

## Calgary Economic Development

### KEY SECTOR REPORT: CREATIVE INDUSTRIES

January 2008

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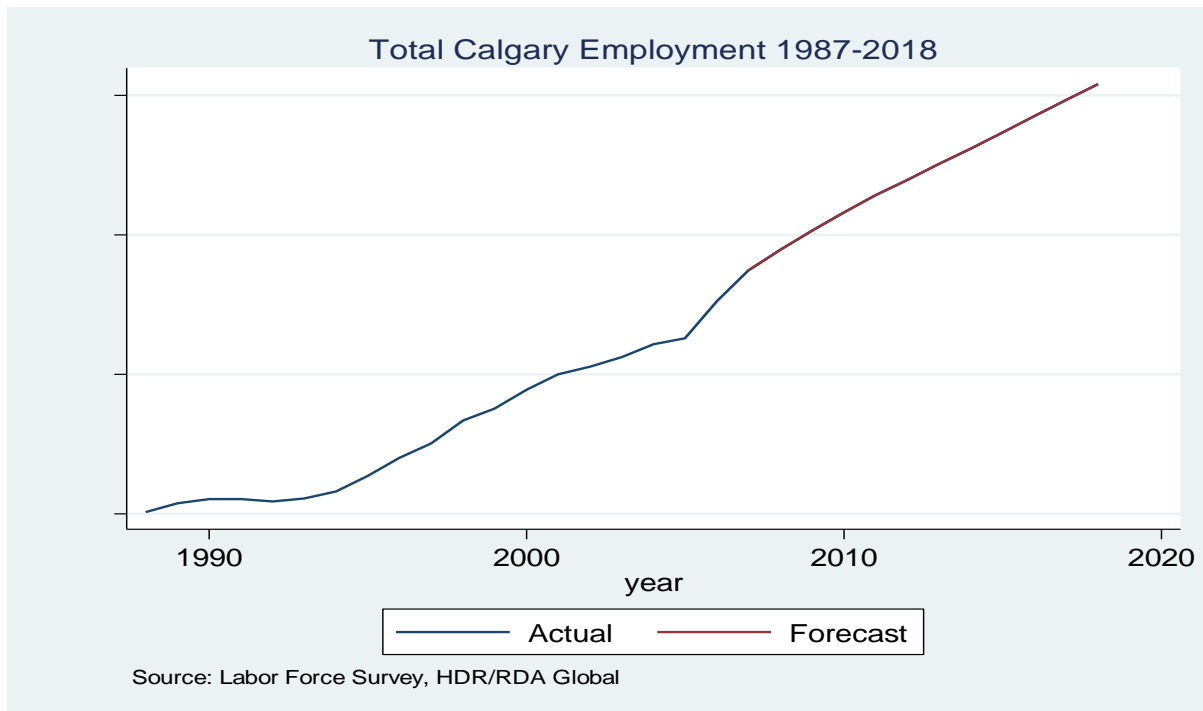


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## CALGARY LABOR MARKET

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**Figure 1: Total Calgary Employment Forecast (All Industries)**



The Calgary economy has seen tremendous growth in labour demand over the previous decade with employment growth reaching an all-time high of 8.1%<sup>1</sup> in 2006. The recent strong growth in the Calgary economy has been driven by a combination of economic factors spurring growth in specific sectors and generally throughout the Calgary economy. Energy prices are a significant driver with West Texas Intermediate oil price rising 17%<sup>2</sup> in 2006. Investment levels in major construction projects have increased significantly compared to historical levels. Housing starts have risen from 13,700<sup>3</sup> starts in 2005 to 17,000 starts in 2006, an increase of 25%. Calgary GDP grew at 7.7% in 2006.

Recent increases in employment levels have been highest in sectors of the Calgary economy which are related to energy, in particular in the professional services sector. However, overall growth has been relatively balanced among industries with significant growth in most sectors of the economy.

As Figure 1 shows, labour demand in the Calgary Economic Region is expected to continue to grow at a healthy rate throughout the forecast, albeit at a lower, more sustainable level. The overall growth in employment in Calgary is expected to decline over the next several years settling at a more sustainable long-term employment growth rate of 2.4%, in line with historical average growth. However, this lower growth rate will continue to result in strong job creation. Over the previous ten years (1996-2006) Calgary employment increased adding 224,000 new jobs. Over the ten year forecast period (2007-2017) Calgary employment growth will result in

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<sup>1</sup> Source: Labor Force Survey

<sup>2</sup> Source: US Energy Information Administration

<sup>3</sup> Source for housing starts statistics and Metro GDP at basic prices was the Conference Board of Canada

the creation of an additional 244,000 new jobs. This growth in the Calgary economy will be driven by a number of factors including expectations that oil prices will remain at or near historically high levels. Energy prices are expected to be volatile in the near term, with possible spikes in prices, partially due to the declining value of the US dollar. However, for the long-term forecast, an average annual 1.7% growth rate in oil prices has been forecasted, which is consistent with conservative expectations of energy analysts<sup>4</sup>. Calgary GDP growth will moderate to a strong long term compound annual real growth rate of 3.8%.

