



Technical Report: Economic + Industry Analysis

City of Edmonton

"The Way We Prosper"

An Economic Development Plan

April 2012



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1 Introduction

Prosperity is the fundamental goal for all economic development. But what drives prosperity and what can be done to sustain prosperity over the longer term is complex and differs from one jurisdiction to another, one region to another. The capacity for long term prosperity and economic growth however, can be understood in part, through a review of the performance and interplay of a range of economic and demographic factors. In a 2005 report by the U.S. Council on Competitiveness it was suggested that in advanced economies, productivity growth and by extension prosperity, increasingly depends on the capacity for innovation – either through the reduction of bottom line costs, as a result of the deployment of new technologies, or through the growth of top line revenues, resulting from the continuous introduction of new and differentiated markets and services that command a higher value in the marketplace¹.

The report goes on to state that every region has a range of assets, networks and underlying economic culture that determines the ultimate prosperity of a city or region. These include:

- Human Capital Development – workforce availability, the presence of skilled or specialized workers, the quality of local education institutions and opportunities for life-long learning;
- Financial Capital – access to venture capital or angel investors for entrepreneurs and start-ups;
- Research and Development Institutions – R+D spending by universities and government and R+D investment by private firms;
- Industrial Base – employers in a region, products and services for export, competitive advantages and disadvantages;
- Physical Infrastructure – reliable transportation and communication infrastructure, access to water;
- Quality of life – subjective measures that appeal to a range of tastes and preferences;
- Culture – evidence of collaboration within the business community, support for entrepreneurship, value place on diversity.

The importance of many of these factors was echoed in the Province of Alberta's 2011 report *Shaping Alberta's Future*. While it is acknowledged that the Province's economy, and by extension Edmonton's economy has expanded at an extraordinary pace in recent years, the authors of that report believe that Alberta has yet to seize on the opportunity to build a more resilient economy that effectively leverages its assets,

¹ The Council on Competitiveness. [Measuring Regional Innovation: A Guidebook for Conducting Regional Innovation Assessments](#), 2005.



invests strategically in businesses in other parts of the world, actively seeks to attract investment to Alberta, leverages international networks to enable the creation new knowledge and technology and identifies the specialized niches that the province is positioned to fill in global supply chain networks².

The timing of efforts to create a dialogue around future growth and prosperity in the province and the development of the City of Edmonton's Economic Development Plan provides a unique opportunity for the City to renew its competitive efforts in collaboration with its business and stakeholder community. The City's Economic Development Corporation, in particular should play an important role in advancing the City's economic prosperity by providing thought leadership on key issues that will affect the City's success locally and regionally; by assuming a more international and global perspective for measuring success; and by enhancing the value proposition for the attraction of business, investment and residents to the City of Edmonton.

The technical report that follows discusses the City of Edmonton's recent performance against a select range of demographic, economic and innovative indicators and is intended to provoke thinking on the state of Edmonton's competitive position in a global landscape. The information presented is based on a review of available data, reports, studies and business directory information considered relevant to the development of the Economic Development Plan. A detailed bibliography is provided in appendix A.

1.1 Alberta Trends and Context

According to RBC Economics Research Provincial Outlook March 2012, Canada's western provinces will benefit from a commodities boom and related capital investment and lead provincial growth in Canada in 2012. Alberta's economy in particular, is once again anticipated to be one of the fastest growing provincial economies over the next four years.

While Alberta's GDP growth averaged 3.1% annually between 1990 and 2010³, the provincial economy continues to experience the impact of a boom and bust cycle with growth slightly under 2% in 2001 rising annually to reach almost 6% in 2006. The recent global economic crisis impacted the growth of the provincial economy through 2009, but the resurgence in oil prices and capital investment in the oil sands has contributed to Alberta's economy expanding by 4.2% in 2011 with expectations that growth will remain near 4% growth through 2012 and 2013⁴. The economic recovery of the US and efforts to diversify sales of energy products to Asia should ensure continued economic expansion in the near future.

² Report of the Premier's Council for Economic Strategy. *Shaping Alberta's Future*, 2011

³ Extracted from Alberta's Economic Development Website <http://www.albertacanada.com/about-alberta/economic-results.html>

⁴ RBC Economics Research Provincial Outlook March 2012



The same RBC Economics Research report suggests that GDP growth in 2011 led to the creation of 99,000 jobs, half of all the jobs created in Canada in 2011. Most jobs were full time and jobs were created in almost all industry sectors. Job growth in 2012 will continue as the number of jobs will expand by 3.1% bringing unemployment down to 4.5% by 2013⁵.

Alberta's economy also demonstrates a trend towards diversification. Manufacturing shipments (exports) expanded by approximately 30% between 2000 and 2010. While energy comprised 36.1% of provincial GDP in 1985 it accounted for 25.7% in 2010⁶. Over the same time period construction's share of GDP rose from 6.7% to 9.6%; health from 3.6% to 5.4%; finance and real estate from 11% to 14.8%; and business and communication services from 5.5% to 9.4%⁷.

Energy however, is the primary driver of economic growth in Alberta. While declining as an overall percentage of GDP, energy is still over a quarter of provincial GDP and directly and indirectly provides 13.8% of all jobs⁸. RBC reports output of unconventional oil expanded 9% in 2011 and will expand by another 16% in 2012⁹. Statistics Canada reports investment in non-conventional oil (oil sands) will increase by 24.6% in 2012 to \$26.9 billion. As of December 2011 the value of major projects in Alberta stood at \$208.8 billion (including projects that have been approved or are already under construction). Oil sands related projects alone stood at \$133.6 billion¹⁰.

The benefits of the provincial energy economy extend far beyond the primary activities related to oil, gas and coal extraction. Of the 146,900 oil and gas jobs in Alberta in 2009; 71,700 of these jobs were in exploration, construction, transportation and technical services. Provincially, primary activities account for only 8% of energy related jobs. The service sector accounts for 58% of energy sector jobs while construction accounts for 24% and manufacturing 7%¹¹.

In addition, the Canadian Energy Research Institute estimates that every oil and gas extraction job leads to 2 additional jobs in support industries which in turn generate 1.7 jobs in the broader economy¹². In fact only 55% of the GDP attributed to the energy industry is the extraction of oil and gas and a report by the Canadian Energy Research Institute shows that approximately 30% of the economic impact from the oil sands will be in non-oil and gas industries between 2000 and 2020¹³.

⁵ Ibid

⁶ <http://www.albertacanada.com/about-alberta/economic-results.html>

⁷ Extracted from Alberta's Economic Development Website <http://www.albertacanada.com/about-alberta/economic-results.html>

⁸ Canadian Energy Research Institute. (2009). Economic Impacts of the Petroleum Industry.

⁹ RBC Economics Research Provincial Outlook March 2012

¹⁰ Alberta Treasury Board and Enterprise Inventory of Major Projects Report, December 2011

¹¹ Energizing Investment: A framework to improve Alberta's natural gas and conventional oil competitiveness. March 2010.

¹² Canadian Energy Research Institute. (2009). Economic Impacts of the Petroleum Industry.

¹³ Canadian Energy Research Institute. 2005. "Economic Impacts of Alberta's Oil Sands".



In envisioning a world beyond energy, the province also sees export opportunities in value added agricultural and forestry products; medical devices, medical science and biotechnology; and information and communications technologies¹⁴. Alberta has recently commissioned several studies that will explore the opportunities in value added energy activities and non-energy related industries.

1.2 Highlights of Edmonton's Economy

Edmonton's location at the heart of Alberta's oil and gas sector and the closest large city to the Athabasca Oil Sands effectively positions the city as the research and supply and services hub for oil and gas in Alberta. As such, Edmonton has developed solid sector strengths in areas of industrial manufacturing, engineering and construction and transportation and logistics that are further underpinned by the research and development activity that is focused on the province's energy sector. Provincially, primary oil and gas activities account for only 8% of energy related jobs. The service sector however, accounts for 58% of energy sector jobs while construction accounts for 24% and manufacturing 7%. These areas of service and supply provide the basis for Edmonton's thriving economy and create the highest level of business momentum in western Canada¹⁵.

Strong Economic Growth Driving Employment and Population Increases

Emerging from the global recession in 2009, Alberta's economy demonstrated strong growth in both 2010 and 2011. Edmonton (CMA) benefited greatly from this success, posting a solid 4.0% growth in 2010 and 4.4% in 2011¹⁶. All of this while Europe and the United States struggle to recover and while Canada posted GDP growth of 2.5% in 2011¹⁷.

With strong forecasts for the provincial energy and oil sands sector, manufacturing and wholesale and retail trade sectors, the Edmonton CMA is forecast to continue posting strong economic growth averaging 3.7% annually in the 2013 to 2016 period¹⁸. The strong economy in turn is driving job and employment growth. While the unemployment rate in the Edmonton CMA has already declined to 5.7%, it is expected to decline further to 4.1% by 2016. Among many western economists, 5% is considered to be 'full' employment – a point where labour shortages emerge and costs of labour begin to increase. The Edmonton CMA is very close to a full employment scenario and many businesses are already experiencing challenges in the recruitment of personnel.

¹⁴ Report of the Premier's Council for Economic Strategy. Shaping Alberta's Future. 2011

¹⁵ CIBC World Markets, January 2012

¹⁶ Conference Board of Canada Metropolitan Outlook 1, Spring 2012

¹⁷ Scotiabank Global Economic Research: Global Forecast Update, April 4, 2012

¹⁸ Ibid



The strong economic and employment growth has also contributed to a strong rate of population growth with the Edmonton CMA recording, a population growth rate of 12.1% from 2006 to 2011 – the second highest in Canada and more than double the national average. While previous census periods showed that Edmonton's suburban communities were growing faster than the city; this trend reversed in the 2006 to 2011 period. Within the CMA, the city of Edmonton itself expanded by 12.5% almost 2% higher than the 10.8% provincial population growth rate further supporting the importance of the city in the growth of the province's energy sector.

Migration Providing a Continued Supply of Labour

While the country struggles with an aging population, Alberta's population is the youngest in the country at an average age of 36.8 – almost 3 years younger than the national average. In addition, 40.3% of the city's population is aged between 20 and 44 considered to be the prime working years. While the youthful population will assist Edmonton in meeting its labour force needs, employment growth is predicted to outpace youth entering the workforce. It is anticipated the city will need to attract more migrants and immigrants to meet its future labour force needs.

As economies in other provinces recover and expand and those same provinces require younger workers to fill jobs left vacant by retirees, attracting interprovincial migrants to Alberta will become increasing difficult. This will result in increased reliance on immigration to supply future labour force demand and longer supply chains to meet the demands of business. However, in the past two census periods, Edmonton has attracted record numbers of immigrants. The immigrant population grew by almost 35% between 2001 and 2011 with the net migration of immigrants to Edmonton almost tripling from 2009 to 2010 alone.

However, Edmonton faces increasing competition from other jurisdictions in attracting domestic and international migrants and will need to consider factors such as services and supports offered to immigrant groups, support to spouses in securing employment and cultural amenities for diverse cultural groups. While Edmonton has, recently, been very successful in attracting immigrants, the Conference Board of Canada grades Edmonton 'B' overall in attractiveness to new residents. The favourable score is the result primarily of employment opportunities rather than the other factors mentioned previously. Next Generation Consulting ranks Edmonton 10th in the list of Canadian hotspots for talent suggesting that there are aspects of quality of place Edmonton could improve to attract talented workers. In an increasingly crowded market for skilled workers, Edmonton needs to ensure it provides a strong proposition to these workers and offers a supportive, creative and vibrant city to all newcomers.

Traditional Economic Strengths Leading to More Diverse Opportunities

Edmonton's position as the supply and service centre for the provincial energy industry along with being the provincial seat of government and centre for education and health has contributed to the emergence of a highly diverse regional economy. Indeed, the Conference Board of Canada scores the economy of the Edmonton CMA at 0.91 where 1 is a highly diverse economy. This diversity is also reflected in the Location



Quotients (LQ) calculated for Edmonton's employment base¹⁹. Using the national economy as a benchmark, LQ's generated for the Edmonton CMA illustrates that industrial employment in the Edmonton CMA is very similar to the national average. While still heavily reliant upon the success of the province's energy sector, the diverse range of goods and service activities has contributed to the city being better positioned to weather economic downturns while providing a range of employment opportunities in the Edmonton area.

Edmonton's diversity is further understood in recognizing the strengths of both traditional and emerging industries. Traditionally, the service and supply strengths of Edmonton have centred on engineering and construction, manufacturing and metal fabrication and transportation and logistics. More recently however, Edmonton has been able to capitalize on opportunities in emerging industries related to the energy sector including water and waste water treatment, remediation technologies, waste management, information and communication technologies and financial services.

Productivity Challenges Continue Despite Diversity of Workforce

The diversity of the local economy is also reflected in the range of labour force occupations represented in Edmonton. Sales and service occupations accounted for the largest proportional share of labour force in the city of Edmonton with strong representation in occupations in business, finance, and administration; and trades, transport, and equipment operations. The city of Edmonton also exhibits a higher percentage of workers in the creative occupations, most often identified with the creative economy, than in worker occupations including tradespersons and manufacturing workers. To some degree this dispels the city's reputation as a predominantly 'blue collar town'. The city, in fact, provides employment to considerable number of managers, business and finance professionals, scientists, health professionals, educators and artists.

Edmonton's productivity – or output per worker measured by dividing real GDP by employment was 82.27 in 2011, well above the national average but well behind Calgary and the provincial average²⁰. It should be noted that while Alberta still maintains a very high level of labour productivity relative to other parts of the country, the *growth* in productivity is seen by many experts as being lacklustre in recent years. This is particularly concerning as productivity gains are the only way to sustain a higher standard of living for Albertans. Higher levels of productivity can also be a competitive advantage in attracting new businesses. There are several factors that may affect productivity including the integration of technological improvements to products and services and the skill level of the labour force. In Alberta's case, oil prices have a particularly strong influence on the productivity figures as the sale of oil is the primary determinate of provincial real GDP.

¹⁹ Location Quotients are frequently used to determine the diversity of an economy and the level of concentration in any given industry by comparing the percentage of local employment in an industry with the percentage of employment in that same industry for a broader benchmark.

²⁰ Conference Board of Canada (2011). Metropolitan Outlook, 2011



High Levels of Post-Secondary Education but Lingering Challenges with Secondary School Program Completion

Developing bright people begins with a strong secondary education program. In 2010 Alberta's grade 8 students achieved the highest marks in the country in science, second highest in reading and third highest in mathematics according to the latest national test results of the Pan-Canadian Assessment Program (PCAP). Within the provincial context, Edmonton Public School children in grades 6 and 9 outperform their provincial cohorts in almost every subject. However, school children in Edmonton perform much lower in Grade 12 diploma exams and far fewer students complete high school in Edmonton, than in the Province as a whole, due in part to the fact that . Teenagers can leave school for high-paying, short-term jobs in the 'oil patch', thus reducing the pool of well-educated workers available over the long term²¹. It is widely understood that higher levels of education lead to higher incomes and greater employment stability during a recession. Edmonton will need to improve these results if it is to succeed in matching its resident workforce with future employment opportunities.

Despite the lower high school completion rates 30.6% of the city's residents aged 25-64 hold a university certificate, diploma or degree – 3.6% higher than the provincial average and 2.3% more than the national average²². This is due, in part, to the presence of the University of Alberta, Alberta's largest university with 38,290 students in 2010/11. The University of Alberta attracts significant research funding (3rd in Canada) and international students (15% of the student population).

While Edmonton's post-secondary institutions contribute the high levels of education, so too does population migration. Edmonton experiences high levels of net migration (people moving to the city) and it is likely these migrants are highly skilled and educated contributing the overall skill level of the resident labour force. Regardless, the high levels of education of Edmonton's residents assist in business formation and in the attraction and retention of business that require highly educated knowledge workers.

In servicing and supplying Alberta's energy industry, trades certificates are as important in the labour force as university and college degrees. An important asset in this regard is the presence of the Northern Alberta Institute of Technology. Canada's largest apprenticeship trainer, NAIT trained 12,500 apprentices in 2011. While the city of Edmonton is not home to a large pool of trades workers, the Edmonton CMA as a whole has a high percentage of the resident labour force with apprenticeship or trades certificates and college degrees. As employers often seek to locate in proximity to their workforce, this might lead industries such as manufacturing and metal fabrication, construction and transportation to locate in the neighbouring communities rather than in the City of Edmonton itself.

²¹ Report of the Premier's Council on Economic Strategy: Shaping Alberta's Future, May 2011

²² Manifold Data Mining, Custom Demographic Report, 2012



High Standard of Living Reflected in Income Levels

Alberta has the highest average and median household incomes in Canada. In 2010 the average household income in the Edmonton CMA was estimated to be \$99,810 in 2010 – well above the national average. Per capita income in Edmonton, at \$44,281 in 2011 was \$5,378 above the national average. While the Conference Board of Canada ranks the cost of living in the Edmonton CMA to be slightly higher than the national average (scoring 105 where that national average is 100), they also predict Edmonton's personal income per capita will grow faster than the consumer price index in the near future suggesting that Edmonton will continue to provide a high quality of life for its residents.

Small Business Contributing to City's Innovativeness and Business Growth

Edmonton is home to an entrepreneurial and innovative business community with small and medium sized businesses dominating the landscape in Edmonton. When consideration is given to those businesses with employees, 94.3% of all businesses in the city have fewer than 50 employees. Businesses with fewer than five employees are also particularly well represented, accounting for 54.0% of all employer establishments in 2011 (up slightly from 53.4% in 2007). Not only is the business landscape dominated by small business, the city ranks highly in terms of innovativeness, based on its cultural assets, human infrastructure (including start-ups and finance), and networked market connections. Edmonton was ranked 6th among Canadian municipalities (behind Toronto, Montreal, Vancouver, Calgary, and Quebec City) by 2thinknow in 2011.

Excluding the self-employed, Edmonton's number of business establishments grew at a comparatively moderate 0.2% between 2007 and 2011. However, self-employed businesses experienced a growth of 3.8% from 2007 to 2011. Thus, the majority of new business growth in the city is at the self-employed level. Currently, these businesses comprise 50.9% of all business establishments in the city. Across all business sizes, the number of total business establishments increased by 2.0% from 2007 to 2011. The fastest growing sectors were:

- Health care and social assistance (19.0%);
- Administrative and support, waste management and remediation services (9.3%);
- Real estate and rental and leasing (9.3%);
- Finance and insurance (7.0%); and,
- Transportation and warehousing (5.0%).

The number of businesses in the construction; professional, scientific, and technical services; and other services sectors also grew during the time period. The number of businesses in the manufacturing sector however, declined by 8.7% from 2007 to 2011. This is in contrast to both employment and labour force growth in the city over roughly the same time period. This may be attributed, in part to the comparatively limited



choice of employment lands for a range of industrial operations and the proportionately higher costs associated with a location in the City of Edmonton.

Traditional Strengths in Oil and Gas Contributing to Diversification Efforts

With its historic connections to the provinces' oil and gas sector, Edmonton demonstrates considerable strength in a range of traditional industry sectors like manufacturing, construction, and transportation. In many ways, oil and gas has been the primary driver of most business investment in Edmonton over the last several decades, and it is expected to continue driving investment in the city and region in the coming years. The impact of this core investment however, has also contributed to the emergence of opportunities that offers Edmonton new ways of deriving value-added activity and investment from the oil and gas sector. The City is emerging as a global supply and services hub as it relates to the primary industrial activity in the province's oil and gas sector but this has expanded in recent years to include professional expertise in environmental remediation and consulting, water treatment, renewable energy, cold weather construction and waste management. Similar opportunities exist to leverage the impact and reach of investment in the oil and gas sector to support the growth of ICT and finance services sectors. Strategies are required to encourage this growth and foster opportunity in new areas of industry value chains that build on or leverage the strengths in oil and gas. Underlying this potential though, is the requirement for competitive office and industrial spaces, which form a critical foundation to the potential to support new activity in emerging areas.



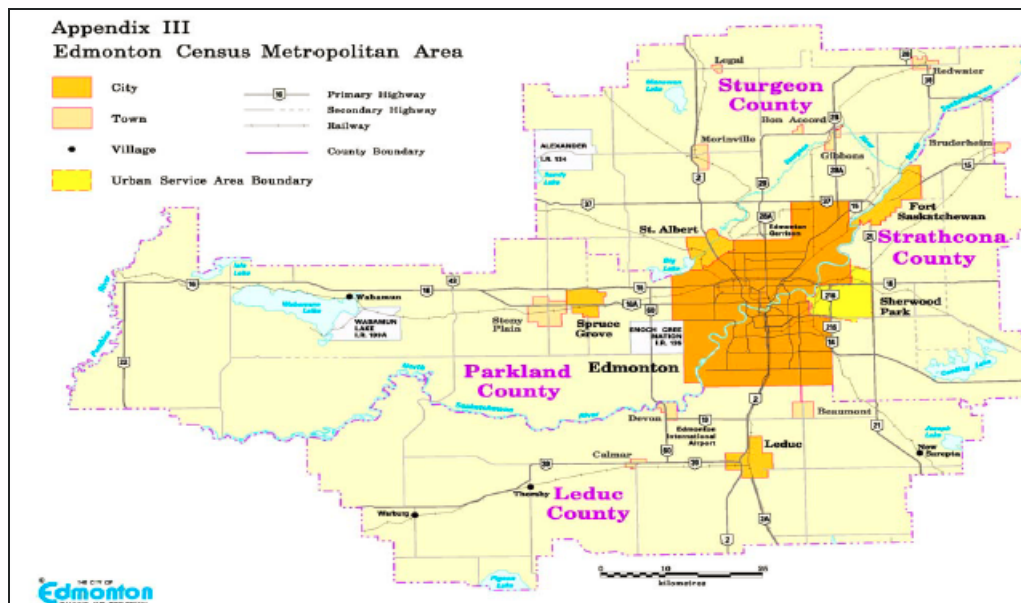
2 Demographic and Labour Force Characteristics

2.1 Note on the Data

It should be noted that this report uses a wide variety of data to support a demographic and economic base analysis of Edmonton. Every effort has been made to ensure consistent geographies, time series, and that the most recent data has been used. However, due to the nature of metropolitan and regional level data, some data is only available on Census years (i.e., 2006 and preliminary population releases for 2011), some data is not available every year and some data is not available for consistent geographies.

Data for both the City of Edmonton and the Edmonton Census Metropolitan Area (CMA) have been used in the base analysis and industry sector analysis sections of this report. Where possible, the City of Edmonton has been extracted from the data for the Edmonton CMA to illustrate differences within the regional area. The boundaries of the City of Edmonton and the Edmonton CMA are illustrated in the figure below.

FIGURE 1: CITY OF EDMONTON AND EDMONTON CMA BOUNDARIES



Source: City of Edmonton, Socio-Economic Outlook, 2007



2.2 Demographic Characteristics

2.2.1 Population Change

Alberta has been at the forefront of population growth in the country in recent years. Since 1972, the province's average annual growth of 2.1%, was double that of the Canadian average, but it has also been more volatile, fluctuating from 4.6% to 0.0% in the 1980s. Alberta's success however, has been Edmonton's success. Based on strong growth over the last ten years, the City of Edmonton is now Canada's fifth largest municipality, behind the cities of Toronto, Montreal, Calgary, and Ottawa respectively (Vancouver city is 603,000, eighth in Canada). The Edmonton CMA (6th) has also seen steady growth, with annual growth rates of 8-10% from 2001 to 2011 effectively positioning it as Canada's sixth largest metropolitan region.

FIGURE 2: POPULATION OF EDMONTON AND FOUR COMPARISON CMA'S, 2011

Population	2006	2011	2006-2011 (%)	2006-2011 Change (Absolute)
Calgary	1,079,310	1,214,839	12.6%	135,529
Edmonton	1,034,945	1,159,869	12.1%	124,924
Hamilton	692,911	721,053	4.1%	28,142
Ottawa - Gatineau	1,133,633	1,236,324	9.1%	102,691
Winnipeg	694,668	730,018	5.1%	35,350

Source: Statistics Canada. 2012. Population and dwelling counts, for census metropolitan areas and census agglomerations, 2011 and 2006 censuses (table).

Given the integrated nature of a regional economy, the population of the Edmonton CMA has been used to select comparison CMA's that will be referred to throughout this report. Edmonton falls into a middle group of CMA's with populations between 700,000 and 1,300,000. There are 6 metropolitan areas in this group: Ottawa, Calgary, Edmonton, Winnipeg, Hamilton and Quebec (City). The focus of comparison here is on English speaking CMA's of a similar size; therefore, Quebec is not included in the comparisons in this report.

With respect to population growth, between 2006 and 2011 Edmonton placed among this select group expanding by 12.1% behind only Calgary. Both Calgary and Edmonton exhibited population growth far exceeding the other comparator regions and tripling the population growth of Hamilton which placed fifth in the group of 5 regions.



FIGURE 3: POPULATION 2001-2011 BY, CITY OF EDMONTON, EDMONTON CMA, AND ALBERTA

Population	2001	2006	2011	2001-2011 Change	2001-2011 Change (Absolute)	2006-2011 Change	2006-2011 Change (Absolute)
City of Edmonton	666,104	722,260	812,201	21.9%	146,097	12.5%	89,941
CMA (excluding Edmonton)	271,741	312,685	347,668	27.9%	75,927	11.2%	34,983
Alberta	2,974,807	3,290,350	3,645,257	22.5%	670,450	10.8%	354,907

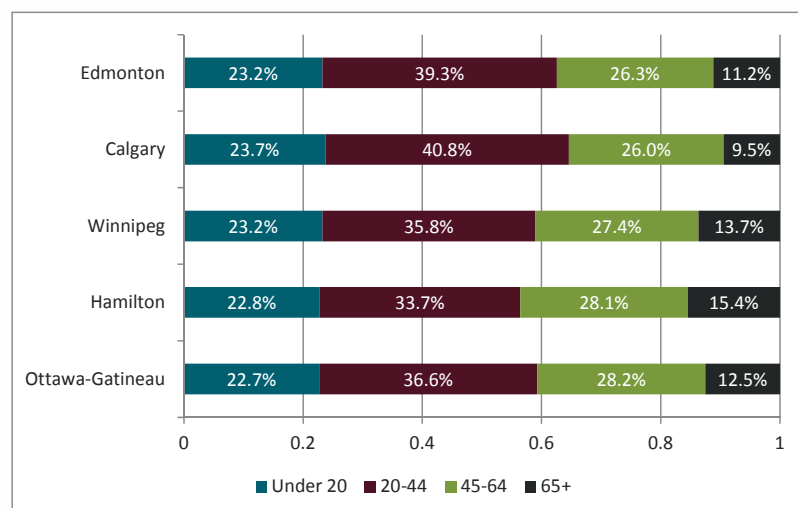
Source: Statistics Canada, Census of Population, 2001, 2006, and 2011

The city of Edmonton alone added 146,097 new residents between 2001 and 2011, for an increase of 21.9% from its population in 2001. While this rate of growth is significant, the ring communities in the Edmonton CMA and the province outpaced the growth of the city over the same time period, with 27.9% and 22.5% growth respectively. Upon closer inspection, while the ring communities in the Edmonton CMA experienced a faster rate of growth overall, the preference for the suburbs was strong in the 2001 – 2006 period. From 2006 – 2011 the city of Edmonton overtook its neighbours in population growth.

2.2.2 Population by Age and Gender

While most Canadian cities struggle with an increasing aging population, Alberta has the youngest population of all provinces – with an average age of 36.8 years compared to the Canadian average of 39.5 years in 2006. The difference is largely due to the in-flow of young workers into Alberta in the past few decades. In the figure below it can be seen that Edmonton and Calgary have the highest percentage of the population under the age of 44 when compared to other select regions of Canada. These 2 CMA's account for the largest proportional of working age population (20-44) and the smallest proportional population moving into retirement in the next 20 years (those aged 45-64).

FIGURE 4: PERCENTAGE OF POPULATION BY AGE COHORT, 2011, EDMONTON VS. PEER REGIONS

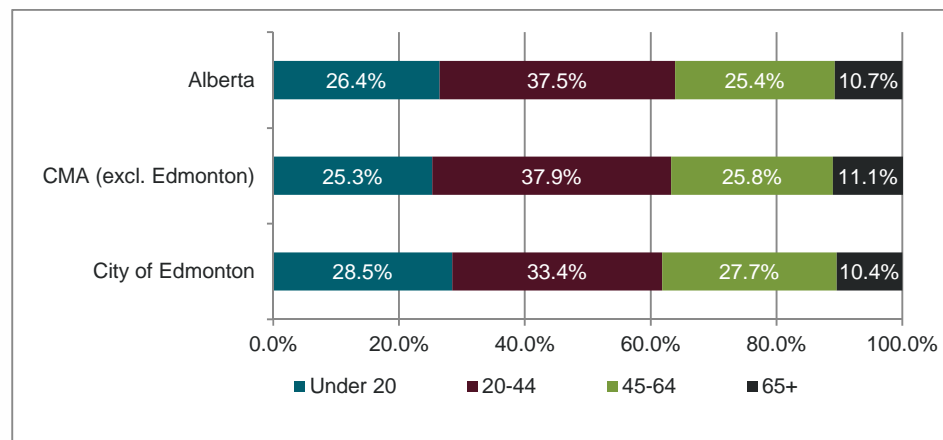


Source: Statistics Canada. Table 051-0046 - Estimates of population by CMA, sex and age group



In the following figure, it can be seen the city of Edmonton is slightly older than neighbouring communities and the province with 61.9% of the population under the age of 45 compared to 63.2% in the ring communities and 63.9% in the province as a whole. However, Edmonton had the highest proportion of the population under the age of 20 suggesting its attractiveness to families and the opportunity to meet aspects of the city's future labour force needs.

FIGURE 5: POPULATION BY AGE, CITY OF EDMONTON, EDMONTON CMA, AND ALBERTA, 2006



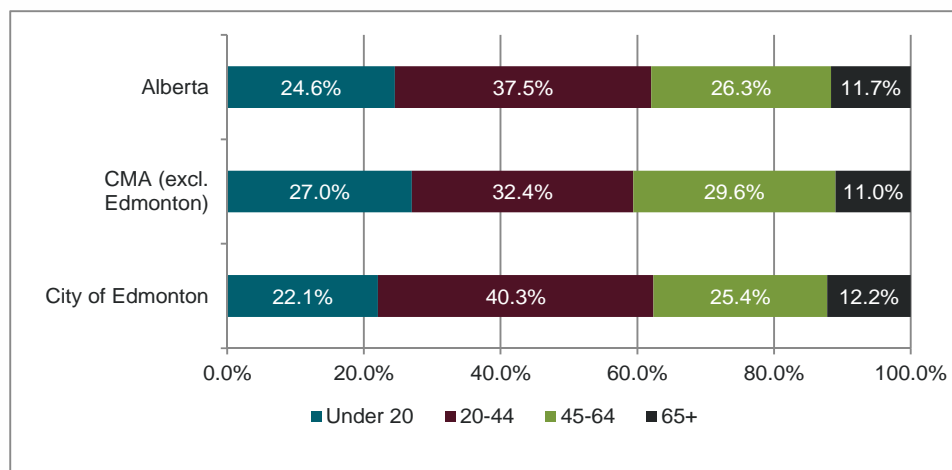
Source: Statistics Canada Census of Population, 2006

In the following figure, Edmonton's population can be seen as having the largest share of workers in prime working age (20-44). While the older segments of the population (45-64, 65+) are increasing steadily across the rural/suburban areas of the CMA, the City of Edmonton retained a high proportion of population under 45 years old in 2011.

It is expected that the growth of older population segments will outpace that of all other age groups in the province by 2031. However, the City's relatively youthful population represents a competitive edge over the rest of the province, particularly in the communities of the CMA that surround the City. As noted previously, the increased proportion of population in the 20-44 year old age range is a result of working-aged individuals migrating to the province based on opportunities in Alberta's workforce. External and internal migration, the driver of this growth, will be examined later in this section.



FIGURE 6: POPULATION BY AGE, EDMONTON, EDMONTON CMA, ALBERTA, 2011



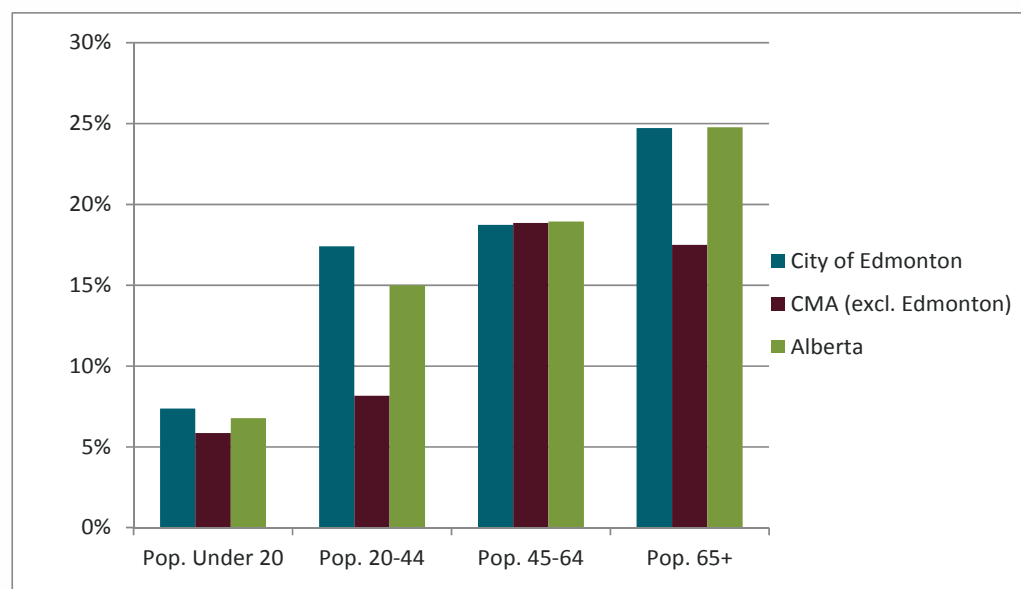
Source: Manifold Data Mining, Custom Demographic Report, 2012

While the City of Edmonton remains relatively young, it is still aging. Thus, in the longer term, it will face the same demographic pressures that are being experienced in other cities and regions across the country. Strong growth in younger age ranges in Edmonton may delay these effects. Figure 7 illustrates the rate of growth experienced by each broader age group in the City of Edmonton, the Edmonton CMA (excluding Edmonton) and the province between 2001 and 2011. The City is experiencing a slightly faster rate of growth in most of the four age groups, but the difference is particularly notable in the 20-44 and 65+ age groups, where the growth across the City is well above that of the ring communities, and slightly above the province. The exception is in population aged 45-64, where the growth of the city's population is largely similar to that of the Province and CMA, excluding Edmonton.

The strong growth in the younger elements of the workforce is a definite advantage for the city. However, double digit rates of growth in the working aged and older population segments will require the consideration of the planning and development needs of an older population in both short (to serve current residents over 65) and longer-term priorities (to serve the working age population as it ages in Edmonton). Issues such as accessibility, local health care systems, youth and immigrant attraction and retention strategies, and the effective delivery of social services will all be important discussions for the city over the longer-term.



FIGURE 7: POPULATION GROWTH BY AGE GROUP, 2001 TO 2011



Source: Statistics Canada Census of Population, 2001 and Manifold Data Mining, Custom Demographic Report, 2012

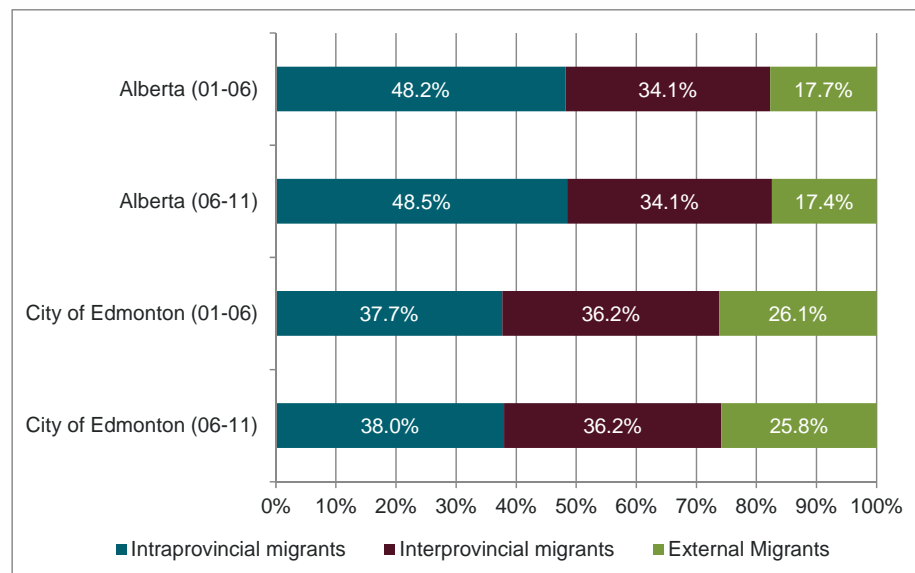
2.2.3 Migration and Immigration

Though the province and the city have enjoyed strong rates of natural growth, intraprovincial, interprovincial and external migration has contributed greatly to the growth of Edmonton and Alberta's population in recent years. The City of Edmonton attracted 257,339 in-migrants between 2001 and 2011, with the majority of these new residents settling in the city of Edmonton as opposed to neighbouring municipalities. The level of in-migration to the city during the last five years has increased by 24.2% from 2001-2006 levels. These migration patterns have also contributed to a faster rate of the population growth than the ring communities in the 2006 – 2011 period.

Figure 8 outlines the components of inward migration to the city of Edmonton and Alberta from 2001 to 2011. Intraprovincial migration, or migration to the City from another area within Alberta, makes up the majority of migrant population in each of the five year periods. Interprovincial migrants, or residents moving from an area outside of Alberta but within Canada, account for stable shares of total in-migration to the city and Province over the last decade. The city also draws a large share of its in-migration from external (or international) migrants. The city holds a significant advantage over the rest of the province, with 25.8% of total in-migration to the city between 2006 and 2011 accounted for by external migrants, versus just 17.4% at the provincial level. This is likely due to a number of factors including range of employment opportunities, existing populations of the international community, service provision to new Canadians and perceived quality of life.



FIGURE 8: COMPONENTS OF IN-MIGRATION, CITY OF EDMONTON AND ALBERTA, 2001-2006, 2006-2011

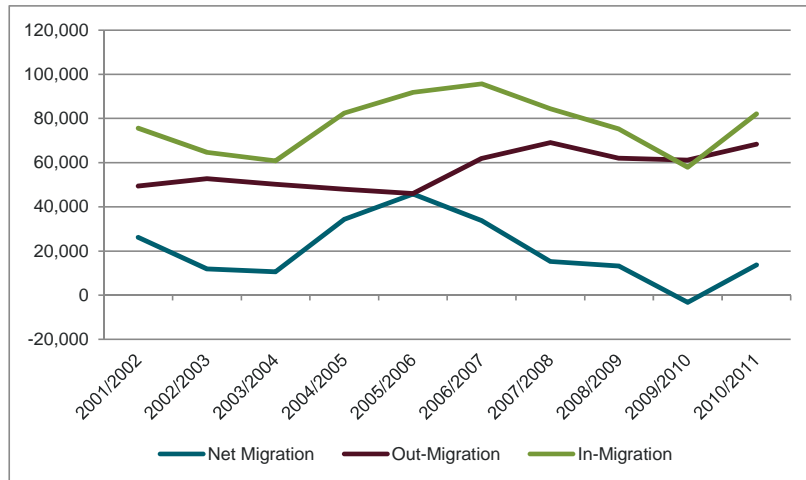


Source: Statistics Canada Census of Population, 2001 and 2006, Manifold Data Mining, Custom Demographic Report, 2012

The health and prospects of other provincial economies in comparison to the Albertan economic climate will have a strong effect on the rate of interprovincial migration in the future, as it has over the last decade (Figure 9). Between the rapid growth of the economy in 2004 and 2005 tied to the increase in oil prices, to the years prior to the recession, net interprovincial migration grew rapidly in Alberta. By 2005/2006, out-migration from the province started to outpace in-migration despite continued growth of in-migration up to the middle of 2007. Coinciding with the global economic recession and the subsequent decrease in oil and gas activity, net interprovincial migration continued to decrease to the middle of 2010, even experiencing a net loss of interprovincial migrants between 2009 and 2010. At that point, again coinciding with the expansion of oil and gas activity in the province, net interprovincial migration has started to rebound rapidly. What this illustrates however, is the vulnerability of the provincial economy and by extension the Edmonton economy to slow downs in energy production.



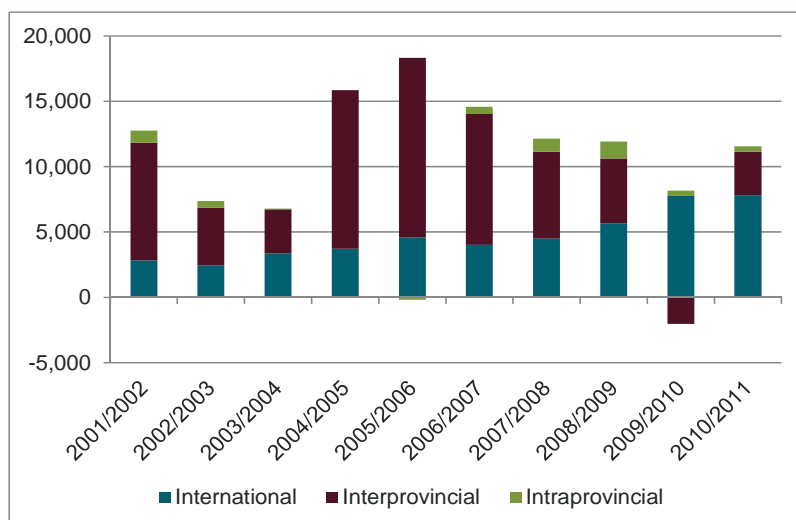
FIGURE 9: INTERPROVINCIAL MIGRATION TO/FROM ALBERTA, 2001-2011



Source: Statistics Canada, CANSIM Table 051-0019, 2012

The combined effect of an aging workforce across Canada and increasingly strong economies in other provinces like Newfoundland, Nova Scotia, and Saskatchewan, which have been centres of positive net interprovincial migration for Alberta over the last decade, make it critical that Alberta and Edmonton focus on the attraction and retention of skilled and unskilled workers from both Canada and overseas (including the US). As the environment becomes more competitive and interprovincial migration slows, careful consideration must be given to workforce attraction and integration strategies, to ensure the City remains competitive in an increasingly crowded national and global market for labour.

FIGURE 10: COMPONENTS OF NET MIGRATION, EDMONTON 2011

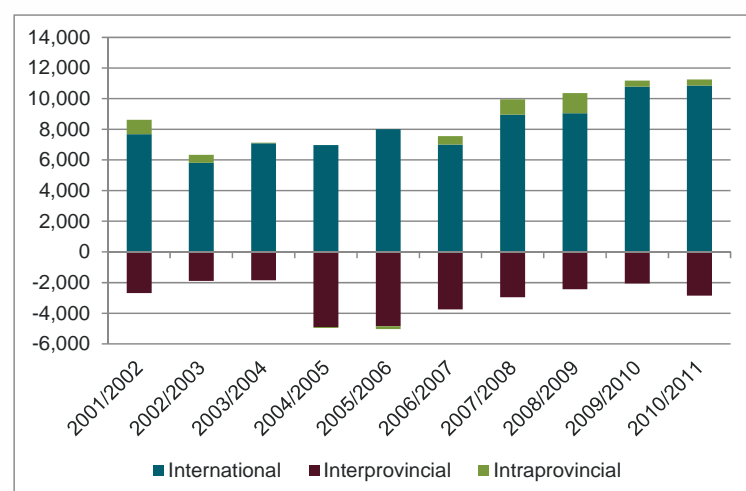


Source: Statistics Canada. Table 051-0047 - Components of population growth by census metropolitan area, sex and age group



As seen in the previous figure, international migration has become an increasingly important component of net migration in Edmonton reinforcing the need to focus on attraction and retention of international migrants. Provinces and cities have taken different approaches to this. The following figure shows that Winnipeg, a smaller CMA with lower rates of overall population growth has been able to attract greater numbers of international migrants than Edmonton. The city has benefitted from Manitoba's Provincial Nominee Program (MPNP), which has been in place since 1998 and is widely regarded as one of the more successful in Canada based on its stream of programs and success in attracting and retaining immigrants. From 2005 to 2009, 40.7% of immigrants to Canada through PNPs came through the MPNP (as opposed to 16.5% in BC, 13.7% in Alberta, and 12.8% in Saskatchewan²³. Though Alberta has had its Immigrant Nomination Program (AINP) in place since 2002, it remains secondary to the federal government's Foreign Skilled Worker (FSW) program in terms of the attraction of new Immigrants to the province. Where Manitoba attracted 13,089 applicants through the PNP from 2005-2009 (or 91.1% of total immigrants), the AINP attracted 4,698 (22.0%) of total immigrants²⁴. Manitoba's more integrated approach to the program has resulted in high success rates in both attraction and retention of skilled immigrants.

FIGURE 11: COMPONENTS OF NET MIGRATION, WINNIPEG, 2011



Source: Statistics Canada. Table 051-0047 - Components of population growth by census metropolitan area, sex and age group

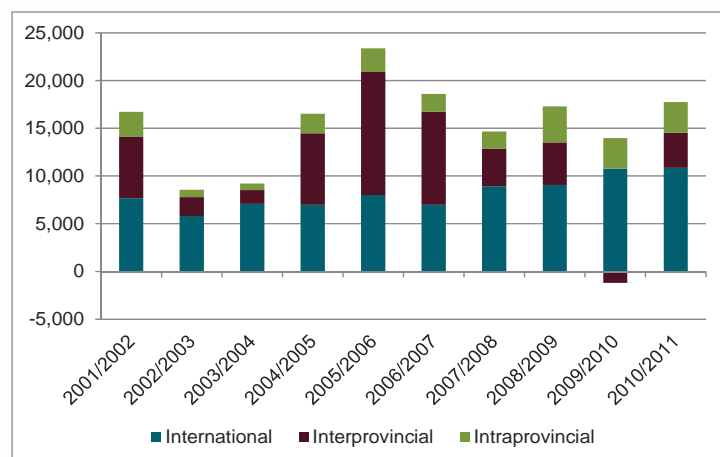
Faced with large net outmigration of interprovincial migrants, Winnipeg has steadily increased the number of international migrants arriving in the city since 2006. In comparison to Calgary, the Edmonton CMA attracted lower levels of net migrants each year since 2001 (with the exception of 2009). This is likely a result of more aggressive workforce attraction efforts in the city of Calgary.

²³ Citizenship and Immigration Canada. (2011, September). Evaluation of the Provincial Nominee Program.

²⁴ Ibid.



