</td>
<td>BC</td>
<td>Construction</td>
<td>64,446</td>
<td>53.6%</td>
<td>$72,282</td>
</tr>
<tr>
<td>Vernon</td>
<td>BC</td>
<td>Construction</td>
<td>1,368</td>
<td>68.9%</td>
<td>$50,286</td>
</tr>
<tr>
<td>Victoria</td>
<td>BC</td>
<td>Construction</td>
<td>8,034</td>
<td>44.5%</td>
<td>$63,822</td>
</tr>
<tr>
<td>Vancouver</td>
<td>BC</td>
<td>Creative &amp; Cultural</td>
<td>67,916</td>
<td>35.3%</td>
<td>$57,927</td>
</tr>
<tr>
<td>Vancouver</td>
<td>BC</td>
<td>Finance</td>
<td>95,557</td>
<td>26.2%</td>
<td>$76,962</td>
</tr>
<tr>
<td>Abbotsford - Mission</td>
<td>BC</td>
<td>Food &amp; Beverage</td>
<td>2,885</td>
<td>47.5%</td>
<td>$48,499</td>
</tr>
<tr>
<td>Vancouver</td>
<td>BC</td>
<td>Food &amp; Beverage</td>
<td>39,271</td>
<td>21.0%</td>
<td>$51,362</td>
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<tr>
<td>Abbotsford - Mission</td>
<td>BC</td>
<td>Forestry &amp; Wood</td>
<td>2,288</td>
<td>-38.5%</td>
<td>$57,964</td>
</tr>
<tr>
<td>Campbell River</td>
<td>BC</td>
<td>Forestry &amp; Wood</td>
<td>1,187</td>
<td>-56.9%</td>
<td>$67,112</td>
</tr>
<tr>
<td>Chilliwack</td>
<td>BC</td>
<td>Forestry &amp; Wood</td>
<td>1,016</td>
<td>-31.3%</td>
<td>$60,175</td>
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<tr>
<td>Duncan</td>
<td>BC</td>
<td>Forestry &amp; Wood</td>
<td>1,230</td>
<td>-47.8%</td>
<td>$70,520</td>
</tr>
<tr>
<td>Kamloops</td>
<td>BC</td>
<td>Forestry &amp; Wood</td>
<td>1,748</td>
<td>-30.8%</td>
<td>$68,881</td>
</tr>
<tr>
<td>Kelowna</td>
<td>BC</td>
<td>Forestry &amp; Wood</td>
<td>2,136</td>
<td>-16.7%</td>
<td>$67,597</td>
</tr>
<tr>
<td>Nanaimo</td>
<td>BC</td>
<td>Forestry &amp; Wood</td>
<td>1,350</td>
<td>-43.9%</td>
<td>$67,048</td>
</tr>
<tr>
<td>Prince George</td>
<td>BC</td>
<td>Forestry &amp; Wood</td>
<td>4,504</td>
<td>-34.7%</td>
<td>$75,838</td>
</tr>
<tr>
<td>Quesnel</td>
<td>BC</td>
<td>Forestry &amp; Wood</td>
<td>2,951</td>
<td>-10.6%</td>
<td>$69,931</td>
</tr>
<tr>
<td>Vernon</td>
<td>BC</td>
<td>Forestry &amp; Wood</td>
<td>1,287</td>
<td>-11.6%</td>
<td>$79,340</td>
</tr>
<tr>
<td>Williams Lake</td>
<td>BC</td>
<td>Forestry &amp; Wood</td>
<td>1,507</td>
<td>-52.2%</td>
<td>$65,643</td>
</tr>
<tr>
<td>Nanaimo</td>
<td>BC</td>
<td>Higher Education</td>
<td>2,075</td>
<td>273.9%</td>
<td>$65,032</td>
</tr>
<tr>
<td>Vancouver</td>
<td>BC</td>
<td>Higher Education</td>
<td>58,301</td>
<td>62.4%</td>
<td>$68,251</td>
</tr>
<tr>
<td>Victoria</td>
<td>BC</td>
<td>Higher Education</td>
<td>9,862</td>
<td>44.7%</td>
<td>$65,519</td>
</tr>
<tr>
<td>Vancouver</td>
<td>BC</td>
<td>ICT Services</td>
<td>78,231</td>
<td>29.8%</td>
<td>$72,196</td>
</tr>
<tr>
<td>Vancouver</td>
<td>BC</td>
<td>Logistics</td>
<td>81,261</td>
<td>4.8%</td>
<td>$62,567</td>
</tr>
<tr>
<td>Nanaimo</td>
<td>BC</td>
<td>Maritime</td>
<td>1,300</td>
<td>1.1%</td>
<td>$59,697</td>
</tr>
<tr>
<td>Prince Rupert</td>
<td>BC</td>
<td>Maritime</td>
<td>1,245</td>
<td>-6.4%</td>
<td>$69,786</td>
</tr>
<tr>
<td>Vancouver</td>
<td>BC</td>
<td>Maritime</td>
<td>12,390</td>
<td>-14.3%</td>
<td>$66,637</td>
</tr>
<tr>
<td>Victoria</td>
<td>BC</td>
<td>Maritime</td>
<td>3,621</td>
<td>-5.0%</td>
<td>$59,879</td>
</tr>
<tr>
<td>Kamloops</td>
<td>BC</td>
<td>Mining</td>
<td>2,749</td>
<td>53.2%</td>
<td>$87,653</td>
</tr>
<tr>
<td>Prince George</td>
<td>BC</td>
<td>Mining</td>
<td>1,356</td>
<td>12.6%</td>
<td>$73,617</td>
</tr>
<tr>
<td>Fort St. John</td>
<td>BC</td>
<td>Oil &amp; Gas</td>
<td>2,670</td>
<td>88.7%</td>
<td>$95,575</td>
</tr>
</tbody>
</table>
5.5.1 Prince George Forestry & Wood

