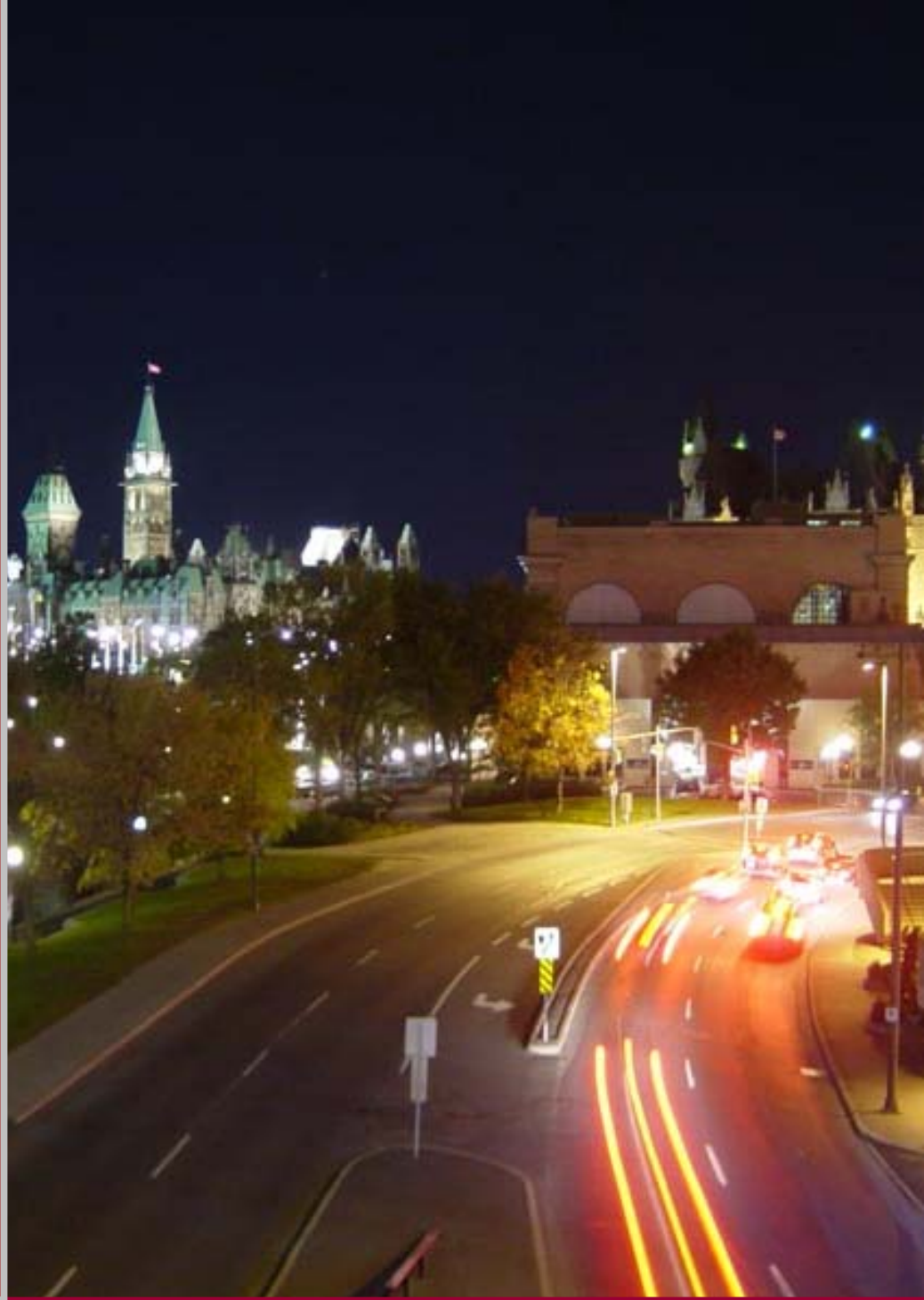


November 10, 2008



City of Ottawa

Employment Land Study Strategy Phase 1



Final Report





Executive Summary

The Ottawa Employment Lands Strategy Study was initiated in July 2008 and is being carried out in two phases. This report reflects the analysis and findings of Phase 1 of the study which was conducted to identify priority areas for the City's employment lands strategy.

Scope of Work

In Phase 1, the study examined the effect of Ottawa's current economy and employment base on employment lands, projected prospective employment growth, and reviewed historical and current market trends affecting employment lands development in the City.

The Phase 1 report provides an overview of Ottawa's current economic context from provincial, regional and municipal perspectives. It incorporates forecasts for the growth of Ottawa's economic sectors to the planning horizon of 2031 and analyzes the effect of these forecasts on the requirement for employment lands. The supply and demand analysis for employment lands that follows is based on the sector forecasts and absorption rates, and is accompanied by intensification analysis. The land budget produced through this analysis is followed by a qualitative assessment of the existing supply of employment lands and informed by current and historical development trends. Overall, the study identifies issues relevant to employment lands development in Ottawa. It provides focus areas to be explored in Phase 2, in order to facilitate strategies for the City to capture the economic and employment growth projected.

Overall Findings

1. Employment Base. The most significant economic sectors in

Ottawa's current economy are the federal government and IT high-tech sector. Strong service sector and retail growth have also influenced the City's economy in recent years. Manufacturing activity has declined in Ottawa, so reflecting provincial and regional trends. However, industrial sectors comprise a relatively lower share of the City's economy and thus have not impacted the City's overall economy significantly.

2. Sectoral Growth Forecasts. Two scenarios for potential sector growth are projected to 2031. They differ in two respects: employment growth in the federal government and administrative services sectors. Nonetheless, both scenarios project that four employment sectors would contribute to approximately half of Ottawa's overall employment in 2031. These include federal public administration; health care and social assistance; professional, scientific and technical services; and the retail sector.

3. Supply and Demand Analysis. The land budgeting exercise is based on the sector forecasts and absorption rates. It demonstrates that the existing quantity of lands designated and zoned for employment, i.e., 1,970 net hectares, in Ottawa is more than sufficient to support the 799 to 817 net hectares of employment lands demand projected for 2031. However, the marketability of this supply and its potential absorption and development for employment uses is contingent largely upon the quality of the supply. In particular, the current lack of servicing is a constraint on the ability of the existing supply to meet demand.

4. Development Trends. The major employment sectors in Ottawa have generated a need for primarily office-



based employment in past years, although locational requirements within this office-based segment may differ (e.g., federal government tends to prefer locations inside the Greenbelt while the IT high tech cluster is located in the west end of the City). This development has generally been concentrated in the Central Area and Kanata. Orleans, on the other hand, has been characterized mainly by residential and retail development and is currently not developing as a significant employment hub.

5. Quality of Vacant Employment Lands.

The development trends noted in Ottawa are indicative of the locational preferences of businesses with different employment lands requirements. Overall, office uses locate in areas which allow for access to employees, related transportation and transit accessibility, similar uses and amenities. Industrial uses require highway access and proximity to suppliers and customers. Institutional and retail uses are population-serving and locate near residential areas.

The assessment of Ottawa's employment lands supply indicates that supply inside the Greenbelt is diminishing, and that parcel characteristics (e.g., parcel sizes, location, fragmentation and ownership) and high land values could impact development negatively. Outside the Greenbelt, servicing is a major constraint found to restrict the development of well-located parcels in Kanata. While servicing is also a constraint in Orleans, several other factors detract from the appeal of the east end as location to develop employment lands.

Conclusion

Overall, the study finds that the designated vacant employment lands supply should be more than sufficient to meet projected demand to the planning horizon of 2031. It

also finds that a very high rate of employment intensification is occurring in the City. The concentration of employment growth in office-based sectors, as in the top two employment sectors, indicates that the City needs to:

- Ensure that lands are available for major office development.
- Focus on developing the east end through appropriate infrastructure investment and partnerships.
- Recognize that servicing is a key issue restricting absorption of vacant employment lands outside the Greenbelt.
- Recognize that transit access and nodal development (e.g., Central Area, transit hubs) is an opportunity.
- Consider an office hierarchy to guide planning and development decisions on office location.
- Recognize and seek to address disadvantages to employment lands development for industrial uses in Ottawa.
- Determine the long-term location of retail growth.

While the economic sector analysis and land budget exercise demonstrate that the quantity of designated employment lands in Ottawa is sufficient to fulfill demand to 2031, the qualitative assessment affirms that the City will need to take appropriate steps (such as those listed above) to enhance the market appeal and quality of such lands.

The unique nature of the Ottawa area creates a need for the City to recognize that planning for employment lands in Ottawa is, to a large degree, dependent on the interests of and relationships with public (and quasi-public) landowners including the federal government and the Ottawa International Airport Authority.



Importantly, the City may benefit from playing a more active role in employment lands development to improve the marketability of the existing vacant land supply. By and large, the development community indicated a strong need for the City to engage more actively in bringing vacant but constrained land on-stream, to recognize that industrial development while proportionally smaller than other sectors could impact Ottawa's regional competitiveness to some degree, and to actively pursue development opportunities through an aggressive marketing strategy and a more streamlined and user friendly development process.

Directions for Phase 2

Phase 2 of this study will build upon the analysis and findings of Phase 1 to assist the City in refining opportunities to direct employment lands development. The work will focus on the overall role the City could play to ensure that the designated employment lands supply supports new development and maintains the existing employment base. Phase 2 will include aspects such as a focus on the locational preferences of the federal government, the identification of priority areas for servicing provision, and incentives to guide employment lands to fulfill preferred growth objectives.



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1 Study Overview

The City of Ottawa engaged Metropolitan Knowledge International (MKI) in association with the Centre for Spatial Economics (C4SE) in July 2008 to assist in the development of a “Long-Term Employment Lands Strategy.” The goal of the employment lands strategy is to ensure that the right amounts of lands with the right services are located in the right place to maximize economic growth.

The employment lands strategy is intended to address the type of employment growth likely in Ottawa, and the characteristics and quantity of the lands required to accommodate the projected growth. The strategy should also be designed to ensure that employment lands planning supports broader planning objectives.

The employment lands strategy will inform the current review of the City of Ottawa’s Official Plan as well as the accompanying Economic Strategy which will be updated in 2009.

1.1 Approach

The development of the employment lands strategy involves two phases of work:

- **Phase 1 - Analysis and Forecasting**, which includes three steps that, (1) examine the employment base analysis and forecast; (2) analyze the overall supply / demand for employment lands; and (3) assess the quality of the employment lands supply.
- **Phase 2 - Strategy Formulation**, which includes three steps that (1) review the employment strategies of other urban municipalities; (2) investigate roles for the federal government and the City; and (3) develop recommendations for tools to attract more employment development

and to restrict conversion to other uses.

1.2 Study Questions

Phase 1 seeks to address the following questions:

- What are the major trends shaping Ottawa’s current economy and employment?
- What are the major sectors projected to grow in Ottawa?
- What requirements do the major sectors have?
- What do these trends mean for the demand for employment lands?
- What is the impact of these trends on employment lands supply?
- How adequate is the supply going to be to meet the projected demand?

1.3 Structure of Report

The structure of this report follows the approach of first analyzing and forecasting the demand for employment lands, and then assessing whether Ottawa has the appropriate quantity and quality of employment lands to support the projected growth.

The employment base analysis and forecast is the first step of Phase 1 and establishes an understanding of the future demand for employment lands. It includes the following:

- Economic outlook (Chapter 2)
- Sectors, drivers and growth (Chapter 2)
- Sectoral growth projections (Chapter 3)

A high-level review of Ontario’s economy and historical employment growth informs our understanding of Ottawa’s economic outlook. Chapter 2 discusses broad economic trends, key economic sectors and



the City's regional competitiveness. Employment sector forecasts are presented in Chapter 3, based on historical trends in employment and employment growth by sector. These are analyzed to identify the projected largest employment sectors and their implications on future employment growth.

With this understanding of projected demand, the next step in Phase 1 proceeds to review the adequacy of the supply of employment lands to meet this demand. Chapter 4 estimates the demand for employment lands in Ottawa to 2031, based on existing supply and historical and future demand trends by sector. A land budget is presented along with broad direction to guide future employment lands development. Chapter 4 is supported by Appendix B, which discusses employment growth potential through intensification and redevelopment in existing employment areas.

The third and final step of Phase 1 is an assessment of the quality of Ottawa's employment lands supply in the City's development context. Chapter 5 discusses the historical patterns of employment lands development in Ottawa and broadly identifies the reasons underlying these development trends. Within this context, Chapter 6 identifies the extent to which Ottawa's vacant employment lands meet the market demand for commercial and industrial development. This chapter discusses specific location factors that influence the quality of the supply. It is supported by interviews with key developers and landowners in the City.

Chapter 7 concludes the Phase 1 study by summarizing its findings, discussing their implications, and identifying the next steps for Phase 2 of the study. It discusses the role that strategy and policy together can play in guiding employment lands development towards the City's broader goals.

Appendix A provides a glossary of technical terms used in this report. Appendix B contains a detailed analysis of intensification potential in Ottawa. Appendix C lists interviewees who informed this study and key themes identified in these interviews. Appendix D contains the bibliography of the materials reviewed in this study. Appendix E outlines the study's limitations.



2 Employment Base

This chapter summarizes the current status of the employment base in Ottawa. It forms the basis to understand the opportunities and challenges to sustaining employment growth in the City over the long term planning horizon. The chapter is based on a review of documentation and data up to early 2008; therefore recent economic conditions are not captured here. However, a discussion of recent economic changes is included in Chapter 3 which presents sector forecasts.

Section 2.1 presents an overview of the unique characteristics of the City's economy to provide a context for Ottawa's current economic development pattern. Section 2.2 identifies key drivers contributing to the growth and change of the employment base.

2.1 The City Economy: An Overview

The output of economic sectors and the employment they generate contribute to real GDP and consequently to overall economic growth. Ultimately, it is the long-term employment growth and the land-use patterns and built-form preferences of distinct economic sectors that impact the overall amount, location, and characteristics of land required to spur the City's economy.

While Ottawa has one of the fastest growing Gross Domestic Products¹ in the country, in 2008 the Ottawa-Gatineau economy recorded a GDP growth of 2.7% in 2007, trailing 8 of 10 Canadian Cities including Toronto, Montreal and Vancouver.² The Region's GDP has been rising since 1995 and, according to studies, is expected to remain stable in 2008, when it is forecast to parallel the annual national

¹ GDP = Gross Domestic Product

² Conference Board of Canada, *Metropolitan Outlook Spring 2008*.

GDP growth rate of 2.6%.³ Chapter 3, which accounts for recent economic changes, estimates a slower rate of real GDP growth at 1% for 2008.

Historically, economic growth in the surrounding region has also been driven primarily by the City of Ottawa. The City's economy, in turn, is intrinsically dependant on the contribution and growth of key economic sectors. Most prominent amongst these are the federal government and the IT high tech sector which, together, are estimated to contribute to approximately 37% of Ottawa's GDP.⁴ Exhibit 2-1 presents a breakdown of the City's economy by sector.

From an employment perspective, economic activity in Ottawa was supported 521,639 jobs in 2006, with the federal government as the largest employer.⁵ The public administration sector was followed in size by retail trade; professional, scientific and technical services; health care and social assistance; educational services; and accommodation and food services.

The office-based economic strength of the City is associated with its demographic profile of a highly educated labour force and its concentration in the knowledge-based industry. This profile is complemented by a strong institutional based sector, including the campuses of the University of Ottawa, Carleton University, Algonquin College and La Cite Collegiale, as well as a number of major hospitals, libraries, etc.

Recent growth in population and income levels, the strong housing market and corresponding increase in residential construction partially explain trends such

³ Conference Board of Canada, *Metropolitan Outlook Spring 2008*.

⁴ Conference Board of Canada, *Metropolitan Outlook Spring 2008*.

⁵ City of Ottawa: *Employment in Ottawa - Results of the 2006 Employment Survey, November 2007*.

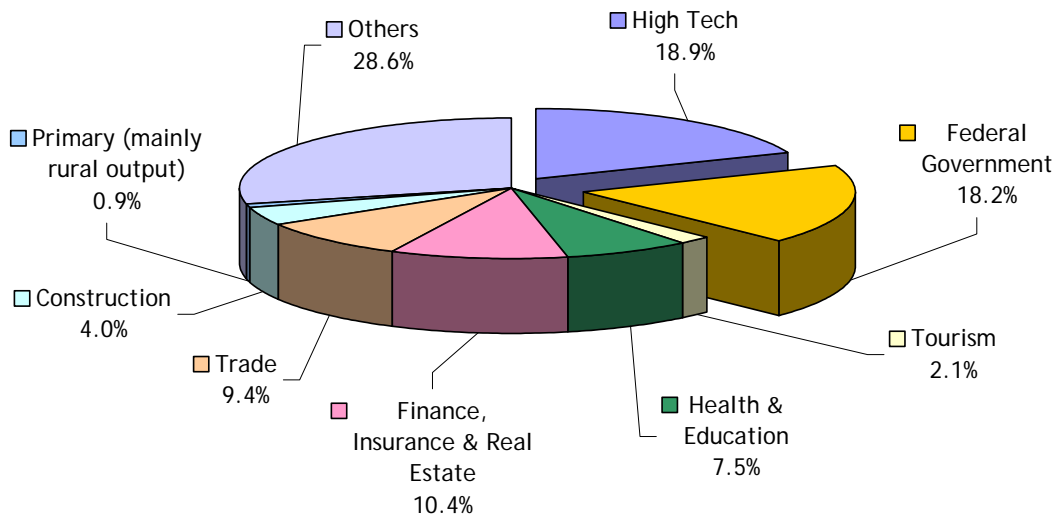


as growth in the construction sector, which has seen the most rapid growth at 41%, and the 9.5% growth in employment provided by the population serving retail sector between 2001 and 2007. The growth of the construction sector should be viewed within the broader context of the economic surge that has followed the recession of the 1990s, and the corresponding increase in the ability of the labour market to meet demand in the construction sector.

these two sectors was noted for the period between 2001 and 2007. Notably, during this period, the Gatineau CMA⁸ gained the same number of jobs in the educational sector as Ottawa lost. In the Ottawa CMA, the transportation and warehousing sector also saw declining growth in the same period while the Gatineau CMA saw positive growth, which is potentially linked to business losses to municipalities outside Ottawa for reasons of competitiveness (this

Exhibit 2-1: Ottawa GDP by Sector (2007)

Source: Conference Board of Canada



According to the City of Ottawa's 2006 Employment Survey, the most significant decline over the 2001 to 2006 period was the manufacturing sector's decline of -27% or 12,000 jobs. The Transportation and Warehousing and Educational sectors however, grew by 10.5% and 2.6% respectively.⁶

However, in the broader region represented by the Ottawa Census Metropolitan Area (CMA)⁷, a decline in

issue is discussed further in Section 6).⁹

2.2 Economic Drivers: The City in Context

To understand the economic drivers in Ottawa, it is important to review the broader context of the economic changes in the Province of Ontario. In addition, Ottawa's position in terms of

⁶ City of Ottawa, *Employment Surveys 2006, 2001*.