FIGURE 12: COMPONENTS OF NET MIGRATION, CALGARY 2011



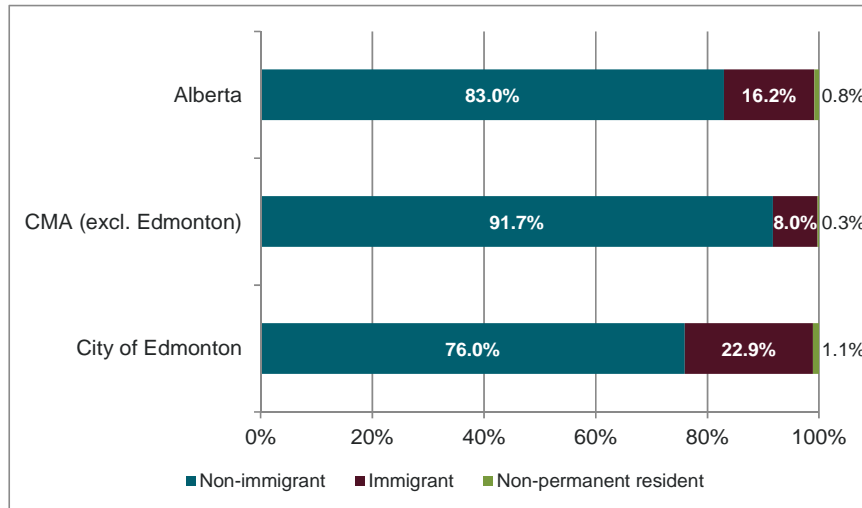
Source: Statistics Canada. Table 051-0047 - Components of population growth by census metropolitan area, sex and age group

Though Edmonton is steadily improving its prospects and performance related to immigrant attraction, the comparative lack of interprovincial migration strategies places some emphasis on the need to lobby both provincial and federal levels of government to more fully accept and accommodate skilled immigrants looking to call the city home. Though progress has been made over recent years, with the introduction of provincial nominee programs to augment programs at the federal level, there is still work to be done for the province to more effectively be able to attract the necessary skilled workforce.

With and aging demographic and declining birth rates, immigrants have become a driving force of population and labour force growth in Canada in the past few decades. Statistics Canada expects that the figures from the next national census could show that for the first time, all net labour force growth for the country was attributable to immigration in 2011, which underlies the importance of workforce attraction for Canadian cities. In 2006, 19.8% of Canada's population was foreign-born; in Alberta and the City of Edmonton those figures were 16.2% and 22.9% respectively (see Figure 13). Immigrants in the communities outside of the City of Edmonton accounted for a comparatively small proportion of the total population, at just 8.0% in 2006. The City was well above the national and provincial averages, but the province as a whole remains well below other provinces that have historically attracted higher proportions of foreign-born population, such as Ontario (28.3%) and British Columbia (27.5%).



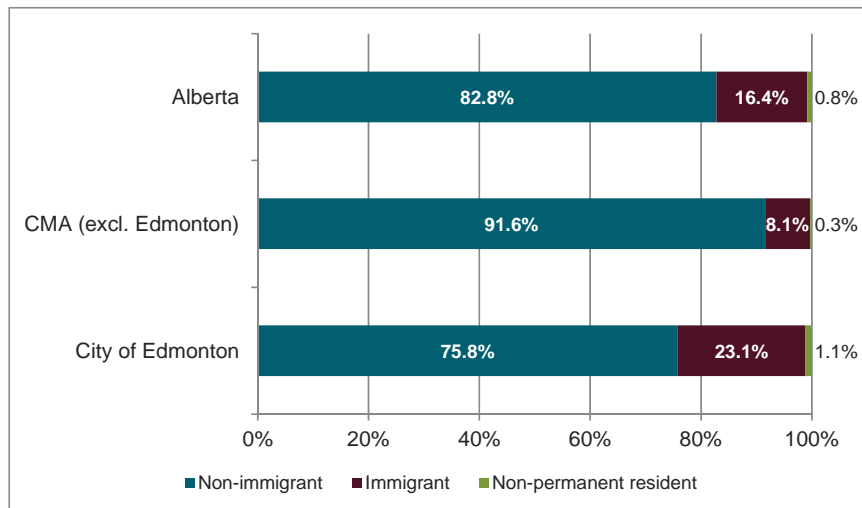
FIGURE 13: IMMIGRANT STATUS, TOTAL POPULATION, 2006



Source: Statistics Canada Census of Population, 2006

In 2011, the estimated proportions of population accounted for by immigrants was largely similar to the figures for 2006, with the City of Edmonton (23.1%) leading both the ring communities of the Edmonton CMA (8.1%) and the province (16.4%). In each jurisdiction, the proportional amount of immigrants increased in 2011, though the largest increase was in the city of Edmonton.

FIGURE 14: IMMIGRANT STATUS, TOTAL POPULATION, 2011



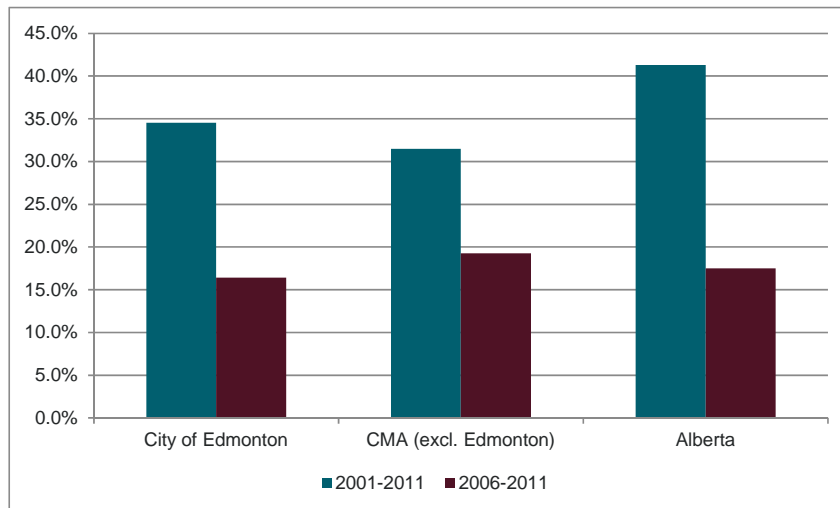
Source: Manifold Data Mining, Custom Demographic Report, 2012

Generally, the city of Edmonton, and the province of Alberta have seen increased immigrant interest in their communities, with the province and the city experiencing record highs in the past decade. Edmonton nearly tripled its net migration of



international immigrants from 2009-2010 alone²⁵. This strong growth trend has been especially present in the ring of communities surrounding Edmonton, which have led the city and the province in the growth of immigrant population over the last five years.

FIGURE 15: GROWTH OF IMMIGRANT POPULATION, 2001-2011



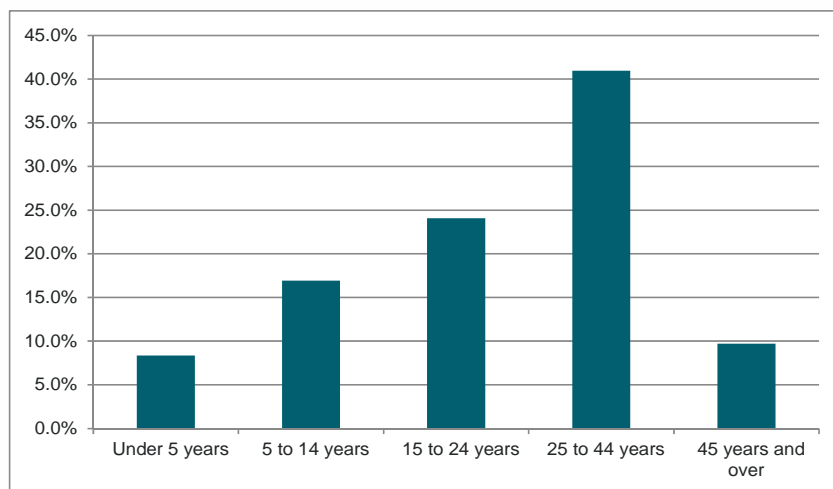
Source: Statistics Canada Census of Canadian Population 2001 and 2006, Manifold Data Mining, Custom Demographic Report, 2012

As seen in Figure 16, just over 40% of the estimated immigrant population in the city in 2011 arrived during what is considered their prime working age of 25 to 44 years of age, and a further 24% when aged 15-24 years. In order to continue competing nationally and internationally in the attraction of talented workforce, the City of Edmonton will need to ensure that immigrants can access programs and employment that take advantage of their skills and education, that they and their spouses or partners can move easily into the workforce, and that the city offers a variety of lifestyle opportunities and fosters an inclusive community.

²⁵ Government of Alberta, Ministry of Finance and Enterprise. *Demographic Spotlight: Recent Migration Trends in Census Divisions: Fort McMurray, Calgary and Edmonton*, 2010. http://www.finance.alberta.ca/aboutalberta/demographic_spotlights/2011-0311-migration-trends-fort-mcmurray-calgary-edmonton.pdf



FIGURE 16: IMMIGRANT STATUS BY AGE AT IMMIGRATION, CITY OF EDMONTON, 2011



Source: Manifold Data Mining, Custom Demographic Report, 2012

2.2.4 Ethnic Diversity

The ethnic diversity of a community presents further considerations for the city in terms of the community services it offers, the specific focus of potential language and skills training initiatives, as well as its international investment attraction efforts.

In examining the ethnic origins of Edmonton's total population, and immigrant population, it is clear that Edmonton's population is becoming increasingly diverse. Like most of Canada, the city's population is generally of European or North American ethnic origin, as defined through the census of population. In 2006, 32.0% of the City's population identified European origins, while 31.8% across Canada identified the same origins. However, when looking at the immigrant population of the City and across Canada, Asian nations continue to account for higher shares of the incoming immigrants in the city.

Recent immigrant levels examine the immigrants that arrived in the city in the five years prior to the 2006 census year. For the 2006 census year, or those that arrived in the city of Edmonton from 2001 to 2006, India, the Philippines, China, and West Central Asia/Middle East²⁶ accounted for the highest shares of incoming immigrants. Over the five year period, 64.4% of the immigrants to arrive in the city between 2001 and 2006 were from Asian Countries of origin, while African and European countries accounted for 13.8% and 12.0% respectively. Within Europe, eastern European nations²⁷ accounted for the largest share of incoming immigrant population.

²⁶ Includes Afghanistan, Armenia, Azerbaijan, Bahrain, Cyprus, Georgia, Iran, Iraq, Israel, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Tajikistan, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan, West Bank and Gaza Strip (Palestine), and Yemen.

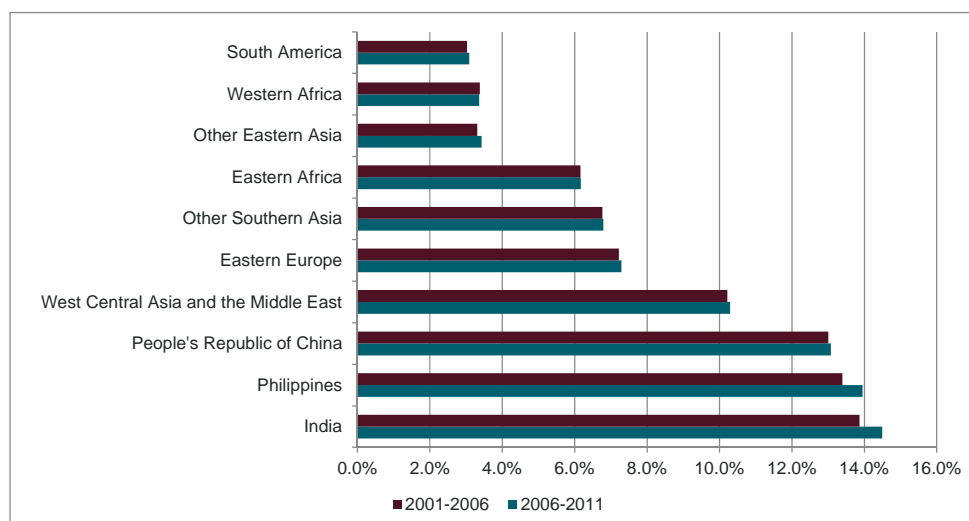
²⁷ Includes Belarus, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russian Federation, Slovakia, and Ukraine.



In the five years following that (2006-2011), India, the Philippines, China, and West Central Asia/Middle East increased their share of the incoming immigrant population, with Indian Immigrants accounting for one of the fastest growth rates among the incoming immigrant population. By region, Asian countries increased their share of recent immigrants to 65.5% and African nations stayed stable at a 13.8% share of recent immigrants, while the share of immigrants from for European nations (11.8%) and North American nations (4.5%) fell from 2001-2006 levels.

Looking at the increasingly diverse population of the city offers insight into the programming that should be planned to welcome these new residents, especially in a workforce development and business support context given that a majority of them are likely between 25-44 years of age. Examining the composition of incoming immigrants allows the city and its workforce and economic development partners (i.e. Edmonton Region Immigrant Employment Council - ERIEC) to align their programming to match the languages and cultural values of the incoming population. The recent immigrant population also offers insights into areas where the city is experiencing increased “people” connections to other areas of the globe, which can offer insight into the countries in which the city has the best chances to attract new workforce, and develop stronger business ties.

FIGURE 17: RECENT IMMIGRANT POPULATION BY COUNTRY/REGION OF ORIGIN, CITY OF EDMONTON, 2001-2006 AND 2006-2011



Source: Statistics Canada, Census of Population, 2001 and 2006, Manifold Data Mining, Custom Demographic Report, 2012

Visible minority status of the population offers an indication of the diversity of a city as well, which has implications again of workforce development and equity in employment opportunities, but also the visible diversity of the city, which plays a role in its



perceptions as a welcoming city. The largest visible minority²⁸ groups in the city of Edmonton in 2011 were Chinese, South Asian, Filipino, and Black; similar to the composition of the population at the provincial level. The city of Edmonton showed significant growth in its visible minority population between 2006 and 2011 (17.6%); slightly ahead of the CMA excluding the city (17.4%) and slightly behind the Province (18.0%). In terms of growth, the City's fastest growing visible minority population groups in the city were West Asian, Korean, Filipino, South Asian, and Black. Areas outside of the city showed stronger rates of growth for most of these groups, though that growth should be considered within the context of the share of visible minority population in the CMA outside of the city, which sat at just 5.6% in 2011.

Looking back to the recent immigrant data, this aligns with the strong growth of immigrants from India, the Philippines, West Central Asia, and African nations (particularly Western African nations²⁹) in the city over the last five years. However, given that visible minority status is not limited to the immigrant population, the growing visible minority population is likely coming from elsewhere in Canada (i.e. inter- or intra-provincial migration), particularly in areas not well-represented by the countries of origin for growing groups of immigrants (i.e. Korean or Black visible minorities).

FIGURE 18: POPULATION BY VISIBLE MINORITY STATUS, 2006-2011

	City of Edmonton			CMA (excl. Edmonton)			Alberta		
	2006	2011	% change	2006	2011	% change	2006	2011	% change
Total visible minority population	165,465	194,659	17.6%	9,830	11,541	17.4%	454,200	535,832	18.0%
Chinese	45,310	53,343	17.7%	1,885	2,225	18.0%	120,275	141,217	17.4%
South Asian	38,225	45,624	19.4%	1,980	2,356	19.0%	103,885	124,994	20.3%
Black	19,020	21,744	14.3%	1,360	1,632	20.0%	47,075	54,434	15.6%
Filipino	18,245	21,813	19.6%	1,385	1,602	15.6%	51,095	61,070	19.5%
Latin American	8,650	9,916	14.6%	560	585	4.5%	27,265	31,937	17.1%
Southeast Asian	10,635	12,508	17.6%	390	451	15.7%	28,605	33,629	17.6%
Arab	11,205	12,960	15.7%	735	743	1.2%	26,180	30,102	15.0%
West Asian	2,690	3,231	20.1%	235	314	33.8%	9,650	11,400	18.1%
Korean	3,445	4,133	20.0%	320	352	10.1%	12,045	14,476	20.2%
Japanese	1,845	2,016	9.3%	420	556	32.5%	11,025	12,655	14.8%
Visible minority, n.i.e.	1,255	1,493	19.0%	220	260	18.3%	3,850	4,340	12.7%
Multiple visible minorities	4,940	5,879	19.0%	335	463	38.1%	13,250	15,579	17.6%

Source: Statistics Canada, Census of Population, 2006, and Manifold Data Mining, Custom Demographic Report, 2012

The value of diversity in a community cannot be underestimated. Popular commentary in works like *The Rise of the Creative Class*, backed by strong academic research, has confirmed that a diverse community generates social and economic prosperity, and can be a key driver of the attraction of skilled residents and immigrants that perceive the community as welcoming. Diversity in the resident population reflects that a community is open to and supportive of newcomers and new businesses ideas, such that a diverse community is highly correlated with its ability to attract talent and high value employment. Furthermore, having citizens from a wide range of ethnic or cultural backgrounds also generates access to new economic opportunities that may otherwise

²⁸ The use of this measure, broadly defined by Statistics Canada as persons that are "non-caucasian in race or non-white in colour, other than Aboriginal", is helpful in understanding the diversity of a community, despite its limitations in achieving an understanding of cultural values, length of residence in Canada, or specific national origins.

²⁹ Includes Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Saint Helena, Senegal, Sierra Leone, and Togo.



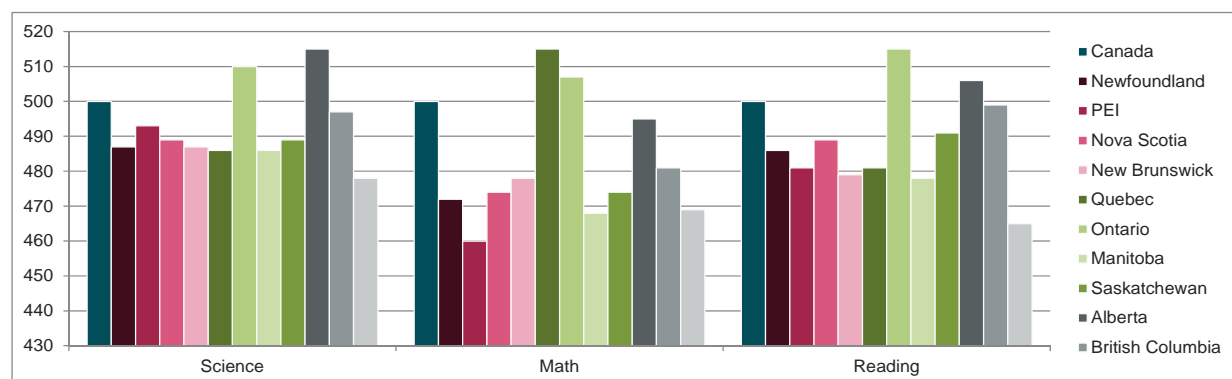
be hidden. Opportunities can include the leveraging of business networks abroad, and connections to export markets and international client bases.

2.2.5 Educational Attainment and Field of Study

Of the major economic shifts occurring in the Canadian economy over the past several years, the transition to knowledge-intensive industries is one of the most relevant. The economy in Edmonton is no exception, as illustrated in the industry sector analysis of the report. As a result of this shift, the levels of educational attainment in a community can provide an understanding of how well positioned the city is to support the growth of innovative, knowledge-based industries.

Developing bright people begins with a strong secondary education program. In 2010 Alberta's grade 8 students achieved the highest marks in the country in science, second highest in reading and third highest in mathematics according to the latest national test results of the Pan-Canadian Assessment Program (PCAP). Approximately 4,000 Alberta students from nearly 170 schools participated in the PCAP test, conducted by the Council of Ministers of Education, Canada (CMEC) in 2010. The test assesses the national achievement of grade 8 students in reading, mathematics and science, with a major focus on one subject per test year. Mathematics was the focus for 2010. PCAP scores are expressed on a scale with a national average of 500 points and a standard deviation of 100 points. Alberta students scored the highest in the country in science with an average score of 515 and third in math with an average score of 495, behind only Quebec and Ontario. Ontario outperformed Alberta students in reading, although Alberta did notice a slight improvement in its result, compared to 2007.

FIGURE 19: GRADE 8 PAN CANADIAN ASSESSMENT PROGRAM 2010



Source: Pan-Canadian Assessment Program Test (2010). Results for Alberta

Edmonton Public School board also performs well in provincial exams administered to children in grades 3, 6 and 9. Most notably, in grades 6 and 9 Edmonton Public School Children outperform their provincial cohorts in almost every subject.

FIGURE 20: EDMONTON PUBLIC SCHOOL TEST RESULTS 2011



		Meeting Standards		
Test	Standard	2010	2011	Difference
Grade 3				
Language Arts	Accpetable	79.7	81.7	2
	Excellence	19.3	15.8	-3.5
Mathematics	Accpetable	-	78.9	-
	Excellence	-	27.1	-
French LA	Accpetable	80.5	80.2	-.03
	Excellence	15.5	17.3	1.80
Grade 6				
Language Arts	Accpetable	83.1	83.8	0.7
	Excellence	19.3	20.6	1.3
Mathematics	Accpetable	-	75.4	-
	Excellence	-	22.0	-
Science	Accpetable	79.1	80.0	0.9
	Excellence	31.5	31.9	0.4
Social Studies	Accpetable	73.9	74.2	0.3
	Excellence	19.9	23.4	3.5
French LA	Accpetable	87.8	92.0	4.2
	Excellence	19.9	20.1	0.2
Grade 9				
Language Arts	Accpetable	79.7	80.1	0.4
	Excellence	18.0	18.6	0.6
Mathematics	Accpetable	-	68.7	-
	Excellence	-	23.1	-
Science	Accpetable	76.4	78.9	2.5
	Excellence	24.7	29.1	4.4
Social Studies	Accpetable	73.5	71.9	-1.6
	Excellence	24.7	25.6	0.9
French LA	Accpetable	92.5	94.9	2.4
	Excellence	9.7	13.5	3.8

Edmonton Public Schools District Achievement Test Results extracted from http://www.epsb.ca/datafiles/DistrictAchievementResultsChart_10_11.pdf and adapted by Millier Dickinson Blais

However, school children in Edmonton perform much lower in Grade 12 diploma exams and far fewer students complete high school in Edmonton, than in the Province as a whole. According to data provided by Edmonton Public School District³⁰ High School Completion rates for the district improved from 72% in 2005/06 academic year

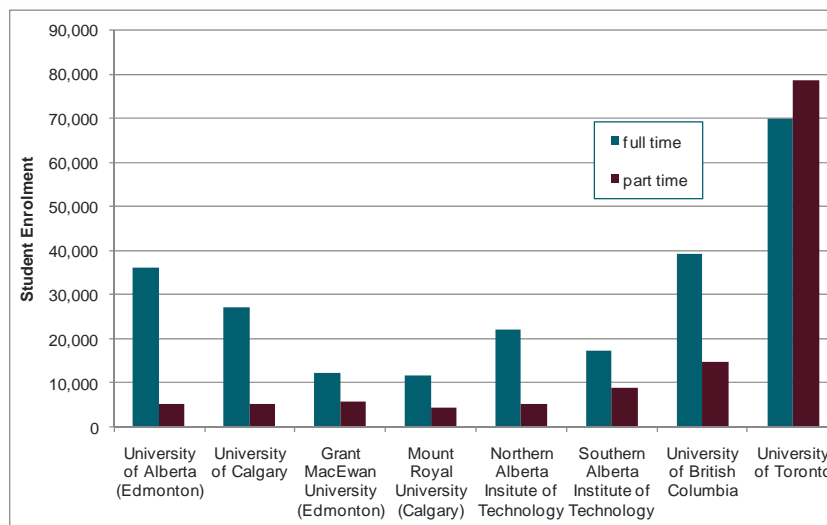
³⁰ Extracted from http://www.epsb.ca/datafiles/DistrictAchievementResultsChart_10_11.pdf



to 74.9% in the 2009/10 academic year. However, this remains well below the provincial average of 79%. In addition, students in the district scored well below their provincial cohorts in Grade 12 diploma exams in English, French, Social Studies and Math. On a more positive note, Edmonton students outscored the provincial average in Science, Biology, Physics and Chemistry. High School completion and performance is a distinct weakness for Edmonton if it is to leverage its own population to develop an educated and skilled workforce for the future.

Access to and enrollment in post-secondary education is another indicator of capacity to support and sustain an innovative economy. Innovation emerges from the ideas, knowledge and research emerging from a region's post-secondary institutions. Edmonton is home to several academic institutions including the University of Alberta, MacEwan University and the Northern Alberta Institute of Technology comprising the largest institutions in the province with respect to student enrollment. Established in 1908 the University of Alberta is the largest university in the province and one of the largest universities in Canada with over 34,000 Full Load Equivalent students. Over 6,700 or 19.5% of students are involved in graduate level studies³¹.

FIGURE 21: POST-SECONDARY STUDENT ENROLMENT BY SELECTED INSTITUTION, 2010



Source: Alberta (2011). Alberta Facts and Figures; UBC (2011). The UBC Plan, Annual Report; University of Toronto (2011). Enrolment Report 2010-2011.

The University of Alberta also attracts approximately 4,100 foreign students each year through visa student enrollment. These students represent some of the brightest in the world and Edmonton has the opportunity to attract each of them as full time residents of the city.

The university acknowledges that completion rates are lower than other large institutions across Canada, however, different institutions have different definitions of

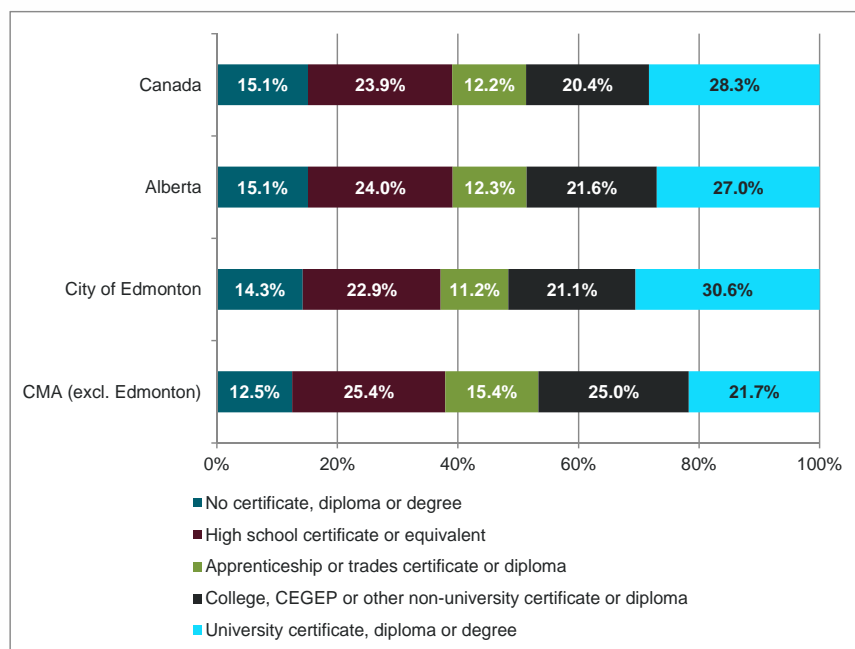
³¹ University of Alberta Annual Report for submission to the Government of Alberta 2010-2011



full time studies and the University of Alberta has seen completion rates steadily rise in recent years to 68.8% of undergraduate student, 81.6% of masters students and 77.6% of PhD students³². Almost all (95.8%) of graduates are working within 2 years of graduation.

Figure 22 demonstrates the level of educational attainment of Edmonton's population in comparison with that of the CMA excluding the city, the province of Alberta, and Canada. In 2011, 62.9% of Edmonton's population had some form of post-secondary education, which was higher than the CMA, the Province, and Canada at 62.1%, 60.9%, and 60.9% respectively. Those with a university certificate, diploma or degree were the largest component of this group, with Edmonton outperforming both the areas of the CMA outside of the City, the Province, and the Country (30.6%, 21.7%, 27.0%, and 28.3% respectively). The labour force in the city exhibits strong advantages over adjacent areas, the province, and the rest of Canada in terms of labour force with professional degrees and university-level credentials. When looking at the potential to drive new innovations in products and services, and productivity improvements to improve competitiveness, it is the highly skilled individuals of the workforce that are often at the forefront of these developments.

FIGURE 22: COMPARATIVE EDUCATIONAL PROFILE, % OF POPULATION AGED 25 TO 64, 2011



Source: Manifold Data Mining, Custom Demographic Report, 2012

In an economy like Alberta's, competitive advantages also depend on the availability of a labour force with strong technical skills, usually obtained through practical college programming or trades-based and apprenticeship programming. Indeed, in many of the region's strongest industries (i.e. oil and gas, industrial manufacturing, transportation

³² Ibid

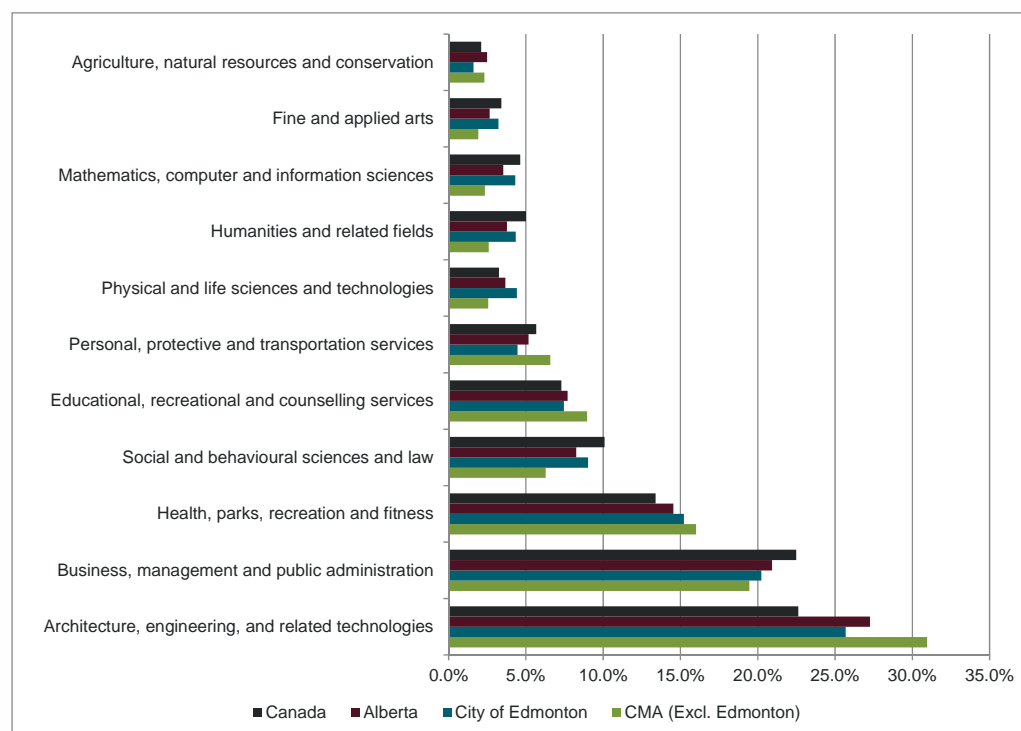


and logistics), the availability of skilled workers in technical fields is a strong component of a community's competitiveness. It is these skilled individuals that implement, manage, and adapt process and product improvements. In both college-level credentials, and trades or apprenticeship certifications, the city fell well behind the communities of the CMA outside of Edmonton, and slightly behind the provincial and national averages in 2011. Thus while Edmonton has a strong profile of workers with professional-level skills and university education, it is comparatively lacking in the proportion of skilled technical and trades-based labour that most closely engages in important industrial sectors of the economy. This might, in part, explain some of the industry sector growth patterns in the suburbs as companies seek to locate in proximity to their workforce or employees seek to locate near their companies.

Figure 23 illustrates the major fields of study for those with post-secondary credentials in the city of Edmonton, CMA (excluding Edmonton), Alberta, and Canada in 2011. In all jurisdictions referenced architecture, engineering, and related technologies accounted for the highest proportion of residents with a post-secondary degree. However, the percentages in this field of study are much higher in Edmonton, Edmonton CMA and Alberta than elsewhere in Canada. Alberta, and more specifically Edmonton, is a centre of knowledge-based employment related to the oil and gas sector, and key sectors through its value chain like engineering and construction. Business, management, and public administration; and health, parks, recreation, and fitness account for the next highest shares of post-secondary credentials in each of the three Albertan geographies. Together, these three fields account for 61.1%, 66.4%, and 62.7% of the total population with post-secondary credentials in the City of Edmonton, CMA, and Alberta respectively.



FIGURE 23: EDUCATIONAL PROFILE BY MAJOR FIELD OF STUDY, 2011



Source: Manifold Data Mining, Custom Demographic Report, 2012

The results have significant bearing on the kinds of businesses, enterprises, and investments that are located in the community, the labour pool that can support the attraction of new industry, and the types of training programs needed to improve competitiveness. The city of Edmonton falls behind the province and the surrounding region when considering the labour force educated in architecture, engineering, and related fields. Though the CMA as a whole is largely on-par with the rest of the province, a centre that derives significant spin-off activity from domestic and international oil and gas and infrastructure projects, as envisioned in the *Alberta Industrial Sector Market Opportunities Report* completed by Alberta Treasury Board and Enterprise, would be expected to exhibit an advantage in the area based on educational attainment in the field. Edmonton, like the rest of the province, needs to focus on developing the innovative skills that allow local firms to be more globally competitive.

The city also falls behind the province with regards to post-secondary skills in business, management, and public administration suggesting the city may be challenged in attracting businesses in areas like financial services, as other areas of the province show higher concentrations of skilled workers in this area.

It is important to note that the city does show slight advantages in terms of population with post-secondary education in social and behavioural sciences and law, physical and life sciences and technologies, and mathematics, computer, and information sciences. These fields commonly account for the professional and technical workers in

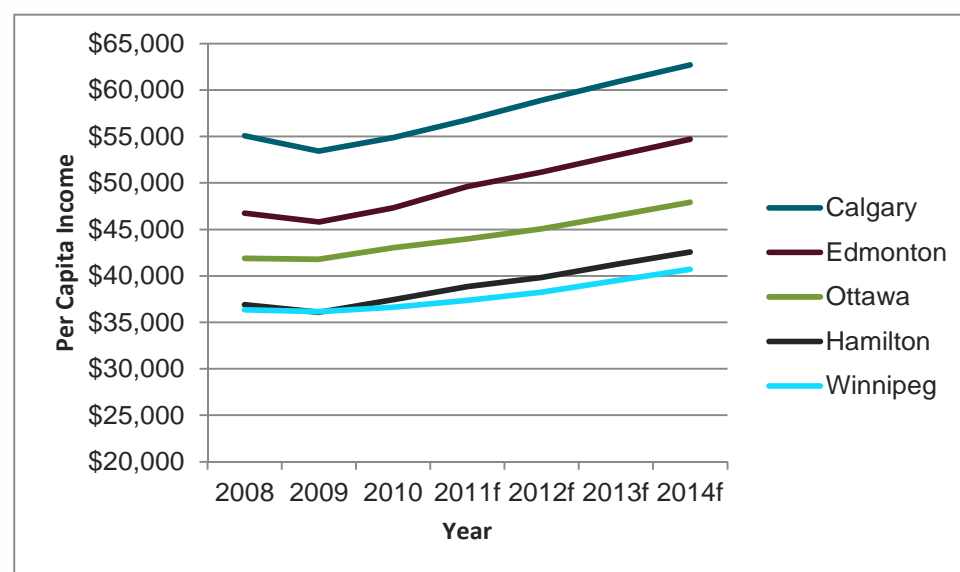


natural and applied sciences and computer systems design that can have positive implications on areas like life sciences, clean technology, and ICT, as well as the sectors which they service (i.e. oil and gas, industrial manufacturing) in the city.

2.2.6 Household and Personal Income

A community's socio-economic composition is also determined by the average income of its population. As can be seen in the following figure, Calgary and Edmonton lead the comparative communities in income per capita. All regions experienced declines in per capita income associated with the recent global recession with Calgary and Edmonton experiencing the largest declines. However, since the economic recovery began in 2010, these two cities have experienced the most rapid rebound and increase in incomes. As can be seen in the figure, however, per capita incomes in the Edmonton CMA are noticeably lower than those of the Calgary CMA.

FIGURE 24: PER CAPITA INCOME, EDMONTON VS. PEER CITIES, 2011



Source: Conference Board of Canada (2011). Metropolitan Outlook, 2011

Figure 25 provides estimates for the proportion of total private households that fall within each income level in the city, the CMA excluding the city, and the Province for 2010. The city holds the highest proportion of households with incomes below \$30,000 in 2010 (22.6%), and the lowest proportion of total households with incomes of \$100,000 or more of the three jurisdictions. Edmonton's estimated average and median household incomes in 2010 (\$92,426 and \$75,151) are also lower than those of the CMA³³ (\$99,810 and \$82,214) and the Province (\$102,491 and \$81,372) in 2010.

³³ Median and average income for the entire Edmonton CMA, including the City of Edmonton, due to availability of projected data.



FIGURE 25: COMPARATIVE HOUSEHOLD INCOME (PRIVATE HOUSEHOLDS), 2010

Income Level	City of Edmonton	CMA (excl. Edmonton)	Alberta
Under \$10,000	3.9%	1.9%	3.2%
\$10,000 to \$19,999	9.3%	4.4%	7.4%
\$20,000 to \$29,999	9.3%	5.4%	8.0%
\$30,000 to \$39,999	10.8%	7.2%	9.7%
\$40,000 to \$49,999	9.6%	7.2%	9.0%
\$50,000 to \$59,999	8.7%	7.3%	8.5%
\$60,000 to \$69,999	8.0%	7.4%	7.9%
\$70,000 to \$79,999	6.9%	7.5%	7.2%
\$80,000 to \$89,999	6.1%	7.4%	6.4%
\$90,000 to \$99,999	5.2%	7.1%	5.6%
\$100,000 and over	22.0%	37.3%	27.1%

Source: Manifold Data Mining, Custom Demographic Profile, 2012

Income figures can reveal insights into the social and economic issues facing a community. A high average income suggests high levels of disposable income, and the distribution of households across the income groups can indicate income inequality in the community. Generally speaking, the city's households fall more heavily into lower income thresholds than the province, and the surrounding communities of the municipality.

The city of Edmonton's comparatively lower household income could be attributed to a number of factors, such as the diversity of housing options available in the city vs. the suburban areas (i.e. affordable rental properties and apartments), or the need for lower-income households to locate within the city to have better access to social services and infrastructure (i.e. transit).

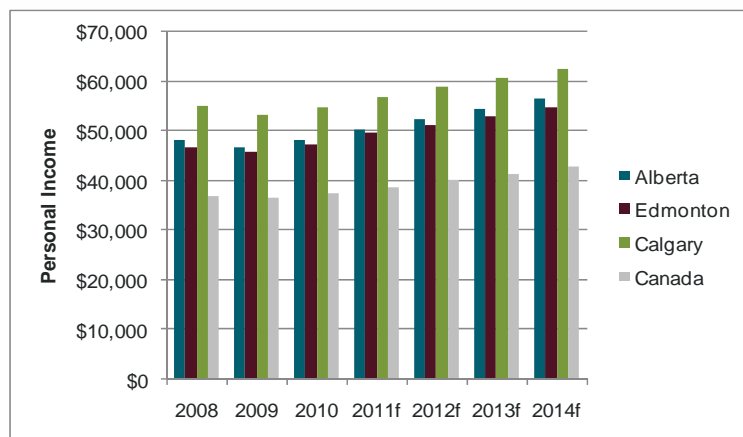
However, looking back to educational attainment data, the city of Edmonton is home to higher proportions of university-educated population than across the province and the areas of the CMA outside of the city, which would initially seem to suggest the city would have a strong proportion of high-income households as well; the strong figures for post-secondary education in the CMA (excluding Edmonton) and the province seem to relate to the high relative household incomes in this fashion. It would seem as though the skilled individuals in areas surrounding the city, with college-level and trades/apprenticeship-based education are generally earning more than their counterparts, despite having differing levels of educational attainment. The industry in which individuals are employed may instead play a key role. Given the strength of the oil and gas and petrochemical industry in the CMA, these industries may be driving the higher earnings in the surrounding areas of the CMA, despite the fact that the city is home to a range of knowledge-based workers, government and businesses.

The Conference Board of Canada provides personal income forecasts for CMA's across Canada. While personal income levels for the Edmonton CMA are forecast to lag those of the Calgary CMA and the province, they will outpace with the national



averages (Figure 26). Over the short term, Edmonton will continue to experience incomes levels well above those of the rest of Canada.

FIGURE 26: PERSONAL INCOME LEVELS FOR CANADA, ALBERTA, EDMONTON CMA, AND CALGARY CMA, 2008-2014



Source: Conference Board of Canada (2011). Metropolitan Outlook, 2011

2.2.7 Housing (owner/rental) affordability

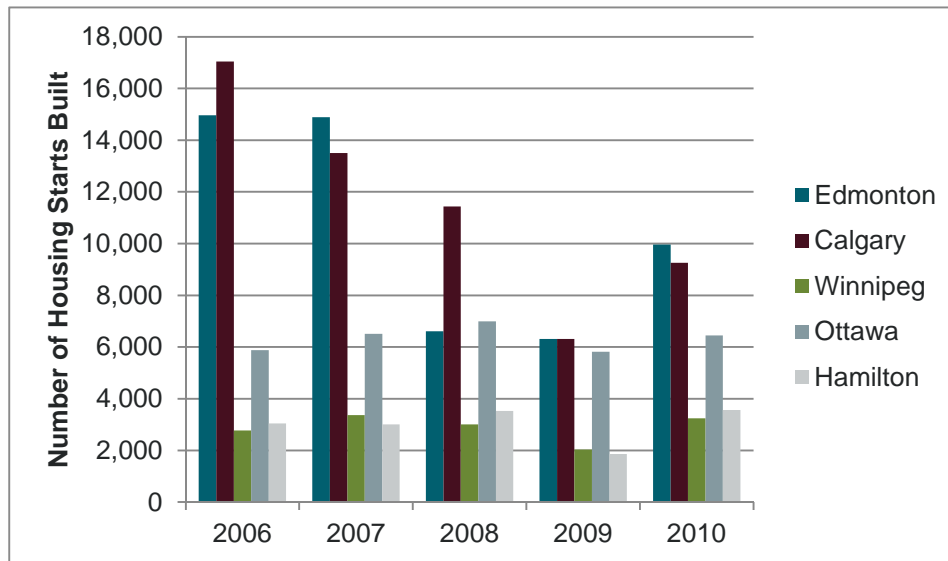
WITHOUT A SUFFICIENT SUPPLY OF AFFORDABLE HOUSING, EMPLOYERS AND ENTIRE REGIONAL ECONOMIES CAN BE AT A COMPETITIVE DISADVANTAGE BECAUSE OF THEIR SUBSEQUENT DIFFICULTY ATTRACTING AND RETAINING WORKERS.³⁴ THE FIGURES BELOW SUGGEST THAT EDMONTON'S REGIONAL HOUSING MARKET WAS HARD HIT BY THE 2008-2009 RECESSION. AS OF 2010 EDMONTON'S NEW HOME PRICES AND OVERALL ABSORPTION REMAINED WEAK. THE RENTAL MARKET, HOWEVER, REMAINS TIGHT WITH AVERAGE RENTS OF TWO BEDROOM UNITS ONLY SLIGHTLY BELOW CALGARY AND OTTAWA AND WELL ABOVE WINNIPEG AND HAMILTON.

Figure 27 shows the total number of housing starts constructed with selected CMAs across Canada. This includes single and multiple starts (semi-detached, row and apartment). Housing starts in Calgary and Edmonton declined more drastically through the recession in 2008/09 and recovered more quickly in 2010 reinforcing the influence of Alberta's boom/bust economy. In 2010, Edmonton's CMA housing starts had not recovered to pre-recession levels; although from 2009 to 2010, Edmonton's housing starts newly doubled from 6,317 to 9,959 units leading the peer group.

³⁴ Center for Housing Policy (2011). The role of affordable housing in creating jobs and stimulating local economic development



FIGURE 27: HOUSING CONSTRUCTION IN SELECTED CANADIAN CMA'S: TOTAL NEW STARTS, 2006-2010

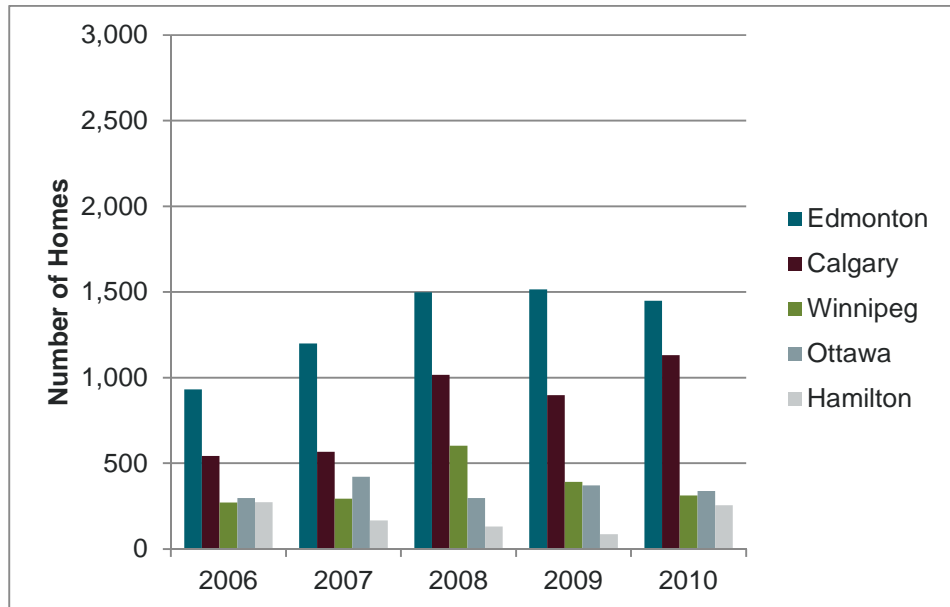


Source: CMHC (2012). Housing Market Indicators, Canada, Provinces, and Metropolitan Areas, 1990 – 2010.

Figure 28 describes the available supply of housing in the selected Canadian CMAs. It refers to housing units for which construction has been completed, but have not been rented or sold (includes single, semi-detached, row and apartments). The figure also speaks to market saturation. All comparator communities (except Hamilton) experienced increasing supply as the recession set in. However, as we can see the reduced housing starts in Calgary and Edmonton brought supply into balance with demand as supply in Edmonton's CMA has remained rather consistent with just under 1,500 unabsorbed units from 2008 to 2010.



FIGURE 28: NEWLY COMPLETED AND UNABSORBED HOMES IN SELECTED CANADIAN CMAS, 2006-2010

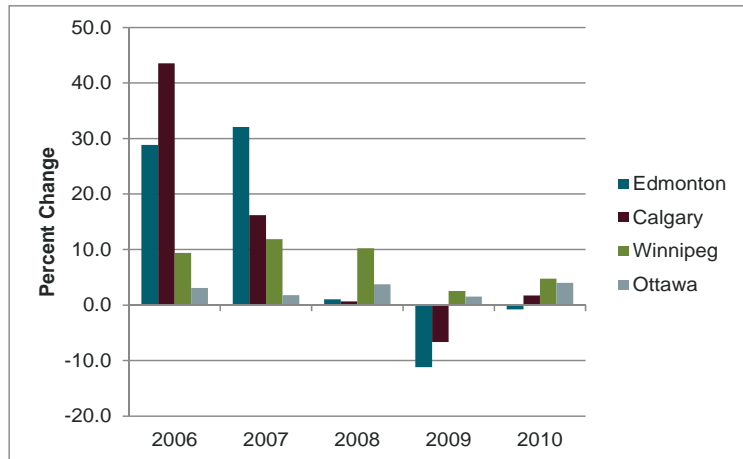


Source: CMHC (2012). Housing Market Indicators, Canada, Provinces, and Metropolitan Areas, 1990 – 2010.

The New Housing Price Index (NHPI) is shown in Figure 29. The NHPI is a series measured by Statistics Canada that measures changes over time in the contractors' selling prices of new residential houses, where detailed specifications pertaining to each house remain the same between two consecutive periods. In 2008-2009, national housing markets crumbled with the onset of the recession. Edmonton was particularly hard hit in 2009 with a score of negative 11.2, the lowest of all CMAs. As of 2010, Edmonton's score was still negative (0.8), remaining the lowest of all the CMAs. Again, it is apparent housing markets in Alberta's CMA's are more volatile in tandem with economic peaks and valley's experienced in the province.