The forestry & wood cluster in Prince George employed 4,504 people in 2011. This made Prince George the largest forestry & wood cluster in Canada (out of 18). Between 2001 and 2011 employment decreased by 34.7%. The labour force was 87.3% male and 12.7% female. 51.8% of the labour force was over the age of 44.

In 2011 49.5% of the cluster labour force held post-secondary qualifications with 10.7% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Prince George forestry & wood cluster was $75,838 per year. This ranked the cluster 3rd out of 18 forestry & wood clusters in Canada.

In 2011 Dun & Bradstreet identified 144 business establishments in the Prince George forestry & wood cluster. The average establishment size was 16 employees. The largest firms in core forestry & wood industries in 2011 included: Canadian Forest Products Ltd; Carrier Forest Products Ltd; Winton Global Lumber Ltd; Brink Forest Products Ltd; Parallel Wood Products Ltd; North-west Wood Preservers Ltd; Industrial Forestry Service Ltd; Dollar Saver Lumber Ltd; Warmac Ventures Ltd; Spruce Capital Homes Ltd; and Frost Lake Logging Ltd.

Figure 5.5.1.1
Size and location of business establishments, 2011
5.5.1 Prince George Forestry & Wood

Figure 5.5.1.2
Labour force demographics, 2011

Figure 5.5.1.3
Educational attainment of labour force, 2011

Figure 5.5.1.4
Occupational structure of labour force, 2011
5.5.2 Abbotsford - Mission Food & Beverage

The food & beverage cluster in Abbotsford - Mission employed 2,885 people in 2011. This made Abbotsford - Mission the 9th largest food & beverage cluster in Canada (out of 15). Between 2001 and 2011 employment increased by 47.5%. The labour force was 62.6% male and 37.4% female. 31.9% of the labour force was over the age of 44.

In 2011 37.3% of the cluster labour force held post-secondary qualifications with 10.3% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Abbotsford - Mission food & beverage cluster was $48,499 per year. This ranked the cluster 6th out of 15 food & beverage clusters in Canada.

In 2011 Dun & Bradstreet identified 64 business establishments in the Abbotsford - Mission food & beverage cluster. The average establishment size was 16 employees. The largest firms in core food & beverage industries in 2011 included: Lilydale Inc; A & P Fruit Growers Ltd; Vanderpol’s Eggs Ltd; Omstead Foods Limited; Valley Berries Inc; I & G Bismarking Ltd; Klassic Catering Ltd; Smith E.D. Foods Ltd; Anglo American Cedar Products Ltd; and B.C. Frozen Foods Ltd.

Figure 5.5.2.1
Size and location of business establishments, 2011
5.5.2 Abbotsford - Mission Food & Beverage

**Figure 5.5.2.2**
Labour force demographics, 2011

**Figure 5.5.2.3**
Educational attainment of labour force, 2011

**Figure 5.5.2.4**
Occupational structure of labour force, 2011
5.5.3 Victoria Business Services

The business services cluster in Victoria employed 22,334 people in 2011. This made Victoria the 7th largest business services cluster in Canada (out of 10). Between 2001 and 2011 employment increased by 30.8%. The labour force was 56.3% male and 43.7% female. 51.0% of the labour force was over the age of 44.