⁷ See Glossary

⁸ See Glossary

⁹ Corporate Research Group, *Economic Outlook Q1 2008, based on Statistics Canada Labour Force Survey*.



competitiveness and economic cluster formation in the surrounding region is also relevant to understanding the strengths and weaknesses of the City's economic growth.

Province: The traditional export-based manufacturing strength of the Ontario economy has been diminished significantly over the past decade. This is primarily due to the influence of factors such as the increasing need of businesses for global competitiveness and, until recently, the appreciation of the Canadian dollar.

At the provincial level, import trade with Asia (primarily China) has increased substantially since 2000 and has been accompanied by the growth of the transportation and warehousing sector. Lower employment densities have accompanied this growth, due to technological advances that have been widely experienced across the country including in high employment regions, such as across municipalities in the Greater Golden Horseshoe.

Employment growth has been stable or negative for manufacturing and primary industries. This is partly due to trends such as outsourcing, which may be shifting employment from vertically integrated manufacturers to business services and other sectors, e.g., through growth in third-party supply chains.

Productivity is increasingly the driver of growth for manufacturers. Jobless growth has been a phenomenon in this sector, caused by productivity increases (automation, outsourcing) replacing expansion in generating profits.

Companies have shifted the way they invest in their businesses. Twenty years ago roughly half of investment was in structures (buildings) and half was in machinery and equipment. Today, roughly 80% of investment is in machinery and equipment and less than 20% is in structures -

investment in technology is the focus, real estate less so.

In contrast, employment growth has been strongest in service sectors. In particular, employment in business services has grown at almost twice the rate of other sectors. Output growth has been strongest for the service sectors and the highest rates of output growth over the past two decades have been in wholesale trade, business services, and other services.

Surrounding Region: As Canada's capital, the headquarters of the federal government, and a significant IT high-tech cluster, Ottawa's unique economic structure sets the City and its surrounding region apart from other areas in the Province.

Service-based sectors provide the larger proportion of employment in Ottawa and have seen considerable growth in recent years. Between 2000 and 2007, for the Ottawa Census Metropolitan Area (CMA), the most significant growth in employed labour force was in the health and social services sector (10.7% of total employment) which increased by 23.7% and the finance, insurance and real estate sector (5% of total employment) which increased by 22.3%.¹⁰

The manufacturing sector is a relatively smaller component of the employment base of the Ottawa CMA as opposed to employment in other sectors such as public administration (18.7%), retail and wholesale trade (12.7%), or professional, scientific and technical services (10.7%).¹¹ For instance, while the 0.8% decline in the manufacturing labour force in the Ottawa CMA between by 2000 and 2007 mirrors province-wide trends, this workforce constitutes under 8% of the CMA's employment.¹² Consequently, job loss in

¹⁰ *Ibid.*

¹¹ *Ibid.*

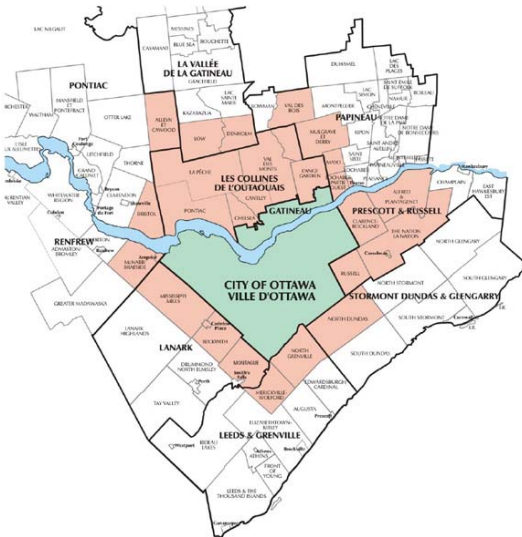
¹² *Ibid.*



manufacturing has not generated as much of an impact in Ottawa as in other municipalities in the Province.

As a regional hub, Ottawa also attracts a significant proportion of its labour force from Ontario municipalities adjacent to Ottawa (OMATO)¹³ and Quebec municipalities adjacent to Gatineau (QMAG)¹⁴ (Exhibit 2-2). Employment projections for the City indicate that from 2006 to 2031, 67% of the estimated labour force in OMATO and 31% of the estimated labour force in QMAG will work in Ottawa.¹⁵

Exhibit 2-2 Greater Ottawa-Gatineau Area¹⁶



The regional distribution of future employment holds implications for the City's competitiveness in terms of employment land absorption. This is particularly relevant to industrial uses, which have been found to be disadvantaged to some degree by locational challenges as well as high cost considerations of establishing and operating a business in the

City and particularly inside the Greenbelt. Chapter 6 discusses this issue in further detail.

2.3 Summary

The main themes of this chapter are summarized below:

- The federal government and IT high-tech sectors have been the most significant contributors to the City's employment base.
- While employment in manufacturing has declined in Ottawa, the relatively lower share of this sector has not created a significant impact on the City's economy.
- In recent years, strong service sector growth and declining manufacturing have characterized not only Ottawa but also the surrounding region. However, the transportation and warehousing sector of the City has seen some growth.

Chapter 3 contains sector growth forecasts from 2006 to 2031, and provides a basis for Chapter 4 which projects the demand for employment lands to 2031 based on the sector forecasts.

¹³ See Glossary

¹⁴ See Glossary

¹⁵ City of Ottawa, November 2007. *Growth Projections for Ottawa: Prospects for Population, Housing and Jobs 2006-2031*.

¹⁶ Ibid.



3 Sectoral Growth Forecasts

In order to establish an understanding of the future demand for employment lands in Ottawa, this chapter presents employment forecasts to the planning horizon of 2031. These employment forecasts update the by-sector employment forecasts completed by the City of Ottawa in 2001 by estimating the number of future jobs in the City by sector between 2006 and 2031.

The employment forecasts are based on a historical database of 35 sectors as well as the City of Ottawa’s 2006 employment survey. The forecasts reflect our current understanding of emerging trends and future growth prospects for various economic sectors. The methodology used is based on econometric analysis that establishes employment by sector.

In order to present a comprehensive picture of the employment growth potential in Ottawa, this chapter presents two forecast scenarios. The scenarios are based on different assumptions of the concentration and growth of federal government jobs in Ottawa, productivity gains, and the trend of outsourcing. Although the two scenarios project a different number of jobs for some sectors, the largest employment sectors are found to remain the same in both scenarios.

The forecasts in this chapter form the foundation for the employment lands supply-demand analysis in Chapter 4. They allow for an in-depth analysis of the varying manner in which different sectors use employment lands. By considering the employment growth projected for each sector, the City can ensure that it provides for the long term land needs of major employment sectors, in terms of both quantity and quality.

3.1 Projection Assumptions and Overall Employment Trends

The employment forecasts are based on two factors: population growth and macro-economic conditions.

Canada’s total population is estimated at 32.7 million in 2006 (based on the post-2006 census total from Statistics Canada). According to the C4SE base case estimation, it is projected to reach 44.5 million in 2031. The City and C4SE have separate population projections for Ottawa, but both present almost identical views about the City’s future population growth, as summarized in the table below.

Population	2006	2031
City	870,757	1,135,840
C4SE	848,100	1,121,500

The macro-economic forecasts support the labour force projections for Canada and Ottawa, and are developed based on the following elements:

- Estimates for the Canadian economy
- Estimates for the US economy, since Canada’s economy remains largely dependent on that of the US.

As summarized in the table below, real GDP growth is projected to slow down in 2008 and 2009 and then pick up pace in 2010 and 2011. Real GDP growth is expected to gradually slow down towards 2031.

Real GDP Growth	US	Canada
2008	1.0%	1.0%
2009	0.0%	0.3%
2010	3.3%	3.6%
2011	3.3%	3.6%
2031	2.1%	2.4%



In part, this gradual slowing down of growth for the US in the latter years of the planning horizon is attributable to the contraction of the labour force due to the aging of the baby boom generation. Compared to the US, the slightly higher real GDP growth for Canada is based on the assumption that Canadian productivity growth will average 1.2% to 1.3% per year from 2008 through 2031. These rates are slightly higher than the long term rate of about 1.0% since they account for the introduction of new technologies.

On this basis, total employment growth for Canada is estimated as shown in the table below:

Total Employment Growth	Canada
2008	-0.2%
2009	-0.9%
2010	2.4%
2031	1.1%

Although it is unlikely that Canada will be able to generate enough employees between ages 20 and 64 to meet the nation's future labour requirements, higher productivity growth could help reduce annual employment growth needs. Higher participation rates from the workforce beyond the age of 55 are also expected to strengthen this trend. Nonetheless, to meet the projected labour requirements, Canada's immigration targets will need to increase beyond the current level of 225,000 per year. The forecast model shows that Canada would need 300,000 people by 2015 and 550,000 by 2025 if growth were to continue as outlined above.

3.2 Employment Projections by Sector

Forecasting is based on various assumptions regarding economic growth, and is

dependant on factors including demographic and industry trends. As aforementioned, two forecast scenarios have been generated to present a range of outcomes that represent the future employment growth likely in Ottawa. The scenarios differ in terms of their assumptions for the growth of various sectors. For instance, Scenario A has a higher number of new jobs projected for the federal government while Scenario B predicts more growth in the business services sector.

The following table summarizes the assumptions in the two scenarios:

	A	B
Federal government	Continuing concentration in Ottawa Growth at rate of national population growth	Gaining productivity so job numbers not expected to increase
Business services ¹⁷	Strong growth in IT sector	Continuing outsourcing trends
Construction	Housing starts and commercial/industrial slowing down	
Education	Slower growth due to demographics	New injection of staffing into education

The employment projections are by sector and are based on the 2006 Census estimates for employed by industry by place of work for Ottawa. The Employment Place of Work (EPOW) data are typically broken down into economic base and community base jobs for each industry, in

¹⁷ The business services sector includes all professional, scientific, technical and administrative services.



order to separate population serving jobs from export oriented jobs. In the case of Ottawa, both the economic base and community base jobs are projected at the same rates of growth as at the national level.

The City's population growth projections estimate an increase from 529,800 in 2006 (the City's estimate of EPOW) to 703,100 in 2031 i.e., a population growth rate of 32.7%. Consequently, the total for 2031 in these projections is also constrained to 703,100. Exhibit 3-1 presents the employment growth from 2006 to 2031.

Based on the population forecasts, C4SE has projected a share of employment for each sector on an annual basis through the projection horizon. Future growth in each sector is projected at the rates obtained using the above methodology. Thereafter, the employed figures are reallocated such that the new projections by industry add up to the City's projected totals. The City's sector-wise estimates of EPOW in 2006 are the starting point for the sectoral employment forecasts.

Productivity gains are also estimated for each sector since the level of productivity influences the estimated number of jobs required to support population and economic growth.

Much like the rest of Ontario, Ottawa is projected to see considerable growth in service sectors. It is also important to note that many service sectors are becoming increasingly more dominant as engines of community growth:

- Many communities, mainly those in metropolitan areas, are benefiting from the rapid rate of growth observed in the business services sector over the past several decades. Traditionally, the business services sector was understood to include service providers such as accountants, lawyers, engineers and architects. Now it is also

characterized by rapidly growing service providers, including companies in software development, computer systems design, advertising, marketing, management consulting, and scientific and technical consulting. Since many of these service providers serve markets beyond the local community, they also expand the community's economic base.

- Communities are also developing as regional providers in retail shopping, health care delivery and specialized education. While such sectors were typically considered only as part of the community base in the past, today these industries are facilitating an expansion of the export base.
- Communities are also spurring economic development by catering to the needs of tourists, seasonal residents and retirees. Due to rising real incomes and the aging of the baby boom generation, this industry is one of the fastest growing in the country.

The breakdown of Ottawa's employment projections into its economic base and community base components reveals that the City's export base is relatively diversified. This delineation suggests that:

- approximately one-third of the jobs in professional and administrative services are export based;
- tourism accounts for export based jobs (which include those in information and culture, retail sales, and food and accommodation)
- regional services also provide an important proportion of export based jobs (almost one-third of health and social services and about of 15% education); and
- approximately three-quarters of the jobs in public administration reflect the export based nature of most of the jobs



in the federal civil service and in national defence.

The diversity of Ottawa's export base suggests that export based employment will continue to grow in future years, attracting new residents and consequently generating a need for additional community based employment.

The following section discusses projections for major employment sectors in Ottawa to 2031. Trends in the primary and manufacturing sectors are included in the discussion. Ottawa does not have a large industrial sector and is not expected to see significant industrial growth in the planning horizon. However, considerable changes are anticipated for the industrial sector and these will likely have impacts on employment land requirements in Ottawa.

3.2.1 Major Employment Sectors

Despite the different assumptions for sectoral growth in the two forecast scenarios, both projections identify the same four employment sectors as the largest contributors to employment growth to 2031. The land requirements of these major employment sectors are primarily for office space although their location requirements may differ.

Exhibit 3-2 presents the 2031 projections by sector. The four largest employment sectors - circled in orange in Exhibit 3-2 - are:

- Federal public administration;
- Professional, scientific and technical services;
- Health care and social assistance; and
- Retail.

Together, these four employment sectors are projected to account for approximately half of all employment in Ottawa in 2031. The projections indicate that the federal government is expected to remain the

City's largest employment sector. Health care and professional services are estimated as the fastest growing employment sectors and as gaining the most number of jobs in the 25-year period. On the other hand, the primary sector is estimated to experience a slow decline over the planning horizon.

In Scenario A, the health care and social assistance sector is projected as the most significant contributor to incremental employment growth over the 25-year horizon. With an addition of almost 40,000 jobs by 2031, this sector is anticipated to account for 22.4% of all new jobs added to the City by 2031. Next, the professional services sector is forecast to continue to grow steadily, contributing 15.6% or approximately 27,000 new jobs to the City by 2031. The federal government is expected to remain a significant source of employment generation, contributing approximately 12% to the incremental employment growth or 20,503 new jobs by 2031. Exhibit 3-3 highlights the incremental changes to employment by sector in Scenario A.

On the other hand, if further productivity is gained by the public sector and if outsourcing continues to benefit the administrative services and professional services sector, employment growth could present a somewhat different picture. This view is represented in Scenario B.

Scenario B assumes that the due to productivity gains experienced by the public sector, substantial employment will not be generated by the federal government between 2006 and 2031. However, the federal government is still projected to remain the largest employer in Ottawa. In this scenario, the top four sectors will contribute to 60% of the total employment growth, resulting in 173,511 projected new jobs in Ottawa by 2031. Exhibit 3-4 highlights the incremental changes to employment by sector in



Scenario B. In this scenario, the four top sectors are, in descending order, as follows:

- Professional, scientific and technical services;
- Health care and social assistance;
- Administrative, support services and waste management; and
- Retail.

Federal public administration and the rest of the public sector

In 2031, the federal government is projected to remain the largest employer in the City of Ottawa with between 102,476 and 123,022 of all projected jobs i.e., between 14.7% and 17.5% of all employment. This represents a relative decline in the share of employment generated by the federal government which in 2006 accounted for almost 20% of all employment in Ottawa. When considering all public sector employment, the sector is projected to employ between 16.6% and 20.0% of the labour force in 2031 - a decrease from approximately 22.1% in 2006. Overall, although the public sector is projected to continue as the largest employer in Ottawa, its significance may diminish as other sectors grow at a faster pace.

As represented in Scenario A, the real output from public administration is expected to grow at an average annual rate of 1.5% over the projection horizon in Ontario, growing at a slightly more rapid rate than that in the early years and slowing to a rate below that in the latter years of the projection. The rate of growth is roughly in line with the expected rate of growth in the population. The projection reflects that the level of government services prevailing throughout Ontario at

present is expected to hold steady on a per capita basis across the projection horizon.¹⁸

Scenario B forecasts that the public sector has further productivity to gain in the next 25 years through the adoption of labour saving technologies. In this case, the number of receptionists, clerks, secretaries, material handlers, document handlers and other such could significantly reduce. This scenario is based on the assumption that output per worker in public administration would grow in the future at a rate matching that of productivity growth for the economy at large, indicating a sharp reversal in historical trends.

The combination of growing real output in public administration coupled with steady productivity growth in the delivery of government services results in a slight rise in the total number of people employed by governments across the province until 2010, followed by a slight fall across the projection horizon to 2031. These trends are illustrated in Exhibit 3-5.

Health care and social assistance

The health care sector is forecast to contribute to between 10.4% and 12.0% of the total employment in 2031. Although the health care sector appears to be highly capital-intensive - with hospitals, clinics, physicians' offices, etc. all well stocked with expensive diagnostic equipment and computerized information systems - official historical measures of output and employment in this sector suggest that productivity has declined at an average annual rate of about 0.5% per year. This apparent contradiction reflects the fact

¹⁸ *Canada's population growth is driving federal employment in Ottawa (i.e., the largest share of public administration employment in Ottawa) and Ottawa's is driving provincial and local public administration employment. Because the federal share of public administration employment is so significant, the total grows at a rate determined mostly by Canada's population growth rate, which is approximately the same as that for Ontario.*



that the health care and social assistance sector is also very labour-intensive. The equipment available to health care workers has not decreased the amount of time each spends with people in need of health care; instead, the equipment has simply provided each individual with a higher level of care. Since a healthier population lives longer, each individual today consumes more health care over his or her lifetime than was the case just a decade or two ago.

Elderly people in particular require more health services than the average person. With the baby boom generation now between the ages of 42 and 62 and about to enter the years in which their health care needs spiral, the health care system is likely to be challenged in a significant fashion.

Within the health care sector, diagnostic procedures are expected to continue to improve in the future. It is anticipated that each individual will continue to receive the best available care for their ailments. As illustrated in Exhibit 3-6, these trends indicate that health care workers and social workers will continue to increase in number at an average annual pace exceeding the rate of growth in the total population. Although the number of workers in this sector will not grow as quickly as the number in business services in either absolute or relative terms, this sector will nevertheless generate many of the new jobs in Ontario and in Ottawa over the projection horizon.