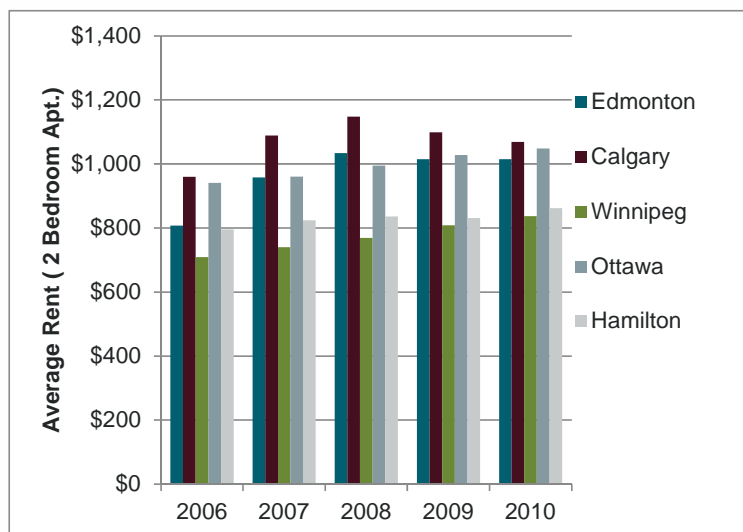
FIGURE 29: NEW HOUSING PRICE INDEX FOR SELECTED CANADIAN CMAS (PERCENT CHANGE 2006-2010)



Source: CMHC (2012). Housing Market Indicators, Canada, Provinces, and Metropolitan Areas, 1990 – 2010³⁵.

Figure 30 shows the average monthly rent for privately initiated apartment structures with at least 3 units. Between 2006 and 2010, Calgary's CMA consistently had the highest rent for a two bedroom unit. While rents in Edmonton's CMA have not earned this distinction, they have remained near the high end of the comparator communities since 2008. In 2010, the average rent for a two bedroom unit in Edmonton's CMA was \$1,015 well above the lower end of the peer group, Winnipeg and Hamilton.

FIGURE 30: AVERAGE RENT AMOUNT FOR TWO-BEDROOM DWELLINGS FOR SELECTED CANADIAN CMAS, 2006-2010



Source: CMHC (2012). Housing Market Indicators, Canada, Provinces, and Metropolitan Areas, 1990 – 2010.

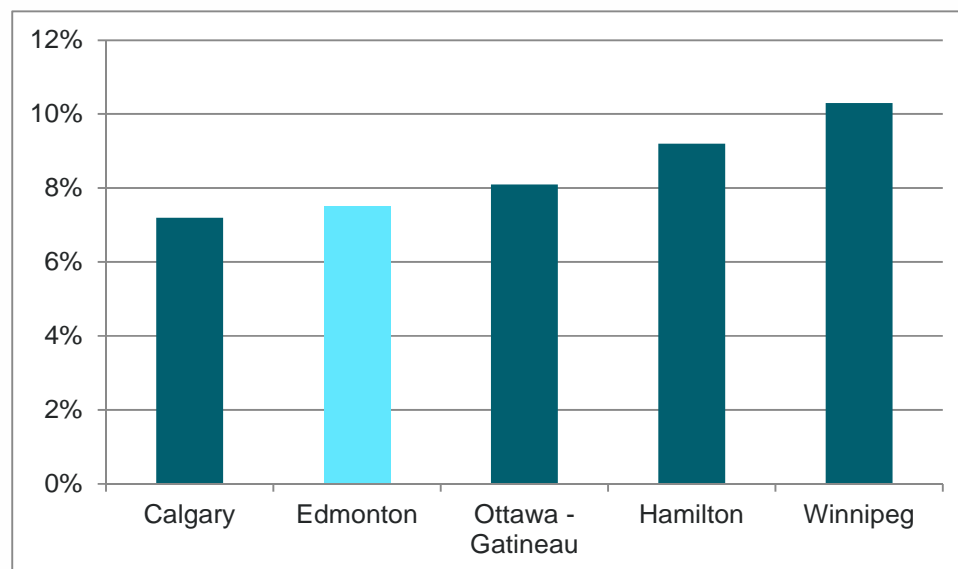
³⁵ Note: data is not available for Hamilton CMA



2.2.8 Percentage of low-income population

Produced by Statistics Canada on a yearly basis, the 'low income cut-off' represents the income level at which a family may be constrained because it has to spend a greater proportion of its income on necessities than the average family of similar size. Figure 31 shows the prevalence of low income within selected CMA's. In 2006, 9.4% of Edmonton's population was considered low income. This is slightly higher than Calgary but among the low end of the peer group. Generally speaking, Canada's large urban centers face high incidents of poverty, when compared to smaller cities or rural areas. From this figure, it appears that in periods of economic expansion, as was the case from 2002 – 2006 in Alberta, Alberta's wealth is being distributed across income groups resulting in lower incidence of poverty in Alberta's CMA's compared to the peer group.

FIGURE 31: PREVALENCE OF LOW INCOME AFTER TAX IN 2006 %, EDMONTON, ALBERTA, CANADA



Source: Statistics Canada (2006). Census Profiles.

2.2.9 Consumer Price Index

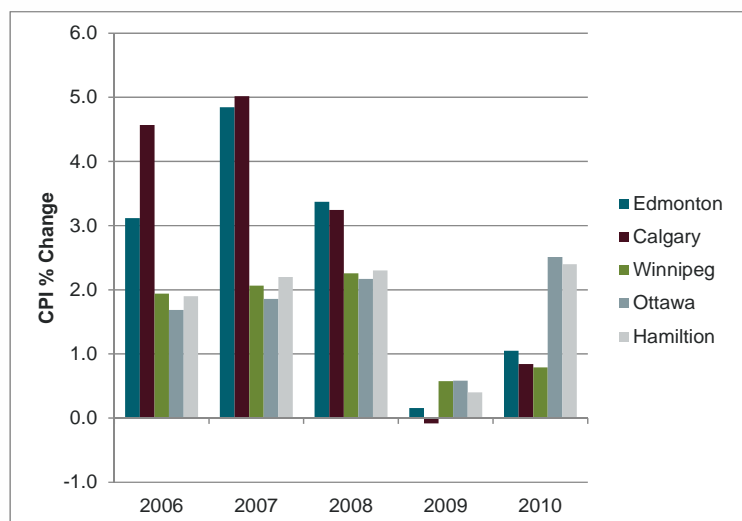
The Consumer Price Index (CPI) is an indicator of changes in consumer prices experienced by Canadians. It is obtained by comparing, over time, the cost of a fixed basket of goods and services purchased by consumers. Since the basket contains goods and services of unchanging or equivalent quantity and quality, the index reflects only pure price change.

Figure 32 shows the annual percentage change of the CPI in selected CMAs across Canada. From 2006 to 2007, Edmonton's CPI jumped by 4.8% which was more than double of the Canadian average of 2.1%. From 2008 to 2009, however, Edmonton's percentage change in CPI declined to .02% percent. In 2010, the CPI's in Hamilton and Ottawa experienced much higher changes in CPI than the rest of the peer group



indicating Winnipeg, Calgary and Edmonton were still feeling the effects of the 2008/09 recession.

FIGURE 32: CONSUMER PRICE INDEX FOR SELECTED CANADIAN CMAS (PERCENT CHANGE 2006-2010)



Source: CMHC (2012). Housing Market Indicators, Canada, Provinces, and Metropolitan Areas, 1990 – 2010.

The Conference Board of Canada is forecasting (through 2014), Alberta's general cost of living to be approximately 10% higher than the Canadian average³⁶ with Calgary and Edmonton once again experiencing higher CPI's than other CMA's.

2.3 Labour Force and Employment Profile

Statistics Canada collects both labour force and employment data for the Canadian population aged 15 and over; or those considered part of the labour force based on capabilities. Labour force data is concerned with the employed and unemployed resident population of a community, regardless of the community in which the individual is employed. Employment, on the other hand, is concerned with the number of individuals employed within a certain sector.

Employment numbers are provided to the Census Metropolitan Area level of geography by Statistics Canada through the Labour Force Survey (LFS); which surveys households to determine labour force characteristics. Employment includes the employed labour force by the jurisdiction in which they live, regardless of where they are employed. The Survey of Employment, Payrolls, and Hours (SEPH) reports employment by the jurisdiction in which the business is located, and is thus a closer representation of the number of jobs in a community. However, the SEPH is reported only to the national and provincial/territorial level. Though conceptual and

³⁶ Source: Conference Board of Canada (2011). Metropolitan Outlook, 2011



methodological differences result in differences in estimates from the LFS and SEPH from time to time, Statistics Canada advises that trends in the data are quite similar³⁷. Labour Force Survey data estimates, though not an ideal indication of employment or number of jobs within the CMA, are used in the absence of SEPH data below the Provincial and Territorial level to illustrate general trends for the purposes of this report.

The following section provides an overview of the characteristics of the labour force, the labour force by industry (North American Industrial Classification Standard - NAICS) and Occupation (National Occupational Classification - NOC), the employment by industry (NAICS), and selected wages and GDP by industry. For most variables and geographies, the most recent data is based on the 2006 Census of Canadian Population. Where possible, more recent data from Statistics Canada, and estimates from Manifold Data Mining have been used to expand the data beyond 2006.

2.3.1 Labour Force Characteristics

The total labour force in the City of Edmonton grew by approximately 14.7% from 2001 to 2006, slightly faster than the comparative rate at the provincial level (14.5%) Labour force in the suburban and rural areas of the Edmonton CMA, or the CMA excluding the City of Edmonton, grew at a slightly higher rate than the city from 2001 to 2006 (15.0%), suggesting that the areas outside of the City were accounting for a significant portion of labour force growth. The areas of the CMA outside of Edmonton led the province over the time period as well.

As a result of strong employment growth and migration of skilled workers to the province, Alberta had a comparatively higher employment rate for each age group in 2006, compared to a rate of just 62.4% for the total labour force across all of Canada. For youth aged 15-24 - the population poised to enter the workforce - the province's employment rate of 67.3% in 2006 was well above that for the same age group across Canada, and the highest of all other provinces and territories. Participation rates followed a similar trend, with Alberta's labour force actively pursuing employment at a higher rate than in Canada and across most other provinces and territories. This is evident in the following figure which compares Edmonton's labour force characteristics with those of its peers. While unemployment rates in Edmonton are not dissimilar to the peer group, participation and employment rates are higher in Edmonton than Ottawa, Hamilton and Winnipeg. This indicates Edmonton outperforms its peers, except Calgary, in employment opportunities.

³⁷ Statistics Canada. (2012, February). Employment Earnings and Hours, December 2011. Catalogue No. 72-002-X, vol. 89, no. 12



FIGURE 33: LABOUR FORCE CHARACTERISTICS, EDMONTON VS. PEER GROUP, 2011

	Ottawa-Gatineau	Hamilton	Winnipeg	Calgary	Edmonton
Population 25 years and over	860,600	516,600	519,100	859,400	794,800
Labour force	619300	337500	361900	650400	590000
Employment	591600	320500	346000	621100	562500
Full-time employment	522600	274900	296600	541400	490800
Part-time employment	68900	45600	49400	79700	71700
Unemployment	27700	17000	15900	29300	27500
Not in labour force	241300	179100	157200	209000	204800
Unemployment rate (%)	4.5	5	4.4	4.5	4.7
Participation rate (%)	72	65.3	69.7	75.7	74.2
Employment rate (%)	68.7	62	66.7	72.3	70.8

Source: Statistics Canada (CANSIM table 282-0110, last updated on: 2012-01-04; coverage: 1996 to 2011)

The City of Edmonton and suburban/rural areas of the Edmonton CMA all exhibited similarly high participation rates, suggesting a strong regional labour market as well. This is in part a reflection of the strong labour market in Alberta, which quickly employs skilled new graduates. However, high employment and participation rates could also be considered a cause for concern in the local and provincial economy. If the opportunities in the workforce are indeed drawing individuals out of secondary, and post-secondary programs prior to completion, which is the perspective that the province has taken, this could be negatively affecting the development of the workforce needed in Alberta to improve the productivity.

Unemployment rates for total labour force across Alberta, the CMA excluding the City, and the City of Edmonton were also considerably lower than unemployment rates across Canada (6.6%) in 2006. In the key youth age segment of 15-24 years, where unemployment rates are typically higher due to a lack of experience, the 12.8% rate for youth across Canada was well above that of Alberta (8.2%) and the City of Edmonton (8.7%) in 2006. The suburban and rural areas of the CMA outside of Edmonton had youth unemployment rates well below that of the City in 2006, at 5.9%. It is also worth noting that unemployment rates fell between 2001 and 2006 for Alberta and across the CMA. Figure 34 summarizes these labour force characteristics highlighted above.



FIGURE 34: LABOUR FORCE CHARACTERISTICS, 2001 AND 2006

Population by Labour Force Activity	Alberta		City of Edmonton		CMA (excl. Edmonton)	
	2006	2001	2006	2001	2006	2001
Total population 15 years and over	2,625,145	2,322,020	598,905	534,005	238,805	207,150
In the labour force	1,942,825	1,696,760	430,975	375,595	180,270	156,785
Employed	1,859,960	1,608,840	409,835	353,060	173,380	150,300
Unemployed	82,860	87,925	21,145	22,535	6,880	6,485
Not in the labour force	682,320	625,265	167,925	158,400	58,540	50,380
Participation rate (%)	74.0	73.1	72.0	70.3	75.5	75.7
Employment rate (%)	70.9	69.3	68.4	66.1	72.6	72.6
Unemployment rate (%)	4.3	5.2	4.9	6.0	2.9	3.1
Population 15-24 years	487,710	435,330	114,855	102,465	43,825	38,915
In the labour force	357,660	311,140	84,785	73,180	32,455	27,510
Employed	328,440	279,060	77,410	64,825	29,885	24,890
Unemployed	29,220	32,085	7,375	8,355	2,570	2,625
Not in the labour force	130,050	124,185	30,075	29,285	11,370	11,410
Participation rate (%)	73.3	71.5	73.8	71.4	74.1	70.7
Employment rate (%)	67.3	64.1	67.4	63.3	68.2	64.0
Unemployment rate (%)	8.2	10.3	8.7	11.4	5.9	6.7
Population 25 years and over	2,137,435	1,886,695	484,045	431,540	194,985	168,235
In the labour force	1,585,160	1,385,620	346,190	302,420	147,815	129,270
Employed	1,531,520	1,329,780	332,425	288,240	143,495	125,405
Unemployed	53,640	55,840	13,770	14,180	4,315	3,865
Not in the labour force	552,270	501,075	137,850	129,120	47,175	38,965
Participation rate (%)	74.2	73.4	71.5	70.1	75.8	76.8
Employment rate (%)	71.7	70.5	68.7	66.8	73.6	74.5
Unemployment rate (%)	3.4	4.0	4.0	4.7	2.2	2.3

Source: Statistics Canada, Census of Canadian Population, 2001 and 2006

More recent data (Figure 35) illustrates that Alberta's labour market has lost little of its comparative strength. From 2006 to 2011, the total labour force in Alberta grew by approximately 14.0%, while the total labour force in the Edmonton CMA grew by 16.1%. The participation, unemployment, and employment rates across both Alberta and the CMA continue to lead those across the rest of Canada for each major age group of the labour force in 2011.



FIGURE 35: LABOUR FORCE CHARACTERISTICS (THOUSANDS), 2011

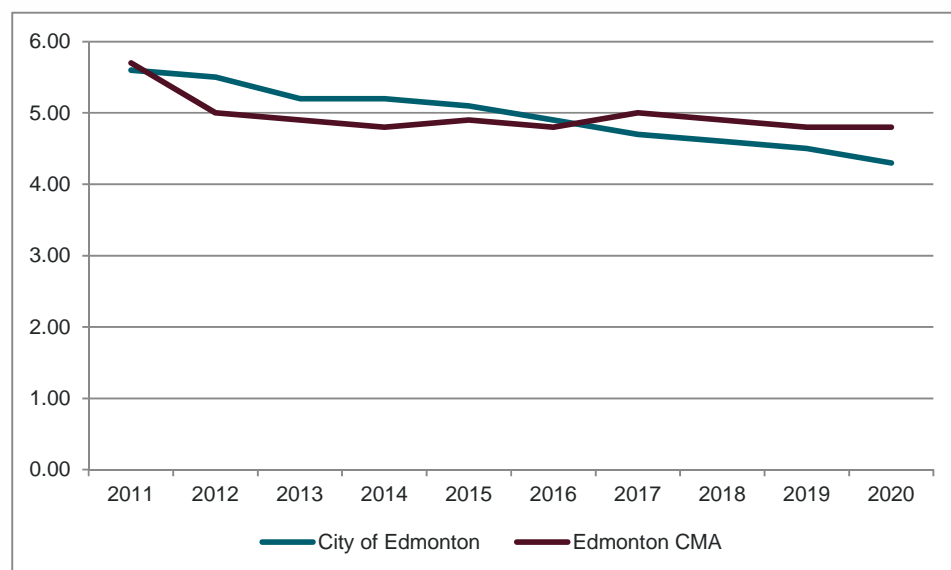
Labour Force Activity	Canada	Alberta	Edmonton CMA
Total Labour Force (15 years and over)	27,987.3	3,006.6	964.9
In the labour force	18,699.4	2,215.2	709.4
Employed	17,306.2	2,094.1	671.0
Unemployed	1,393.1	121.0	38.4
Not in the labour force	9,287.9	791.4	255.5
Participation rate (%)	66.8	73.7	73.5
Employment rate (%)	61.8	69.7	69.5
Unemployment rate (%)	7.4	5.5	5.4
Population 15-24 years	4,457.9	508.6	170.1
In the labour force	2,878.3	357.1	119.4
Employed	2,470.6	318.9	108.5
Unemployed	407.7	38.2	11.0
Not in the labour force	1,579.6	151.5	50.7
Participation rate (%)	64.6	70.2	70.2
Employment rate (%)	55.4	62.7	63.8
Unemployment rate (%)	14.2	10.7	9.2
Population 25 years and over	23,529.4	2,498.0	794.8
In the labour force	15,821.0	1,858.1	590.0
Employed	14,835.7	1,775.3	562.5
Unemployed	985.4	82.9	27.5
Not in the labour force	7,708.4	639.9	204.8
Participation rate (%)	67.2	74.4	74.2
Employment rate (%)	63.1	71.1	70.8
Unemployment rate (%)	6.2	4.5	4.7

Source: Statistics Canada, Labour Force Survey table 282-002 and table 282-0110, 2012

As Figure 36 indicates, the unemployment rates across both the City of Edmonton and the Edmonton CMA are expected to continue declining over the next decade, with the City of Edmonton's rate projected at 4.3% by 2020, with the Edmonton CMA only slightly higher at 4.8%. While this is a positive indicator of the health of the local and regional economies, it also reflects in the increasingly tight labour market faced by employers across the province and a significant challenge to ensure the availability of a workforce to meet the demands of business. All recent indicators suggest that while the unemployment rate in Canada is expected to decline slightly with improved economic conditions, it will remain comparatively higher than its historical rates. Alberta and Edmonton are forecast to retain their competitive edge on the rest of the national economy.



FIGURE 36: FORECAST UNEMPLOYMENT RATES, 2011-2020



Source: City of Edmonton, Economic Trends and External Research, 2010

2.3.1.1 Labour Force by Gender

Looking at labour force characteristics by gender can provide an indication of whether the labour and employment opportunities in a given community are available equally to individuals in each gender. An uneven distribution may indicate areas in which a community can target workforce development or support initiatives to better utilize the skills and abilities of its entire workforce. Figure 37 summarizes key labour force characteristics for Alberta, the city of Edmonton, and the Edmonton CMA excluding Edmonton by gender.

In 2006, male members of the labour force in each age group in Alberta outperformed their female counterparts in each labour indicator, with the exception of unemployment rates. The employment and participation rates for males in each age group were higher than for females across all of Alberta, with individuals in the 25 years and older age groups illustrating the most striking differences by gender. Though unemployment rates were generally similar by gender, and lower for females in some age groups, this is the result of a higher number of females that are outside of the labour force, and thus not factored into unemployment rates. In 2006, 80.3% of males aged 15 or older were part of the labour force in Alberta, which contrasts with a rate of just 67.7% for females. Youth between 15 and 24 years of age represent the most competitive participation and employment rates by gender, with females only slightly lagging behind their male counterparts.

The CMA and city of Edmonton show similar trends, with differing participation and employment rates in each jurisdiction by gender. It is worth noting that participation and employment rates for youth segments of the labour force are similar by gender across the suburban and rural areas of the CMA; a similar trend to the province.



FIGURE 37: LABOUR FORCE CHARACTERISTICS BY GENDER, 2006

Population by Labour Force Activity	Alberta		City of Edmonton		CMA (excl. Edmonton)	
	Male	Female	Male	Female	Male	Female
Total population 15 years and over	1,307,515	1,317,625	294,290	304,615	119,090	119,715
In the labour force	1,050,175	892,650	228,660	202,320	97,195	83,065
Employed	1,006,865	853,095	217,345	192,485	93,615	79,770
Unemployed	43,310	39,550	11,310	9,835	3,585	3,300
Not in the labour force	257,345	424,975	65,630	102,295	21,895	36,650
Participation rate (%)	80.3	67.7	77.7	66.4	81.6	69.4
Employment rate (%)	77.0	64.7	73.9	63.2	78.6	66.6
Unemployment rate (%)	4.1	4.4	4.9	4.9	3.0	2.8
Population 15-24 years	250,825	236,880	57,835	57,025	22,990	20,825
In the labour force	188,230	169,430	43,225	41,555	17,365	15,095
Employed	172,290	156,145	39,035	38,380	15,990	13,890
Unemployed	15,940	13,280	4,195	3,180	1,365	1,200
Not in the labour force	62,595	67,455	14,610	15,465	5,630	5,735
Participation rate (%)	75.0	71.5	74.7	72.9	75.5	72.5
Employment rate (%)	68.7	65.9	67.5	67.3	69.6	66.7
Unemployment rate (%)	8.5	7.8	9.7	7.7	5.9	5.8
Population 25 years and over	1,056,690	1,080,740	236,455	247,590	96,095	98,890
In the labour force	861,940	723,220	185,430	160,760	79,840	67,980
Employed	834,575	696,950	178,315	154,105	77,620	65,880
Unemployed	27,370	26,270	7,115	6,650	2,215	2,100
Not in the labour force	194,745	357,525	51,025	86,830	16,255	30,910
Participation rate (%)	81.6	66.9	78.4	64.9	83.1	68.7
Employment rate (%)	79.0	64.5	75.4	62.2	80.8	66.6
Unemployment rate (%)	3.2	3.6	3.8	4.1	2.3	2.1

Source: Statistics Canada, Census of Canadian Population, 2006

The most recent data from 2011 (Figure 38) illustrates a similar trend in Alberta, but offers insight into the fact that Alberta is not alone in its challenge to equalize employment and participation rates by gender. However, it is important to note that there is a greater discrepancy between male and female participation and employment rates in Alberta and the Edmonton CMA, than there is across Canada. Thus the issue is slightly more pronounced in the Province. In light of the workforce issues faced by the city however, further consideration of this issue may be appropriate.

FIGURE 38: TOTAL LABOUR FORCE CHARACTERISTICS BY GENDER (THOUSANDS), 2011

Population by Labour Force Activity	Canada		Alberta		Edmonton CMA	
	Male	Female	Male	Female	Male	Female
Total population 15 years and over	13,788.8	14,198.5	1,532.3	1,474.3	490.8	474.1
In the labour force	9,858.9	8,840.5	1,223.4	991.7	385.7	323.7
Employed	9,085.1	8,221.1	1,154.6	939.5	363.3	307.7
Unemployed	773.8	619.3	68.8	52.2	22.4	16.0
Not in the labour force	3,929.9	5,358.0	308.9	482.6	105.1	150.4
Participation rate (%)	71.5	62.3	79.8	67.3	78.6	68.3
Employment rate (%)	65.9	57.9	75.4	63.7	74.0	64.9
Unemployment rate (%)	7.0	5.1	5.6	5.3	5.8	4.9

Source: Statistics Canada, Labour Force Survey table 282-002 and table 282-0110, 2012

2.3.1.2 Aboriginal and Total Population

Canada is home to approximately 1.2 million aboriginal people, accounting for a total of 3.8% of the total population in Canada. The approximately 188,000 aboriginal people in Alberta accounted for 5.8% of the total provincial population in 2006, or 16.1% of the



total aboriginal identity population across Canada; behind only Ontario (20.7%) and British Columbia (16.7%). As a result, Provincial reports like *Shaping Alberta's Future*, prepared by the Premiers Council for Economic Strategy, make the equalization of educational opportunities between aboriginal and non-aboriginal population in Alberta a key priority in this regard; providing the necessary foundation upon which aboriginal children and young adults can build the skills to participate in a shifting economy. In doing so, the province benefits from accessing the skills and talents of its entire population. Figure 39 outlines the labour force characteristics of the Canadian, Provincial, and Regional aboriginal identity population in 2006.

Generally, the national aboriginal population exhibited a slightly lower participation rate than the total population, at 63.0% and 66.8% respectively. However, despite the fact that the Canadian aboriginal population is engaged in the labour force, the employment rate remains well below that of the total population in Canada, with the unemployment rate comparatively much higher as a consequence. This suggests a mismatch in the skills available in the aboriginal population; there are people available to work, but they remain unemployed because they may not have the skills that are in demand in the workplace. This is increasingly problematic as the economy shifts to more knowledge-based and service-oriented activities.

The aboriginal population in Alberta, the city of Edmonton, and the communities surrounding Edmonton each outperformed their national counterparts, with comparatively higher rates of both participation and employment. However, when compared to the total population in each of those jurisdictions, the aboriginal labour force figures fall slightly behind. With that being said, participation and employment rates for the total and aboriginal population in both the Edmonton CMA and the city of Edmonton are much closer than the comparative rates at the provincial level.

FIGURE 39: LABOUR FORCE CHARACTERISTICS BY ABORIGINAL IDENTITY AND TOTAL POPULATION, 2006

Labour Force Activity	Aboriginal Population			
	Canada	Alberta	City of Edmonton	CMA (excl. Edmonton)
Total Labour Force (15 years and over)	823,890	129,745	27,690	8,995
In the labour force	519,250	88,655	18,960	6,760
Employed	442,395	78,845	16,995	6,220
Unemployed	76,860	9,810	1,965	545
Not in the labour force	304,635	41,090	8,725	2,240
Participation rate (%)	63.0	68.3	68.5	75.2
Employment rate (%)	53.7	60.8	61.4	69.1
Unemployment rate (%)	14.8	11.1	10.4	8.1
Labour Force Activity	Total Population			
	Canada	Alberta	City of Edmonton	CMA (excl. Edmonton)
Total Labour Force (15 years and over)	25,664,220	2,625,145	598,905	238,805
In the labour force	17,146,135	1,942,825	430,975	180,270
Employed	16,021,180	1,859,960	409,835	173,380
Unemployed	1,124,955	82,860	21,145	6,880
Not in the labour force	8,518,085	682,320	167,925	58,540
Participation rate (%)	66.8	74.0	72.0	75.5
Employment rate (%)	62.4	70.9	68.4	72.6
Unemployment rate (%)	6.6	4.3	4.9	3.8

Source: Statistics Canada, Census of Canadian Population, 2006



Overall, the national aboriginal population continues to lag behind the total population with regards to labour force participation and employment. Likely based on the strength of Alberta's economy, the aboriginal population in the province continues to outperform the national aboriginal population. The more urban areas around the Edmonton CMA are a leader in this regard, though the city of Edmonton outperforms the Provincial average as well.

2.3.2 Labour Force by Industry

An understanding of the skills of the resident labour force by industry can provide an indication of the areas in which a community or jurisdiction can provide support to investment attraction and retention initiatives based on the industry-related skills of its labour force. Figure 40 outlines the actual (2006) and estimated (2011) labour force composition of the province, the city of Edmonton, and the communities of the Edmonton CMA (excluding the city of Edmonton) by major industry sector.

The entire Edmonton CMA had an estimated labour force of 698,263 in 2011, of which 488,038 fell within the city of Edmonton and 210,255 fell within the communities surrounding the city. In 2011, the city of Edmonton's labour force was most heavily concentrated in:

- Retail (11.5%);
- Health care (10.4%); and,
- Construction (8.8%).

Each of these sectors accounted for the highest proportions of labour force across the province as well. Their prominence in the city's economy is unsurprising for a large, and rapidly growing urban area that requires a strong profile of services oriented towards its population. The communities of the CMA surrounding the city of Edmonton held comparatively higher proportions of labour force than the city in the construction sector (10.9%), as well as a number of other key industrial sectors in the province like mining and oil and gas extraction (5.2%), transportation and warehousing (5.3%), and traditional sectors like agriculture, forestry, fishing, and hunting (2.6%). The proportions in the Edmonton CMA remained below those of the province in each of those sectors though.

High concentrations of labour in the city of Edmonton also exist in the manufacturing (8.3%), and professional, scientific, and technical services (7.5%) sector, with the labour force in the city and the surrounding areas sitting proportionally higher than Alberta in the former, and proportionally lower (though only slightly for the city of Edmonton) than Alberta in the latter.

Between 2006 and 2011, the proportions of labour force in each major sector have stayed relatively constant across the Province and the Edmonton CMA.



FIGURE 40: PROPORTION OF TOTAL LABOUR FORCE BY INDUSTRY (NAICS), 2006 AND 2011

Industries (NAICS)	Alberta		City of Edmonton		CMA (excl. Edmonton)	
	2011	2006	2011	2006	2011	2006
All Industries	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
11- Agriculture, Forestry, Fishing, Hunting	3.8%	3.9%	0.4%	0.4%	2.6%	2.9%
21- Mining and Oil and Gas Extraction	7.2%	7.0%	2.5%	2.5%	5.2%	5.2%
22 - Utilities	0.9%	0.9%	0.9%	0.9%	1.3%	1.3%
23 - Construction	9.0%	8.8%	8.8%	8.7%	10.9%	10.7%
31-33 - Manufacturing	7.3%	7.2%	8.3%	8.3%	8.2%	7.9%
41 - Wholesale Trade	4.4%	4.4%	5.2%	5.2%	5.3%	5.3%
44-45 - Retail Trade	10.8%	10.7%	11.6%	11.5%	10.6%	10.5%
48-49 - Transportation and Warehousing	5.1%	5.1%	4.7%	4.7%	5.3%	5.4%
51 - Information and Cultural Industries	1.8%	1.9%	2.0%	2.1%	1.5%	1.6%
52 - Finance and Insurance	3.1%	3.1%	3.2%	3.3%	3.3%	3.4%
53 - Real Estate and Rental and Leasing	1.9%	2.0%	2.1%	2.1%	1.9%	1.9%
54 - Professional, Scientific, and Technical Services	7.7%	7.5%	7.5%	7.3%	6.3%	6.2%
55 - Management of Companies and Enterprises	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
56 - Administrative and Support, Waste Management and Remediation Services	3.6%	3.7%	4.4%	4.5%	2.7%	2.8%
61 - Educational Services	6.2%	6.2%	7.0%	7.2%	6.6%	6.5%
62 - Health Care and Social Assistance	9.1%	9.1%	10.4%	10.4%	9.1%	9.0%
71 - Arts, Entertainment, and Recreation	1.8%	1.9%	1.9%	1.9%	1.5%	1.6%
72 - Accommodation and Food Services	6.5%	6.6%	7.3%	7.3%	4.9%	4.9%
81 - Other Services (Except Public Administration)	5.0%	5.1%	5.3%	5.4%	5.6%	5.7%
91 - Public Administration	4.6%	4.7%	6.4%	6.4%	7.0%	7.2%

Source: Statistics Canada Census of Population 2006, and Manifold Data Mining, Custom Demographic Report, 2012

By sector, the fastest labour force growth across the city over the last decade, not unsurprisingly has been in the mining and oil and gas extraction sector (46.6%), which has been driving the attraction of labour to the province for some time. Growth of labour force in the sector throughout the province and surrounding areas of the CMA has been comparatively higher over the last decade, at 86.2% and 119.7% respectively from 2001 to 2011. Though labour force grew steadily in the sector for each of the three jurisdictions, the strongest growth was in the first half of the decade, with the recession and slow recovery in the latter part of the decade slowing labour force growth in the sector from 2006 to 2011.

The oil and gas sector has been driving important subsectors of construction as well, especially related to non-residential buildings, heavy and civil projects, and speciality trades, resulting in growth of 38.3% across the city, and 53.9% and 63.2% across the province and the CMA outside of Edmonton from 2001 to 2011. Similarly, the utility sector labour force has grown, with professional, scientific, and technical services also experiencing growth tied in part to oil and gas expansion. The manufacturing sector, though facing external challenges tied to the recession and volatile demand, grew steadily in each jurisdiction from 2001 to 2011 as well, with the majority of labour force growth occurring in the last half of the decade. Key knowledge-based sectors of the economy like finance and insurance, and professional, scientific, and technical services grew steadily as well. Generally speaking, labour force growth in most sectors across the city of Edmonton lagged behind the province, and behind the communities surrounding the city from 2001 to 2011.

From 2006 to 2011, a similar trend occurred, with growth of the labour force at the provincial level, and in the communities surrounding Edmonton leading growth of labour force in the city. The exceptions were in the agricultural and public



administration sectors, where labour force growth in the city exceeded growth in the province and the ring communities of the CMA. For the city, some of the strongest areas of labour force growth were agriculture, professional, scientific, and technical services, construction, mining and oil and gas, manufacturing, and retail and wholesale trade; key knowledge-based, industrial, and population-related sectors for the provincial economy. The growth of agricultural sector labour force in the city is not related to business and employment growth within the borders of the city (as shown later through business patterns), but rather the growth of businesses and employment in the sector outside of the city in the rural areas inside and outside of the CMA.

FIGURE 41: LABOUR FORCE GROWTH/DECLINE BY INDUSTRY, 2001-2011, 2006-2011

Industries (NAICS)	2001-2011			2006-2011		
	Alberta	City of Edmonton	CMA (excl. Edmonton)	Alberta	City of Edmonton	CMA (excl. Edmonton)
All Industries	32.6%	24.0%	34.9%	15.7%	14.3%	17.2%
11- Agriculture, Forestry, Fishing, Hunting	-0.3%	0.7%	-7.9%	11.2%	16.9%	5.7%
21- Mining and Oil and Gas Extraction	86.2%	46.6%	119.7%	18.9%	15.9%	18.3%
22 - Utilities	52.8%	36.6%	42.8%	15.0%	12.1%	17.1%
23 - Construction	53.9%	38.8%	63.2%	18.1%	16.2%	19.9%
31-33 - Manufacturing	20.2%	21.5%	23.2%	17.2%	15.3%	21.0%
41 - Wholesale Trade	30.6%	25.5%	34.9%	15.6%	15.0%	18.1%
44-45 - Retail Trade	31.9%	24.0%	39.3%	16.8%	15.3%	18.2%
48-49 - Transportation and Warehousing	23.2%	20.0%	18.1%	15.1%	14.5%	16.7%
51 - Information and Cultural Industries	2.5%	-4.1%	-1.2%	11.7%	8.2%	11.2%
52 - Finance and Insurance	27.5%	18.7%	28.7%	14.8%	12.4%	13.2%
53 - Real Estate and Rental and Leasing	40.9%	30.6%	38.0%	14.0%	11.2%	19.6%
54 - Professional, Scientific, and Technical Services	43.6%	24.8%	45.2%	17.4%	16.2%	18.8%
55 - Management of Companies and Enterprises	45.3%	29.5%	118.0%	4.3%	-1.0%	4.5%
56 - Administrative and Support, Waste Management and	26.9%	20.3%	15.3%	13.4%	12.3%	15.2%
61 - Educational Services	26.2%	21.0%	27.6%	14.3%	12.3%	18.9%
62 - Health Care and Social Assistance	35.8%	24.4%	35.7%	16.3%	14.9%	18.5%
71 - Arts, Entertainment, and Recreation	25.5%	14.6%	24.0%	11.7%	11.1%	10.7%
72 - Accommodation and Food Services	19.4%	15.5%	21.6%	14.4%	14.0%	16.6%
81 - Other Services (Except Public Administration)	36.3%	21.9%	42.6%	13.7%	12.1%	14.6%
91 - Public Administration	32.1%	26.4%	30.4%	14.0%	14.4%	14.1%

Source: Statistics Canada Census of Population 2006, and Manifold Data Mining, Custom Demographic Report, 2012

Overall, labour force growth has been comparatively healthy in Alberta and the city of Edmonton/Edmonton CMA over the last decade, but particularly over the last five years despite challenging economic conditions. Labour force growth was particularly strong in the oil and gas sector, and industries with value chain connections to the oil and gas and other resource sectors, such as construction, utilities, manufacturing, and transportation and warehousing. Though the growth in the city lagged behind growth rates at the province and in the communities surrounding the city, the existing labour force supports the positioning of the city as a centre for a range of knowledge-based and industrial sector activity; both related to oil and gas, and in areas outside of the primary sector. From an investment attraction perspective, the growth of labour in the broader value chain of oil and gas industries speaks to the greater opportunities for



development of spin-offs from oil and gas, which have the potential to further diversify the local and regional economy into niche areas outside of oil and gas. Alberta continues to be a driver of economic prosperity in Canada, suggesting the attraction of labour will continue to be a priority in the province.

2.3.3 Labour Force by Occupation

In order to get a more complete picture of the labour force capabilities for a particular area, it is necessary to examine the labour force by occupation, that is, by the core activities associated with an individual's employment. This is in contrast to the previous section, which outlines the labour force by the industry in which the individual is employed. Examining the labour force by occupation provides a more detailed look at the individual specializations which may not be as evident through industry-based statistics and provide more of an indication of the extent of knowledge workers that may be present in a local economy.

Sales and service occupations accounted for the largest proportional shares of labour force across Alberta, the City of Edmonton, and the areas surrounding the city in 2011, followed in each jurisdiction by occupations in business, finance, and administration, and trades, transport, and equipment operations. Across the city of Edmonton, a number of more knowledge-based occupational classifications account for similar or higher proportions of total labour force than in the province in 2011, most notably:

- Business, Finance, and administration (18.8% to 17.7%);
- Health (6.3% to 5.3%); and,
- Occupations in social science, education, government service, and religion (8.3% to 7.0%).

Labour force in occupations related to natural and applied sciences, including scientists and engineers, were equal at the city and provincial levels. The communities in the CMA outside of Edmonton hold a unique advantage over Edmonton and the Province as they held the highest relative proportion of total labour force in management occupations. These are the occupations that typically require the highest levels of education and also pay the highest wages. They are key occupations in the emerging knowledge-based economy and they may also drive decisions on investment. The proportions of labour force in knowledge-based occupations in areas outside of Edmonton generally fell below those across the city of Edmonton (with the exception of management occupations), with trades-based occupations and occupations unique to primary industry (i.e. oil and gas extraction, agriculture) holding higher proportions of labour force as well. Though the areas surrounding the city hold higher proportions of individuals in management occupations, the City of Edmonton leads in a number of other key knowledge-based occupational classifications.



FIGURE 42: PROPORTION OF TOTAL LABOUR FORCE BY OCCUPATION (NOC-S), 2006 AND 2010

Occupation (NOC-S)	Alberta		City of Edmonton		CMA (excl. Edmonton)	
	2011	2006	2011	2006	2011	2006
All occupations	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
A Management occupations	9.8%	9.7%	9.0%	9.0%	11.5%	11.3%
B Business, finance and administration occupations	17.7%	17.7%	18.8%	18.8%	18.7%	18.7%
C Natural and applied sciences and related occupations	7.6%	7.5%	7.6%	7.6%	6.1%	6.0%
D Health occupations	5.3%	5.4%	6.3%	6.3%	5.6%	5.6%
E Occupations in social science, education, government service and religion	7.0%	7.1%	8.3%	8.5%	6.9%	7.0%
F Occupations in art, culture, recreation and sport	2.2%	2.3%	2.7%	2.8%	1.8%	2.0%
G Sales and service occupations	22.7%	22.7%	24.2%	24.2%	21.2%	21.1%
H Trades, transport and equipment operators and related occupations	18.5%	18.2%	18.0%	17.7%	20.8%	20.6%
I Occupations unique to primary industry	6.0%	6.1%	1.8%	1.8%	4.8%	5.1%
J Occupations unique to processing, manufacturing and utilities	3.3%	3.4%	3.2%	3.3%	2.5%	2.6%

Source: Statistics Canada Census of Population 2006, and Manifold Data Mining, Custom Demographic Report, 2012

As with the labour force by industry assessment, the labour force in each of the occupational classifications grew across the province, the city of Edmonton, and the areas of the CMA surrounding the city of Edmonton. From 2001 to 2011, the fastest growing occupational classifications in the city of Edmonton were (Figure 43):

- Trades, transport and equipment operators and related occupations (44.2%);
- Health occupations (43.7%); and
- Occupations unique to primary industry (41.4%).

For the most part, the growth in these occupational classifications can be tied back to the expansion of the oil and gas sector in the province, with new labour force arriving in the city to satisfy demand for skilled and semi-skilled, or unskilled labour in the industrial sectors of the economy. The communities outside of Edmonton in the CMA appeared to generate much of this growth, as each occupational classification grew at a faster rate than in the city of Edmonton (with the exception of occupations unique to primary industry). Over the last five years, labour force has continued to grow in each occupational classification, with trades, transport, and equipment operators (16.0%), natural and applied sciences (15.4%), and management occupations (15.0%) leading the growth across the City. Like growth over the last decade, labour force in the areas of the CMA excluding the city of Edmonton grew at a faster rate in every occupational classification than across the city, with the exception of occupations unique to primary industry and occupations in art, culture, recreation, and sport.



FIGURE 43: LABOUR FORCE GROWTH/DECLINE BY OCCUPATION, 2001-2011, 2006-2011

Industries (NAICS)	2001-2011			2006-2011		
	Alberta	City of Edmonton	Capital Region (excl. Edmonton)	Alberta	City of Edmonton	Capital Region (excl. Edmonton)
All occupations	32.6%	31.6%	34.9%	15.7%	14.2%	17.2%
A Management occupations	24.4%	21.3%	29.8%	16.9%	15.0%	18.8%
B Business, finance and administration occupations	35.6%	34.5%	38.3%	15.7%	14.4%	16.9%
C Natural and applied sciences and related occupations	43.4%	37.2%	38.2%	17.3%	15.4%	18.5%
D Health occupations	44.9%	43.7%	46.6%	14.4%	14.6%	18.0%
E Occupations in social science, education, government service and religion	32.2%	29.9%	32.0%	13.7%	11.5%	16.4%
F Occupations in art, culture, recreation and sport	30.0%	31.0%	31.4%	8.2%	9.6%	8.9%
G Sales and service occupations	28.5%	24.6%	27.4%	15.7%	14.1%	17.4%
H Trades, transport and equipment operators and related occupations	45.4%	44.2%	50.4%	17.5%	16.0%	18.8%
I Occupations unique to primary industry	14.3%	41.4%	16.2%	13.4%	12.0%	10.6%
J Occupations unique to processing, manufacturing and utilities	11.4%	7.3%	11.1%	12.9%	11.8%	15.4%

Source: Statistics Canada Census of Population 2006, and Manifold Data Mining, Custom Demographic Report, 2012

2.3.4 Employment by Industry

In contrast to the labour force, employment in a given community accounts for the individuals who are employed or held a job during the reference week of the survey, rather than those that were employed or unemployed during the reference week (or the Labour Force). Employment levels by industry sector are typically reported down to the Census Metropolitan Area level.

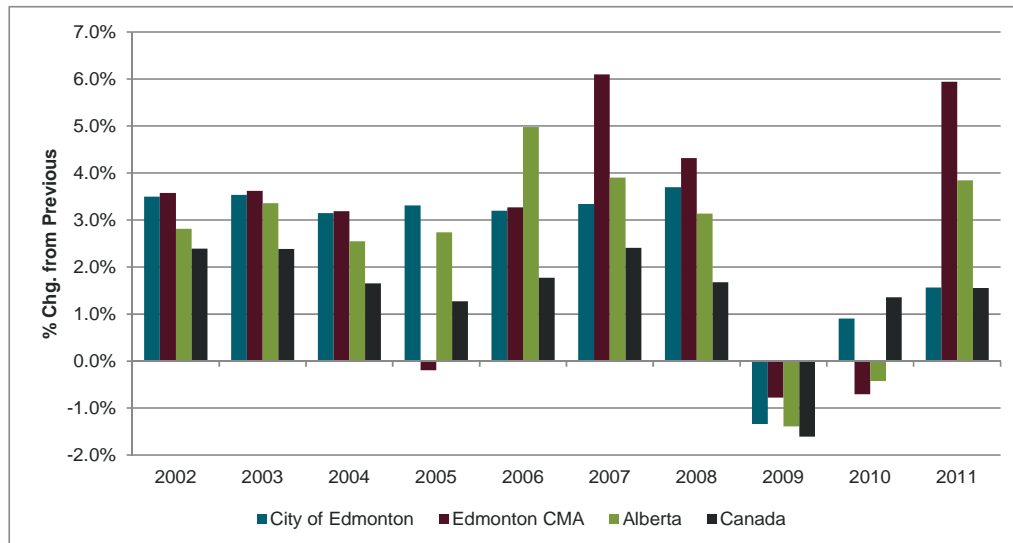
From 2001 to 2011, employment across the Edmonton CMA grew by approximately 32%, and employment in the City of Edmonton grew by approximately 28%. Province-wide employment growth over the same time period matched the City (28%). Employment in all three jurisdictions grew significantly more than across the country over the same time period, with employment growth in all industries reaching 15.8% across Canada.

Within the last decade, performance has varied across Canada and Alberta, especially during the most recent recession in late 2008 and early 2009. From 2001 to 2008, the City of Edmonton posted strong employment growth between 3.1% and 3.7% per year, where employment declined by 1.3% between 2008 and 2009. From 2009 to 2011 though, the City regained the employment lost during the recession, and experienced growth of 2.4% over the three-year period. This coincides with the recovery of the oil and gas sector, which has resumed much of the activity (i.e. exploration, construction) that was delayed at the onset of the recession and the tightening of credit markets. With the exception of a slight decline in 2005, likely tied to instability in oil prices after a quick rise from 2002 to 2004, the Edmonton CMA has experienced similar patterns of employment growth. Employment across the CMA declined for two consecutive years, but rebounded considerably in 2011 to drive growth of employment well-beyond pre-recessionary levels across the CMA. Again, this coincides with the recovery of the



economy in general, but also the oil and gas sector. Alberta follows a similar, yet slightly more stable pattern than the CMA, with consecutive years of decline from 2008 to 2010, and a strong recovery to 2011. All three jurisdictions have outperformed the national economy with regards to employment growth and employment recovery from 2001 to 2011.