**Figure 2 Calgary Job Creation in Each Industry**

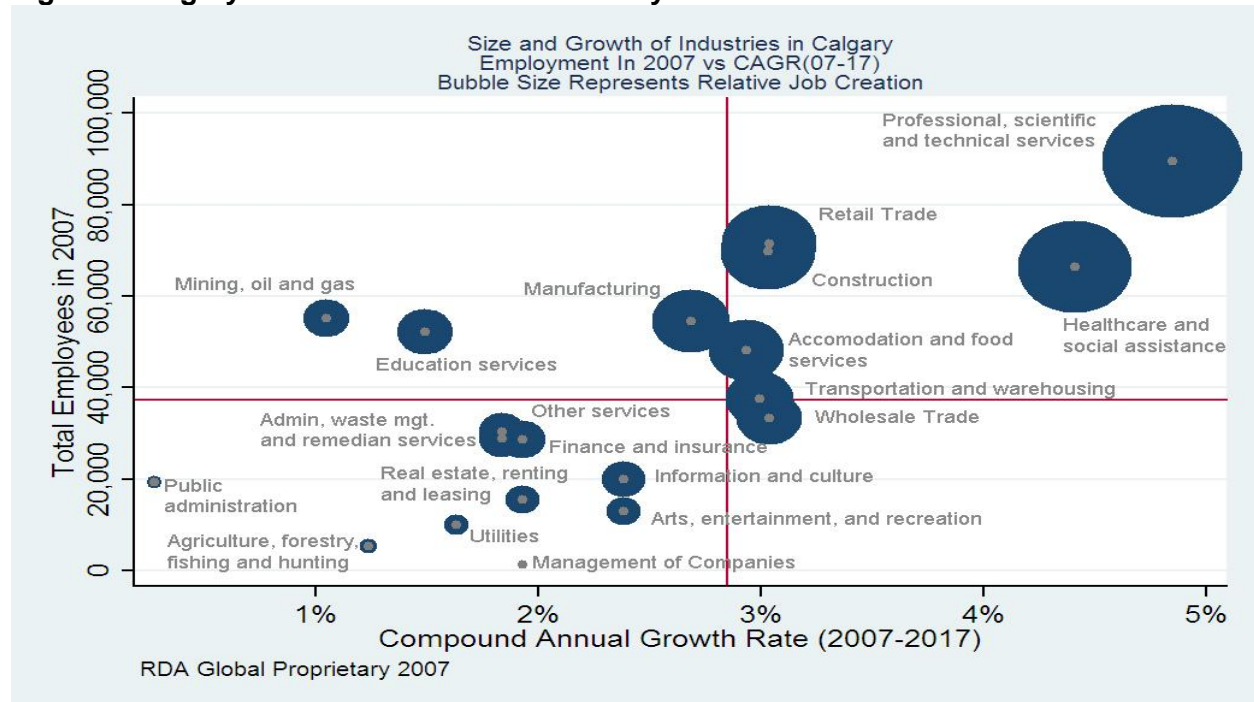


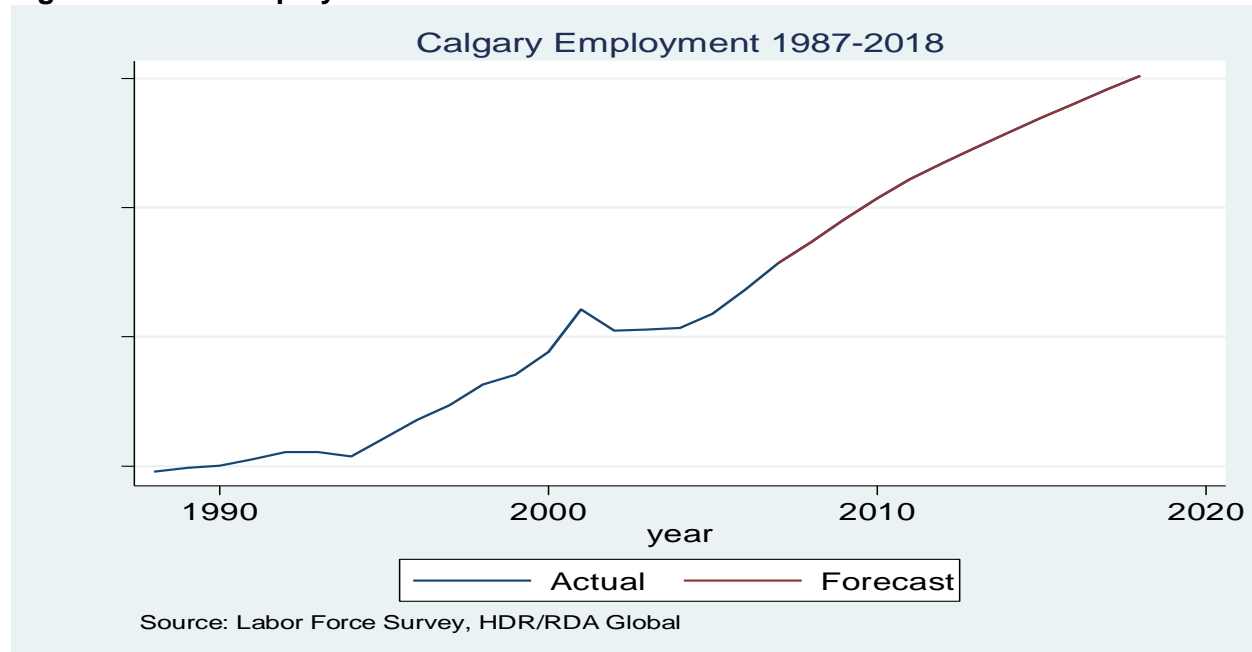
Figure 2 highlights the differences in job creation across industries in Calgary, with the larger circles representing industries with more job creations. Significant gains in employment will be somewhat distributed among economic sectors. However, there will be particularly strong expansion in the professional services sector, which is tied to continued demand for technical and engineering services in the energy sector. There will also be strong job growth in healthcare, driven by overall population growth and growth in the older segments of the population. Job expansion will also continue to be robust in retail, construction, accommodation & food services, transportation, manufacturing, and wholesale. Population growth is expected to drive up demand for education services. Most segments of the economy are expected to continue to see positive growth with employment growth rates in the 1% to 2.5% long-term growth range. However, total job creation in niche industries will be constrained by the relatively smaller size of these segments.

