

Prepared by:



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Table of Contents

1. Introduction.....	1
2. Population.....	3
3. Labour Force.....	16
4. Other Labour Force Characteristics.....	27
5. Migration.....	34
6. Commuters.....	48
7. Immigration.....	55
8. Industry Sectors Approaching a Crisis Stage.....	63
9. Productivity.....	67
10. Key Findings.....	71
11. Employer Interviews.....	73
12. Recommendations.....	77
13. Conclusion.....	82
Appendix A – Additional Research.....	83
Appendix B – Data Issues.....	84
Appendix C – Data Methodology.....	85
Appendix D – Bibliography.....	86
Appendix E – HR Matters Steering Committee.....	89

Introduction

Sometimes a large ship trying to dock appears to be barely moving. Yet it can generate enough momentum to wreak major havoc. Demographic change can be like that too. This is a study of one such change – the aging of Hamilton's population.

Two events define Hamilton's, and for that matter, Canada's population growth over the past half-century. A baby boom after the 2nd World War through to around 1965 was immediately followed by plummeting birth rates. They have never recovered. The first event was instrumental in shaping economic and social life during the last 50 years. The second event has mostly passed unnoticed – until now. New, and potentially adverse repercussions from the two events are about to simultaneously sweep through the Canadian economy, promising to transform the way we conduct our business and our lives. Employers will be pressured to urgently revamp human resource policies and practices, communities will be scrambling to entice and retain workers, and educational institutions, healthcare facilities and economic and social organizations will be hard-pressed to deliver services. The specter of widespread disruption because of severe and prolonged labour shortages will be a constant threat. Fortunately, current demographic trends offer a narrow window of opportunity before reforms needed to ease the transition to an older society will become much more difficult, and costly.

The creation of the New City of Hamilton launched a complex community-based planning process aimed at establishing optimal economic, social and environmental objectives for the newly amalgamated municipalities, as well as defining structures and processes to achieve them. The Economic Development Strategy, adopted by the City Council in December of 2001, is a long-term vision for the City of Hamilton and its economy. It serves as the foundation for a much larger planning process, GRIDS (Growth Related Integrated Development Strategy), which will incorporate the municipality's infrastructure master plan, Official Plan, human resources strategy and capital budgets.

The success or failure of all the various plans, notwithstanding their appropriateness or brilliance, ultimately rests with the people that make Hamilton either home and/or their place of work. Only an effective and forward-looking human resources strategy will ensure that Hamilton has the people it needs for a vibrant future. Early in 2001, Hamilton's Economic Development Department commissioned this study. Its purpose was to examine the long-term implications for the city's economy arising from an aging population, and to recommend actions to counter any negative consequences. Human Resources Development Canada (HRDC) and the Hamilton Training Advisory Board (HTAB) joined with the city in providing the required funding. A steering committee, composed of a cross-section of community stakeholders, was formed to guide the design and conduct of the study. The names of the committee members and the organizations they represented are listed at the end of this document.

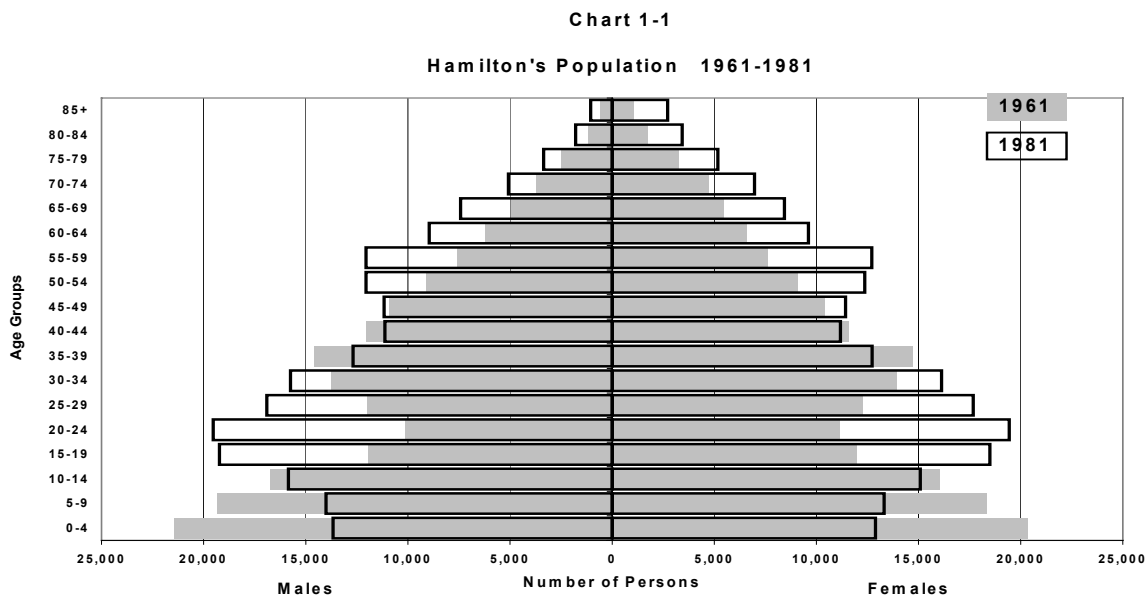
There were three components to the study. The first was the research itself – defining current and forecasting future population and labour force characteristics for Hamilton, and identifying imbalances. The second consisted of a voluntary and condensed Internet-based employer human resources survey, and a more extensive human resources survey instrument mailed out to a representative cross-section of Hamilton employers – the latter followed-up with in-person interviews. A little over 50 local employers were eventually interviewed. Their input regarding human resource practices and concerns were incorporated into the recommendations that form the final component of this study.

This study measures the impact that the convergence of escalating baby-boomer retirements and dwindling youth populations are likely to have on Hamilton's labour force and its economy. It recommends actions to combat unprecedented declines in labour supply, and identifies opportunities the community can exploit, and resources the community will need.

Our starting point for examining Hamilton's future growth prospects is population.

Population¹

This examination of Hamilton's population begins with a combined retrospective and forecast – a series of snapshots of Hamilton's population between 1961 and 2026. Charts 1-1, 1-2 and 1-3 compare changes in Hamilton's population over three 20-year periods, 1961 to 1981, 1981 to 2001 and 2001 to 2026. The graphic images of Hamilton's population at the beginning and end of each 20-year period have been superimposed to provide a quick visual interpretation of the growth that occurred over the intervening years. Charts 1-1 and 1-2 reveal the imprint the baby-boom and the subsequent "bust" in birth rates had on population characteristics through to the end of the twentieth century. Chart 1-3 highlights some of the impacts the "baby-boom" and "baby-bust" events will continue to have well over half a century after their occurrence



Source: Statistics Canada – Census Series 1961-1981

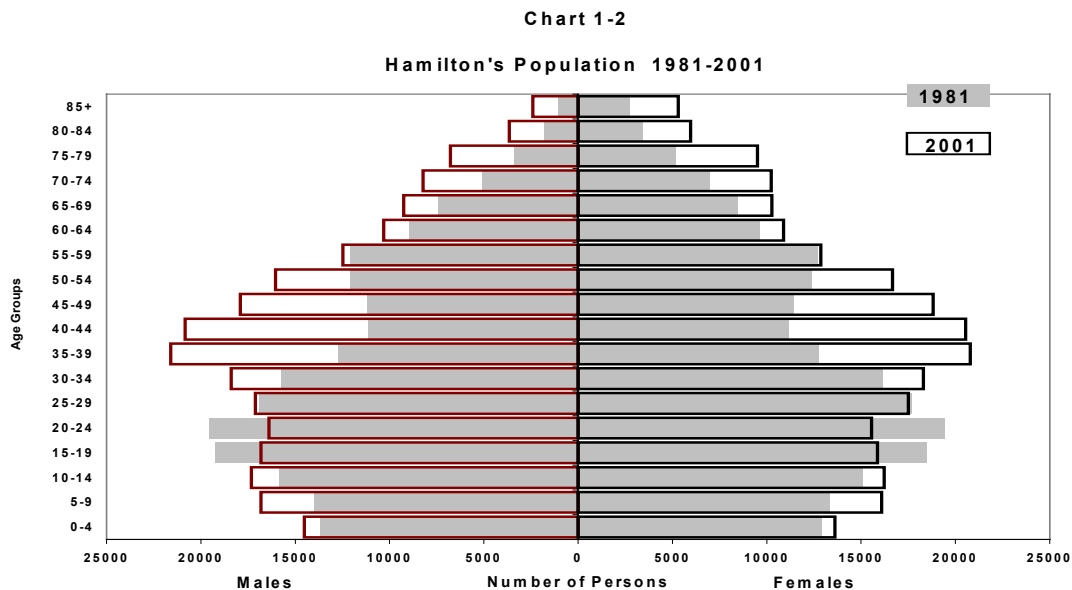
Chart 1-1 (1961-1981) depicts a fairly standard population pyramid in 1961² and the skewing of its base by 1981. The 1961 pattern is typical of societies supporting an average birth rate sufficient to replace parents and premature deaths and to provide for

¹ Wherever "Hamilton" is used in reference to data, the New City of Hamilton is the geographic unit being described. Any deviations from this practice will be indicated.

² When populations are plotted in ascending order of age, using horizontal bar graphs to signify the various age groups, the size of the bars declines with age, creating a pyramid shape.

moderate population growth...and it is what Canada's and Hamilton's population looked like for the better part of its history. In the Canadian context though, relatively moderate birth rates across most of the country prior to 1950 (with the exception of Quebec where they were much higher) were augmented by sizeable immigration flows in most years. The anomalies seen in the 15 through 30 age-groups in 1961 were caused by a number of factors, primarily dramatic reductions in immigration during the decade of the 1930's and the 2nd World War, as well as lower birth rates during the war period itself³.

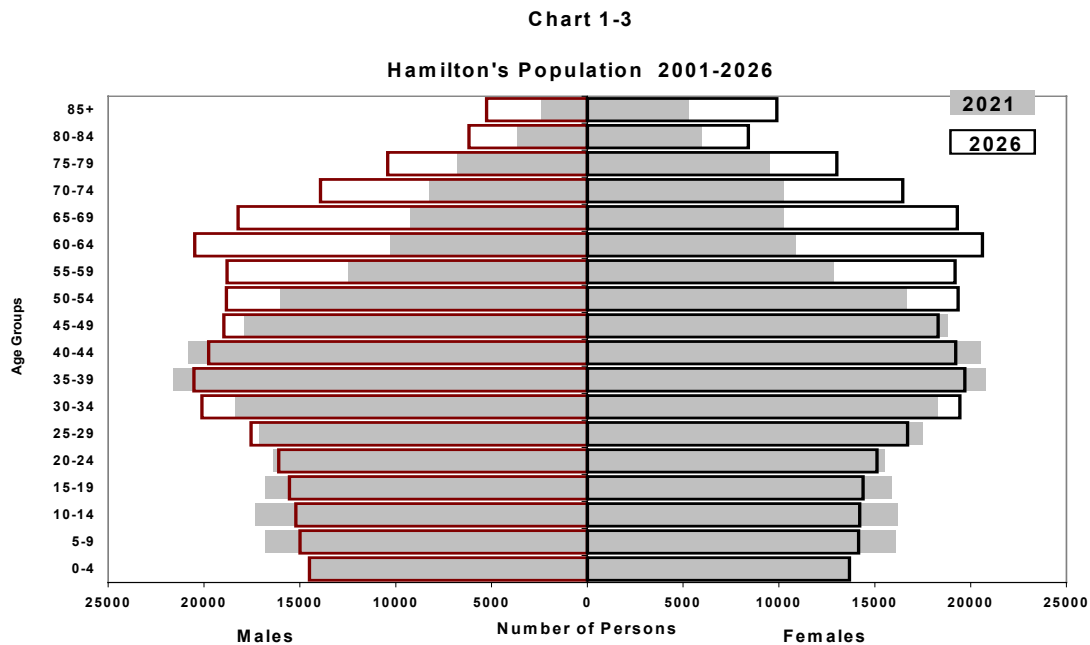
By 1981, the base of the pyramid begins to collapse due to plunging birth rates after 1965 (witness the shrinkage of the 0-4 year-olds – born in the period 1976 to 1980, the 5-9 year-olds – born in the period 1971-1975, and the 10-14 year-olds – born between 1966 and 1970). By 1981, the then current "next labour force generation", i.e. the 15-24 year-olds, are already numerically, significantly larger than the age cohorts that will follow them, the age cohorts destined to become their successor "next labour force generation" by 1991, i.e. the 5-14 year-olds. The other essential feature of Chart 1-1 is the consistent growth in the population over 50 years of age between 1961 and 1981, with females extending their numerical superiority over males.



Source: Statistics Canada – Census Series 1981-1996 & Ontario Ministry of Finance

³ If you do the math you can verify the time-correspondence between the events just described and the abnormal shrinkage of the 15-30 year-old population cohorts in the 1961 population graph.

By 2001, the baby-boomers are in their late 30's and 40's, moving steadily towards retirement age, as shown in Chart 1-2. While the growth in females in the 75+ age categories continues to outdistance that of their male counterparts, growth in the 60-75 age categories has now become more nearly equal for the two sexes, as male life-spans continued improving. The other significant factor in Chart 1-2 is the improvement in the growth of the 0-15 age categories by 2001 relative to the earlier 1981 account. Demographers refer to this resurgence in birth activity as the "baby-boom echo" – in other words, the children of the baby-boomers. As the next chart, 1-3 shows, not surprisingly, the echo didn't last much longer than the approximately fifteen years of the original baby-boom itself. By 1996, growth in the 0-15 age categories resumes their decline relative to immediately preceding time periods.



Source: Ontario Ministry of Finance

In addition to the petering-out of the baby-boom echo, Chart 1-3 reveals that the baby boomers started to trickle into early retirement age categories (55-60) gradually after 2006, and with accelerating pace after 2011. As one moves towards 2026, the base of the pyramid behind them begins to look more and more like an inverted apex, albeit somewhat shallow. By 2026, there is little semblance of a pyramid actually left.

Hamilton's baby-boomers are then between the ages of 60 and 75. Undoubtedly most of them will have exited the labour force and will be enjoying retirement.

Further examination of Chart 1-3 produces other interesting findings. First, relative to earlier years, Hamilton's population is ageing more quickly. And while its 65 and older population is becoming decidedly more female, male population growth rates have now nearly caught up to those of females for age categories right up to the age of 85 – again a testimony to continuing improvements in life-spans.

Probably the most striking feature of Chart 1-3 is its inference of a continuation of the ageing process for at least 30 years beyond 2026. All the age cohorts below 30 years of age are considerably smaller than cohorts between 30 and 70 years of age. Moreover, the base age cohort, the 0-4 year-olds, has shrunk continuously relative to its predecessor generation, for nearly all of the 30 previous years. Therefore, even factoring in normal death rates, the size of the current 30-65 year-old group will still dwarf the current 0-30 year-old group as they both move forward. And if the current trend of an ever shrinking 0-4 year-old base continues past 2026, then the ageing of Hamilton's population will continue for at least 30 years and more beyond 2026.

Together, the population trends observed thus far imply enormous changes for Hamilton's economy, its society, and certainly its labour force. Some of those changes are already underway. More...many more, will follow.

The next section will examine the labour force implications of an ageing population in more detail. But first there are a number of other population characteristics worth examining.

As most people are aware, The New City of Hamilton represents the amalgamation of six formerly independent municipalities, each of which had its own population growth characteristics. Merging the six entities into one is unlikely to significantly alter individual, historical growth patterns, even though the importance of comparative

differences is likely to diminish over time. Furthermore, time series data which would allow for such comparisons will disappear as reporting systems, such as the Canada Census adjust to the new geographic definitions for Hamilton. For a number of planning purposes though, it is still important to be aware of age composition and population growth differences among Hamilton's former geographic components – Ancaster, Dundas, Flamborough, Glanbrook, the old Hamilton city, and Stoney Creek. Table 1 below sketches the basic age distribution as it existed in 1996 when the six municipalities still comprised the Regional Municipality of Hamilton-Wentworth.⁴

Table 1

Percentage Distribution of Population by Aggregate Age Groups for the Former Regional Municipality of Hamilton-Wentworth and its Municipal Components - 1996							
Age Groups	Hamilton-Wentworth	Ancaster	Dundas	Flamborough	Glanbrook	Hamilton	Stoney Creek
0-14	20.0%	22.9%	19.4%	23.6%	21.5%	19.2%	21.2%
15-24	12.9%	13.3%	11.7%	11.8%	12.6%	13.0%	13.3%
25-44	31.6%	26.2%	29.0%	32.1%	28.8%	32.3%	31.4%
45-64	21.4%	25.6%	22.9%	23.0%	25.4%	20.5%	22.6%
65+	14.2%	12.1%	17.0%	9.6%	11.7%	15.1%	11.5%

Source: Statistics Canada Census Series

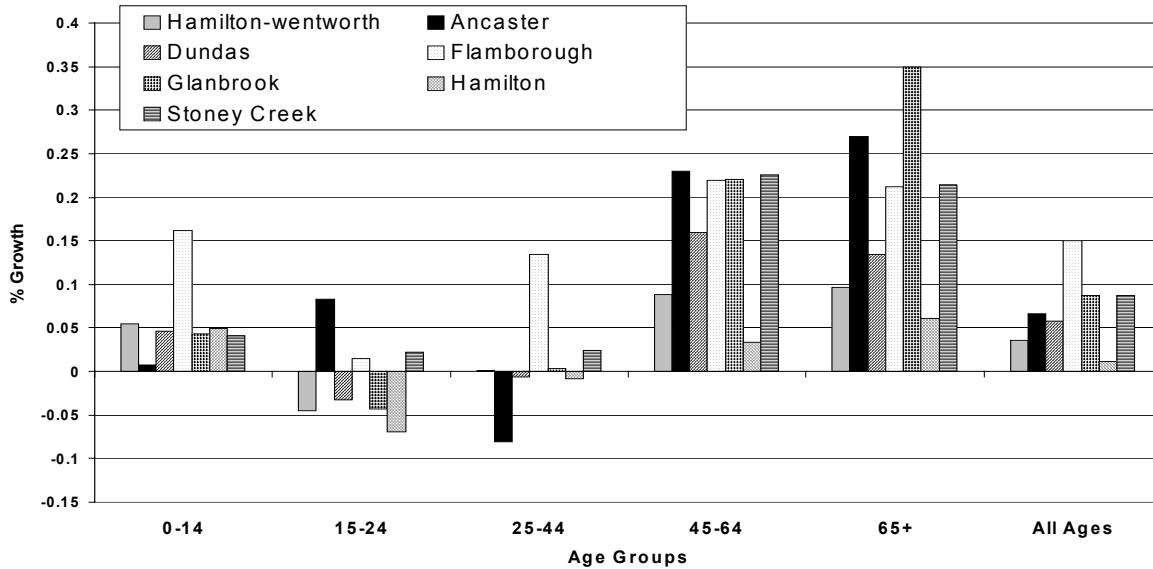
The data in Table 1 indicates that the six municipalities that now constitute The New City of Hamilton, are remarkably homogeneous, at least with respect to age composition. For nearly every age group the percentage shares lay within a very narrow band. The only notable exception is for the 65 years of age and older group. The municipality with the highest percentage of its population in this age group, Dundas, has nearly double the percentage of Flamborough, which has the lowest percentage. There is also significant variation among the remaining four municipalities.

Chart 1-4 below, examines the same data from a different perspective. It measures the percentage change between 1991 and 1996 for the same age categories as displayed in Table 1.

⁴ Until detailed population data from the 2001 Census becomes available later this year, the 1996 Census data remains the only accurate source of sub-municipal age-group information. Due to amalgamation, future Census are unlikely to provide the same geographical aggregations as have been produced historically, thereby making long-range time series analysis more difficult.

Chart 1-4

Growth in Population Age Groups for Hamilton-Wentworth and its Component Cities 1991-1996



Source: Statistics Canada Census Series

Even though the time period is somewhat limited, Chart 1-4 suggests a high probability that, from an age distribution perspective, Hamilton's communities will be less homogeneous in the future than they are today.

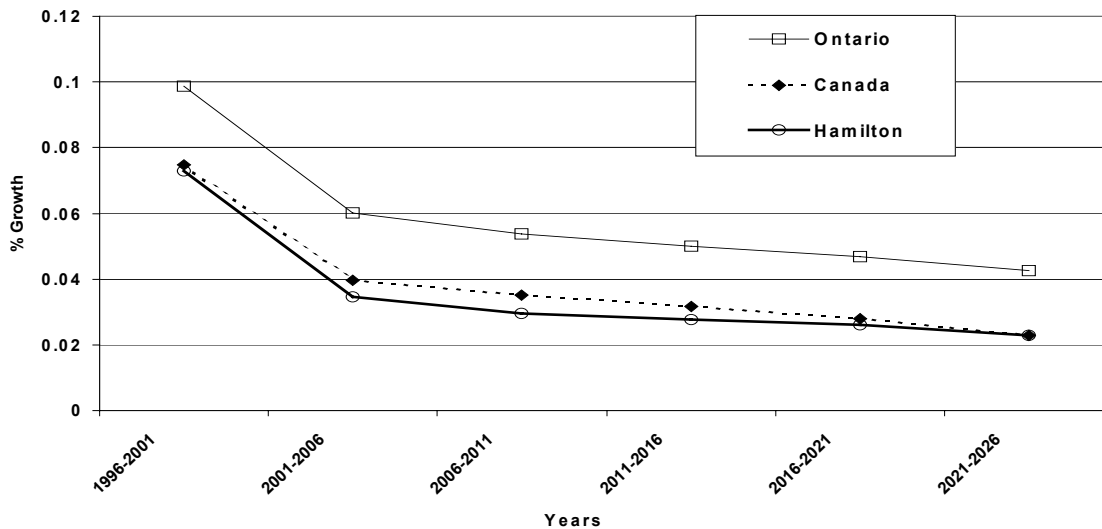
Without highlighting a myriad of examples, a cursory scan of the chart by the reader will reveal substantial differences in growth rates among the six component municipalities as well as within specific age categories. This degree of variation, if maintained over another decade, is bound to create more age diversity among Hamilton's communities than currently exists. While such an event can hardly be classified as a "good" or a "bad" development, it has major ramifications for municipal planning purposes, e.g. transportation needs, educational facilities, land zoning...just to name a few considerations. Because of the current paucity of detailed age data at the sub-municipal level, planners will have to wait another decade to establish definitive trends.

From a labour market planning perspective, the differences that may exist between Hamilton's, Ontario's and Canada's populations are probably more important than the differences in population characteristics among its own geographic units. Significant variation in population growth rates, migration rates and immigration rates all afford Hamilton opportunities to improve its own performance vis-a-vis Ontario and Canada.

Chart 1-5 traces the growth of population for Hamilton, Ontario and Canada between 1996 and 2026.