In 2011 81.3% of the cluster labour force held post-secondary qualifications with 54.1% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Victoria business services cluster was $67,368 per year. This ranked the cluster 6th out of 10 business services clusters in Canada.

In 2011 Dun & Bradstreet identified 2,779 business establishments in the Victoria business services cluster. The average establishment size was 8 employees. The largest firms in core business services industries in 2011 included: The Canadian Corps Of Commissioners National Off; The Land Conservancy Enterprise Ltd; Agropur Cooperative; A.R.C. Accounts Recovery Corporation; HP Advanced Solutions Inc; Sierra Systems Group Inc; Land Title & Survey Authority of British Columbia; Paretologic Inc; Total Delivery Systems Inc; Rai Enterprise Ltd A; Devon Properties Ltd; Coast Forest Management Ltd; and Axys Analytical Services Ltd.

Figure 5.5.3.1
Size and location of business establishments, 2011
5.5.3 Victoria Business Services

Figure 5.5.3.2
Labour force demographics, 2011

Figure 5.5.3.3
Educational attainment of labour force, 2011

Figure 5.5.3.4
Occupational structure of labour force, 2011
5.5.4 Vancouver ICT Services

The ICT services cluster in Vancouver employed 78,231 people in 2011. This made Vancouver the 3rd largest ICT services cluster in Canada (out of 7). Between 2001 and 2011 employment increased by 29.8%. The labour force was 62.2% male and 37.8% female. 35.2% of the labour force was over the age of 44.

In 2011 83.6% of the cluster labour force held post-secondary qualifications with 56.4% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Vancouver ICT services cluster was $72,196 per year. This ranked the cluster 4th out of 7 ICT services clusters in Canada.

In 2011 Dun & Bradstreet identified 2,567 business establishments in the Vancouver ICT services cluster. The average establishment size was 21 employees. The largest firms in core ICT services industries in 2011 included: TELUS Communications Inc; Business Objects Corp; MDA Systems Ltd; MacDonald Dettwiler And Associates Ltd; McKesson Medical Imaging Company; NAV Canada; Rogers Cable Communications Inc; and E-Comm Emergency Communications.

Figure 5.5.4.1
Size and location of business establishments, 2011
5.5.4 Vancouver ICT Services

Figure 5.5.4.2 Labour force demographics, 2011

Figure 5.5.4.3 Educational attainment of labour force, 2011

Figure 5.5.4.4 Occupational structure of labour force, 2011
5.5.5 Vancouver Creative & Cultural

The creative & cultural cluster in Vancouver employed 67,916 people in 2011. This made Vancouver the 3rd largest creative & cultural cluster in Canada (out of 3). Between 2001 and 2011 employment increased by 35.3%. The labour force was 52.6% male and 47.4% female. 36.3% of the labour force was over the age of 44.

In 2011 74.5% of the cluster labour force held post-secondary qualifications with 41.3% having a university degree.

According to the 2011 NHS the average full-time employment income for individuals working in the Vancouver creative & cultural cluster was $57,927 per year. This ranked the cluster 2nd out of 3 creative & cultural clusters in Canada.

In 2011 Dun & Bradstreet identified 4,601 business establishments in the Vancouver creative & cultural cluster. The average establishment size was 7 employees. The largest firms in core creative & cultural industries in 2011 included: Canadian Broadcasting Corporation; B.C. Pavilion Corporation; Hannah-Rachel Production Services Limited; Hastings Entertainment Inc; Grosvenor Park Impact Productions Inc; Orangeville Raceway Limited; Canadian Tourism Commission Fincentric Corporation; Mainframe Entertainment Inc; Postmedia Network Inc; Rainmaker Entertainment Inc; Pegasus Productions V Inc; Black Street Productions Ltd; and CTV Inc.

Figure 5.5.5.1
Size and location of business establishments, 2011
5.5.5 Vancouver Creative & Cultural

**Figure 5.5.5.2**
Labour force demographics, 2011

**Figure 5.5.5.3**
Educational attainment of labour force, 2011

**Figure 5.5.5.4**
Occupational structure of labour force, 2011
6.0 Discussion & Conclusions

This report provides a comprehensive overview of what industries are performing well and specifically where they are performing well in Canada. Pockets of strength and weakness are evident within the national economy and national geography. The information presented allows for a sober view on where strategic investments are needed and where they may be most impactful. That being said there are some dilemmas that become evident when looking at the bigger trends. In particular, the 2001 to 2011 period was very difficult for manufacturing and some resource sectors such as forestry and wood. There are numerous reasons for this, namely the rise in the value of the Canadian dollar, stronger global competition, and generally poor performance on innovation.