<sup>4</sup> In development of this forecast, oil price forecasts of the Energy Information Administration and Sproule and Associates were consulted, however, final assumptions in the forecast model were based on a nominal annual growth rate of 1.7%.

## CREATIVE INDUSTRIES KEY SECTOR

The Creative industries sector is expected to continue to expand at a compound annual growth rate of 4.3% over the next ten years. This growth will outpace the overall employment growth in Calgary of 2.9% over the same forecast period. Growth in the key sector will result in the creation of an additional 26,800 new jobs over the forecast period.

**Figure 3: Total Employment in the Creative Industries Sector 1987-2018**



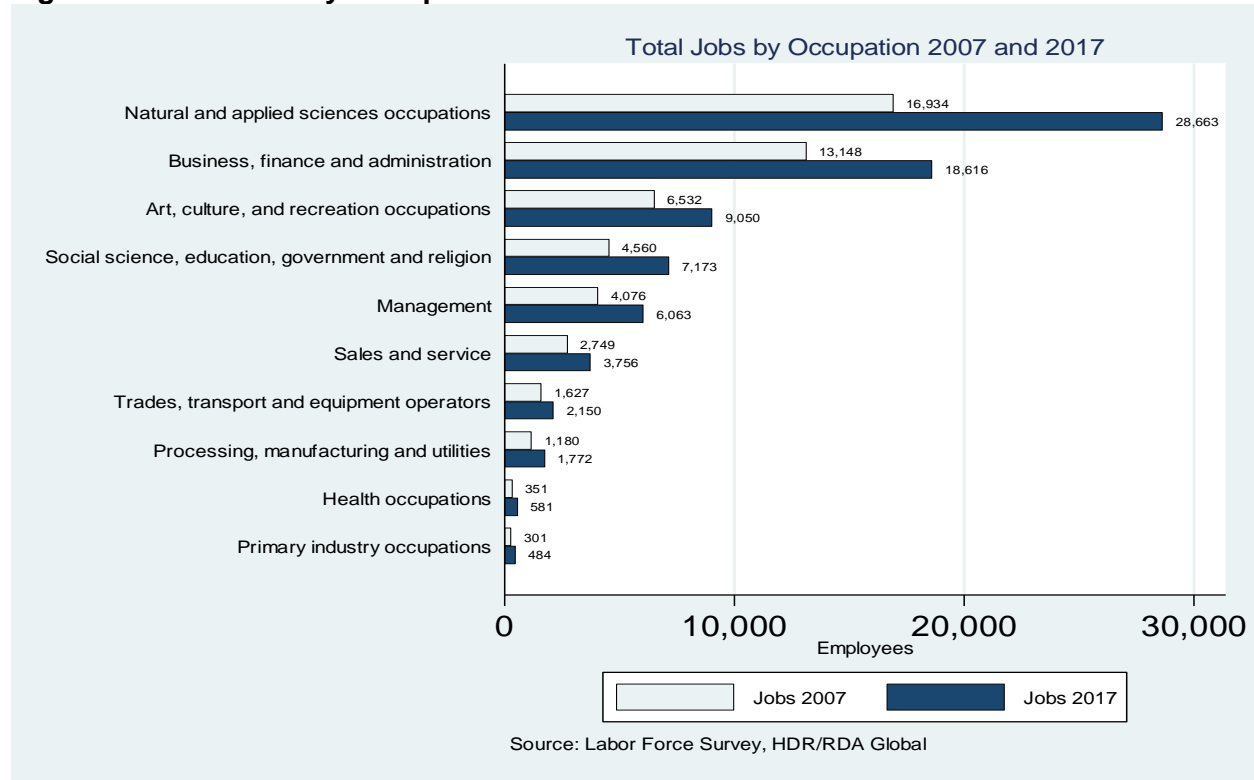
The Creative Industries Sector ranks fifth for total employment among the Calgary Economic Development Key Sectors. Historically, growth in this sector has outperformed employment growth in the overall region and will continue to see strong growth above that of the Calgary average. In terms of jobs created, the sector ranked fourth over the 1997-2007 period, creating about 22,000 jobs. The sector will move up to become the third largest contributor to job creation in the 2007-2017 forecast period, creating nearly 27,000 new jobs. About one in every ten new jobs created in the next ten years will be in the Creative Industries Sector.