Chart 1-5

**Comparison of Population Growth Rates for Canada, Ontario and Hamilton
1996 to 2026**

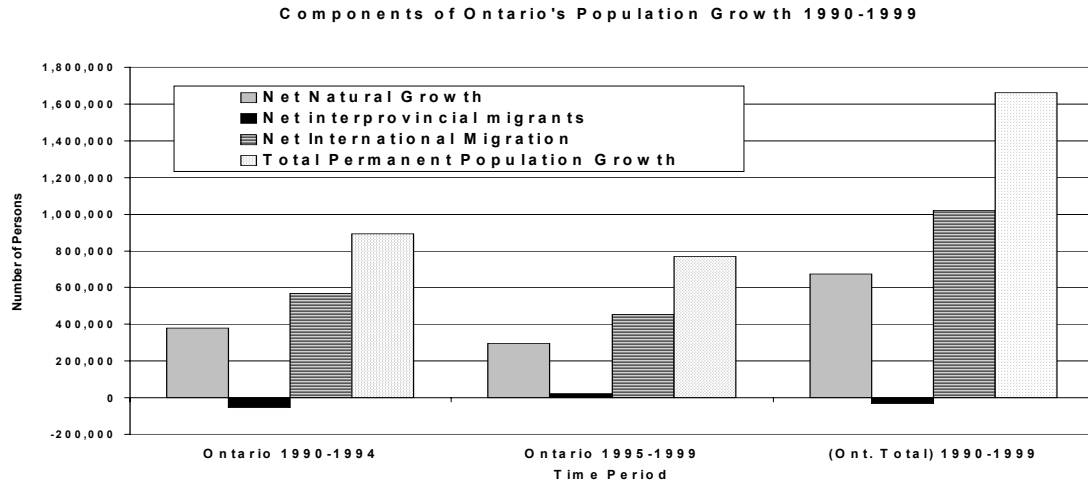


Source: Ontario Ministry of Finance

All three jurisdictions experience a steep drop in population growth between 2001 and 2006, and a continuing, but more gradual decline in growth rates over the remainder of the forecast period. Because Ontario maintains a consistently higher growth rate than Hamilton for all of the forecast period, despite the parallel direction of their decline, labour supply in the rest of the province could offer Hamilton employers better prospects than will be available locally. Canadian population growth rates suggest that labour supply conditions will be generally as tight nationally as they will be locally.

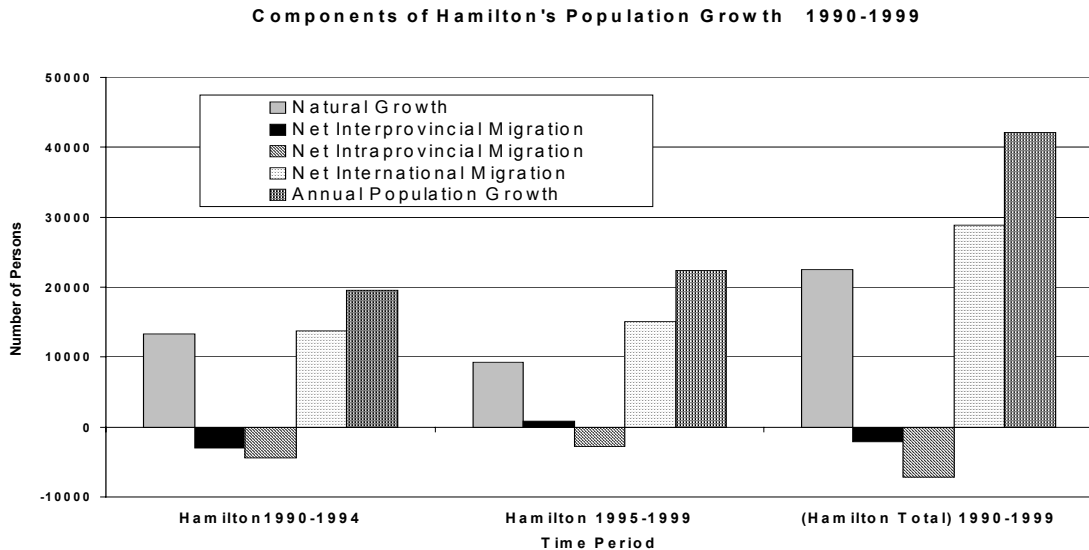
Charts 1-6 and 1-7 trace the sources of Ontario's and Hamilton's population growth over the decade of the 1990's.

Chart 1-6



Source: Statistics Canada – Special Tabulations – Small Area Data Division

Chart 1-7



Source: Statistics Canada – Special Tabulations – Small Area Data Division

The most striking feature of both Charts is the dominant contribution immigration made to both Ontario's and Hamilton's growth during the 90's. Its importance to Hamilton was particularly large, accounting for nearly three-quarters of the city's net-gain in population between 1990 and 1999. With current birth rates languishing in the 1.5 live births per female lifetime in Canada, immigration's dominance will likely continue to increase and

within one or two decades may well be the only source of population growth in Hamilton and Canada.

The purpose of breaking the data out into two 5-year periods rather than combining them into a single 10-year period was to clarify trends in the factors driving population growth. For both Ontario and Hamilton, net inter-provincial migration was negative for the first-half of the decade but became positive over the second-half. So both jurisdictions swung from being net-losers of population to the rest of Canada to becoming net-gainers. As labour shortages develop and competition for workers becomes more intense over the next couple of decades, inter-provincial movements are likely to assume far greater importance for every municipality in Canada. It goes without saying that there will be "winners" and "losers". Hamilton wants to make sure its policies maintain and accelerate the swing in momentum evident in Chart 1-7.

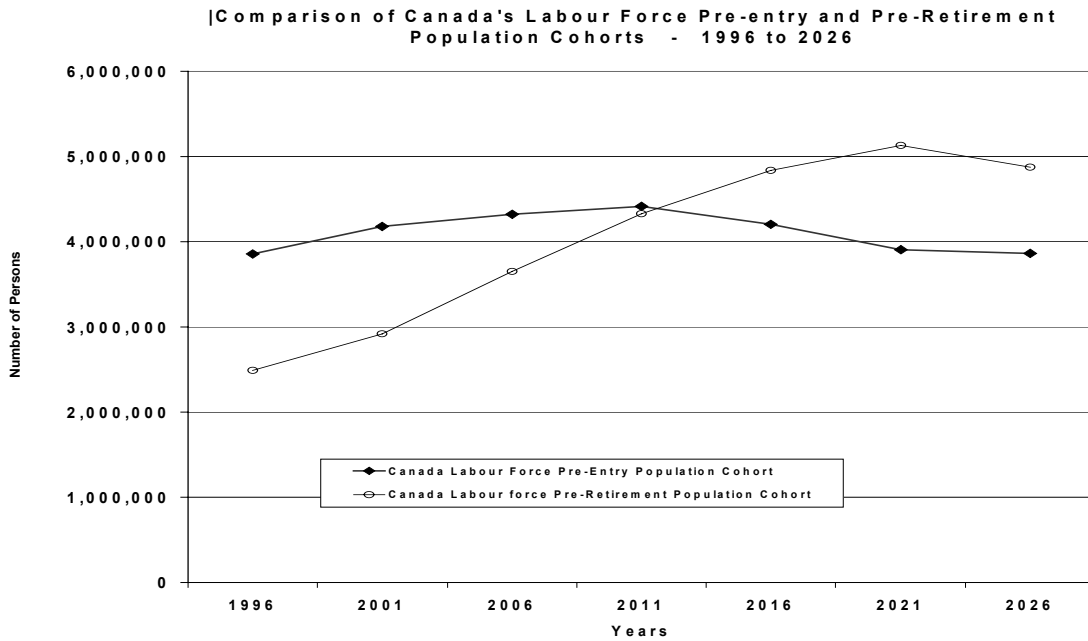
Chart 1-7 also reveals an improvement in net intra-provincial⁵ population movements for Hamilton over the second-half of the 1990's. Unfortunately, the improvement was insufficient to turn Hamilton from a "net-loser" to a "net-gainer". For the whole of the decade of the 1990's, more people left Hamilton for elsewhere in Ontario than came the other way.⁶ Hamilton needs to accelerate the improving trend, and quickly. A later section of this report will explore migration trends and characteristics in more detail.

From a future labour force perspective, there are two population cohorts that have particular importance, the 15-24 year age group and the 55-64 year age group. Their importance derives from the fact that they represent the "pre-entry" and "pre-retirement" components of the labour force, respectively. Charts 1-8, 1-9 and 1-10 trace the trends for these two population groups in Canada, Ontario and Hamilton between 1996 and 2026.

⁵ Intra-provincial being movements of persons within the province of Ontario

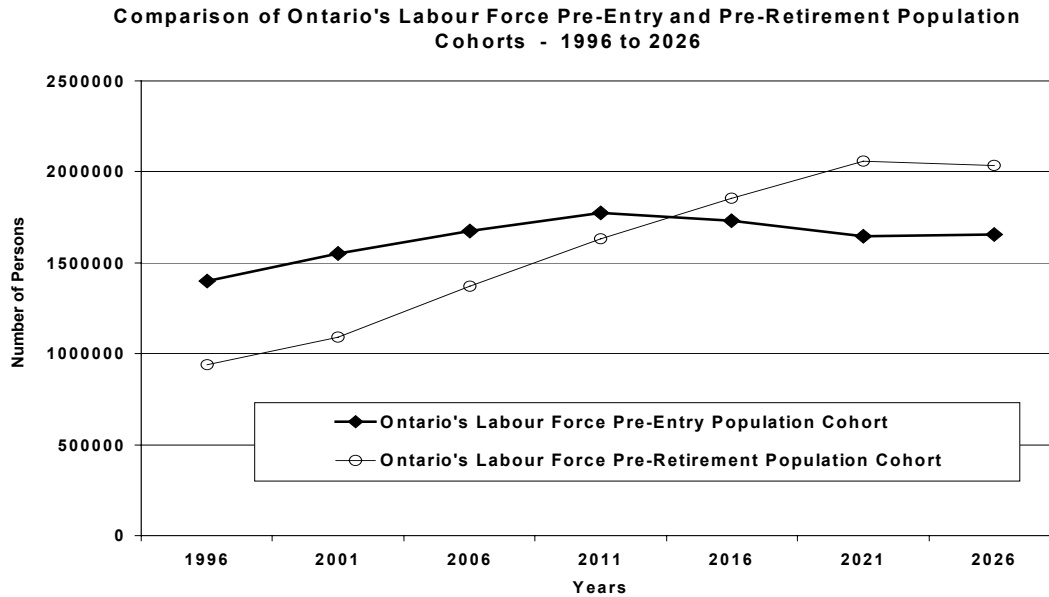
⁶ Because of their importance, migration flows will be covered in greater detail in a later section.

Chart 1-8



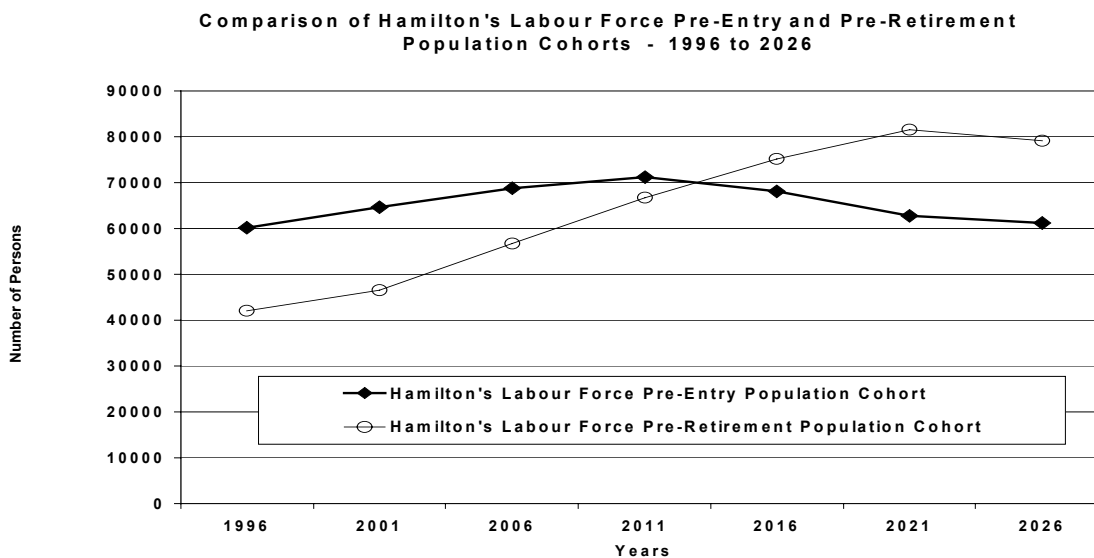
Source: Ontario Ministry of Finance

Chart 1-9



Source: Ontario Ministry of Finance

Chart 1-10



Source: Ontario Ministry of Finance

The data indicates that a cross-over point will occur between 2011 and 2016 for all three jurisdictions, Canada, Ontario and Hamilton. At that point, the absolute size of the 55-64 year old age cohort will exceed the absolute size of the 15-24 year old age cohort. We can therefore conclude that in Canada's case, the number of persons retiring from the labour force will exceed the number coming in to replace them for the first time shortly after 2011. (We know with relative certainty from labour force participation rate data, that nearly all 55-64 year olds retire by the time they reach 65 and that nearly all 15-24 year olds will enter the labour force within ten years of reaching their 15th birthday.) For Hamilton, the crossover occurs late in 2012 and for Ontario it occurs midway through 2013. Of course, labour market tightness will occur years before the actual cross-overs take place because of the geographic and skill mismatch between labour demand and labour supply that has been a permanent feature of our economy.

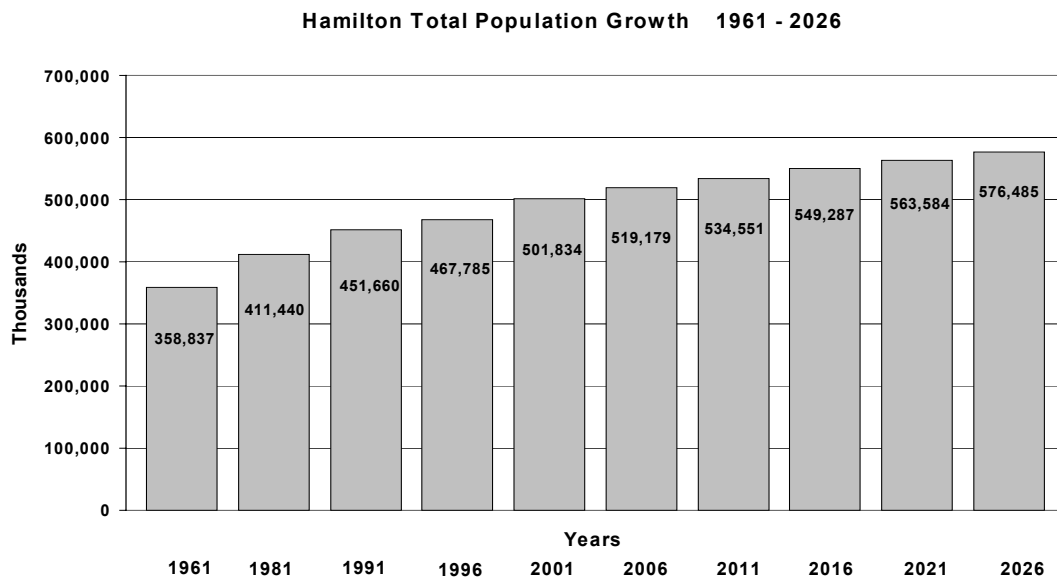
In addition to signaling when the cross-over will occur, Charts 1-8, 1-9 and 1-10 all indicate that the gap between the "pre-entry" and "pre-retirement" population cohorts will continue to widen right out to 2021. In Hamilton's situation, the gap then remains constant out to the end of our forecast period, 2026. For Canada and Ontario it shows signs of beginning to gradually diminish by 2026. The evidence clearly points to a long-

term structural, age imbalance in Hamilton's, Ontario's and Canada's populations. The phenomenon is not cyclical and will require massive and continuous labour market adjustments well out into the new century.

Prior to moving on to a more detailed examination of the labour market effects implicit in the population numbers, a final table and chart summarize the data discussed earlier.

Chart 1-11 traces Hamilton's population growth from 1961 through to 2026, while Table 2 provides actual numbers, showing detailed age groups.

Chart 1-11



Source: Statistics Canada Census Series & Ontario Ministry of Finance

Based on the height of the bars in Chart 1-11, it is evident that Hamilton's population growth begins to decelerate rapidly after 2011. Plotting Ontario's and Canada's populations would show similar patterns of slowing. Even substantial immigration inflows may be insufficient to prevent Canada's population from slipping below zero growth by mid-century. Again, the labour market implications are significant. The next section examines what some of those impacts are likely to be.

Table 2

Population Growth for Hamilton - Actuals 1961-1996 and Projections 2001-2026									
Age Group	1961	1981	1996	2001	2006	2011	2016	2021	2026
0-4	41,790	26,565	30900	28,124	26,556	26,586	27,301	28,116	28,177
5-9	37,680	27,320	31715	32,909	29,207	27,597	27,625	28,336	29,140
10-14	32,774	30,935	30875	33,540	34,006	30,291	28,683	28,710	29,415
15-19	23,931	37,715	29210	32,687	34,746	35,212	31,505	29,902	29,928
20-24	21,271	38,960	30990	31,943	34,033	36,063	36,529	32,827	31,217
25-29	24,228	34,590	33575	34,621	33,492	35,487	37,508	37,967	34,254
30-34	27,678	31,875	39365	36,691	36,307	35,107	37,094	39,106	39,550
35-39	29,270	25,415	39345	42,387	37,853	37,430	36,236	38,219	40,218
40-44	23,635	22,300	35520	41,383	43,082	38,574	38,171	36,998	38,980
45-49	21,346	22,595	32565	36,721	41,522	43,221	38,789	38,417	37,272
50-54	18,182	24,420	25305	32,708	36,356	41,114	42,837	38,513	38,182
55-59	15,181	24,760	21550	25,336	32,077	35,698	40,407	42,157	37,986
60-64	12,798	18,565	20595	21,199	24,578	31,111	34,697	39,319	41,091
65-69	10,403	15,860	20545	19,517	20,061	23,300	29,533	33,047	37,518
70-74	8,454	12,050	19115	18,462	17,591	18,181	21,222	27,005	30,385
75-79	5,717	8,525	12415	16,281	15,538	14,922	15,561	18,304	23,442
80-84	2,876	5,220	8160	9,614	12,386	11,958	11,615	12,264	14,584
85+	1,623	3,770	6040	7,711	9,788	12,698	13,974	14,377	15,146
Totals	358,837	411,440	467,785	501,834	519,179	534,551	549,287	563,584	576,485

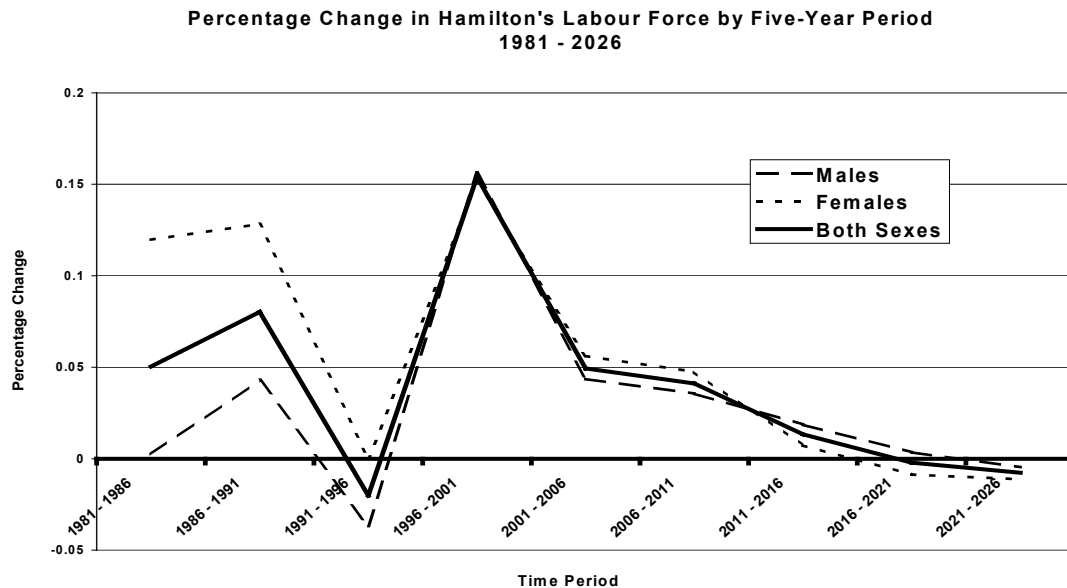
Source: Statistics Canada Census Series & Ontario Ministry of Finance

Hamilton's Labour Force

Coverage by Statistics Canada's monthly Labour Force Survey, Canada's most comprehensive source of labour market information, treats all the communities of the Hamilton Census Metropolitan Area (CMA)⁷ as a singular unit. And the Census, which provides information specific to Hamilton itself, does so only every five years – the most recent data being from 1996. Consequently, generating 25-projections for Hamilton proved to be a fairly convoluted process. The reader is directed to the *Methodology* section at the end of this paper for a detailed explanation of the statistical techniques employed in producing the data underlying the graphs and tables of this section. Suffice it to say that the population projections discussed in the previous section drive the forecasts prepared for this study.

Our first chart, Chart 2-1, provides a visual summary of Hamilton's labour force growth rates between 1981 and 2026 by 5-year periods.

Chart 2-1



Source: Statistics Canada Census Series & e-Economics Consulting

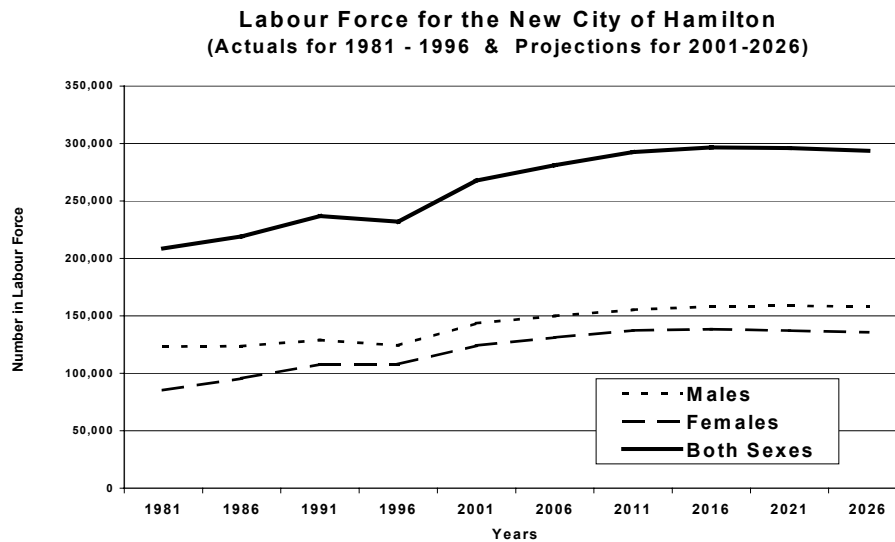
⁷ The CMA geographic reporting unit encompasses the New City of Hamilton plus Burlington and Grimsby.

The chart reveals that the wide gap in male and female labour force growth rates, clearly visible in 1981, had virtually disappeared by 2001. There is very little difference in their respective rates of growth for the remainder of the projection period. A second notable feature of Hamilton's labour force growth rates is the steep decline expected between 2001 and 2006 as the last large wave of the baby-boomers own children move into the labour force. The decline continues, but at a more gradual pace for the remainder of our forecast period. According to the trend line, Hamilton's labour force actually begins to shrink shortly before 2021.

The precipitous drop in labour force growth rates evident for the 1991 to 1996 period, parallels similar drops for Ontario and Canada and resulted from the depressing effects of the 1991-1992 recession. During that period, many workers took early retirement, others became discouraged and withdrew from the labour force, and still others, mainly young persons, either stayed in school longer or returned to school to await a better job market.

The next series of charts and a summary table translate the growth rates shown in the previous chart, into actual labour force numbers.