This generalized decline is a problem in its outright, but also one that is compounded by geography. The significant declines in traditional manufacturing and resource sectors has mean significant decline for communities that depend on them. These communities tend to be smaller and mid-sized cities that are often highly specialized in certain economic activities. The decline of these industries is only half of the problem. There has been very strong employment growth in service industries and some resource sectors such as oil & gas and mining. While the latter are wedded to certain locations for obvious reasons, the former provide hope that jobs can be created that replace the ones lost in other parts of the economy. The issue with this however is that the rapid growth in services is occurring disproportionately in the largest urban centres. There are different reasons why clusters exist where they do. Some are more cost sensitive, some depend on specific infrastructure, access to markets matters more to some, as does economies of scale and networks. It is important to consider that certain clusters may be in decline due to a change in demand (e.g. coal mining and certain forestry clusters), increased global competition, or difficulties with attracting new younger workers. Further research is needed to better understand these complex dynamics in order to develop effective policies that can balance the goals of maximizing aggregate growth with those that are geared to distributing growth across all parts of the country.

Current areas of strength are mainly the aforementioned service based clusters as well as oil & gas and mining. Support for the former largely depends on ensuring that the larger urban areas are well functioning, highly liveable, and affordable. Urban transportation systems and housing costs have been recent key issues for such places. With oil & gas and mining public support is needed in achieving physical access to markets. Transportation investments including ports and pipelines are key. These are the relatively straightforward interventions, more difficult decisions lie with many manufacturing clusters. While innovation is essential across the entire spectrum of economic sectors, it is arguably most important in manufacturing. Furthermore, the knowledge intensive clusters such as ICT and life sciences receive a substantial amount of attention in this area, but it is the next tier of industries that may be most crucial. Areas such as auto manufacturing, steel, aluminum, and other materials are under heavy pressure from global competition that have a significant cost element. Long-term local industrial change in many clusters shows that there is a trend away from manufacturing employment. This raises the potential for deindustrialization and growing disparity in regional economies that de-
pend on such industries. Some regional economies, particularly in Ontario and Quebec that rely on traditional manufacturing industries could face important challenges in rejuvenating themselves. Thus, effective innovation policies must be put in place in order to increase the chances of longer term prosperity, not just for the industries but for the communities as a whole. This does not necessarily mean trying to maintain what currently exists but also finding ways to evolve to new and emerging technologies while building clusters of whole new industries. Overall, a balance needs to be struck between supporting clusters that are clearly drivers of growth and those that need assistance in order to provide sustainable foundations for communities in the future.
Appendix A - Cluster Definitions - Maritime

- Inland water transportation
- Scenic & sightseeing transport., water
- Scenic & sightseeing transport., land
- Ship and boat building
- Deep-sea, coastal & ... lakes water transportation
- Support activities for water transportation
- Heritage institutions
- Fishing
- Seafood product preparation & packaging
Appendix A - Cluster Definitions - Mining

- Support activities for rail transportation
- Rail transportation
- Metal ore mining
- Mining (unspecified)
- Coal Mining
- Electric power generation, trans. & dist.
- Support act. for mining & oil & gas extraction
- Non-metallic mineral mining & quarrying
Appendix A - Cluster Definitions - Oil & Gas

- Oil and gas extraction
- Pipeline transportation of crude oil
- Support act. for mining & oil & gas extraction
- Natural gas distribution
- Other pipeline transportation
- Pipeline transportation of natural gas
- Commercial & ind. machinery & equip. rental & leasing
- Petroleum & coal products mfg
- Boiler, tank & shipping container mfg
Appendix A - Cluster Definitions - Construction

- Land subdivision & land development
- Commercial & industrial machinery & equipment rental & leasing
- Construction management
- Building construction
- Offices of real estate agents & brokers
- Architectural, engineering & related services
Appendix A - Cluster Definitions - Textiles