**Table 1: Creative Industries Sector Compared with Other CED Key Sectors**

Key Sector	Total Employment				Compound Annual Growth			Jobs Added		
	1987	1997	2007	2017	1987-97	1997-07	2007-17	1987-97	1997-07	2007-17
Creative Industries	19,048	29,408	51,459	78,309	4.4%	5.8%	4.3%	10,360	22,050	26,850
Energy	37,811	36,371	63,148	70,909	-0.4%	5.7%	1.2%	(1,440)	26,777	7,762
Film	1,949	2,837	3,438	4,354	3.8%	1.9%	2.4%	889	600	917
Financial Services	26,201	33,679	45,185	54,695	2.5%	3.0%	1.9%	7,478	11,506	9,509
Health & Wellness	47,734	68,830	116,345	177,895	3.7%	5.4%	4.3%	21,096	47,515	61,550
ICT	17,724	26,373	40,273	57,709	4.1%	4.3%	3.7%	8,649	13,900	17,435
Manufacturing	30,500	42,900	54,380	70,890	3.5%	2.4%	2.7%	12,400	11,480	16,510
Professional Services	24,200	39,494	76,610	118,726	5.0%	6.9%	4.5%	15,294	37,116	42,116
Transportation & Logistics	39,762	49,062	65,958	88,751	2.1%	3.0%	3.0%	9,300	16,896	22,793
Other (Not a Key Sector)	191,766	243,914	359,958	465,549	2.4%	4.0%	2.6%	52,148	116,044	105,591
Grand Total	389,800	500,700	749,368	993,298	2.5%	4.1%	2.9%	110,900	248,668	243,930

## JOBS CREATED BY OCCUPATION – CREATIVE INDUSTRIES KEY SECTOR

**Figure 4: Total Jobs by Occupation 2007 and 2017 – Creative Industries Sector**



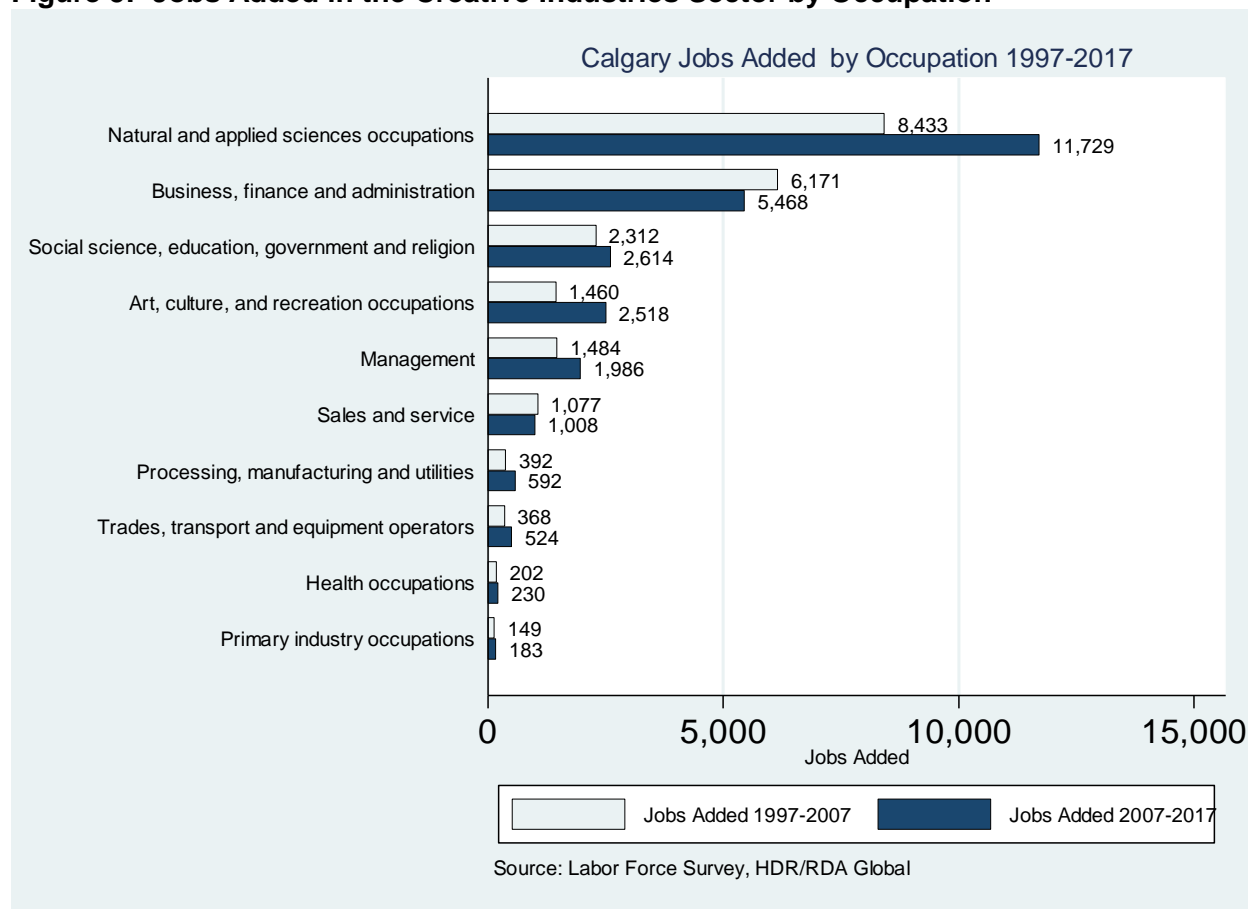
**Table 2: 30-Year Occupational Growth for the Creative Industries Key Sector**