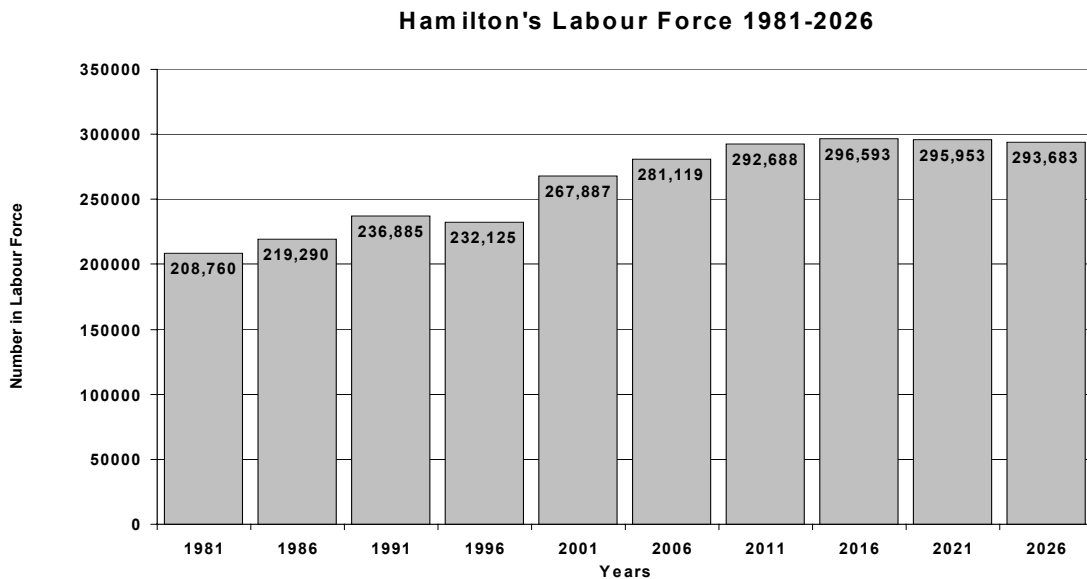
Chart 2-2



Source: Statistics Canada Census Series & e-Economics Consulting

Chart 2-2 reflects the patterns seen in the first chart tracking labour force growth rates. Total labour force grows strongly from 1981 through to 2006, with the exception of the recessionary 1991-1996 period. Likewise, the female labour force grows closer in size to the male labour force between 1981 and 1996 and parallels its growth thereafter. The dramatic slowing of labour force growth after 2006 and the complete cessation of growth by the 2016-2021 period is clearly demarcated by the long-term trend line. Although the decline in labour force size after 2021 is barely perceptible in the trend line, it becomes more evident in Chart 2-3 below which provides the actual numbers of labour force by age for Hamilton over the full projection period.

Chart 2-3



Source: Statistics Canada Census Series & e-Economics Consulting

According to Chart 2-3, Hamilton's labour force which began the new century at nearly 268,000 workers, reaches a peak of 296,593 in 2016 and declines slightly to 293,683 by 2026. To really appreciate the dramatic slowdown in labour force growth induced by the "bust" in birth rates after 1965, one only needs to look at the absolute gains in labour force size for the 20 years between 1981 and 2001, and compare them to the experience of the next 25 years through to 2026. The labour force grew by nearly 60,000 in the first 20-year period versus an expected growth of only 26,000 over the next 25-year period.

And the longer-term prognosis beyond 2026 is for continued stagnation or decline in labour force growth well out towards the middle of the century. "Crisis" may be considered too strong a word to describe this abrupt reversal in trends, but it is difficult to think of a more apt one.

Table 2-1 below presents age detail for Hamilton's labour force between 2001 and 2026.

Table 2-

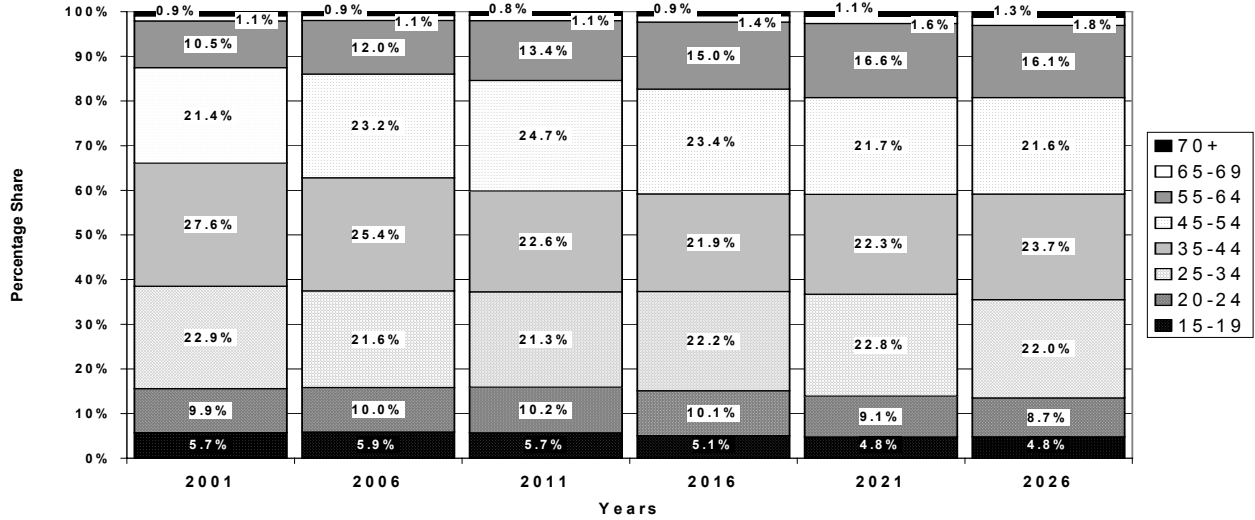
Labour Force For the New City of Hamilton by Age Group and Sex										
Projections for 2001 - 2026										
Sex	Year	15-19	20-24	25-34	35-44	45-54	55-64	65-69	70+	Totals
Males	2001	8,225	14,201	32,922	39,614	30,687	15,043	1,637	1,351	143,681
	2006	8,798	14,972	32,402	38,017	34,796	18,007	1,609	1,342	149,942
	2011	8,860	15,867	33,141	35,083	38,406	20,832	1,781	1,311	155,281
	2016	8,002	15,977	35,074	34,634	37,071	23,755	2,233	1,440	158,185
	2021	7,602	14,480	36,245	35,460	34,454	26,336	2,482	1,689	158,748
	2026	7,602	13,779	34,733	37,398	34,092	25,512	2,921	1,979	158,016
Females	2001	7,836	12,524	28,940	34,012	28,392	10,799	944	761	124,206
	2006	8,274	13,476	28,325	33,469	32,401	13,592	884	755	131,177
	2011	8,443	14,431	28,539	32,619	35,318	16,392	935	731	137,407
	2016	7,479	14,710	30,113	31,670	34,279	18,182	1,196	780	138,408
	2021	7,091	13,102	31,102	31,601	32,761	19,313	1,347	889	137,205
	2026	7,103	12,450	29,760	33,217	31,852	18,780	1,479	1,025	135,666
Both Sexes	2001	16,061	26,725	61,862	73,626	59,078	25,842	2,581	2,111	267,887
	2006	17,073	28,448	60,727	71,486	67,197	31,599	2,493	2,097	281,119
	2011	17,302	30,299	61,680	67,702	73,724	37,223	2,715	2,042	292,688
	2016	15,480	30,687	65,187	66,303	71,350	41,937	3,429	2,219	296,593
	2021	14,692	27,581	67,348	67,061	67,215	45,649	3,828	2,578	295,953
	2026	14,705	26,229	64,493	70,615	65,944	44,292	4,401	3,004	293,683

Source: e-Economics Consulting

Because its difficult to immediately discern age patterns by scanning columns and rows of numbers, the data in Table 2-1 has been graphed as bar charts in the two figures that follow.

Chart 2-4

Distribution of Hamilton Male Labour force by Age Groups 2001-2026

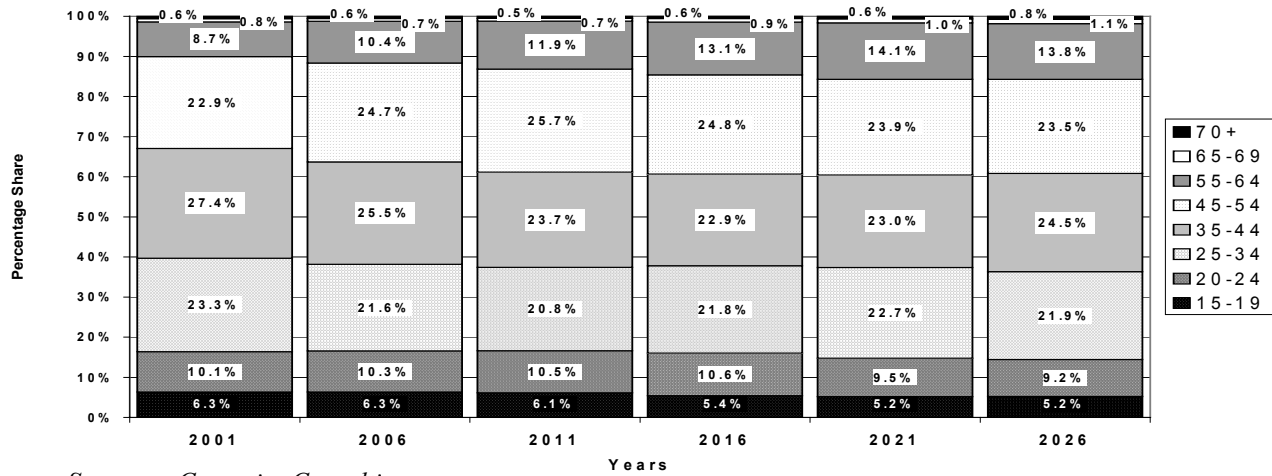


Source: e-Conomics Consulting

Charts 2-4 and 2-5 indicate the gradual ageing of both Hamilton's male and female labour forces, respectively. Proportionally, the largest swings in shares occurs among the 55-64 and 65-69 year age groups, both of which grow significantly over the 25 year forecast period. Although the movement is less dramatic, all the age categories under 45 years of age suffer drops in their shares of the labour force.

Chart 2-5

Distribution of Hamilton Female Labour force by Age Groups 2001-2026

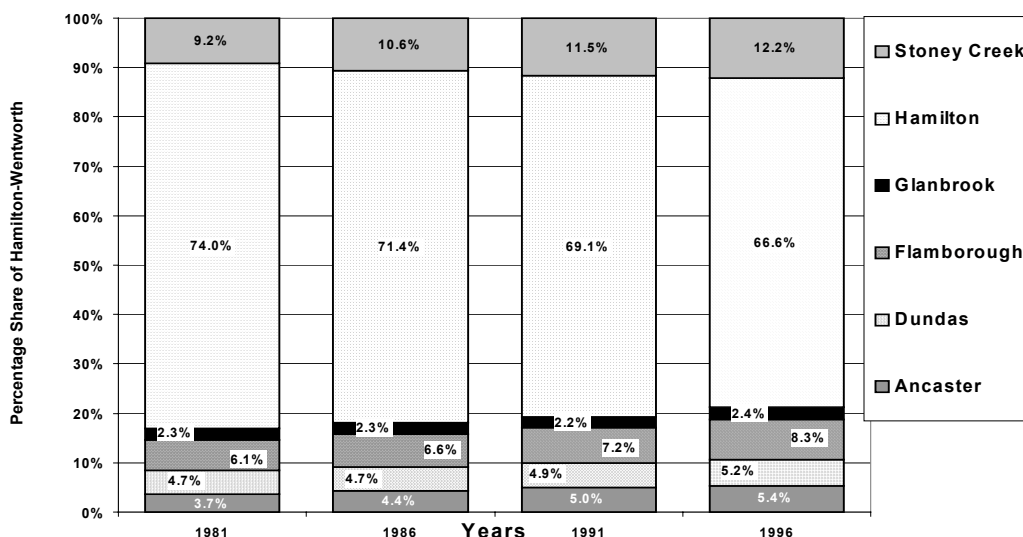


Source: e-Conomics Consulting

While it would help for planning purposes to have a better understanding of labour force trends within the constituent communities of Hamilton, the margin of error that would be introduced into our data by trying to generate projections at the sub-municipal level, would be so high as to render the information nearly useless for analytical purposes. An alternative would be to analyze existing Census sub-municipal data under the reasonable supposition that long-term trends are unlikely to deviate substantially over the immediate future. Chart 2-6 attributes percentage shares of Hamilton's labour force among its constituent communities for the period 1981 to 1996 as derived from Census information.

Chart 2-6

Labour Force Percentage Shares for Municipal Components of Hamilton-Wentworth 1981-1996



Source: Statistics Canada Census Series

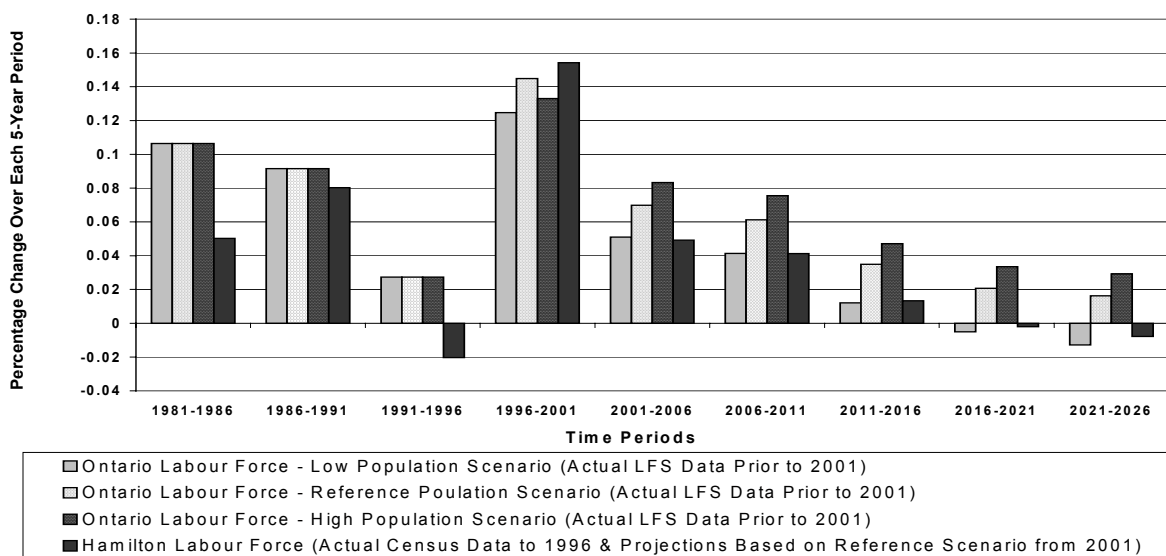
Although the shifts are more gradual than sudden or dramatic, the data in Chart 2-6 indicate some clear trends. The most significant is that the old city of Hamilton's share of the new city's total labour force is gradually shrinking relative to the periphery communities, all of which are gaining share. But it still dominates with nearly two-thirds of the city's total labour force. In proportional terms, the community with the fastest growing labour force is Ancaster, which shows a growth of nearly 46% in its share of the city's total labour force. That still only amounts to 5.4% of the labour force though by 1996. Flamborough and Stoney Creek are the next two fastest growing communities at 36% and 33% growth, respectively between 1981 and 1996.

So far this study has focused exclusively on Hamilton's internal labour force. There is important information to be gleaned by looking externally as well. In particular, provincial level developments and trends offer additional opportunities for increasing Hamilton's labour supply. They are also the source of pressures that could thwart Hamilton's progress. Chart 2-7 compares Hamilton's expected labour force growth with Ontario's.

Three Ontario labour force projections are presented. Each is dependent upon a specific population growth scenario⁸. Unless otherwise noted though, the "reference" population scenario is the basis for all the Hamilton and Ontario labour force projections discussed in this paper. It is based on the most likely trends for such key variables as fertility, migration and mortality rates. However, so that the reader is aware of the range of labour force growth possibilities should key variables deviate from anticipated trends, Chart 2-7 also presents an Ontario labour force growth forecast based on a population projection where key variables fall short of anticipated trends (the "low" scenario), and one where key variables perform above anticipated trend (the "high" scenario).

Chart 2-7

**Comparison of Hamilton and Ontario Labour Force Growth
(Actual to 2001 and Projected from 2001)**



Source: Statistics Canada Census Series & e-Conomics Consulting

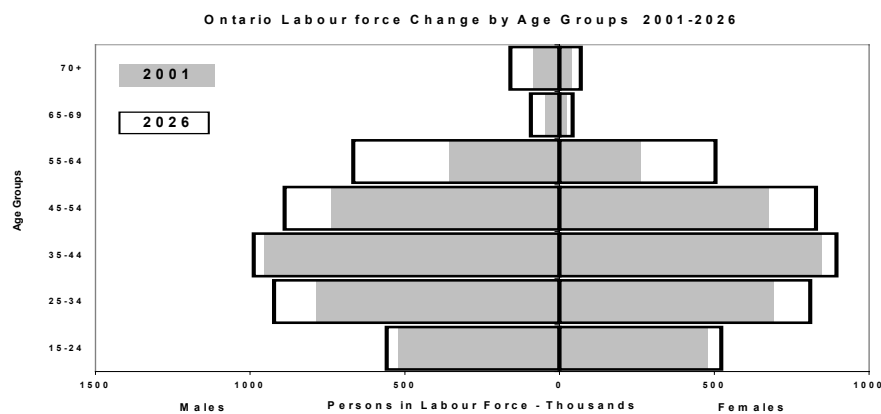
⁸ A detailed explanation of the three population growth scenarios, low, reference and high can be found in the **Methodology** section at the end of this report.

Based on the Ontario "reference" projection, there is only one time period over the whole of the forecast period where Hamilton's labour force growth rate is higher than the province's, and that is for the period just past, 1996-2001. For all other periods, Hamilton's labour force grows considerably slower than for the province as a whole⁹. After 2001, even Ontario's "low" growth scenario produces labour force growth rates comparable to Hamilton's for every time period except 2016-2021 and 2021-2026. For the latter two periods, the provincial rate of growth, like Hamilton's, drops into negative territory.

Looking at the period prior to 2001 and comparing it with the forecast to 2026 leaves little doubt that strong labour force growth will soon be an historic memory. Hamilton's and Ontario's employers will have to learn to cope with unprecedented labour supply shortages for decades to come. Chart 2-7 does suggest that the pickings will be somewhat easier in the rest of Ontario than in Hamilton.

Because this whole study is about looming labour shortages, the extent of the changes Hamilton's labour force is undergoing are worth one last look. The next series of charts presents some of the earlier comparative data as bar charts, somewhat akin to the population pyramids seen in the previous section. These images confirm the pivotal role the baby-boom and baby-bust play in the evolving labour market shortages. They also bring the magnitude of the shift into dramatic focus.

Chart 2-8

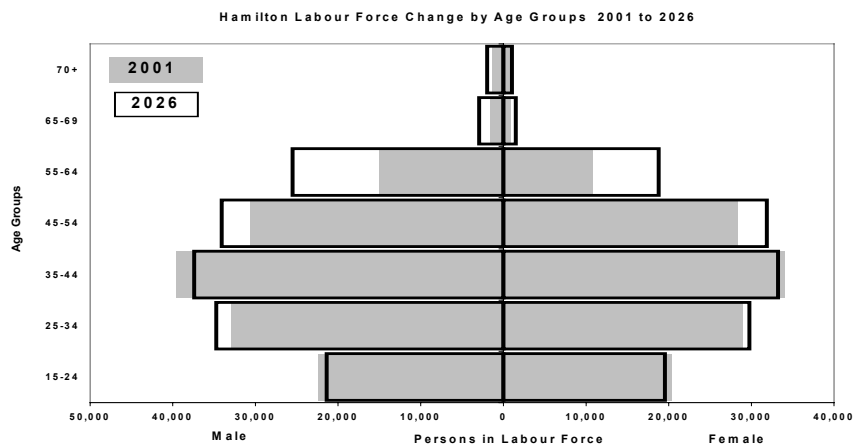


Source: e-Economics Consulting

⁹ This result is consistent with Hamilton's older age profile as compared to Ontario. The factors producing that profile will become clearer in the next section which looks at migration trends.

Chart 2-8 tracks the total changes in Ontario's male and female labour force between 2001 and 2026. The dramatic aging of Ontario's labour force is plainly evident. Likewise, comparing the "pre-entry" (15-24) and "pre-retirement" (55-64) cohorts provides visual confirmation that retirees will exceed new workers by 2026, particularly for males. One trend the chart shows that was not as apparent in earlier figures, is the slight growth in the 15-24 age cohort over the 25 year period. Clearly their percentage share of the total labour force has fallen, but nevertheless, there are still slightly more workers in this age category in 2026 than there were in 2001. The small gain, as will be shown in a later section, is entirely due to immigration.

Chart 2-9

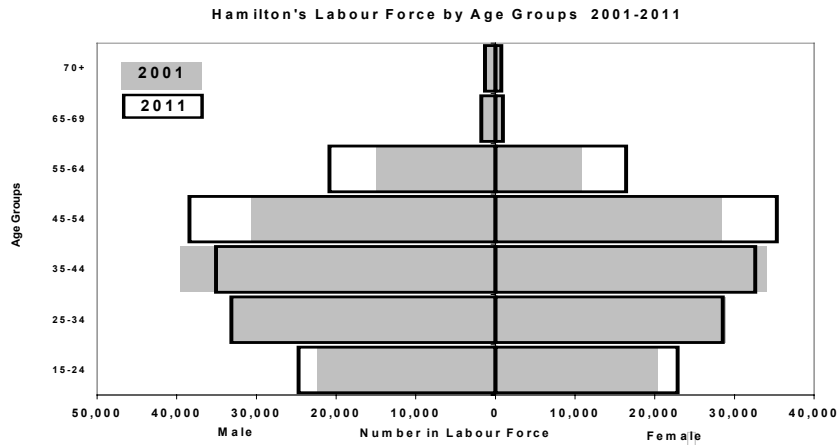


Source: e-Economics Consulting

The patterns for Hamilton's labour force between 2001 and 2026, as shown in Chart 2-9, are very similar to those seen for Ontario in the previous chart. The notable exceptions are the 15-24 and 35-44 age cohorts which, in contrast to Ontario's experience, actually shrink in Hamilton. This difference can be directly attributed to the fact that Hamilton's labour force actually begins to decline after 2016 while Ontario's continues to expand, albeit slowly. Chart 2-9 identifies within which age categories the shrinkage we saw in earlier data, actually occurs.

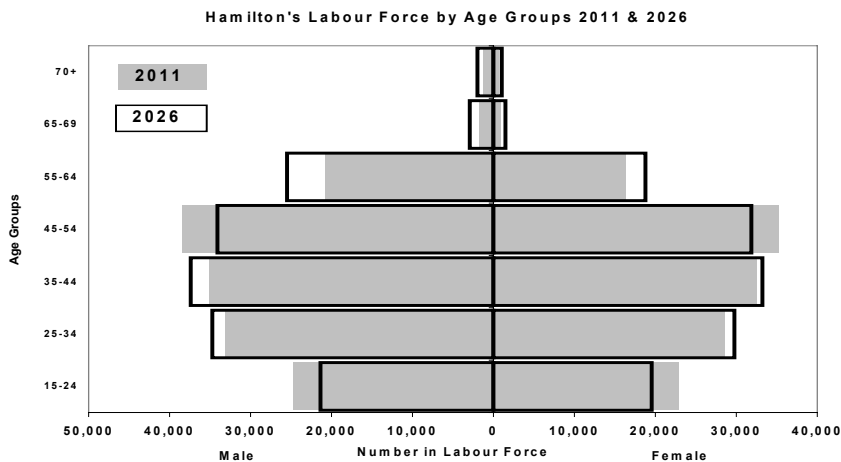
The final two charts, 2-10 and 2-11, slice the 25-year accounting of Chart 2-9 into a 10 and 15-year period, respectively. Doing so clarifies the momentum that is likely to shape trends beyond 2026.