FIGURE 44: EMPLOYMENT GROWTH, 2001-2011

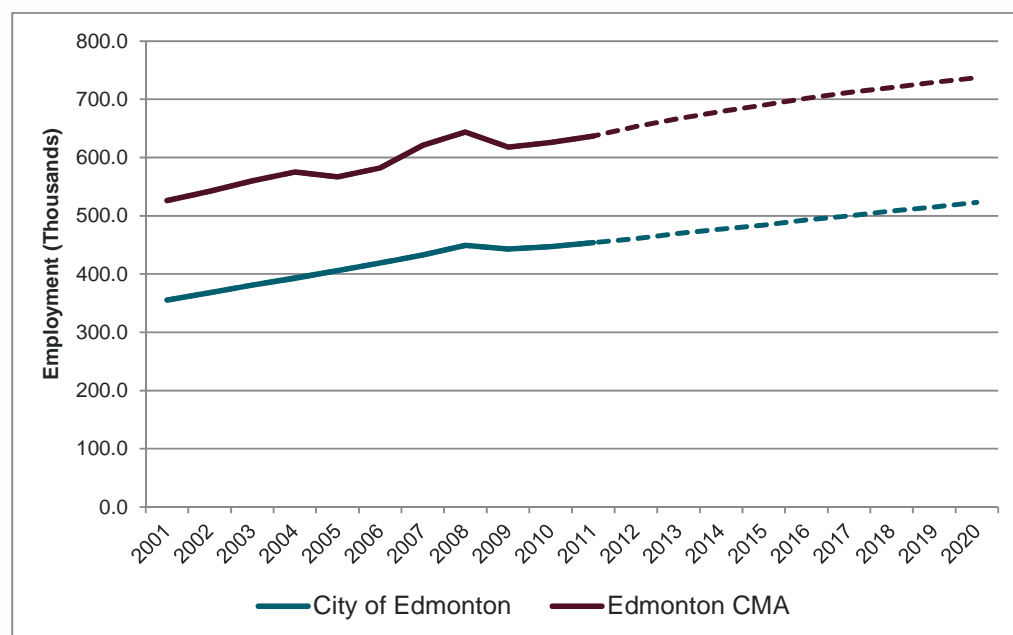


Source: Statistics Canada Labour Force Survey, Tables 282-0110 and 282-0112, and City of Edmonton, Economic Trends and External Research, 2010

Alberta is expected to continue driving employment growth in Canada. As such, employment in both the Edmonton CMA and city of Edmonton is expected to continue growing (Figure 45) to approximately 523,000 and 737,000 respectively by 2020, based on projections provided by the City of Edmonton.



FIGURE 45: EMPLOYMENT GROWTH AND PROJECTIONS (2001-2020) (THOUSANDS)



Source: City of Edmonton, Economic Trends and External Research, 2010

Looking at oil and gas prices and production as a driver for the province's employment prospects, the diversification of the provincial and Edmonton economies appear to make them slightly less reliant on oil and gas sector than the CMA as a whole, given more stable rates of growth and decline at the provincial and local level. Areas outside of the city of Edmonton continue to focus on more industrial sectors of the economy tied directly to servicing the oil and gas industries, while the province as a whole and the city continue to experience employment growth in knowledge-based sectors that offer more value-added benefits. Though the local, regional, and provincial economies outperformed the national economy through the lead-up and duration of the most recent recession, they were not immune to the challenges related to decreased demand from the U.S., decreased demand for housing and construction, and decreased demand for manufactured goods, among other challenges faced by the national economy. Examining employment by economic sector can provide more in-depth understanding of the employment-based performance of an economy, which has implications on both growth prospects and competitiveness.

In 2011, the industries that accounted for the largest proportion of total employment in the Edmonton CMA included:

- Wholesale/retail trade (16.8%);
- Health care (11.6%);
- Construction (10.9%);
- Manufacturing (8.0%); and,
- Educational services (7.3%).



Employment in each one of these sectors in the Edmonton CMA accounted for a higher proportion of total employment than across the Province in 2011. In some of the more key knowledge-based sectors of the economy, the share of total employment lagged behind the province. In the professional, scientific, and technical services sector, which includes engineering, surveying, and design companies, the CMA's 6.6% share of employment was below that of the province at 7.8% in 2011. However, in the finance, insurance, and real estate sector, the CMA's 4.8% share of employment was directly in line with that of the Province in 2011. Figure 46 illustrates employment by major sector in both 2006 and 2011.

FIGURE 46: EMPLOYMENT BY MAJOR INDUSTRY GROUP, ALBERTA AND EDMONTON CMA, 2006 AND 2011

Industry	Alberta		Edmonton CMA	
	2011	2006	2011	2006
Total Employment	100.0%	100.0%	100.0%	100.0%
Agriculture	2.5%	2.8%	0.6%	0.7%
Forestry, fishing, mining, quarrying, oil and gas	7.4%	7.5%	3.0%	2.7%
Utilities	0.8%	0.9%	0.7%	0.8%
Construction	10.1%	9.3%	10.9%	9.9%
Manufacturing	6.8%	7.4%	8.0%	8.1%
Trade	15.4%	15.1%	16.8%	16.7%
Transportation and warehousing	5.1%	5.6%	4.7%	5.7%
Finance, insurance, real estate and leasing	4.8%	5.1%	4.8%	5.6%
Professional, scientific and technical services	7.8%	7.7%	6.6%	6.6%
Business, building and other support services	3.5%	3.3%	3.7%	3.4%
Educational services	6.1%	7.0%	7.3%	7.5%
Health care and social assistance	10.7%	9.5%	11.6%	10.5%
Information, culture and recreation	3.8%	3.7%	3.9%	4.0%
Accommodation and food services	6.2%	6.0%	6.1%	5.4%
Other services	5.0%	4.7%	5.6%	5.6%
Public administration	4.0%	4.3%	5.7%	6.8%

Source: Statistics Canada, Labour Force Survey table 282-002 and table 282-0112, 2012

As noted previously, the Edmonton CMA led the province in terms of employment growth from 2001 to 2011. Figure 47 outlines employment growth by sector for both Alberta and the Edmonton CMA. The majority of employment growth in the province happened in the 2001 to 2006 time period (17.5% growth), based on substantial gains in the following sectors:

- Forestry, fishing, mining, quarrying, and oil and gas (44.5%);
- Business, building, and other support services (36.4%)³⁸;
- Construction (35.6%); and

³⁸ The business, building, and other support services sector is a combination of the following NAICS sectors: 55 – Management of Companies and Enterprises, and 56 – Administrative and Support, Waste Management and Remediation Services. It is used to report data collected in the Labour Force Survey conducted by Statistics Canada.



- Utilities (33.1%).

Population related industries like public administration (27.1%), education (22.3%), and health care (21.7%) grew rapidly in tandem with the growing population in the province attracted by the strong economy. Growth slowed over the 2006-2011 period, though key industrial sectors like construction (18.5% growth from 2006 to 2011), and service-based sectors like health care (23.8%), personal services (16.4%), and business support (14.2%) continued to grow at healthy rates to service oil and gas industries and the expanding population, despite the recent recession.

In contrast, employment in the Edmonton CMA grew at a healthy rate over the last decade, with growth between 2006 and 2011 (15.5%) slightly eclipsing the growth rate between 2001 and 2006 (14.1%). Sectors in the Edmonton CMA that led the growth over the last decade include sectors related to resource extraction and processing:

- Agriculture (104.8%);
- Business, building, and other support services (94.5%);
- Forestry, fishing, mining, quarrying, and oil and gas (77.4%); and
- Construction (74.4%).

For each of these four sectors the growth of employment is likely tied to expansion of business in areas outside of the city, especially within agricultural and resource industries. While the employed labourers may live in the City of Edmonton, their work in the agricultural, forestry, mining, or oil extraction industries likely takes them to work sites outside of the city. As such, this does not necessarily reflect business growth of primary sectors within the City of Edmonton over the last decade.

Despite the challenges being encountered by the North American manufacturing sector over the last several decades, perhaps the most challenging of which being the last decade, employment in the CMA's manufacturing sector grew by 10.3% from 2001 to 2011, with the strongest growth coming in the last five years. The CMA remains an important centre for manufacturing, particularly in subsectors that service the growing resource extraction, and civil and non-residential construction industries. These include structural metals, industrial machinery and components, and civil and utility structures.

From 2006 to 2011, the strongest growth in the Edmonton CMA has been in the following sectors:

- Accommodation and food services (30.8%);
- Forestry, fishing, mining, quarrying, and oil and gas (29.9%);
- Business, building, and other support services (27.7%);
- Health care (27.1%); and,
- Construction (26.3%).

Much of this growth exceeded the growth of each sector at the provincial level as well. From 2006 to 2011 the CMA's employment growth exceeded the province in a number of key industrial and knowledge-based sectors, such as forestry, fishing, mining, quarrying, oil and gas; utilities; construction; manufacturing; professional, scientific, and technical services; and business support. The CMA's economy is benefitting



greatly from increased resource-based activities in northern Alberta and northern Canada, as it is the closest major urban centre to much of that activity.

FIGURE 47: EMPLOYMENT GROWTH/DECLINE BY INDUSTRY, EDMONTON CMA AND ALBERTA, 2001-2011

Industry	Alberta			Edmonton CMA		
	2001-2011	2001-2006	2006-2011	2001-2011	2001-2006	2006-2011
Total Employment	28.4%	17.5%	9.3%	31.9%	14.1%	15.5%
Agriculture	-14.2%	-10.9%	-3.7%	104.8%	81.0%	13.2%
Forestry, fishing, mining, quarrying, oil and gas	54.8%	44.5%	7.1%	77.4%	36.5%	29.9%
Utilities	22.6%	33.1%	-7.9%	14.3%	7.1%	6.7%
Construction	60.7%	35.6%	18.5%	74.4%	38.0%	26.3%
Manufacturing	1.1%	0.8%	0.4%	10.3%	-3.3%	14.0%
Trade	27.5%	14.4%	11.5%	33.3%	15.3%	15.6%
Transportation and warehousing	7.6%	8.3%	-0.6%	1.6%	6.8%	-4.9%
Finance, insurance, real estate and leasing	20.2%	18.2%	1.6%	2.6%	4.2%	-1.5%
Professional, scientific and technical services	32.2%	19.0%	11.1%	25.6%	8.7%	15.5%
Business, building and other support services	55.7%	36.4%	14.2%	94.5%	52.3%	27.7%
Educational services	16.7%	22.3%	-4.6%	14.0%	1.9%	11.9%
Health care and social assistance	50.7%	21.7%	23.8%	47.3%	15.9%	27.1%
Information, culture and recreation	17.9%	5.5%	11.8%	28.0%	13.0%	13.2%
Accommodation and food services	17.5%	4.0%	13.0%	15.3%	-11.9%	30.8%
Other services	35.4%	16.4%	16.4%	48.0%	29.0%	14.8%
Public administration	31.3%	27.1%	3.3%	32.9%	37.4%	-3.3%

Source: Statistics Canada, Labour Force Survey table 282-002 and table 282-0110, 2012

However, it is important to note that the CMA lags behind the province in some key employment sectors. Based on connections to North American markets and the major transportation infrastructure in the west, like the Port of Metro Vancouver and the Port of Prince Rupert, Alberta has experienced growth in transportation, warehousing, and distribution sectors. Employment growth in the CMA has lagged behind that of the province despite access to major provincial intermodal infrastructure. The development of Port Alberta and its accompanying infrastructure improvements have the potential to be key drivers for this industry in Edmonton and the CMA over the next several decades though, especially as downstream activities in the oil and gas sector expand in the Region. At present though, the CMA lacks the comparative growth rates to suggest that it has developed a critical mass to be a major centre for transportation and logistics, except in niche areas connected to sectors like oil and gas, manufacturing, and construction.

Further, Alberta has continued to develop as a centre for financial and related services in western Canada, to the extent that the finance, insurance, and real estate sector has grown by approximately 20.2% across the province over the last decade. Other knowledge-based sectors like professional, scientific, and technical services have also expanded rapidly. The CMA lags behind the province in terms of employment growth in each of these sectors. It is important to note though, that the CMA continues to gain on the province in the professional, scientific, and technical services sector, with employment growth over the last several years exceeding that of the province. As the major urban area with the closest connections to resource development in the north, and emerging areas of strength in industrial biotechnology and clean technology, the



CMA is a natural centre for development of the industry in areas like environmental consulting, engineering, and scientific research and development. Growth in the financial services sector has been very limited in the CMA, with much of the provincial activity centred on Calgary. Based on past trends, the CMA does not appear to be developing a similar competitive edge in financial services.

2.3.5 Wages by Industry

Labour force challenges in Alberta have been well documented over the last several years. As the provincial economy moved through its latest period of rapid expansion, competitiveness for skilled labour increased, as did the average wages demanded by that skilled labour. Average hourly wages for full and part-time employees in all industries across the province went from \$17.11 in 2001, to \$25.47 in 2011, or an overall increase of 48.9%. In comparison, average wages grew by 33.6% across all of Canada over the same time period. In 2011, Alberta held the highest average hourly wages for all industries and all employees, of each province in Canada. The next highest average wages were in Ontario, but they were well behind Alberta at \$23.72 per hour.

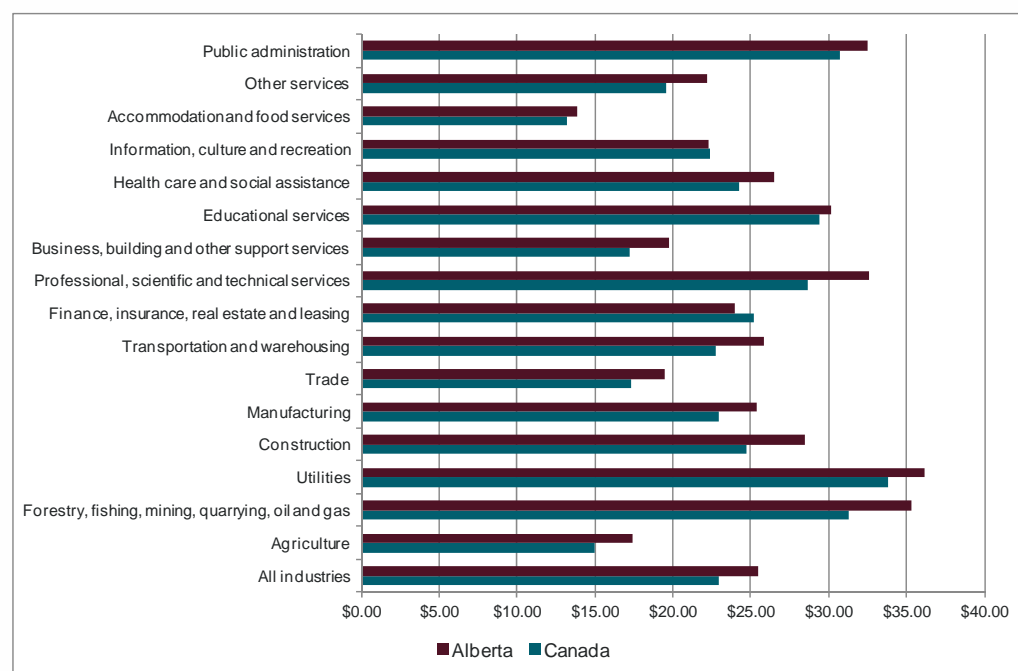
Wages grew significantly across all industries in Alberta from 2001 to 2011, but each of the following sectors experienced growth in excess of 50% over this time period:

- Other services (i.e. personal services, repair) (56.8%);
- Business, building and other support services (55.3%);
- Public administration (54.2%);
- Construction (53.2%);
- Forestry, fishing, mining, quarrying, oil and gas (53.1%); and,
- Health care and social assistance (52.9%).

Alberta leads the Country in terms of average hourly wages in most major sectors, as illustrated in Figure 48.



FIGURE 48: AVERAGE HOURLY WAGES BY INDUSTRY, ALBERTA AND CANADA, 2011



Source: Statistics Canada, Labour Force Survey table 282-0072, 2012

The greatest wage discrepancies between Canada and Alberta fall in sectors such as forestry, fishing, mining, quarrying, oil and gas (primarily driven by oil and gas); professional, scientific, and technical services; construction; and transportation and warehousing; each of which exhibit a \$3.00 or more per hour advantage over their national counterparts. Only in the finance, insurance, and real estate sector do Alberta's average hourly wages of \$23.96 per hour fall below Canada's. Alberta's average wages in the sector were well behind those of Ontario (\$26.74 per hour), which held Canada's highest average hour wages in finance, insurance, and real estate industries in 2011.

Alberta Learning and Information Services (ALIS) undertake a survey of salaries in major occupational and industry classifications every two years, by each economic region in Alberta. The results from the 2009 survey are summarized in Figure 49.

At the regional level, the Edmonton CMA had the highest wages in utilities; information, culture, and recreation; and public administration, though the Region's wages in most other sectors were typically second, or third-highest in Alberta as well. For industrial sectors like manufacturing, oil and gas, and construction, the wages in centres like Wood Buffalo-Cold Lake, Red Deer, and Athabasca-Peace River-Grande Prairie often exceeded those in the Edmonton CMA. For more knowledge-based and population sectors (with the exception of retail trade being led by Wood Buffalo-Cold Lake), Calgary typically held the highest wages for those sectors in 2009, with Edmonton close behind.



FIGURE 49: AVERAGE WAGES BY INDUSTRY AND ECONOMIC REGION, ALBERTA, 2009

Industry	Athabasca- Peace River- Grande Prairie	Banff-Jasper- Rocky Mountain House	Calgary	Camrose- Drumheller	Edmonton	Lethbridge- Medicine Hat	Red Deer	Wood Buffalo- Cold Lake
Agriculture	\$16.74	\$13.39	\$21.10	\$18.69	\$15.31	\$18.11	\$16.92	\$20.69
Forestry, Logging, Fishing &	\$22.30	\$22.33	\$22.78	NA	\$22.03	NA	NA	\$24.73
Oil and Gas Extraction	\$32.40	\$33.18	\$47.42	\$40.23	\$29.20	\$29.28	\$33.14	\$37.09
Utilities	\$31.69	\$30.18	\$31.58	\$23.54	\$33.20	\$28.31	\$30.88	\$31.05
Construction	\$26.90	\$26.55	\$28.29	\$25.49	\$29.97	\$22.75	\$24.68	\$33.85
Manufacturing	\$31.98	\$25.71	\$24.37	\$25.85	\$25.82	\$21.62	\$33.23	\$23.04
Wholesale Trade	\$23.99	\$20.36	\$23.60	\$22.09	\$26.56	\$21.99	\$23.63	\$32.83
Retail Trade	\$17.27	\$16.46	\$17.35	\$17.12	\$17.35	\$16.54	\$16.18	\$19.49
Transportation and Wareho	\$27.90	\$25.19	\$22.58	\$21.49	\$25.04	\$22.43	\$21.41	\$27.22
Information, Culture & Recre	\$16.76	\$16.46	\$16.77	\$14.51	\$21.67	\$15.20	\$15.05	\$15.61
Finance, Insurance, and Re	\$21.46	\$24.10	\$23.68	\$23.33	\$24.32	\$21.62	\$22.13	\$27.70
Professional, Scientific & Te	\$27.45	\$24.63	\$35.05	\$25.59	\$33.21	\$27.33	\$30.15	\$32.87
Business, Building & Other	\$18.92	\$19.86	\$18.13	\$16.92	\$16.39	\$16.08	\$17.46	\$16.12
Educational Services	\$31.14	\$18.77	\$34.54	\$25.67	\$31.87	\$22.91	\$16.68	\$24.14
Health	\$21.77	\$22.73	\$25.52	\$21.22	\$24.30	\$21.78	\$24.01	\$22.40
Accommodations & Food S	\$12.12	\$12.55	\$12.20	\$11.61	\$11.70	\$10.68	\$11.19	\$13.86
Other Services	\$24.27	\$21.02	\$22.47	\$19.30	\$22.49	\$21.25	\$18.74	\$21.97
Public Administration	\$29.92	\$29.34	\$31.28	\$26.69	\$31.80	\$26.99	\$30.56	\$28.09
Mining	\$26.41	\$25.69	\$25.81	\$27.74	\$19.44	\$28.11	NA	NA

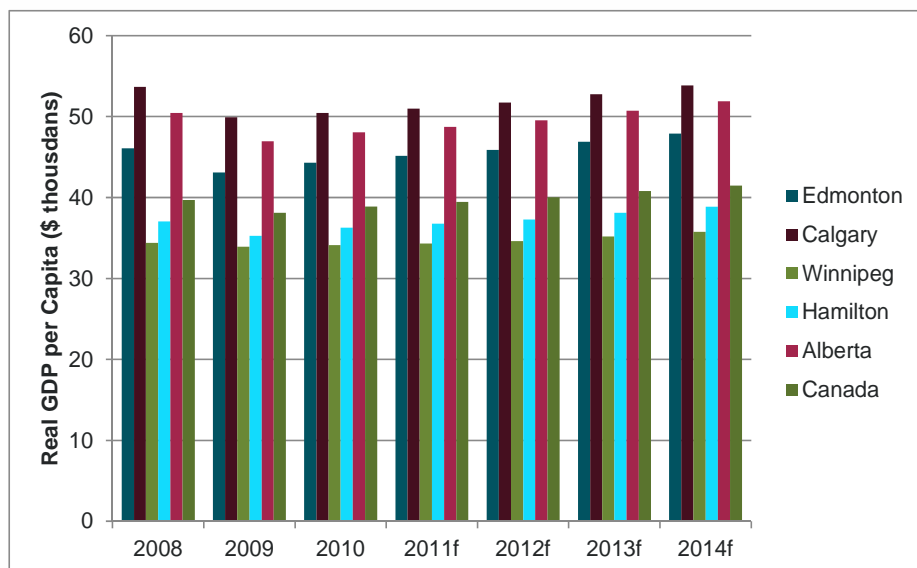
Source: Alberta Learning and Information Service (ALIS), 2009

2.3.6 GDP per capita

The Gross Domestic Product (GDP) per capita is the ratio of GDP to total population. In this case, the GDP figures are expressed in constant 2002 dollars. This gives us what is commonly known as the Real Gross Domestic Product, which eliminates the fluctuations resulting from inflation. The GDP is widely used to gauge broad based economic trends such as recessions or recoveries. It can also be used as a general metric to measure relative wealth between regions. The GDP does not, however, account for variations of cost of living.



FIGURE 50: GDP PER CAPITA, CANADA, ALBERTA, EDMONTON, AND CALGARY, 2008-2014



Source: Conference Board of Canada (2011). Metropolitan Outlook, 2011

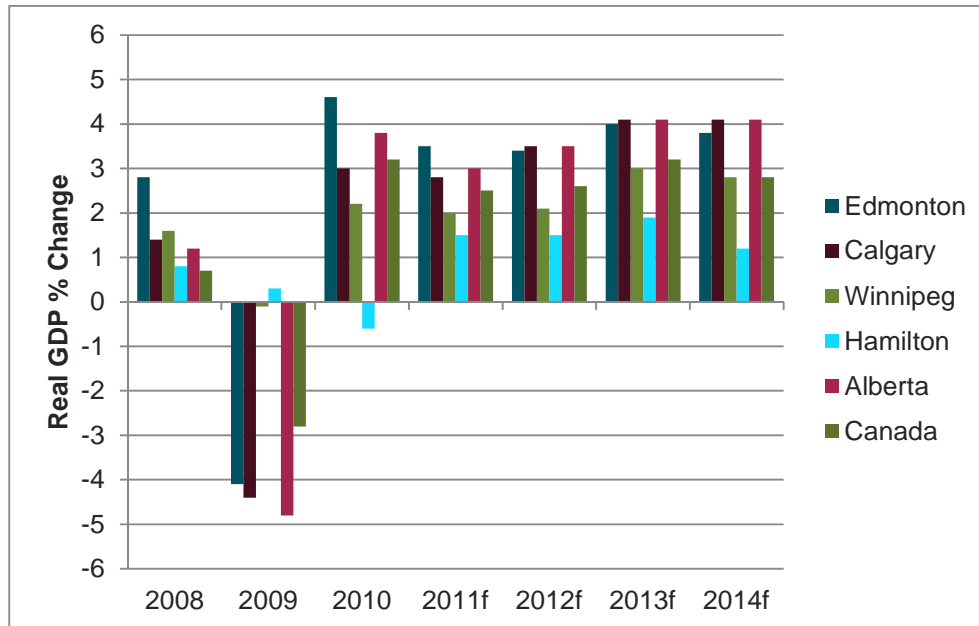
In 2010, Alberta's GDP per capita was nearly \$10,000 higher than the Canadian average. Calgary boasts the highest GDP per capita (\$50,462), while Edmonton's was \$44,281, which was \$5,378 above the national average. The Conference Board of Canada predicts that this trend will continue over the next five years.

2.3.7 GDP Growth

The GDP % change year-to-year is used to measure growth or decline in a local economy. A *positive* growth rate of GDP implies that the economy is expanding, while a *negative* growth rate of GDP implies that the economy is contracting. On the one hand, a rapidly expanding economy may be in a **boom**, depending on its rate of expansion. On the other hand, a contracting economy, for at least two consecutive quarters, is said to be in a **recession**.



FIGURE 51: GDP % CHANGE, CANADA, ALBERTA, EDMONTON, CALGARY, 2008-2014



Source: Conference Board of Canada (2011). Metropolitan Outlook, 2011

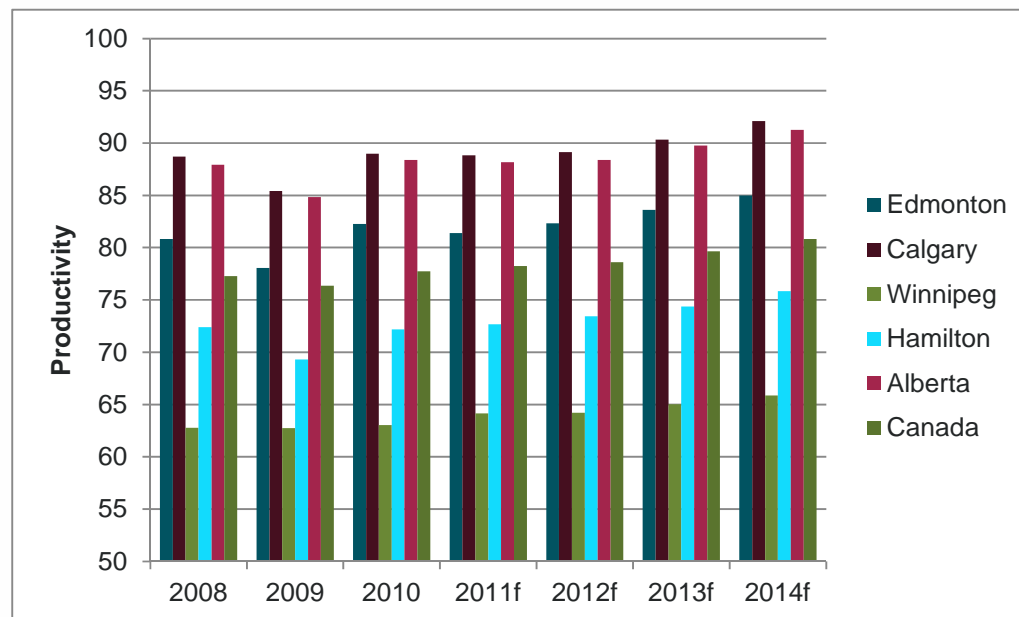
Figure 51 demonstrates the severity of the 2008-2009 economic recession in Alberta and Canada. Since that time, however, the Canadian economy has shown broad based recovery. In 2010, Edmonton's GDP percentage change was 4.6%, which was higher than the change in GDP of Alberta (3.8%), Calgary (3%), and Canada (3.2%). Relative to these jurisdictions, Edmonton has demonstrated considerable economic growth in the last year and is expected to continue over the next five years. Moving forward stronger growth should generate greater levels of employment opportunities.

2.3.8 Productivity

Productivity is a macro-economic indicator and can be measured through several methods. In this case productivity has been calculated by dividing the real GDP by employment. There are several factors that may affect the output of this calculation, which include technological progress, the skill level of the labour force, and oil prices. Oil prices have a particularly strong influence on the productivity figures in Alberta and its regional economies.



FIGURE 52: PRODUCTIVITY BY SELECTED GEOGRAPHIES, MEASURED BY REAL GDP/ EMPLOYMENT, 2008-2014



Source: Conference Board of Canada (2011). Metropolitan Outlook, 2011

High productivity levels generate wealth, allowing businesses to pay higher salaries and wages. As of 2010, Edmonton (82.27) was approximately six points behind Calgary (88.79). Used as a high level business site selection tool, this figure suggests that Edmonton is comparatively less attractive than Calgary. Accordingly, this may hinder Edmonton's capacity to draw investment dollars in the short to medium term.

2.3.9 Gross Domestic Product by Industry

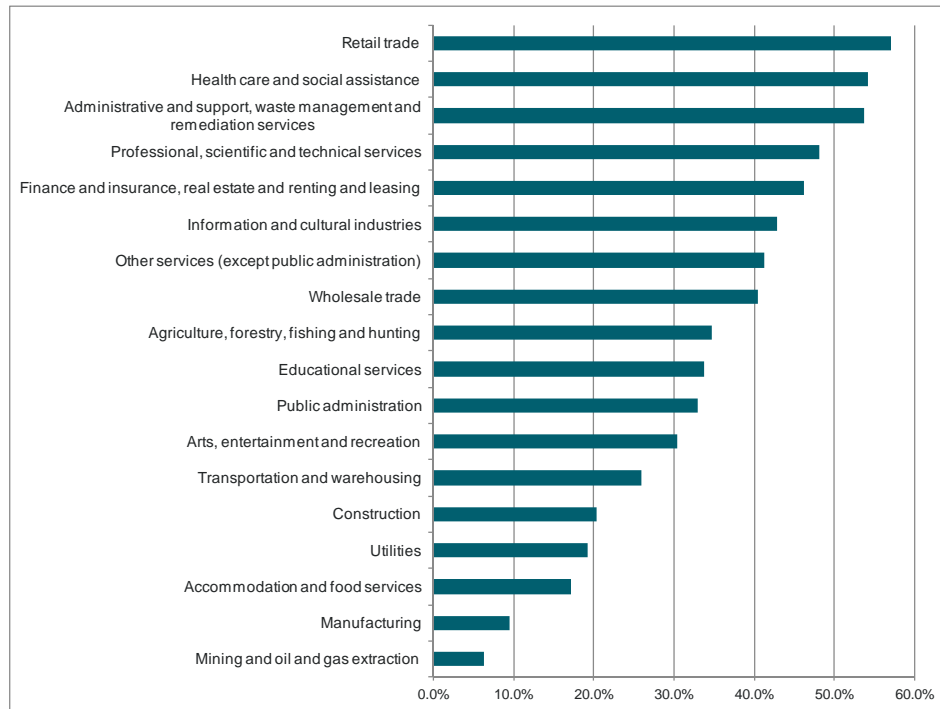
Employment growth and performance only identifies an element of industry growth and success over a given time period. Changes in the level of employment may mask the success of an industry, especially in light of the fact that a number of traditionally labour intensive industries are evolving to contribute the same, or higher, levels of production with a smaller workforce. The continued integration of advanced manufacturing technologies into the manufacturing sector is a primary example of this. Though sector-based employment may decline, new technologies have allowed the industry to maintain a similar level of production.

From 2001 to 2010, GDP in Alberta grew by 25.3%, led primarily by population-related sectors like retail trade (57.0%), and health care and social assistance (54.2%), and knowledge-based sectors like professional, scientific, and technical services (48.2%), finance, insurance, and real estate (46.3%) and information and cultural industries (42.8%). Growth in more industrial sectors was led by wholesale trade (40.4%),



transportation and warehousing (26.0%), and construction (20.3%), with comparatively more moderate growth in the manufacturing (9.5%) and oil and gas sectors (6.4%).

FIGURE 53: GROSS DOMESTIC PRODUCT AT BASIC PRICES, NOMINAL GROWTH BY INDUSTRY, 2001-2010, ALBERTA

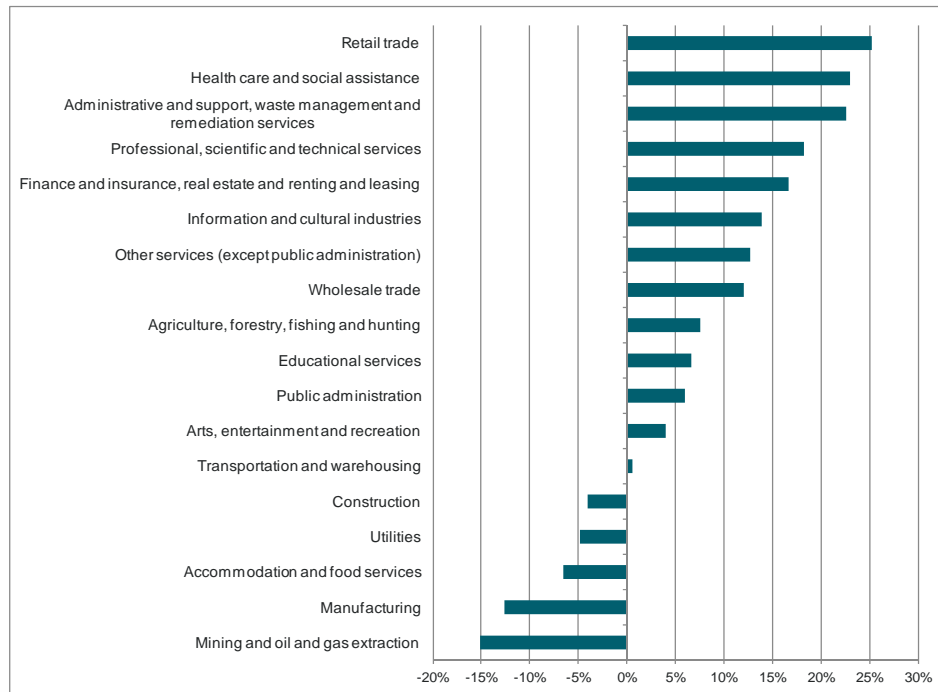


Source: Statistics Canada, CANSIM table 379-0025, 2012

That growth over the last decade is mirrored in the changes in proportional share of provincial GDP held by each sector. The largest change in share has come from population-related sectors (i.e. retail trade and health care), though some of the key knowledge-based sectors of the economy (i.e. professional, scientific, and technical services; finance, insurance, and real estate; and information and cultural industries) grew their relative share of GDP significantly as well between 2001 and 2010. Each of construction, utilities, manufacturing, and mining and oil and gas extraction saw a decreased share of provincial GDP from 2001 to 2010, in line with the growth of a more service-oriented economy in the province. However, the declining rate of contribution to GDP may also be attributed to the ongoing demand for workers, placing many companies in the position of hiring less experienced personnel and the level of investment that is occurring in productivity improvements.



FIGURE 54: CHANGE IN SHARE OF PROVINCIAL GDP, AT BASIC PRICES, BY INDUSTRY, 2001-2010, ALBERTA

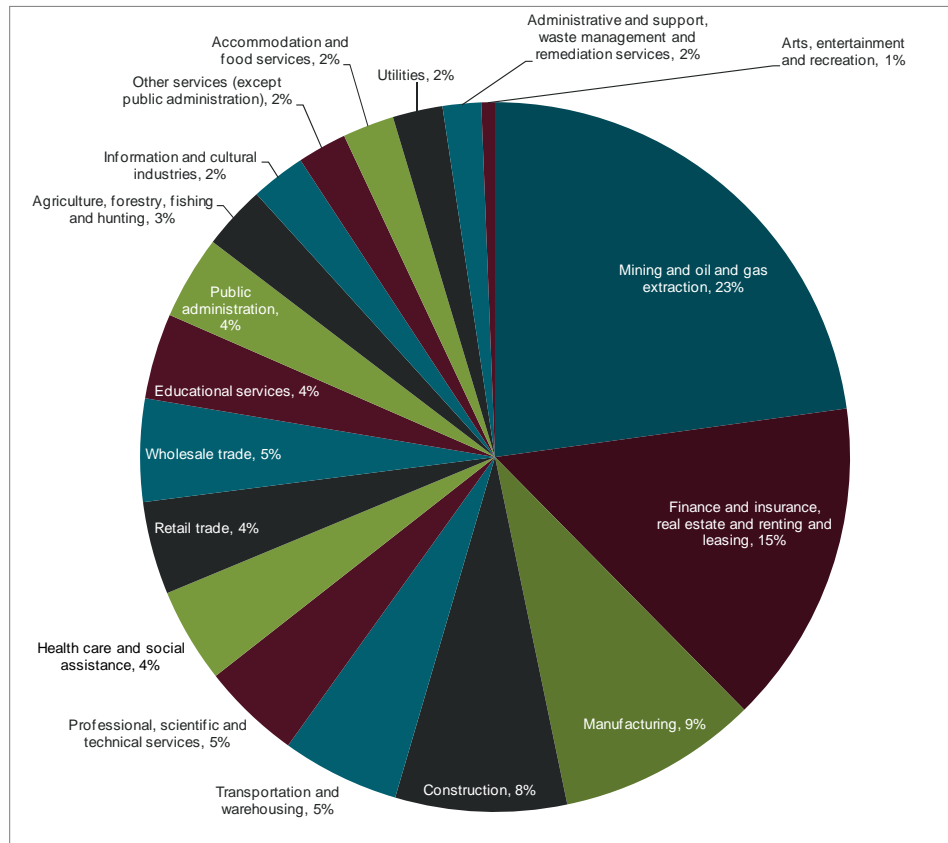


Statistics Canada, CANSIM table 379-0025, 2012

Notwithstanding the growth outlined above, the sector with the highest share of provincial GDP in 2010 was still the mining and oil and gas extraction sector (19.4%). Though its share of GDP had fallen and population-related and knowledge-based sector led growth, mining and oil and gas extraction still holds the highest proportional share of industrial production in the province in 2010. This was followed closely by the finance, insurance, and real estate sector, which held a 17.3% share of provincial GDP in 2010. Other industrial sectors like manufacturing (8.0%), construction (7.5%), and transportation and warehousing (5.4%) also held notable shares of GDP, followed by the more population-related sectors and other knowledge-based sectors. Though the provincial economy is moving increasingly towards service-oriented sectors, tied to the increasingly skilled workforce and growing population, industrial sectors of the economy still hold a significant share of the province's production. Thus, they play a key role in the economy's prospects.



FIGURE 55: INDUSTRY STRUCTURE BY SHARE OF GDP, AT BASIC PRICES, 2010, ALBERTA

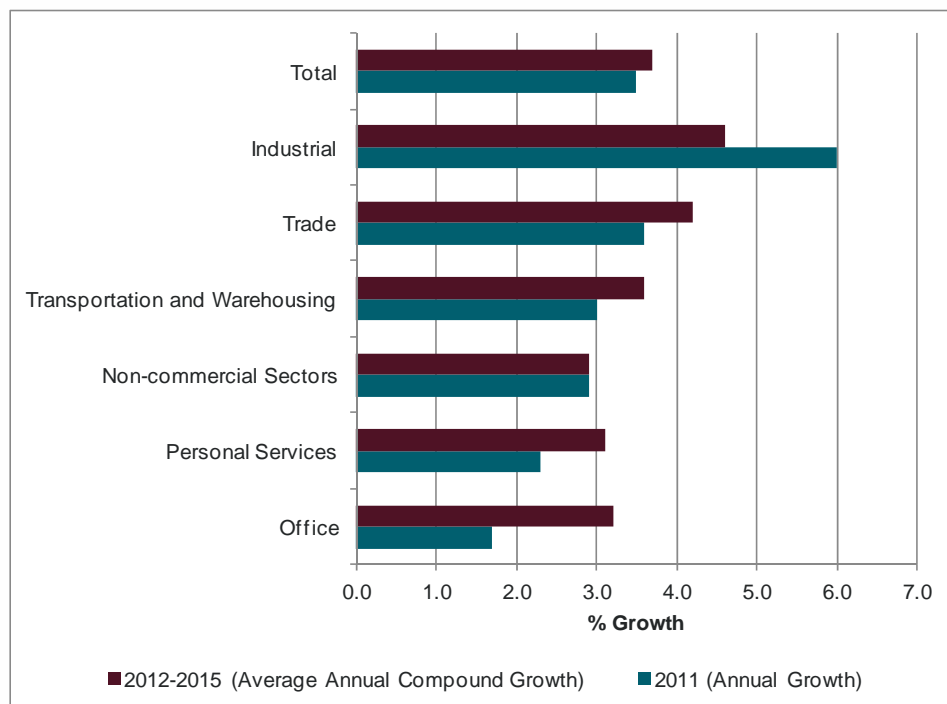


Statistics Canada, CANSIM table 379-0025, 2012

For Edmonton and the rest of the CMA, the industry outlook points to positive prospects for all sectors of the economy. The industrial sectors of the economy (manufacturing, construction, oil and gas, utilities) along with wholesale/retail trade, and transportation and warehousing, are expected to lead the growth in the Region over the next five years. However, given the forecasted growth of production in all industries, it remains critical to maintain and grow the labour force and skills needed to drive these production increases in the Edmonton region in all sectors of the economy, beyond just the industrial sectors.



FIGURE 56: INDUSTRY OUTLOOK, GROSS DOMESTIC PRODUCT GROWTH, CAPITAL REGION (EDMONTON CMA)



Source: Conference Board of Canada Metropolitan Outlook, Autumn 2011

2.4 Summary of Key Findings

- Edmonton has a relatively young population. In 2006, 63.8% of the population in the City of Edmonton was younger than 45 years old, with 63.2% of the CMA population in the same age range, compared to the national proportion of 58.9% in that same year.
- In 2006, 19.8% of Canada's population was foreign-born; in Alberta, the CMA, and the City of Edmonton, those figures were 25.1%, 24.0% and 23.2% respectively. Just over 40% of the immigrant population in the City arrived during what is considered their prime working age of 25 to 44 years of age, and a further 24% when aged 15-24 years.
- In 2006, 51.2% of Edmonton's population had some form of post-secondary education, higher than the Region and the Province, at 49.8% and 47.1% respectively. Those with a university certificate, diploma or degree were the largest component of this group, with Edmonton outperforming both the CMA and the Province (30.2%, 27.7% and 26.6% respectively).
- Edmonton's average and median household incomes (\$72,950 and \$57,085) are significantly lower than those of the CMA (\$79,163 and \$63,082) and the Province (\$84,368 and \$63,988).



- Edmonton receives a large portion of the interprovincial migrants, with their numbers peaking in 2005-2006. Since then, the net number of migrants has declined as other Western provinces experience economic booms (Saskatchewan) and the cost of living increases. However, the numbers remain strong.
- The City of Edmonton and the CMA continue to be a primary attractor of labour force in Alberta; as a whole, the CMA's total labour force has grown by approximately 33.3% from 2001 to 2011, slightly out-pacing the growth across the province of 30.6%. Much of this labour force growth has been in the suburban and rural communities surrounding Edmonton, rather than in the City of Edmonton. The Province, the CMA, and the City of Edmonton continue to lead the Country in key labour force indicators, with a proportionally larger share of the labour force employed, and a proportionally larger share of labour force actively searching for work. Migration, especially interprovincial, has been a key driver of this labour force growth.
- Indicators suggest that despite the strong labour market, there are imbalances. On average, the male labour force outperforms the female labour force in the City of Edmonton and the CMA with regards to both participation in the labour force, and employment rates. The gender-based discrepancies are not unique to Alberta, but they are slightly more pronounced than at the national level.
- At the national level, there is a significant gap between the aboriginal labour force available and looking for work, and the employed aboriginal labour force. The rates for the aboriginal population are typically below those of the total population. In Alberta, where the proportion of aboriginal population to total population falls behind only Ontario and British Columbia, the gap is slightly narrower. The aboriginal labour force in both the CMA and the City of Edmonton generally outperformed their provincial and national counterparts in terms of both participation and employment rates in 2006. Nonetheless, further labour force development efforts targeted at aboriginal people can continue to close the gap in the province and region, and maintain Alberta as a leader.
- Labour force across the City and CMA continues to shift towards more service-based sectors of the economy, though sectors like construction and manufacturing continue to hold a significant share of the labour force. Growth has been led by labour in the mining and oil and gas sector, though industries throughout the energy sector's value chain (i.e. manufacturing, construction, professional services) and population-related industries continue to grow as well (i.e. retail, health care). The growth of resident skills in the energy value chain suggest greater opportunities for diversification and the development of oil and gas industry spin-offs in the local and regional economies. However, some of the key technical and managerial labour force resides more in the surrounding communities of the CMA, than in the City of Edmonton.
- Employment is expected to continue growing in both the CMA and the City of Edmonton. The CMA is currently home to a high proportion of employment in both industrial (primarily manufacturing and construction) and population-related sectors (primarily trade, health care, and education); all of which at higher shares than across the province. Employment has grown at a comparatively higher rate in the



CMA than across the province over the last decade, with strong growth in agriculture, business services, oil and gas, and construction industries. The CMA also remains a major centre of manufacturing employment, with moderate growth over the last decade, despite the challenges observed in the sector across North America. The CMA lags behind the province in terms of employment growth in some notable provincial target sectors, such as transportation and warehousing, professional services, and financial services.



3 Industry Sector Analysis

3.1 Location Quotient Analysis

In order to determine the level and degree of industrial specialization that has developed in Edmonton, and thus the diversity of the regional economy, location quotients (LQs) have been calculated to measure the relative concentration of industry/business activity by major industry sector.

Location Quotients are a commonly used tool in local/regional economic analysis. They assess the concentration of economic activities within a smaller area relative to the overarching region in which it resides. Understanding that the Capital Region is within a highly competitive provincial economy, LQs have been calculated to compare the labour force concentrations in the city of Edmonton and the areas of the Edmonton CMA outside of the city relative to the Province of Alberta, to provide an understanding of the areas in which the city and CMA impose a competitive advantage over the rest of the province, as well as how the labour force composition in the city differs from that of its surrounding area. Given that Edmonton is one of Canada's largest metropolitan areas, LQs have also been calculated relative to Canada to provide an indication of areas where the city and surrounding region can compete on a national scale.

A location quotient greater than 1.0 for a given sector indicates a local concentration of economic activity as compared to the overarching region (either Alberta or any other region) and may be an indication of competitive advantage with respect to the attraction of that industry sector. Location Quotients equal to 1.0 for a given sector suggest that the study area has the same concentration of economic activity as the overarching region. Finally, a location quotient of less than 1.0 suggests that the community does not have a strong competitive advantage in that sector.

In theory, an industrial or business concentration that is greater than the overarching regional average may also represent the export base of the participating municipality (both in terms of products or services). Businesses that make up this export base may have chosen to locate in the community due to certain local or regional competitive advantages. These competitive advantages can be used to attract additional investment, in the same or complimentary industries.

Both the city of Edmonton and the Edmonton CMA (excluding the city of Edmonton) had high concentrations of estimated resident labour force in the public administration sector in 2011, reflective of the city and the surrounding region being the seat of the provincial government, and home to a number of federal and provincial agencies and departments and their workers. The only area in which the city and surrounding areas of the CMA differ in terms of the "level" of labour force concentration is in the utilities sector. Here, the surrounding areas of the CMA, with a strong profile of labour force in areas like oil and gas and construction (and higher relative concentrations of labour),



exhibit a higher relative concentration than the city when comparing against the province. This aligns with the perception of the surrounding areas as a centre of oil and gas servicing labour, particularly in areas to the south and northeast of Edmonton.

Though not within the “high” classification, the city exhibited higher than average estimated concentrations of labour force in a number of other sectors relative to Alberta in 2011:

- Administrative and support, waste management and remediation services;
- Wholesale trade;
- Manufacturing;
- Health care and social assistance;
- Educational services;
- Real estate and rental and leasing; and
- Finance and insurance.

A number of other sectors are relatively well represented by the resident labour force, in the city as well, such as construction, professional, scientific, and technical services, utilities, and transportation and warehousing. Labour force in each of these areas increased from 2006 to 2011, though relative concentrations of labour stayed the same between 2006 and 2011, suggesting that despite growth, the city's positioning in these sectors is not necessarily improving.