Professional and other business services

The professional and other business services sector covers a wide range of services directed at supporting business activities. The sector includes the following services: scientific, legal, accounting, architectural, specialized design, computer systems design, consulting, scientific research, market research, office administrative support,

employment, travel, investigative, security, building and waste management.

This broadly defined services sector can be separated into three sub sectors, all of which are services that support business activity:

- professional, scientific and technical services;
- management of companies and enterprises; and
- administrative support and waste management

Exhibit 3-2 illustrates employment projections for each of these three sectors.

Future growth in the professional and other business services sector depends on two key trends:

- The outsourcing of such services by manufacturers, financial institutions, governments, etc.; and
- The increase in the proportion of the workforce working from home.

The professional and administrative support sectors reflect the fact that manufacturers (as with many other industries) have for decades been outsourcing activities they used to carry out internally (e.g., marketing, legal, accounting, security, waste management). This outsourcing activity goes hand in hand with the trend towards working at home. Professional, scientific and technical services also include the research and development work in the IT industry, which is a dominant industry in Ottawa. Professional services as a sector is estimated to surpass retail and to take on the second position with 11.6% to 12.8% of all the jobs in Ottawa in 2031.

Although Scenarios A and B forecast for a different pace of the outsourcing trend, both scenarios predict growth from the 2006 level of 10.2% of total employment. This sector is expected to continue to grow



faster than the economy as a whole (averaging growth at 4.5% from 2006 to 2031) since the outsourcing and work at home trends are expected to persist, though at a reduced pace.

As highlighted in Exhibit 3-7, this sector has historically achieved productivity gains in the 1.0% to 1.5% per year range. This level of productivity growth is expected to continue in the sector at a pace of 1.5% per year. As a result, employment in professional and other business services is expected to grow at rates of between 2% and 3% per year both province-wide and in Ottawa. Consequently, the sector is expected to sustain its position as one of the fastest growing employers in both relative and absolute terms.

Retail

The fourth largest employment sector - retail - is expected to constitute approximately 10% of the total employment in Ottawa in 2031. Since the retail sector is closely linked to the wholesale sector, both are discussed herein.

Changes to the processes of manufacturing and distributing goods have had significant impacts on both the wholesale and retail trade sectors. Due to the adoption of just-in-time delivery systems, manufacturers continue to carry smaller inventories of parts and final products, shifting their storage, instead, into warehouses and sending goods to onward destinations on trucks and rail cars. Similarly, retail outlets continue to carry smaller inventories of final products, shifting their storage into major warehousing and distribution centres.

Growth in the volume of wholesale and retail trade has exceeded that of manufacturing for the past two decades, reflecting the above described phenomena. Constantly improving production and delivery systems within manufacturing

ensure that these trends will continue into the future.

Over the last decade or so, both wholesale and retail trade have managed to achieve productivity gains exceeding those achieved on an economy-wide basis, and have adopted technologies to manage the entire process in an increasingly efficient manner. This is true especially with respect to retail trade. The increased penetration of online shopping is expected to enhance these long term trends.

On a province wide basis, the volume of wholesale and retail trade is expected to grow at an average annual rate of just over 5% i.e., twice the pace of growth of the economy as a whole. Productivity gains in wholesale trade are expected to reach close to 2% per year and productivity gains in retail trade are anticipated to approach 3% per year. These trends are consistent with the productivity gains obtained in these sectors over the last decade or so.

As depicted in Exhibit 3-8 and 3-9, the trends indicate that the two sectors will each deliver thousands of new jobs across the province and in Ottawa over the planning horizon.

3.2.2 Industrial Sectors

Industrial sectors are projected to contribute to between 6% and 8% of Ottawa's total employment in 2031. For the purpose of this discussion, industrial sectors include primary, utilities, manufacturing, wholesale, and transportation and warehousing activities.

The 19th and 20th century drivers of economic development at the community level have been the primary (agriculture, forestry, fishing, hunting and mining) and manufacturing sectors, respectively. The forecasts indicate that primary and manufacturing production are likely to continue to grow in constant dollar terms,



though at a diminishing annual rate of growth that reflects the anticipated slowdown in the pace of US growth. Both the primary and manufacturing sectors have generated high annual growth rates in output per worker (productivity) in the past, and this is expected to continue in the future. Therefore, despite growing real output, employment in these two sectors is projected to decline between now and 2031. The charts in Exhibit 3-10 and 3-11 illustrate these trends.

Primary

The primary sector is projected to experience negative growth with over 1,000 jobs lost in the 25-year period. Exhibit 3-10 illustrates this declining trend.

Within the primary sector, only mining is expected to employ more people in Ontario in 2031 than was the case in 2006. Employment in agriculture and fishing (mostly agriculture in Ontario) is expected to drop to half the 2006 level by 2031.

Exhibit 3-10 shows how the primary sector is expected to decline in employment (thousands of persons, line, right scale) while growth in real GDP (millions of constant 2000 dollars, bar, left scale) is expected to stabilize.

Manufacturing

Manufacturing sector trends are found to be similar to the primary sector trends, with a projected gradual decline in employment and stable real GDP growth. Exhibit 3-11 illustrates this decline in employment (thousands of persons, line, right scale) with reference to real GDP growth (millions of constant 2000 dollars, bar, left scale).

Only manufacturers of furniture, food, fabricated metals, computers, machinery, chemicals and miscellaneous products are expected to employ more people in 2031 than was the case in 2007. Manufacturers of transportation equipment, electrical

products, clothing, paper, printing, wood, non-metallic mineral and petroleum/coal products are all expected to employ fewer people. The annual rates of increase and decline projected for the period from 2007 to 2031 reflect similar trends over the past two decades.

3.3 Summary

The key findings from the sectoral growth forecasts are as follows:

- The total number of jobs projected for Ottawa in 2031 is 703,100, i.e., a 32.7% increase from 2006.
- Employment is estimated to grow by approximately 1.14% on average for every year between 2006 and 2031.
- The largest employment sectors in 2031 are projected to be: the federal government; professional, scientific and technical services; health care and social assistance; and retail.
- The fastest growing employment sectors from 2006 to 2031 (i.e., the sectors contributing the largest proportion of new jobs) are: health care and social assistance; and professional, scientific and technical services.
- With 173,511 jobs to be added to the City by 2031, the average contribution by sector is 4.5% or 7,887 jobs.
- The growth in federal government employment depends on the extent of productivity gain (i.e., the more productivity gain, the fewer new jobs) and the use of outsourcing by the federal government (i.e., the more outsourcing, the fewer new jobs). In both projection scenarios, the federal government is still expected to remain the largest employment sector in Ottawa.



- The primary sector is the only sector expected to lose jobs from 2006 to 2031.
- The forecasts suggest that Ottawa will likely continue to require mainly office space in order to support the projected future employment growth. However, industrial sectors constitute approximately 10% of all employment and they are likely to see considerable changes to their land requirements as technology continues to change in the years to come.
- The overall growth of Ottawa's largest employment sector - the federal government - is dependant on the government's centralization policy as well as the fiscal situation.



Exhibit 3-1: Projected Total Employment - 2006 to 2031

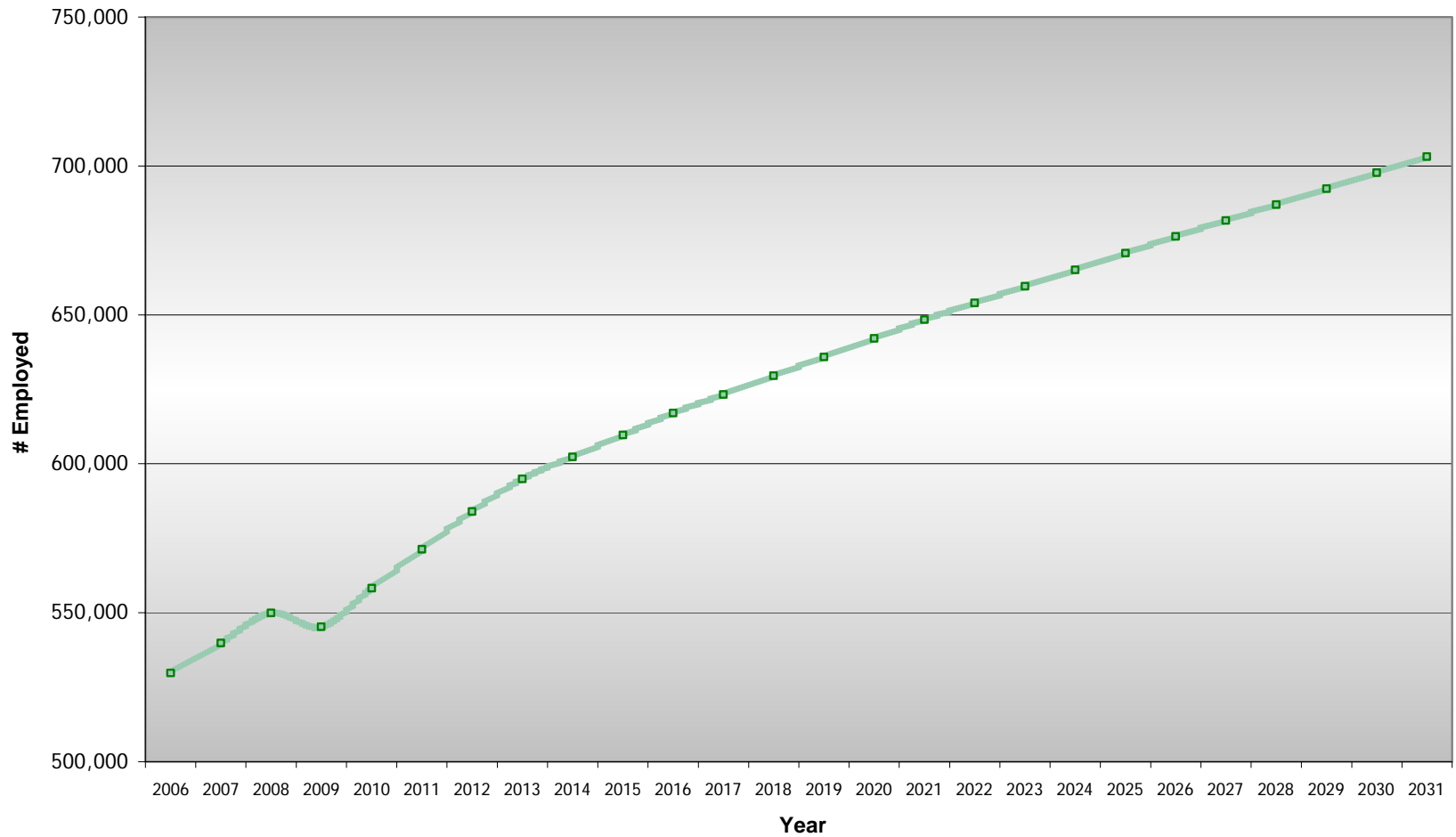




Exhibit 3-2: Total Projected Employment by Sector for 2031

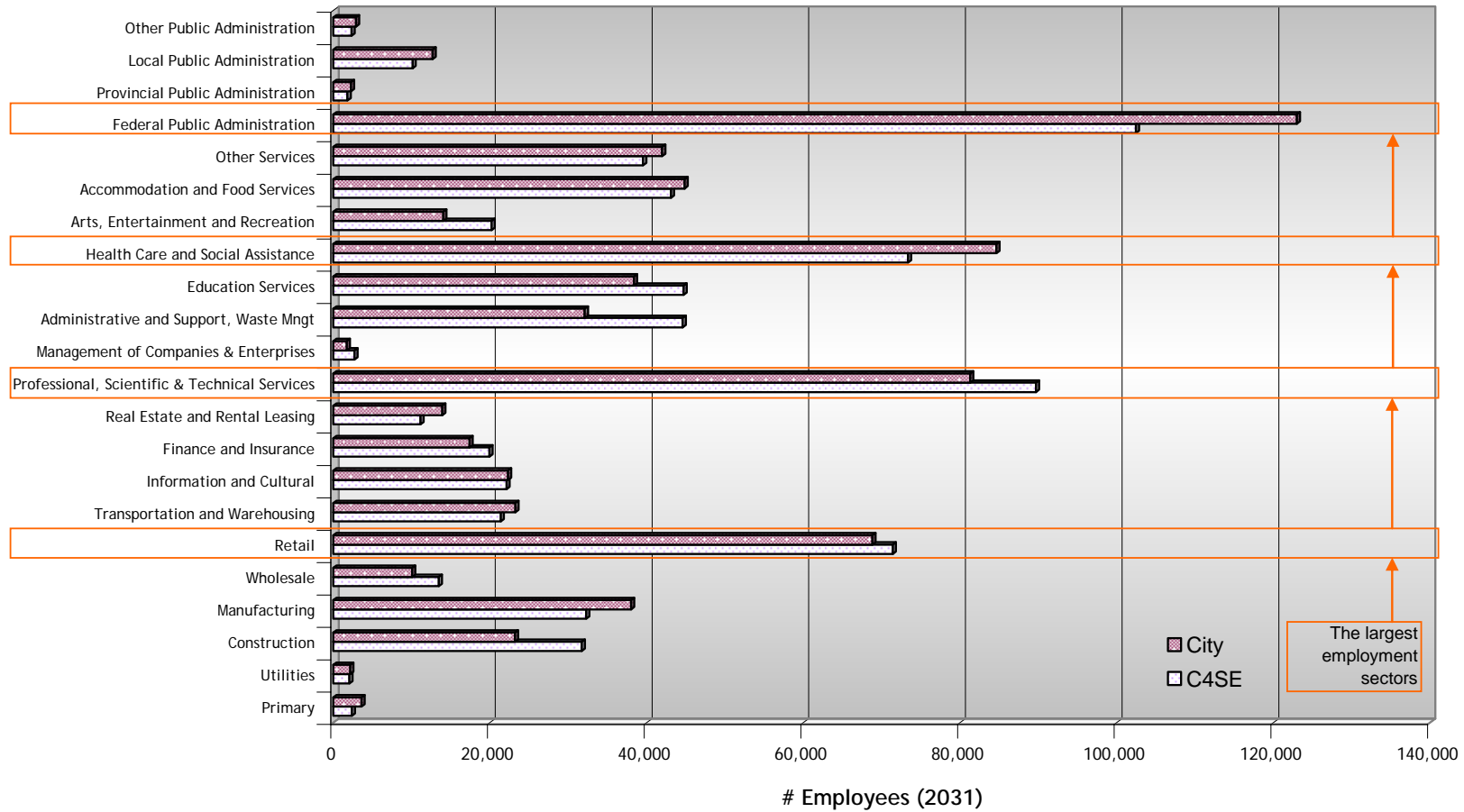




Exhibit 3-3: Projected Change in Employment - 2006 to 2031
(Scenario A)

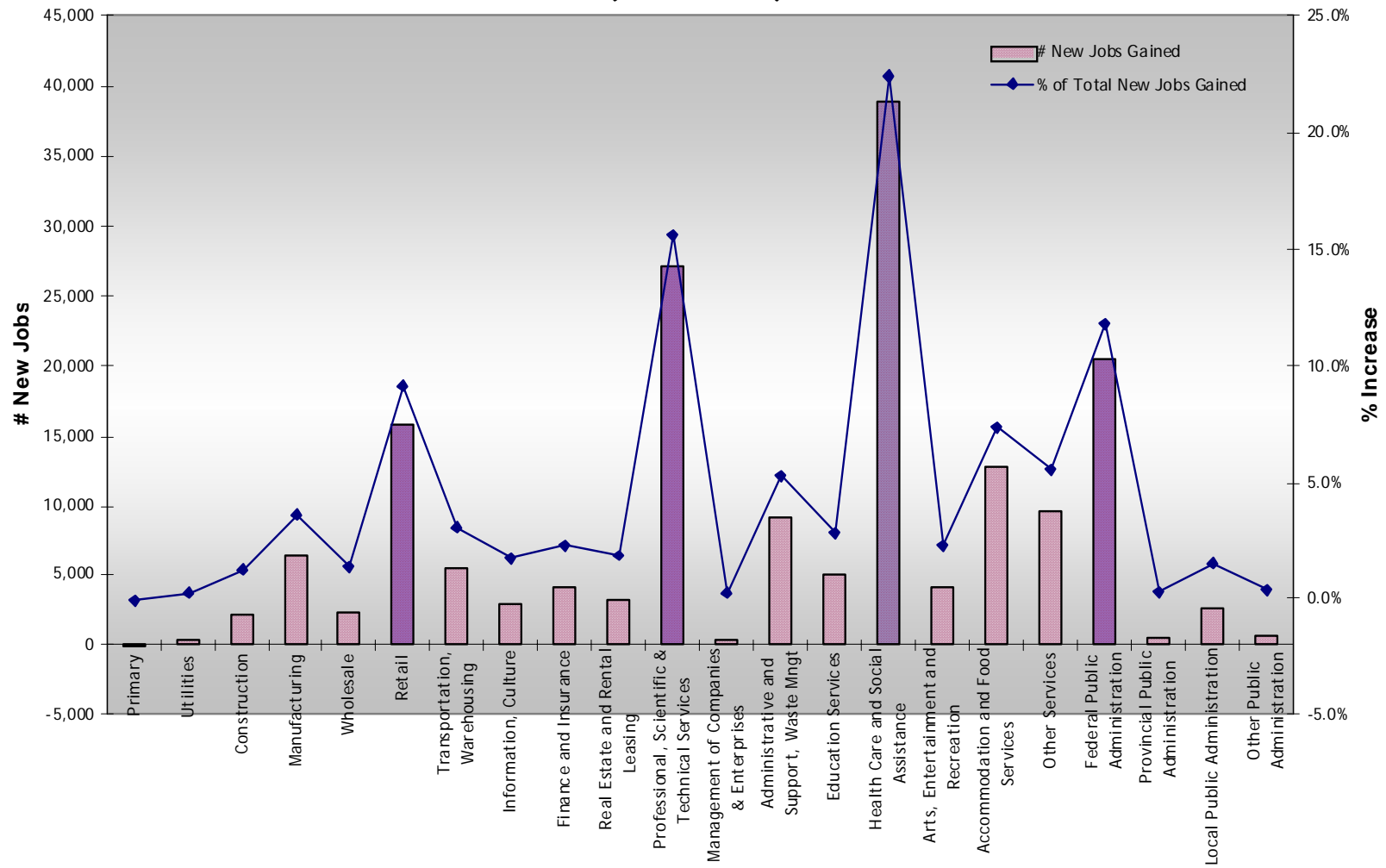




Exhibit 3-4: Projected Change in Employment - 2006 to 2031 (Scenario B)