Occupation (1 Digit NOC)	Total Employees				Compound Annual Growth		
	1987	1997	2007	2017	1987-97	1997-07	2007-17
A Management occupations	1,477	2,592	4,076	6,063	3.9%	6.5%	3.5%
B Business, finance and administration occupations	4,759	6,977	13,148	18,616	3.9%	6.5%	3.5%
C Natural and applied sciences and related occupations	5,316	8,501	16,934	28,663	4.8%	7.1%	5.4%
D Health occupations	98	149	351	581	4.2%	8.9%	5.2%
E Occupations in social science, education, government service and religion	1,255	2,248	4,560	7,173	6.0%	7.3%	4.6%
F Occupations in art, culture, recreation and sport	3,430	5,072	6,532	9,050	4.0%	2.6%	3.3%
G Sales and service occupations	1,161	1,672	2,749	3,756	3.7%	5.1%	3.2%
H Trades, transport and equipment operators and related occupations	916	1,258	1,627	2,150	3.2%	2.6%	2.8%
I Occupations unique to primary industry	59	152	301	484	9.9%	7.1%	4.9%
J Occupations unique to processing, manufacturing and utilities	577	788	1,180	1,772	3.2%	4.1%	4.1%
<b>Grand Total</b>	<b>19,048</b>	<b>29,408</b>	<b>51,459</b>	<b>78,309</b>	<b>4.4%</b>	<b>5.8%</b>	<b>4.3%</b>

There are nearly 52,000 employees in the Creative Industries Sector today. Nearly 17,000 of these workers have natural and applied sciences or related occupations, representing the largest share of occupations. Demand for workers in with natural and applied sciences or related occupations will rise to nearly 29,000 workers over the forecast period. The next largest occupational category is business, finance, and administration jobs, which currently represent about 13,000 workers in the Creative Industries Key Sector. By 2017, there will be demand for about 18,500 business, finance and administration workers in the Creative Industries Key

Sector. Art, culture, recreation and sports jobs is the third largest category with over 6,500 employees today growing to 9,050 workers in 2017.

**Figure 5: Jobs Added in the Creative Industries Sector by Occupation**



Over 1/3 of all jobs created in this sector will be natural and applied sciences and related occupations (a total of about 11,000 new jobs by 2017). The sector will generate about 5,000 jobs for workers in business and finance occupations and about 3,500 jobs for workers in art, culture, recreation and sports occupations.

**Table 3: Ten-Year Forecast of Jobs by Major Occupational Group – Creative Industries Sector**

Occupation (1 Digit NOC)	Annual Employment											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
A Management occupations	3,647	4,076	4,373	4,626	4,918	5,154	5,335	5,488	5,648	5,798	5,934	6,063
B Business, finance and administration occupations	11,799	13,148	14,082	14,847	15,749	16,441	16,927	17,302	17,694	18,045	18,345	18,616
C Natural and applied sciences and related occupations	15,845	16,934	18,494	20,120	21,402	22,455	23,607	24,707	25,692	26,650	27,660	28,663
D Health occupations	336	351	360	375	397	420	441	465	491	520	549	581
E Occupations in social science, education, government service and religion	4,083	4,560	4,839	5,123	5,455	5,753	5,989	6,214	6,459	6,704	6,939	7,173
F Occupations in art, culture, recreation and sport	6,140	6,532	6,413	6,818	6,981	7,313	7,550	7,850	8,132	8,438	8,736	9,050
G Sales and service occupations	2,607	2,749	2,894	2,909	3,075	3,199	3,306	3,380	3,483	3,579	3,671	3,756
H Trades, transport and equipment operators and related occupations	1,522	1,627	1,677	1,731	1,794	1,850	1,902	1,952	2,005	2,055	2,103	2,150
I Occupations unique to primary industry	279	301	319	336	361	380	399	416	434	451	468	484
J Occupations unique to processing, manufacturing and utilities	1,083	1,180	1,236	1,300	1,367	1,427	1,485	1,542	1,600	1,657	1,715	1,772
<b>Grand Total</b>	<b>47,343</b>	<b>51,459</b>	<b>54,686</b>	<b>58,183</b>	<b>61,498</b>	<b>64,391</b>	<b>66,941</b>	<b>69,316</b>	<b>71,637</b>	<b>73,895</b>	<b>76,119</b>	<b>78,309</b>