Chart 2-10



Source: e-Economics Consulting

Chart 2-11



Source: e-Economics Consulting

The changes in Chart 2-10 when compared with those that occur in the following time period, as depicted in Chart 2-11, suggest that the ageing of Hamilton's labour force will continue well beyond 2026. The base of the pyramid which grew in the first time period, 2001-2011, shrunk during the later time period, 2011-2026. Furthermore, because of their relative size, all age cohorts above 35 years of age in 2026, will swell the ranks of successive age cohorts by 2036. For example, there will be more workers in the 45-54

age category in 2036 than there were in 2026 as the previous (and larger) 35-44 age cohort advances into the next category.

A striking feature of all four previous charts, is the fact that the female share of the labour force, while gaining on their male counterparts, remains considerably smaller throughout all of the forecast period.

There are three main conclusions to be drawn from the data analyzed in this section:

- 1) Hamilton's labour force growth will stall by 2016 and then gradually decline.
- 2) Hamilton's labour force will grow older rapidly over the next 25 years.
- 3) Labour supply will be tighter in Hamilton over the next 25 years than in the rest of Ontario.

Declining birth rates after 1965, retiring baby-boomers and population migration patterns, are the principal reasons for the trends noted. From a municipal policy perspective, there is not a great deal of opportunity to influence birth rates. There is potential however, to influence baby-boomer retirement rates and certainly, to modify migration patterns. The next section will examine migration trends for opportunities to improve Hamilton's labour supply potential over the next several decades.

Other Labour Force Characteristics

The previous section forecasted growth in Hamilton's labour supply out to 2026. This section examines some of the current characteristics of Hamilton's labour force.

The first table compares the education level of Hamilton's population of labour force age with Ontario's.

Table 3-1

Schooling Achievement for Hamilton compared to Ontario and Canada - 1996			
Highest level of schooling achieved for the population age 25 years and over	% Share		
	Hamilton-Wentworth	Ontario	Canada
Less than grade nine	13.6	11.7	13.8
With a high school certificate or higher	64.7	69.4	67.2
With trades or non-university certificate or diploma or higher	42.2	45.9	44.2
Have completed university	14.3	18.8	17.4

Source: Statistics Canada Census Series

Table 3-1 compares the educational achievement of Hamilton's adult population 25 years and older with that of their Ontario and Canadian peers. Although the differences aren't major, Hamilton shows weaker achievement at all education levels, especially as compared to Ontario. And the gap in Hamilton's performance worsens the higher the level of education achievement. If the totals shown were to be broken down by sex, the patterns would not change appreciably.

An important aspect of Hamilton's Economic Development Strategy is its focus on certain industry groups¹⁰, chosen because of their inherent strength within Hamilton's existing economic base and because of their long-term growth potential. The next series

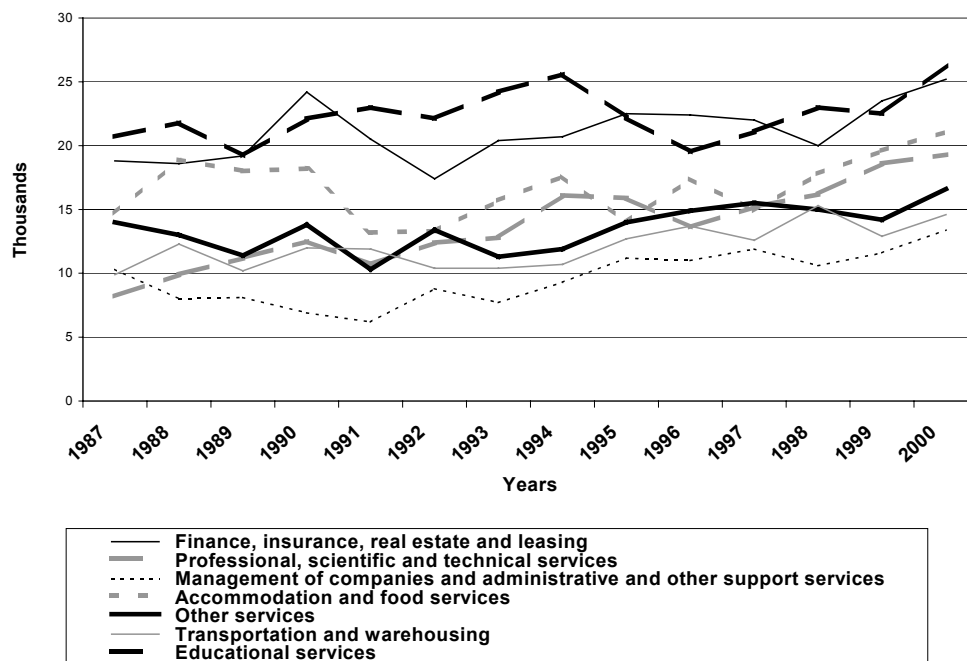
¹⁰ The six 'cluster' industry sectors are: 1) Industrial/Manufacturing/Port, 2) Agri-Business, 3) Airport, 4) Health and Biotechnology, 5) Information and Communication Technology, and 6) Film

of charts examines prevailing labour force trends by industry and by occupation to see if they are supportive of the city's strategic directions. The detailed industry and occupational data utilized is derived from Statistics Canada's Monthly Labour Force Survey. Unfortunately, the data applies to Hamilton CMA which includes the new city of Hamilton plus Burlington and Grimsby. The industry and occupational distributions could be a little skewed compared to coverage of Hamilton only. Nevertheless, Hamilton only data does not exist, and considering that Hamilton makes up nearly 75% of the CMA totals, it is reasonable to expect broad trends to be applicable.

The first series of three charts track employment for the major industry sectors between 1987 and 2000. The industries have been grouped according to common trends.

Chart 3-1

Employment by Industry for Hamilton CMA 1987 - 2000



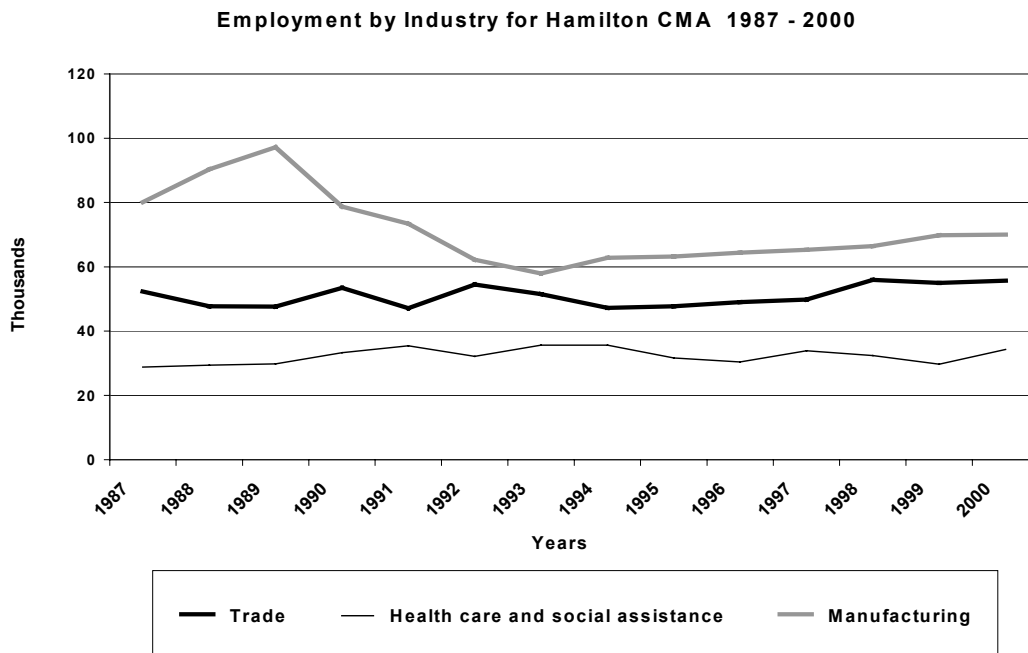
Source: Statistics Canada Labour Force Survey

All seven industry sectors in Chart 3-1 experienced strong employment growth over the latter part of the 1990's after earlier weakness. The trend lines also show that all seven sectors were hit hard by the 1991-1992 recession. Education and Professional, Scientific

and Technical Services also suffered a secondary decline during the middle years of the decade, primarily due to the significant downsizing that the federal and provincial governments implemented as part of their deficit reduction programs. Despite dips due to the 1991-1992 recession and mid-decade government cost-cutting, the long-term trend in employment growth for the Professional, Scientific and Technical Services is very strong and indicates progress in 'growing' the Health and Biotechnology 'cluster'.

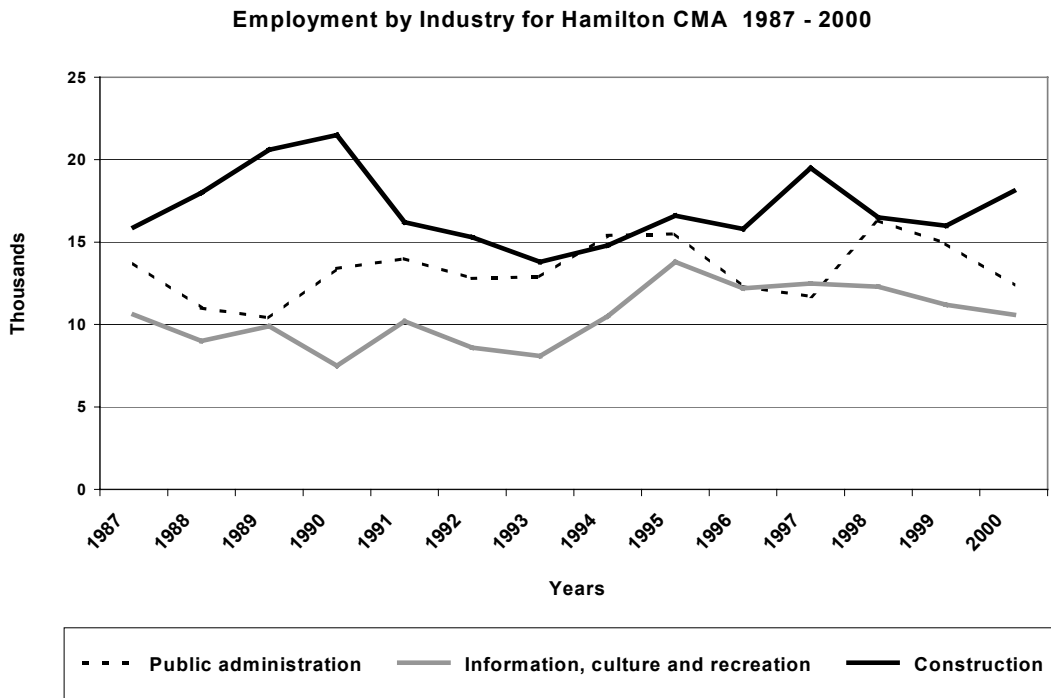
Employment in the Wholesale and Retail Trade and the Health Care and Social Assistance sectors is almost devoid of trend over the 13 years plotted in Chart 3-2. Manufacturing though, suffered a nearly 40% drop in employment between 1989 and 1993, and recovery has been very slow since. It is by far the largest single sector in Hamilton and figures prominently in Hamilton's economic development strategy. Based on current trends, it will be many years before this sector regains its 1989 employment peak. But at least, it appears that the restructuring phase is over and new growth sources are beginning to emerge.

Chart 3-2



Source: Statistics Canada Labour Force Survey

Chart 3-3

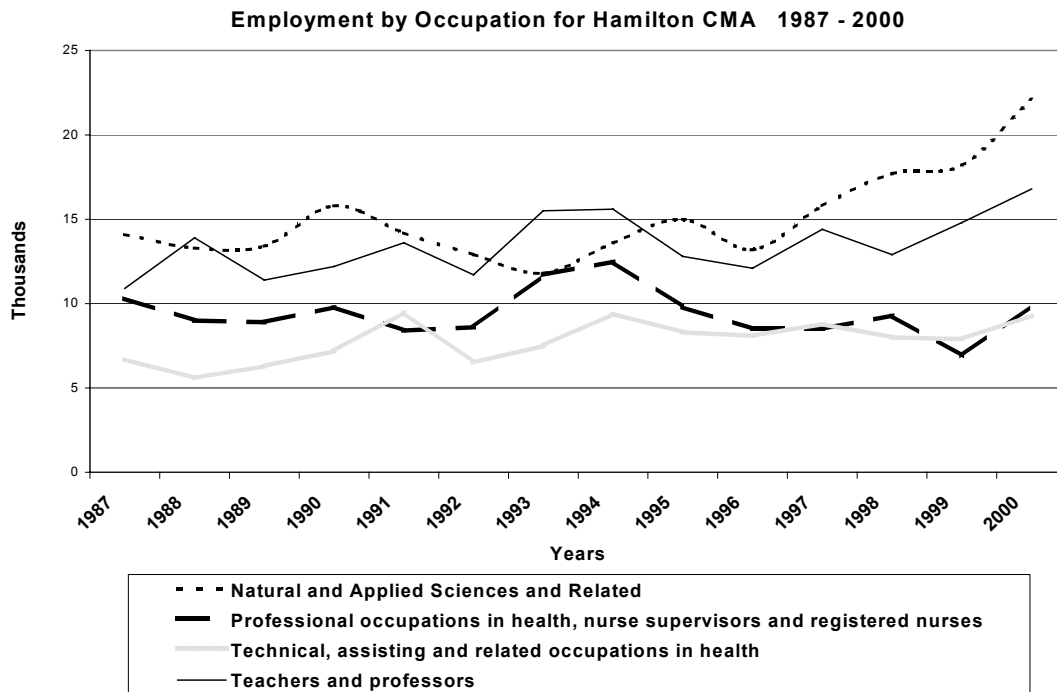


Source: Statistics Canada Labour Force Survey

Based on the full 13 years of data shown in Chart 3-3, none of the three sectors depicted exhibits much trend. However, two of the sectors, Public Administration and Information, Culture and Recreation were losing jobs (fairly rapidly in the case of Public Administration) during the last half of the 1990's. Not only has construction not shown much long-term trend, total employment by the end of the decade was still well below 1989's peak level of nearly 22,000.

The next three charts look at the same labour force data as the previous three charts, except from an occupation as opposed to an industry distribution. Not surprisingly, there is a close correspondence between the occupational growth trends and the industry trends as many occupations tend to be clustered in particular industries.

Chart 3-4



Source: Statistics Canada Labour Force Survey

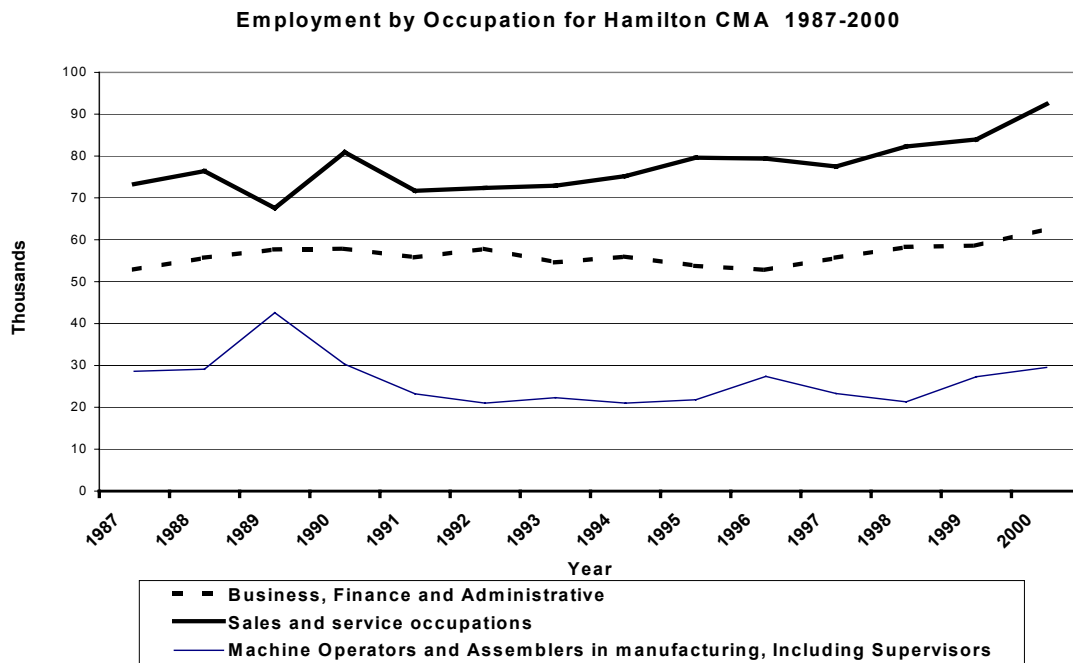
All the occupations in Chart 3-4 experienced strong growth towards the end of the 1990's. There was particularly strong growth among teachers, professors, and natural and applied science occupations. The latter occupations are especially significant in light of Hamilton's professed desire to foster economic growth in the Health and Biotechnology sector. While these occupations will support that thrust, the significant loss of health care professionals, including nurses is worrisome. There was some recovery evident by the end of the decade, but well below the peak year of 1994, just prior to the provincial funding cut-backs. The beginnings of today's shortages of nurses, doctors and other medical practitioners, are clearly seen in the trend lines of Chart 3-4.

The induced shortages apparent in Chart 3-4 reinforce the importance of long-range planning for human resource needs. Today's ageing population and their concomitant increased demands on the health care system, as well as a dramatic slowing in labour force growth due to plummeting birth rates, are all long-term, predictable, demographic phenomena. As a society we made decisions in the mid-1990's that exacerbated today's

human resource problems. This study identifies additional labour market imbalances that are equally predictable as those now affecting healthcare and education. Hamilton's ability to implement its industry "cluster" approach to economic growth is clearly linked to how effectively the community responds to the demographic changes documented in this study. Labour supply shortages over the next 20 years will be more severe, more prolonged, and much more broadly-based than those currently affecting Hamilton's economy and social systems.

In numerical terms, the occupations shown in Chart 3-5 are the most important in Hamilton. Of the three, only Sales and Service occupations is showing a long-term positive growth trend. The other two are essentially stagnant, with Machine Operators and Assemblers hovering nearly 25% below their peak employment levels of 1989. The latter occupations are highly concentrated in one of the 'clusters' Hamilton had identified as part of its preferred growth strategy. On a positive note, all three occupations were showing signs of revival at the end of the decade.

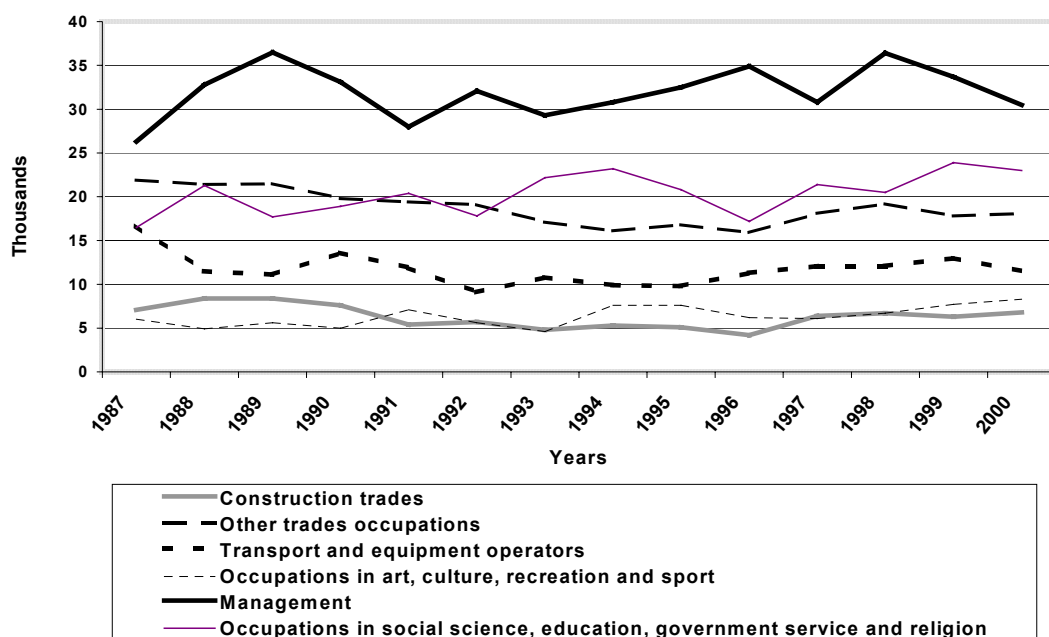
Chart 3-5



Source: Statistics Canada Labour Force Survey

Chart 3-6

Employment by Occupation for Hamilton CMA 1987 - 2000



Source: Statistics Canada Labour Force Survey

The occupations grouped together in Chart 3-6 show very weak long-term trends, with the exception of Management. The latter, although it appears to be on a gradual upward growth trend over the 13 years covered by the graph, has seen wide fluctuations in employment and more recently seemed to be on a fairly steep downward slope. This trend is somewhat puzzling, considering the strong economic growth in Hamilton between 1998 and 2000. Certainly, management equates with leadership and new industry, and its growth needs to be encouraged if Hamilton hopes to successfully implement its economic strategy and resolve the emerging labour supply crisis.

This concludes the discussion of the educational, occupational and industrial make-up of Hamilton's workforce. There are clearly encouraging trends with respect to Hamilton's new Economic Development Strategy. Some of the industry sectors chosen for the preferred 'clusters' are already exhibiting strong growth as are the occupations employed by those industries. On the other hand, the very slow recovery in manufacturing and the loss of management and health care workers will make implementation of the strategy more difficult.

Migration

For most of Canada's history, annual population growth was an event comparable to the seasons of the year. It happened with such regularity that the possibility of change simply did not occur to most people. And waves of people trekking back and forth across the country in response to economic opportunity, was equally predictable. In respect to both population growth and migration, Hamilton has been a microcosm of the nation. Its population has steadily expanded for most of its history, and in the last decade alone, migration of people in and out of Hamilton, together totaled nearly 70% of the city's average population during that same period. Fortunately for Hamilton and its labour supply, more people were moving into Hamilton than were moving out. But, as will be shown in the discussion that follows, Hamilton's net-gain fell far short of potential, and derived from a pattern, that if it persists, will present major economic challenges for the city in the near future.

Although births and deaths play an important role in population growth, for Hamilton, migration is the single most significant factor. This section examines the pattern of migration driving Hamilton's population, and by extension, labour force growth. It is a pattern with disturbing trends, ones that promise persistent and severe labour shortages within 10 years. The first three tables summarize the major migration flows for Hamilton between 1991 and 2000.

Table 4-1

Annual Migration of Population Into Hamilton by Source of Migration 1991 - 2000												
Year	Type of Migration											
	Intra-provincial			Inter-provincial			International			Total In-Migration		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1991	5633	5522	11155	815	847	1662	1558	1539	3097	8006	7908	15914
1992	5582	5532	11114	787	809	1596	1581	1545	3126	7950	7886	15836
1993	5752	5792	11544	771	784	1555	1699	1794	3493	8222	8370	16592
1994	6073	5812	11885	855	868	1723	1633	1900	3533	8561	8580	17141
1995	6232	6068	12300	956	884	1840	1489	1554	3043	8677	8506	17183
1996	6393	6174	12567	871	826	1697	1536	1602	3138	8800	8602	17402
1997	6561	6310	12871	1046	995	2041	2029	2073	4102	9636	9378	19014
1998	6760	6691	13451	1148	1057	2205	1958	1927	3885	9866	9675	19541
1999	6631	6372	13003	1094	1021	2115	1758	1777	3535	9483	9170	18653
2000	6689	6705	13394	1139	1100	2239	2122	2118	4240	9950	9923	19873
10-Year Total	62306	60978	123284	9482	9191	18673	17363	17829	35192	89151	87998	177149

Source: Statistics Canada – Special Tabulations – Small Area Data Division

Table 4-1 breaks in-migration into its three primary components, inter-provincial (flows from the rest of Canada, excluding Ontario), intra-provincial (flows from other Ontario communities) and international (immigrants). The annual flow of people into Hamilton each year during the decade of the 1990's amounted to nearly 4% of the city's total population. Over the full decade, the flow amounted to approximately 38% of Hamilton's total population. The table also shows that intra-provincial movements represented nearly 70% of the inflow with immigrants accounting for a further 20% and the rest-of-Canada contributing the remaining 10%. The table also shows that the inter-provincial and intra-provincial inflows increased steadily over the whole 10-year period. Immigration also increased substantially over the period, but much more erratically. In terms of the sex of the in-migrants, males slightly outnumbered their female counterparts except for immigration where females held a slight edge.