- Fabric mills
- Fibre, yarn & thread mills
- Textile & fabric finishing & fabric coating
- Textiles, clothing & footwear wholesaler-dist.
- Textile furnishings mills
- Cut & sew clothing manufacturing
- Leather & hide tanning & finishing
- Other textile product mills
- Clothing knitting mills
- Clothing accessories & other clothing mfg
- Other leather & allied product manufacturing
- Footwear manufacturing

Textile & fabric finishing & fabric coating
Appendix A - Cluster Definitions - Aluminum

Alumina and Aluminum Production and Processing

Foundries
Appendix A - Cluster Definitions - Steel

Iron & steel mills & ferro-alloy manufacturing

- Coating, engraving heat treating & allied activities
- Natural gas distribution

- Foundries
- Forging and stamping
- Metalworking machinery manufacturing

- Steel product mfg from purchased steel
- Other fabricated metal product manufacturing

- Spring & wire product manufacturing
- Basic chemical manufacturing
- Architectural & structural metals manufacturing
- Electric power generation Trans. & dist.
- Other fabricated metal product manufacturing
Appendix A - Cluster Definitions - Auto Manufacturing

- Paint, coating & adhesive manufacturing
- Motor vehicle manufacturing
- Motor vehicle parts mfg
- Motor vehicle parts mfg
- Foundries
- Forging and stamping
- Other fabricated metal product manufacturing
- Machine shops... & screw, nut & bolt mfg
- Metalworking machinery manufacturing
- Spring & wire product manufacturing
- Coating, engraving heat treating & allied activities
- Plastic product manufacturing
- Rubber product manufacturing
- Used motor vehicle parts & access. wholesaler-dist.
Appendix A - Cluster Definitions - Aerospace

Aerospace Product and Parts Manufacturing
Appendix A - Cluster Definitions - ICT Manufacturing

- Electrical equipment manufacturing
- Computer & comm. equip. & supplies wholesaler-dist.
- Semiconductor & other electronic component mfg
- Medical equipment & supplies mfg
- Spring & wire product manufacturing
- Communications equipment manufacturing
- Other electrical equipment & component mfg
- Nav., measuring, medical & control instruments mfg
- Computer & peripheral equip. manufacturing
Appendix A - Cluster Definitions - Finance

Activities related to credit intermediation
- Depository credit intermediation
- Non-depository credit intermediation
- Other financial investment activities

Insurance carriers
- Securities & commodities exchanges
- Other funds & financial vehicles

Security & commodities brokerage
- Depository credit intermediation
- Bus. schools & comp. & mngmt training
- Accounting, tax prep, bookkeeping & payroll services

Couriers
- Other funds & financial vehicles

Agencies, ... & other insurance related activities
- Couriers

Pension funds
- Insurance carriers

Other financial investment activities
- Activities related to credit intermediation
- Data processing services

Software publishers
- Accounts, tax prep, bookkeeping & payroll services

Other financial investment activities
Appendix A - Cluster Definitions - Business Services

- Information services
- Data processing services
- Mngmt, scientific & technical consulting serv.
- Lessors of real estate
- Investigation & security services
- Computer systems design & related services
- Elect. & precision equipment repair & maintenance
- Universities
- Architectural, engineering & related services
- Scientific research & development services
- Technical & trade schools
- Business support services
- Couriers
- Legal services
- Bus schools & comp & mngmt training
- Employement services
Appendix A - Cluster Definitions - Creative & Cultural

- Motion picture & video industries
- Radio & television broadcasting
- Software publishers
- Other schools & instruction
- Technical & trade schools
- Specialized design services
- Independent artists, writers & performers
- Sound recording industries
- Grant-making & giving services
- Advertising & related services
- Promoters of performing arts & similar events
- Agents ... for artists, entertainers...
- Spectator sports
Appendix A - Cluster Definitions - Higher Education

- Scientific research & development services
- Technical & trade schools
- Facilities support services
- Information services
- Universities
- Educational support services
- Bus. schools & comp. & mgmt training
- Other schools & instruction
### Appendix B - City-region Innovation Finance Indicators

<table>
<thead>
<tr>
<th>CMA</th>
<th>Public R&amp;D Funding</th>
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Original data sources: CAUBO; Impact Group/Statistic Canada; Thomson-Reuters
Data are averages for 2005-2007
## Appendix B - City-region Innovation Output Indicators

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<th>CMA</th>
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<th>High-tech Entrepreneurship</th>
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Original data sources: USPTO/Dieter Kogler UCD; Canadian Business Patterns; Census of Population 2006
Patent & income data is for 2006; HT formation is for 2001-2006
References