**Table 4: Top 50 Occupations Adding Jobs From 2007-2017<sup>5</sup>**

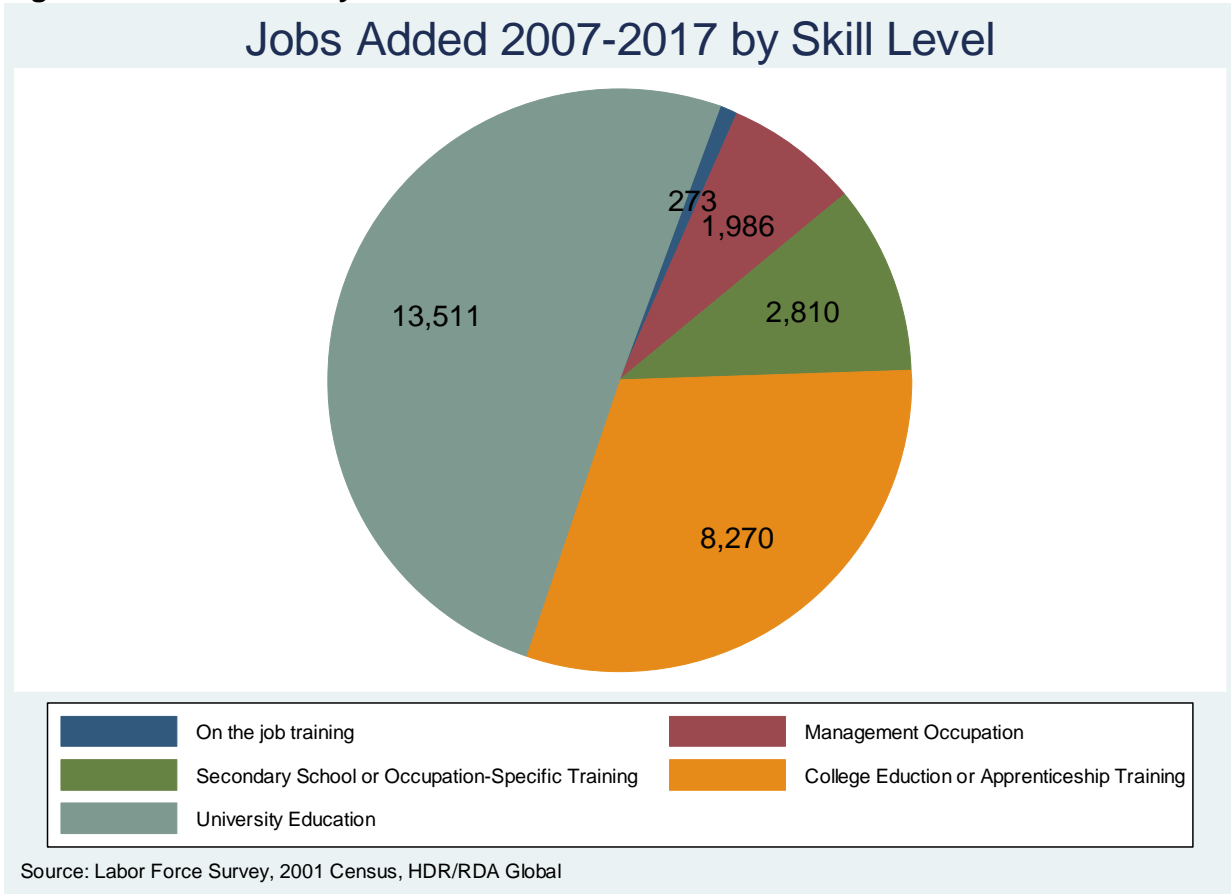
Rank	Occupation (4 Digit NOC)	Employees				Jobs Created
		1987	1997	2007	2017	2007-2017
1	B011 Financial auditors and accountants	857	1,645	3,450	5,025	1,575
2	C071 Information systems analysts and consultants	726	1,158	2,270	3,796	1,526
3	C074 Computer programmers and interactive media developers	671	1,064	1,996	3,188	1,191
4	E012 Lawyers and Quebec notaries	582	1,045	2,139	3,280	1,142
5	C013 Geologists, geochemists and geophysicists	235	377	802	1,560	758
6	C031 Civil engineers	330	531	1,088	1,819	731
7	E211 Paralegal and related occupations	327	587	1,198	1,857	659
8	C153 Drafting technologists and technicians	293	472	961	1,565	604
9	C181 Computer and network operators and web technicians	239	381	762	1,327	565
10	C045 Petroleum engineers	164	263	562	1,125	564
11	F141 Graphic designers and illustrators	620	938	1,315	1,866	551
12	C112 Geological and mineral technologists and technicians	146	235	497	947	449
13	B511 General office clerks	362	489	964	1,403	439
14	C182 User support technicians	223	351	640	1,077	437
15	C033 Electrical and electronics engineers	184	296	601	1,024	423
16	B531 Accounting and related clerks	334	451	874	1,252	378
17	B022 Professional occupations in business services to management	336	637	1,222	1,596	374
18	A131 Sales, marketing and advertising managers	314	564	811	1,175	364
19	E033 Business development officers and marketing researchers and consultants	162	286	542	903	361
20	B311 Administrative officers	332	411	723	1,067	345
21	C032 Mechanical engineers	139	224	458	790	332
22	C073 Software engineers	228	358	628	951	323
23	A122 Computer and information systems managers	240	435	699	1,017	318
24	G111 Sales representatives, wholesale trade (non-technical)	317	485	838	1,133	295
25	C047 Computer engineers (except software engineers)	128	205	424	715	290
26	B211 Secretaries (except legal and medical)	248	307	540	812	272
27	B212 Legal secretaries	415	517	909	1,180	271
28	C075 Web designers and developers	129	207	425	673	248
29	F021 Authors and writers	367	540	687	931	244
30	G121 Technical sales specialists, wholesale trade	126	198	451	687	236
31	F036 Painters, sculptors and other visual artists	407	592	710	946	236
32	C034 Chemical engineers	101	162	334	568	235
33	C051 Architects	130	210	424	650	226
34	E031 Natural and applied science policy researchers, consultants and program officers	99	178	366	586	219
35	G211 Retail salespersons and sales clerks	270	375	601	817	217
36	H521 Printing press operators	472	645	795	1,010	215
37	C054 Land surveyors	115	184	375	579	204
38	C072 Database analysts and data administrators	109	170	298	500	201
39	C141 Electrical and electronics engineering technologists and technicians	81	129	249	437	189
40	B111 Bookkeepers	180	224	401	583	182
41	A121 Engineering managers	98	182	332	510	178
42	J181 Printing machine operators	165	221	348	520	171
43	A013 Senior managers - Financial, communications and other business services	132	189	355	523	168
44	A111 Financial managers	77	141	255	421	166
45	F024 Professional occupations in public relations and communications	169	252	339	503	165
46	B553 Customer service, information and related clerks	170	228	403	565	162
47	F142 Interior designers	114	177	316	477	161
48	F121 Photographers	182	275	421	577	156
49	B514 Receptionists and switchboard operators	148	202	408	562	154
50	J182 Camera, platemaking and other pre-press occupations	153	201	314	462	148
	Others	5,904	8,809	13,939	20,769	6,831
	<b>Grand Total</b>	<b>19,048</b>	<b>29,408</b>	<b>51,459</b>	<b>78,309</b>	<b>26,850</b>