Of course, in-migration is only half of the equation. How many people left Hamilton over the same time period? Table 4-2 shows the out-migration pattern.

Table 4-2

Annual Migration of Population Out Of Hamilton by Destination of Migration 1991 - 2000												
Year	Type of Migration											
	Intra-provincial			Inter-provincial			International			Total Out-Migration		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1991	6,318	6,290	12,608	1,246	1,124	2,370	205	207	412	7,769	7,621	15,390
1992	6,661	6,786	13,447	1,218	1,170	2,388	272	281	553	8,151	8,237	16,388
1993	6,754	6,666	13,420	1,105	1,071	2,176	264	266	530	8,123	8,003	16,126
1994	6,323	6,408	12,731	1,062	987	2,049	250	236	486	7,635	7,631	15,266
1995	6,060	5,998	12,058	917	863	1,780	270	264	534	7,247	7,125	14,372
1996	6,288	6,056	12,344	977	938	1,915	319	297	616	7,584	7,291	14,875
1997	6,485	6,362	12,847	935	869	1,804	347	389	736	7,767	7,620	15,387
1998	6,940	6,910	13,850	972	904	1,876	342	303	645	8,254	8,117	16,371
1999	6,728	6,558	13,286	813	821	1,634	470	507	977	8,011	7,886	15,897
2000	7,335	7,279	14,614	832	785	1,617	462	488	950	8,629	8,552	17,181
10-Year Total	65,892	65,313	131,205	10,077	9,532	19,609	3,201	3,238	6,439	79,170	78,083	157,253

Source: Statistics Canada – Special Tabulations – Small Area Data Division

According to the data in Table 4-2, over 83% of the people moving out of Hamilton during the 1990's, migrated to other Ontario communities. Twelve percent of the movers ended up elsewhere in Canada, and roughly 4% of them left the country entirely. In a

single decade, the equivalent of one-third of Hamilton's total population moved out of the city to another location. In terms of trends in the out-migration, annual intra-provincial flows have fluctuated within a narrow range (12 to 14 thousand) over the 1990's while inter-provincial movements have declined fairly steadily and emigration has steadily increased, over doubling during the decade. With respect to the sex of the out-migrants, the patterns were identical to that of the in-migrants, slightly more males moving intra and inter-provincially and more females than males moving internationally, in this case, emigrating.

While understanding the magnitude of the flows in various directions is important, the "net" result of all that movement is even more important from a planning perspective. Table 4-3 presents that picture.

Table 4-3

Annual Net Migration of Population Into & Out Of Hamilton by Source of Migration 1991 - 2000												
Year	Type of Migration											
	Intra-provincial			Inter-provincial			International			Total Net Migration		
	Male	Female	Net Total	Male	Female	Net Total	Male	Female	Net Total	Male	Female	Net Total
1991	-685	-768	-1,453	-431	-277	-708	1,353	1,332	2,685	237	287	524
1992	-1,079	-1,254	-2,333	-431	-361	-792	1,309	1,264	2,573	-201	-351	-552
1993	-1,002	-874	-1,876	-334	-287	-621	1,435	1,528	2,963	99	367	466
1994	-250	-596	-846	-207	-119	-326	1,383	1,664	3,047	926	949	1,875
1995	172	70	242	39	21	60	1,219	1,290	2,509	1,430	1,381	2,811
1996	105	118	223	-106	-112	-218	1,217	1,305	2,522	1,216	1,311	2,527
1997	76	-52	24	111	126	237	1,682	1,684	3,366	1,869	1,758	3,627
1998	-180	-219	-399	176	153	329	1,616	1,624	3,240	1,612	1,558	3,170
1999	-97	-186	-283	281	200	481	1,288	1,270	2,558	1,472	1,284	2,756
2000	-646	-574	-1,220	307	315	622	1,660	1,630	3,290	1,321	1,371	2,692
10-Year Total	-3,586	-4,335	-7,921	-595	-341	-936	14,162	14,591	28,753	9,981	9,915	19,896

Source: Statistics Canada – Special Tabulations – Small Area Data Division

The data in Table 4-3 clearly demonstrates the important role immigration plays in Hamilton's population growth. It alone accounts for all of Hamilton's net migration gains despite the large in and out movements of domestic population.

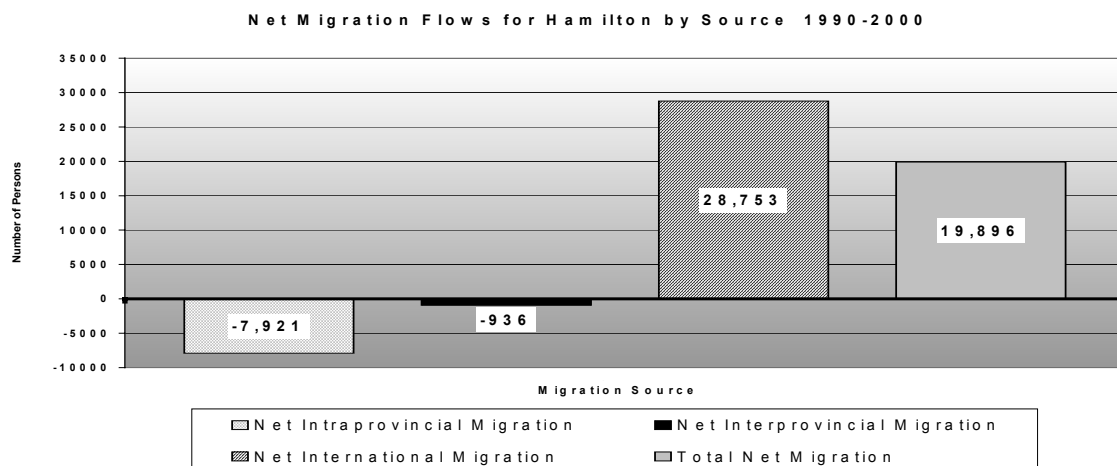
Intra-provincial migration flows were negative in 7 out of the 10 years between 1991 and 2000 (meaning Hamilton was losing more population than it was gaining) and inter-

provincial migration was negative in 5 of the 10 years. Only net international migration (immigration minus emigration) was positive for all the years. And for the decade as a whole, the international component was the only migration flow that actually contributed to Hamilton's population growth. (A later chart, 4-2, shows that immigration accounted for 100% of population growth in several years.)

On a positive note, net inter-provincial migration showed an improving trend over the ten year period of the 1990's. Unfortunately, net intra-provincial migration, after showing an improving trend in the middle of the decade, slipped back into negative territory and was trending downwards by the end of the decade. Net international migration was devoid of trend.

Other important planning information contained in Table 4-3, is the male-female composition of net-migration flows. Although earlier data showed that among the domestic population, slightly more males than females moved both in and out of Hamilton, when it came to net intra-provincial movements, females held a large lead on their male counterparts. And yet nearly double the number of males moved inter-provincially as compared to females. The pattern for net international migration paralleled the separate in and out movements shown in earlier tables, females held a slight edge on their male counterparts.

Chart 4-1

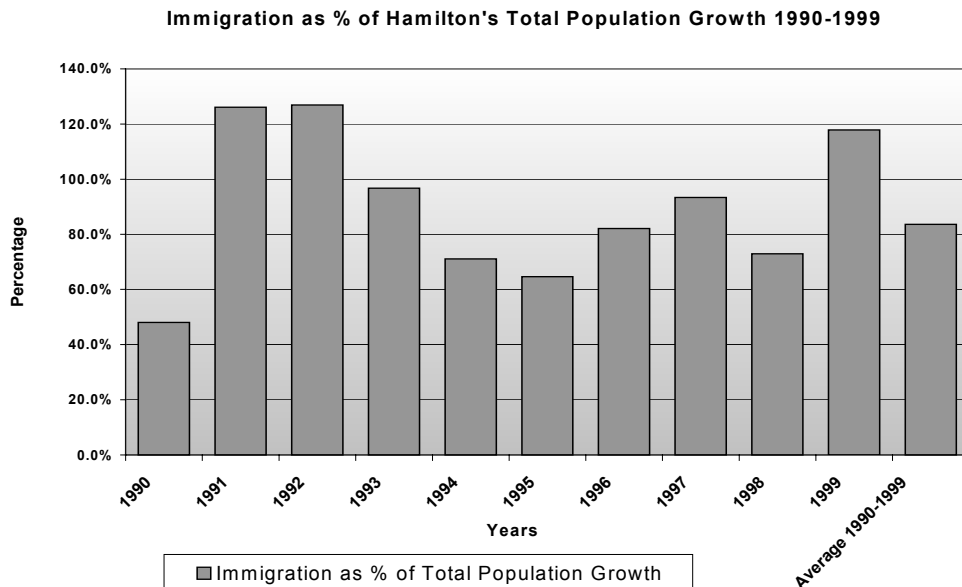


Source: Statistics Canada – Special Tabulations – Small Area Data Division

Chart 4-1 provides a visual summary of the net migration flows just discussed. The potential for increasing labour supply merely by eliminating the net outflows intra and inter-provincially is immediately evident...as of course, is the crucial importance of immigration.

The next chart captures in visual terms, the overwhelming importance of immigration to Hamilton's population, labour force and economy. It plots annual immigration as a percentage of Hamilton's total population growth from all sources (i.e. migration, births and deaths essentially) between 1990 and 1999.

Chart 4-2



Source: Statistics Canada – Special Tabulations – Small Area Data Division

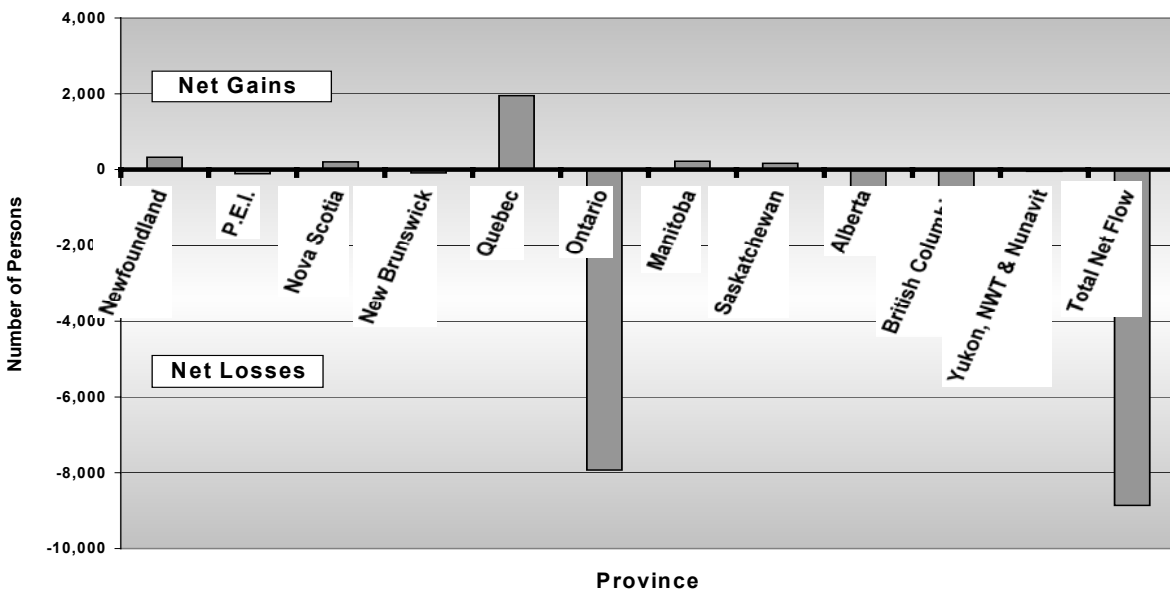
Over the decade of the 1990's, on-average, immigration amounted to slightly more than 80% of Hamilton's total population growth. In a several years it was larger than the total growth in population, meaning that due to high net out-migration, Hamilton would have suffered an absolute decline in population were it not for immigration. Interestingly, two of those three years were the severe recession years of 1991 and 1992¹¹. Because of its singular importance, the characteristics of immigration will be examined in greater detail later in a separate section.

¹¹ A logical deduction would be that the larger than normal net outflows in the early years of the 1990's were the result of workers leaving to find work elsewhere due to the weak economic conditions then prevailing in Hamilton. Earlier data showed that inter-provincial movements were highest for that time period.

Earlier data has already shown the very large migration flows of population experienced by Hamilton over the last decade and explored some of the parameters defining those movements. The next chart and table examine the net movement of domestic population into and out of Hamilton by province.

Chart 4-3

Net Population Migration for Hamilton - To & From Canadian Provinces 1990-2000



Source: Statistics Canada – Special Tabulations – Small Area Data Division

The dominant trends for the total ten-year period are the massive losses of population to the rest of Ontario, smaller losses to British Columbia and Alberta, in that order, and the modest gains from Quebec. Because the summary picture tends to mask the actual magnitude and momentum of the movements (which can provide valuable insights for planning purposes), Table 4-4 provides detailed annual data on net movements within Canada.

Table 4-4

Net Population Migration Into and Out Of Hamilton from Canadian Provinces 1990 - 2000											
Province	Time Period (Flows are measured from July 1st. of one year to June 30 th of the next year)										Totals
	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	1990-2000
Newfoundland	-7	-47	5	39	74	58	70	39	35	62	328
P.E.I.	-48	-10	-32	-6	15	-25	-5	2	11	-11	-109
Nova Scotia	-3	-61	-30	48	8	34	115	26	12	61	210
New Brunswick	-137	-64	-17	8	-24	-4	48	94	-12	23	-85
Quebec	90	77	88	76	148	138	280	345	334	378	1,954
Ontario	-1,453	-2,333	-1,876	-846	242	223	24	-399	-283	-1,220	-7,921
Manitoba	-14	22	10	11	40	75	-14	-15	76	32	223
Saskatchewan	16	17	-17	35	10	37	32	17	4	16	167
Alberta	-205	-123	-66	-3	33	-94	-68	-232	51	59	-648
British Columbia	-376	-608	-553	-537	-248	-425	-203	44	-36	7	-2,935
Yukon	-3	0	-4	2	5	-7	-6	8	5	5	-5
N.W.T.	-21	5	-5	1	-1	-2	-1	-5	4	3	-22
Nunavit						-3	-11	6	-3	-3	-14
Annual Net Flow To & From Canadian Sources	-2,161	-3,125	-2,497	-1,172	302	5	261	-70	198	-598	-8,857
Total In-Migrants From Canada	12,817	12,710	13,099	13,608	14,140	14,264	14,912	15,656	15,118	15,633	141,957
Total Out-Migrants To Canada	14,978	15,835	15,596	14,780	13,838	14,259	14,651	15,726	14,920	16,231	150,814

Source: Statistics Canada – Special Tabulations – Small Area Data Division

Table 4-4 reveals that Ontario's dominance of the movements in and out of Hamilton to Canada, waned during the middle years of the decade when British Columbia was the biggest gainer relative to Hamilton's population movements. In fact, in those middle years (1994-95 to 1996-97), Ontario was the largest positive net contributor to Hamilton's population growth. That's worth noting when trying to grow Hamilton's population in the future. For planning purposes there are two other important trends evident in the data, the fact that Quebec's positive net contribution to Hamilton's population growth continued to increase steadily over the whole decade of the 1990's, and that the losses to British Columbia have moved decisively in the opposite direction. It may also be important that Hamilton's net loss of population to the rest of Canada had shown a fairly impressive turnaround after 1994. Because of the net losses again in 1997-98 and 1999-2000, it is difficult to discern if the improvement was temporary or indicative of longer-term prospects.

The final two rows in Table 4-4 reinforce the fluid nature of Hamilton's population. In the ten years between 1990 and 2000, the combined movement of people into and out of Hamilton, in number, was over 60% of the size of the average total population. If only

25% of the people who left over that time could have been persuaded to remain, Hamilton's population would be nearly 8 %, or 37,704 persons larger today. Depending upon the age structure of the departing population, the impact on the labour force could be potentially have been even larger.

The age structure of migrants will be explored a little later in this section. First, because of Ontario's dominance of Hamilton's domestic migration flows, the geographic parameters of population movements within the province will be investigated.

Table 4-5

Hamilton's Net Population Migration To & From Other Ontario Municipalities For the Periods 1990-1995 and 1995-2000			
Top-Ten Recipients of Hamilton's Out-Migration			
For the Period 1990 to 1995	Net Outflow	For the Period 1995 to 2000	Net Outflow
Haldimand-Norfolk	2,786	Haldimand-Norfolk	2,584
Niagara	1,833	Niagara	2,085
Brant	999	Brant	817
Ottawa-Carleton	346	Wellington	366
Simcoe	311	Waterloo	328
Bruce	307	Simcoe	299
Wellington	295	Essex	248
Waterloo	223	York	222
Essex	198	Bruce	173
Parry Sound	183	Ottawa-Carleton	168

Source: Statistics Canada – Special Tabulations – Small Area Data Division

Table 4-5 shows where the majority of the people go in Ontario when they leave Hamilton, and Table 4-6 shows where they come from when they arrive in Hamilton. Ten years of annual flows have been aggregated into two 5-year periods in order to clarify whatever trends might exist.

The first trend clearly apparent in the data is that the top three locations of choice for both in-migrants and out-migrants remained constant over the whole of the 1990's. Hamilton's out-migration was concentrated in regions within an hours commuting distance, Halimand-Norfolk and Brant to the south, and Niagara to the south-east. The remaining regions of choice for out-migrants also remained remarkably consistent, with Parry

Sound being the only change between the first half and the second half of the 1990's. It was replaced by York on the "Top Ten" list during the second half.

Table 4-6

Hamilton's Net Population Migration To & From Other Ontario Municipalities For the Periods 1990-1995 and 1995-2000			
Top-Ten Sources for Hamilton's In-Migration			
For the Period 1990 to 1995	Net Inflow	For the Period 1995 to 2000	Net Inflow
Halton	1,320	Halton	2,889
Toronto	735	Toronto	1,196
Peel	211	Peel	636
Durham	98	Middlesex	322
Thunder Bay	57	Sudbury	274
York	41	Algoma	156
Kent	35	Thunder Bay	112
Frontenac	33	Frontenac	100
Cochrane	32	Cochrane	91
Perth	7	Nipissing	88

Source: Statistics Canada – Special Tabulations – Small Area Data Division

While the top three sources of in-migration remained the same over the first and second half of the decade, there were a lot of changes among the rankings and locations for the 7 remaining positions on the "Top Ten" list. If there was a theme to the change, it was that, from a population perspective, Northern Ontario communities were becoming prime feeder sources for Hamilton.¹² Algoma, Sudbury and Nipissing Districts joined Thunder Bay and Cochrane which were already on the list for the first half of the decade.

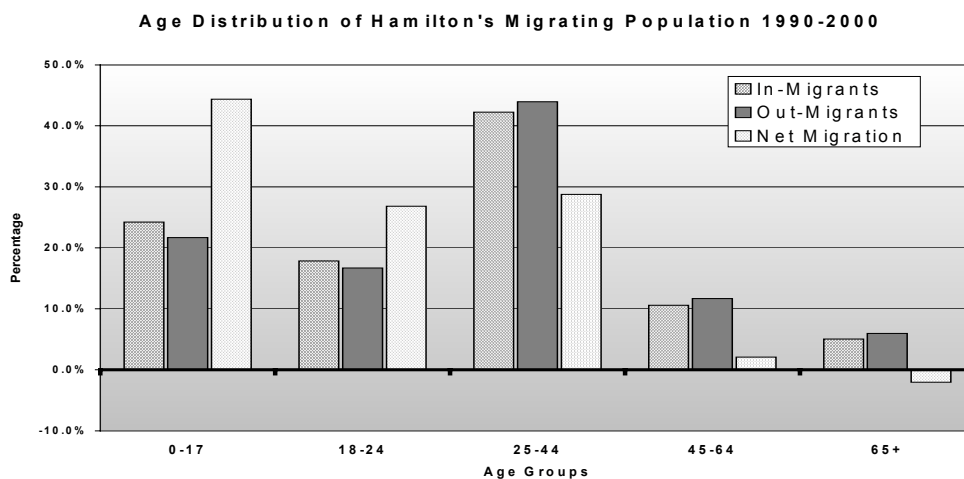
A final observation on the location of in and out-migrants within Ontario is that, in numerical terms, the top 3 or 4 regions really dominate the flows. Exploration of the affinity those communities clearly exhibit, would be a useful exercise for Hamilton as it attempts to cope with serious and worsening population and labour force growth issues.

The next series of charts and a final table examine the age structure of Hamilton's population's migration flows. Age structure can be an important explanatory variable for

¹² Anyone familiar with economic conditions in Ontario over the latter half of the 1990's would not be surprised by the strong increase in population flows from Northern Ontario to Hamilton. Northern Ontario's primary industry was shedding jobs during this time period while Hamilton, which also has a strong primary industry sector, was enjoying one of the lowest unemployment rates in Canada.

the flows themselves, as well as being a significant consideration in developing initiatives to address the emerging population and labour shortages. In general, the more migrant characteristics one can ascertain, the greater is the likelihood of success in improving Hamilton's population growth trends. Unfortunately, data is not available for some important characteristics like occupation and education level...although inferences can be made based solely on the age profiles which follow. Data deficiencies also make it impossible to distinguish between the age structure of international migrants versus those of domestic origin. Because immigration so dominates total net movements, the latter information is important for unmasking factors vital to understanding the causal factors driving domestic movements. Again, one is often left to make inferences on the basis of what reliable data is available.

Chart 4-4



Source: Statistics Canada – Special Tabulations – Small Area Data Division

Chart 4-4 shows the percentage shares of the total migrating population held by specific age-groups for the 10-year period, 1990 to 2000. The 25-44 year-old age group accounted for slightly over 40% of all migrants, both in and out. No other age group garnered anywhere near as large a share. The second largest group of migrants, in percentage terms, was the 0 to 17 year-olds. It is likely that many of the latter were children of parents in the 25-44 age category, as very few would likely migrate on their own.

The not surprising conclusion evident in the data is that migrants tend to be younger people. For Hamilton, nearly 100% of "net" migrants were under the age of 45. Unfortunately, the data is not sufficiently detailed to allow attribution of family status to

particular streams of migration. But simple observation of the age composition of the two largest groups suggests that both in and out-migrants are dominated by young families. Therefore, just as their parents are the prime source of growth in Hamilton's population today, immigrant children will help drive tomorrow's labour force growth.