FIGURE 57: LABOUR FORCE LOCATION QUOTIENT, CITY OF EDMONTON AND CMA (EXCL. EDMONTON) VS. ALBERTA, 2006 AND 2011

Industry (NAICS)	City of Edmonton				CMA (excl. Edmonton)			
	2006 LQ	2011 LQ	LQ Level (2011)	% Change (2006-2011)	2006 LQ	2011 LQ	LQ Level (2011)	% Change (2006-2011)
91 - Public Administration	1.37	1.40	High	14.4%	1.54	1.52	High	14.1%
56 - Administrative and Support, Waste Management and Remediation Services	1.21	1.21	Average	12.3%	0.75	0.75	Average	15.2%
41 - Wholesale Trade	1.17	1.17	Average	15.0%	1.20	1.20	Average	18.1%
31-33 - Manufacturing	1.15	1.15	Average	15.3%	1.10	1.13	Average	21.0%
62 - Health Care and Social Assistance	1.14	1.14	Average	14.9%	0.99	1.00	Average	18.5%
61 - Educational Services	1.15	1.14	Average	12.3%	1.04	1.07	Average	18.9%
72 - Accommodation and Food Services	1.10	1.11	Average	14.0%	0.75	0.75	Average	16.6%
51 - Information and Cultural Industries	1.12	1.09	Average	8.2%	0.87	0.85	Average	11.2%
44-45 - Retail Trade	1.07	1.07	Average	15.3%	0.98	0.98	Average	18.2%
53 - Real Estate and Rental and Leasing	1.08	1.07	Average	11.2%	0.97	1.00	Average	19.6%
52 - Finance and Insurance	1.07	1.06	Average	12.4%	1.10	1.07	Average	13.2%
81 - Other Services (Except Public Administration)	1.05	1.04	Average	12.1%	1.11	1.10	Average	14.6%
71 - Arts, Entertainment, and Recreation	1.02	1.03	Average	11.1%	0.86	0.84	Average	10.7%
23 - Construction	0.99	0.98	Average	16.2%	1.22	1.22	Average	19.9%
54 - Professional, Scientific, and Technical Services	0.97	0.98	Average	16.2%	0.82	0.82	Average	18.8%
22 - Utilities	0.94	0.93	Average	12.1%	1.43	1.43	High	17.1%
48-49 - Transportation and Warehousing	0.91	0.92	Average	14.5%	1.05	1.05	Average	16.7%
55 - Management of Companies and Enterprises	0.84	0.81	Average	-1.0%	1.00	0.99	Average	4.5%
21 - Mining and Oil and Gas Extraction	0.36	0.35	Low	15.9%	0.74	0.73	Low	18.3%
11 - Agriculture, Forestry, Fishing, Hunting	0.10	0.10	Low	16.9%	0.73	0.69	Low	5.7%

Source: Statistics Canada Census of Population 2006, and Manifold Data Mining, Custom Demographic Report, 2012



Relative to the rest of Canada in 2011, the city of Edmonton exhibited high concentrations of labour force in a greater number of sectors than when compared to the rest of Alberta. Sectors with “high” concentrations of labour force in the city include:

- Mining and oil and gas extraction; and,
- Construction.

This is characteristic of the city's position as a key servicing sector for oil and gas industries and civil infrastructure projects. The relative concentration of labour force in the rest of the CMA is higher than across the city in 2011, suggesting the labour force capabilities in the surrounding region are much more heavily weighted towards the oil and gas industry. The is undeniably the major centre of the metropolitan area though, and generally has higher relative concentrations of labour force than the surrounding areas in a number of more knowledge-based sectors, such as professional, scientific, and technical services, educational services, health care, and information and cultural industries.

Labour force in the public administration sector, which was highly concentrated in both the surrounding areas of the CMA and City of Edmonton relative to the rest of the province, exhibited a lower relative concentration of labour when compared to Canada. Thus the Edmonton region's position as a centre for government employment is not as prominent when considered against the labour force across the rest of the County

FIGURE 58: LABOUR FORCE LOCATION QUOTIENT, CITY OF EDMONTON AND EDMONTON CMA VS. CANADA, 2006 AND 2011

Industry (NAICS)	City of Edmonton				CMA (excl. Edmonton)			
	2006 LQ	2011 LQ	LQ Level (2011)	% Change (2006-2011)	2006 LQ	2011 LQ	LQ Level (2011)	% Change (2006-2011)
21- Mining and Oil and Gas Extraction	1.77	1.77	High	15.9%	3.65	3.62	High	18.3%
23 - Construction	1.37	1.38	High	16.2%	1.69	1.71	High	19.9%
53 - Real Estate and Rental and Leasing	1.18	1.19	Average	11.2%	1.06	1.12	Average	19.6%
41 - Wholesale Trade	1.18	1.19	Average	15.0%	1.21	1.22	Average	18.1%
22 - Utilities	1.11	1.13	Average	12.1%	1.69	1.74	High	17.1%
54 - Professional, Scientific, and Technical Services	1.10	1.11	Average	16.2%	0.93	0.93	Average	18.8%
91 - Public Administration	1.10	1.10	Average	14.4%	1.23	1.20	Average	14.1%
81 - Other Services (Except Public Administration)	1.11	1.10	Average	12.1%	1.17	1.16	Average	14.6%
72 - Accommodation and Food Services	1.09	1.10	Average	14.0%	0.74	0.74	Low	16.6%
56 - Administrative and Support, Waste Management and Remediation Services	1.04	1.04	Average	12.3%	0.65	0.65	Low	15.2%
61 - Educational Services	1.05	1.03	Average	12.3%	0.95	0.97	Average	18.9%
62 - Health Care and Social Assistance	1.02	1.01	Average	14.9%	0.89	0.88	Average	18.5%
44-45 - Retail Trade	1.01	1.01	Average	15.3%	0.92	0.92	Average	18.2%
48-49 - Transportation and Warehousing	0.96	0.97	Average	14.5%	1.10	1.10	Average	16.7%
71 - Arts, Entertainment, and Recreation	0.93	0.95	Average	11.1%	0.79	0.78	Average	10.7%
55 - Management of Companies and Enterprises	0.92	0.84	Average	-1.0%	1.10	1.02	Average	4.5%
51 - Information and Cultural Industries	0.84	0.82	Average	8.2%	0.65	0.63	Low	11.2%
52 - Finance and Insurance	0.81	0.79	Average	12.4%	0.83	0.80	Average	13.2%
31-33 - Manufacturing	0.69	0.69	Low	15.3%	0.67	0.68	low	21.0%
11- Agriculture, Forestry, Fishing, Hunting	0.12	0.13	Low	16.9%	0.93	0.87	Average	5.7%

Source: Statistics Canada Census of Population 2006 and Labour Force Survey, 2012, and Manifold Data Mining, Custom Demographic Report, 2012



While the preceding assessment provides a look at the sectors in which the Edmonton CMA and the City of Edmonton are able to provide a competitive advantage based on the relative concentration of the resident labour force, the following section examines competitive advantage based on the concentration of businesses by industry sector.

3.2 Business Patterns Assessment

Statistics Canada's Canadian Business Patterns Data provides a record of business establishments by industry and size. This data is collected from the Canada Revenue Agency (CRA). The business data collected for the City of Edmonton includes all businesses that meet at least one of the three criteria:

- Have an employee workforce for which they submit payroll remittances to the CRA; or
- Have a minimum of \$30,000 in annual sales revenue; or
- Are incorporated under a federal or provincial act and have filed a federal corporate income tax form within the past three years.

The Canadian Business Patterns Data records business counts by "Total", "Indeterminate" and "Subtotal" categories. The establishments in the "Indeterminate" category include the self-employed (i.e. those who do not maintain an employee payroll, but may have a workforce consisting of contracted workers, family members or business owners)³⁹.

A review of the business patterns for the period between 2007 and 2011 for the city of Edmonton provides an understanding of the growth or decline of businesses in the three year period, as well as the key characteristics that define the city of Edmonton's business community. When combined with the broader industry analysis, the business patterns information will further assist in understanding the key industry opportunities for the City of Edmonton.

Understanding trends in business growth in the community provides valuable insight into the shape that future growth and investment in the city might take. It also provides an indication of where the priorities of the city should lie, especially with regards to possible program development and support, investment attraction and strategic planning.

In terms of industry share, the following sectors (identified in Figure 59) exhibit the highest proportion of business establishments in the city of Edmonton in December 2011:

- Professional, scientific, and technical services (15.3%);
- Construction (13.0%);

³⁹ It should be noted that the Canadian Business Patterns Data uses the CRA as a primary resource in establishment counts; therefore, businesses without a business number or indicated annual sales less than \$30,000 are not included. The population of these small, unincorporated businesses is thought to be in the range of 600,000 in all of Canada.



- Real estate and rental and leasing (10.2%); and,
- Other services (except public administration)⁴⁰ (9.5%).

When the indeterminate sector businesses are removed, the sectors with the highest proportion of businesses are:

- Professional, scientific, and technical services (13.8%);
- Other services (excluding public administration) (12.2%);
- Construction (11.4%);
- Health care and social assistance (11.4%); and,
- Retail trade (10.9%).

The professional, scientific, and technical services sector accounts for the highest proportion of business establishments when considering both the self-employed (indeterminate) and employer establishments in the city in 2011. The sector is particularly oriented towards businesses in management, scientific, and technical consulting services, as well as establishments engaged in architectural, engineering, and design services. Both of these subsectors have positive implications on the city as a centre for oil and gas servicing (primarily in construction and design, and environmental consulting), but also in new sectors of the economy that build on those traditional strengths, such as clean technology and life sciences/biotechnology/agri-food, through environmental, agricultural, and economic consulting services. Together, these two subsectors account for 44.3% of all establishments in the professional, scientific, and technical services sector.

⁴⁰ Other Services comprises establishments, not classified to any other sector, primarily engaged in repairing, or performing general or routine maintenance, on motor vehicles, machinery, equipment and other products to ensure that they work efficiently; providing personal care services, funeral services, laundry services and other services to individuals, such as pet care services and photo finishing services; organizing and promoting religious activities; supporting various causes through grant-making, advocating (promoting) various social and political causes, and promoting and defending the interest of their members.



FIGURE 59: NUMBER OF BUSINESS ESTABLISHMENTS BY INDUSTRY, CITY OF EDMONTON, 2007 AND 2011

Industry (NAICS)	2011			2007			% Change		
	Total	Ind.	Subtotal	Total	Ind.	Subtotal	Total	Ind.	Subtotal
Total	62,319	31,695	30,624	61,113	30,540	30,573	2.0%	3.8%	0.2%
11 - Agriculture, Forestry, Fishing and Hunting	528	402	126	534	411	123	-1.1%	-2.2%	2.4%
21 - Mining, Quarrying, and Oil and Gas Extraction	447	230	217	514	248	266	-13.0%	-7.3%	-18.4%
22 - Utilities	42	24	18	54	33	21	-22.2%	-27.3%	-14.3%
23 - Construction	8,132	4,648	3,484	7,819	4,414	3,405	4.0%	5.3%	2.3%
31-33 - Manufacturing	1,881	530	1,351	2,060	623	1,437	-8.7%	-14.9%	-6.0%
41 - Wholesale Trade	2,664	844	1,820	3,018	1,059	1,959	-11.7%	-20.3%	-7.1%
44-45 - Retail Trade	4,627	1,290	3,337	4,945	1,550	3,395	-6.4%	-16.8%	-1.7%
48-49 - Transportation and Warehousing	3,484	2,215	1,269	3,319	1,982	1,337	5.0%	11.8%	-5.1%
51 - Information and Cultural Industries	610	315	295	646	344	302	-5.6%	-8.4%	-2.3%
52 - Finance and Insurance	3,579	2,582	997	3,344	2,355	989	7.0%	9.6%	0.8%
53 - Real Estate and Rental and Leasing	6,387	5,076	1,311	5,844	4,592	1,252	9.3%	10.5%	4.7%
54 - Professional, Scientific and Technical Services	9,559	5,328	4,231	9,469	5,208	4,261	1.0%	2.3%	-0.7%
55 - Management of Companies and Enterprises	2,719	2,230	489	2,774	2,212	562	-2.0%	0.8%	-13.0%
56 - Administrative and Support, Waste Management and Remediation Services	3,047	1,555	1,492	2,788	1,377	1,411	9.3%	12.9%	5.7%
61 - Educational Services	688	349	339	701	375	326	-1.9%	-6.9%	4.0%
62 - Health Care and Social Assistance	4,457	976	3,481	3,744	720	3,024	19.0%	35.6%	15.1%
71 - Arts, Entertainment and Recreation	711	434	277	724	441	283	-1.8%	-1.6%	-2.1%
72 - Accommodation and Food Services	2,576	498	2,078	2,618	609	2,009	-1.6%	-18.2%	3.4%
81 - Other Services (except Public Administration)	5,913	2,163	3,750	5,889	1,984	3,905	0.4%	9.0%	-4.0%
91 - Public Administration	268	6	262	309	3	306	-13.3%	100.0%	-14.4%

Source: Statistics Canada, Canadian Business Patterns, December 2007 and December 2011

Figure 59 also illustrates the growth in business establishments by type across the City of Edmonton from 2007 to 2011. The number of total business establishments increased by 2.0% across Edmonton during that time period, and the fastest growing sectors were:

- Health care and social assistance (19.0%);
- Administrative and support, waste management and remediation services (9.3%);
- Real estate and rental and leasing (9.3%);
- Finance and insurance (7.0%); and,
- Transportation and warehousing (5.0%).

The number of businesses in the construction; professional, scientific, and technical services; and other services sectors also grew during the time period. The number of businesses in the manufacturing sector declined by 8.7% from 2007 to 2011 despite both employment and labour force growth in the city over roughly the same time period.

Excluding the self-employed, Edmonton's number of business establishments still grew, but at a comparatively moderate 0.2%. Thus, the majority of business growth noted above occurred within the indeterminate establishments in the city, which grew by 3.8% over the three-year period. The fastest growing subsectors in the employer establishment (total excluding self-employed) segment was:

- Health care and social assistance (15.1%);
- Administrative and support, waste management and remediation (5.7%)
- Real estate and rental and leasing (4.7%);
- Educational services (4.0%); and,
- Accommodations and food services (3.4%).



Agriculture, construction, and finance and insurance employer establishments also grew during the time period, with all other broad industry sectors exhibiting a decline. While the number of businesses may be declining in some key sectors, employment continues to grow in the city in a majority of business sectors. This is true of even the manufacturing sector, which over the last several decades has experienced challenges with regards to the rationalization and restructuring of multinational branch operations and entire subsectors, a high currency exchange rate, a slowing North American (particularly U.S.) economy, and higher labour force costs.

Another important consideration in understanding Edmonton's economic base is to examine the size of businesses in the city (Figure 60). Edmonton's industry base is overwhelmingly oriented towards small to medium businesses, with 94.3% (virtually unchanged from 2007) of employer businesses having fewer than 50 employees. Businesses with fewer than five employees are particularly well represented, accounting for 54.0% of all employer establishments in 2011 (up slightly from 53.4% in 2007).

Given these findings, supporting future business growth and investment in Edmonton will be based on understanding and supporting the needs of small to medium businesses, which have maintained business growth despite the performance of some sectors of the economy. This is particularly relevant in light of existing research and trends which suggest that an overwhelming percentage of new business investment in a community is derived from companies already located there. However, it is important that the City not lose sight of the contributions from larger firms as well, which in many cases have more resources to compete at the global scale, and undertake innovative research and development tied to new product and service innovations. The inability of Alberta's firms to compete with larger global firms for investment and activity in major provincial sectors was highlighted as an ongoing challenge by a range of provincial resources. Enabling small businesses to become more competitive medium and large businesses can be a key initiative in working to solve this challenge.



FIGURE 60: BUSINESS ESTABLISHMENTS BY INDUSTRY AND EMPLOYMENT SIZE, CITY OF EDMONTON, 2011

Industry (NAICS)	Subtotal	1 - 4	5 - 9	10 - 19	20-49	50-99	100-199	200-499	500 +
Total	30,624	16,537	5,837	3,912	2,599	949	448	237	105
11 - Agriculture, Forestry, Fishing and Hunting	126	86	17	13	7	2	1	0	0
21 - Mining, Quarrying, and Oil and Gas Extraction	217	132	19	27	19	8	5	3	4
22 - Utilities	18	2	5	0	4	1	1	2	3
23 - Construction	3,484	2,017	649	354	257	113	59	23	12
31-33 - Manufacturing	1,351	404	269	258	244	106	42	26	2
41 - Wholesale Trade	1,820	603	489	352	257	82	28	7	2
44-45 - Retail Trade	3,337	1,157	986	677	289	133	68	27	0
48-49 - Transportation and Warehousing	1,269	873	146	91	96	26	19	14	4
51 - Information and Cultural Industries	295	141	44	42	39	10	10	5	4
52 - Finance and Insurance	997	570	159	112	92	34	15	6	9
53 - Real Estate and Rental and Leasing	1,311	903	183	107	77	22	14	4	1
54 - Professional, Scientific and Technical Services	4,231	3,216	482	246	192	49	22	19	5
55 - Management of Companies and Enterprises	489	293	59	42	39	25	15	10	6
56 - Administrative and Support, Waste Management and Remediation Services	1,492	789	291	185	114	58	32	14	9
61 - Educational Services	339	163	61	60	35	7	2	3	8
62 - Health Care and Social Assistance	3,481	2,086	698	403	187	37	33	28	9
71 - Arts, Entertainment and Recreation	277	127	45	41	29	13	11	7	4
72 - Accommodation and Food Services	2,078	469	473	502	419	156	35	15	9
81 - Other Services (except Public Administration)	3,750	2,445	725	361	158	37	16	6	2
91 - Public Administration	262	61	37	39	45	30	20	18	12

Source: Statistics Canada, Canadian Business Patterns, December 2011

3.3 Moving Beyond Location Quotients

While location Quotients are a commonly used tool in economic analysis, the practicality of location quotients is limited in several ways:

- High level industry classifications are too broad – assessing labour force concentration at the 2 digit NAICS level cannot reveal the true strengths within an industry sector, or the impact of that sector at a regional level. Larger local economies such as Edmonton are likely to be more integrated with the broader region. Indeed, Edmonton's location quotients reveal a diverse economy with a single labour force concentration – public service;
- Location quotients do little to explain the relationships or linkages between industries or explain where the economic activities of the local area rest along a value chain of activities (from product research and commercialization to shipping and distribution). Nor do location quotients reveal the business support systems in place for various industries;
- Location quotients also do not reveal the economic impact of any industry on the local area. It may be that an industry showing no significant labour force concentration may be a significant economic contributor to the local economy; and
- Location quotients don't reveal emerging industries which might still be in the nascent stage. As location quotients don't take into account global trends, it is also difficult to know if local industries with a concentration of the labour force have positive or negative prospects for growth.



The following sections of the report take into account these factors in determining Edmonton's industry strengths and potential. The assessment that follows provides a more detailed perspective of the local economy at the subsector level along with an understanding of industry trends and outlook. Based on this work, select industries are considered through the lens of input – output chain of activities and the broader support system and value chain in place to develop local industries.

3.4 Edmonton's Industry Sectors

As part of the City of Edmonton's *The Way We Prosper* initiative, a number of goals and outcomes were generated at the outset of the economic development strategic planning process. The long list of industries presented below was generated the Economic Development Council Outcomes, industries profiled on the EEDC website, industries exhibiting high LQ's and employment growth, industries profiled in the McKinsey Provincial Sector Outlook and industries profiled in the Conference Board of Canada's CMA outlook for Edmonton. These include (in no particular order):

- Biotechnology;
- Culture;
- Agriculture;
- Industrial manufacturing;
- Construction and engineering;
- Financial services; and,
- Tourism.
- Agri-food;
- Medical devices;
- Transportation and logistics
- Clean technology; and,
- Information and communications technology.

In developing an economic development strategy for the City of Edmonton it will be essential to focus on those sectors and subsectors that present the highest potential for growth in both the short and longer term. The following discussion further aligns the findings of the demographic and labour force characteristics with location quotients, business patterns and industry trends to establish the primary sectors of interest for the City of Edmonton.

3.4.1 Biotechnology

Biotechnology is difficult to define through standard industrial classifications, as industrial biotechnology has emerged as a key driver in a number of different industries (i.e. health, biofuels, and bio-products). Statistics Canada's Biotechnology Use and Development Survey narrows the focus of the sector to include industries focused in the agriculture, mining and oil and gas extraction, manufacturing, wholesale trade, professional services, and health services sectors. These sectors are considered the



most likely to either integrate biotechnology into their processes or to develop bio-products, as a result of their activities. Figure 61 outlines the profile of biotechnology subsectors by labour force and business establishments in Edmonton and the Capital Region.

FIGURE 61: BIOTECHNOLOGY INDUSTRY PROFILE, CITY OF EDMONTON AND EDMONTON CMA

Industry (NAICS)	Edmonton CMA (vs. Alberta)			City of Edmonton Business Patterns		
	2006 LQ	Classification	Labour Force	2011	2007	% Change
Total	0.41	Low	21,480	534	571	-6.5%
1125 Aquaculture*	0.27	Low	5,900	0	1	-100.0%
2111 Oil and gas extraction	0.27	Low	4,905	84	91	-7.7%
3111 Animal food manufacturing	0.47	Low	150	7	6	16.7%
3112 Grain and oilseed milling	0.19	Low	55	5	5	0.0%
3114 Fruit and vegetable preserving and specialty food manufacturing	0.60	Low	220	11	8	37.5%
3115 Dairy product manufacturing	1.36	High	600	10	14	-28.6%
3116 Meat product manufacturing	0.58	Low	1,815	19	25	-24.0%
3117 Seafood product preparation and packaging	0.45	Low	10	1	1	0.0%
3221 Pulp, paper and paperboard mills	0.29	Low	220	0	0	0.0%
3251 Basic chemical manufacturing	1.42	High	1,430	10	13	-23.1%
3252 Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	1.26	High	280	4	9	-55.6%
3253 Pesticide, fertilizer and other agricultural chemical manufacturing	1.00	Average	545	4	4	0.0%
3254 Pharmaceutical and medicine manufacturing	2.04	High	350	11	13	-15.4%
3255 Paint, coating and adhesive manufacturing	1.42	High	315	14	9	55.6%
3256 Soap, cleaning compound and toilet preparation manufacturing	1.75	High	240	15	21	-28.6%
3259 Other chemical product manufacturing	1.03	Average	425	18	27	-33.3%
4145 Pharmaceuticals, toiletries, cosmetics and sundries wholesaler-distributors	1.28	High	855	58	67	-13.4%
4183 Agricultural supplies wholesaler-distributors	0.38	Low	405	16	19	-15.8%
5417 Scientific research and development services	0.95	Average	1,070	129	133	-3.0%
6215 Medical and diagnostic laboratories	1.17	Average	1,690	118	105	12.4%

* Labour force data for NAICS 1125 – Aquaculture is aggregated into the larger NAICS 1110 – Farms subsector.

Source: Adapted from Statistics Canada, Census of Canadian Population, 2006 and Canadian Business Patterns Data, 2007 and 2011 by Millier Dickinson Blais, 2012

Industry Canada suggests that Canada's biotechnology industry is one of the top five in the world, with firms generating an estimated \$4.2 billion in biotechnology revenues in 2005⁴¹. Alberta accounts for just a 3.3% share of overall biotechnology revenues, with average revenues per firm (\$2.7 million) falling behind Ontario (\$19.2 million), Manitoba (\$8.6 million), British Columbia (\$6.2 million) and Saskatchewan (\$2.9 million). The provincial industry has grown quickly in the past (82% between 1999 and 2005), but it remains a comparatively small part of the national industry⁴².

⁴¹ Statistics Canada. (2005). Biotechnology Use and Development Survey.

⁴² PriceWaterhouseCoopers. (2009). Alberta Industry Sector Performance and Prospects.



The biotechnology sector in Alberta is centred on its post-secondary institutions. Edmonton is home to three research centres: Alberta Innovates, Northern Alberta Clinical Trials and Research Centre, and Genome Alberta; as well as a number of tier one and two research chairs. There is also advanced commercialization infrastructure in the province, with TEC Edmonton and Alberta Innovates having a presence in Edmonton. The province has also made a number of investments in biotechnology in Edmonton, including the Alberta Cardiovascular and Stroke Research Centre (ABACUS) at the University of Alberta. ABACUS continues to focus its bioscience research on prevention, detection, and cure of cardio vascular diseases.

A survey of the component fields of biotechnology suggest that there are approximately 21,480 people employed in biotechnology industries in the Edmonton CMA. Relative labour force concentrations point to strengths in a number of fields of biotechnology use and development, at both the early and late stages of the value chain:

- Pharmaceuticals and medicine manufacturing, which impacts biopharmaceuticals and the broader life and health sciences industry;
- Basic chemical manufacturing, with implications on bioproducts and intermediate materials (i.e. polyols, reactants);
- Paint, coating, and adhesive manufacturing and soap and compounds manufacturing, which primarily relate to opportunities in bioproduct intermediates and components (i.e. resins, adhesives);
- Dairy product manufacturing, with implications on agri-food biosciences, value-added agricultural products, and nutraceuticals; and
- Pharmaceuticals, toiletries, cosmetics, and sundries wholesalers/distributors, which speak to the synergies between the biotechnology industry and the wholesale/distribution sector.

Business patterns data suggests there were 534 establishments in the biotechnology industry in the City of Edmonton in 2011, down 6.5% from the 571 establishments in 2007. By number of firms, the City's biotechnology sector is focused primarily on research and distribution:

- Scientific research and development;
- Oil and gas extraction; and
- Pharmaceuticals, toiletries, cosmetics and sundries wholesaler-distributors.

However, each of those industries decreased in size between 2007 and 2011. Growth of business establishments in the biotechnology sector has been primarily focused in paint, coating, and adhesive manufacturing (55.6%), fruit and vegetable preserving and speciality foods (37.5%), animal food manufacturing (16.7%), and medical and diagnostic laboratories (12.4%). These subsectors are key drivers of the industry as customers, utilizing new industrial and medical biotechnology advancements in the introduction of new products for their core markets. For example, industrial biotechnology focused on bio-based alternatives to traditional non-renewable feedstocks plays a key role in the introduction of new adhesives and lubricants that can



replace traditional ones based on petrochemicals in the coating and adhesive industry. Though dairy products and meat products declined, all other food manufacturing subsectors grew or stayed stable in the City of Edmonton between 2007 and 2011.

Overall, the sector is expected to continue growing in Alberta, especially in light of new commercialization strategies at the provincial level focused on improving access to capital. The sector is particularly oriented towards innovative health treatments and products, but also the development of new value-added products from the province's strong agricultural industries (agricultural biotechnology). Programs at the provincial level are focused on both areas, as a means of diversifying the products developed in Alberta.

Edmonton benefits from expertise in both the health applications of biotechnology and the value-added agricultural applications of biotechnology. Health industries offer the city a number of opportunities in biotechnology, especially given the focus of programs at the University of Alberta and NAIT. However, the sector's concentration of SMEs rather than major multi-nationals with internal resources, and comparatively smaller size than the major health-related biotechnology sectors of the Toronto Region and Montreal remain major challenges for development of the sector in the Region. Tight credit markets and lack of venture capital are of particular concern, given the capital needed to drive innovation in the sector.

3.4.2 Culture

Alberta's cultural sector represents an estimated 3% of provincial GDP and employment. Nationally, the province's cultural sector ranks fourth in terms of GDP – behind Ontario, Quebec, and British Columbia⁴³. The written media, broadcasting, and film production subsectors account for the largest shares of employment in the sector across the province in 2009.

Figure 62 details the strengths in the cultural industries across the City of Edmonton and the Edmonton CMA. The sector is primarily concerned with the creation and distribution of written and digital content over traditional (i.e. television, radio, and newspaper) and new channels (i.e. internet, optical media); the sale, repair, and manufacturing of arts and cultural goods; performing and visual arts; and cultural heritage institutions.

⁴³ PriceWaterhouseCoopers. (2009). Alberta Industry Sector Performance and Prospects.



FIGURE 62: CREATIVE CULTURAL⁴⁴ INDUSTRIES PROFILE, CITY OF EDMONTON AND EDMONTON CMA

Industry (NAICS)	Edmonton CMA (vs. Alberta)			City of Edmonton Business Patterns		
	2006 LQ	Classification	Labour Force	2011	2007	% Change
Total	1.01	Average	48,470	6,671	6,688	-0.3%
3231 Printing	1.34	High	2,960	149	173	-13.9%
3271 Pottery and ceramics	0.77	Average	75	6	8	-25.0%
3346+5121+5322 Motion pictures and video industries	1.00	Average	2,150	261	361	-27.7%
4144+4511+4512 Music stores	1.11	Average	4,170	364	443	-17.8%
4144+4512 Book stores	1.14	Average	1,355	147	196	-25.0%
4144+5122 Sound recording	0.97	Average	485	125	155	-19.4%
4533 Antiques	1.37	High	815	54	68	-20.6%
4539 Art dealers	0.99	Average	1,475	238	270	-11.9%
5111+5112+5191 Publishing industries	1.05	Average	1,290	227	232	-2.2%
5112 Software publishers	1.14	Average	520	88	65	35.4%
5151+5152+5175 Radio and television	0.92	Average	1,945	39	30	30.0%
5161 Internet publishing	0.86	Average	50	49	44	11.4%
5191 Libraries and archives	1.05	Average	1,290	40	42	-4.8%
5413 Architecture	0.84	Average	13,125	1,718	1,744	-1.5%
5414 Design	1.03	Average	1,390	341	333	2.4%
5418 Advertising	1.05	Average	2,010	267	294	-9.2%
5419+8129 Photography	1.09	Average	3,975	775	710	9.2%
6116+7114+8139 Culture and support services	1.29	High	6,430	1,465	1,204	21.7%
7111+7113 Performing arts	0.94	Average	1,135	112	100	12.0%
7115 Independent artists, writers, and performers	0.98	Average	1,350	56	52	7.7%
7121 Museums and heritage sites	0.52	Low	475	150	164	-8.5%

Source: Adapted from Statistics Canada, Census of Canadian Population, 2006 and Canadian Business Patterns Data, 2007 and 2011 by Millier Dickinson Blais, 2012

Proportionally, labour force in the cultural sector in the Edmonton CMA is centred on the architectural services, and in support for cultural activities (i.e. education, management, and personal services). However, only culture and support activities exhibit a high concentration of labour force in the region (LQ 1.29) when compared to the rest of the province. Retail trade-based antiques activities represent the highest relative concentration of labour force in the Region, with printing activities following closely behind.

A review of business patterns for the sector suggests that there were approximately 6,671 total establishments engaged in the sector in 2011, down only slightly from 6,688 in 2007. Despite an overall decline of business establishments in the sector, the software publishing, radio and television, culture and support services, performing arts, internet publishing, independent artists, and design subsectors increased by number of businesses from 2007 to 2011. Thus, growth of the sector of late has occurred in both traditional (performing arts and artists), and emerging and knowledge-based (i.e. software, design) areas of the cultural sector in Edmonton.

Alberta continues to experience lower than average levels of federal public spending on culture, (\$214,495 in federal funding vs. \$373,422 in provincial funding in FY 2008/2009), but the province continues to lead the rest of the country in provincial levels of cultural funding, primarily directed at heritage institutions, broadcasting, and

⁴⁴ As defined by the Statistics Canada in the Canadian Framework of Culture Statistics.



libraries⁴⁵. Funds provided by the Alberta Foundation for the Arts (AFA) total approximately \$20 million per year, through 13 cultural programs⁴⁶.

Alberta also leads in consumer expenditures on cultural works and events. In 2008, Albertans spent \$3.3 billion on cultural goods and services, or \$963 per person, which led all other provinces⁴⁷. Calgary was the highest among major Canadian cities on consumer expenditures per capita (\$1,020), while Edmonton (\$933) was fifth among the 12 major CMAs in 2008⁴⁸. Edmonton's spending was mostly concentrated in home entertainment, with reading materials, art works and events, photographic equipment and services, art supplies and musical instruments, and movie theatre admissions.

Alberta Treasury Board and Enterprise suggests there will be continued changes to the market structure for cultural industries, as technological advancements and the convergence of media sectors (i.e. telecommunications, ICT, media, and consumer electronics) will continue to shape the way in which cultural media is distributed and paid for. The emergence of this more interactive structure signals opportunities for innovative companies to compete on a global scale.

Other jurisdictions continue to offer competitive advantages over Alberta in the sector. For example, both Ontario and British Columbia offer competitive tax credits to encourage film and television production, which are now evolving to include a number of other interactive and digital media industries as well. Alberta's grant program, while generous, does not generate the same level of opportunity.

Alberta's cultural industries have a history of labouring under relatively lower levels of public support, suggesting that they are lean and well-run. In addition, the continued population expansion of population in the province signals continued expansion of consumer expenditures in the cultural industries. However, the comparative lack of public funding keeps many cultural industries under-capitalized, restricting the potential to take full advantage of opportunities when they arise. Further, the sector remains comparatively smaller and fragmented.

Edmonton's cultural industries exhibit similar characteristics. There has been limited growth and concentration of labour in a number of key emerging industries tied to interactive media in the CMA (i.e. software publishing, design, internet publishing), with labour instead focused in more traditional areas. However, business growth in these subsectors, particularly by small and agile firms, point to positive prospects in areas blurred with ICT. Though there are opportunities for growth of the sector based on continued growth in Alberta, the City and CMA remain susceptible to challenges associated with a lack of diversity, a lack of cohesion among the sector and related sectors, and competition from other strong employment sectors challenging employee retention. To encourage development, Edmonton can support the sectors that

⁴⁵ Statistics Canada. (2010). Government Expenditures on Culture, table 505-0003.

⁴⁶ PriceWaterhouseCoopers. (2009). Alberta Industry Sector Performance and Prospects.

⁴⁷ Hill Strategies. (2010). Consumer Spending on Culture in Canada, the Provinces, and 12 Metropolitan Areas in 2008.

⁴⁸ Ibid.



converge with cultural industries (i.e. ICT), and facilitate opportunities to diversify the sector into more emerging areas of activity based on strengths in collaboration.

3.4.3 Agriculture and Agri-food

Agriculture has a long history in Alberta. Today, Alberta is the nation's second largest agricultural economy accounting for approximately 20% of Canada's value added agricultural output⁴⁹. While agriculture historically, has been an important component of the Alberta economy, its relative importance has declined over time. Primary agriculture accounts for only 1.5% of provincial GDP and 2% of provincial employment. Primary agriculture is evenly divided between crop production and livestock production. Agricultural production is challenged by variables such as weather and climate, commodity prices, the value of the Canadian Dollar and other variables beyond the control of the producer. At the same time, the prices of input goods and machinery continue to rise.

The Agri-food sector is closely related to the primary agriculture sector as it processes the agricultural products produced. The agri-food sector is similar in size to the primary agriculture sector accounting for approximately 1% of provincial GDP. Nationally, agri-food in Alberta is relatively smaller than primary agriculture accounting for approximately 9% of economic output in the sector.

FIGURE 63: AGRICULTURAL INDUSTRY PROFILE, CITY OF EDMONTON AND EDMONTON CMA

Industry (NAICS)	Edmonton CMA (vs. Alberta)			City of Edmonton Business Patterns		
	2006 LQ	Classification	Labour Force	2011	2007	% Change
Total	0.39	Low	11,085	542	585	-7.4%
1111 Oilseed and Grain Farming*	0.27	Low	5,900	130	125	4.0%
1112 Vegetable and Melon Farming				7	8	-12.5%
1113 Fruit and Tree Nut Farming				2	3	-33.3%
1114 Greenhouse, Nursery and Floriculture Production				21	24	-12.5%
1119 Other Crop Farming				38	24	58.3%
1121 Cattle Ranching and Farming				76	97	-21.6%
1122 Hog and Pig Farming				3	3	0.0%
1123 Poultry and Egg Production				6	11	-45.5%
1124 Sheep and Goat Farming				1	1	0.0%
1125 Aquaculture				0	1	-100.0%
1129 Other Animal Production				134	144	-6.9%
3111 Animal food manufacturing	0.47	Low	150	7	6	16.7%
3112 Grain and oilseed milling	0.19	Low	55	5	5	0.0%
3113 Sugar and confectionery product manufacturing	0.51	Low	55	2	1	100.0%
3114 Fruit and vegetable preserving and specialty food manufacturing	0.60	Low	220	11	8	37.5%
3115 Dairy product manufacturing	1.36	High	600	10	14	-28.6%
3116 Meat product manufacturing	0.58	Low	1,815	19	25	-24.0%
3117 Seafood product preparation and packaging	0.45	Low	10	1	1	0.0%
3118 Bakeries and tortilla manufacturing	1.15	Average	1,070	41	52	-21.2%
3119 Other food manufacturing	0.80	Average	520	23	23	0.0%
3121 Beverage manufacturing	0.98	Average	655	5	9	-44.4%
3122 Tobacco manufacturing	1.59	High	35	0	0	0.0%

⁴⁹ Alberta industry sector performance and prospects May 2009



* Labour force data for all NAICS 111 – Crop Production and NAICS 112 – Animal Production subsectors are aggregated into the larger NAICS 1110 – Farms subsector, for which the LQ data is reported.

Source: Adapted from Statistics Canada, Census of Canadian Population, 2006 and Canadian Business Patterns Data, 2007 and 2011 by Millier Dickinson Blais, 2012

Primary agricultural production accounts for approximately 5,900 workers in the Edmonton CMA. Given the urban nature of the region, it isn't surprising that primary agriculture has low labour force concentration. The Edmonton Census Metropolitan Area (CMA) accounted for 12.5% of all farms in Alberta in 2006, however the number of farms decreased by 8.7% from 2001. Farming establishments continued to decline to 2011 with the City of Edmonton losing businesses in almost all subsectors between 2007 and 2011. The only subsectors that did not lose ground were oilseed and grain farming and other crop farming. Statistics Canada reports that Edmonton CMA farms are getting smaller while farms in Alberta are getting larger (as measured by gross farm receipts).

Farm types mirror farms found in Alberta with a high concentration of beef and field crops. However, these types of farms are declining in Edmonton while other animal production is expanding rapidly (20.8% growth from 2001 to 2006). Edmonton is particularly concentrated with vegetable and poultry farms⁵⁰ with:

- 17.7% of provinces vegetable farms: high in cucumbers, green peas, green beans, cabbage, chinese cabbage, cauliflower, broccoli, beets, lettuce, spinach and other vegetables
- 12% of provinces farms of hens and chicken and 18.4% of the number of birds.
- 11% of provincial laying hens 19 weeks and over
- 32% of provincial turkeys
- 6.5% of farms being organic versus the provincial average of 5.4%

Edmonton is also home to 124 firms engaged in food and beverage manufacturing, with the largest businesses found in:

- Bakeries and tortilla manufacturing
- Other food manufacturing
- Meat product manufacturing
- Dairy product manufacturing

Of these four categories, only bakeries and tortilla manufacturing and dairy product manufacturing show a concentration of resident labour force. In terms of growth, animal food manufacturing, sugar and confectionary products, and fruit and vegetable/specialty foods subsectors grew from 2007 to 2011. Within meat product manufacturing, poultry processing is particularly important for Edmonton. While there are only two firms engaged in this activity, both have over 200 employees raising the

⁵⁰ 2006 Census of Agriculture Community Profiles

http://www26.statcan.ca:8080/AgrProfiles/cp06/Table.action?prov=00&tab_id=27&geog_id_amal=485011061&search=search&loccode=31606&placename=edmonton&placestart=0&geog_id=485011061&offname=Edmonton



significance of this activity in Edmonton. This may be why poultry and egg production is the only farm production on the increase in the region.

While primary agriculture in Alberta is largely driven by export sales (82% of crop production is exported), agri-food sales are largely domestic. While retail food sales are showing strong growth in Alberta and Canada, Alberta's agri-food sector has not shown significant GDP growth (only 0.4%/year in real GDP terms between 2000 and 2007). Wages in the agri-food sector in Alberta are considerably lower than wages in other sectors of the economy. In a tight labour market, it is challenging to meet labour force demands in the sector. Overall primary agriculture and agri-food in Edmonton declined in business establishments between 2007 and 2011 losing 94 (14%) of all businesses.

Two trends of interest in the agriculture and agri-food sectors are likely to have a direct impact on Alberta's agriculture and agri-food industry. Firstly, the emergence of a middle class in countries like China have increased the demand for different food types, particularly beef. As a result, agriculture exports to China have increased by a factor of 8 between 2000 and 2007.

The Edmonton region also has a vibrant local food movement led by Live Local and the Local Food Development Council. Live Local is a program developed to support and sustain independent business understanding that local, independent businesses stimulate the local economy, create jobs and support the local community. Not only do local businesses stimulate the economy, but they contribute to the area's character and sense of place. Independent businesses, however, had smaller marketing budgets and continue to struggle to compete against larger food store chains.

The local food movement is also spearheaded by the Local Food Development Council for the Capital Region. The Local Food Development Council strives to build the local food value chain through import replacement and undertakes several initiatives to raise the profile and consumption of local food in the Edmonton Region. Finally, at the time of writing, the City of Edmonton is undertaking a local food and agriculture strategy to understand the full potential of the agri-food value chain in Edmonton.

The region is also home to the Agri-value Processing Business Incubator in Leduc. The Agri-value Incubator is actually a campus of facilities including the Food Development Processing Centre and Business Commercialization facility. The incubator facility is open 24/7, includes 8 fully services processing suites, private offices and conference room. The processing development centre includes lab and pilot plant, process and engineering assistance and expertise and product evaluation services. The Business Commercialization Branch includes assistance in market assessment and development, networking, business plan development and funding support. The campus approach in 'helping food processors commercialize new products and technologies' has led to, "over 80% of incubator graduates surviving beyond the first 5 years of existence". The facility is supported by the Government of Alberta.



3.4.4 Industrial Manufacturing

Industrial manufacturing is referred to by the Province of Alberta as those manufacturing activities that produce products and components for heavy industry. They include two NAICS categories: 332 metal fabrication and 333 industrial machinery equipment manufacturing. Industrial manufacturing accounts for 1.7% of provincial employment (2008) and 1.9% of nominal GDP⁵¹. Alberta's industrial manufacturing sector accounts for 11.6% of national employment and 14.4% of national GDP generated by industrial manufacturing.

While the total resident labour force for this industry in the Edmonton CMA is not large (16,215) concentrations of labour force and business establishments present themselves in the following figure.

FIGURE 64: INDUSTRIAL MANUFACTURING INDUSTRY PROFILE, CITY OF EDMONTON AND EDMONTON CMA

Industry (NAICS)	Edmonton CMA (vs. Alberta)			City of Edmonton Business Patterns		
	2006 LQ	Classification	Labour Force	2011	2007	% Change
Total	1.48	High	16,215	682	702	-2.8%
3321 Forging and Stamping	1.96	High	160	2	8	-75.0%
3322 Cutlery and Hand Tool Manufacturing	1.64	High	85	16	9	77.8%
3323 Architectural and Structural Metals Manufacturing	1.43	High	3,915	115	123	-6.5%
3324 Boiler, Tank and Shipping Container Manufacturing	1.50	High	1,495	14	16	-12.5%
3325 Hardware Manufacturing	1.99	High	25	4	3	33.3%
3326 Spring and Wire Product Manufacturing	1.11	Average	180	8	10	-20.0%
3327 Machine Shops, Turned Product, and Screw, Nut and Bolt Manufacturing	1.85	High	2,685	164	163	0.6%
3328 Coating, Engraving, Heat Treating and Allied Activities	1.67	High	600	42	49	-14.3%
3329 Other Fabricated Metal Product Manufacturing	1.76	High	1,160	65	72	-9.7%
3331 Agricultural, Construction and Mining Machinery Manufacturing	1.65	High	3,125	94	98	-4.1%
3332 Industrial Machinery Manufacturing	0.63	Low	200	15	10	50.0%
3333 Commercial and Service Industry Machinery Manufacturing	1.07	Average	150	16	23	-30.4%
3334 Ventilation, Heating, Air-Conditioning and Commercial Refrigeration Equipment Manufacturing	0.95	Average	525	13	10	30.0%
3335 Metalworking Machinery Manufacturing	2.16	High	465	47	39	20.5%
3336 Engine, Turbine and Power Transmission Equipment Manufacturing	1.45	High	150	8	11	-27.3%
3339 Other General-Purpose Machinery Manufacturing	1.07	Average	1295	59	58	1.7%

Source: Adapted from Statistics Canada, Census of Canadian Population, 2006 and Canadian Business Patterns Data, 2007 and 2011 by Millier Dickinson Blais, 2012

Industrial manufacturing in Alberta is closely linked to the oil and gas sector and the capital expenditures made by oil sands companies. As a result, the sector's real GDP grew at an annual rate of 8.9% between 2000 and 2007. While the sector is driven by capital expenditures in Alberta's oil sands, the industry in Alberta also receives a considerable amount of revenues from export sales. Export sales in the sector accounted for a quarter of the sector's revenues and experienced 15% annual growth between 2000 and 2008. It is likely firms in Alberta have gained a level of knowledge

⁵¹ Alberta industry sector performance and prospects May 2009



and product expertise for the oil and gas industry that provides them with a competitive advantage in specific export market segments.

Labour force data shows there are 16,215 people employed in industrial manufacturing in the Edmonton CMA. Concentrations that emerge within the sector include:

- Architectural and structured metals manufacturing;
- Boiler, tank and shipping container manufacturing;
- Machine shops, turned product and screw, nut and bolt manufacturing;
- Coating, engraving, heat treating and allied activities;
- Other fabricated metal product manufacturing;
- Agricultural, construction and mining machinery manufacturing;
- Metal working machinery manufacturing; and
- Other general purpose machinery manufacturing

In particular, the industrial manufacturing labour force in the City exhibits concentrations of skills within machine operator occupations, especially within metal and mineral products processing and metalworking, woodworking, and related activities. The industrial manufacturing sector labour force shows particular concentrations of individuals with apprenticeship or trades certificates in the City; 28.3% of the labour force has a trades or apprenticeship certificate, compared to just 10.8% of the labour force across the City in 2006. However, the proportion of labour force in the industrial manufacturing sector with a college- or university-level education, which has significant impacts on the potential for product and service innovation within industrial manufacturing companies, was below the standard for all industries across the City. A total of 31.6% of the labour force in the industrial manufacturing sector had college- or university-level credentials, with the majority holding college diplomas, while 47.3% of the labour force across all sectors of the economy with the majority holding university-level credentials.

According to business patterns data there were 682 business establishments in the Edmonton CMA engaged in industrial manufacturing activities in 2011. This is a slight decrease of 2.8% from the 702 establishments counted in 2007. By number of firms, the city's industrial manufacturing sector is concentrated in:

- Machine shops, turned product and screw, nut and bolt manufacturing;
- Architectural and structured metals manufacturing;
- Agricultural, construction and mining machinery manufacturing;
- Other fabricated metal product manufacturing;

Growth within the industrial manufacturing sector has been concentrated in a range of industries, such as cutlery and hand tool manufacturing, hardware manufacturing, machine shops, turned product and screw, nut, and bolt manufacturing, industrial machinery manufacturing, ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing, and other general purpose machinery manufacturing. With the exception of HVAC equipment manufacturing and industrial



machinery, each of these subsectors also exhibited higher than average concentrations of labour force in the Edmonton CMA.

The subsectors that exhibit high levels of employment and labour force, and relatively stable or growing levels of business establishments, form the core strength of the broader industrial manufacturing sector in Edmonton. The outlook for the sector remains positive. Capital expenditures in Alberta's oil sands are expected to remain high into the near future with estimated expenditures for 2012 at \$20 Billion (compared to the \$17 Billion spent in 2010). While in the near term the domestic market will remain strong, exports will be challenged. As the American economy continues to struggle and the Canadian dollar and local wages remain high, exports are likely to level off with little prospect for near term growth.