<sup>5</sup> Note that these job creations in Table 4 capture only jobs created in the Creative Industries Sector and do not represent total job creations for all of Calgary. Jobs with these occupations will also be created in other industries.

## EMPLOYMENT GROWTH BY SKILL LEVEL – CREATIVE INDUSTRIES SECTOR

From a skill level perspective, there will be about 2,000 new management occupations, 8,200 jobs requiring some college education or apprenticeship training, 2,800 jobs requiring secondary school or occupation-specific training, 13,500 that require university training and close to 300 that require only on-the-job training.

**Figure 6: Jobs Added by Skill Level in the Creative Industries Sector**



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## APPENDIX 1: SECTOR DEFINITION – CREATIVE INDUSTRIES

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The Creative Industries Sector is comprised of selected industry segments from a number of industries. The Sector is comprised of the following segments:

NAICS 7111 – Performing Arts Companies  
NAICS 7113 – Promoters (Presenters of Performing Arts)  
NAICS 7112 – Other Clubs and Organizations  
NAICS 7114 – Agents and Managers for Artists, Entertainers, etc  
NAICS 7115 – Independent Artists, Writers and Performers  
NAICS 7121 – Heritage Institutions  
NAICS 5111 – Newspaper, Periodical, book and directory publishers  
NAICS 5418 – Advertising and Related Industries  
NAICS 5413 – Architecture, Engineering and Related Services  
NAICS 5414 – Specialized Design Services  
NAICS 3231 – Printing and Related Support Activities  
NAICS 5191 – Other Information Services  
NAICS 5112 – Software Publishers  
NAICS 5161 – Internet Publishing and Broadcasting  
NAICS 5417 – Scientific, Research and Development Services

These industry selections are selected out of NAICS 71 Arts, Entertainment and Recreation (***with the exception of Amusement, Gambling and Recreation Industries***), NAICS 51 Information and Cultural Industries (***including only Publishing Industries (except Internet)***), NAICS 32 ***Manufacturing (including only Printing and Related Support Activities)***, and NAICS 54 Professional, Scientific and Technical Services (***with the exception of Legal Services, Accounting, Tax Preparation, Bookkeeping and Payroll Services, Computer Systems Design and Related Services, Management, Scientific and Technical Consulting Services, Other Professional, Scientific and Technical Services***). Definitions of these four industries are listed below.

### **Arts, Entertainment and Recreation (NAICS 71)**

This sector comprises establishments primarily engaged in operating facilities or providing services to meet the cultural, entertainment and recreational interests of their patrons. These establishments produce, promote or participate in live performances, events or exhibits intended for public viewing; provide the artistic, creative and technical skills necessary for the production of artistic products and live performances; preserve and exhibit objects and sites of historical, cultural or educational interest; and operate facilities or provide services that enable patrons to participate in sports or recreational activities or pursue amusement, hobbies and leisure-time interests.