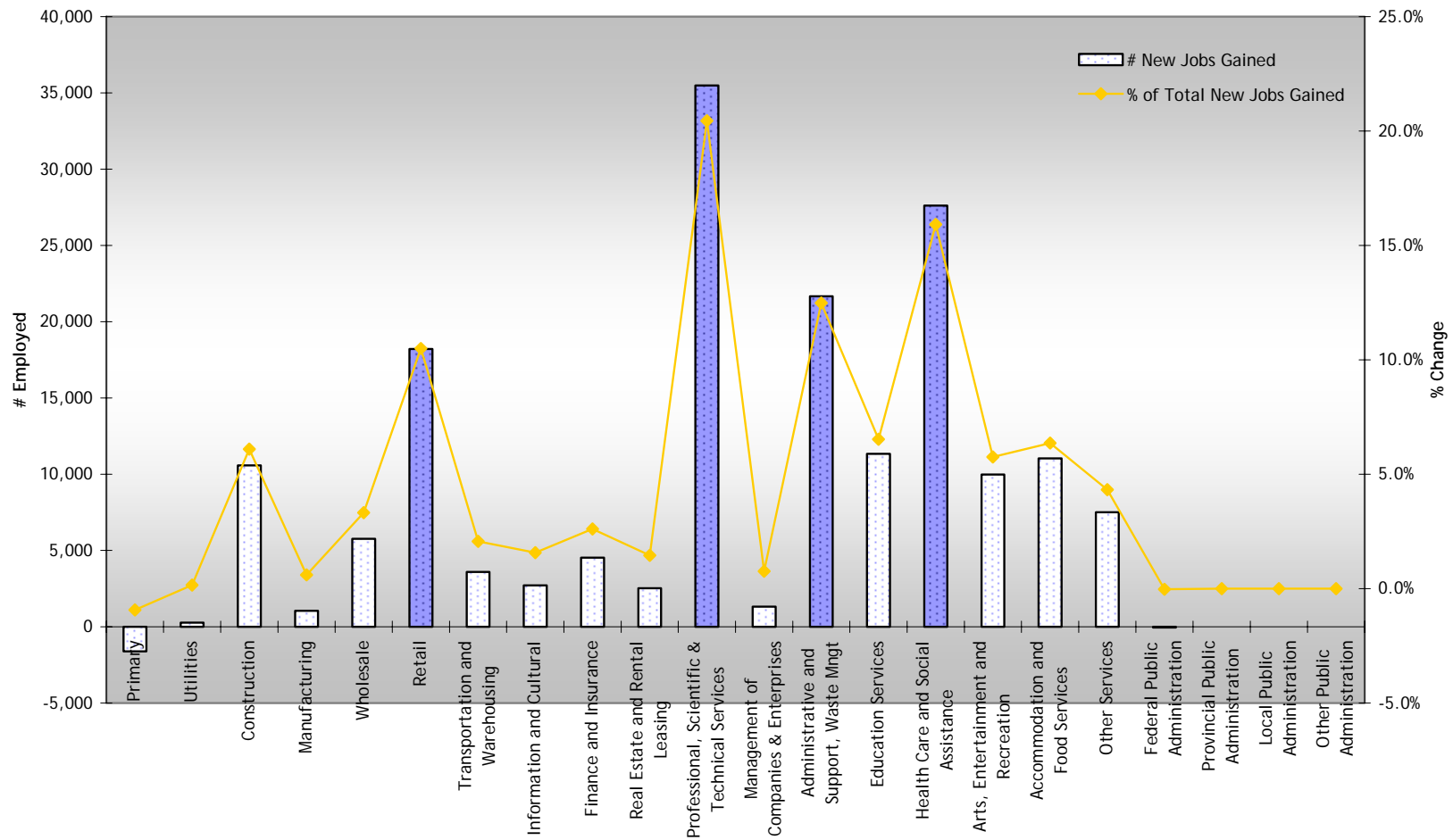
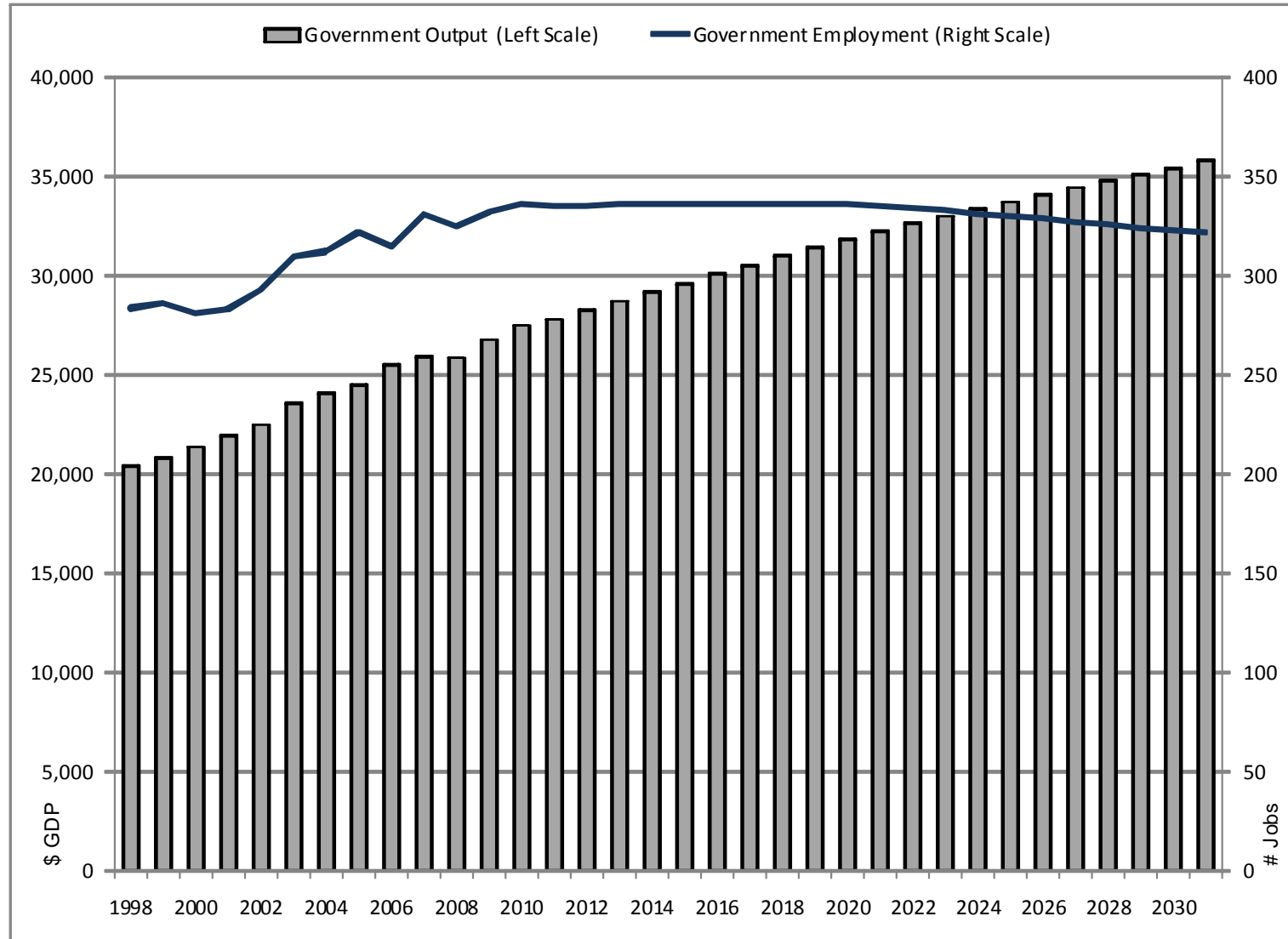




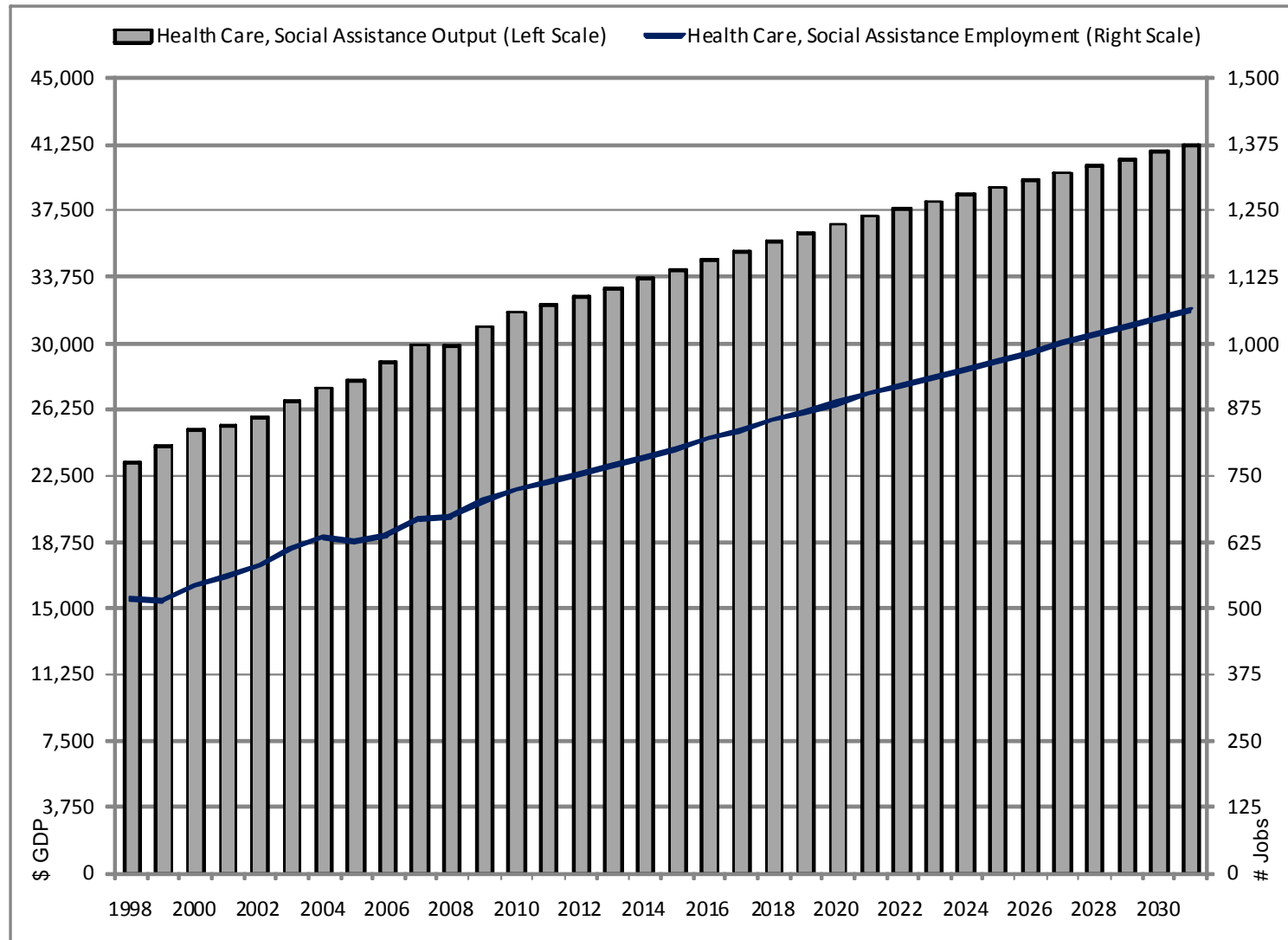
Exhibit 3-5: Output and Employment in the Public Sector



Figures are actual from 1998 to 2007 and projected from 2008 to 2031; Source: Statistics Canada and C4SE



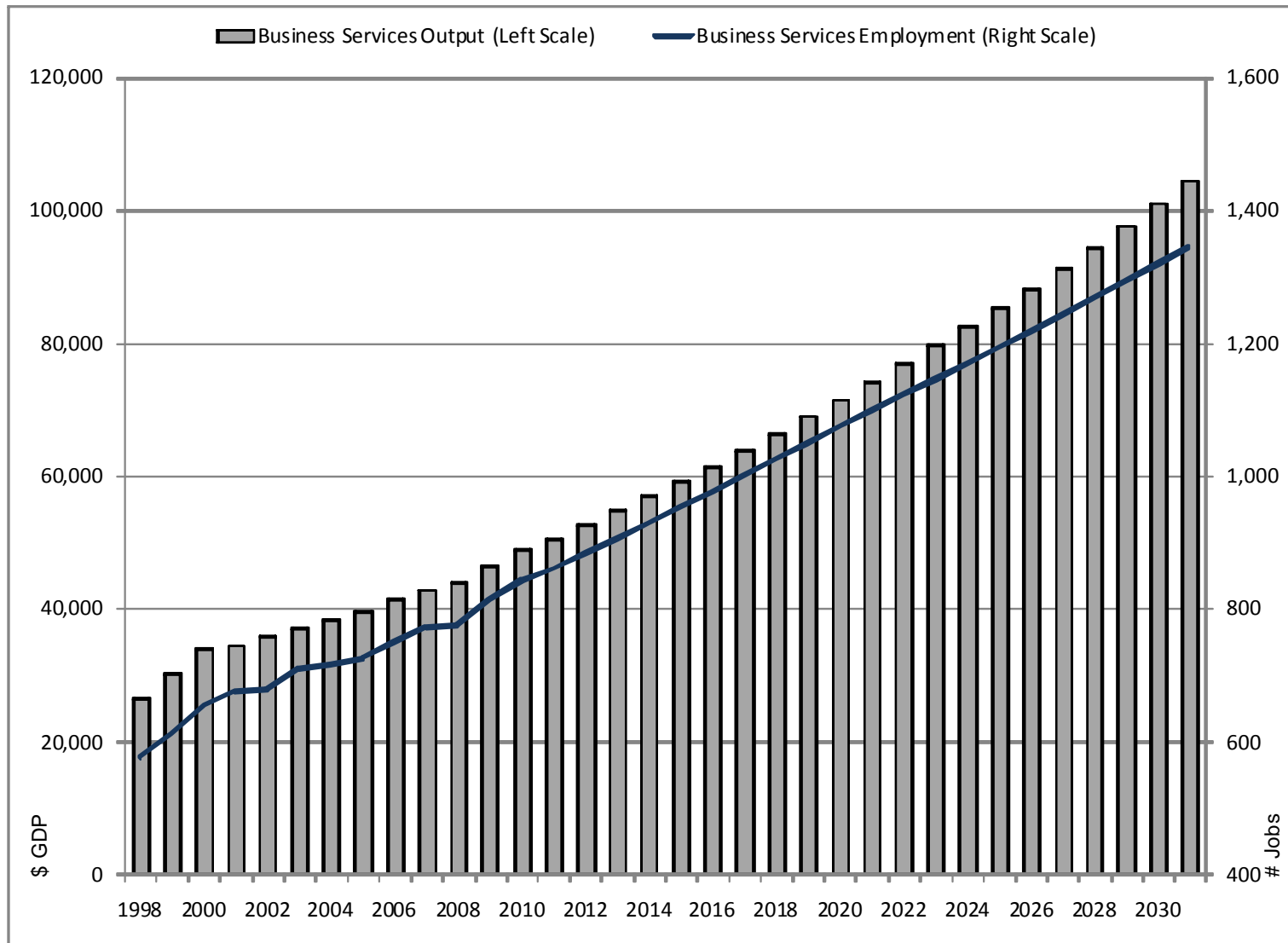
Exhibit 3-6: Output and Employment in the Health Care Sector



Figures are actual from 1998 to 2007 and projected from 2008 to 2031; Source: Statistics Canada and C4SE



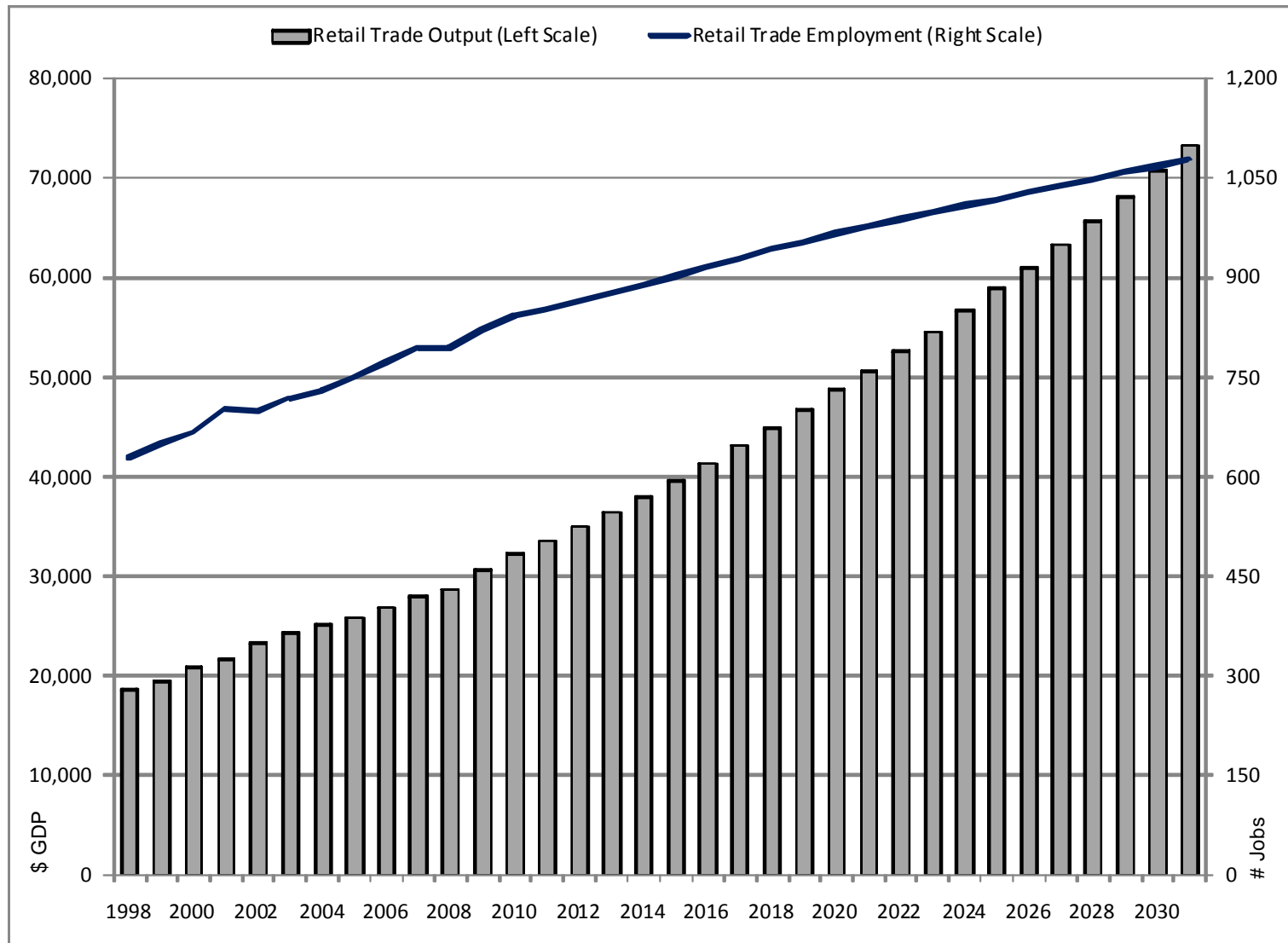
Exhibit 3-7: Output and Employment in the Professional Services Sector