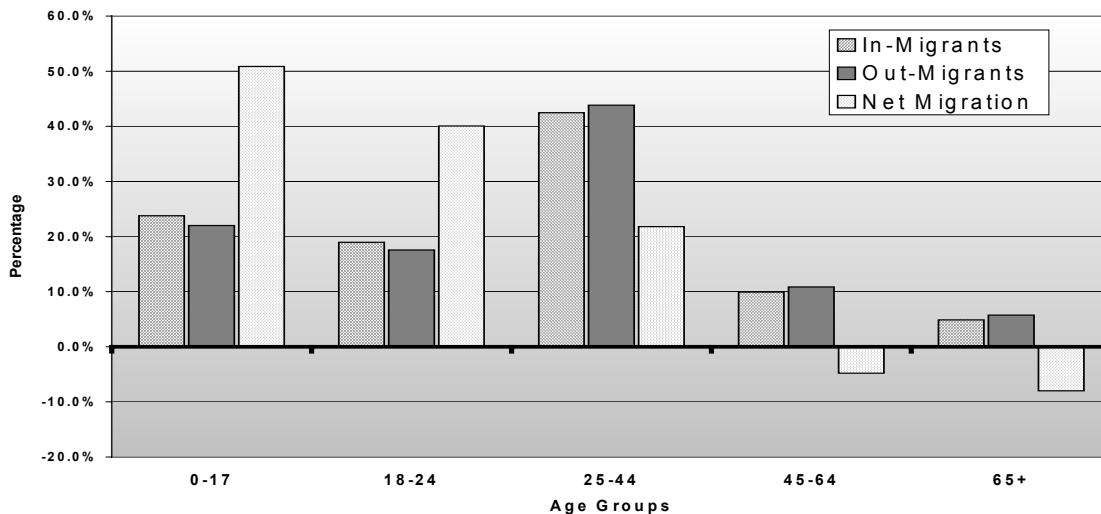
An examination of the population "net" flows reinforces the future labour force potential contained in the migration figures. As is shown in Chart 4-4, slightly over 70% of the net gain in population for Hamilton between 1990 and 2000 was under 25 years of age. However, as will be shown in the next two charts, youth's share of net in-migration slipped in the second half of the decade relative to the first half.

The final piece of important information contained in Chart 4-4 is that all of Hamilton's net loss in population occurred in the over 45 age groups. From a labour force perspective, having all of your gains concentrated in the under-45 years of age groups and your losses in the over-45 years of age groups is not necessarily the worst outcome. However, from an economic perspective there are negative consequences in losing your most experienced people, as well as your relatively wealthiest. Their loss will also likely weaken Hamilton's emotional grip on any still-resident older children once the parents have resettled elsewhere.

The next two charts break the data of Chart 4-4 into two time periods, 1990-1995 and 1995-2000, in order to clarify any trends that may exist.

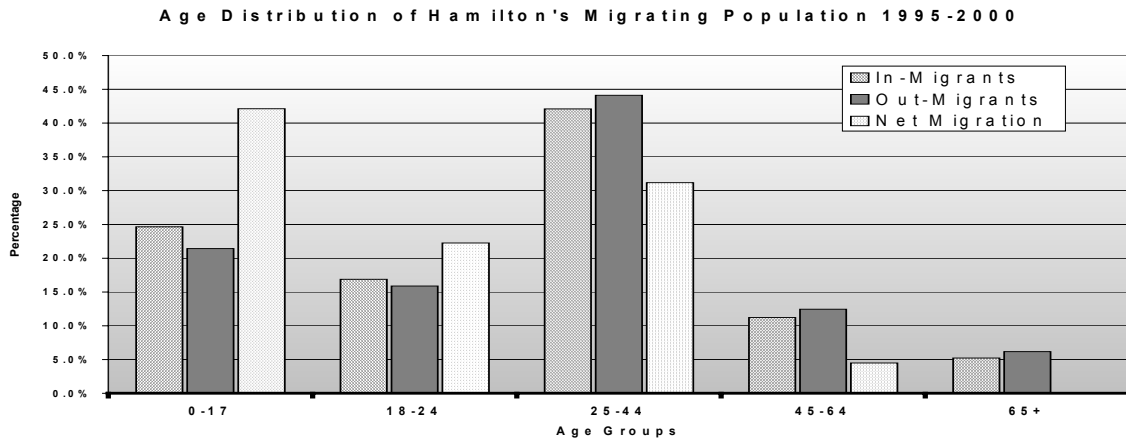
Chart 4-5

Age Distribution of Hamilton's Migrating Population 1990-1995



Source: Statistics Canada – Special Tabulations – Small Area Data Division

Chart 4-6



Source: Statistics Canada – Special Tabulations – Small Area Data Division

Comparing the data between the two charts, 4-5 and 4-6, two important trends are immediately evident. First, Hamilton's net population gains from migration are becoming older. Percentage shares for all of the under-25 year-olds drop while shares for all age groups above 25 years of age, rise. While it is not possible to tell what is causing this shift based on the available migration data, the examination of immigration characteristics in a later section suggest that the type of immigrants Hamilton is attracting are primarily responsible. (We do know from the migration data that immigration accounts for all of the net in-migration.)

The second noteworthy development evident in the data is the positive improvement made in retaining older population. Net losses for both of the over-45 years-of-age groups in the first half of the decade became net gains during the second half. While Chart 4-6 does not clearly show the swing into positive territory for the over-65 years-of-age group, because of its very small number (+4 persons), Table 4-6 below does.

Table 4-6

Population Migration To & From Hamilton by Age Groups 1990 - 2000							
Type of Migration Flow	Time Period	Age Groups					Totals
		0-17	18-24	25-44	45-64	65+	
In-Migrants	1990 to 1995	19,661	15,672	35,104	8,193	4,036	82,666
	1995 to 2000	23,286	15,936	39,758	10,581	4,922	94,483
	10-Year Total	42,947	31,608	74,862	18,774	8,958	177,149
Out-Migrants	1990 to 1995	17,055	13,619	33,986	8,437	4,445	77,542
	1995 to 2000	17,064	12,652	35,155	9,922	4,918	79,711
	10-Year Total	34,119	26,271	69,141	18,359	9,363	157,253
Net Migration	1990 to 1995	2,606	2,053	1,118	-244	-409	5,124
	1995 to 2000	6,222	3,284	4,603	659	4	14,772
	10-Year Total	8,828	5,337	5,721	415	-405	19,896

Source: Statistics Canada – Special Tabulations – Small Area Data Division

Table 4-6 presents the raw data underlying the three previous charts. While the charts help in understanding trends, they also tend to mask the actual magnitudes of events. So the purpose in providing the actual data is to reinforce the message that very large volumes of people are migrating in and out of Hamilton, and if any of those flows can be influenced for Hamilton's benefit, then the effort needs to be made. The sections on Population and Labour Force in this paper have clearly indicated serious trouble ahead for both population and labour force growth. While the reader can probably surmise opportunities in the figures contained in Table 4-6, the Recommendations section of this paper posits some of the authors own insights and suggestions.

The next section of this paper examines another type of migration, commuter activity. The data sources that capture commuter movements are generally labeled "Place of Residence" and "Place of Work". By noting the differing addresses for the two identifiers, one is able to discern movements in and out of Hamilton for work purposes. Understanding daily commuting patterns is useful when the goal is to increase Hamilton's domestic labour supply.

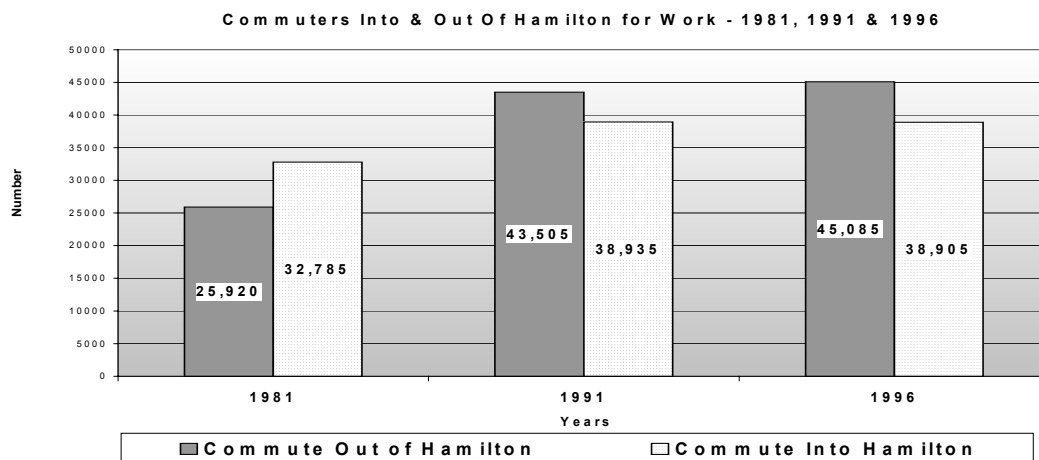
Commuters

A vital part of most communities' labour forces are commuters, people who work outside of their community of residence. From Hamilton's perspective there are two types of commuters that are important, those that live in Hamilton and work elsewhere, and those that live elsewhere and come into Hamilton to work each day. Each brings different advantages to the city, and each has its own importance for municipal planning. The relative balance between the two, in itself, is very consequential from a labour supply viewpoint.

This section examines the trends in commuter activity for Hamilton between 1981 and 1996. Information is derived from three Censuses, 1981, 1991 and 1996. The data is known as "Place of Work" tabulations and results from comparing people's residence address with their workplace locations. There are other ad hoc data series available respecting commuters (primarily generated through on-the-spot surveys of traffic flows), but they don't generally provide complete geographic or population coverage. Nor are they conducted regularly enough to yield sufficient data for time-series analysis, essential for determining trends.

Chart 5-1 establishes the basic in and out flows for Hamilton at three time points in time.

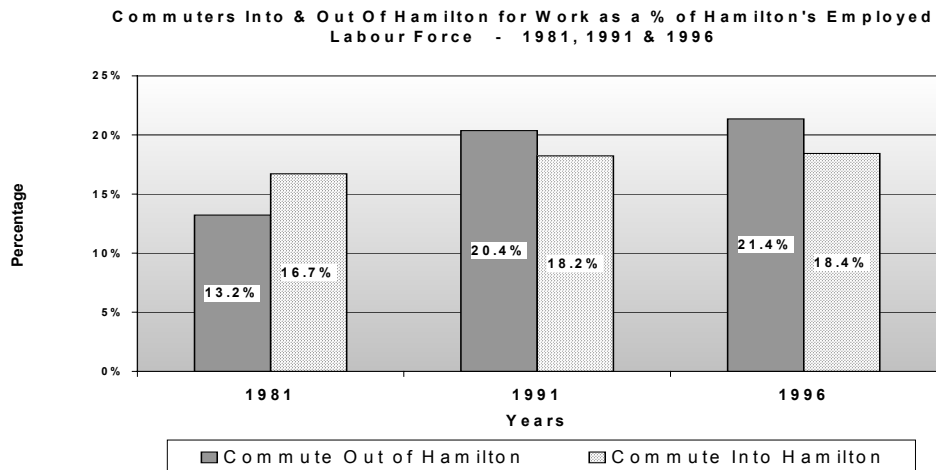
Chart 5-1



Source: Statistics Canada Census Series

The data shows that commuters-out¹³ of Hamilton have been growing steadily between 1981 and 1996, while commuters-in grew between 1981 and 1991 but remained static in number between 1991 and 1996. The data also indicates that the number of commuters-out is growing considerably faster than commuters-in. This latter fact is highlighted by the substantial swing in the contribution of commuters to Hamilton's labour supply between 1981 and 1996. In 1981 Hamilton's labour supply was supplemented by a net gain of 6,720 workers from commuter movements. By 1996, Hamilton's labour supply suffered a net loss of 6,180 workers. Had 1981 patterns prevailed in 1996, Hamilton's employers would have had 12,900 more workers available to them than was actually the case. Hamilton can ill afford to see this trend continue as it moves into a world of shrinking labour supply.

Chart 5-2



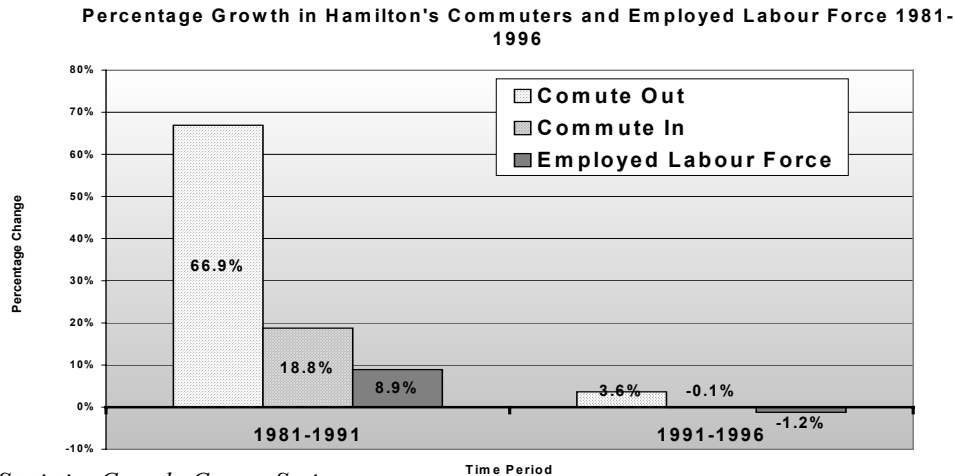
Source: Statistics Canada Census Series

Chart 5-2 translates the numbers seen in Chart 5-1, into percentage shares of Hamilton's employed labour force. The trends evident in the percentage data parallel those for their numerical equivalents. The purpose in providing the percentages is to demonstrate the significance of commuters for Hamilton's total labour supply. A number equivalent to over 20% of Hamilton's total employed labour force leaves Hamilton every day to work somewhere else and are replaced by a lesser number of persons living outside of Hamilton. Altering either the in or out flow in Hamilton's favour would have a very beneficial impact on the city's future labour supply.

¹³ Commuters-in and commuters-out will be used throughout this section to refer to the employed labour force which works in Hamilton and lives elsewhere or lives elsewhere and works in Hamilton, respectively.

We have seen that commuters make up at least 20% of Hamilton's labour supply. The next chart examines whether that share is likely to grow, shrink, or remain static. Chart 5-3 presents the rate of growth in commuters-out and commuters-in between 1981 and 1996, and contrasts their growth rates with the growth in the total employed labour force over the same time periods. Two time periods are examined, the earlier one being 10 years in length and the more recent period being 5 years long.

Chart 5-3



Source: Statistics Canada Census Series

In the period between 1981 and 1991, commuters-out were growing over six times as fast as the employed labour force itself, and commuters-in about twice as fast. In the more recent period, 1991 to 1996, commuters-out were still growing four times as fast as the employed labour force (which actually shrunk over this time period), and commuters-in experienced a slight decline, albeit one that was much less than the decline affecting the employed labour force. The bottom-line is that commuters are becoming more, rather than less important for Hamilton's labour supply...and the trends are not favourable. Based on the evidence available thus far¹⁴, Hamilton is likely to continue experiencing growing net losses of workers due to commuting patterns. If Hamilton is to arrest these trends, more detail about the commuters themselves would likely help. The next series of charts looks at the sex composition of commuters and their primary sources and destinations.

¹⁴ While the trends are disturbing, one has to be careful not to read too much into the data. It is after all only snapshots of three points in time...and really, a fairly short time relative to population life cycles.

Chart 5-4



Source: Statistics Canada Census Series

Chart 5-5



Source: Statistics Canada Census Series

Comparing Charts 5-4 and 5-5 reveals that significantly more males than females commuted both in and out of Hamilton over the whole of the period under examination. But the patterns appear to be changing. The number of males moving both in and out has peaked, and in the case of commuters-in, actually declined between 1991 and 1996. In contrast, the numbers of female commuters, again both in and out, grew steadily over the whole 15 years, including during the 1991-1996 period when the total employed labour force was actually shrinking. In percentage terms, the number of male commuters-out increased by 56% between 1981 and 1996 while their female counterparts grew by 116%.

The number of male commuters-in was shrinking by 3% while female commuters-in was growing by 75% over the same time period.

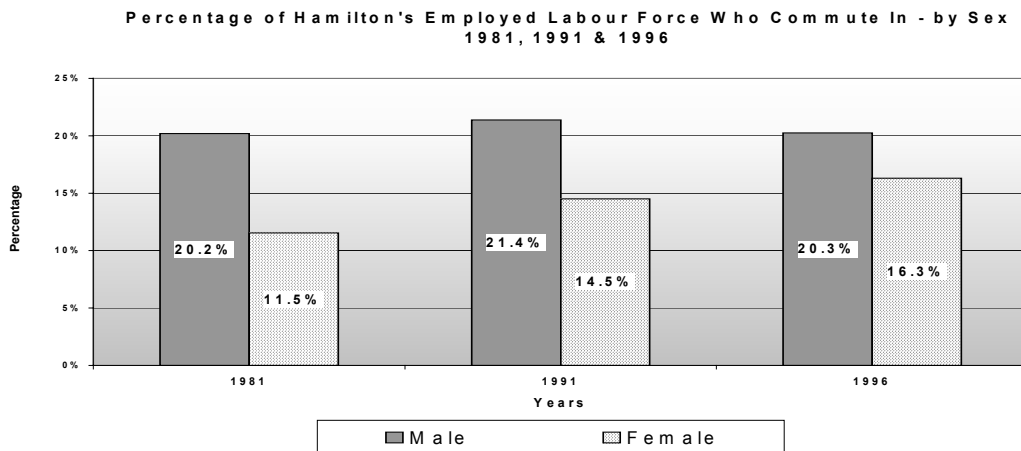
The next two charts present the same data as was seen in numerical form in Charts 5-4 and 5-5 but arranged as percentage shares of their respective employed labour forces. We have already seen in earlier charts that in the most recent year, 1996, commuters-out represented about 21½ % of the employed labour force and commuters-in, about 18½ %. As the next two charts will show, there are considerable differences among males and females.

Chart 5-6



Source: Statistics Canada Census Series

Chart 5-7



Source: Statistics Canada Census Series

By 1996, male commuters-out amounted to the equivalent of 25.2 % of Hamilton's total employed male labour force. And females were about 19.9 % of the total female employed labour force. The comparable shares for male commuters-in was 20.3 % and for females was 16.3 %. In terms of trends, the most important one is the growing gap between the commuters-out and the commuters-in. It showed up in the total numbers discussed earlier and it shows up again for both their male and female components. As a percentage share of their total employed labour forces, both male and female commuters-out are growing significantly faster than commuters-in. In fact for males, the commuters-in are shrinking while the commuters-out continues to grow, albeit somewhat slower in the more recent time period.

The final piece of information is where the commuters go and where they come from.

Chart 5-8



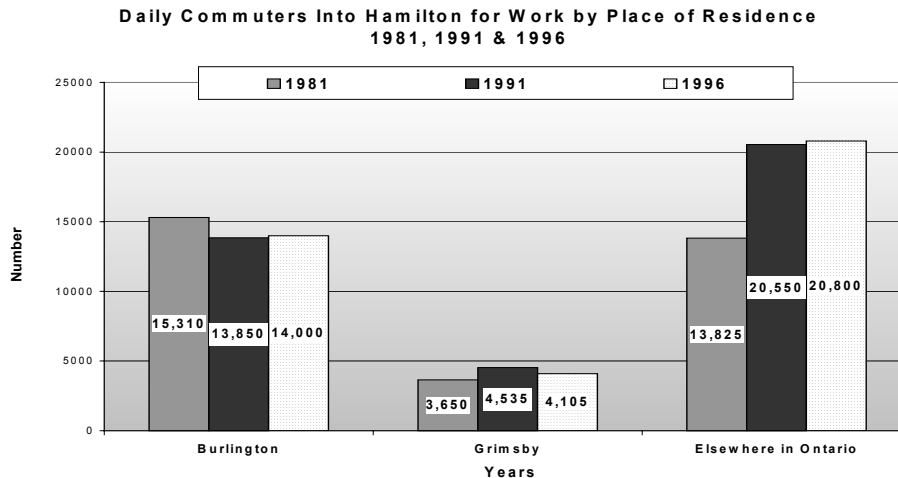
Source: Statistics Canada Census Series

Chart 5-8 shows that Burlington is the destination of choice for the largest single group of commuters-out (for about 40% of them in 1996). It held that distinction for the whole time period, 1981 to 1996. While Burlington was the first choice, its dominance was weakening as is apparent from the data. The absolute increases in the "elsewhere"¹⁵ category's share of commuters-out, dwarfs the increases for both Burlington and

¹⁵ "Elsewhere" refers to all the other communities within commuting distance of Hamilton. Because of the widely dispersed destinations and residences of commuters-out and commuters-in, respectively, other than for Burlington and Grimsby, all the other communities are lumped together for analysis purposes.

Grimsby. The ostensible slowdown in growth for commuters-out between 1991 and 1996 may be illusory as the 1991-1992 recession caused an actual shrinkage in Hamilton's employed labour force. Furthermore, the reader needs to remember that the data examines two time periods of differing size. The first, 1981-1991 is 10 years long and the later period, 1991-1996 is only 5 years long.

Chart 5-9



Source: Statistics Canada Census Series

The pattern for commuters-in differs from that for commuters-out in several significant ways. First, while Burlington retains its number one status, it is actually declining as a source of commuters-in over the analysis period. Secondly, numerically, far more people commute in from Grimsby than leave Hamilton for Grimsby. But again the trend for the commuters-in is downwards, not upwards as for the commuters-out. The one point of similarity between the commuters-out and the commuters-in is that the "elsewhere" category continues to grow for both. Numerically though, the commuters-out group is both larger and growing faster.

Examination of the commuting patterns and trends for Hamilton's labour force raises a number of concerns. The most serious is the growing gap between the number of commuters-out and commuters-in. It is a large gap, both numerically and relative to its overall share of Hamilton's labour force. Hamilton needs to reverse the direction of current trends. Otherwise, solving its future labour supply shortages will be made more difficult. Furthermore, not doing so, courts the danger that the many of the commuters-out, especially the young ones who have yet to buy their first homes, will eventually move their residences closer to their workplaces, leaving Hamilton altogether.

Immigration

The section on migration already established the vital contribution immigration makes to Hamilton's population growth. This section takes a closer look at some of the characteristics of immigrant flows in order to discover opportunities for growing Hamilton's population and labour force faster in the future.

Different sources of data were used in preparing this section. Annual administrative statistics from Citizenship and Immigration Canada and Census information were the two primary ones, in that order. Unfortunately, some of the data relates to Hamilton city while other figures are only available on a Hamilton CMA (Census Metropolitan Area) basis, which included both the Burlington and Grimsby areas. Even though Hamilton city so dominates the CMA totals that the CMA trends are probably good substitutes for city trends, the different sources are noted whenever the data is not referring to Hamilton itself.¹⁶

Table 6-1

Immigrant Shares of Total Population Hamilton, Ontario & Canada - 2001			
Location	Total Population	Immigrant Population	Immigrant Population as % of Total Population
Hamilton	490,268	129,732	26.5%
Ontario	11,410,000	3,172,274	27.8%
Canada	30,007,094	5,778,229	19.3%

Source: Statistics Canada Census Series & e-Economics Consulting

The first table situates Hamilton's immigrant population relative to that of Ontario and Canada. Immigrants make up about one-quarter of Hamilton's population, slightly less than their provincial share, but considerably more than their national share. The next table though, starts to identify some significant differences in Hamilton's immigrant population vis-a-vis that of Ontario and Canada.

¹⁶ "Hamilton" as used throughout this report, meaning the newly (2000) amalgamated city of Hamilton.

Table 6-2

Immigrants by Period of Immigration						
Period of Arrival	Number			Percent of Total Immigration		
	Hamilton	Ontario	Canada	Hamilton	Ontario	Canada
Before 1961	36,580	588,800	1,054,930	28.2%	18.6%	18.3%
1961-1970	24,350	450,425	788,580	18.8%	14.2%	13.6%
1971-1980	18,640	522,950	996,160	14.4%	16.5%	17.2%
1981-1990	18,975	599,330	1,092,400	14.6%	18.9%	18.9%
1991-1996	15,420	562,980	1,038,990	11.9%	17.7%	18.0%
1997-2000	15,762	447,789	807,169	12.2%	14.1%	14.0%
Totals	129,727	3,172,274	5,778,229	100.0%	100.0%	100.0%

Source: Statistics Canada Census Series & Special Tabulations - Small Area Data Division

The first major divergence between Hamilton's and Ontario's and Canada's current immigrant populations, is the apparent difference in age. Table 6-2 indicates that a much higher proportion of Hamilton's immigrant population came to the city before 1970 as compared to the province as a whole, or to the country. Nearly 50% of Hamilton's immigrants arrived in Canada before 1970 as compared to around 33% for both Ontario and Canada. Furthermore, just under 25% of Hamilton's immigrants arrived since 1990, as compared to approximately 32% for Ontario and Canada. These two facts, together with the age profiles of recent immigrants, which will be discussed later, can only mean Hamilton's immigrant population is much older than either Ontario's or Canada's. The period of arrival patterns also suggest that Hamilton's attractiveness to immigrants, relative to its past, is slipping. In fact, one can deduce that Hamilton's share of total immigration to Canada has dropped in recent years, and appears to be continuing to drop for the most recent period, 1990-2000¹⁷. The implications for current and future labour force supply are obviously negative.