Over the longer term, domestic sales for the city's industrial manufacturing sector are likely to decline. It is expected that capital expenditures by oil sands companies will begin declining in the mid-term (5-10 years) as current and planned construction projects are completed⁵². As such, the sector's future success could depend on the level of innovation and productivity that emerges in the sector, the ability of the sector to introduce new products to new markets, and the degree to which this expertise can be exported globally. In this regard, the sector will need to find ways to adapt the expertise gained in the oil and gas industry to other potential markets, as well as build and attract the skills necessary to allow the industrial manufacturing sector to diversify its products and markets with new innovations.

3.4.5 Construction and Engineering

The construction and engineering sector is an aggregation of the construction industry which includes all companies with activities related to the construction of buildings and heavy and civil engineering construction including specialty trades contractors and architectural and engineering services related to the construction projects. The sector includes NAICS 23 and NAICS 5413.

The sector is an important component of Alberta's economy comprising 10% of GDP and 12% of provincial employment. High wages in the sector augment the impact on the local economy. Similar to the industrial manufacturing sector, construction and engineering is closely tied to the development of the Athabasca Oil Sands. Rapid oil sands development prior to the recession of 2008/09 contributed to an annual expansion of 16% for the sector provincially. Population growth and residential building construction also contributed to the growth of the sector.

⁵² Alberta industry sector performance and prospects May 2009



FIGURE 65: CONSTRUCTION AND ENGINEERING INDUSTRY PROFILE, CITY OF EDMONTON AND EDMONTON CMA

Industry (NAICS)	Edmonton CMA (vs. Alberta)			City of Edmonton Business Patterns		
	2006 LQ	Classification	Labour Force	2011	2007	% Change
Total	1.01	Average	69,360	9,850	9,563	3.0%
2361 Residential Construction	0.94	Average	12,610	1,876	1,705	10.0%
2362 Non-residential Building Construction	1.41	High	6,100	396	387	2.3%
2371 Utility Systems Construction	0.91	Average	4,585	171	162	5.6%
2372 Land Subdivision	0.78	Average	530	826	838	-1.4%
2373 Highway, Street and Bridge Construction	0.99	Average	2,780	62	77	-19.5%
2379 Other Heavy and Civil Engineering Construction	1.14	Average	410	33	22	50.0%
2381 Foundation, Structure and Building Exterior Contractors	1.06	Average	5,580	1,004	1,062	-5.5%
2382 Building Equipment Contractors	1.13	Average	11,425	1,227	1,145	7.2%
2383 Building Finishing Contractors	1.07	Average	7,950	2,058	1,936	6.3%
2389 Other Specialty Trade Contractors	1.11	Average	4,265	479	485	-1.2%
5413 Architectural, Engineering and Related Services	0.84	Average	13,125	1,718	1,744	-1.5%

Source: Adapted from Statistics Canada, Census of Canadian Population, 2006 and Canadian Business Patterns Data, 2007 and 2011 by Millier Dickinson Blais, 2012

In line with the significance of the sector on a provincial basis, the construction and engineering sector employed 69,360 people in the Edmonton CMA in 2006. While the number of people employed in the sector in the region is significant, location quotients indicate only a few clear subsectors with a relative concentration of the labour force including:

- Non-residential building construction;
- Building equipment contractors; and
- Other specialty trade contractors

Like the industrial manufacturing sector, the labour force in construction and design has a strong profile of workers with trades and apprenticeship certifications (16.9%), as well as a strong profile of workers with college-level technical and university-level professional credentials related to engineering and architecture.

Construction and engineering as a whole had limited business establishment growth in the City of Edmonton (3.0%) between 2007 and 2011. Business growth was recorded in:

- Other heavy and civil engineering construction;
- Residential construction;
- Building equipment contractors;
- Building finishing contractors;



- Utility systems construction; and,
- Non-residential business construction.

When combining the size of the labour force, relative concentration of labour, and number of businesses and business growth, it appears that building equipment contractors and non-residential building construction form the core competitive strength in the sector. In addition, while the other heavy and civil engineering construction subsector represents a relatively small number of workers, there is a concentration of labour force in this subsector. This subsector is also exhibiting the fastest rate of business growth of all subsectors in construction and engineering.

The sector is largely driven by domestic demand for residential and non-residential construction. Provincial reports estimate that oil sands driven construction and residential construction will experience declining growth in the near term. Given this, it is expected that the construction and engineering sector will post a considerably lower level of growth in the coming years. The sector's labour force is mobile and volatile, expanding and contracting as the sector expands and contracts. As the sector slows, it is possible workers will leave the area to seek opportunities elsewhere.

Driven by domestic demand, the sector itself is not a driver of the economy, rather serves other sectors responsible for driving growth. However, the industry has developed specific expertise and knowledge with respect to the oil and gas industry creating significant potential export opportunities for the sector. There are challenges to developing an export component to the sector including relatively low levels of productivity and productivity growth compared to other industries, high wages relative to other jurisdictions and a high Canadian dollar.

3.4.6 Financial Services

The financial services sector is considered a critical enabler of Alberta's traditional and emerging industries. The sector provides businesses across the region with the capital needed to continue growing into global leaders, while the diversity of services ensures that entrepreneurship, equity, and wealth are cultivated and developed locally. A globally connected financial services industry provides the opportunity to attract capital and expertise from across abroad to the province.

Alberta's financial services sector employs approximately 70,000 people and generates 4.7% of Alberta's total GDP, while facilitating approximately \$75 billion in capital investment every year and managing over \$100 billion in assets⁵³. From 2002 to 2010, the GDP of the financial services industry in Alberta grew by an annual average rate of 5.9%; significantly outpacing the provincial economy (1.8%) and Canada's financial services sector as a whole (3.7%)⁵⁴.

⁵³ Alberta Treasury Board and Enterprise. (2010). Financial Services Industry Profile.

⁵⁴ Ibid.



Figure 66 outlines the financial services industry in the Edmonton CMA. The industry is defined as NAICS industry 52 – Finance and insurance, which includes subsectors associated with monetary authority and credit intermediation, insurance, brokerages, securities and commodities, pension funds, and other financial vehicles.

FIGURE 66: FINANCIAL SERVICES INDUSTRY PROFILE, CITY OF EDMONTON AND EDMONTON CMA

Industry (NAICS)	Edmonton CMA (vs. Alberta)			City of Edmonton Business Patterns		
	2006 LQ	Classification	Labour Force	2011	2007	% Change
Total	1.08	Average	20,190	3,579	3,344	7.0%
5211 Monetary authorities - Central bank	0.79	Average	10	0	0	0.0%
5221 Depository credit intermediation	0.93	Average	6,805	87	91	-4.4%
5222 Non-depository credit intermediation	1.61	High	1,790	223	273	-18.3%
5223 Activities related to credit intermediation	0.79	Average	540	138	124	11.3%
5231 Securities and commodity contracts intermediation and brokerage	0.80	Average	1,070	117	114	2.6%
5232 Securities and commodity exchanges	0.50	Low	25	7	6	16.7%
5239 Other financial investment activities	0.84	Average	1,490	2,502	2,274	10.0%
5241 Insurance carriers	1.58	High	4,755	70	66	6.1%
5242 Agencies, brokerages and other insurance related activities	1.07	Average	3,405	391	373	4.8%
5261 Pension funds	3.18	High	25	7	3	133.3%
5269 Other funds and financial vehicles	1.09	Average	275	37	20	85.0%

Source: Adapted from Statistics Canada, Census of Canadian Population, 2006 and Canadian Business Patterns Data, 2007 and 2011 by Millier Dickinson Blais, 2012

Labour in the Edmonton CMA is primarily concentrated within the depository credit intermediation subsector (i.e. personal/commercial/corporate banking and credit unions), with insurance carriers and agencies, brokerages, and other insurance related activities also accounting for a significant share of the 20,190 people employed in the sector. This reflects the presence of large Alberta-based credit unions, insurance companies, and alternative finance companies based in the region. Relative to the rest of Alberta though, the CMA's labour force was highly concentrated in:

- Pension funds;
- Non-depository credit intermediation (i.e. credit cards, sales financing, consumer lending); and,
- Insurance carriers.

The CMA accounts for almost all labour force in the pension funds subsector across the province, owed to the presence of the Alberta Pension Services Corporation (APS), and other pension plan operations like the Alberta Carpenters' and Allied Workers' Pension Plan, Alberta Envirofuels Inc. Pension Plan, and Alberta Milk Employees' Pension Plan, all based in Edmonton.

In terms of labour force capabilities, the financial services sector in the City of Edmonton shows specializations in management of financial and business services, finance and insurance administrative occupations, insurance and real estate sales, and auditors, accountants, and investment professionals. Overall, 27.6% of the labour force in the sector has completed a university-level certificate, diploma, or degree, compared to 23.0% across all sectors in Edmonton, suggesting that the city's financial services sector is one of the more highly skilled areas of the local economy.



The industry experienced business establishment growth of 7.0% across the City of Edmonton from 2007 to 2011, with other funds and financial vehicles (i.e. investment funds, equity funds, and mortgage funds) and pension funds leading that growth. Most other subsectors grew as well over the time period, with the exception of non-depository credit intermediation and depository credit intermediation. Even with the growth of business establishments, there was a decline in employment across the Capital Region over roughly the same time period (a decline of 1.5% in finance, insurance, and real estate employment from 2006 to 2011).

The financial services sector remains a priority for the province. The energy sector, with its concentration of capital-intensive companies, high deal velocity, and large deal sizes, continues to drive activity to the province. The high volume of deals in the last several years has made the City of Calgary into Canada's capital of mergers and acquisitions; Alberta is home to almost four times as many mergers and acquisitions than any other Canadian province⁵⁵.

Further, the province is home to almost double the level of capital investment per capita (\$18,024) than the national average (\$9,174), based on significant investments into the energy sector and infrastructure to meet the needs of the province's growing population. The sector is expected to continue growing in the province largely as a result of the energy sector. The expertise that has developed in response to oil and gas activity and capital investment in Calgary makes it a centre of financial services in much of western Canada.

Opportunities for Edmonton and the CMA are constrained by its status as a branch location for major financial services, notwithstanding the presence of headquarter operations for Servus Credit Union, Canadian Western Bank, and ATB Financial in the City. Calgary continues to be the major centre for financial transactions in the province, and Vancouver continues to grow on the basis of trade connections with the Asia-Pacific Region. However, Edmonton's leading companies in the sector can drive innovations that complement the strengths of both Calgary and Vancouver, particularly in areas like alternative financials and investment management. Further, the City's resident expertise in capital and fund management, paired with the opportunity to capitalize on the stable financial positioning of the province and stability of the Canadian financial services sector, may provide opportunities to build the sector through the management of third-party capital and investments.

3.4.7 Tourism

Tourism is one of the leading sectors in the province, employing approximately 100,000 people and generating over \$5 billion in annual expenditures. Attractions in Alberta range from natural heritage features (five of Canada's 15 UNESCO World Heritage Sites) to cultural amenities and events like the West Edmonton Mall and the Calgary Stampede. The total number of person visits in the province increased by

⁵⁵ Alberta Treasury Board and Enterprise. (2010). Financial Services Industry Profile.



1.6% from 2009 to 2010, to approximately 23 million. The majority of those visitors are residents of Alberta, (81%), while residents of other Canadian provinces accounted for 12% and overseas/U.S. visitors accounted for 7%. While in-province visitors account for the highest proportions of total visits, they account for only 53% of all tourism expenditures in the province suggesting an emphasis on the expansion of U.S. and overseas tourists as a priority for the province.⁵⁶

The province continues to account for a major share of U.S. (6.4%) and overseas (13.1%) tourist visits to Canada⁵⁷. For U.S. visitors, the province's total number of visits largely stayed the same from 2009 to 2010, though there were increases in spending (0.9%), average trip duration (9.2%), and spend per visit (0.9%) figures from 2009 to 2010⁵⁸. For overseas visitors, Alberta's number of total visits, spending, trip duration, and spend per visit all declined from 2009 to 2010, though a number of other Canadian provinces experienced similar performance. Like the rest of Canada, the province continues to target both domestic tourists, and tourists from key markets in North America, Asia, and Europe.

The Edmonton CMA receives approximately 22% of total person visits to Alberta (5 million) per year, with the majority (74%) coming from elsewhere in Alberta⁵⁹. Residents from elsewhere in Canada account for 15% of visitors suggesting that an overwhelming majority of visitors to the Edmonton Region are from Canada; a proportion higher than at the provincial level. Tourists from the U.S. (8%) and overseas, (3%) account for comparatively small shares⁶⁰. The majority of visitors (44%) to the region are visiting friends and relatives. Pleasure (29%) and business (19%) accounted for the next largest shares of total visitors.

Figure 67 outlines the tourism industry performance in the Edmonton CMA and City of Edmonton, as defined by Statistics Canada in the Human Resource Module of the Tourism Satellite Account. Not all industries included will focus their core market on tourists, as some will service both domestic and tourist markets.

⁵⁶ PriceWaterhouseCoopers. (2009). Alberta Industry Sector Performance and Prospects.

⁵⁷ Canadian Tourism Commission. (2010). Travel Characteristics Q4 2010.

⁵⁸ Ibid.

⁵⁹ Alberta Tourism Parks and Recreation (2011). Tourism in Edmonton and Area Tourism Destination Region.

⁶⁰ Ibid.



FIGURE 67: TOURISM INDUSTRY PROFILE, CITY OF EDMONTON AND EDMONTON CMA

Industry (NAICS)	Edmonton CMA (vs. Alberta)			City of Edmonton Business Patterns		
	2006 LQ	Classification	Labour Force	2011	2007	% Change
Total	0.98	Average	61,640	4,568	4,460	2.4%
4811 Scheduled air	0.43	Low	1,015	8	13	-38.5%
4812 Non-scheduled air transportation	0.86	Average	335	33	29	13.8%
4821 Rail transportation	0.91	Average	1,730	2	3	-33.3%
4831 Deep sea, coastal and great lakes water transportation	0.00	Low	0	0	1	-100.0%
4832 Inland water transportation	0.00	Low	0	3	4	-25.0%
4851 Urban transit systems	1.32	High	1,815	1	7	-85.7%
4852 Interurban and rural bus transportation	0.89	Average	175	4	3	33.3%
4853 Taxi and limousine service	1.24	Average	1,890	894	667	34.0%
4854 School and employee bus transportation	0.77	Average	1,095	10	9	11.1%
4855 Charter bus industry	0.78	Average	110	7	6	16.7%
4859 Other transit and ground passenger transportation	0.51	Low	80	39	40	-2.5%
4871 Scenic and sightseeing transportation, land	0.00	Low	0	2	4	-50.0%
4872 Scenic and sightseeing transportation, water	0.49	Low	10	2	6	-66.7%
4879 Scenic and sightseeing	0.32	Low	10	1	2	-50.0%
5121 Motion picture and video industries	0.99	Average	1,060	183	223	-17.9%
5615 Travel arrangement and reservation services	1.10	Average	1,615	170	181	-6.1%
7111 Performing arts companies	1.20	Average	790	112	100	12.0%
7112 Spectator sports	1.11	Average	735	83	70	18.6%
7115 Independent artists, writers and performers	0.98	Average	1,350	150	164	-8.5%
7121 Heritage institutions	0.52	Low	475	18	20	-10.0%
7131 Amusement parks and arcades	1.51	High	365	12	20	-40.0%
7132 Gambling industries	1.32	High	1,980	46	54	-14.8%
7139 Other amusement and recreation industries	0.91	Average	4,990	212	216	-1.9%
7211 Traveller accommodation	0.75	Average	5,540	208	232	-10.3%
7212 RV (recreational vehicle) parks and recreational camps	0.74	Low	370	29	33	-12.1%
7213 Rooming and boarding	1.73	High	270	26	23	13.0%
7221 Full-service restaurants	1.03	Average	16,530	978	1,058	-7.6%
7222 Limited-service eating	1.08	Average	12,785	1,072	1,016	5.5%
7223 Special food services	1.33	High	2,885	149	136	9.6%
7224 Drinking places (alcoholic beverages)	0.83	Average	1,635	114	120	-5.0%

Source: Adapted from Statistics Canada, Census of Canadian Population, 2006 and Canadian Business Patterns Data, 2007 and 2011 by Millier Dickinson Blais, 2012

By labour force, full-service restaurants and traveller accommodations account for the largest share of labour force in the CMA's tourism industry. Relative to the rest of Alberta, the CMA exhibits high concentrations of labour force in:

- Amusement parks and arcades;
- Special food services (such as food service contractors and caterers);
- Urban transit systems; and,



- Gambling industries.

Tourism-related establishments increased by 2.4% from 2007 to 2011. A majority of subsectors declined during that time period, but growth was experienced in:

- Scheduled air transportation;
- Non-scheduled air transportation;
- Rail transportation;
- Deep sea, coastal, and great lakes transportation;
- Inland water transportation;
- Urban transit systems;
- Inter-urban and rural bus transportation;
- Taxi and limousine service;
- School and employee bus transportation; and,
- Charter bus industries.

Much of this development has likely been driven by either the increasing resident population, or the needs of other business sectors. For example, the oil and gas and construction industries have generated demand for accommodations, contract food services, and transit services. Further, the growth of inland water and deep sea transportation establishments is likely a result of the growing profile of the CMA and City in transportation and logistics, rather than as a tourism destination.

Edmonton and the Edmonton CMA face the same challenges as the province and much of Canada with regards to tourism development in the next several years. Heightened border restrictions continue to challenge U.S. visitation levels; the tourism consumer is demanding an increasingly sophisticated tourism product; and continued volatility of the global economy challenges the attraction of overseas visitors, even with the strong economic conditions in the province driving business tourism.

One of the key priorities and opportunities for Edmonton in the tourism industry is based in events. The City has previously had success hosting a number of major sports events, such as the Commonwealth Games and the FISU Summer Universiade, and was at one time considered on the front wave of sports tourism. The recently completed Edmonton Events Strategy outlines the steps and actions that the City can take to regain its position in the Sports Tourism industry. In doing so, the City hopes to accrue the economic and social benefits of tourism expenditures associated with the event, capital investments in infrastructure and facilities, and promotion of the City on the world stage. Recent labour and business growth points to expansion of basic tourism and hospitality industry infrastructure. This positively impacts both the broader tourism industry, and the prospects for Edmonton in hosting major international sporting and cultural events.



3.4.8 Medical Devices

The medical device subsector includes the manufacturing of assistive devices, diagnostic devices, hospital equipment, medical imaging, and medical/surgical supplies. Alberta's medical device industry focuses specifically on:

- Prosthetics;
- Patient positioning products for surgery and rehabilitation;
- Wound care supplies;
- Specialty made soft contact lenses;
- Products for people with physical disabilities; and,
- Soft gel capsules.

In line with the rest of the medical and life sciences in the province, specific areas of expertise relate to bones and joints, cancer, cardiovascular research, diabetes and islet transplant research, and vaccines; all of which are particularly aligned with research at the University of Alberta. As of July 2009, the medical device industry in Alberta employed over 1,600 people, and generated revenues of over \$195 million per year⁶¹. The sector accounts for approximately 0.1% of Alberta's GDP, but 11.1% of the Canadian medical devices sector GDP⁶². The market is primarily based in Canada, with only 20% of revenues coming from exports⁶³.

The industry can be characterized through NAICS by the following industries:

- 3345 – Navigational, measuring, medical and control instruments manufacturing and NAICS; and,
- 3391 – Medical equipment and supplies manufacturing.

Using this definition, the performance of the medical devices sector in the Edmonton CMA and City of Edmonton is illustrated in Figure 68.

FIGURE 68: MEDICAL DEVICES INDUSTRY PROFILE, CITY OF EDMONTON AND EDMONTON CMA

Industry (NAICS)	Edmonton CMA (vs. Alberta)			City of Edmonton Business Patterns		
	2006 LQ	Classification	Labour Force	2011	2007	% Change
Total	1.10	Average	1,185	132	138	-4.3%
3345 Navigational, measuring, medical and control instruments manufacturing	0.88	Average	450	35	41	-14.6%
3391 Medical equipment and supplies manufacturing	1.29	High	735	97	97	0.0%

Source: Adapted from Statistics Canada, Census of Canadian Population, 2006 and Canadian Business Patterns Data, 2007 and 2011 by Millier Dickinson Blais, 2012

By labour force, the medical device sector in the CMA is heavily weighted towards medical equipment and supplies manufacturing, which accounts for 62.0% of the total labour force in the sector. Relative to the rest of Alberta, there is a high concentration

⁶¹ Alberta Treasury Board and Enterprise. (2010). Medical Devices.

⁶² PriceWaterhouseCoopers. (2009). Alberta Industry Sector Performance and Prospects.

⁶³ Ibid.



of labour force in the medical equipment and supplies manufacturing subsector across the CMA, suggesting a slight advantage over the rest of the province in core areas of strength like prosthetics, assistive devices, and medical supplies. Further, the City's electronics and miscellaneous manufacturing subsectors show a strong concentration of workers with college diplomas and degrees (26.5%); well above the averages for the entire manufacturing sector (18.5%) and all sectors across the City (19.8%) in 2006.

The number of business establishments in the sector declined from 2007 to 2010, with the most dramatic declines in the navigational, measuring, medical, and control instruments manufacturing subsector. The medical equipment and supplies subsector, already showing a relative concentration of labour in the Edmonton area, did not lose or gain any establishments. Strength in the sector primarily comes from SME businesses, as they dominate the landscape. There are no medical device businesses with more than 100 employees in either the CMA or Alberta.

Like biotechnology, the medical devices subsector is a research intensive industry, so the post-secondary assets in Edmonton greatly support the prospects of the sector. The comparatively lower density of financial services and venture capital in the Edmonton area makes it slightly more difficult for early-stage companies in the sector, despite the presence of commercialization infrastructure. Regardless, Edmonton's comparative strength is in its profile of existing medical device and diagnostic companies focused in core areas of provincial strength, such as Abbott Canada, Dycor Technologies and Nucrust Pharmaceuticals, and its ability to capitalize on cutting edge nanotechnology, ICT, and health sciences research and development at the University of Alberta and NAIT.

3.4.9 Clean Technology

It is difficult to define the clean technology sector by standard industrial classifications. The sector covers a wide variety of industries, but it is primarily concerned with several major areas of activity: renewable energy, water technologies, waste management, and environmental products and services. One of the more comprehensive NAICS-based definitions of the clean technology sector can be derived from Statistics Canada's Survey of Environmental Goods and Services, which aims to produce an estimate of the production of environmental goods and services related to both of those major areas above, by industry. The target population for the survey includes manufacturing, wholesale distribution, professional services, and waste management and remediation services industries. Figure 69 uses that definition to illustrate the performance of the clean technology sector in the City of Edmonton and the Edmonton CMA.



FIGURE 69: CLEAN TECHNOLOGY INDUSTRY PROFILE, CITY OF EDMONTON AND EDMONTON CMA

Industry (NAICS)	Edmonton CMA (vs. Alberta)			City of Edmonton Business Patterns		
	2006 LQ	Classification	Labour Force	2011	2007	% Change
Total	1.11	Average	69,990	7,258	7,659	-5.2%
322 Paper manufacturing	0.51	Low	600	7	12	-41.7%
325 Chemical manufacturing	1.32	High	3,580	76	96	-20.8%
326 Plastics and rubber products manufacturing	1.65	High	3,360	79	84	-6.0%
331 Primary metal manufacturing	1.33	High	1,605	14	19	-26.3%
332 Fabricated metal product manufacturing	1.58	High	10,305	430	453	-5.1%
333 Machinery manufacturing	1.33	High	5,915	252	249	1.2%
334 Computer and electronic product manufacturing	0.72	Low	1,130	72	75	-4.0%
335 Electrical equipment, appliance and component manufacturing	0.98	Average	785	45	46	-2.2%
339 Miscellaneous manufacturing	1.14	Average	2,020	269	284	-5.3%
416 Building material and supplies wholesaler-distributors	1.21	Average	5,020	474	491	-3.5%
417 Machinery, equipment and supplies wholesaler-distributors	1.33	High	13,070	880	998	-11.8%
418 Miscellaneous wholesaler-distributors	0.93	Average	3,195	331	415	-20.2%
5413 Architectural, engineering and related services	0.84	Average	13,125	1,718	1,744	-1.5%
5416 Management, scientific and technical consulting services	0.84	Average	4,990	2,514	2,594	-3.1%
562 Waste management and remediation services	0.82	Average	1290	97	99	-2.0%

Source: Adapted from Statistics Canada, Census of Canadian Population, 2006 and Canadian Business Patterns Data, 2007 and 2011 by Millier Dickinson Blais, 2012

The manufacturing sector represents one of the strongest areas of the clean technology sector, building on the Capital Region's strengths as a centre for industrial manufacturing. Though much of this has been tied to the expansion of the oil and gas sector, the same industrial and labour force concentrations are an asset when considering the development of renewable energy systems and components, and a range of other environmental products. Further, the growth in professional services across the Capital Region, related back to engineering and environmental consulting, is an asset to the industry as well. These professional services companies have developed expertise in remediation and monitoring based on proximity to major energy operations.

Relative to the rest of the province, the sector has an average concentration of labour force in clean technology. At the subsector level, the region's strengths in industrial manufacturing and the integrated wholesaling-distribution industry account for the highest concentrations of labour force. The highest concentration of labour force is found in:

- Plastics and rubber products manufacturing;
- Fabricated metal product manufacturing;
- Primary metal manufacturing;
- Machinery manufacturing;
- Chemical manufacturing; and,
- Machinery, equipment, and supplies wholesaler-distributors.

The number of establishments in the sector declined from 2007 to 2011 (5.2%), and most subsectors of the clean technology sector declined as well. The notable exception to the trend was the machinery manufacturing subsector, which grew by



1.2% from 2007 to 2011. This is in alignment with the strength of the City as a centre for industrial manufacturing, with the sector increasing its number of establishments even as the broader Canadian manufacturing sector experiences challenges related to the external economy. Though most subsectors declined by number of establishments from 2007 to 2011, the declines in some of the key subsectors like architecture, engineering, and related services (1.5%), waste management and remediation (2.0%), electrical equipment, appliance, and component manufacturing (2.2%), management, scientific, and technical consulting services (3.1%), and fabricated metal product manufacturing (5.1%), which account for both knowledge-based and industrial activities in the sector, were generally more moderate.

In Alberta, the environmental goods and services sector has seen tremendous growth as a spin-off from the growth of the province's oil and gas sector. This has served to focus the industry on water supply and treatment products, remediation services, and products aimed at monitoring and reducing greenhouse gas (GHG) emissions. Revenues in the sector reached \$3.4 billion in 2007, having grown steadily at an average annual rate of 13% from 2000 to 2007⁶⁴. Employment grew at 6% per year over the same time period, and the sector maintains an above average outlook for growth into the future⁶⁵. Growth is expected to be driven by sustained growth of the energy sector, increased public funding on environmental initiatives, increased private investment as a result of environmental regulations, and stronger public and political agendas in Canada and abroad aimed at protecting the environment.

Growth has not been without challenges and projected growth will continue to face many of the same challenges. Other sectors related to oil and gas and industrial manufacturing compete heavily for skilled labour needed in the clean technology sector. Comparatively higher wages in sectors other than clean technology challenge retention of skilled employees. The lack of replacement employees emerging from post-secondary institutions into the sector exacerbates the problem. Further, the comparative lack of professional skills in the industrial manufacturing may pose challenges for transferability of skills to clean technology applications, and innovations within the subsector focused on clean technology systems and products.

Credit market volatility and demand for energy have also had major impacts on capital spending in the province over the last several years. Major projects have been cancelled or deferred, leaving little private sector incentive to invest in the clean technology sector. Private sector investment could be a key driver for the industry in the future. Energy sector businesses may look to invest in new innovations or partnerships that allow them to accomplish remediation, water treatment, GHG reduction, or corporate social responsibility goals. Despite a positive outlook for the clean technology industry, its prospects are still inherently related to the prospects of the energy sector.

⁶⁴ PriceWaterhouseCoopers. (2009). Alberta Industry Sector Performance and Prospects.

⁶⁵ Ibid.



For Edmonton, there are a number of assets on which to build the sector, including world-class environmental and engineering consulting firms (i.e. Stantec, Golder and Associates, CH2M Hill, and AECOM) supported by innovative SMEs throughout the region, the strength in testing services (ALS Laboratory Services Centre of Excellence), the profile of post-secondary research and education resources at the University of Alberta focused on the environment, and a small but growing profile of renewable energy distributors and contractors.

However, the sector faces challenges with regards to retaining the skilled employees needed to work in the sector, and developing the skills and capabilities that allow existing strengths in other industries to build the city's strengths in clean technology. There will be continued competition for talent among businesses in subsectors that service both oil and gas and clean technology sectors (i.e. industrial manufacturing and engineering). As such, the prospects of the clean technology sector in the Edmonton region appear closely tied to the prospects of the energy sector in the short to medium term. Renewable energy will continue to lack the prominence it holds in other provinces, and other areas of Alberta continue to adopt new policies aimed at renewable energy development. Demand for management of environmental issues will remain strong for the sector across Edmonton. As the closest major centre with direct multimodal connections to major oil and gas activity, Edmonton remains the most logical place from which to source environmental and clean technology products and services.

3.4.10 Information and Communications Technology

The most prominent trend in the information and communications technology sector over the last several decades is industrial convergence. The lines continue to blur between sectors, as ICT applications increasingly make their way into non-traditional industries, often with quite disruptive results. Advanced ICT applications have been at the basis of maintaining the manufacturing sector in North America, offering solutions that allow businesses to increase efficiency, productivity, and quality to the extent that price is not the defining factor in production decisions.

Similarly, ICT advancements have allowed the economy to become more globally connected. The ability to communicate immediately with anyone, anywhere paired with the ability to instantly direct investments, cash flows, and payments has enabled businesses to access opportunities across the globe. Systems have emerged to manage the movement of goods and people at the speed needed to keep up with the flow of information. It is critical for a community to have a strong ICT sector in order to drive innovations in ICT and communications that can have positive implications on other sectors.

Statistics Canada's definition of the ICT sector includes components from manufacturing, wholesale trade, information and cultural industries, and professional services. Figure 70 uses this definition to illustrate the performance of the ICT sector across the City of Edmonton and the Edmonton CMA.



FIGURE 70: INFORMATION AND COMMUNICATIONS TECHNOLOGY INDUSTRY PROFILE, CITY OF EDMONTON AND EDMONTON CMA

Industry (NAICS)	Edmonton CMA (vs. Alberta)			City of Edmonton Business Patterns		
	2006 LQ	Classification	Labour Force	2011	2007	% Change
Total	1.04	Average	16,665	1,965	2,027	-3.1%
3333 Commercial and service industry machinery manufacturing	1.07	Average	150	16	23	-30.4%
3341 Computer and peripheral equipment manufacturing	0.78	Average	75	9	8	12.5%
3342 Communications equipment manufacturing	0.40	Low	215	9	8	12.5%
3343 Audio and video equipment manufacturing	0.00	Low	0	4	4	0.0%
3344 Semiconductor and other electronic component manufacturing	0.92	Average	335	12	9	33.3%
3345 Navigational, measuring, medical and control instruments manufacturing	0.88	Average	450	35	41	-14.6%
4173 Computer and communications equipment and supplies wholesaler-distributors	1.49	High	2,695	92	127	-27.6%
5112 Software publishers	1.14	Average	520	88	65	35.4%
517 Telecommunication services	1.04	Average	4,690	82	89	-7.9%
518 Internet service providers, web search portals, data processing services	0.68	Low	425	49	44	11.4%
5415 Computer systems design and related services	1.03	Average	7,110	1,569	1,609	-2.5%

Source: Adapted from Statistics Canada, Census of Canadian Population, 2006 and Canadian Business Patterns Data, 2007 and 2011 by Millier Dickinson Blais, 2012

Alberta has a diverse information and communications technology sector with a history of close ties to the oil and gas sector. It has since diversified into other areas of strength for the province (i.e. health industries, industrial manufacturing, and environmental remediation) to offer specializations related to:

- Bioinformatics;
- Digital content;
- E-learning;
- Global positioning systems;
- Health management systems/health informatics;
- Nanotechnology;
- Software development;
- Systems integration;
- Telecommunications; and,
- Wireless communications.

In 2008, the provincial sector employed 54,500 people, generating revenues of \$10.2 billion and exports of \$1.6 billion⁶⁶. Exports of the manufacturing sector account for 21% of total revenues, and products are primarily directed at the U.S. (53%), the U.K. (5.9%), China (4.2%), and Singapore (4.1%). Domestic markets serviced by the sector's primarily small- to medium-sized manufacturing and service enterprises include oil and gas, finance, retail, and wireless telecommunications sectors. Real GDP in the sector expanded by 5.5% between 2000 and 2007, led primarily by service-

⁶⁶ Alberta Treasury Board and Enterprise. (2009). Information and Communications Technology Sector Profile.



oriented subsectors like software and systems design.⁶⁷ ICT manufacturing industries experienced a reduction in GDP from 2000 to 2007, which was masked to an extent by the success in those service-oriented sectors. From 2003 to 2007, the growth of real GDP in Alberta's ICT sector led the growth of provincial counterparts in Ontario, British Columbia, Quebec, and Atlantic Canada⁶⁸.

Alberta's highly skilled workforce has been a driver of the ICT sector's success. Like other sectors in the province though, the ICT sector has experienced a shortage of skilled labour in the past. The Information and Communications Technology Council predicts continued challenges related to computer systems managers, information systems analysts, and software engineers and designers across Canada to 2015, which complicates the sector's ability to grow⁶⁹. Research expenditures made by ICT firms remain well above the provincial averages for all sectors, though access to venture capital remains a continuing challenge for the sector.

The Edmonton CMA's ICT sector labour force is primarily oriented towards the service-based components of the sector like computer systems design and related services, telecommunications, and computer and communications equipment and supply wholesalers/distributors. Only the wholesaling-distribution component subsector showed a high concentration of labour. Slightly higher than average concentrations of labour were also exhibited in software publishing, telecommunications, and commercial and service industry machinery manufacturing subsectors. Though not a competitive advantage, the CMA's performance is still notable given that it shows strength in some of the key service-based subsectors of ICT.

There was a decline of 3.1% in the number of ICT sector establishments in the City of Edmonton between 2007 and 2011. Despite the overall decline, the City's ICT sector experienced growth in software publishing (35.4%), semiconductor and other electronic component manufacturing (33.3%), computer and peripheral equipment manufacturing (12.5%), communications equipment manufacturing (12.5%), and internet service providers, web search portals, and data processing services (11.4%). By business growth, the City exhibits strengths in both industrial and knowledge-based areas of the sector. The growth of the software publishing sector by number of businesses paired with a strong profile of labour across the CMA translates into positive prospects for growth of the subsector, which has positive implications on other areas of ICT (i.e. digital media) and most other sectors (i.e. productivity improvements in industrial manufacturing).

Like the provincial sector, much of Edmonton's ICT sector labour force is concentrated in smaller businesses in areas like consulting, software, web design, and development. Given that innovations in traditional areas of ICT are driven by large companies, Edmonton's ICT prospects in these areas seem comparatively more limited. With that said, there are major multinational enterprises (i.e. GE, MCL/MITEQ) with a presence

⁶⁷ PriceWaterhouseCoopers. (2009). Alberta Industry Sector Performance and Prospects.

⁶⁸ Ibid.

⁶⁹ Ibid.



in the Region that can drive sector prospects in these more mature markets. Further, there are innovative and agile companies focused on growing areas of mobile applications and digital media and related industries (i.e. film production), supported by a growing network of public and private educational infrastructure (i.e. University of Alberta Department of Computer Science, Pixel Blue College, GURU Digital Arts College) which improve the region's prospects in emerging areas of the industry.

Growth through 2009 was moderate in the sector, reflecting lower consumer demand and constrained financing and investment in other sectors. ICT services are expected to fair more positively into the future, as they are now considered essential spending in most sectors. The continued integration of ICT into other sectors of the economy and into daily life will be a key driver of development, and digital media industries are expected to experience comparatively stronger growth than more mature areas of the sector. Success for Edmonton will come from aligning the interests and activities of the network of small to medium-sized local firms with growing areas of the economy (i.e. digital media), and integrating the innovations from larger businesses in more mature subsectors of ICT into other sectors of the economy. This has positive implications on productivity and output, but also their ability to integrate into an increasingly global economy.

3.4.11 Transportation and Logistics

Driven by rapid growth in international trade and the shift in manufacturing to developing countries such as India and China, transportation and logistics has moved to the forefront of business functions. Managing global supply chains has become crucial to success and innovations and partnerships in transportation and logistics are a key enabler to this success. Different industries have developed different models to suit their unique needs and trade patterns. Outsourcing in transportation and logistics is increasing with increased importance placed on collaboration and global connections. Traceability and managing global carbon footprints have also become important aspects of the transportation and logistics industry.

On a more local level, transportation and logistics to both strengthen local industries, facilitating the movement of goods and services within Edmonton, while also serving as an export driven industry in its own right are providing opportunities to coordinate and facilitate the movement of goods in global supply chains. The sector has been growing quickly in Canada. Investment in facilities grew by 106% from 2005 to 2010 with 25% of national growth in Alberta. Investment in distribution facilities in Alberta expanded by 187% from 2005 to 2010. Overall the sector expanded by 4.6% annually from 200 to 2007, faster than the broader provincial economy. Total provincial employment in the sector was estimated to be 100,000 people in 2007⁷⁰.

⁷⁰ ⁷⁰ PriceWaterhouseCoopers. (2009). Alberta Industry Sector Performance and Prospects.



FIGURE 71: TRANSPORTATION AND LOGISITICS INDUSTRY PROFILE CITY OF EDMONTON AND EDMONTON CMA

Industry (NAICS)	Edmonton CMA (vs. Alberta)			City of Edmonton Business Patterns		
	2006 LQ	Classification	Labour Force	2011	2007	% Change
Total	0.95	Average	26,355	2,529	2,585	-2.2%
4811 Scheduled air transportation	0.43	Average	1,015	8	13	-38.5%
4812 Non-scheduled air transportation	0.86	Average	335	33	29	13.8%
4821 Rail transportation	0.91	Average	1,730	2	3	-33.3%
4831 Deep sea, coastal and great lakes water transportation	0.00	Low	0	0	1	-100.0%
4832 Inland water transportation	0.00	Low	0	3	4	-25.0%
4841 General freight trucking	1.01	Average	7,150	1,018	1,043	-2.4%
4842 Specialized freight trucking	0.84	Average	4,285	691	752	-8.1%
4851 Urban transit systems	1.32	High	1,815	1	7	-85.7%
4852 Interurban and rural bus transportation	0.89	Average	175	4	3	33.3%
4861 Pipeline transportation of crude oil	1.69	High	605	3	5	-40.0%
4862 Pipeline transportation of natural gas	0.12	Low	60	2	3	-33.3%
4869 Other pipeline transportation	0.21	Low	10	0	1	-100.0%
4881 Support activities for air transportation	1.13	Average	1105	41	46	-10.9%
4882 Support activities for rail transportation	1.33	High	245	8	10	-20.0%
4883 Support activities for water transportation	0.79	Average	10	3	1	200.0%
4884 Support activities for road transportation	0.91	Average	750	89	99	-10.1%
4885 Freight transportation arrangement	1.04	Average	805	50	62	-19.4%
4889 Other support activities for transportation	1.19	Average	120	41	29	41.4%
4911 Postal service	1.14	Average	2480	6	12	-50.0%
4921 Couriers	1.08	Average	1585	315	225	40.0%
4922 Local messengers and local delivery	1.23	Average	610	91	104	-12.5%
4931 Warehousing and storage	1.02	Average	1465	120	133	-9.8%

Source: Adapted from Statistics Canada, Census of Canadian Population, 2006 and Canadian Business Patterns Data, 2007 and 2011 by Millier Dickinson Blais, 2012

Alberta accounts for almost 13% of national employment in transportation and more than 17% of national GDP in the sector. While productivity is lower than other industries in Alberta, Alberta's transportation sector is more productive than other provinces. Pipelines form an important component of the sector in Alberta but road, rail and air transportation are also key factors in the measuring the industry's strength in the province.

In the Edmonton CMA, the sector employs 26,355 people. While significant, the LQ of 0.95 indicates this is marginally less than the provincial average of employment in this sector. Overall, concentrations in the labour force are found in pipeline transportation of crude oil, support activities for rail transportation, urban transit systems and postal service. Most of the labour force in the sector is engaged in activities related to:

- General freight trucking
- Specialized freight trucking
- Postal service
- Urban transit systems
- Rail transportation



- Couriers
- Warehousing and storage

In terms of labour force capabilities, the City of Edmonton's transportation and logistics sector is heavily weighted towards motor vehicle and transit drivers, which account for 45% of the total transportation and logistics labour force in the City. Outside of drivers, relative concentrations of labour were found in transportation officer, train crew and operators, other transport equipment operators (i.e. railway yard workers, air transport ramp attendants), supervisors in the railway and motor transportation sector, and mail and message distribution occupations. The labour force in the City is primarily oriented towards skills in transportation support and logistics occupations.

By educational attainment, 40.5% of the sector's labour force has completed some form of post-secondary education, compared to 58.1% across all sectors in the City. The sector's labour force has strong proportions of labour with trades- and apprenticeship-based credentials. The sector has proportionally lower shares of labour force with college- and university-level educational attainment than the rest of the City's economy; 28.5% in the transportation and logistics sector and 47.3% of labour force throughout the rest of the economy. This latter point has implications on Edmonton's potential to move up through the value chain of the sector. Compared to other logistics hubs that are home to head offices and knowledge-based activities within the sector, Edmonton's existing labour force lacks the professional skills needed to drive investment outside of the technical areas of the sector.

Overall, the number of transportation and logistics establishments in the City of Edmonton decreased slightly from 2007 to 2011 to 2,529 firms. The strongest growth in the sector was exhibited by the sectors with the smallest number of firms, such as scheduled (200.0%) and non-scheduled air transportation (41.4%), deep sea, coastal, and great lakes water transportation (33.3%), and inland water transportation (13.8%). The largest sector to experience growth in the number of business establishments was rail transportation, which grew by 40.0% from 2007 to 2011. All other subsectors declined between 2007 and 2011, though due to the relative small number of firms in each subsector the absolute declines were moderate. The subsectors with the greatest number of firms in 2011 were general freight trucking and specialized freight trucking; both of which are dominated by small firms, but also have a strong profile of companies with 200 or more employees in the City.

The City of Edmonton, in collaboration with regional partners has supported the development of Port Alberta. Port Alberta is "an industry-led association fostering transportation and logistics linkages to simplify the supply chain and to promote economic diversity and value added for Alberta."⁷¹ Port Alberta works to strengthen the value proposition of the transportation and logistics sector in Alberta – connecting the Capital Region and Alberta to the world. The organization strives to increase the efficiency with which Alberta based businesses can strengthen their global value chains, and attract additional investment in transportation and logistics based firms to

⁷¹ <http://www.portalberta.com/organization/vision-mission>



the Capital Region. Intermodal has been one of the fastest growing segments in transportation and the Capital Region, through investments by both CN and CP is well positioned to capitalize on this growth. The Edmonton International Airport is the nation's 5th busiest airport and serves to play a stronger role in the movement of goods and people to an ever expanding network of cities around the world.

3.5 Summary of Industry Assessment

In reviewing material presented by the City of Edmonton, the Edmonton Economic Development Corporation and through discussions with the Project Management Team, a long list of industry sector opportunities was evident. In order to move forward with an economic development strategy however, it is necessary to develop a certain level of focus for industry retention and expansion as well as attraction of new investment. This focus can allow the city to clarify the value proposition and develop clear actions and strategies to assist in industry growth and development. It also enables the City of Edmonton to better its resources in a way that will support the expectations of long term economic prosperity.

The discussion that follows has drawn from EEDC, provincial sector outlooks and prospects, Statistics Canada subsector Labour Force information and Business Establishment counts, as well as other sources to develop a short list of industry prospects for further profiling. The short list along with a brief explanation for the industry selection is presented below:

Clean Technologies

- The region has manufacturing strengths to build a strong clean technology industry including plastics and rubber, fabricated metals, machinery and chemical manufacturing;
- The environmental goods and services sector has exhibited strong growth and the research related to the oil and gas sector provides both a strong base and area of unique expertise;
- Growth in the energy sector and trends towards sustainability are leading to positive longer term prospects for the sector;
- The University of Alberta has key areas of environmental research; and
- Edmonton has demonstrated leadership in water, waste water and solid waste treatment.

Engineering, Design and Construction

- Built on a strong foundation in engineering and construction, the sector has expanded to incorporate the city's strength in architecture (as raised in the culture discussion) and architectural and structured metals manufacturing;
- The sector employs approximately 69,000 workers with strong near to mid-term growth based on oil sands construction; The oil sands have led to a level of



expertise in the engineering, manufacturing and construction of heavy oil and upgrader facilities – an expertise that offers global export opportunities;

- The sector has developed specialize knowledge in cold weather design and cold climate construction and
- Edmonton has a concentration of non-residential construction and building equipment and trades contractors with unique expertise that can be marketed globally.

Financial services

- Has been a critical enabler of traditional and emerging industries;
- The sector is a priority for the province and has shown positive growth provincially;
- Large employer in the province with Edmonton exhibiting a concentration of workers, most notably in pension funds;
- Several provincial employee pension plans are managed in Edmonton; and
- Edmonton is home to AIMCo, ATB, Servus Credit Union and Canadian Western Bank.

Information and Communications Technology (ICT)

- Diverse sector provincially with strong GDP growth;
- Alberta's growth in ICT industry is leading the nation;
- Sector is growing globally with advancements in supply chain and digital media;
- Alberta and Capital Region have the highly skilled workforce needed by the sector;
- The sector is crucial to productivity improvements across all sectors of the economy;
- Edmonton has some clear strengths in software publishing and computer systems design and telecommunications services; and
- The sector exhibits clear linkages to transportation and logistics, health industries, cultural industries and education.

Health Industries

- Sector based on the foundation of Edmonton's Biotechnology industry but has expanded to include Medical Devices and components of ICT (health informatics);
- Canada's biotechnology sector is one of the largest in the world providing opportunities to develop synergies with regional partners;
- Strong prospects for global growth combined with strong transportation and logistics sector to reach global markets;
- Edmonton is home to important research institutions and the province has recently made important investments in the sector with medical research centres at the University of Alberta and NAIT;
- Labour force concentrations are evident in pharmaceutical and medicine manufacturing



- Edmonton exhibits a large number of firms engaged in scientific research and development which can be leveraged to strengthened biotechnology research; and
- Small but emerging concentration in medical equipment and supplies manufacturing.

Transportation and logistics

- Historically focused on the needs of the provincial market, with strides been made to advance the region as a global logistics centre (Port Alberta initiative);
- Edmonton is home to both CN and CP which have invested in important intermodal infrastructure – the fastest growing aspect of the transportation sector;
- The sector is a key enabler as well as having export opportunity;
- Strong prospects for global growth as management of global supply chains is a key component of business success; and
- The sector has been posting healthy growth in GDP and investment on a provincial level.

While each of these targets has a certain logic and strength in the context of the local economy, Edmonton's challenge remains as to how to identify its unique value proposition in a sea of local, regional and global competitors.



4 Employment Land Review

Having reviewed the City's industry composition an assessment of the City's employment lands can identify the issues and opportunities associated with sustainable growth of business and investment in the City. The following section provides an evaluation of existing, designated, planned, and development employment areas to determine if any changes, additions, or modifications are needed to policy or approaches to achieve the City's economic development objectives.