Figures are actual from 1998 to 2007 and projected from 2008 to 2031; Source: Statistics Canada and C4SE



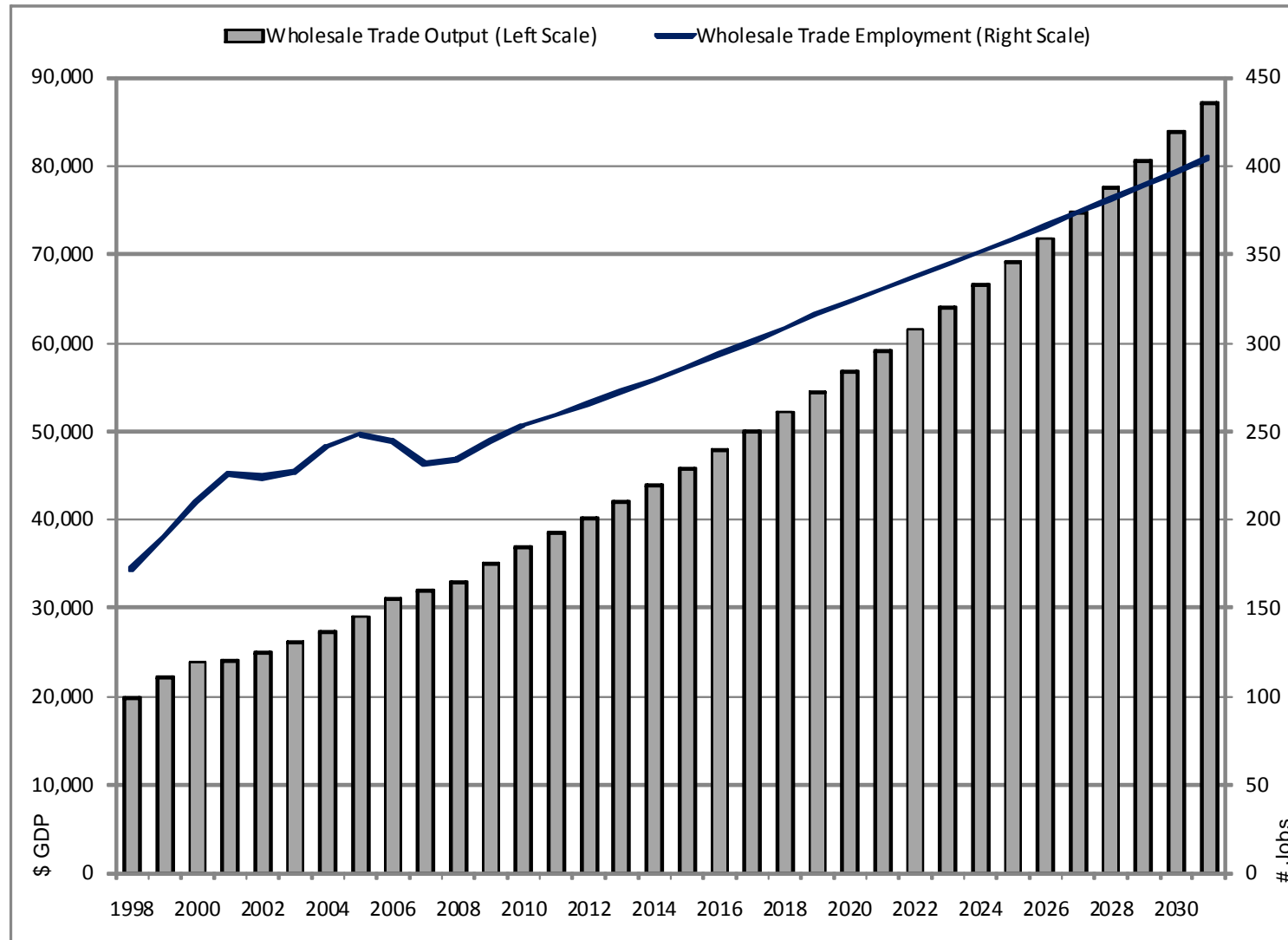
Exhibit 3-8: Output and Employment in the Retail Sector



Figures are actual from 1998 to 2007 and projected from 2008 to 2031; Source: Statistics Canada and C4SE



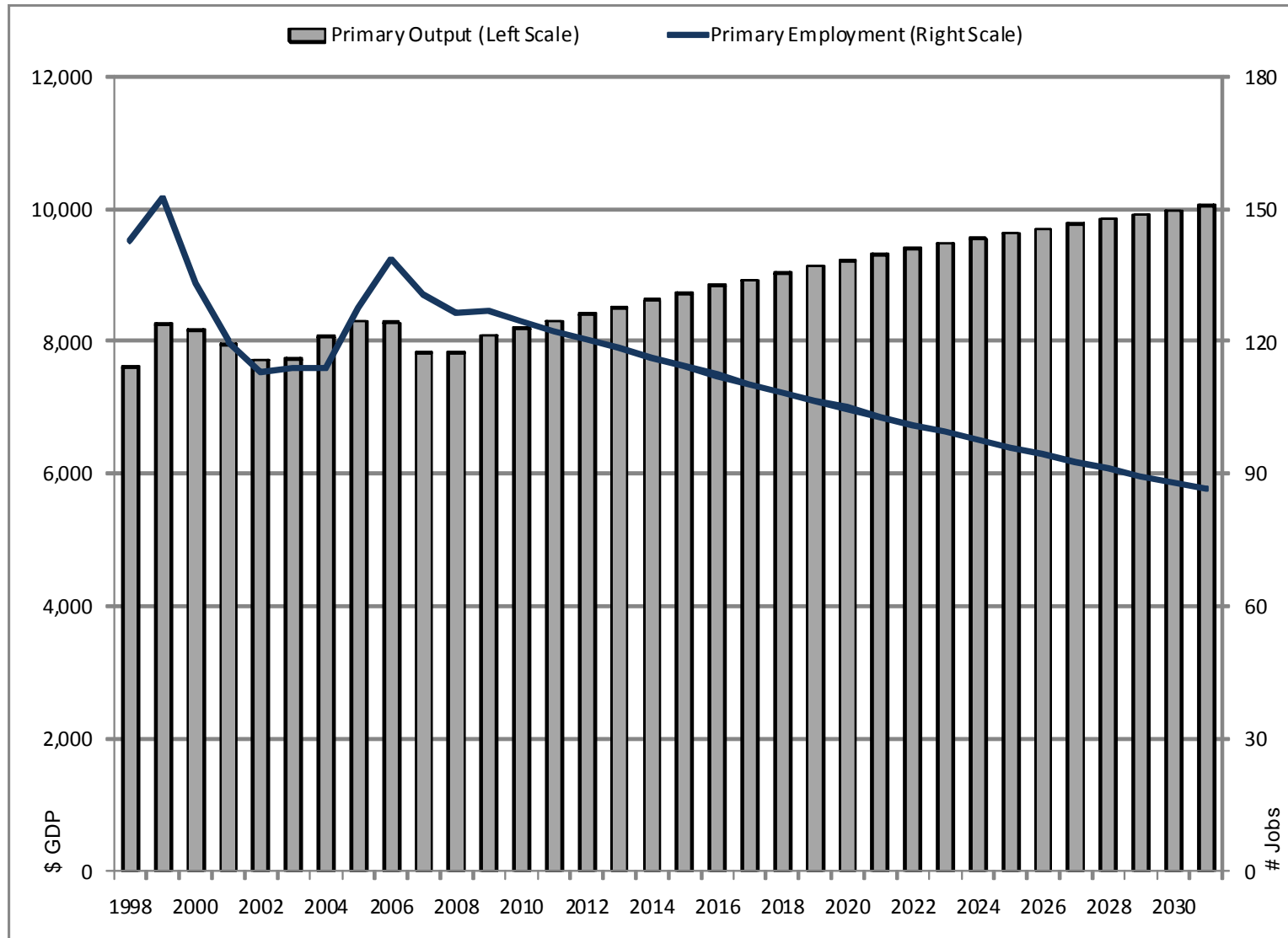
Exhibit 3-9: Output and Employment in the Wholesale Sector



Figures are actual from 1998 to 2007 and projected from 2008 to 2031; Source: Statistics Canada and C4SE



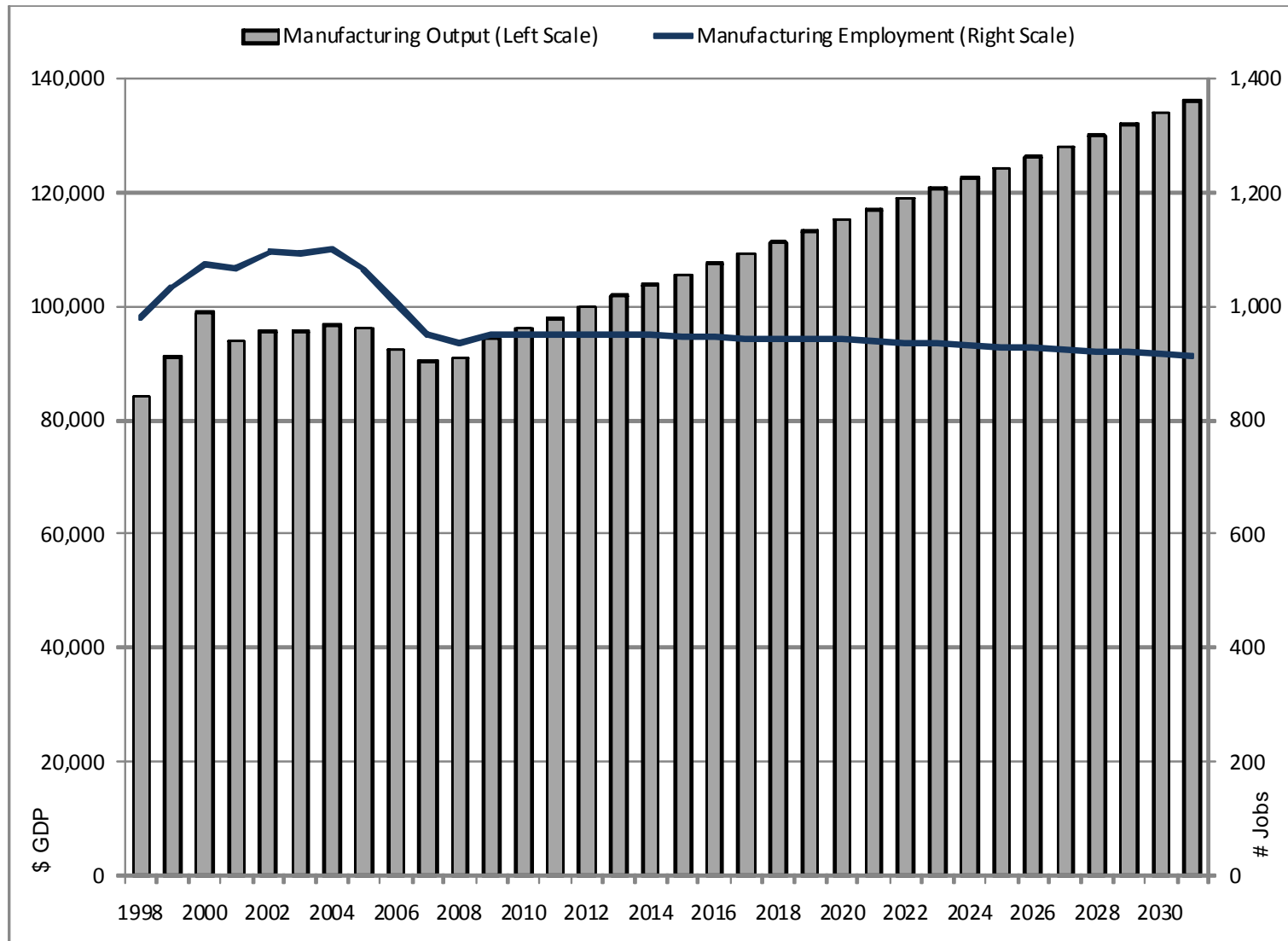
Exhibit 3-10: Output and Employment in the Primary Sector



Figures are actual from 1998 to 2007 and projected from 2008 to 2031; Source: Statistics Canada and C4SE



Exhibit 3-11: Output and Employment in the Manufacturing Sector



Figures are actual from 1998 to 2007 and projected from 2008 to 2031; Source: Statistics Canada and C4SE



4 Supply-Demand Analysis

The purpose of this chapter is to determine whether Ottawa's existing employment lands supply can meet the demand for employment lands to 2031. The chapter provides a land budget for employment lands in Ottawa to 2031, which is informed by the sectoral employment forecasts in Chapter 3. The land budget also considers the intensification potential of Ottawa's employment lands supply (Appendix B).

The current inventory of designated and zoned employment lands in Ottawa stands at some 1,970 net hectares. To provide sensitivity analysis, the land budget exercise was carried out for both the forecast scenarios discussed in Chapter 3.

According to the analysis, which assumes a strong trend toward intensification, only between 799 and 817 net hectares of the lands designated and zoned for employment will be required to support the forecast employment through the planning horizon of 2031 (the two figures represent the land budgets linked to Scenarios A and B respectively). Even allowing for considerably greater absorption than forecast, Ottawa should have a more than sufficient supply of employment lands up to 2031. While the land budget indicates that the City has an adequate quantity of lands to support future employment growth, the appropriateness of the quality of this supply is discussed in Chapter 6.

4.1 Supply

The 2007 Ottawa Vacant Lands Inventory provides a detailed assessment of the distribution of existing vacant industrial lands in Ottawa. It indicates that:

"There was a total of 1,969.5 net hectares of vacant industrial land in the city of Ottawa at the end of 2007. The distribution of these

*lands by major geographic area is illustrated on Map 1. The urban area had 1,204.3 net hectares of vacant land, split between areas inside the Greenbelt, with 242.3 net hectares, and urban centres outside the Greenbelt, with 962.0 net hectares. The rural part of Ottawa had 765.3 net hectares."*¹⁹

However, the report notes that servicing and other site upgrades are required for some areas before they are suitable for development. Broadly speaking, industrial lands within the Greenbelt are serviced, but only about half the urban industrial lands outside the Greenbelt are serviced. Approximately 513 net hectares of vacant land in the urban area outside the Greenbelt is considered as serviced with water and sewer services at or in close proximity to vacant properties. The remaining 449 net hectares require infrastructure improvements before development can occur. Required servicing improvements by area include:

- Major and local water and sewer pipes throughout the 416 Business Park;
- Major and local water and sewer pipes in three northwest lots in Kanata West;
- Major and local sewer pipes in the southwest lots of Kanata West;
- Major and local sewer pipes in Albion-Leitrim; and
- Local water and sewer pipes in Orleans Industrial Park.

4.2 Absorption Analysis and Forecast

The 2007 Vacant Lands Inventory includes a basic supply/demand forecast prepared through the absorption method. It suggests

¹⁹ City of Ottawa. *Inventory of Vacant Industrial and Business Park Lands 2006-07 Update, August 2008.*



that, based on a rolling average absorption, the

“estimated reserve for the urban area is between 24 and 26 years, and in the rural area is 78 years. Both reserves assume that no new lands will be added or taken away from the existing industrial supply.”

However, the study also notes that “the supply of and demand for industrial and business park land is more complex than this simple method implies. Factors such as access to transportation systems, proximity to markets, materials and labour force, compatibility with adjacent land uses, cost of land, business-specific location requirements, the need for large amounts of water or electrical power, and other factors may all affect the effective supply of sites for specific users of industrial land.”

It is important to note the relative patterns of absorption in Ottawa. Due in part to constrained supply, the absorption of industrial lands within the Greenbelt has been declining. Conversely, the consumption of industrial lands in urban lands outside the Greenbelt has been trending upward. Rural absorption is slowly declining. The charts in Exhibit 4-1 illustrate these trends.

As shown in these trends, absorption of employment lands in Ottawa has been gradually declining. While absorption is only one measure of current trends in employment lands, the availability of time-series data allows for a trend-based forecast of the demand for employment lands in the three areas discussed above. This forecast would see an average annual absorption of 33-50 net hectares of employment lands over the forecast period, distributed as follows:

- Rural area - 5-8 hectares annually;

- Urban - Inside Greenbelt - 8-12 hectares annually; and
- Urban - Outside Greenbelt - 20-30 hectares annually.

However, the absorption method, even when trend-based, does not provide a forward-looking assessment of supply and demand. The absorption rate method should generally be used as a benchmark for the supply and demand analysis, but not the baseline forecast.

4.3 Sector-Based Forecast of Demand

A modified version of the methodology outlined in the 1995 Provincial Guidelines for forecasting population and employment is used in this study to determine employment land requirements. Although this methodology retains the characterization of employment in three types for land forecasting purposes, it adds considerable additional sensitivity by forecasting employment, adjustments for place of work, and employment densities at the sector level.

This approach requires a series of steps, as outlined below.