The next table establishes the importance of immigration to Canada's population growth over most of its history. The information is useful in putting immigration's importance for Hamilton into perspective

¹⁷ If Hamilton's immigrants make up about the same share of its total population as is the case for Ontario, but many more arrived in Hamilton before 1970 as compared to Ontario, then Hamilton's share of recent immigration has to be declining relative to the share it garnered in earlier years.

Table 6-3

Immigration as a Share of Canada's Population Growth 1851-1996			
Time Period	Total Population Growth (1000's)	Immigration (1000's)	Immigration as % of Population Growth
1851-1861	793	352	44.4%
1861-1871	459	260	56.6%
1871-1881	636	350	55.0%
1881-1891	508	680	133.9%
1891-1901	538	250	46.5%
1901-1911	1836	1550	84.4%
1911-1921	1581	1400	88.6%
1921-1931	1589	1200	75.5%
1931-1941	1130	149	13.2%
1941-1951	2141	548	25.6%
1951-1956	2433	783	32.2%
1956-1961	2157	760	35.2%
1961-1966	1777	539	30.3%
1966-1971	1553	890	57.3%
1971-1976	1882	1053	56.0%
1976-1981	1371	771	56.2%
1981-1986	1280	677	52.9%
1986-1991	1930	1199	62.1%
1991-1996	1641	1137	69.3%
1996-2001	1160	1042	89.8%

Source: Statistics Canada Census Series & Special Tabulations - Small Area Data Division

As is shown in Table 6-3, immigration accounted for roughly half of Canada's population growth prior to 1900 (the one exception being the period, 1881-1891, when it rose to over 130% of Canada's growth). It was responsible for nearly three-quarters of Canada's population growth over the first three decades of the twentieth century before dropping off dramatically during the depression of the 1930's and the period of the 2nd World War. Its contribution to Canada's population growth resumed after the war, and moved up steadily from the 30% range to the 70% range by 1996. Its contribution leapt ahead to nearly 90% after 1996, and considering current Canadian fertility rates, is likely to remain at this very high level for the foreseeable future.

Because Hamilton has a somewhat older population than Ontario and Canada, immigration's contributing share to its population growth was already at 83% by 1990. It too is expected to remain at this high level and could eventually go over the 100% mark.

Table 6-4

Immigrant Shares of Population Growth Hamilton - 1990 to 1999			
Year	Population Growth	New Immigrant Arrivals	New Immigrants as % of Population Growth
1990-1994	19,613	16,292	83.1%
1995-1999	22,460	18,900	84.1%

Source: Statistics Canada – Special Tabulations – Small Area Data Division

In addition to confirming Hamilton's strong dependence upon immigration for its population, and by extension, labour force growth, Table 6-4 offers another clue that Hamilton may be witnessing a decline in its relative share of Canadian immigration. When compared to immigration's share of Canada's growth, as shown in the previous table, Hamilton's share for the latest period, 1996-2000, is lower. Too early to determine if a trend is underway, but worrisome especially when viewed with some of the other immigrant characteristics explored in the next part of this section.

Eligibility for persons seeking to emigrate to Canada is governed by different requirements depending upon which "class" they are applying under. The names of the classes are fairly self-explanatory, Family (reunification of families), Refugee, Business (persons intending to start or invest in a Canadian business), Skilled Workers (applicants applying on the basis of Canadian demand for their skills) and Other (a catch-all category for anyone not fitting one of the main categories). Citizenship and Immigration Canada collect a wealth of information on immigrants, most of it arranged on the basis of the categories just described. The remainder of this section examines some of this data to draw conclusions about the appropriateness of Hamilton's immigration flows vis-a-vis its current and future labour force needs. The Hamilton data that follows is all at the CMA level.

Table 6-5 provides an overview of Hamilton's shares of the various immigrant flows. Aggregate data for the five years between 1996 and 2000 are used in order to smooth out annual variations.

Table 6-5

Distribution of Immigrants by Immigration Class									
Immigration Class	1996-2000								
	Hamilton CMA	Ontario	Canada	Hamilton CMA		Ontario		Canada	
	Number			% of Totals	Rank	% of Totals	Rank	% of Totals	Rank
Family Class - Applicants & Dependents	4,859	163,274	294,939	36.5%	1	28.8%	2	28.5%	2
Refugee - Applicants & Dependents	2,532	64,166	129,715	19.0%	3	11.3%	4	12.6%	4
Business - Applicants Only	132	7,293	23,086	1.0%	6	1.3%	6	2.2%	6
Skilled Workers - Applicants Only	2,200	128,602	216,575	16.5%	4	22.7%	3	21.0%	3
Dependents of Business & Skilled Workers	3,307	190,594	338,779	24.8%	2	33.6%	1	32.8%	1
Other - Applicants & Dependents	291	13,095	29,708	2.2%	5	2.3%	5	2.9%	5
Total - Principal Applicant & Dependents	13,321	567,024	1,032,802	100.0%		100.0%		100.0%	

Source: Citizenship and Immigration Canada Administrative Data

Relative to Ontario and Canada, Hamilton welcomed more Family class and Refugee class immigrants, and less Skilled Workers and Dependents of Business Class and Skilled Workers¹⁸ between 1996 and 2000. In all cases, the differences between Hamilton and Ontario and Canada are statistically significant. The shares by class for Canada and Ontario are very similar.

The rest of this section examines the differing characteristics of the various immigrant classes from a labour supply perspective. Because only Canada data is available at the required level of detail, all figures in the remaining three tables are for Canada. It is highly unlikely that the characteristics for Hamilton-bound immigrants will differ significantly from the patterns shown.

¹⁸ A quirk in the published data is that it is not possible to separate out the Dependents of the Business and Skilled Workers Categories, so they are included as an additional category. They are important to some of the later analysis.

Table 6-6

Immigration into Canada by Class of Immigrant by Average % Share for Age Groups Over the Period 1996-2000					
Age Group	Class of Immigrant				
	Family	Refugee	Business	Skilled Worker	Other
0-14	13.3%	27.1%	27.0%	26.4%	18.8%
15-24	23.9%	18.2%	20.3%	7.9%	14.1%
25-44	36.4%	45.2%	32.2%	59.5%	57.6%
45-64	18.2%	7.9%	20.0%	6.0%	9.0%
65+	8.2%	1.5%	0.5%	0.1%	0.5%

Source: Citizenship and Immigration Canada Administrative Data

With regards to age, proportionately, Family class has half the number of children under the age of 15 compared to the other major classes. And with the exception of Business class, Family class also has the smallest share of prime-labour-force-age (25-44) adults. And finally, immigrants over 45 years-of-age have three times the share of Family class immigration than they hold for any other class, with the exception of Business. And as we discovered in the earlier table, Family class constitutes, by far, the largest share of immigrants to Hamilton.

The Refugee class has a higher portion of its immigrants younger than 25 years-of-age than any other group. However, its prime labour force age category is in the middle of the pack and lags well behind the Skilled Workers and Other classes. Refugees are the third largest group of immigrants coming to Hamilton.

The Skilled Workers category is the second youngest category and has the largest share of its constituents in the prime labour force age category of 25-44 years-of-age. It also has the smallest concentration of persons over 45 years-of-age. Skilled Workers only constitute the 4th largest group of immigrants heading to Hamilton.

The next table examines labour force intentions of immigrants.

Table 6-7

Average Percentage of Immigrants Intending to Work by Class of Immigrant for Canada 1996-2000		Rank
Principal Applicant & Dependents (All Immigrants)	67.4%	4
Family Class & Dependents	53.6%	5
Refugee Class & Dependents	77.2%	3
Business Class & Dependents	48.5%	6
Skilled Workers Class & Dependents	93.2%	1
Other Class & Dependents	82.6%	2

Source: Citizenship and Immigration Canada Administrative Data

Over 90% of Skilled Workers and their dependents plan on working when they arrive in Canada. Roughly 54% of Family class are planning on working when they arrive. With the exception of Business class, the other classes fall somewhere in between. Again, the prognosis is that Hamilton's labour supply will gain only a muted boost from immigration, based on the classes of immigrants it is receiving.

The final table examines the schooling levels achieved by the various classes of immigrants.

Table 6-8

Level of Schooling Achieved for Immigrants by Class of Immigrant - Canada 1996-2000							
Level of Schooling	Class of Immigrant						
	Principal Applicant & Dependents (Total Immigrants)	Family Class - Principal Applicants & Dependents	Refugee - Principal Applicants & Dependents	Business - Principal Applicants	Skilled Worker - Principal Applicants	Dependents of Business and Skilled Workers	Other - Principal Applicants & Dependents
0-9 Years	16.6%	29.2%	23.5%	12.7%	1.5%	13.7%	17.8%
10-12 Years	21.7%	28.3%	34.2%	29.3%	4.5%	24.6%	28.0%
13 or more Years	8.6%	10.5%	10.4%	8.1%	4.8%	9.3%	10.9%
Trade Certificate	8.2%	7.4%	10.3%	11.2%	7.4%	8.3%	11.0%
Non-University Diploma	8.6%	7.0%	9.3%	11.7%	9.0%	8.5%	15.8%
Bachelor's Degree	26.9%	14.3%	10.5%	22.0%	49.5%	28.5%	15.8%
Master's Degree	7.7%	2.7%	1.4%	4.2%	18.7%	6.2%	0.6%
Doctorate	1.7%	0.5%	0.5%	1.0%	4.7%	0.9%	0.1%

Source: Citizenship and Immigration Canada Administrative Data

Hamilton's largest immigrant category, Family class, has the smallest proportion of its cohort achieving a university degree, 17%. That compares with 73% for the Skilled Workers class. Family class is also tied with the Refugee class for having the largest portion of its cohort having less than a Grade 13 education. Nearly 60% of both categories have less than Grade 13. Because the Refugee class has so many young children, its education levels will likely improve over time. On the negative side, educating Refugee children will put more pressure on a strained Hamilton education system, and they will likely require additional training before they are able to make a major contribution to labour supply.

This concludes the discussion of immigrant characteristics. The data strongly suggests, that from a labour supply perspective, Hamilton needs to encourage more Skilled Workers and Business class workers to choose Hamilton as their preferred destination. Overall, Hamilton needs to encourage more immigration, period!

Industry Sectors Currently Approaching a Human Resource Recruitment Crisis

In the course of reviewing the literature and gathering data to support the analysis part of this study, a few pieces of information were unearthed that provide particularly stark evidence of the timing and magnitude of the emerging labour supply shortages. Even though most of it does not fit logically into other sections of this paper, the information is of such relevance and importance to the education and health sectors, two sectors that provide critical support to development of Hamilton's human resources, that they are being included here in a separate section. The data requires very little narrative as the figures themselves speak volumes about the impact retiring baby-boomers are already having on the labour supply.

The recruitment needs of the education and the healthcare sectors are but the tip of the ice-berg. Most other industries will experience the same scale of recruitment needs, only somewhat later. Also most other industries will not see their situation exacerbated by ill-conceived down-sizing at a most inappropriate time.

Table 7-1

Projected Retirements of Nurses, Registered Practical Nurses and Personal Support Workers in Hamilton 2001-2011			
	Work Location		
	Hospitals	Long-Term Care	Community Care
Registered Nurses	39.0%	41.0%	38.0%
Registered Practical Nurses	26.3%	20.0%	0.0%
Personal Support Workers	17.6%	17.3%	50.0%

Source: Hamilton Training Advisory Board – "A Few Good Nurses" - 2001

The data in Table 7-1 is by no means comprehensive, but it does illustrate the nature of the demographic issue. The reader needs to keep in mind that the recruitment shown in the table excludes a couple of important factors that can either reduce the total recruitment requirements or increase them. The numbers only look at replacement needs. They do not take into account the increased demand for health care services resulting

from an ageing population (whom we know consume more health care services per capita than younger populations). Perhaps balancing that somewhat, the numbers don't anticipate productivity improvements, e.g. automation of certain tasks, etc., that may reduce the total workforce requirements in the future. Interviews with hospital administrators, conducted as part of this study, indicated that productivity improvements offered significant potential with respect to nurses and other health care practitioners.

Most people tend to think of the current health care shortages as primarily a nursing and physician shortage. The following table illustrates just how widespread the worker shortages are becoming and are poised to become within the health care sector. And it again, only relates to a limited spectrum of occupations. For instance it does not reveal that the supply of pharmacists and pharmacologists is becoming desperately short in Ontario hospitals, nor that Ontario's one training institution does not come close to supplying the province's annual requirements right now...never mind when the baby-boomer retirements get underway in earnest. Nor does the table reveal that the compounding and prescription of drugs is becoming ever more complex and important to the practice of medicine, removing these activities almost completely from the duties of physicians and placing them in the hands of experts whose only duties are dispensing complex combination drug therapies.

Table 7-2

Demand for Medical Laboratory Technologists in Canada & Ontario 2001-2015						
Time Frame	Canada		Ontario			
	Estimated Number of Eligible Retirements	Estimated % of Total Workforce	Estimated Number of Eligible Retirements	Estimated % of Total Workforce	Number per Year	Number of Training Positions Available per Year
2001-2005	2,551	12.0%	742	11.2%	158	93
2006-2010	3,357	15.8%	1,062	16.0%	212	93
2011-2015	3,513	16.6%	1,085	16.5%	219	93
Totals	9,421	44.4%	2,889	43.7%	589	279

Source: Canadian Society for Medical Laboratory Science – National Review - April, 2001

Although the numbers in Table 7-2 are daunting enough on their own, one needs to remember that ageing populations demand more medical testing and the range of equipment, and the sophistication of that equipment is growing nearly exponentially. (e.g. how many hospitals in Ontario could provide ultra-sound, medical resonance imaging (MRI) or kidney dialysis procedures even 10 years ago versus today...and tomorrow?)

The next three tables look at the staffing requirements of Ontario's universities and Community Colleges, the institutions we count on to prepare tomorrow's labour force and upgrade today's. The very last table provides some data on McMaster's situation, which appears to be dire, but much less dire than the average facing other Ontario universities.

Table 7-3

Staffing Requirements of Ontario Community Colleges - 2001-2006					
Category of Staff	Total Staffing Level as of September 2001	% of Staff Eligible to Retire	% of Staff Predicted to Retire	Total Additional Staff Required by 2006 based on "Predicted" Reirements + Enrolments Increases	New Hirings as % of 2001 Staffing Levels
Support	5844	38%	20.6%	2377	40.7%
Administrative	1531	54%	19.7%	634	41.4%
Faculty	6225	65%	43.2%	4103	65.9%
Totals	13600	52%	30.8%	7114	52.3%

Source: ACAATO – Human Resource Requirements Report – September 2001

Table 7-4

Ontario Universities' Faculty Hiring Requirements - 1998-99 to 2010-2011					
Assuming a Continuation of Current Trends in Early Retirements	1998-1999 Faculty Level	Requirements to 2004-2005	Requirements to 2004-2005 as % of 1998-1999 Staffing Levels	Requirements to 2010-2011	Requirements to 2010-2011 as % of 1998-1999 Staffing Levels
"Low" Enrolment Projection	11893	6952	58.5%	8992	75.6%
"High" Enrolment Projection		7448	62.6%	10043	84.4%

Source: SEDAP Research Paper No. 61 – October 2001

Table 7-5

Faculty Recruitment Forecast for McMaster University 1999-2009						
1999/2000 Faculty	Forecast Faculty Level in 2004 (based on a 16% enrolment growth)	Estimated Retirements 2000-2004	Estimated New Faculty Hirings Required 1999-2004	Est. New Hirings as % of 1999 Faculty	Estimated Additional Retirements 2005-2009	Est. New Hirings 1999-2009 as % of 1999 Faculty (assumes enrolments peak in 2005)
928	1077	83	232	25.0%	156	41.9%

Source: Registrar's Office – McMaster University – September 2001

It should be pointed out that the predicted recruitment needs do factor in anticipated increases in enrolments. The Community College figures however, don't reveal that nearly 75% of all Ontario college management personnel are eligible to retire by 2006...just five years from now. And a final comment to frame the reality of the numbers shown in the tables – all the required hiring will be occurring at a time when labour supply will not be growing at the 12% rate witnessed between 1996 and 2001, but at something closer to 3% or 4% – well below levels seen in most of our lifetimes. And by the middle of the next decade, labour force growth rates could be approaching zero.

The one table that is missing from this section, but at least as important as any that are here, is the one containing data for the Hamilton public and Catholic school boards. While good data on enrolment projections was forthcoming, very little information was available concerning future teacher or administrator requirements, particularly with respect to the baby-boomer retirement phenomena. The researcher was left with the distinct impression that the school boards themselves do not have a good handle on their requirements beyond the immediate future. Preparing the next generation of teachers and administrators will take longer than that of course.

Productivity

While adding additional workers is a primary means of increasing production, it is of course, not the only way. Adding more capital, the other main factor of production, can also boost output. Because the ultimate goal of this study is to identify potential ways to support Hamilton's economic growth, a short review of recent trends in productivity will clarify why improving labour supply offers the best prospect.

First, a definition of productivity.

"Economic growth arises from an increase in the quantity of goods and services produced by a country in a given period. The two main sources of economic growth in output are increases in the factors of production (the labour and capital devoted to production) and efficiency or productivity gains that enable an economy to produce more for the same amount of inputs. Increases in productivity may come from many sources: technological progress, economies of scale (firms get larger and more efficient), research and development, and increases in the quantity of inputs that go into the production process....Measurement of efficiency gains due to productivity growth are derived by subtracting the contribution of the additional quantities of inputs used between two periods from the change in quantity produced. The result, a measure of productivity growth, is the residual portion of growth that cannot be accounted for by the additional quantities of inputs that have been used to produce the increase in outputs observed....Productivity growth can be measured as the increase in output relative to the increase in a single input like labour (growth in labour productivity) or the increase in output relative to the increase in a bundle of inputs like labour and capital (growth in multifactor productivity). **Labour productivity** growth is the most widely used measure. This productivity measure *captures the increase in the quantity of goods and services produced per unit of labour (hours worked)*¹⁹"

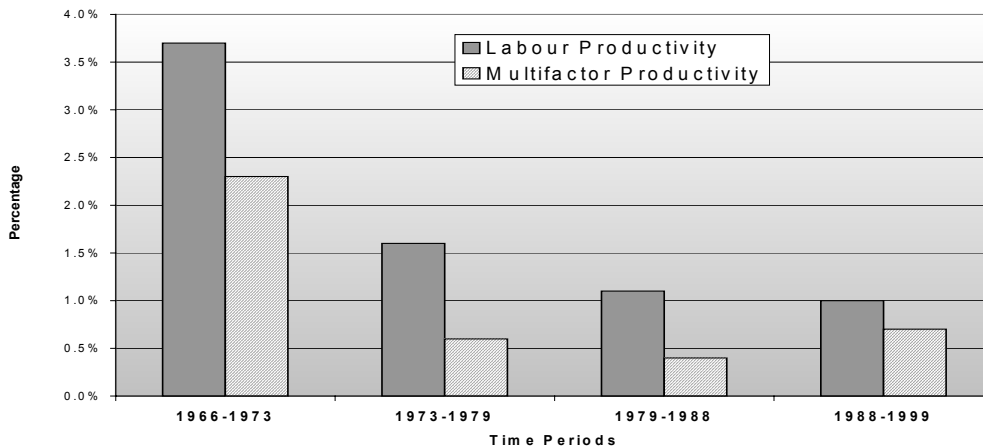
¹⁹ Productivity: Concepts and Trends, Statistics Canada – Catalogue no. 15-204, Chapter 1, January 2002.

Since 1961, labour productivity has grown at an average annualized rate of 2.0, and multifactor productivity at an average annualized rate of 1.2%. The difference between the two is explained by the increase in the capital-to-labour ratio (more machinery and equipment per employee) over the period 1961 to 1999. Since 1966, labour growth has contributed less to overall growth than has capital growth.

The steepness in the decline of both labour and multifactor productivity in Canada over the last 40 years, especially in the period after 1973, is clearly visible in Table 8-1. The reasons for the drop are not clearly understood, but it is widely believed related to having achieved optimal exploitation of existing technology and process developments, as well as to limits on labours' ability to work 'smarter' and/or willingness to work harder. The trend is not unique to Canada. Most Western countries have experienced similar, albeit generally not as precipitous, drops in productivity. Although labour productivity was still declining at century's-end, multifactor productivity had started to improve over the 1990's. Undoubtedly, the widespread application of microelectronic technology contributed to this improving trend.

Chart 8-1

Multifactor Productivity and Labour Productivity Average Growth Rates for Canada for Selected Periods

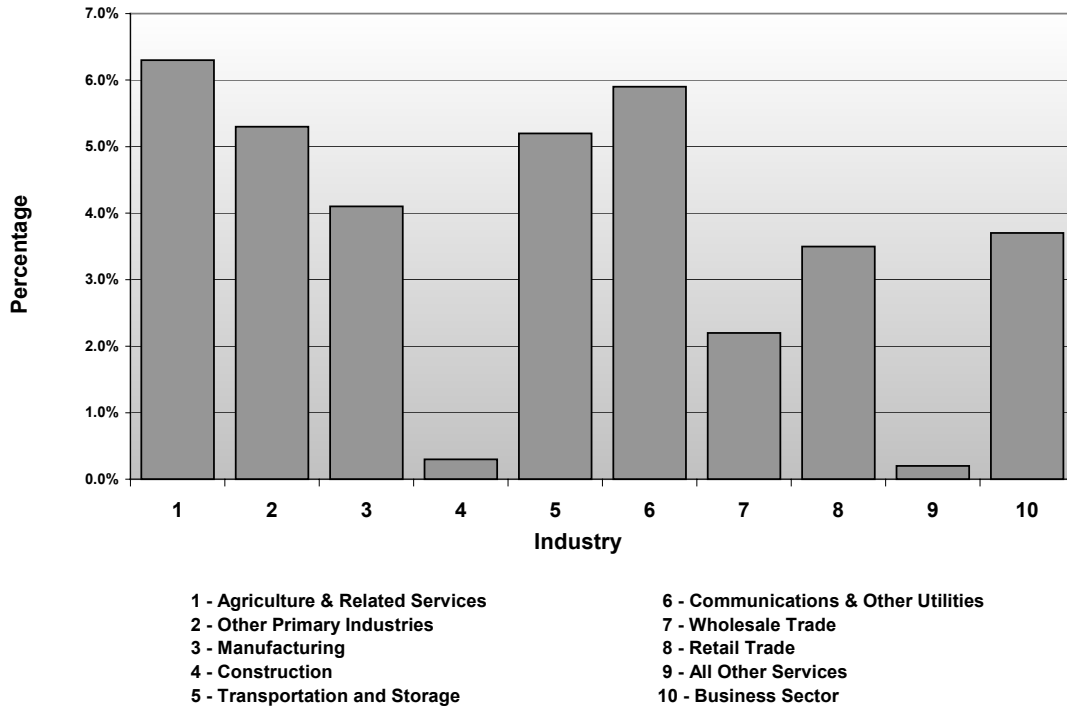


Source: Statistics Canada – Catalogue No. 15-204

The next two tables show labour productivity gains by industry sector. Although not evident from the data plotted in the two tables, the main source of output growth varies by sector. In the services-producing sector, labour was the engine of output growth, with a contribution of close to 50% in the post-1973 periods. By contrast, in the goods-producing sector, capital was the most important source of growth, contributing over 50% during the 1973-1988 period.