In the summer of 2011, the City retained Watson & Associates Economists Ltd. (Watson & Associates) and Bourgeois & Company Ltd. to prepare an Industrial Land Supply and Demand Analysis Study for the city of Edmonton. A key objective of that study was to determine if Edmonton has sufficient vacant industrial land opportunities to accommodate growth over the next decade, and when the City should initiate the development of the Edmonton Energy and Technology Park in the northeast quadrant of the city.

At present, the Edmonton Energy and Technology Park is a 5,238 ha (gross) development in the north of the City intended to accommodate petro-chemical related industries, logistics, manufacturing, and research and development uses. The proximity to the Alberta Industrial Heartland and the connections to major transportation infrastructure, as well as intended development as an eco-industrial park, make the Edmonton Energy and Technology Park a major asset in the City's industrial land inventory. Though the Area Structure Plan is in place for these lands, they are a medium- to longer-term development opportunity for the City. However, they are still considered within the context of Edmonton's industrial land inventory.

4.1 Industrial Market Review

The industrial base in the City of Edmonton is the largest in the Capital Region, with a total gross floor area (GFA) inventory of 78.5 million square feet⁷², accommodated on 5,253 net ha of developed industrial lands.

During the last 10 years (2001-2010) the city has averaged approximately 2.3 million square feet of new GFA on industrial lands per year, with considerable growth between 2005 and 2009, up to the on-set of the most recent recession. Development on industrial lands reached a peak in that ten-year period of 4.1 million square feet in

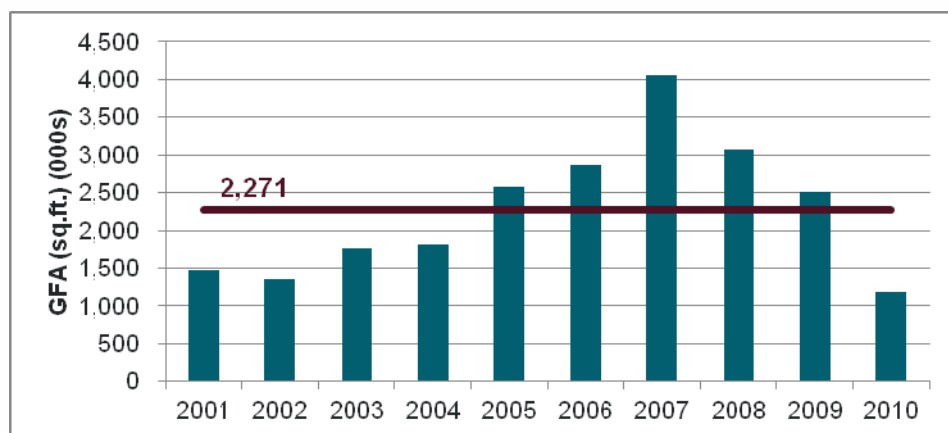
⁷² Colliers International. (2011). Edmonton Industrial Market Report, Q1 2011.



2007. The 1.2 million square feet of new GFA in 2010 was well below the 10-year average for annual development on industrial lands.

The majority of development activity on industrial lands has been industrial in nature, with the manufacturing, transportation, logistics, and distribution sectors characterizing development. Over the last five years, 85% of new GFA constructed on industrial lands was by industrial users. Over the same time period, 14% of development on industrial lands was commercial in nature, while institutional uses accounted for just 1% of development activity. A majority of commercial development, particularly in the South/Southeast District has been in the office and knowledge-based sectors, largely driven by proximity to the airport.

FIGURE 72: HISTORICAL BUILDING PERMIT ACTIVITY ON INDUSTRIAL LANDS, ANNUAL GFA, 2001-2010, CITY OF EDMONTON

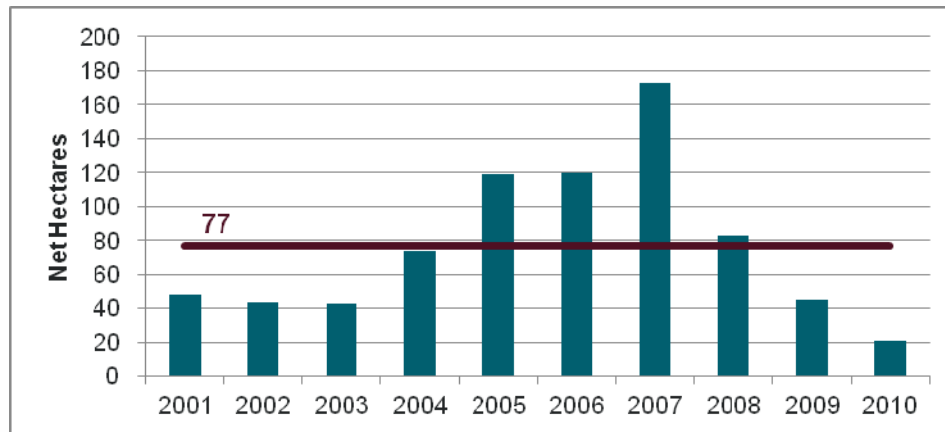


Source: Adapted from City of Edmonton, building permit data by Watson & Associates Economists Ltd., 2011

Over the last ten years, the city of Edmonton has averaged an annual absorption of 77 net ha of industrial lands per year. Industrial land absorption increased rapidly from 2003 to 2007 (43 net ha to 173 net ha), but similar to development trends by GFA, absorption declined rapidly to just 21 net ha in 2010. The increase in development activity up to 2007 largely coincides with the increase in oil and gas activity in the province. Since 2007 though, development has still been recovering from the most recent recession and resulting decline in energy prices and oil and gas activity.



FIGURE 73: INDUSTRIAL LAND ABSORPTION PER YEAR, 2001-2010, CITY OF EDMONTON

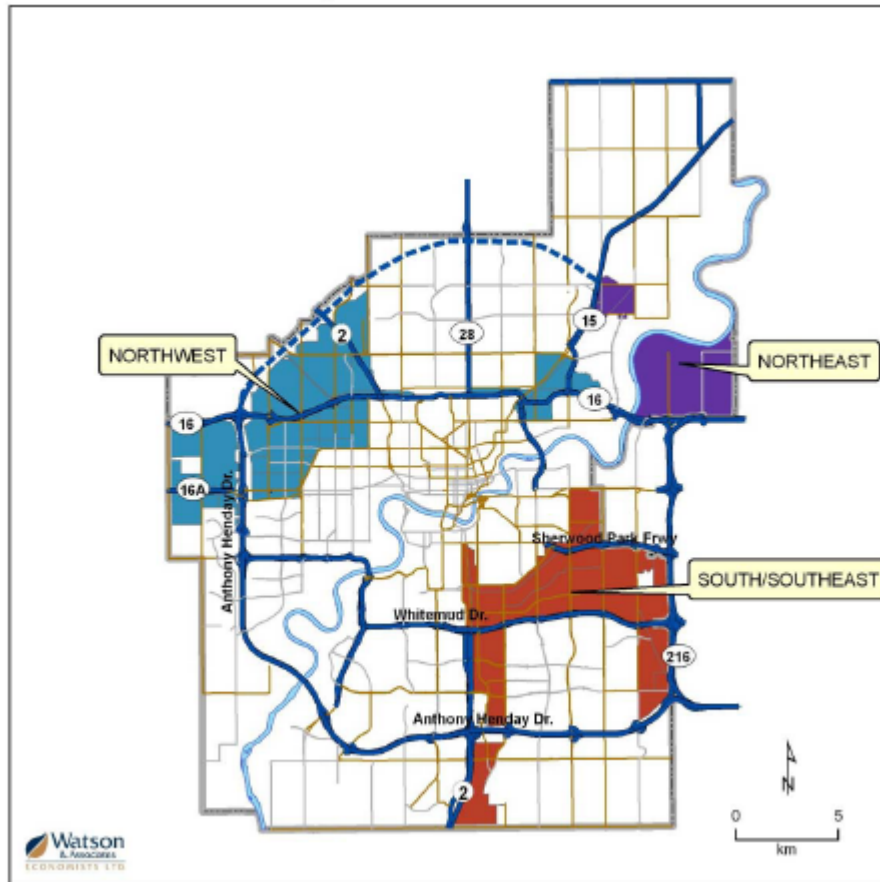


Source: Watson & Associates Economists Ltd., 2011

There are four major industrial areas in the city, characterized as the Northwest District, the Northeast District, the Central District, and the South/Southeast District. The Central District, located between the Edmonton Downtown Core and the Yellowhead Highway to the north is the most mature industrial area, and is largely built out. As such, there are limited opportunities to accommodate future development. The remaining three major employment areas were the focus of the 2011 study, and are identified in Figure 74.



FIGURE 74: MAJOR INDUSTRIAL DISTRICTS, CITY OF EDMONTON



Source: Watson & Associates Economists Ltd., Edmonton Industrial Land Study, 2011.

The following sections outlined major development trends on employment land by each of these industrial districts in the City.

4.1.1 Northwest Industrial District Profile

The Northwest Industrial District extends along the Yellowhead Highway and Anthony Henday Drive corridors. Of the 2,434 net ha of developed industrial lands, 62% is zoned Medium Industrial (IM), 22% is zoned Industrial Business (IB), 7% is zoned Heavy Industrial (IH), and 1% is zoned Light Industrial (IL). The 3.8 million square feet of industrial space in the district accounts for 57% of the City wide total⁷³.

By sector, 51% of the developed land base is devoted to wholesale trade, warehousing and storage, 14% is devoted to manufacturing, 11% is used for transportation, and 6% is used for construction. The high concentration of transportation and logistics used in

⁷³ Colliers International. (2011). Edmonton Industrial Market Report, Q1 2011.



the district is due to proximity to the CN Intermodal facility and connections to major highway corridors. The development of Anthony Henday Drive has further driven development. The Industrial area is also home to limited retail trade, service, and office uses at 6%, 5%, and 3% of total developed industrial lands respectively.

The district is split between more mature and largely built-out industrial lands to the east of 170th Street, which are more focused on general industrial uses, and newer industrial areas to the west of 170th Street and north of the Yellowhead Highway.

The Northwest Industrial District has captured 43% of total industrial development on industrial lands in Edmonton over the last five years (2006-2010), with 69% of that development focused in the warehousing, logistics, and storage sectors, and characterized by large-scale multi-bay industrial condo-type development. The next most active sectors in the Northwest District include retail trade (7%), construction (6%), general industrial (6%), and manufacturing (4%).

In terms of industrial land absorption, the Northwest Industrial District averaged 36 net ha of industrial land absorption per year from 2001 to 2010, or 42% of the city-wide lands absorbed from 2001 to 2010. Parcels less than one ha in size, accounted for 59% of all parcels absorbed in the district, while parcels from two to five ha (21%) and one to two ha (15%) followed closely behind. Recent development in the Northwest District has been focused west of 170th street, south of the Yellowhead Highway, and East of Anthony Henday Drive, with major developments in the area being the Sunwapta Business Park and Yellowhead Crossing. With the extension of Anthony Henday to the North of the Yellowhead Highway, industrial development has been shifting north as well, with recent development being the Yellowhead Transportation Depot, Northport Business Park, Horizon Business Park, and the Northwest Business Park (Giffels Business Park).

4.1.2 South/Southeast Industrial District Profile

The South/Southeast Industrial District extends south along the Highway 2 corridor, and east along the Sherwood Park Freeway and the Whitemud Drive Corridor. It is the closest of the City's major industrial areas to Edmonton International Airport, and benefits from excellent connections to the highway 2 corridor.

The District's 2,237 net ha of developed industrial lands are split as follows: 42% in the IM zone, 34% in the IB zone, 17% in the IH zone, and 5% in other zones, with Light Industrial accounting for just 1% of total developed area. The 32.5 million square feet of industrial GFA accounts for 41% of the total across the city⁷⁴, with the industrial base split as follows: 48% is utilized for warehousing/wholesaling/trade/storage, 18% for manufacturing, 9% for office, and 7% for construction. Retail and service commercial uses account for 9% of the total space in the District.

⁷⁴ Colliers International. (2011). Edmonton Industrial Market Report, Q1 2011.



The District accommodates a wide range of business uses. To the south, the District accommodates a significant share of the city's suburban office and prestige industrial facilities, primarily oriented towards business and financial services and research and development. The largest parks in the area include the Parsons Business Park and the Gateway Business Park. The District is also home to the Edmonton Research Park, a prestige employment area which primarily accommodates research and development activities in areas like biotechnology, life sciences, and energy. The Industrial uses in the Southeast areas of the District are more prestige in nature, and highly oriented towards business services and the logistics sectors. Industrial lands to the north of Anthony Henday Drive are more focused on medium and heavy industry, similar to the business uses in the adjacent "Refinery Row" in Strathcona County.

The South/Southwest Industrial District has captured 52% of city-wide development on industrial lands over the last five years, with the majority of that development being in the warehousing/logistics/storage sector and focused in prestige multi-bay industrial condominiums within the Roper Business Park and Pylypow Business Park. Office development has been the next most active sector, capturing accounting for 15% of the total development on industrial lands in the District over the last five years. This more knowledge-based employment has been focused on areas to the south of the district, with Edmonton International Airport and major highway connectivity acting as primary attractors for that type of development. Over the last five years, other sectors have accounted for limited levels of development on industrial lands in the district: construction (9%), general industrial (7%), retail trade (5%), manufacturing (5%), and wholesale trade (4%).

The South/Southeast District has experienced an average of 34 net ha of industrial land absorption per year from 2001 to 2010, or a 49% share of all industrial land absorbed across the city over the last 10 years. Similar to the Northwest District, the majority of absorbed parcels were less than one ha (54%), with one to two ha parcels (26%) and two to five ha parcels (15%) accommodating the majority of remaining absorption. Recent development has been concentrated to the south of Anthony Henday Drive, within the Ellerslie Industrial Park and Gateway Business Park, and to the east of 75th Street within the Roper Business park and the Pylypow Business Park. Most development in these areas has been more prestige in nature, as previously outlined.

4.1.3 Northeast Industrial District Profile

The Northeast Industrial District accommodates a total of 491 net ha of developed industrial lands, and 1.3 million square feet of industrial space; or just 2% of the total area in the city⁷⁵. The comparatively small industrial base in the District is oriented primarily to medium and heavy industrial uses. Approximately 51% of developed industrial lands are zoned IH, while 47% are zoned IM. Manufacturing (53%) and

⁷⁵ Ibid.



warehousing/storage/wholesale trade (37%) make up the majority of industrial land uses in the district. In terms of recent development, the District accounted for just 5% of total development on industrial lands in the city over the last five years, and all of that development was within industrial sectors of the economy:

warehousing/logistics/storage (73%), manufacturing (23%), and transportation (4%).

The Northeast District averaged a comparatively lower seven net ha of land absorption per year from 2001 to 2010, with the most successful years being 2005 (28 net ha) and 2007 (38 net ha). There has been limited recent development in the area, with the exception of development in the east of the District adjacent to Strathcona County.

4.1.4 Underutilized and Vacant Industrial Lands

A total of 1,377 ha of developed industrial lands in the city's inventory of 5,253 net ha of developed lands are characterized as underutilized; sites that have relatively low building coverage or sites that are currently used exclusively for storage and/or parking. By industrial district, the majority of these underutilized lands were within the South/Southeast District (603 net ha), with the Northwest District (495 net ha), and the Northeast District (279 net ha) accommodating the remaining share.

At approximately 26% of the total developed industrial land base, underutilized lands in the City of Edmonton represent a range of opportunities for intensification to accommodate future employment and business growth; either through infill development, or expansion of existing business uses on those lands. The Intensification of these lands offers opportunities for more effective use of existing infrastructure (i.e. roads, sewers, water), and for the encouragement of built forms that are more conducive to land use policy goals (i.e. transit supportiveness, increased employment densities, more complete communities). However, a high degree of market uncertainty surrounds these lands, as their potential development opportunities are largely determined by the plans of existing and future land owners. As such, they should not count towards a city's inventory of vacant lands until a more comprehensive assessment is done to address their opportunity for redevelopment, as outlined in the 2011 study.

A municipality's vacant land inventory can be categorized in terms of net vacant and net developable vacant lands. Net vacant lands are gross vacant lands exclusive of City of Edmonton/Public Utility Reserve Lands, environmental constraints, major utility corridors, and internal roads/infrastructure. Net developable vacant lands are net vacant lands exclusive of lands that are physically constrained⁷⁶ and unlikely to develop due to existing non-industrial land uses). A long-term vacancy adjustment is also often added to the net developable vacant supply to address longer-term development considerations in the vacant land inventory⁷⁷ As of May 2011, the city-

⁷⁶ Defined by Watson & Associates in terms of size, configuration, or access.

⁷⁷ Which, defined by Watson & Associates, accounts for employment land sites which may not develop over the long-term (i.e. 2021 and beyond) due to underutilization of employment sites, inactive sites, and land banking.



wide supply of net vacant industrial lands was 1,876 net ha, while the city-wide supply of net developable vacant industrial lands was 1,380; both exclusive of lands in the Edmonton Energy and Technology Park. The majority of net developable vacant lands are within the Northwest District of the city (680 net ha), with the South/Southeast District of the city accommodating a majority of the remaining supply (523 net ha).

The Edmonton Energy and Technology Park would add an estimated⁷⁸ 3,311 net ha of developable vacant lands to the city-wide inventory, resulting in a total supply of 4,911 net ha of developable vacant industrial lands. Overall, the 4,911 net ha of developable vacant lands represent 48% of the total designated industrial lands in the city of Edmonton.

FIGURE 75: CITY-WIDE SUPPLY OF NET VACANT AND NET DEVELOPABLE VACANT LANDS, CITY OF EDMONTON (MAY 2011)

Industrial District	Net Vacant Industrial Lands	Net Developable Vacant Lands	Net Developable Vacant Industrial Lands (Adjusted for Long-term Vacancy)
Northwest	834	801	680
South/Southeast	653	615	523
Northeast	187	185	157
Total (without Edmonton Energy and Technology park)	1,675	1,600	1,360
Edmonton Energy and Technology Park	3,311	3,311	2,814
Total (with Edmonton Energy and Technology Park)	4,986	4,911	4,175

Source: Adapted from Watson & Associates Economists Ltd., 2011.

4.1.4.1 Vacant Lands and Market Choice

Excluding the Edmonton Energy and Technology Park, the remaining 1,600 net ha of vacant developable industrial lands across the city are characterized by the following observations that relate to market choice (in terms of zoning, size, and shovel-readiness):

- Almost half of the net vacant developable industrial lands (46%, or 744 net ha) in the city are designated, but not zoned for industrial uses, while 28% (445 net ha) are zoned Medium Industrial (IM) and 14% (218 net ha) are zoned Industrial Business (IB). Comparatively limited amounts of net vacant developable lands are zoned Light Industrial (4%, or 62 net ha) or Heavy Industrial (3%, or 42 net ha).
- The lands designated, but not zoned for industrial uses are generally located in the Northwest District (i.e. Rampart Industrial Area, Winterburn Industrial Area East) and in the South/Southeast District (i.e. Ellerslie Industrial Area, Maple Ridge Area).
- Overall, the City has a short-term to medium-term (i.e. designated and zoned) supply of 856 net ha of vacant developable lands, the majority of which are Medium Industrial (446 net ha) or Industrial Business (218 net ha).

⁷⁸ Based on gross and vacant land areas derived from the Edmonton Energy and Technology Park Area Structure Plan, December 2009, Office Consolidation, ay 2011.



- Based on recent development trends (2006 to 2010), this leaves the city with an estimated six years of supply of Industrial Business lands, and seven years of supply of Medium Industrial lands. However, Watson & Associates note that absorption is projected to be slightly higher than suggested by historical trends over the next several years, meaning that the actual supply in years is likely more limited, especially in the South/Southeast District, which is expected to lead in growth.
- Over half (56%) of the zoned vacant developable industrial lands are less than one net ha in size, with 1-2 net ha and 2-5 net ha parcels accounting for 22% and 12% of the total zoned vacant developable lands respectively.
- Large-sized parcels, both 5-10 net ha and 10 or more net ha, account for comparatively smaller proportions of total land inventory at 7% and 3% respectively.
- Given recent absorption trends, Edmonton has a reasonably balanced supply mix of parcels in its developable industrial land inventory, with the exception of 2-5 net ha parcels.
- Cross referencing parcel sizes with zoning classifications, the city's inventory of Heavy Industrial sites appears to offer little market choice. Of the 38 parcels within the Heavy Industrial zone, 74% are one net ha or less.
- In terms of "shovel ready" lands, the city has a supply of 577 net ha, or 67% of the zoned developed vacant industrial land inventory. In terms of timing, these lands have servicing available (municipal or private) and are available for development by an end user immediately, or within the next 12 months.
- The City's supply of developable vacant lands is sufficient to meet demand over the short to medium term. However, the city has limited supply of prestige industrial lands in the IB and IL zones. This is particularly relevant for the South/southeast District, where demand for more prestige lands has been strong in the last several years. There is also a limited supply of lands in Heavy Industrial zones.
- By size, the city has a limited amount of industrial lands in the medium (2-5 net ha) and large (greater than 5 net ha) size ranges, particularly in the IM and IB zones. To attract larger scale users, especially in the manufacturing and transportation sectors, Edmonton needs to ensure that a greater number of large sites are available in these zones.

Overall, the report recommends that the city maintain a five-year supply of industrial lands in a diverse range of sizes, zoning, and locations) throughout the 2011-2021 planning period.

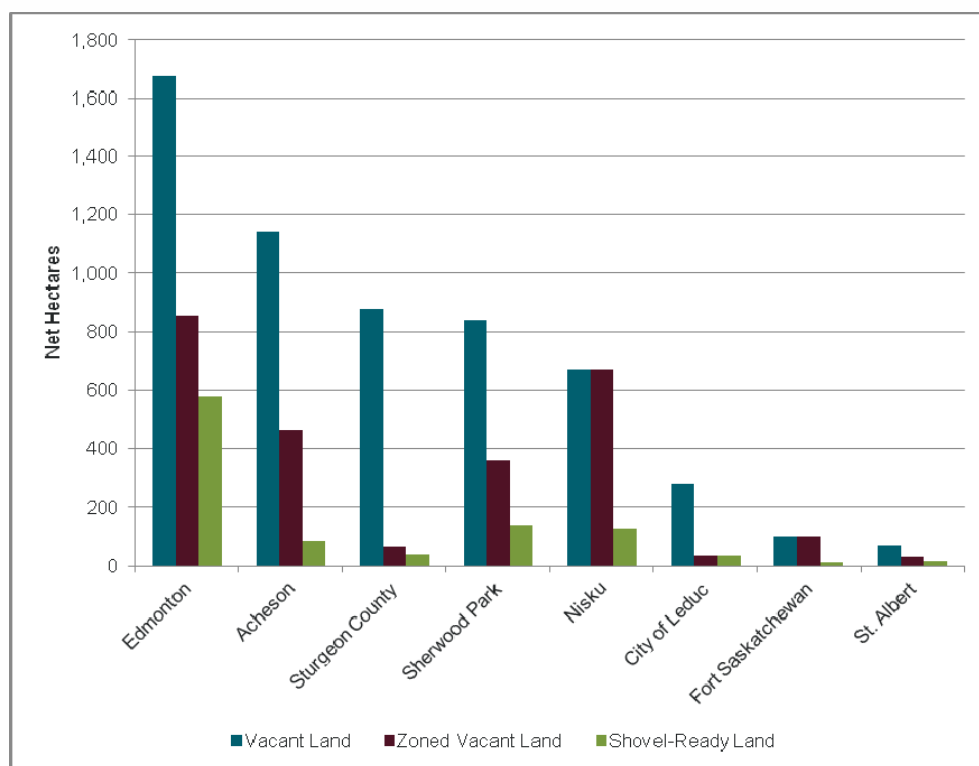
4.1.5 Regional Competitiveness Considerations

The Industrial Land Supply Study also examined Edmonton's competitive positioning within the regional market based on the supply of vacant, zoned vacant, and shovel-



ready⁷⁹ industrial lands in the Region. Figure 76 outlines the vacant industrial land supply in a number of key communities in the Capital Region.

FIGURE 76: NET VACANT⁸⁰ INDUSTRIAL LAND SUPPLY⁸¹ IN THE CAPITAL REGION, 2011



Source: Bourgeois & Company Ltd. and Watson & Associates Economists Ltd., 2011

There are a number of key observations that relate to Edmonton's positioning within the Regional industrial market:

- Edmonton holds a 29.6% share of the total 5,655 net ha of vacant industrial land surveyed in the Region, with Acheson (20.2%), Sturgeon County (15.6%), Sherwood Park (14.9%), and Nisku (11.9%) holding significant shares as well.
- Edmonton also holds the largest share (33.2%) of the 2,579 net ha of vacant zoned industrial land in the region, with Nisku (26.1%) following closely behind. All of Nisku's vacant industrial land is currently zoned for industrial purposes.
- Edmonton has a significant advantage over other communities with regards to shovel-ready lands, with more than triple the amount (577 net ha) of the next closest competitor (Sherwood Park at 138 net ha). A good portion of the communities in the Capital Region that were surveyed have limited amounts of

⁷⁹ Defined by Watson & Associates Economists Ltd. as zoned vacant industrial lands located within existing industrial areas that have municipal or private servicing, and would be available for development by an end user immediately, or within the upcoming year.

⁸⁰ Converted from gross to net based on a 65% net to gross Ratio by Watson & Associates Economists Ltd.

⁸¹ Excludes the Edmonton Energy and Technology Park in Edmonton, and Alberta's Industrial Heartland.



shovel-ready lands, including Sturgeon County, Leduc, St. Albert, and Fort Saskatchewan.

- Edmonton holds the largest developed and vacant industrial land base in the Region, with the largest supply of vacant and shovel-ready lands of all municipalities reviewed. On that note, Edmonton can offer the widest range of industrial land opportunities.

The development and ownership of industrial lands varies by municipality in the Capital Region. The City of Edmonton's 2003 Industrial Land Strategy indicates that the City must maintain a minimum three-year supply of serviced industrial land within its major industrial areas. As a result, the City has played an active and strategic role as a land developer in the past, to complement the efforts of the private sector in the city. Most recent efforts have been in the Rampart Industrial Park in the Northwest and the Pylypow Industrial Park in the South/Southeast. The Edmonton Energy and Technology Park would also be developed by the City.

Edmonton's Northwest and South/Southeast District offer the most competitive supply of prestige industrial lands in the Region, and are well located with respect to major transportation infrastructure like Edmonton International Airport. The City also has a competitive supply of general industrial lands across all industrial districts, which offer access to Anthony Henday Drive and the Yellowhead Highway Corridor, in addition to major rail infrastructure.

In contrast, the majority of lands in the surrounding area are focused on rural or general industrial uses to medium or heavy industrial intensities, with limited offerings that can appeal to more prestige industrial users. The exceptions are St. Albert and Sherwood Park, which are largely reaching build-out in their prestige industrial inventories. While the surrounding communities can boast excellent connections to infrastructure as well, but the City of Edmonton is able to offer the most complete set of industrial development opportunities, especially with regards to prestige industrial users.

4.1.6 Industrial Land Needs in Edmonton

Economic growth is expected to be strong over the next ten years in Edmonton, generating employment growth of an additional 103,000 jobs to 2021; approximately 45% of this (46,415 jobs) is expected to be accommodated on industrial lands. That translates to a demand of 1,192 net ha of industrial lands, at an annual absorption rate of 119 net ha to 2021.

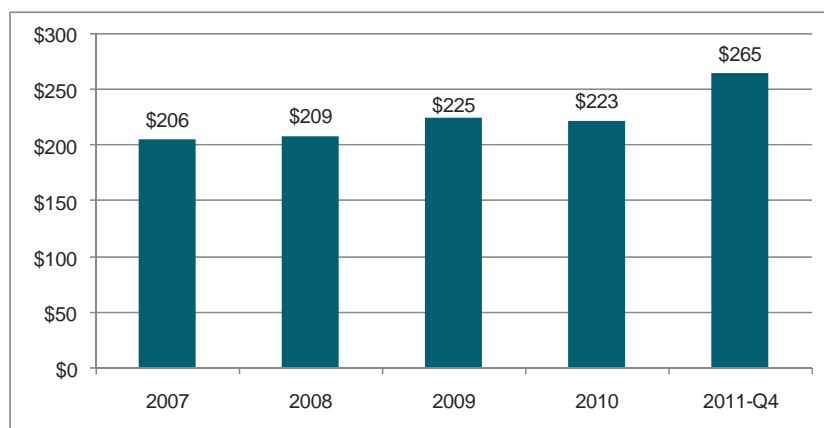
By 2021, the city is expected to have a 168 net ha surplus of industrial lands based on this demand. However, the inventory of vacant developable land will fall below the recommended five-year threshold of unconstrained supply by 2017-2018. As such, the report recommends the first phase of the City's Energy and Technology Park to be prepared and available for development by 2017-2018. The development of the park will greatly assist with accommodation of longer-term opportunities in a number of industrial sectors.



4.1.7 Commercial and industrial lease and purchase rates

Prices of retail, office, and industrial spaces may be used as a measure of the strength of the local economy. These prices will also influence business investment decisions. High prices for retail, office and industrial space can be a disincentive for investment and expansion of businesses. The figures below suggest that the general trend for each kind of commercial and industrial space is of higher average prices. This is reflective of the industrial sector picking up on the back of increased activity in oil and gas. As a result, companies are taking back previously marketed space for their own use and the supply of sublease space is diminishing.

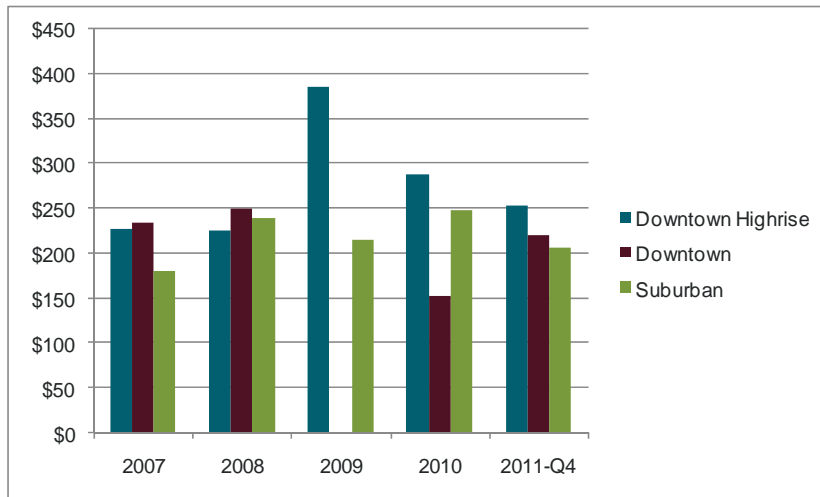
FIGURE 77: EDMONTON'S AVERAGE PRICE PER SQUARE FOOT: RETAIL SALES



Source: Cushman & Wakefield (2011). Marketbeat: Edmonton Investment Report Q4 2011.



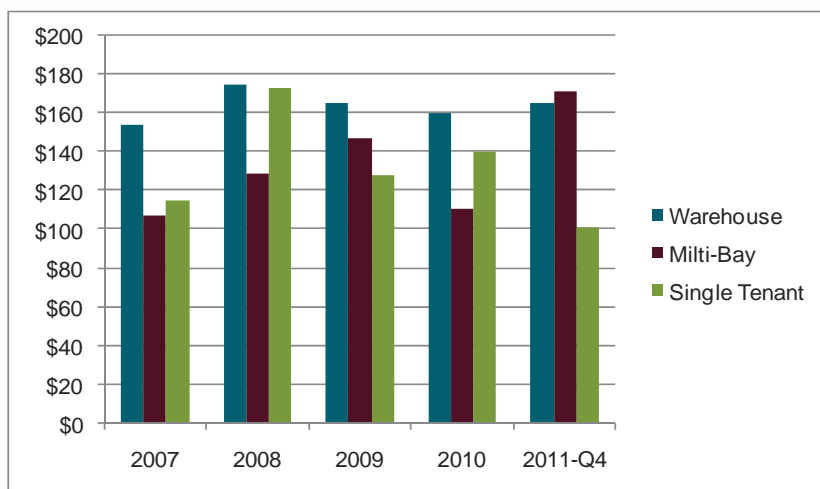
FIGURE 78: EDMONTON'S AVERAGE PRICE PER SQUARE FOOT: OFFICE SPACE⁸²



Source: Cushman & Wakefield (2011). Marketbeat: Edmonton Investment Report Q4 2011.

Overall, the City of Edmonton has experienced a drop in industrial vacancy rates. In the first quarter of 2011, this rate was at 3.9% which was down 0.7% from the same time in 2010.⁸³ While this is not a substantial decrease in vacancy, this decrease suggests that the market is stabilizing from the recession and that tenants are no longer downsizing, but looking for and expanding their space.

FIGURE 79: EDMONTON'S AVERAGE PRICE PER SQUARE FOOT: INDUSTRIAL SALES



Source: Cushman & Wakefield (2011). Marketbeat: Edmonton Investment Report Q4 2011.

⁸² The Cushman and Wakefield report did not include data for all real estate types in all years. Where bars are not evident, data was not available.

⁸³ Colliers International (2011). Edmonton Alberta Market Report.



Investment sales are seeing more of the same, a large demand for product but a lack of supply. While there has been a general trend of increased activity in the industrial market, land sales activity has increased as well. Edmonton's surrounding markets have seen an increase in demand for shop space with yards, but there is a shortage of supply as the oil and gas service sector is expanding again. Tenants are looking for specialized space that meets the needs of their business operations, including heavy power equipment, open floor space, and large yards. A general lack of supply has tenants looking for raw land appropriate for construction of typical shop space. Land is also in demand for lay down and assembly yards.⁸⁴

In light of historical data and the current market research, Edmonton when compared to other localities across the Capital Region, holds no competitive advantage in terms of commercial or industrial lease and purchase rates. This means that quality of life and quality of place considerations become more important in distinguishing Edmonton from competing jurisdictions.

4.1.8 Residential/Non-residential tax assessment

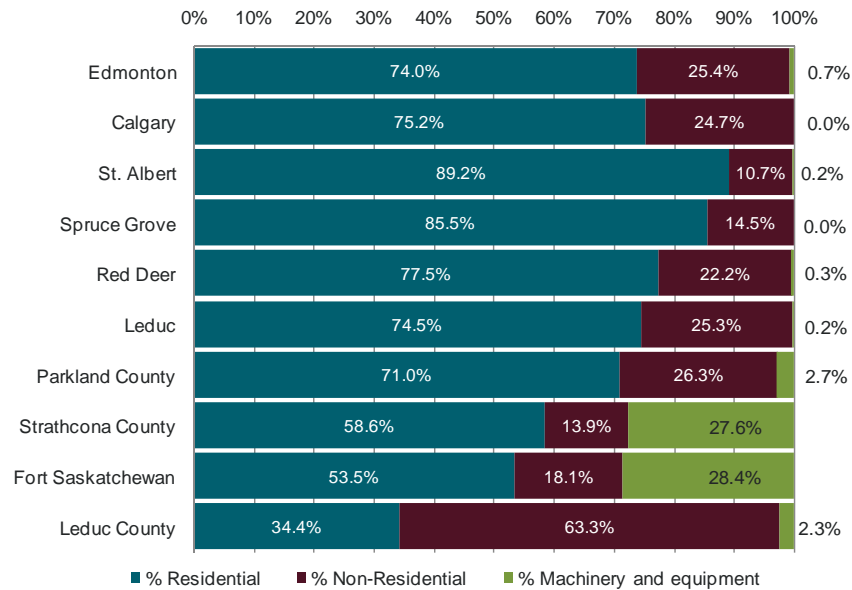
In terms of residential, non-residential and machinery and equipment assessment shares, approximately three-quarters (74.0%) of Edmonton's 2010 assessment base is residential. One quarter (25.4%) of the City's 2010 assessment base is non-residential with only a marginal share of the assessment base classified as machinery and equipment.⁸⁵ Edmonton Region communities such as Strathcona County and Fort Saskatchewan have sizable non-residential assessment base. Each of these localities have very large machinery and equipment assessment shares.

⁸⁴ Colliers International (2010). Edmonton Alberta Market Report.

⁸⁵ The Machinery and Equipment Tax is levied on field installations of particular components, including but not limited to above ground tanks, trollers, fuel gas scrubbers, and gas boots. Refer to Alberta's (2011) Machinery & equipment assessment guidelines for full details.



FIGURE 80: 2010 RESIDENTIAL, NON-RESIDENTIAL AND MACHINERY & EQUIPMENT ASSESSMENT SHARE COMPARISON

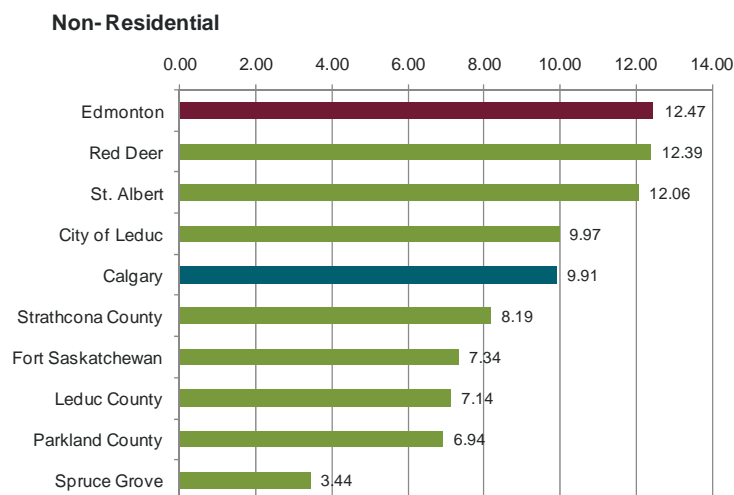


Source: Alberta Ministry of Municipal Affairs, Municipal Profiles.

Figure 81 shows the non-residential municipal tax rates within the Capital Region communities, along with Calgary. Edmonton has the highest non-residential tax rate of these communities at 12.47. Moreover, given Edmonton's industrial and commercial leasing rates, see Section 4.1.7, it follows that Edmonton has relatively high assessment values. This suggests that Edmonton is comparatively expensive for businesses to locate.



FIGURE 81: NON-RESIDENTIAL MUNICIPAL TAX RATES BY SELECTED ALBERTA COMMUNITIES, 2010



Source: Alberta Ministry of Municipal Affairs, Municipal Profiles.

4.2 Downtown Redevelopment

The Capital City Downtown Plan was approved by City Council in 2010, and is focused on achieving a downtown area that is sustainable, vibrant, well designed, and accessible. At present, the land area in the downtown core is a mix of commercial (33.5%), institutional (26.1%), and residential (15.5%) uses, with limited land area devoted to industrial/utilities (2.1%). Though the area will have limited influence on industrial development, the policies and initiatives in the Downtown core can have a significant impact on the city's ability to accommodate growth of other high-quality employment sectors like research and development, which can locate in other industrial facilities or major offices.

The Downtown is a major employment centre of the city for knowledge-based employment sectors, and is home to more than 65% of the total commercial space in the city. A significant portion of the space is occupied by City, provincial, and federal government offices, as well as the education sector, including the University of Alberta, Grant MacEwan University, and NorQuest College. There are two major office nodes in the Downtown; one at the intersection of 101st Street and 102nd Avenue, and one between 106 and 109 Streets South of Jasper Avenue and North of the Provincial Legislature. The former covers a four-block radius and is home to a wide range of public and private sector activities, while the latter is composed primarily of government offices, major institutions, and private sector commercial operations.

The attraction of employment uses to the Downtown is not without challenges. From an employment land and space perspective, the following are the highest priority challenges to further development in the Downtown:



- Competition with comparatively lower priced suburban markets for space and lands.
- Competition with other cities, across Canada and across the globe, for people, capital, and knowledge.

The Downtown Plan outlines the strategies, goals, and policies for overcoming those challenges, and creating the sustainable, vibrant, well-designed, and accessible Downtown envisioned by the plan. This includes two general strategies related to economic development and employment, including to:

- Enhance economic vibrancy and diversity through sustainable economic development initiatives, expansion of the knowledge-based economy, and promotion of greater economic diversification and employment growth; and,
- Create dynamic and focused work precincts, by designating the Commercial-Cultural Core and Capital City Districts as employment growth areas, intended to encourage major employment-oriented projects through the development of high-quality services, facilities, and amenities focused on employment needs in these neighbourhoods.

Section 4.1.4 of the Plan outlines the specific goals and policies for economic development in the Downtown core. One of the key objectives of the plan in this regard is to increase the amenity value, and promote the strategic advantages of locating new office, institutional, and retail uses in the Downtown. The goal is to maintain and enhance the Downtown's key role as a dynamic, growing business centre and fostering an economic environment worthy of Edmonton's role as the Provincial capital. The policies of the plan with the most relevance to commercial office uses include:

- Targeted reinvestment in the Downtown, including the development of incentive programs and other financial mechanisms focused on resolving long standing problem areas or issues.
- Office and retail growth in the Downtown, including strengthening the role of the Downtown as the premier employment centre in the Capital Region based on unique characteristics as a concentrated, diverse, urban office-retail centre.
- Employment growth areas, including promoting growth in the Commercial-Cultural Core and Capital City districts of the Downtown by developing high quality services, amenities, and facilities focused on the needs of knowledge-based employees in these districts.
- Economic Development partnerships, including the encouragement of partnerships and networking between non-profit and economic development organizations to implement the plan.

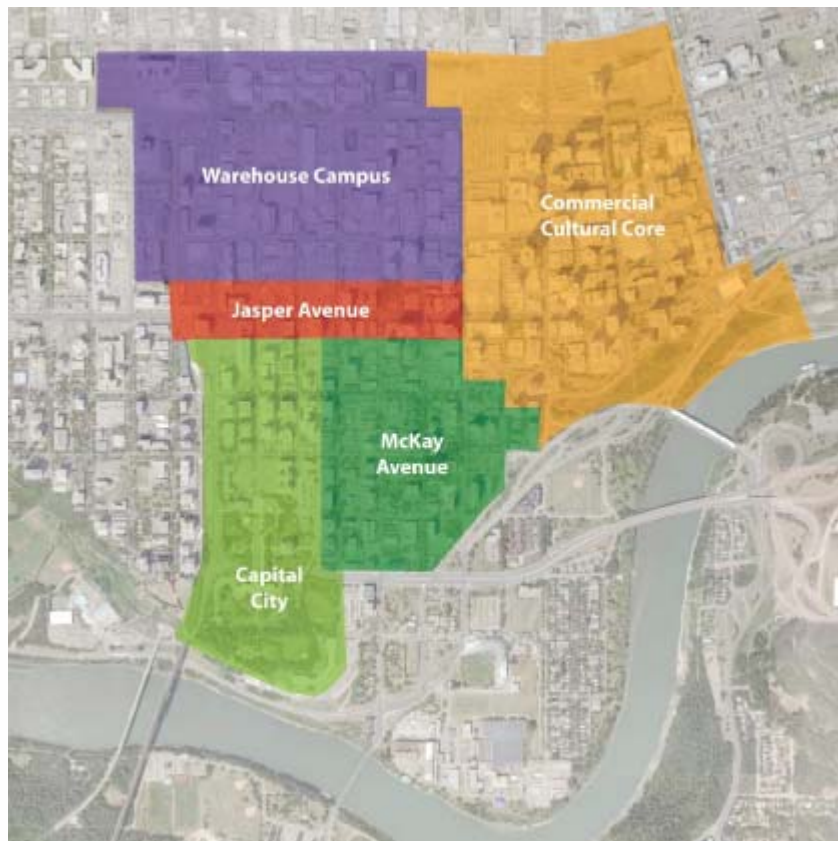
Section 4.1.7 of the Plan outlines the goals and policies for commercial, educational, and institutional activities in the Downtown, with the goal of creating strong retail and commercial sectors, a vibrant educational sector, and faith based and community service organizations that are well positioned to respond to the emerging Downtown community. Policies to achieve the goal include the promotion of employment growth,



the expansion and consolidation of government offices in the Downtown, and promotion of knowledge-based economy growth.

By neighbourhood (as illustrated in Figure 82), major commercial office development is intended to be focused primarily in the Capital City District, though smaller-scale and mixed commercial office-retail development is expected in the other downtown districts as well. The Capital Boulevard Sub Area, to the North of the Provincial Legislature, is intended to be the City's major downtown office precinct, composed of a mix of high density government and commercial office, hotel, and institutional uses.

FIGURE 82: DOWNTOWN EDMONTON NEIGHBOURHOODS



Source: City of Edmonton, Capital City Downtown Plan

The Downtown area is not intended to be the major focus for industrial and employment land employment (i.e. warehousing, storage, prestige industrial) in the City. However, the goals and policies of the Capital City Downtown Plan intend to overcome some of the established barriers to downtown redevelopment and investment, especially as it relates to accommodating an increasingly knowledge-based workforce. As such, the redevelopment plans for the Downtown area have specific implications on the economic development, and employment growth prospects for the City of Edmonton.



4.3 Airport Development

As global trade and connections continue to grow, airports are becoming an increasingly significant component in the economic development prospects of communities, particularly those connected to sectors that require the timely movement of high-value goods and highly-skilled workers. As one of the busiest airports in Canada by passenger volume and aircraft movements, and the primary air gateway to resource development industries in northern Alberta and northern Canada, the future development plans of Edmonton International Airport and the related Port Alberta initiative have significant implications on industrial and knowledge-based development in the Edmonton Area.

Edmonton Airports manages three other regional airports in addition to Edmonton International Airport: Edmonton City Centre Airport (ECCA), Villeneuve Airport, and Cooking Lake Airport. ECCA is primarily home to small charters, private and corporate aircraft, training, military, and industrial and medevac flights. The expected closure of ECCA will shift these activities, along with a growing segment of business aviation currently using the airport. Villeneuve Airport in Sturgeon County is the primary flight training facility for the Capital Region. There are currently 16 businesses at the airport, primarily related to servicing flight training businesses and general aviation. Cooking Lake Airport is located to the East of Edmonton in Strathcona County, and is primarily focused on recreational flying.

The Edmonton International Airport Master Plan 2010-2035 (submitted to Transport Canada) outlines the longer-term facilities development plans of the airport, in response to projected growth of passengers, aircraft movements, and freight at the airport. Under the expansion 2012 program, there are five major redevelopment projects: an expanded apron, an expanded air terminal, a combined office tower and air traffic control tower (COT), a new power substation, and a major expansion of the central utilities plant. The current terminal expansions are focused on accommodating 9 million annual passengers through the airport, which the airport is expected to reach from current levels (6.1 million passengers) by 2020.

Edmonton International Airport presently handles 34 million kilograms of cargo annually, split by 80% domestic and 20% trans-border/international. Developments currently underway (expanded apron, Port Alberta) are expected to drive growth of cargo at EIA by 4.6% per year over the longer term, to an expected level of 50 million kilograms by 2020 and 100 million kilograms by 2035. Cargo facilities are presently located in the northeast area of the airport in EIA Business Park; a 15.4 ha park that is home to FedEx, DHL, Cargojet, Purolator, Canadian North, First Air Cargo, and the cargo operations of Air Canada and WestJet. There is a two-phase plan for the development and accommodation of increased cargo services at the airport.

Short-term development is expected to be accommodated in the Cargo Business Park in the Airport Southeast area. Understanding that the Airport has available lands and infrastructure, the longer term plan for the Airport is the Port Alberta logistics park (Figure 83).



FIGURE 83: PORT ALBERTA, PROPOSED DEVELOPMENT PLAN



Source: Edmonton International Airport Master Plan, 2010

The approximately 600 hectare park is specifically engineered to funnel cargo to and from the airport area. It consists of lands designated for a range of uses, and an inland port for goods shipped by road and rail, connected directly to airside infrastructure. The Logistics Support Centre, the first multi-modal facility of its type in Canada, is expected to allow the processing of goods in a single environment, allowing better security, regulatory clearance, and data management. Overall, the park is expected to be a major driver for multimodal investment in Edmonton.