4.3.1 Supply of Employment Lands

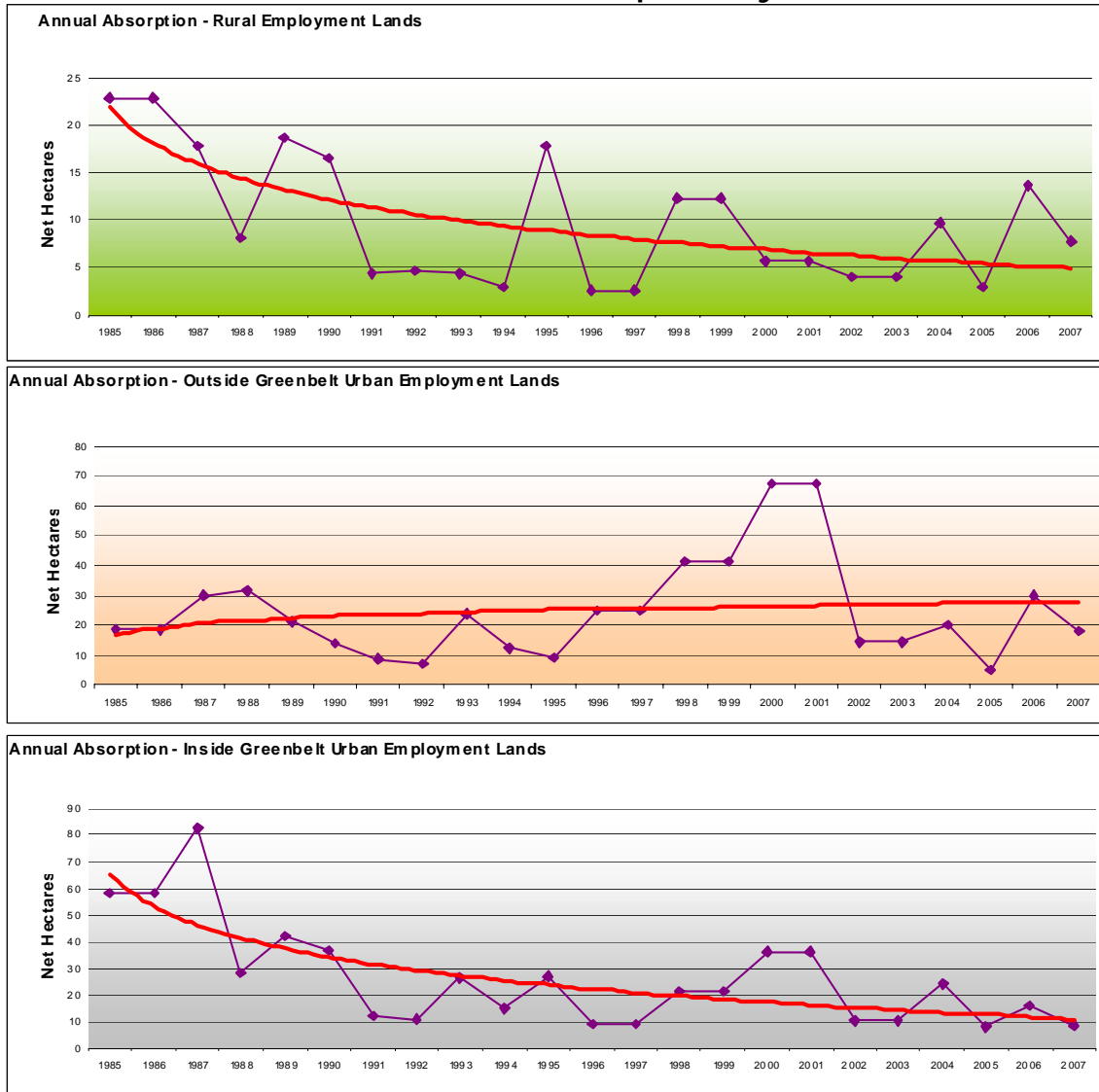
The supply of employment lands is calculated using the following steps:

- (1) Identify gross supply of employment lands
- (2) Apply Net to Gross factor if required
- (3) Apply structural vacancy factor of 5%
- (4) Assess marketability of supply (note - this is a qualitative exercise and does not impact the calculation)

The section below walks through each of these steps to conclude with a net supply figure for Ottawa.



Exhibit 4-1: Historical Annual Absorption by Location



1. Identify gross supply of employment lands

The 2007 Ottawa Vacant Land Inventory has identified a total supply of employment lands in net hectares (see below).

"There was a total of 1,969.5 net hectares of vacant industrial land in the city of Ottawa at the end of 2007. The distribution of these lands by major geographic area is illustrated on Map 1. The urban area had 1,204.3 net hectares of

vacant land, split between areas inside the Greenbelt, with 242.3 net hectares, and urban centres outside the Greenbelt, with 962.0 net hectares. The rural part of Ottawa had 765.3 net hectares."

2. Apply Net to Gross factor if required

A net to gross factor is used to remove space within designated and zoned employment areas for roads, stormwater ponds, and other required infrastructure. Analysis of typical industrial subdivisions



indicates a net-to-gross factor of 15-20% is common.

However, Ottawa's employment lands supply is contained largely within previously subdivided industrial areas, with existing infrastructure largely in place. Where this is not the case, the Vacant Land Inventory has accounted for the net-to-gross factor as follows:

"Generally, lots greater than five but less than ten ha are categorized as either gross or net based on factors such; lot configuration and shape, whether it fronts on an existing road that can provide direct access, sizes of neighbouring lots in the area. These lots and those that are ten or more ha in area are converted to net hectares using a standard netting down of 15% (from empirical research of Ottawa industrial patterns) to allow for roads and ancillary uses such as stormwater facilities."

Accordingly, there is no need to adjust the supply figures contained in the 2007 Vacant Lands Inventory Report.

3. Apply structural vacancy factor of 5%

The use of vacancy factors in calculating employment land requirements has been debated. However, in every urban centre across the world, there are certain sites that remain vacant in the long term for various reasons. Reasons might vary from intractable or prohibitively expensive brownfield contamination, to ownership or other legal questions, or simply awkward or unworkable site geometry.

The supply of employment lands would therefore be reduced as follows:

- Net Supply - 1,969.5 hectares
- Vacancy Factor (5%) - 98.75 hectares
- Net Net Supply - 1,871.0 hectares

This figure constitutes the "developable" portion of the inventory, against which the demand for land will be assessed to determine land need (if any).

4. Assess Marketability of Supply

It is extremely important to note that, while the calculation of total supply includes all developable employment lands, not all employment lands are in the right location or are attractive to the non-residential development market. Chapter 6 discusses the quality of Ottawa's vacant employment lands in-depth, linking their successes and limitations to specific locational attributes.

4.3.2 Demand for Employment Lands

The steps used by this study to calculate demand for employment lands are as follows:

- (1) Employment forecast by type for Ottawa
- (2) Remove "Work at Home" jobs
- (3) Reallocate "No Fixed Place of Work" jobs
- (4) Assign percentages of employment to employment lands
- (5) Identify intensification potential for accommodating employment on existing lands
- (6) Establish densities for employment by sector, then by type;
- (7) Calculate total employment land need using densities.

Step 1. Employment forecast by type for Ottawa

Employment forecasts for the City of Ottawa are provided by C4SE, as presented in Chapter 3. The key figures from the forecast are the current (2006) and forecast (2031) employment by sector, as shown in Exhibit 4-2:



Exhibit 4-2: Employment Forecasts 2006-2031

Employment Forecast	2006	2031	Change
Total Employed in Ottawa	529,589	703,100	173,511
Primary	4,002	2,390	-1,612
Utilities	1,824	2,092	268
Construction	21,181	31,757	10,576
Manufacturing	31,262	32,306	1,044
Wholesale	7,751	13,516	5,765
Retail	53,236	71,448	18,212
Transportation and Warehousing	17,821	21,411	3,590
Information and Cultural	19,427	22,147	2,720
Finance and Insurance	15,445	19,969	4,524
Real Estate and Rental Leasing	8,633	11,161	2,528
Professional, Scientific & Technical Services	54,228	89,715	35,487
Management of Companies & Enterprises	1,397	2,716	1,319
Administrative and Support, Waste Mngt	22,952	44,616	21,664
Education Services	33,406	44,739	11,333
Health Care and Social Assistance	45,763	73,381	27,618
Arts, Entertainment and Recreation	10,253	20,238	9,985
Accommodation and Food Services	32,083	43,126	11,043
Other Services	32,058	39,560	7,502
Federal Public Administration	102,521	102,473	-48
Provincial Public Administration	1,839	1,838	-1
Local Public Administration	10,158	10,153	-5
Other Public Administration	2,349	2,348	-1

Source: Centre for Spatial Economics, 2008

Employment forecasts by sector are the key input in the calculation of land need. In order to provide a sensitivity analysis of the effects of potentially different growth scenarios, a second forecast of employment by sector was used to generate an additional growth scenario (Scenario A). The results of this sensitivity analysis are included in the last section of this chapter; the following sections deal with the “Scenario B” forecast of employment by sector.

Step 2. Remove Work at Home

A growing trend that impacts employment lands needs is that a significant number of Canadians work at home. Work at home employment needs to be removed from the total number of new jobs requiring lands, as by

definition, these jobs will be housed within residential areas.

Work at Home employment varies by sector. In this study, the reduction for “work at home” is addressed by removing the percentage of employees by sector that work at home, using national data for employment by place of work by sector, and applying the percentages to the Ottawa employment forecasts (as summarized in Exhibit 4-3).

The data source for work at home as a percentage of employment by sector is the 2006 General Census (Statistics Canada).

Step 3. Reallocate “No Fixed Place of Work” jobs

A significant number of employed Canadians report that they have “No Fixed Place of Work” - meaning that their employment takes them to different locations throughout the workday, and they may have little or no permanent workspace.

While these employees certainly have different requirements than traditional employees in terms of their workspace, and

Exhibit 4-3: Jobs at Home in Employment Forecasts

Employment Forecast	2006	2031	Change	% Work At Home	Jobs at Home
Total Employed in Ottawa	529,589	703,100	173,511		
Primary	4,002	2,390	-1,612	57.3%	924
Utilities	1,824	2,092	268	1.1%	3
Construction	21,181	31,757	10,576	7.2%	757
Manufacturing	31,262	32,306	1,044	2.9%	30
Wholesale	7,751	13,516	5,765	6.9%	397
Retail	53,236	71,448	18,212	3.8%	688
Transportation and Warehousing	17,821	21,411	3,590	4.5%	160
Information and Cultural	19,427	22,147	2,720	6.6%	179
Finance and Insurance	15,445	19,969	4,524	6.0%	270
Real Estate and Rental Leasing	8,633	11,161	2,528	16.3%	411
Professional, Scientific & Technical Services	54,228	89,715	35,487	18.1%	6,406
Management of Companies & Enterprises	1,397	2,716	1,319	18.4%	243
Administrative and Support, Waste Mngt	22,952	44,616	21,664	7.8%	1,683
Education Services	33,406	44,739	11,333	3.5%	399
Health Care and Social Assistance	45,763	73,381	27,618	7.6%	2,105
Arts, Entertainment and Recreation	10,253	20,238	9,985	13.3%	1,326
Accommodation and Food Services	32,083	43,126	11,043	2.6%	292
Other Services	32,058	39,560	7,502	10.9%	815
Federal Public Administration	102,521	102,473	-48	1.9%	1
Provincial Public Administration	1,839	1,838	-1	1.9%	0
Local Public Administration	10,158	10,153	-5	1.9%	0
Other Public Administration	2,349	2,348	-1	1.9%	0

Source: Centre for Spatial Economics, 2008



therefore, the resulting demand for land, the implications are less clear. First, “No Fixed Place of Work” is reported by individuals having a very wide range of actual working patterns, for example:

- Carpenters who work at construction sites throughout greater Ottawa (or beyond)
- Salespersons who essentially work out of their car
- Security guards who have a locker, but patrol various areas by foot during their shift

Each of the above may, in fact, generate a demand for additional land as part of the needed space to support their jobs, but the amount of space may be considerably less than a traditional employee and may or may not be on employment land.

A “triage” approach is used in this study to address this complexity in work patterns. Data on place of work by sector indicates that certain sectors of the economy have a large proportion of “no fixed place of work” jobs, specifically:

- Primary - 15%
- Construction - 47%
- Transportation and warehousing - 22%
- Administrative and support, waste management and remediation services - 24%

All other sectors have less than 9% of employment in “No Fixed Place of Work”, and typically less than 4%. These factors can be applied to the employment forecasts for Ottawa, using a logical reasoning approach as follows:

- Primary - primary employment is forecast to decline so no adjustment is required.
- Construction - employment within this sector varies widely; however, as a

large percentage is of “no fixed place of work”, it is appropriate to reduce the employment used to calculate land requirements by the factor above (47%).

- Transportation and warehousing - much of this employment consists of drivers of vehicles. While the floor area required for drivers is likely to be minimal, commercial vehicles do in fact require large land areas for parking and vehicle support (washing, loading, etc.) Land requirements are not reduced for this sector.
- Administrative and support, waste management and remediation services - this employment includes services such as building maintenance, security firms, contract call centres and waste management. Since this employment sector typically has needs for warehouse space and/or some office space, land requirements are not reduced for this sector.

The resulting adjustment is for the construction sector only, as shown in Exhibit 4-4.

Step 4. Assign Percentages of Employment to Employment Lands

This step involves determining what the primary built form is for each sector of employment. Per the Provincial Guidelines developed in the mid-1990s, this is separated into Population Serving Employment (PSE), Major Office Employment (MO), and Employment Lands Employment (ELE).

The City of Ottawa has prepared an assignment of percentage of employment within each type of employment, based on employment survey data and assessment of the existing and likely future built form. This breakdown is adjusted to account for the likely distribution of population serving and non-population serving employment,



Exhibit 4-4: Net New Jobs in Employment Forecasts

Employment Forecast	2006	2031	Change	% Work At Home	Jobs at Home	Net New Jobs	NFP Adjustment	NFP Jobs	Net New Jobs
Total Employed in Ottawa	529,589	703,100	173,511						
Primary	4,002	2,390	-1,612	57.3%	924	688	0	0	688
Utilities	1,824	2,092	268	1.1%	3	265	0	0	265
Construction	21,181	31,757	10,576	7.2%	757	9,819	47%	4,971	4,848
Manufacturing	31,262	32,306	1,044	2.9%	30	1,014	0	0	1,014
Wholesale	7,751	13,516	5,765	6.9%	397	5,369	0	0	5,369
Retail	53,236	71,448	18,212	3.8%	688	17,524	0	0	17,524
Transportation and Warehousing	17,821	21,411	3,590	4.5%	160	3,430	0	0	3,430
Information and Cultural	19,427	22,147	2,720	6.6%	179	2,541	0	0	2,541
Finance and Insurance	15,445	19,969	4,524	6.0%	270	4,253	0	0	4,253
Real Estate and Rental Leasing	8,633	11,161	2,528	16.3%	411	2,118	0	0	2,118
Professional, Scientific & Technical Services	54,228	89,715	35,487	18.1%	6,406	29,081	0	0	29,081
Management of Companies & Enterprises	1,397	2,716	1,319	18.4%	243	1,076	0	0	1,076
Administrative and Support, Waste Mngt	22,952	44,616	21,664	7.8%	1,683	19,981	0	0	19,981
Education Services	33,406	44,739	11,333	3.5%	399	10,934	0	0	10,934
Health Care and Social Assistance	45,763	73,381	27,618	7.6%	2,105	25,513	0	0	25,513
Arts, Entertainment and Recreation	10,253	20,238	9,985	13.3%	1,326	8,659	0	0	8,659
Accommodation and Food Services	32,083	43,126	11,043	2.6%	292	10,751	0	0	10,751
Other Services	32,058	39,560	7,502	10.9%	815	6,688	0	0	6,688
Federal Public Administration	102,521	102,473	-48	1.9%	1	47	0	0	47
Provincial Public Administration	1,839	1,838	-1	1.9%	0	1	0	0	1
Local Public Administration	10,158	10,153	-5	1.9%	0	5	0	0	5
Other Public Administration	2,349	2,348	-1	1.9%	0	1	0	0	1
Source: Centre for Spatial Economics, 2008	529,589	703,100	173,511		15,238	158,273		4,971	153,302

based on the forecast population growth for Ottawa through 2031. The resulting matrix is presented in Exhibit 4-5.

Exhibit 4-5: Distribution of PRE, MO and ELE by Sector

Sector	% PRE	MO	ELE
Primary	60%	0%	40%
Utilities	0%	50%	50%
Construction	10%	10%	80%
Manufacturing	0%	50%	50%
Wholesale	0%	0%	100%
Retail	90%	0%	10%
Transportation and Warehousing	0%	20%	80%
Information and Cultural	70%	30%	0%
Finance and Insurance	50%	50%	0%
Real Estate and Rental Leasing	25%	50%	25%
Professional, Scientific & Technical Services	0%	80%	20%
Management of Companies & Enterprises	0%	100%	0%
Administrative and Support, Waste Mngt	25%	50%	25%
Education Services	75%	10%	15%
Health Care and Social Assistance	75%	10%	15%
Arts, Entertainment and Recreation	95%	0%	5%
Accommodation and Food Services	80%	10%	10%
Other Services	85%	15%	0%
Federal Public Administration	0%	100%	0%
Provincial Public Administration	10%	70%	20%
Local Public Administration	100%	0%	0%
Other Public Administration	0%	100%	0%

Step 5. Identify intensification potential for housing employment on existing lands

Appendix B provides an analysis of opportunities for employment intensification, using building permit data to examine recent trends in expansions of existing facilities, and new construction of employment uses through redevelopment and infill. Based on current trends, the

analysis identifies the potential total number of jobs that will be accommodated through additions up to 2031, as follows:

- 2,800 employees would be housed in industrial additions;
- 1,600 employees would be housed in office additions;
- 14,000 employees would be housed in institutional additions; and
- 13,800 employees would be housed in commercial additions.

The intensification analysis also identifies that some 31,000 employees could be housed in new offices in the Central Area, if the current pace of development continues. All of this employment is attributed to intensification, as new office space would occur only through redevelopment of existing buildings or infill on existing vacant sites and parking areas. The analysis notes the important point that achieving this level of development would require both investment in transportation capacity for Ottawa's Central Area and ongoing efforts to support redevelopment of lower density sites. Although this figure would represent a considerable amount of



redevelopment, there are also infill and intensification opportunities on the edges of the Central Area - for example, some 1.5M square feet of office space is planned for LeBreton flats, which would house approximately 6,000 employees once fully developed, at an average of 250 square feet per employee.

In addition to the Central Area, some redevelopment and infill can be expected to occur within existing employment areas in other parts of the City. The analysis of building permit data, outlined in Appendix B, had provided an assessment of the potential for new employment to be housed through intensification.

The intensification potential is deducted from the total land need in step 7.

Step 6. Establish densities for employment by sector, then type

Employment densities are perhaps the most important factor in calculating employment land requirements. Typically, employment land requirements have been calculated using only a single density factor, representing typical employment land densities in all employment areas. This method is quite crude and misses the effect that the different structure of urban economies can have on patterns of development.