Chart 8-2

Labour Productivity by Industry Groups for Canada - Annualized Growth Rates 1961-1973

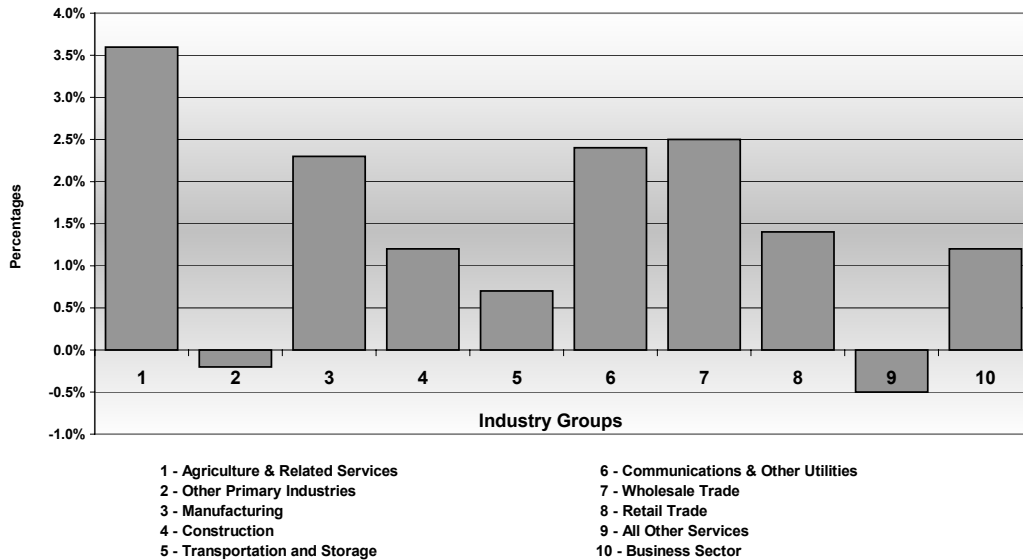


Source: Statistics Canada – Catalogue No. 15-204

Table 8-2 looks at the period from 1961 to 1973 while Table 8-3 focuses on the period after 1973.

Chart 8-3

Labour Productivity by Industry Groups for Canada - Annualized Growth Rates 1973-1999



Source: Statistics Canada – Catalogue No. 15-204

Manufacturing productivity dropped by nearly 50% between the two time periods, but this was still much less than some other sectors like transportation and communications. Productivity in primary industries (mining, forestry, fishing) actually plummeted into negative territory as did the service sector.

The bottom-line is that productivity improvements offer only minimal potential to offset declines in labour supply. With respect to economic growth, communities like Hamilton need to focus instead, on improving both the quantity of labour supply and its quality (upgrading education and skills)²⁰.

²⁰ Conceivably, productivity can increase and standards of living can fall or stagnate over periods as long as a decade if increases in jobs do not reflect growth in the population, i.e. population growing faster than labour force – the converse can also be true – standards of living can rise if productivity falls but population falls faster than productivity and/or labour force.

Key Findings

Population:

- Hamilton's population growth is slowing rapidly and it is becoming much older.
- Immigration now accounts for approximately 85% of Hamilton's total population growth and that percentage could rise to 100% over the next couple of decades.
- By 2013, the number of adults in the labour force pre-retirement (55-64) age group will exceed the number of youths in the labour force pre-entry (15-24) age group, and the gap widens in future years.

Labour Force:

- Hamilton's labour force growth will cease altogether shortly after 2016 and the absolute size of the workforce will actually begin declining.
- Hamilton's city core will continue to lose labour force share to its periphery communities for the foreseeable future.
- Employment growth over the last decade or so, both occupationally and on an industry sector basis, matches favourably with Hamilton's declared economic development strategy of promoting specific "cluster" industries.
- Employment in manufacturing, still Hamilton's most important industry, is on a very slow path to recovery and is still well below peak levels achieved in 1989.
- Educational institutions will inherit massive staffing obligations over the next decade. Society's ability to prepare its next generation labour force will be highly dependent on resolving those needs.
- The health of Hamilton's population and labour force is likely to be negatively affected by current and projected shortages of health care professionals
- Hamilton's population of labour force age lag behind Ontario in terms of educational achievement.
- Emerging labour shortages in both Health Care and Education were adversely affected by budget decisions in the mid-1990's that resulted in downsizing their workforces
- An apparent decline in management workers over the last 13 years could deprive Hamilton of a vital constituency for dealing with future labour supply shortages

Migration:

- In-migration and out migration of population during the 1990's was equivalent to 60% of the average total population during that period.
- Migrants tend to be much younger than the general population with over 70% of the net gain from migration during the 1990's being under 25 years of age.
- Hamilton lost more people to inter-provincial and intra-provincial migration over the 10 years of the 1990's than it gained. The trend was improving though, by the end of the decade. Numerically, movements within Ontario dominate the totals.
- Only net international migration flows were positive for Hamilton between 1990 and 2000, and they were sufficiently large to more than offset inter and intra-provincial losses.

Commuters:

- Numerically, both commuters-in and commuters-out are each equivalent to about 20% of Hamilton's employed labour force
- Workers leaving Hamilton each day outnumber those coming into the city and the gap is growing.
- Although Burlington is the largest single source for both in and out-commuters, taken together, movements to other communities in Ontario are numerically larger and growing faster.

Immigration:

- Hamilton's immigrant population is much older than Ontario's or Canada's.
- Proportionate to Ontario and Canada, Hamilton is not attracting as many immigrants in recent years as it did in the past.
- From a labour supply perspective, Hamilton's immigration flows on a "Class" basis, are far from optimal.

Productivity:

- Labour productivity in Canada has been in constant decline since 1966, dropping from an average increase of 3.7% per year for the period 1966-1973, to barely 1% per year for the period 1988-1999. Considering the complex causal factors driving labour productivity, it would be a long time before substantial improvements could be realized even if the right initiatives were undertaken – the point being that improvements in labour productivity offer only minimal prospects for offsetting emerging labour supply shortages.

Employer Interviews

Early on in the study, it was recognized that it would be important to assess current employment conditions and human resource issues in Hamilton in order to ascertain whether projected conditions merited special concern. A review of the literature and data, which revealed the paucity of data available, quickly led the Steering Committee to opt for a direct survey of employers. The cost of a full-fledged survey could not be justified, considering that Hamilton has an employer base of approximately 16,000 employers. An alternative approach, believed to be capable of providing a reasonable 'reading' of current conditions, was a targeted survey of a limited number of employers – chosen by the committee based on their 'representativeness' of the industry sectors we particularly wanted to understand. Approximately 100 firms and organizations were identified. The plan was to mail-out, under cover of a letter of request from the Mayor, a human resources questionnaire designed to solicit current human resource recruitment and retention issues and to weigh the firm's/organization's exposure to baby-boomer retirements. The survey instrument was to be followed-up with an interview by the author of this study in order to clarify and expand on the data in the questionnaire. Despite the best efforts of the committee and extensive follow-up by the city's Economic Development Department, only 40 some completed questionnaires were returned, and approximately 50 interviews conducted. Clearly, Hamilton employers were occupied with more important issues.

As an adjunct to the formal Employer Survey part of this study, a decision was taken to mount a condensed version of the Employer Survey Questionnaire on the city's web-site and invite all Hamilton employers to go on-line and complete one. A fairly comprehensive media blitz was employed to bring the existence of the on-line survey to the attention of Hamilton's employers. Unfortunately, the on-line version of the Hamilton HR Matters! Survey was even more ignored than the mailed version.

Despite the poor response rates obtained from the two surveys and follow-up interviews, a lot of valuable insights and human resource data were actually captured. However,

because of the limited responses, and in order to protect respondent confidentiality, the data cannot be presented directly in this study. The information was used extensively though to improve the author's understanding of some of the trends observed in the main body of data, and was vital in the framing of the recommendations. Furthermore, the whole Employer Interview exercise confirmed that human resource issues are not a high priority for most Hamilton employers. That in itself, is valuable information considering the critical economic importance human resources are about to assume. As was pointed out earlier in the study, the demographic window is narrow, and Hamilton needs to take advantage of it, now! The survey has clearly, and loudly, identified 'raising awareness' as the first task in marshalling the community's employers and resources to resolve the emerging labour shortages.

The remaining part of this section lists some of the author's own observations concerning the employer interview exercise, and it lists some of the more salient findings extracted from the employer interviews and questionnaires themselves.

Employer Survey Findings:

- Responses to the on-line and to the mailed human resources questionnaires was very poor. Willingness to participate in the follow-up interviews was equally muted.
 - The likelihood is that future worker shortages are, by and large, just not on employers' radar screens
 - Most employers interviewed appeared to have a poor understanding of the nature and magnitude of the worker shortages that will threaten their very existence in the near future.
 - Human resource staff within several firms expressed their own frustrations with getting management's attention respecting this issue
- As a general statement, a community-wide initiative around improving human resource planning and labour supply would be very welcome by employers, particularly small and medium ones.

- At least among the human resource professionals within companies, there were strong indications of a willingness to participate in any 'broader' human resource initiatives
- Very few employers plan for their human resource needs beyond one budget year. Many have an even shorter time horizon. It was rare to find an employer with a five or ten year human resource plan.
- Succession planning was non-existent in most organizations even though there was a fair degree of awareness that their aging workforce would present serious recruitment challenges in the not-too-distant future.
- Most small employers don't have any professional human resource staff capability.
 - The function was often an extra duty tacked-on to some other position, most often the senior manager's
- Primary and secondary school boards appeared just as unprepared for the oncoming wave of baby-boomer retirements as the general employer community
 - Human resource responsibilities at the primary and secondary levels appears to be quite fragmented, with various positions having responsibility for particular recruitment needs. As a result, it was difficult to get a clear picture of the overall human resource situation.²¹
 - The McMaster university and the health care institutions appeared the best prepared
 - Mohawk seemed to have a good handle on its requirements due to student enrolments, but their preparedness vis-a-vis faculty, administrative and maintenance staff was not clear
 - The city itself seemed to be just starting to come to grips with its own emerging recruitment needs
- With a couple of notable exceptions, businesses and organizations are ill-prepared, and generally ill-equipped to cope with the human resource challenges looming ahead.

²¹ This was also true with regards to collecting student 'drop-out' statistics. There did not appear to be any central repository for this vital information.

- A plea for stronger municipal leadership around this and other common concerns was aired by nearly every interviewee.
- With respect to adequate labour supply, small employers already find themselves between the proverbial "rock and a hard place". Their shortages are crippling, but their capacity to develop and implement solutions is severely limited.
 - the metal manufacturing industry seemed to be suffering the most currently – metal trades occupations were in the worst shortage
 - firms in the periphery regions of the city were experiencing the worst worker shortages currently
- Many small and medium employers indicated that the lack of adequate workers has restricted significant growth opportunities for their firms over the last several years.
 - Many appeared to have run out of ideas on how to resolve their dilemma
 - Several firms indicated that they had contracted-out portions of existing contracts to competitors, because of their own lack of workers to complete the work in-house
- Many small employers relied on the Chamber of Commerce (often exclusively) for human resource materials, information and guidance.
- Infrastructure improvements, particularly public transportation in the periphery areas, would ease the recruitment and retention issues faced by many employers.
- A significant number of employers expressed frustration with the city's lack of progress in becoming more 'business-friendly'. The issues ran the gamut from taxes and public transportation to incentives and effective consultation.
- And finally, a few employers were convinced that the world would pretty much continue on its present course and were planning accordingly.

Recommendations

As daunting as the task may appear, Hamilton is well-equipped to confront and resolve the human resource challenges facing it. In addition to the normal range of community facilities:

- it is home to a university, a community college, a teaching hospital, a training board, an industry-education council, and a vibrant immigrant resettlement organization
- the two senior levels of government have a strong presence in the community
- it is home to several sector-based training organizations
- it has a dynamic network of social and economic support organizations
- and, the city is strategically located geographically, is the beneficiary of a good transportation infrastructure, and, as those who live there can attest, well endowed with lifestyle amenities.

Natural attributes aside, if the businesses and organizations interviewed in the course of conducting this study can be believed, the real question facing Hamilton is, "Can the community marshal its abundance of resources in a sufficiently timely and effective manner to cement the vision of, *A city of growth and opportunity?*" Based on the data, the picture painted by the interviewees, and the authors own 30+ years of experience as a labour-market economist, the answer is a cautious 'Yes' – providing that community leaders and stakeholders respond positively, imaginatively, and collectively to the human resource challenges confronting them..and they must respond soon.

The recommendations, which follow, acknowledge some of the key issues demanding attention. The order in which they are presented reflects the authors judgement regarding both a logical sequence, and an order of relative importance. In some instances, specific 'actioners' have been identified, but generally, the community and its stakeholders have to work out the logistics of implementation. No involvement – no ownership!

Raising Awareness, Developing Leadership and Gaining Commitment

- 1) Before wrapping-up, the Steering Committee associated with this study needs to identify core leadership, make them fully aware of the issues and secure their commitment to mobilize a comprehensive community response.
- 2) Convene key stakeholders, community leaders and potential resource personnel to forge an action program aimed at strengthening all aspects of Hamilton's public and private human resources support, development and recruitment activity.
- 3) Create an 'HR Matters' focal point in the community to track progress, co-ordinate initiatives and serve as a repository for human resource information and materials. At a minimum, the Chamber of Commerce needs to be part of the focus, and the university and community college need to be major contributors.
- 4) Develop better mechanisms to give young entrepreneurs a more effective voice in the community's decision-making processes, and to funnel their energy and enthusiasm into community development.
- 5) Establish a public 'Scorecard' to track progress on the community's HR Matters strategy.
- 6) Establish an ongoing program of research into human resource issues affecting Hamilton.

Strengthening the Community's Image

- 1) Develop and launch a campaign to tell the real story of what Hamilton is and what it offers. The city's image was identified as the number one impediment to external recruitment.
- 2) Do something dramatic and creative about the downtown. Create a real "buzz" about the 'New City of Hamilton'. Its current state speaks volumes to insiders as well as outsiders. A 'new' state could speak even louder volumes...and much more positive ones.

Assisting Small & Medium Sized Employers with Human Resource Planning

- 1) Assemble a 'Best Practices' human resource database and make it available on-line to employers. Include a comprehensive register of available resources to assist the employers in their planning and implementation.
- 2) Develop a series of workshops aimed at small to medium sized businesses and human resource practitioners. Topics to be covered include human resources planning, administration, practices, recruitment and retention. Two priority topics should be the recruitment and retention of older workers, and bonding with the next labour force generation. Offer a variety of delivery mechanisms – on-line, correspondence, breakfast seminars etc. – be imaginative. Again, the Chamber presents an ideal starting point for such an initiative.
- 3) Establish an 'HR Connects' program aimed at linking resource personnel with employers seeking professional assistance with their human resource issues. A valuable component would be a 'shared' pool of human resource professionals, allowing small employers to get a better handle on their human resource practices.

Building the Labour Supply

- 1) Launch a campaign to attract more immigrants to Hamilton, especially those with a more advantageous labour force profile.
- 2) Strengthen Hamilton's immigrant resettlement capacity, including language training and cultural orientation.
- 3) Get key community leadership directly involved in the issue of accelerating the immigrant credential recognition process, and lend the city's full weight to moving this agenda forward.
- 4) Develop a strategy to prevent local youth and young workers from migrating out of the community, and to retain post-secondary students after they complete their studies. (Nearly 70% of McMasters full-time students come from outside the community) It needs to include:

- developing earlier bonds with local employers, particularly in such emerging industry sectors as film, biotechnology, graphic arts, communications and micro-electronics
 - broadening career prospects by expanding occupational choice and/or making opportunities better known.
 - promoting their special talents and skills among local employers
 - strengthening support and assistance for new, young entrepreneurs. There is a real role here for 'incubator' types of projects – and in the downtown core would be a 'bonus'.
5. Establish a high-powered, community 'Task Force' to specifically deal with the developing recruitment crisis in the education and healthcare sectors.
 6. Develop a program to encourage and assist older workers in remaining in the labour force longer or returning to it. It might include a 'casual labour pool' and a 'mentoring' element.
 7. Promote Hamilton among early retirees in the GTA looking to relocate to a quieter and cheaper community with a great lifestyle and within easy commuting distance of their kids.
 8. Launch a two-pronged "Come Home to Hamilton" campaign aimed at ex-patriots and existing commuters.
 9. Launch targeted campaigns promoting Hamilton as a place to live and a place to work in those communities from which Hamilton is already attracting significant migrants.

Improving Skills and School-to-Work Transitions

1. Expand co-op, mentoring and work-experience programs, especially at the secondary school level.
2. Improve the quality and variety of information on career opportunities that are available in Hamilton, and improve its dissemination to students and young workers.
3. Promote occupational choices that support Hamilton's economic development goals.
4. Promote skills-upgrading and life-long learning among existing employers and workers, and create effective mechanisms for them to connect to the 'deliverers'.

Infrastructure Issues Affecting Human Resource Recruitment and Retention

1. High business taxes compared to competing jurisdictions.
2. Poor public transportation in the periphery areas and poor linkages with Burlington and other surrounding communities.
3. Lack of effective tax incentives for downtown redevelopment.
4. A shortage of commercial travel accommodation.

Conclusion

The prospect of an ageing population and dwindling labour supply are not unique to Hamilton. Over the next two or three decades, every Western country will have to cope with this reality. What is unique to Hamilton are the details. Hamilton's population is ageing faster than Ontario's and growing even slower. If current trends persist, it will eventually begin to decline. Ontario is a net-gainer from domestic population migration, Hamilton is a net-loser. And finally, Hamilton's industry and occupational spectrum is much more narrowly focused than Ontario's.

Notwithstanding the foregoing, there are actually more similarities than differences among Ontario, Canada and Hamilton. For all three jurisdictions, immigration is quickly assuming responsibility for nearly all population growth. Labour supply will be in severe shortage and critical services in a number of sectors, particularly educational and health, will be strained to the breaking point. Employers will be constantly scrambling to recruit new workers while trying to retain the ones they have – a sure recipe for wage and salary escalation.

Considering the breadth of emerging worker shortages, labour markets are about to become much more competitive. It is that competition that presents Hamilton with its biggest human resource challenges:

- 1) how to stem domestic migration and commuter losses
- 2) how to attract more and better-educated immigrants to the community
- 3) how to improve the education and upgrade the skills of its existing population and workforce
- 4) and how to make sure its key organizations and institutions are able to deliver the services expected, when they are needed.

If Hamilton can successfully deal with these challenges then its prospects for achieving its stated economic development goal of developing a cluster-based economy able to provide the competitive advantage needed to ensure a sustainable future, are good.

Hamilton has declared its priority goal to be "A City of Growth and Opportunity". Much work needs to be done!

Appendix A

Additional Research

- 1) Build an on-line human resources 'Best Practices' database
 - focus on recruitment and retention strategies/practices at the firm level
 - tie it in to a small business seminar program
- 2) Conduct an assessment of the factors influencing immigrant's choices of location for settlement
 - begin with recent immigrants to Hamilton
- 3) Survey young students at the university, college and high school level to determine the factors influencing their decisions to stay or leave Hamilton
- 4) Conduct a hiring needs assessment for the local school boards - primary and secondary levels as well as administrative and maintenance staff
- 5) Create a tracking system for high school drop-out rates and assess the reasons for any trends that appear
- 6) Track the impact of the new Apprenticeship Act and identify the causes of any negative trends
- 7) Identify the factors that caused employment in management occupations to drop substantially during the latter years of the 1990's.

Appendix B

Data Issues

Because many of the readers may wish to view the full spectrum of data used in the preparation of this report, and because of the confusion often arising when referencing Hamilton city, Hamilton CMA and/or Hamilton Census Division, a brief description of sources is provided here.

As a general rule, the smaller the geographic unit, the less accurate is the data. Consequently, statistical agencies tend to aggregate data up to geographic levels that yield reasonably accurate figures for analytical purposes. A great deal of the data for Hamilton is aggregated to the Census Metropolitan Area (CMA), which includes the cities of Burlington and Grimsby in addition to the new city of Hamilton (Hamilton itself accounts for roughly 75% of the CMA's population). This is particularly true of Census data. This is also true of Statistics Canada's Labour Force Survey data, which is not available at all at the city of Hamilton level. It is also true for most of Citizenship and Immigration Canada's administrative data.

Because of the paucity of data at the new city of Hamilton level, a great deal of the data in this report was generated as special tabulations by Statistics Canada, and therefore, cannot be found in the usual publications. Quite a bit of it, especially the migration data, was built from extracts of Revenue Canada's income tax records by Statistics Canada's Small Area Data division. Most of the other data in this report came from Statistics Canada's Census series. Some of it is on a CMA basis, and this is indicated whenever that is the case. And some of it is for the census division of Hamilton-Wentworth (which is essentially the same as the new city of Hamilton and in fact, is being referenced in recent data series by Statistics Canada as just Hamilton). All data in this report refers to the new city of Hamilton unless specifically indicated otherwise.

Data was also drawn from a variety of other sources for this study. This is particularly true of the education and health care numbers. Sources are identified under each Chart or Table and the full descriptor of the data source is provided in the Bibliography at the end of this paper.

Appendix C

Data Methodology

There are a number of reasonably good models available for generating population growth forecasts. They all rely on plugging in such causal demographic factors such as fertility rates, mortality rates, migration flows, etc. into a mathematical formula, that then extrapolates population estimates forward into some defined future period. For this study a number of models were evaluated and in the end, two were used to generate the Hamilton labour force numbers.

The numbers used in this study initially derive from Statistics Canada post-censal population forecasts. After every Census, and on the basis of the new information provided by the Censu, Statistics Canada revises the key demographic variables used to forecast population estimates, and they generate a new 50-year forecast for Canada and the provinces²². The Ontario Ministry of Finance then attributes Statistics Canada's Ontario numbers down to the census sub-division level (in this case Hamilton-Wentworth, or the new city of Hamilton). The process of attribution itself requires making certain assumptions about migration patterns, provincial growth trends, etc.. When Ontario generates its provincial forecasts, it prepares three different scenarios, a high growth scenario, a 'reference' growth scenario, and a low growth scenario. Each scenario differs from the others on the basis of the assumptions being made about the key demographic variables. The 'reference' scenario is what the model builders themselves view as the 'most-likely' outcomes.

In this study, all of the population and labour force numbers for Hamilton start with the Ontario 'reference' scenario, attributed to the census sub-division level...although one chart on comparative labour force growth between Hamilton and Ontario, shows what the results would be for each of the scenarios.

To get to labour force from population forecasts, the author created a series of complex calculations, the description of which, here, would not likely be very illuminating. Essentially, utilizing national and provincial labour force projections obtained from SEDAP Research Papers No. 15 and 16²³, the author made detailed-age attributions of labour force variables to Hamilton, and then applied those to the Hamilton population numbers obtained earlier. The results are the labour force projections to 2026 that form the core topic of this report.

²² Interestingly, the 2001 Census, for which preliminary population totals were just recently released (almost a year after Statistics Canada produced its post-1996 population forecasts), the actual 2001 Census population numbers for Ontario and Hamilton were about 2.5% lower than predicted under the Ontario 'reference' scenario. It would appear then that even the reference scenario was too optimistic about future population growth prospects?

²³ See Bibliography

Appendix D

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Appendix E

HR Matters Steering Committee

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- Ivan Buzzelli – Director, Human Resources – TradePort International Inc.
- John Dolbec – Executive Director – The Hamilton Chamber of Commerce
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