Due to proximity to northern resource-based areas, Edmonton International Airport has also accommodated growth in the business aviation (BA) sector. The BA area of the airport is currently in the Airport Northeast area, and accommodates corporate users, small charter operations, and aircraft fuelling, maintenance, repair, and hangar facilities. The BA traffic is somewhat unique at EIA, with large jets carrying employees to northern resource project sites. Though historical information is unavailable, it is estimated that approximately 270,000 passengers were processed through large fixed base operations (FBOs) at EIA in 2008. Five large FBOs currently reside at EIA, and their operations utilize aircraft up to the Boeing 737-sized family of aircraft, in addition to a number of smaller FBOs and charter operations. As a result of continued resource development, BA activity at EIA is expected to grow at a modest rate of 2.0% per year, with the anticipated closure of Edmonton City Centre Airport (ECCA) adding approximately 22,000 to 50,000 movements to EIA from 2014-2018.



Business aviation is expected to drive investment at the airport as well. In October 2010, Edmonton-based Airside Properties Ltd. announced plans for the construction of a 27,900 square metre aviation complex, composed of hangar and office pods connected to a central FBO to service corporate aviation needs. Over the longer term, the Airport intends to accommodate additional investment of this nature in the Business aviation park, to the west of existing runways. The Park will offer direct access to existing and planned runways, while accommodating investment from large FBOs, small FBOs, and small charter operations focused especially on the resource development sector.



5 Quality of Place Indicators

5.1 Innovative indicators

In a globally competitive world; nations, regions and cities are adopting innovation based economic development models that give greater consideration to the factors that support innovation – the human intellectual, financial, physical and institutional capital present in a city or region. But innovation can mean many things. For the Coalition for Action on Innovation Canada innovation means the development of new products or ideas or making existing products in better and more efficient ways. Regardless innovation creates jobs and wealth and is driven by bright people, entrepreneurs, research and creativity. Places that develop and attract bright people, lead in research and are entrepreneurial and creative stand to be more competitive in a global marketplace.

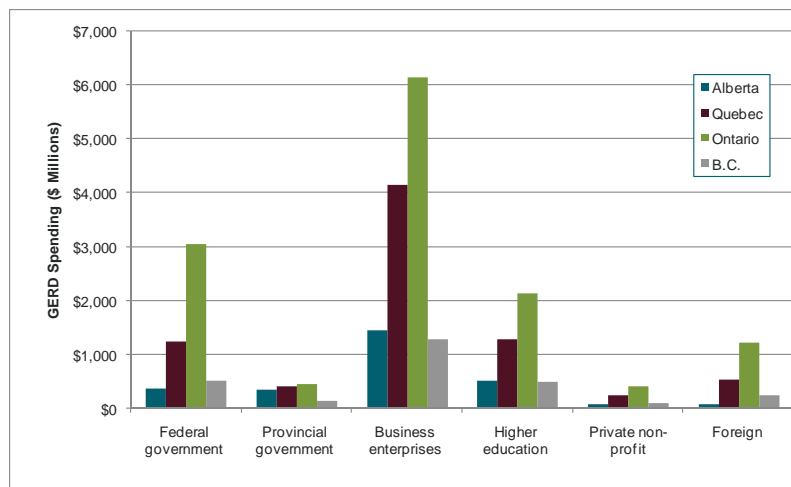
The discussion that follows focuses on a select number of indicators that speak to the City of Edmonton's capacity for innovation.

5.1.1 Research spending

The level of research conducted is a crucial indicator of a region's level of innovation and global competitiveness. Research funding can come from a variety of sources including various levels of government, academic institutions and private enterprise. Alberta receives a proportionate level of research funding from the federal government behind Ontario, Quebec and British Columbia. However, the provincial government, with research spending on par with Quebec and Ontario and more than British Columbia is high considering the provinces relative size (population). The province does relatively well with respect to research conducted by private enterprise and academic institutions, outpacing British Columbia in both areas. However, the province performs much more poorly in attracting foreign research dollars. Overall, spending on research is much higher in Ontario and Quebec, which may leave Alberta at a disadvantage in developing new products and technologies and attracting innovative companies and people.



FIGURE 84: DOMESTIC SPENDING ON RESEARCH AND DEVELOPMENT (GERD), FUNDING SECTOR, BY SELECTED PROVINCE, 2009⁸⁶



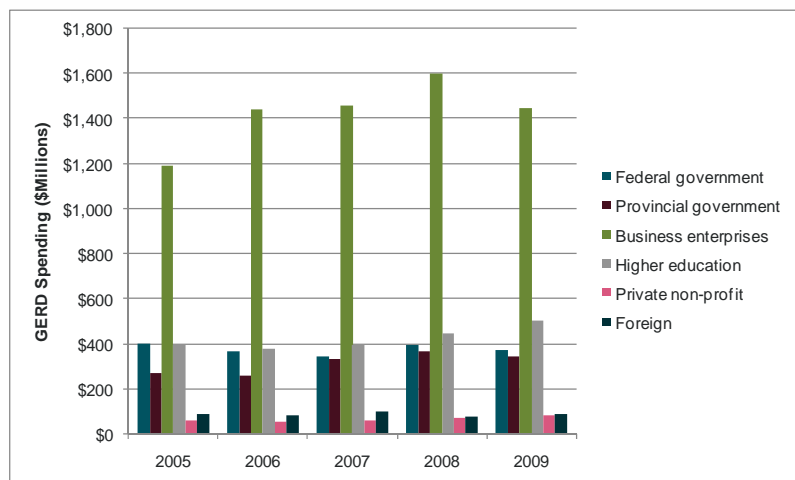
Source: Statistics Canada (2009). Statistics Canada, CANSIM, table [358-0001](#) and Catalogue no. [88-221-X](#).
Note. Gross Domestic Expenditures on Research and Development (GERD) refers to all monies expended for Research and Development (R & D) performed within the country in a given year. Total GERD is often displayed by performing sector as well as by funding sector.

Research spending in Alberta is led by private enterprise and easily outpacing all other sources of research spending.

⁸⁶ Note. Gross Domestic Expenditures on Research and Development (GERD) refers to all monies expended for Research and Development (R & D) performed within the country in a given year. Total GERD is often displayed by performing sector as well as by funding sector.



FIGURE 85: ALBERTA'S DOMESTIC SPENDING ON RESEARCH AND DEVELOPMENT (GERD), FUNDING SECTOR, 2005- 2009



Source: Statistics Canada (2009). Statistics Canada, CANSIM, table [358-0001](#) and Catalogue no. [88-221-X](#).

Research conducted by academic institutions is one area where Edmonton has a competitive advantage. The University of Alberta is the third largest institution in Canada with respect to sponsored research income. Only the University of British Columbia and the University of Toronto attract more research funding. Research funding in 2009/2010 amounted to \$513.5 Million, far greater than the \$282.8 Million attracted by the University of Calgary⁸⁷, Alberta's second largest university. According to SCIMago institution rankings, the University of Alberta ranks 57th globally for number of research publications⁸⁸. The University's commercialization agent, TEC Edmonton has successfully assisted in the start-up of 13 companies since 2004/05.

5.1.2 Patents issued

The number of patents registered in a jurisdiction is another indicator of the innovativeness of an area. While data regarding patent applications for the City of Edmonton was not available, the Canadian Intellectual Property Office published information on the number of patent filings and registrations by province. With 1,107 patent registrations in 2009-2010, the Province of Alberta accounted for 9.6% of all patent registrations in Canada⁸⁹. This is consistent with the relative size of Alberta with respect to the national population. Ontario and British Columbia fare comparatively better in the number of patent applications and registrations in Canada.

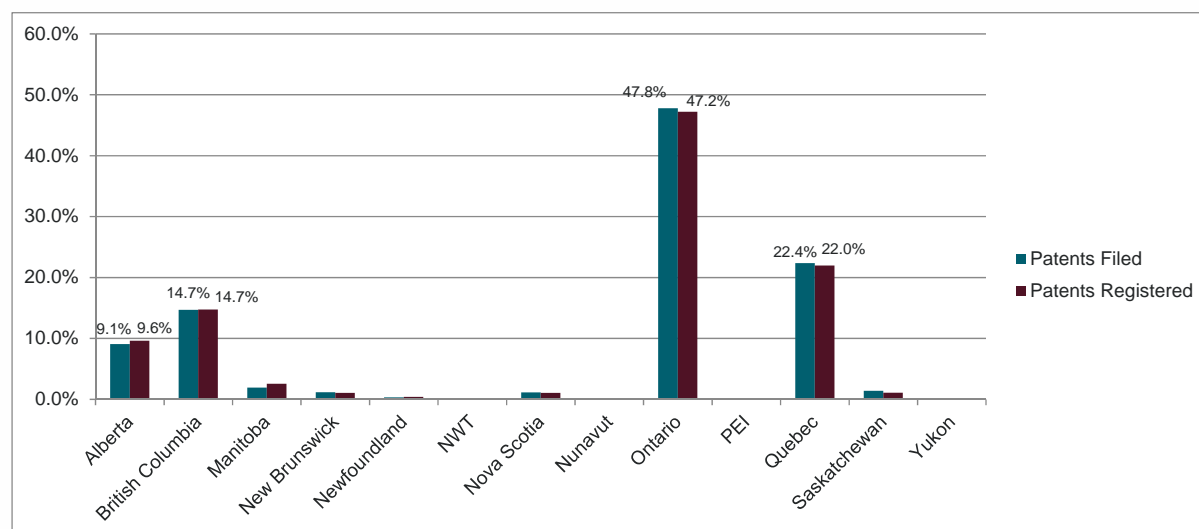
⁸⁷ University of Alberta Annual Report for submission to the Government of Alberta 2010-2011

⁸⁸ <http://www.research.ualberta.ca/ResearchExcellence/ResearchStatistics.aspx>

⁸⁹ Turning ideas into value, CIPO annual report 2009-2010 extracted from http://www.cipo.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/eng/h_wr00094.html



FIGURE 86: PATENT APPLICATIONS AND REGISTRATIONS IN CANADA 2009-2010



Data provided by Turning ideas into value, CIPO annual report 2009 2010 adapted by Millier Dickinson Blais

5.1.3 Creative occupations

In his book, the Rise of the Creative Class, Dr. Richard Florida explains that creative workers – those that are paid to think, are driving innovation and wealth creation in the knowledge economy. As such, understanding the number of creative workers in a region can assist in understanding the level of competitiveness and ability to innovate and attract innovative businesses.

For this assessment, National Occupation Classification codes (NOCs) generated by Statistics Canada have been matched against Dr. Florida's occupational categories for the Creative Class. Based on this approach creative occupations in Canada are comprised of:

- Management occupations including senior management, specialist managers, retail trade, food and accommodations managers and other managers;
- Business and finance professionals including finance and insurance administration;
- Professional and technical occupations and natural and applied sciences;
- Health professionals including nurse supervisors and registered nurses and technical health related occupations;
- Judges and lawyers;
- Psychologists, social workers, ministers of religion, program officers, teachers and professors; and
- Professional and technical occupations in art, culture, recreation and sport.

In the report, Ontario in the Creative Age, Florida pushes the concept of creative worker further by positioning creative occupations in the context of three additional broad kinds of work.

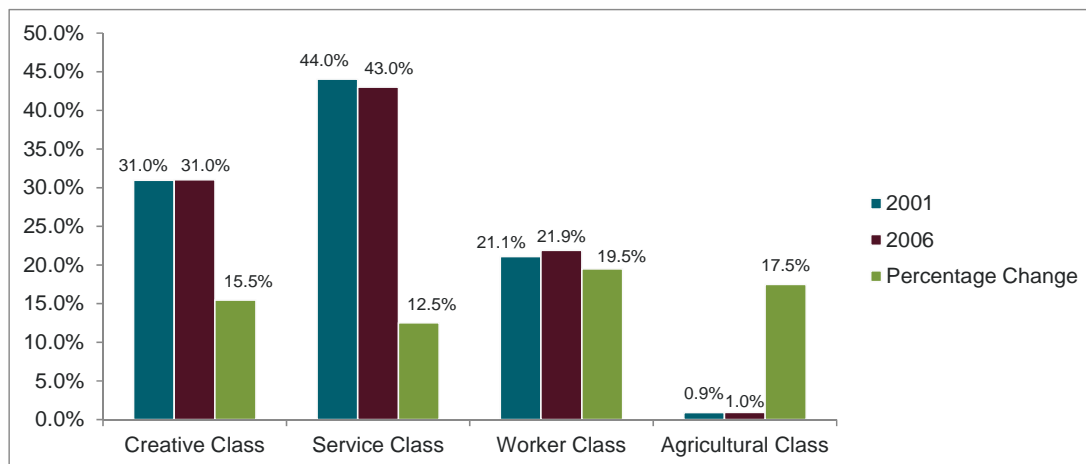


- Creative occupations – the growing number of workers who are paid to think. These include scientists and technologists, artists and entertainers, and managers and analysts.
- Routine-service occupations, where the work involves little autonomy occupations and is focused on the delivery of services, for example, food-service workers, janitors and clerks;
- Routine-physical occupations, consisting of people who use physical skills and carry out repetitive tasks (for example, tradespersons, mechanics, crane operators and assembly line workers);
- Routine-resource occupations including mining and forestry; and

What is apparent from the creative occupational categories is their ability to cut across industry sector lines in a way that can impact both traditional and emerging industries and the degree to which these occupations translate to a well-paid and highly skilled workforce. This is particularly true if one considers the skills needed for creative occupations are more heavily weighted towards analytical and social intelligence skills, both of which play a significant role in a knowledge driven economy

In 2006, 31% of the City of Edmonton's labour force was comprised of the creative class of workers. Further, the number of people engaged in creative occupations increased by 15.5% between 2001 and 2006. Not only do creative workers represent the second largest category of workers in Edmonton, they are also exhibiting a healthy rate of growth.

FIGURE 87: EDMONTON'S GROWTH IN THE CREATIVE CLASS



Statistics Canada Census of Population Community Profiles Adapted by Millier Dickinson Blais

To more fully understand the strength of Edmonton's creative economy, the following figure compares the city's occupational composition with that of the province. Here we can see that Edmonton has a slightly higher percentage of workers engaged in creative occupations. The city also exhibits a higher percentage of workers in service occupations and fewer in worker occupations including tradespersons and manufacturing workers. To some degree this dispels the city's reputation as a



predominantly 'blue collar town'. The city, in fact, provides employment to considerable number of managers, business and finance professionals, scientists, health professionals, educators and artists.

FIGURE 88: CREATIVE CLASS IN EDMONTON AND ALBERTA



Statistics Canada Census of Population Community Profiles Adapted by Millier Dickinson Blais

The occupations that figure most prominently in Edmonton's creative economy are:

- Management occupations
- Natural and applied science related occupations.

However, while these are the largest occupational groups in the creative economy they are not the fastest growing. Health occupations and occupations in education, social services and government services exhibited the fastest rate of growth. Most notably, between 2001 and 2006, there was a significant increase in the number of nurses as well as teachers and professors.

5.1.4 Creative Industries

Using the detailed industry categories defined by the North American Industrial Classifications System (NAICS), a first step in defining and measuring the impact of the creative economy in Edmonton is to identify the range of business and enterprises to be included. Creative businesses and enterprises have been defined as businesses engaged in:

- Advertising, marketing and public relations;
- Publishing, radio and television, film, web and software design and games;
- Architecture and design;
- Artists, music, performing arts and photographic services;
- Education, business consulting and engineering; and
- Heritage and museums.

Creative businesses comprise 12% of all businesses in Edmonton similar to the provincial total of 12.4%. The following figure breaks down the number of businesses



by category and by size of business. As can be seen in the following figure, Edmonton's creative economy is dominated by three sectors:

- Engineering with 1901 businesses (25.8% of creative businesses);
- Business consulting with 1791 businesses (24.3% of creative businesses); and
- Web and software development with 1741 businesses (23.6% of creative businesses).

These three sectors also represent over half of creative businesses with more than 100 employees. Clearly, these sectors represent the core of Edmonton's creative industries and provide the city with a competitive advantage in creative business growth and attraction.



FIGURE 89: CREATIVE BUSINESSES AND ENTERPRISES IN EDMONTON

Industry (NAICS)	Total	Indeterminate	Subtotal	1 - 4	5 - 9	10 - 19	20-49	50-99	100-199	200-499	500 +
Total Creative Businesses	7363	4342	3021	2212	347	214	161	40	19	16	12
5418 Advertising	202	120	82	58	9	11	3	1	0	0	0
5413 Architecture	217	111	106	65	20	10	10	1	0	0	0
5539 + 7115 Artists	168	127	41	32	7	1	1	0	0	0	0
5416 Business Consulting	1791	1179	612	532	45	24	9	2	0	0	0
5414 Design	360	223	132	102	20	10	0	0	0	0	0
611 Education	176	75	101	50	13	22	6	2	1	2	5
541 Engineering	1901	1074	827	610	87	55	42	19	4	8	2
512 Film	187	123	64	34	14	4	12	0	0	0	0
8346 + 3399 + 4144 Games	28	17	11	8	2	1	0	0	0	0	0
7121 Heritage	2	0	2	2	0	0	0	0	0	0	0
5419 Marketing	26	7	19	10	0	2	7	0	0	0	0
7121 + 8132 Museums	80	25	55	20	19	7	5	2	2	0	0
5122 Music	24	14	10	9	0	1	0	0	0	0	0
7111 + 7113 Performing Arts	189	127	62	39	11	4	4	1	2	0	1
5419 Photographic Services	102	55	47	38	4	2	3	0	0	0	0
5419 Public Relations	26	14	12	8	1	2	1	0	0	0	0
5111 Publishing	114	51	63	25	16	6	7	3	4	1	1
5151 + 5152 Radio & Television	29	5	24	1	6	4	9	1	2	1	0
511 + 517 + 518 + 519 + 541 Web & Software	1741	990	751	569	73	48	42	8	4	4	3
Total Creative Industries	7363	4342	3021	2212	347	214	161	40	19	16	12

Statistics Canada, Canadian Business Patterns 2010

5.2 Lifestyle indicators

5.2.1 Commuting: Mode of Travel

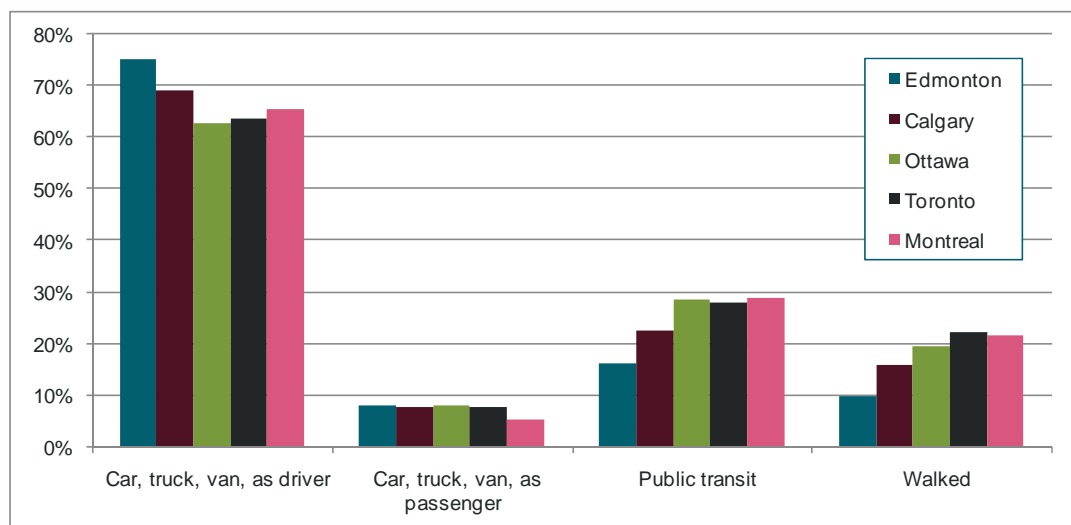
The 'walkability' of a city is often described as an important quality of life consideration for young professionals. The ability to efficiently navigate a city using public transit can also be very important to these individuals. Nevertheless, Figure 90 shows that Canada's largest cities are dominated by automobiles as a means to transport. Edmonton leads the pack in this regard, with nearly 75% of its population taking a car (or truck) to work. Alternately, Edmonton has the lowest rates of public transit use and people walking to work. Over the next three years, Alberta will be spending \$540 million to make public transit more accessible across the province.⁹⁰ The City of Edmonton has also set out a three and ten year plan to increase transit use and alternate modes of transportation (eg. Walk or cycle). In ten years, the City hopes to reduce reliance on the automobile by 2% and increase transit use by 1%.⁹¹

⁹⁰ Alberta (2012). Alberta Budget Highlights 2012.

⁹¹ City of Edmonton (2010). City of Edmonton Strategic Plan.



FIGURE 90: MODES OF TRAVEL BY SELECTED CANADIAN CMA, 2006



Source: Statistics Canada (2006). Census Profiles.

5.2.2 Crime severity index

The police-reported crime rate measures the overall volume of crime, whereas the Crime Severity Index, measures the severity of crime. These indicators are captured below in Figure 91. Across Canada, Police reported just over 437,000 violent incidents in 2010, about 7,200 fewer than in the previous year. Violent crimes accounted for just over 1 in 5 offences. On both indices, Edmonton was just above 100, scoring 102 on the total crime severity index and 106 on the violent crime severity index. The Canadian average on the total crime severity index was 82.7 and 88.9 on the violent crime severity index. Relative to Canada's other major urban centers, Edmonton fared poorly. This indicator, while not reflective of security levels across the entire city, would nevertheless suggest that Edmonton is subject to high crime, both in volume and severity. The City of Edmonton and its citizens understand that personal and community safety for all is of prime importance. Edmonton's 'The Way We Live Plan', emphasizes crime prevention and enforcement, which includes, peace officers, community policing and improved response time as enforcement priorities.



FIGURE 91: CANADIAN CMA'S TOTAL AND VIOLENT CRIME SEVERITY INDEX, 2010

Census metropolitan area	Total Crime Severity Index		Violent Crime Severity Index	
	index	% change 2009 to 2010	index	% change 2009 to 2010
Regina	131.4	-8	151.2	-3
Saskatoon	128.1	-4	155.7	0
Winnipeg	122.3	-10	163.9	-13
Kelowna	113.1	-7	95.9	-8
Thunder Bay	111.3	-1	138.5	1
Edmonton	102	-12	106	-11
St. John's	101.9	12	90.1	29
Vancouver	101.2	-8	108.2	-10
Abbotsford–Mission	99.8	-10	89.8	-24
Brantford	99.1	-6	92.5	1
Halifax	96.8	0	105.6	-12
Saint John	91.9	-4	96.4	-3
Greater Sudbury	84.2	4	85	-14
Montréal	83.7	-6	98.3	-3
Victoria	83.7	-9	81.3	0
London	82.4	-6	74.3	6
Calgary	76.5	-5	82.1	-7
Saguenay	73.4	-4	59.2	-18
Moncton	71.8	-5	72.4	-10
Hamilton	70.9	-4	80.9	-4
St. Catharines–Niagara	69.8	-8	56.9	-10
Trois-Rivières	69.4	-13	44.4	-18
Gatineau	69.3	-7	59.7	-20
Kitchener–Cambridge–Waterloo	68	-8	69.8	7
Peterborough	67.8	3	65.8	8
Windsor	66.1	-7	65.1	-13
Kingston	62.3	-4	54.5	-22
Barrie	60.1	-7	50.1	-7
Ottawa	60.1	-10	67.5	-14
Toronto	57.8	-7	88.4	-6
Québec	56.1	-8	51.3	2
Guelph	50.4	-16	44.5	-13
Canada	82.7	-6	88.9	-6

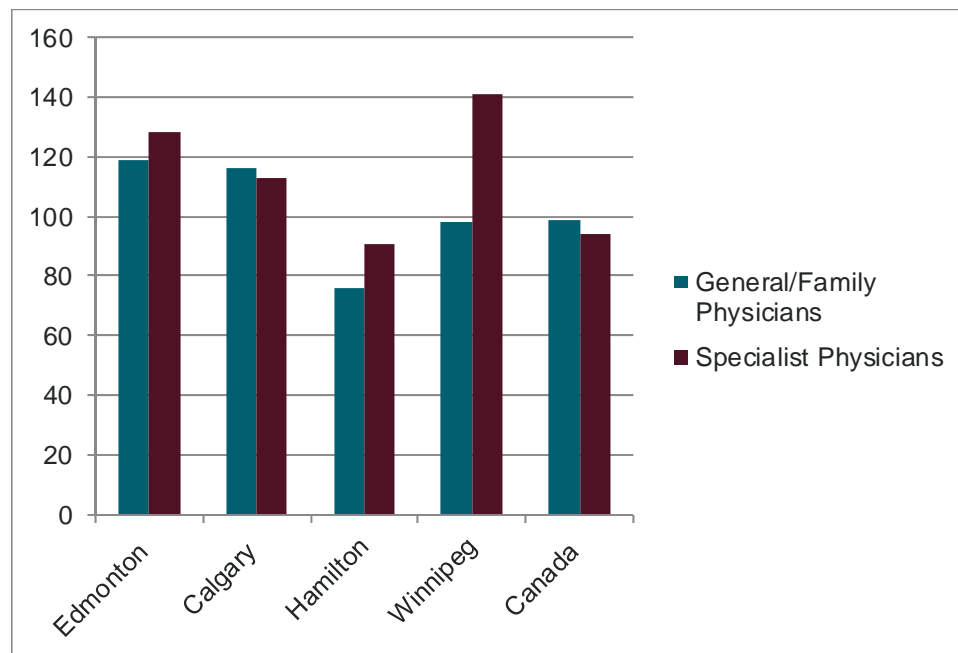
Source: Statistics Canada (2010). Police-reported crime statistics.

5.2.3 General/Specialist physicians per 1,000 population

Health indicators are used to monitor health status of the population and the performance and characteristics of the health system over time and across Canada. Figure 92 depicts general/specialist physicians per 1,000 population. Edmonton's health region is comparatively well serviced with 119 general physicians per 1,000 people. In terms of specialist physicians per 1,000 people, however, Edmonton (128) is well behind Toronto (277) and Vancouver (257). Physicians with specialties have furthered their medical education, by completing a multiple year residency to become a specialist. Therefore, higher rates of medical specialists in a health region suggest an increased capacity to provide advanced care to their population.



FIGURE 92: GENERAL/SPECIALIST PHYSICIANS PER 1,000 POPULATION BY SELECTED HEALTH REGIONS, 2007



Source: CIHI (2009). Health Indicator Reports⁹²

5.3 Edmonton's performance on selected indices

Common indicators are also useful for business or individuals seeking to evaluate the performance of a city on a variety of aggregated indicators. The indices highlighted in this section each draw on one or more of the indicators that have been reflected in the business, innovative, lifestyle indicators, described above. These common indicators, however, are the most publically accessible and readily cited. Accordingly, it is important to understand how Edmonton is portrayed on these indicators.

5.3.1 KPMG Competitive Alternatives City Profile, 2011

The Competitive Alternatives Study represents KPMG's guide for comparing international business locations. It is meant to measure the impact of 26 significant business cost components that are most likely to vary from location to location, including labour costs, facility costs and utility costs based on after-tax cost of start-up

⁹² The cities in the figure refer to their "health region", which is generally larger than the city. Data is provided at the 95% confidence interval.



and operations over 10 years. The study also compares data on a variety of non-cost competitiveness factors. The study examines 19 industry operations in 14 countries: Australia, Canada, France, Germany, Italy, Japan, Mexico, the Netherlands, the United Kingdom, India, China, Russia, Brazil and the United States.

As part of KPMG rankings, there is an opportunity to compare any of the cities in the study with the averages for the United States, indexed as 100. The figure below displays Edmonton's performance in each of the industry sectors against Calgary, Winnipeg and the average score for Canada. Ottawa and Hamilton are not included in the KMPG study.

Based on the 2010 results, Edmonton's business costs are competitive against their average American counterpart in almost all cases. Against the Canadian average, Edmonton's business costs are competitive in operations related to Research & Development and Corporate Services. Across the 12 manufacturing operations, Edmonton has virtually no cost advantage and is either at the Canadian average or above it. Among the 3 CMA's included in the peer group, Winnipeg has a competitive cost advantage against Edmonton in almost every category except Agri-Food and Green Energy.



FIGURE 93: COMPETITIVE ALTERNATIVES CITY PROFILE, EDMONTON, INDEXED TO U.S AVERAGES, 2010 (US=100)

Industry	Operation	Edmonton Index (US=100)	Calgary Index (US=100)	Winnipeg Index (US=100)	Canada Index (US=100)
Digital:					
Digital entertainment	Video game production	86.3	89.8	80.9	77.7
Software design	Software development	89.4	92.1	87.9	90.9
Research & development:					
Biotechnology	Biomedical R&D	88.2	94.2	83.2	93
Clinical trials	Clinical trials management	86.3	90.5	73.3	88.1
Product testing	Electronic systems development & testing	82.3	87.7	77.3	86.7
Corporate services:					
Professional services	International financial services	84.2	89.3	80.3	85.5
Support services	Shared services center	93.9	98.8	88.9	96.7
Manufacturing:					
Aerospace	Aircraft parts	97.9	98.6	96.9	97
Agri-Food	Food processing	100.0	100.2	101.5	97.8
Automotive	Auto parts	98.3	98.9	98.0	96.9
Chemicals	Specialty chemicals	96.7	97.2	95.9	96.6
Electronics	Electronics assembly	95.9	96.6	95.5	96
Green energy	Advanced batteries	99.6	100.3	100.5	95.8
Medical devices	Medical device mfg	96.6	97.7	95.1	96.2
Metal components	Metal machining	99.7	100.6	99.7	96.2
Pharmaceuticals	Pharmaceutical products	97.0	97.7	95.8	95.9
Plastics	Plastic products	101.8	102.6	101.2	97.2
Precision manufacturing	Precision components	98.7	99.0	98.4	96.9
Telecommunications	Telecom equipment	95.6	96.3	94.5	95.9
Overall result	(Average of 19 operations)	96	97.3	94.8	95

Source: KPMG. (2010). *Competitive alternatives-City profiles*. <http://www.competitivealternatives.com>

5.3.2 Innovation Cities

Based in Melbourne Australia and established in 2006, 2thinknow is a small innovation agency that has designed revolutionary models to measure and deliver innovation to cities, business and other clients globally. The Innovation Cities program index is the most comprehensive city ranking and scoring model they offer. Each city in the program was selected from 1,540 cities based on basic factors of health, wealth, population, geography. The selected 289 cities had data extracted for the city benchmarking data program on 162 indicators. Each of the benchmarking indices was scored by analysts using a vast variety of web and print sources. Where data was unavailable, national or state estimates were used.

Data was then trend weighted against 21 global trends (from a summary of key trend thinkers from Oxford, Harvard and elsewhere.). The final index had a market confidence factor added, and was competitively graded into 5 bands with the top 100 cities ranked.⁹³

⁹³ Source: 2ThinkNow Innovation Cities Program.



The most innovative city in the Americas is Boston, Massachusetts. For Canada, the most highly ranked city is Toronto, which ranked 4th overall. Edmonton ranked 32nd overall in the Americas, but 6th for Canadian cities, behind Toronto, Montreal, Vancouver, Calgary, and Quebec City. In the Global Rank, Edmonton scored 107 in the larger 330 city index. Edmonton is given a grade of 'NODE', meaning that it is strong performer in a variety of economic sectors but has relative deficiencies in particular areas.

FIGURE 94: INNOVATION CITIES, AMERICAS INDEX 2011

RANK	CITY	STATE/ PROVINCE	COUNTRY	GLOBAL RANK	2011 GRADE	RANK	CITY	STATE/ PROVINCE	COUNTRY	GLOBAL RANK	2011 GRADE
1	Boston	Massachusetts	United States	1	1 NEXUS	18	Raleigh-Durham	North Carolina	United States	73	2 HUB
2	San Francisco Bay Area	California	United States	2	1 NEXUS	19	Dallas-Fort Worth	Texas	United States	76	2 HUB
3	New York	New York	United States	4	1 NEXUS	20	Québec	Québec	Canada	79	2 HUB
4	Toronto	Ontario	Canada	10	1 NEXUS	21	Calgary	Alberta	Canada	81	2 HUB
5	Seattle	Washington	United States	25	1 NEXUS	22	Houston	Texas	United States	87	2 HUB
6	Los Angeles	California	United States	29	1 NEXUS	23	Pittsburgh	Pennsylvania	United States	92	2 HUB
7	Montréal	Québec	Canada	31	1 NEXUS	24	Jacksonville	Florida	United States	94	2 HUB
8	Philadelphia	Pennsylvania	United States	33	1 NEXUS	25	Baltimore	Maryland	United States	95	2 HUB
9	Chicago	Illinois	United States	34	2 HUB	26	Atlanta	Georgia	United States	97	2 HUB
10	Washington DC	District of Columbia	United States	35	2 HUB	27	Tallahassee	Florida	United States	98	2 HUB
11	Vancouver	British Columbia	Canada	49	2 HUB	28	San Diego	California	United States	99	2 HUB
12	Austin	Texas	United States	51	2 HUB	29	Kansas City	KO/MO	United States	101	2 HUB
13	Denver	Colorado	United States	54	2 HUB	30	Newark	New Jersey	United States	103	2 HUB
14	Minneapolis-St Paul	Minnesota	United States	55	2 HUB	31	Tampa	Florida	United States	105	2 HUB
15	Orlando	Florida	United States	56	2 HUB	32	Edmonton	Alberta	Canada	107	3 NODE
16	Portland	Oregon	United States	60	2 HUB	33	São Paulo		Brazil	109	3 NODE
17	Ann Arbor	Michigan	United States	72	2 HUB	34	Boise	Idaho	United States	110	3 NODE

Source: 2thinknow. (2011). Comprehensive ranking of cities in the global innovation economy across the Americas.
<http://www.innovation-cities.com>

5.3.3 Canadian Council on Learning Composite Learning Index: Canada's Smartest Cities, 2010

In May of 2010, Maclean's Magazine published a ranking of "Canada's Smartest Cities", using research and rankings conducted by the Canadian Council on Learning.

The index rates Canadian cities based on four 'pillars' of learning: "Learning to Know", which measures formal education levels based on enrolment and graduation; "Learning to Do", which looks at skills acquisition and measures training and vocational programs; "Learning to Live", a measure of social engagement based on volunteer and participation levels "Learning to Be", which reflects Canada's most cultured cities based on culture spending. Edmonton, with an overall score of 83, places eighth among Canadian cities, though it is one of only 3 in the top 10 to have their overall score decrease since 2006.

Edmonton performs best in the "Learning to Do" measure, again reflecting the number of strong vocational skills and training programs and occupations in the region. It has average scores in the other categories, indicating a diversity of learning experiences and opportunities in Edmonton compared with other Canadian cities.



FIGURE 95: CANADIAN COUNCIL ON LEARNING: CANADA'S SMARTEST CITIES, 2010

City	Overall Score	Learning to Know	Learning to Do	Learning to Live	Learning to Be
Victoria	95	6.2	7.6	7	7.6
Saskatoon	90	4.5	6.9	7.1	7.4
Calgary	88	6	7.2	5.7	6.8
Ottawa	87	4	7.6	5	6.5
Regina	84	4.1	6.1	5.8	6.9
Halifax	83	5.2	6.8	4.9	6.5
Guelph	83	5.8	7.3	5.6	5.9
Edmonton	83	5.6	7.4	5.8	5.6
Kitchener	82	6.1	6.8	5.4	5.7
Toronto	81	5.2	6.9	5.6	5.4

Source: Maclean's, May 31 2010; Canadian Council on Learning's Composite Learning Index

5.3.4 Corporate Knights Sustainable Cities

Corporate Knights Inc. is an independent Canadian-based media company that publishes the world's largest circulation magazine explicitly focused on corporate responsibility, with a mission to humanize the industry. In addition to the *Sustainable Cities Report*, Corporate Knights also publishes the *Best 50 Corporate Citizens in Canada* and the *Global 100 Most Sustainable Corporations in the World*.

The Sustainable Cities report scores cities in five major theme areas out of ten points each, leading to a total sustainability score. Each major category of indicators is worth 20% of the final score. The major themes are:

- Ecological Integrity
- Economic Security
- Governance and Empowerment
- Infrastructure and the Built Environment
- Social Well-Being.

For large Canadian Cities (over 750,000 in population) Edmonton placed second overall, behind Toronto, but above Ottawa, Calgary, and Montreal. Note, however, that Edmonton is well behind the score achieved by Vancouver, which has been categorized as a medium city. Edmonton's highest score out of all categories was in social well-being which measures life satisfaction and rates of homelessness. Edmonton's lowest score was in infrastructure and built environment, which considers indicators such as sanitary and storm water systems, incentives for green buildings, transportation, and population density. The results for large Canadian Cities in 2011 are summarized below.



FIGURE 96: THE 'CORPORATE KNIGHTS' 2010 MOST SUSTAINABLE CITIES IN CANADA

City	Ecological Integrity	Economic Security	Governance and Empowerment	Infrastructure and Built Environment	Social Well-Being	Final Score
Large Cities						
Toronto	5.5	6.2	7.9	7.3	7.7	6.9
Edmonton	7.1	6.2	5.3	4.7	7.2	6.1
Ottawa	4.8	7.3	6	4.1	7.6	6
Calgary	5.8	6.6	5.5	4.5	7.6	6
Montréal	5.2	4.4	5.3	6.8	7.5	5.8
Medium Cities						
Vancouver	6.5	6	7.6	7.7	7.5	7.1
Mississauga	5.5	7.6	5.7	5.3	7.6	6.3
Halifax	6.3	7.1	6.7	4.3	6.8	6.2
Hamilton	5.2	7.5	6.8	4	6.9	6.1
Québec	4.5	8.4	5.9	3.7	7.7	6.1
Winnipeg	4.6	7.4	5	5.5	6.9	5.9
Small Cities						
Victoria	5.2	7.2	7.2	7.6	8.2	7.1
Saskatoon	4.7	7.4	6.6	4.5	7.4	6.1
Saint John	4.6	8.2	5.5	4.6	7.5	6.1
Yellowknife	5.7	6.4	6.1	4.3	7.6	6
Charlottetown	4.6	6.3	5.2	5.4	7.3	5.8
Whitehorse	4.7	5.7	6.9	2.8	6.5	5.3

Corporate Knights. (2011). <http://www.corporateknights.ca/report/2011-most-sustainable-cities-canada/results-0>

5.3.5 Conference Board Benchmarking Attractiveness of Canadian Cities

The Conference Board of Canada is a not-for-profit, independent applied research organization in Canada. This report examines 50 of Canada's largest cities by ranking their performance according to 41 indicators-grouped in seven categories that make Canadian cities attractive to mobile populations. These categories include society, health, economy, environment, education, innovation and housing.⁹⁴

This study uses a report-card-style ranking of A–B–C–D to assess the performance of cities on each selected indicator. Overall Edmonton performed well in several categories including economy (A ranking 3rd overall), environment (B ranking 23rd overall), innovation (B ranking 7th overall), housing (B ranking 9th overall), attractiveness to university educated migrants (B ranking 12th overall) and attractiveness to non-university educated migrants (B ranking 7th overall).

However, Edmonton fared poorly in society (indicators measuring accessibility, diversity, social cohesion, and creativity), health and education. While larger cities tended to score more poorly in these categories, Alberta's largest cities performed the

⁹⁴ Conference Board of Canada (2010). City Magnets II: Benchmarking the Attractiveness of 50 Canadian Cities



worst across Canada perhaps indicating their struggle to keep with population growth and in-migration.

5.3.6 Next Generation Consulting Report on Hotspots for Young, Talented Workers

In 2009, Next Generation Consulting (NGC) produced a report on “Next Cities”, or “The Top Canadian Hotspots for Young, Talented Workers.” NCG defines a “Next City” as a place with the assets and amenities that attract and keep a young and educated workforce, including vitality, earning potential, educational opportunities, social capital, cost of living, nightlife and walkability and transportation. Edmonton scored relatively well in this index, garnering the 10th ranking amongst Canadian hot spots. The findings are shown below.

FIGURE 97: NEXT GENERATION CONSULTING, TOP CANADIAN HOTSPOTS FOR TALENTED WORKERS, 2009

Rank	City	Rank	City
1	Victoria	14	St. Catharines-Niagara
2	Ottawa	15	Saint John
3	Vancouver	16	Montreal
4	Kingston	17	Kitchener
5	Halifax	18	St.John's
6	Toronto	19	Quebec City
7	Calgary	20	Hamilton
8	Saskatoon	21	Sherbrooke
9	London	22	Sudbury
10	Edmonton	23	Oshawa
11	Winnipeg	24	Windsor
12	Regina	25	Abbotsford
13	Thunder Bay	26	Trois-Rivieres
		27	Saguenay

Source: Next Generation Consulting: Next Cities retrieved from http://nextgenerationconsulting.com/assets/documents/next_cities_2009-2010_canada.pdf

5.4 Summary

The City of Edmonton has experienced rapid population and economic growth in the last few decades – a trend that while temporarily interrupted by the 2008-2009 recession has not abated through 2011. This growth, largely resulting from Alberta's oil related activities, has translated into productivity levels, and a GDP per capita, that are notably higher than the Canadian average. This growth, however, has also caused 'growing pains', which are reflected in several of the business, innovative, lifestyle, and common indicators. The City of Edmonton's strategic goals and complementary plans



have already identified and implemented actions to combat many of these growing pains. For example, the City is committing resources to create a more 'livable' city with improved urban design, community safety and walkability. The following summarizes the key elements of these indicators, which will inform the City of Edmonton's economic development strategy, 'The Way We Prosper'.

Business Case indicator Findings

- Edmonton's 2011 GDP per capita was \$44,281, which was \$5,378 above the national average, a trend that is expected to continue over the next five years. Similarly, Edmonton's 2011 productivity was well above the national average, but it was still behind Alberta's provincial average.
- Edmonton's growth in recent years has been accompanied by increases in commercial, residential and retail development, but the heated state of Edmonton's economy has placed upward pressure on rental and purchase prices for retail, commercial, and industrial spaces. In comparative terms, these spaces are also more expensive than those found in neighbouring jurisdictions. Edmonton also has the highest non-residential tax rates of any regional competitor, including Calgary.

Innovative indicator Findings

- Alberta grade 8 students scored the highest in the country in science, second in reading, and third in math. At the city level, for grades 6 and 9 Edmonton Public School Children outperform their provincial cohorts in almost every subject. However, Edmonton's school children perform much lower on Grade 12 diploma exams when compared to the provincial average.
- Edmonton is home to several academic institutions including the University of Alberta, MacEwan University and the Northern Alberta Institute of Technology. Each of these institutions is the largest in the province with respect to student enrolment. The University of Alberta is one of the largest universities in Canada, attracting some of the best and brightest students that the world has to offer. The presence of these universities in Edmonton has also led directly to 16.6% of the city's residents holding at least a bachelor's degree – a rate significantly higher than both the provincial and national averages.
- Overall, spending on research is much higher in Ontario and Quebec than in Alberta, although Alberta does relatively well with respect to research conducted by private enterprise and academic institutions. Alberta is also well behind Ontario and Quebec in terms of patents filed and registered.
- As of 2006, 31% of Edmonton's labour force was comprised of the creative class of workers (as defined by Richard Florida). These workers cut across industry sector lines in a way that can impact both traditional and emerging industries and the degree to which these occupations translate to a well-paid and highly skilled workforce.
- Growth trends in Edmonton, between 2001 and 2006, would also suggest that the creative class is growing healthily and steadily. Health occupations and



occupations in education, social services and government services exhibited the fastest rate of growth.

- Edmonton 'creative business' composition is similar to Alberta's average, at 12%. The majority of these businesses are considered small, with those business employing fewer than 5 people comprising nearly 90% of all creative businesses. Of these firms, the vast majority of operations include engineering, business consulting, and web and software development.

Lifestyle Indicator Findings

- In 2008-2009, national housing markets crumbled with the onset of the recession. This is reflected by the negative New House Price Index values for Canadian CMAs. Edmonton was particularly hard hit in 2009 with a score of negative 11.2, the lowest of all CMAs. As of 2010, Edmonton's score was still the lowest of all the CMAs. In terms of rental affordability, as of 2010, Edmonton's rental market was comparatively expensive, with rents only 10% below those of Toronto and Vancouver (the highest across Canada).
- Alberta's general cost of living, as reflected by the consumer price index, is approximately 10% higher than the Canadian average. Edmonton's CPI is also well above most of Canada's CMAs. If oil prices remain stable, this trend is expected to continue in the short and medium term.
- Edmonton leads Canada's CMAs in terms of automobile use, with nearly 75% of its population taking a car (or truck) to work. Alternately, Edmonton has the lowest rates of public transit use and people walking to work.
- Edmonton's overall volume of crime and severity of crime is well above the Canadian average. Edmonton also fared poorly against Canada's other major urban centers.
- Edmonton's health region is comparatively well serviced with general physicians per 1,000 people. However, in terms of specialist physicians, Edmonton is well behind Toronto, Vancouver and Montreal.

Edmonton's Performance on Common Indices

- KPMG Competitive Alternatives Study and associated rankings, position Edmonton as globally competitive in several areas of manufacturing, but less competitive with respect to information technology and research and development.
- The Innovation Cities program classifies Edmonton as a 'NODE', meaning that it is strong performer in a variety of economic sectors but has relative deficiencies in particular areas. A NODE is considered less important than both 'NEXUS' and 'HUB' in the innovation economy. Edmonton ranked 32nd overall in the Americas, but 5th for Canadian cities, behind Toronto, Montreal, Calgary, Quebec and Vancouver.
- On the Learning Composite Learning Index, Edmonton places eighth among Canadian cities, though it is one of only 3 in the top 10 to have their overall score decrease since 2006. Edmonton performed best in the "Learning to Do" measure,



which reflects the number of strong vocational skills and training programs and occupations in the region.

- The Corporate Knights Sustainable Cities report suggests Edmonton is performing well in terms of social well-being (measuring life satisfaction and rates of homelessness). Edmonton's lowest score was in infrastructure and built environment, which considers indicators such as sanitary and storm water systems, incentives for green buildings, transportation, and population density.
- The Conference Board of Canada's report on benchmarking the attractiveness of Canadian cities ranks Edmonton across a variety of aggregated indicators. Edmonton's highest grade is on its economy. Edmonton also fared relatively well in terms of environment, housing, innovation, and attractiveness to university and non-university migrants. Edmonton's worst grades were associated with education, society, and health.
- Looking at "The Top Canadian Hotspots for Young, Talented Workers", Edmonton ranked 10th across Canada, notably behind Victoria (1st), Vancouver (3rd), Toronto (6th) and Calgary (7th).



6 Conclusion

The Technical Report is intended to provide an understanding of Edmonton's performance relative to a wide range of demographic and labour force characteristics, and a deeper understanding of the competitive position of Edmonton's economy and its contributing industries.

Based on the information gained from industry analysis select sectors were identified for further profiling. These profiles identified local companies, educational institutions and programs, research and development (R&D) activities and business and professional support considered relevant to the development of the sector. The review also considered the City's competitive advantages and disadvantages for attracting new investment and competing locations for investment.

All of the information contained within this report, together with the intelligence and insight derived from the stakeholder engagement process will serve to inform the reporting of the Strengths, Weaknesses, Opportunities and Threats to economic development in the City of Edmonton. These results in turn will assist with framing the strategic direction for the City of Edmonton's Economic Development Strategy and Action Plan.



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