Ottawa clearly demonstrates the inadequacy of this approach. While typical employment areas densities in other major Ontario cities have an average between 30 and 50 jobs per net hectare, Ottawa's employment areas have higher densities due to presence of large offices in many areas, as shown in Exhibit 4-6.

This pattern of densities is related both to the mix of built forms (office versus industrial) and the commensurate relative mix of employment by sector. Employment densities also vary strongly by geography according to the relative value of land. For

example, regardless of the sector of employment, developed industrial areas in higher-value locations (such as at major highway interchanges, or in central areas) often have much higher densities than those in rural areas.

Exhibit 4-6: Estimated Number of Jobs Per Hectare

Area Type	Employment Area Name	Developed net ha ^a	2006 Jobs	Jobs/net ha
industrial	Albion-Leitrim Industrial Area	38.6	1,699	44.0
industrial	Hawthorne-Stevenage Business Park	123.9	4,087	33.0
industrial	Industrial Avenue Business Park	55.4	4,502	81.3
industrial	Sheffield Industrial Area	168.7	9,442	56.0
Total		386.5	19,730	51.0
mixed	Airport-Hunt Club Industrial Area	16.1	1,446	89.6
mixed	Cardinal Creek Business Park	8.2	202	24.6
mixed	Coventry Industrial Area	16.4	926	56.4
mixed	Delta Airport Industrial Park	6.3	766	121.5
mixed	Merivale-Rideau Heights Business Park	235.4	17,948	76.2
mixed	Newmarket-Cyrville Industrial Area	111.6	5,958	53.4
mixed	Orleans Industrial Park	11.2	221	19.8
mixed	Ottawa-Goulbourn BP (Iber Rd)	22.4	1,155	51.6
mixed	Queensway Industrial Campus - Canotek	29.0	3,734	128.7
mixed	Rideau North Industrial District	16.0	553	34.6
mixed	Taylor Creek Business Park	10.1	587	58.3
mixed	Woodward BP	37.4	4,366	116.8
mixed	Youville Business Park	10.9	1,196	109.3
Total		531.0	39,058	73.6
office	Bells Corners Industrial Area	38.2	5,965	156.1
office	Kanata North BP	182.6	17,392	95.2
office	Kanata South Business Park	18.2	1,626	89.3
office	Ottawa South Business Park	118.3	8,326	70.4
office	Queensview Office Park	18.7	2,413	128.7
office	Terry Fox Business Park	21.3	1,584	74.5
Total		397.3	37,306	93.9
Total - All Areas		1314.8	96,094	73.1

^a land developed for employment uses

The densities depicted in Exhibit 4-6 are a function of the nature of uses in the business parks. Where a substantial amount of office space is contained in a business park, densities are higher. Where employment areas contain more traditional industrial uses, the densities are lower.

There is evidence from other Canadian cities that new modes of production (such as increasing automation and outsourcing) are changing the way industrial space is used, and therefore how much land is required and where. Outsourcing and vertical de-integration of firms is also resulting in some manufacturing firms shifting specialized employment off-site, such as human resources, legal services and accounting divisions.

As industry trends develop, instances of employment shifting from one sector to



another have also been noted. For instance, there has been some reclassification of manufacturing employment as wholesale trade, whereby warehousing and storage employment that was formerly counted in the manufacturing category is now counted in the wholesale trade category. However, this particular instance does not represent a significant amount of employment.

There is also some evidence, although very preliminary, that suggests there is a broader trend of employment densities dropping in certain sectors. For example, in many Greater Toronto Area (GTA) municipalities, the total amount of employment in manufacturing has declined over the past five years, during a period when the total amount of industrial floor space has expanded, and the vacancy rate has remained virtually stable. Although considerably more work is required to confirm this trend, the data suggests that automation, outsourcing of some functions and possible shifting of employment among sectors, is resulting in a de-coupling of employment growth/contraction and the demand for industrial space. At the least, the data suggests that employment growth or contraction is not a clear indication of demand for industrial floor space and therefore demand for land.

Step 7. Calculate total employment land need using densities

Exhibit 4-7 shows how the density and percentage of employment by type factors are applied to calculate land requirements by type.

As a final step, the forecast of land need must be adjusted to reflect potential intensification. Exhibit 4-7 makes this final adjustment to arrive at a forecast of the demand for greenfield employment land.

In summary, a total of about 552 net hectares of **greenfield** lands are anticipated to be required for population-

serving employment, 84 hectares for major office employment, and 733 net hectares for employment lands employment, over the next 25 years.

If the greenfield major office development is assumed to occur entirely on employment lands, this would total a demand for 817 net hectares by 2031. This forecast represents an annual absorption of 32.6 hectares, at the low end of the range forecast using the absorption rate method.

4.3.3 Sensitivity Analysis - Employment Growth By Sector

As noted in Step 1, above, employment growth by sector can change over time as the economy of a city evolves. To provide an additional assessment of the potential impacts of a different sectoral growth scenario, the methodology used in Section 6.3.2 was repeated for the Scenario A forecast of employment by sector.

In this scenario, employment by sector was adjusted by City staff to reflect different assumptions regarding growth in certain sectors. Further details on this revised forecast were discussed Chapter 3.

This forecast was adjusted for work-at-home and no-fixed-place employment using the methodology outlined above. Based on this forecast of employment, the total land need is outlined on Exhibit 4-8. At 585 hectares, the resulting demand for employment land is lower than in the previous scenario, due to a lower number of jobs in the wholesale sector and the construction sector, both of which show 3,000 fewer jobs on employment lands in Scenario A as opposed to Scenario B.

The higher number of office jobs in Scenario A produces a demand for 210 hectares of office development, which could be housed within business parks or through development of federal or other publicly owned lands. The combined



demand totals 799 hectares, or 32.0 hectares annually. This is very similar to the forecast demand in Scenario B.

4.4 Summary

The analysis of land need contained in this section suggests that the overall demand for greenfield employment lands in Ottawa over the next 25 years can be met by the current supply, although there are two critical issues:

- *Not enough employment lands are located in areas of high market demand.* Interviews with the development community, and the analysis of supply, suggest that although the total amount of vacant land designated and zoned for employment considerably exceeds the likely demand for employment lands to 2031, it is not located in the highly desirable areas in the western part of the City, and/or in areas with convenient highway access.
- *Servicing constraints limit the actual amount of effective supply to meet demand.* Some large designated areas do not yet have the roads, stormwater facilities, and piped services required to meet market demand. The supply of existing serviced employment lands is somewhat fragmented, especially within the Greenbelt, and at an annual absorption of 23-29 hectares per year, will be consumed well within the forecast period.

Chapters 5 and 6 discuss the preferential development of employment lands in different areas of Ottawa and the reasons underlying these development trends.



Exhibit 4-7: Forecast Land Needs - Scenario B

	New Jobs 06-31 (adjusted)	New Jobs*			Jobs Net/ha.	Land Need Using Density by Sector		
		PSE*	MOE*	ELE*		% PRE**	MO	ELE
Primary	688	413	-	275	10	-	-	-
Utilities	265	-	132	132	10	-	13	13
Construction	4,848	485	485	3,879	60	8	8	65
Manufacturing	1,014	-	507	507	40	-	13	13
Wholesale	5,369	-	-	5,369	30	-	-	179
Retail	17,524	15,772	-	1,752	40	394	-	44
Transportation and Warehousing	3,430	-	686	2,744	25	-	27	110
Information and Cultural	2,541	1,779	762	-	150	12	5	-
Finance and Insurance	4,253	2,127	2,127	-	150	14	14	-
Real Estate and Rental Leasing	2,118	529	1,059	529	150	4	7	4
Professional, Scientific & Technical Services	29,081	-	23,265	5,816	150	-	155	39
Management of Companies & Enterprises	1,076	-	1,076	-	150	-	7	-
Administrative and Support, Waste Mngt	19,981	4,995	9,990	4,995	60	83	167	83
Education Services	10,934	8,200	1,093	1,640	20	410	55	82
Health Care and Social Assistance	25,513	19,134	2,551	3,827	100	191	26	38
Arts, Entertainment and Recreation	8,659	8,226	-	433	30	274	-	14
Accommodation and Food Services	10,751	8,601	1,075	1,075	40	215	27	27
Other Services	6,688	5,684	1,003	-	20	284	50	-
Federal Public Administration	-	47	-	47	100	-	0	-
Provincial Public Administration	-	1	0	1	40	-	0	0
Local Public Administration	-	5	-	-	40	-	0	-
Other Public Administration	-	1	-	1	100	-	0	-
Total New Jobs	153,302	75,115	45,763	32,424		1,890	573	710
At density		40	100	40				
Land Need using densities by type (net ha.)		1,878	458	811				
Employment Housed through Intensification								
Additions/Alterations		27,922	1,620	2,780				
Redevelopment/Infill		25,124	35,750	324		% Int		
<i>Subtotal Intensification</i>		<i>53,046</i>	<i>37,370</i>	<i>3,104</i>		93,520	61.0%	
Total New Jobs Requiring Greenfield Lands		22,069	8,394	29,320				
At density		40	100	40				
Land Need		552	84	733				
Total of Employment Lands and Major Office (Net Hectares)		817						
Average Annual Absorption to 2031		32.7						

* PSE = Population Serving Employment; MO = Major Office Employment; ELE = Employment Lands Employment

Exhibit 4-8: Forecast Land Needs - Scenario A

	New Jobs 06-31 (adjusted)	New Jobs			Jobs Net/ha.	Land Need Using Density by Sector		
		PSE*	MOE*	ELE*		PSE*	MOE*	ELE*
Primary	82	49	-	33	10	-	-	-
Utilities	361	-	180	180	10	-	18	18
Construction	967	97	97	773	60	2	2	13
Manufacturing	6,157	-	3,078	3,078	40	-	77	77
Wholesale	2,165	-	-	2,165	30	-	-	72
Retail	15,280	13,752	-	1,528	40	344	-	38
Transportation and Warehousing	5,131	-	1,026	4,105	25	-	41	164
Information and Cultural	2,722	1,905	817	-	150	13	5	-
Finance and Insurance	3,781	1,891	1,891	-	150	13	13	-
Real Estate and Rental Leasing	2,694	673	1,347	673	150	4	9	4
Professional, Scientific & Technical Services	22,212	-	17,770	4,442	150	-	118	30
Management of Companies & Enterprises	285	-	285	-	150	-	2	-
Administrative and Support, Waste Mngt	8,467	2,117	4,234	2,117	60	35	71	35
Education Services	4,834	3,625	483	725	20	181	24	36
Health Care and Social Assistance	35,932	26,949	3,593	5,390	100	269	36	54
Arts, Entertainment and Recreation	3,487	3,313	-	174	30	110	-	6
Accommodation and Food Services	12,478	9,983	1,248	1,248	40	250	31	31
Other Services	8,640	7,344	1,296	-	20	367	65	-
Federal Public Administration	20,119	-	20,119	-	100	-	201	-
Provincial Public Administration	451	45	316	90	40	1	8	2
Local Public Administration	2,492	2,492	-	-	40	62	-	-
Other Public Administration	576	-	576	-	100	-	6	-
Total New Jobs	159,150	74,137	58,355	26,657		1,652	727	581
At density		40	100	40				
Land Need using densities by type (net ha.)		1,853	584	666				
Employment Housed through Intensification								
Additions/Alterations		27,922	1,620	2,780				
Redevelopment/Infill		25,124	35,750	324		% Int		
<i>Subtotal Intensification</i>		<i>53,046</i>	<i>37,370</i>	<i>3,104</i>		93,520	58.8%	
Total New Jobs Requiring Greenfield Lands		21,092	20,986	23,553				
At density		40	100	40				
Land Need		527	210	589				
Total of Employment Lands and Major Office (Net Hectares)		799						
Average Annual Absorption to 2031		31.9						

* PSE = Population Serving Employment; MO = Major Office Employment; ELE = Employment Lands Employment



5 Development Trends

Chapter 4 identifies that the amount of vacant lands designated or zoned for employment in the City's 2006 Vacant Lands Inventory is sufficient to support the projected growth of various sectors in Ottawa to 2031. However, as the chapter stresses, the marketability of this supply depends on the degree to which vacant employment lands satisfy the specific requirements of major employment sectors.

This chapter examines past and current development trends in the City to provide an indicator of the type of growth that has occurred in different parts of Ottawa (5.1), where growth has occurred historically (5.2), and why (5.3). An understanding of the existing patterns of employment land use is important to understanding future requirements for employment lands. This chapter also provides context for Chapter 6's discussion of the key factors that influence the quality of the existing vacant employment lands in the City, and their appropriateness in meeting the demands of the major employment sectors forecast in Chapter 3.

5.1 Type of Growth

Ottawa's core strength of employment is office-based. Significant office-based growth has occurred in the Central Area where federal government expanded its workforce between 2001 and 2006, and in the urban centre of Kanata which accommodates a large proportion of the IT high tech sector.

In the remaining urban centres outside the Greenbelt, population-serving employment accommodated primarily through retail and institutional land uses (e.g., health services and educational services sectors) has driven employment growth, including construction jobs. This increase in population-serving

employment corresponds to recent population growth and residential development.

The recent decline in manufacturing supports that industrial land is currently not in high demand in the urban area. Over the 2001-2006 period, manufacturing and transportation and warehousing sector job losses occurred in the Central Area, Kanata, South Nepean and Leitrim. However, some growth in the transportation and warehousing sector, which requires a large quantity of land, occurred in Kanata, Orleans and east areas inside the Greenbelt during this period.

5.2 Geographic Distribution

Exhibit 5.1 provides a snapshot of the distribution and quantity of employment lands in the City as documented in the City's Vacant Industrial Land Inventory. The Vacant Industrial Land Inventory includes land designated as Employment Area or Enterprise Area in the Official Plan as well as vacant industrial zoned land in the urban and rural areas.

Exhibit 5.1 Employment Land Distribution in Ottawa²⁰

<i>Industrial Area</i>	<i>Total (gross ha)</i>	<i>Vacant (net ha)</i>	<i>% built</i>
Urban (Total)	3,997.0	1,204.3	66.0%
Inside GB (Total)	2,116.0	242.3	87.5%
Inside GB (west of Rideau River)	586.9	36.3	93.4%
Inside GB (east of Rideau River)	1,529.2	206.0	85.2%
Urban Centres Outside GB (Total)	1,881.0	962.0	41.8%
Kanata	846.2	309.0	59.5%
Stittsville	47.4	9.1	80.8%

²⁰ City of Ottawa, *Inventory of Vacant Industrial and Business Parks Land, 2006-2007 Update, August 2008*



South Nepean	284.2	194.5	22.2%
Riverside South	235.0	198.3	0.7%
Leitrim	141.9	66.6	46.4%
Orleans	326.3	184.4	34.9%
Rural (Total)	1,654.6	765.3	47.2%
Rural (west of Rideau River)	996.5	496.4	43.0%
Rural (east of Rideau River)	658.2	268.9	53.7%
City (Total)	5,651.6	1,969.5	60.5%

5.2.1 Urban versus Rural

Vacant lands constituted 39.5% of the City's total designated employment lands supply as estimated in December 2007. The urban-rural split of this vacant land supply was approximately 61% urban to 39% rural. While the built area in the urban area surpassed that in the rural area by only approximately 19%, Ottawa's rural areas accounted for only 4.1% of Ottawa's employment growth between 2001 and 2006, indicating that growth occurred primarily in the urban area during this period.

5.2.2 Inside the Greenbelt

Within the urban area, a comparable proportion of existing employment lands are located inside and outside the Greenbelt (53% and 47% respectively). However, 87.5% of lands inside the Greenbelt have been built upon while 41.8% outside the Greenbelt have been built upon, indicating that development has preferred locations inside the Greenbelt (for a variety of reasons discussed in Chapter 6). A total of 242 net hectares of vacant lands remain inside the Greenbelt, most of which are situated east of the Rideau River (206 net hectares).

The greater concentration of jobs in Ottawa is currently found inside the Greenbelt and specifically in the Central and Inner Areas. However, in recent years the share of employment and employment locations within the Greenbelt has declined. As the availability of suitable land in the older industrial areas inside the Greenbelt continues to diminish, this trend is likely to continue in future years.

5.2.3 Urban Centres outside Greenbelt

The largest proportion of Ottawa's vacant land supply in the urban area is located in urban centres outside the Greenbelt (47% of the total, of which approximately 58% is vacant).

This supply is located largely in designated industrial areas and business parks in the six urban centres of Kanata, Stittsville, South Nepean, Riverside South, Leitrim and Orleans. The greatest proportion of total land is concentrated in the west in Kanata which is home to the IT high-tech cluster. Kanata accounts for 846.2 gross hectares or approximately 45% of the urban supply outside the Greenbelt. However, 343.1 gross hectares or 40.5% of these employment lands in Kanata are vacant.

According to statistics on land developed in 2006-2007, Kanata saw the highest proportion of development. Although Stittsville, South Nepean and Orleans also accommodated some development in this time period, much of the vacant land available in areas ranging from Orleans to Kanata West has remained vacant. It is also of note that Riverside South and Leitrim saw no growth during the 2006-2007 period, despite the availability of 198.3 net hectares and 66.6 net hectares respectively.

The patterns of development in different areas of the City indicate clearly that the availability of land itself is not the primary determinant of where development will



occur. The following section provides a high-level overview of the types of factors that can affect the demand for employment lands and the extent to which they might shape development patterns.

5.3 Rationale for Location Selection

A combination of factors, with varying degrees of importance, influences the overall demand for employment lands. Location factors are distinguished here into three categories, based on how businesses typically select locations:

- Fundamental factors that reflect business activity and impact viability
- Direct financial cost factors
- Operational factors that reflect organizational priorities

The first category of factors is typically considered non-financial but impacts the viability of the business itself. Such factors reflect the activity undertaken by businesses, and may include the need to locate near major highways, transit stops, or in proximity to customers or suppliers of raw material. While sector requirements will likely differ within this broad framework (e.g., the servicing requirements of a food processing firm, the building format of a warehouse operation), sector-specific needs for employment lands can often be identified more clearly within this context.

The second category of factors includes direct costs, which usually gain significance once the first category of fundamental requirements for the business activity, as discussed above, have been addressed. Financial criteria such as land costs, construction costs, taxes, and municipal fees such as development charges are found to affect locational decisions to a greater extent in scenarios where there are significant cost advantages to locating in one region rather than the other. However,

depending on a company's requirements, such cost advantage can often be offset by other requirements (e.g., a high-tech firm may be willing to accept higher land costs because of the benefits of locating in proximity to Ottawa's existing high-tech cluster than in a lower cost area further away, while cost factors may cause an industrial user to look outside the City for alternate locations).