There are establishments engaged in activities related to arts and recreation that are classified in other sectors of NAICS. The most important are listed below.

**Exclusion(s):**

- transportation establishments providing sightseeing and pleasure cruises (48-49, Transportation and Warehousing)
- motion picture theatres, libraries and archives, and publishers of newspapers, magazines, books, periodicals and computer software (51, Information and Cultural Industries)
- establishments that provide both accommodation and recreational facilities, such as hunting and fishing camps, resorts and casino hotels (721, Accommodation Services)
- restaurants and night clubs that provide live entertainment in
- addition to the sale of food and beverages (722, Food Services and Drinking Places)

**Information and Cultural Industries  
(NAICS 51)**

This sector comprises establishments primarily engaged in producing and distributing (except by wholesale and retail methods) information and cultural products. Establishments providing the means to transmit or distribute these products or providing access to equipment and expertise for processing data are also included.

The unique characteristics of information and cultural products, and of the processes involved in their production and distribution, distinguish this sector from the goods-producing and services-producing sectors. In particular,

- the value of these products lies in their information, educational, cultural or entertainment content, not in the format in which they are distributed. Most of these products are protected from unlawful reproduction by copyright laws. Only those possessing the rights to these works are authorized to reproduce, alter, improve and distribute them. Acquiring and using these rights often involves significant costs.
- the intangible nature of the content of information and cultural products allows for their distribution in various forms. For example, a movie can be shown at a movie theatre, on a television broadcast, through video on demand, or rented at a local video store; a sound recording can be aired on radio, embedded in multi-media products or sold at a record store; software can be bought at retail outlets or downloaded from an electronic bulletin board; a newspaper can be purchased at a newsstand or received on-line. In addition, improvements in information technology are revolutionizing the distribution of these products. The inclusion in this sector of telecommunications carriers and Internet access providers reflects the increasingly important role these establishments play in making these products accessible to the public.

The main components of this sector are the publishing industries (except exclusively on Internet), including software publishing, the motion picture and sound recording industries, the broadcasting industries (except exclusively on Internet), the internet publishing and broadcasting industries, the telecommunications industries, the internet service providers, web search portals, data processing industries, and the other information services industries. There are establishments engaged in culture-related activities that are classified in other sectors of NAICS. The most important are listed below.

**Exclusion(s):** Establishments primarily engaged in:

- duplicating information or cultural products in print form, or in the form of optical or magnetic media (31-33, Manufacturing)
- wholesaling information and cultural products such as newspapers, books, software, videocassettes, DVDs and sound recordings (41, Wholesale Trade)
- retailing information and cultural products such as newspapers, books, software and sound recordings (44-45, Retail Trade)
- design activities (54, Professional, Scientific and Technical Services)
- producing live presentations that involve the performances of actors and actresses, singers, dancers, musical groups and artists, and other performing artists (71, Arts, Entertainment and Recreation)
- performing in artistic productions, and in creating artistic and cultural works or productions as independent individuals (71, Arts, Entertainment and Recreation)
- preserving and exhibiting objects, sites, and natural wonders of historical, cultural and/or educational value (71, Arts, Entertainment and Recreation)

### **Manufacturing (NAICS 31-33)**

This sector comprises establishments primarily engaged in the physical or chemical transformation of materials or substances into new products. These products may be finished, in the sense that they are ready to be used or consumed, or semi-finished, in the sense of becoming a raw material for an establishment to use in further manufacturing. Related activities, such as the assembly of the component parts of manufactured goods; the blending of materials; and the finishing of manufactured products by dyeing, heat-treating, plating and similar operations are also treated as manufacturing activities. Manufacturing establishments are known by a variety of trade designations, such as plants, factories or mills.

Manufacturing establishments may own the materials which they transform or they may transform materials owned by other establishments. Manufacturing may take place in factories or in workers' homes, using either machinery or hand tools.

Certain activities involving the transformation of goods are classified in other sectors. Some examples are post-harvest activities of agricultural establishments, such as crop drying; logging; the beneficiating of mineral ores; the production of structures by construction establishments; and various activities conducted by retailers, such as meat cutting and the assembly of products such as bicycles and computers.

### **Professional, Scientific and Technical Services (NAICS 54)**

This sector comprises establishments primarily engaged in activities in which human capital is the major input. These establishments make available the knowledge and skills of their employees, often on an assignment basis. The individual industries of this sector are defined on the basis of the particular expertise and training of the service provider.

The main components of this sector are legal services industries, accounting and related services industries, architectural, engineering and related services industries, surveying and mapping services industries, design services industries, management, scientific and technical consulting services industries, scientific research and development services industries, and advertising services industries.

The distinguishing feature of this sector is the fact that most of the industries grouped in it have

production processes that are almost wholly dependent on worker skills. In most of these industries, equipment and materials are not of major importance. Thus, the establishments classified in this sector sell expertise. Much of the expertise requires a university or college education, though not in every case.

Establishments primarily engaged in providing instruction and training in a wide variety of subjects and those primarily engaged in providing health care by diagnosis and treatment are not included in this sector.