The third and final category of factors captures common parameters that influence the process of location selection. These factors relate to the management of the operation - e.g., the size of the organization; local or multinational; the purpose of the existing or proposed facility (start-up, expansion, branch office); and its long term business plans. Overall, weighing less significant costs against larger costs is part of the evaluation process for most businesses.

Even more relevant to a discussion of land use is the fact that companies across sectors often carry out a number of operations - e.g., corporate office, sales office, manufacturing facility, warehousing, distribution, etc. The land use requirements of a business that carries out more than one of such operations will vary with the combination of functions intended on a particular site. For instance, while the IT high-tech sector is typically viewed as a services sector requiring office space, it also requires land for manufacturing uses (e.g., computer parts). The manufacturing and associated warehousing and distribution activity in this sector pose very different land requirements from those of its office uses. However, in comparison with the IT sector, big-box retail activity is relatively more dependant on associated warehousing and distribution uses. Accordingly, it is necessary to recognize that the land use needs of such sectors will likely differ by the activities carried out within the sector.



Another important point to note is that land use trends within sectors are constantly evolving. For instance, in addition to common instances of office support being provided at a manufacturing facility, where land use designations permit, sites may also accommodate functions such as a combination of a corporate office with an adjoining warehouse facility.

5.4 Summary

The main themes of this chapter are summarized below:

- The Central Area inside the Greenbelt and the urban centre of Kanata located west outside the Greenbelt have seen the highest concentration of office development; whereas other urban centres are largely characterized by population-serving retail and institutional uses.
- Previous development patterns indicate that land inside the Greenbelt is at a premium compared to land outside the Greenbelt, but diminishing supply indicates that the latter will need to accommodate the greater share of future development.
- A variety of factors such as transportation infrastructure, financial considerations, and organizational priorities influence the suitability of land for different employment activities to different degrees. A combination of these factors influences where development is likely to occur.

Chapter 6 identifies key factors that affect the quality of Ottawa's existing vacant employment lands supply from a market demand perspective.



6 Quality of Vacant Employment Lands: Key Factors

This chapter assesses the quality of designated vacant employment lands in Ottawa to determine their strengths and shortcomings in accommodating the projected employment growth. The analysis is informed by recent studies, development trends, resources available from the City (Appendix B) and discussions with eleven developers and owners of employment lands in Ottawa (Appendix A).

The key factors found to affect the overall quality of, and consequently demand for, vacant employment lands in Ottawa include:

- Transportation Access
- Critical Mass and Clusters
- Development Feasibility
- Regional Competitiveness
- Parcel Size
- Parcel Ownership
- Parcel Fragmentation
- Servicing

Each of these factors is discussed below.

6.1 Transportation Access

Competitive positioning vis-à-vis the market and other businesses determines the overall efficiency and cost savings of any business activity, and thereby the overall performance and viability of the business to operate in its sector. For instance, highway accessibility and congestion free traffic flow are critical for rapid goods movement. Consequently, it is often a requirement and not a choice for industrial users to locate in areas that provide better access and/or proximity to

uncongested transportation infrastructure, and therefore to customers and markets, than others (e.g., the 400-series highways).

For office development, transportation requirements often translate into access or proximity to a specific knowledge based labour pool's residential areas, relevant institutional uses such as university campuses that provide that labour pool, and road or public transit availability that allows for the workforce to commute to and from the business location.

In Ottawa, the market's need for appropriate transportation provision explains the historical development on lands with access to Highway 417, which is the east-west link through from Toronto and Kingston to Montreal. Similarly, the 416 corridor which links Highways 417 and 401 and major arterials such as Hunt Club Road are considered strategic business locations by many Ottawa businesses.

While capacity constraints and congestion issues have reduced the effectiveness of the 417 corridor through Ottawa in facilitating rapid movement for goods and people, development interests confirm that from a marketability perspective, employment areas with vacant parcels along strategic routes (e.g., Kanata West Business Park, Terry Fox Business Park and 416 Business Park) are priority areas for future industrial and office development.

Similarly, developer interviews confirmed that Orleans' lack of proximity to the backbone of Ottawa's transportation system (i.e., distance from the core and lack of highway access) is a major factor contributing to the market's perception that the east end of the City is relatively less desirable for development of employment lands. Developers also indicated that the location of the Greenbelt limits the potential for industrial development along the Highway 417 east corridor.



6.2 Critical Mass and Clusters

As industry clusters develop, the need for a business to locate in the same geographic area with its suppliers and competitors increases due to efficiencies achieved by operating in a zone that has already developed to service the sector. The value associated with this efficient environment also highlights the reasons behind the varying degrees of demand for different areas of the City.

For instance, land inside the Greenbelt has the highest degree of perceived acceptance within the development community. The most desirable locations for office development are located in the downtown core which has evolved over time to provide appropriate transportation networks and amenities for employees. Industrial users, on the other hand, benefit from the servicing and infrastructure already in place in other urban areas inside the Greenbelt (as compared to the relatively higher proportion of unserviced land situated outside the Greenbelt).

However, with respect to the east end of the City (e.g., Orleans), the interviewees indicated that the lack of demand is the overarching reason for the lack of non-residential development. In part, while the east end has seen some industrial development, the absence of an existing cluster is a major factor that detracts from its appeal to major employers. With respect to office development, employers from other regions who are seeking to establish a new presence in Ottawa generally prefer to locate within established clusters, while existing Ottawa-based businesses typically locate in proximity to where employees live. For such reasons as being the place of residence of the greater proportion of high-tech employees, Kanata is perceived to be developing into a robust suburban core. Developers note that development outside

the Greenbelt is generally trending west. Interviewees pointed out that the development community is generally reluctant to develop in the east end due to the high risk associated with speculative projects.

Several interviewees also believed that the federal government is the natural choice to lead development into the east end, and that the presence of a considerable number of federal employees would likely lead to the implementation of better transit and transportation infrastructure for other employees. This issue will be examined in more depth in Phase 2 of the study.

6.3 Development Feasibility

Once a company has identified prospective locations that provide for competitive advantages, the cumulative capital costs and long-term operating costs that are likely to be incurred as a consequence of the prospective investment are considered. The cost of land, construction, development charges and municipal fees are typical capital costs for parties buying land and undertaking construction. Operating costs usually include taxes, utility charges, labour costs, and long-term financing. At times, low long-term operating costs can offset factors such as high land costs.

As aforementioned, areas inside the Greenbelt, and in particular the downtown core, have evolved into highly desirable employment locations. Alongside, supply inside the Greenbelt has diminished and become constrained. Developers interviewed for this study estimated that the supply of available employment lands will likely run out of appropriate parcels for office development within the next five years (by 2013). Interviewees also agreed that office development will become more competitive and likely continue to drive up



rents as supply dwindles and demand remains relatively stable.

The low flexibility regarding cost factors such as construction and financing costs (which are similar across Ottawa but may vary with specific land-related issues such as soil conditions, environmental features - as in the Airport-Hunt Club Industrial Area, and contamination in areas such as South Walkley) increase the importance of the cost of land as a factor that businesses can lever to their benefit by locating their facilities at the lowest priced option.

Of note is the fact that while the lower vacancy rates and higher land costs inside the Greenbelt affect all sectors, cost disadvantages are perceived to be relatively greater for industrial land uses which typically command lower land prices than office or retail development. Developers noted that this is evident in designated Enterprise Areas of the City, where the permitted uses of residential and retail uses near traditional employment (such as small manufacturers and other industrial users) is believed to have made overall development costs disadvantageous to the latter. Residential and retail developments in urban centres outside the Greenbelt are also perceived to have influenced the economics of land development. That 35% of the employment lands supply in Ottawa in 2001 has been lost to primarily residential (and some retail) conversion in the interim reinforces this fact. Exhibit 6-1 displays employment lands lost to conversion since 2001. As is illustrated in the exhibit, such losses have occurred in the east and west end of the City.

Coupled with constrained and diminishing supply inside the Greenbelt, overall development costs inside the Greenbelt are found to be adding to the appeal of land outside the Greenbelt, specifically near major transportation corridors, which offer access to highways. However, many of

these parcels are still unserved and therefore not immediately available or ready for development.

6.4 Regional Competitiveness

The combination of financial considerations and constrained supply also leads to the issue of regional competitiveness. The overall impact of this trend is currently perceived as impacting industrial uses with expansion or new development plans more than office uses. Developers of industrial lands note isolated cases of Ottawa-based industrial users relocating or establishing new facilities in "OMATO" municipalities, including recent moves by Giant Tiger and Ketchum Manufacturing to Brockville and Cornwall respectively (the former opened a \$5 million 40,000 square foot distribution facility, while the latter relocated its manufacturing plant).

There is little substantiating evidence to support a significant trend of overall competition to Ottawa from neighbouring municipalities. However, with respect to industrial users, a high-level assessment of municipalities including Gatineau, Brockville, Cornwall, Carleton Place, Smiths Falls and Arnprior, does support that certain areas in proximity to Ottawa provide highly competitive land prices, a greater range of parcel sizes, and in some cases, serviced lands (the lack of which was perceived by developers as a major constraint to the marketability of Ottawa's remaining vacant employment lands).

Studies also show that there are cost advantages to locating in Gatineau as opposed to Ottawa, in sectors including manufacturing, software and corporate services.²¹ Similarly, the City of Brockville, provides approximately 100 acres of serviced land and 40 acres of land

²¹ KPMG. *Gatineau 2005 Special Edition: Based on Competitive Alternatives - The CEO's Guide to International Business Costs*, 2005.



respectively in two industrial parks, with access to rail lines as well as Highway 401.²² Brockville is marketing its agri-food processing and pharmaceuticals sectors and also accommodates warehousing and distribution facilities for Purolator Courier, Wills Transfer Ltd. and All-Can Distribution Centres Inc. Other municipalities in the region, such as Smiths Falls, offer incentives such as no development fees and streamlined approvals processes.²³

Overall, while neighbouring municipalities are currently not perceived to pose significant competition for Ottawa's economy, developers interviewed for this study noted that certain segments of industrial users and Ottawa-based businesses exploring expansion plans may, over time, be attracted to other municipalities if major supply issues (such as servicing and the lack of availability of parcels of appropriate size) are not appropriately addressed to make Ottawa a cost-competitive location. For instance, developers indicated that while certain potential infill parcels in the City are located near 400-series highways, they tend to be considered largely inadequate in terms of their facility specifications (e.g., ceiling height, number of loading docks, large column spacing and onsite parking ratio), given industry trends.

Based on previous research in other areas of Ontario, it is relevant to note that while the industrial sectors may contribute to a relatively lower proportion of growth than other sectors in Ottawa, the long-term economic and employment lands strategies of the City should recognize the importance of retaining existing businesses and supporting their competitiveness to sustain a strong economy, while continuing to seek growth from newer businesses.

²² *City of Brockville, Economic Development, Brockville Logistics Profile, Brockville Agri-Food Processing Sector.*

²³ *Town of Smiths Falls, Community Development Office publications.*

6.5 Parcel Size

Location considerations for all economic sectors are dependant on land availability and suitability for particular business activities. The lack of appropriately sized sites for new construction will naturally restrict the growth of a given sector or force it to relocate to another area unless viable alternatives provide comparable opportunities.

Based on the information reviewed, it is evident that Ottawa's existing vacant land inventory is constrained in this regard. This is supported by discussions with members of the development community wherein there is an apparent broad consensus that a 10-acre or 4-hectare site is approximately an optimal parcel size for an industrial facility of approximately 100,000 square feet and an office facility of approximately 200,000 to 300,000 square feet (due to greater site coverage and depending on building coverage).

There is little evidence of such vacant contiguous employment land inventory inside the Greenbelt. The developers interviewed also confirmed that the lack of sufficiently large contiguous parcels is a significant challenge in launching office development in Ottawa.

Small lot sizes characterize much of the vacant land inventory, in part because business parks and industrial areas planned by the former City of Ottawa and various area municipalities prior to amalgamation in earlier years were subdivided into smaller lots. Areas with larger parcels remaining include the Kanata West Business Park, 416 Business Park, Kanata North Business Park, Riverside South, the South Orleans Industrial Park and the NCC lands in the Hawthorne Stevenage Business Park and Riverside South Business Park. A few large parcels also remain in areas such as the Kanata South Business Park, South Merivale Business Park and Leitrim. Several large



parcels also remain in the rural area, although employment lands in rural parts of the City (such as the Gordon McKeown Industrial Area) are typically characterized by smaller lot sizes.

Developers termed Ottawa's industrial market as relatively localized compared to other areas in Ontario, and their estimates of average tenancy for industrial facilities ranged from 10,000 square feet facilities to 60,000 square feet. However, larger industrial users have been found to require facilities in the 100,000 square foot range. For office facilities, average tenancy in business parks was estimated to be in the 5,000 square foot range, while major office and federal government requirements were likely to be in the higher range.

The City's preferred policy direction (e.g., employment intensification policies) will likely influence the land requirements noted by the development community at this time to some degree (e.g., intensification around transit may or may not reduce parking needs for an office facility, depending on potential transit provision and access for the office's workforce and its influence on their mode of travel). Appendix B examines the potential for intensification on employment lands in detail.

6.6 Parcel Ownership

Exhibit 6-2 presents a view of Ottawa's vacant employment lands by ownership. While approximately 79% of mid to large sized vacant parcels are privately owned, several large parcels are also owned by federal and municipal governments.

Large federal holdings include the National Research Council's 33.5 net hectares at Blair Road and Ogilvie Road and the NCC's 31.2 net hectares in the Hawthorne-Stevenage Business Park. There is substantial federal ownership in the Riverside South Business Park, where

National Defence Canada has 50.8 net hectares and the NCC has 23.7 net hectares. The airport lands managed by the Ottawa International Airport Authority (OIAA) are also federally owned.

The City of Ottawa also owns a range of parcels of varying sizes, with larger holdings in the Carp Airport Industrial Area (91.6 net hectares), the Albion-Leitrim Industrial Area (40 net hectares), Orleans Industrial Park (20 net hectares), mid-sized holdings in the Hawthorne Stevenage Business Park (10.8 net hectares), Ottawa River Business Park (9.3 net hectares) and smaller land holdings in other industrial parks.

The interviewees indicated that certain parcels inside and on the Greenbelt currently owned by either the federal government or the City are considered as highly desirable by the development community due to their central location and proximity to major highways, and suggested that such lands be released for employment purposes given that servicing costs for such locations would likely be lower than for currently unserved employment areas outside the Greenbelt. Several developers communicated that much of this publicly owned land does not necessarily contribute significantly to the environmental objective of the City any longer.

The OIAA indicated that approximately 840 hectares of the total airport lands are intended for current and future employment purposes, of which only approximately 10% to 15% is currently built. While a significant proportion of the OIAA's land located to the south is currently designated under the General Rural category, serviced parcels are available to the north, which offer current opportunities for employment uses. Existing development in the area consists primarily of population-serving retail but recent users include warehousing uses.



Furthermore, communication with the OIAA indicated that in addition to airport-related employment uses (such as cargo-related businesses that benefit from airside access), available land was suitable for light industry, institutional uses (ex: flight schools) and office uses (including federal uses). The OIAA also indicated that potential exists for redevelopment and intensification on such lands.

However, the 48-year land lease restrictions on airport property are likely to pose challenges to the marketability of the parcel to private developers of office or industrial uses. For this reason, federal office and institutional uses may be a relatively more appropriate fit for these lands. Given the Ottawa International Airport's relatively central location in the City, current transportation access, and the proposed Light Rail Transit (LRT) link to the airport, a partnership between certain public entities may be appropriate to take advantage of serviced lands and to address issues of constrained supply in the City. This opportunity will be further explored in Phase 2.

6.7 Parcel Fragmentation

Since a significant proportion of vacant employment lands are situated in developed areas (more so inside the Greenbelt), parcel location in these areas and fragmented ownership of such parcels are common problems that constrain the ability for land assembly of smaller parcels to a great degree. While commercial and industrial land developers typically have land holdings across the City, land availability in Ottawa can be influenced by the federal government's ownership of a number of large strategically located vacant employment land parcels (which are thereby currently unavailable to the private sector but available to the federal government).

6.8 Servicing

Within this context of parcel constraints and availability issues, the immediate absorption of vacant lands that are well-located, suitably sized and free for development is contingent on the provision of servicing. Exhibit 6-3 provides an overview of existing servicing provision on vacant employment lands in the City.

The lack of servicing is a significant constraint on the development of potentially strategic employment areas such as the Kanata West Business Park, which is one of the existing areas perceived by developers to be optimal for development, due to its highway location and large sized parcels. Development interest in the area is high but the area's development potential and future growth hinges on the phasing and timing of servicing.

At the same time, it is important to recognize that in the absence of a severe land shortage, serviced land may only be of appeal when it is in the right location. For instance, while developers agreed that servicing would increase the marketability of areas including the 416 Business Park and Riverside South Business Park, they perceived that servicing would not considerably increase the appeal of the Orleans Industrial Park, which has several large parcels but is perceived as largely inaccessible and undesirable for development due to its location in the east end of the City. It is likely that the City would need to explore a combination of strategic measures to support development in this area.

6.9 Summary: The City's Role

By and large, the development community stressed the need for the City to engage more actively in aggressively pursuing employment lands development activity,



through measures such as streamlining the development process, in order to ensure competitiveness with neighbouring areas in certain sectors, and even with other metropolitan centres such as Montreal. Servicing to key employment areas was believed to be a key step towards improving the quality and marketability of the existing supply of vacant employment lands. A recurring suggestion in the developer interviews was for the municipality to re-engage in leading business parks planning, in a return to the direction pursued by the former City and Nepean in areas such as the earlier established Hawthorne, Colonnade and Rideau Heights Business Parks.

The main themes of this chapter are summarized below:

- Location remains the most critical factor for employment lands, whereby office development requires good accessibility for employees (road and transit accessibility) and industrial development requires favourable highway (400-series highway) accessibility to be successful. The locational preferences of businesses typically take precedence over direct financial costs.
- Industrial uses may be relatively more likely to be disadvantaged by cost factors than office and population-serving uses which command higher land values. This, in turn, could affect Ottawa's regional competitiveness in the long-term.
- The lack of appropriately sized contiguous parcels in well located employment areas deters development.
- Servicing appears to be the biggest constraint to bringing on stream existing employment lands that have appealing locational characteristics.

Chapter 7 is the concluding chapter of the Phase 1 report. It ties together the study findings and identifies focus areas for Phase 2.



Exhibit 6-1: Industrial Land Lost Through Conversion Since 2001

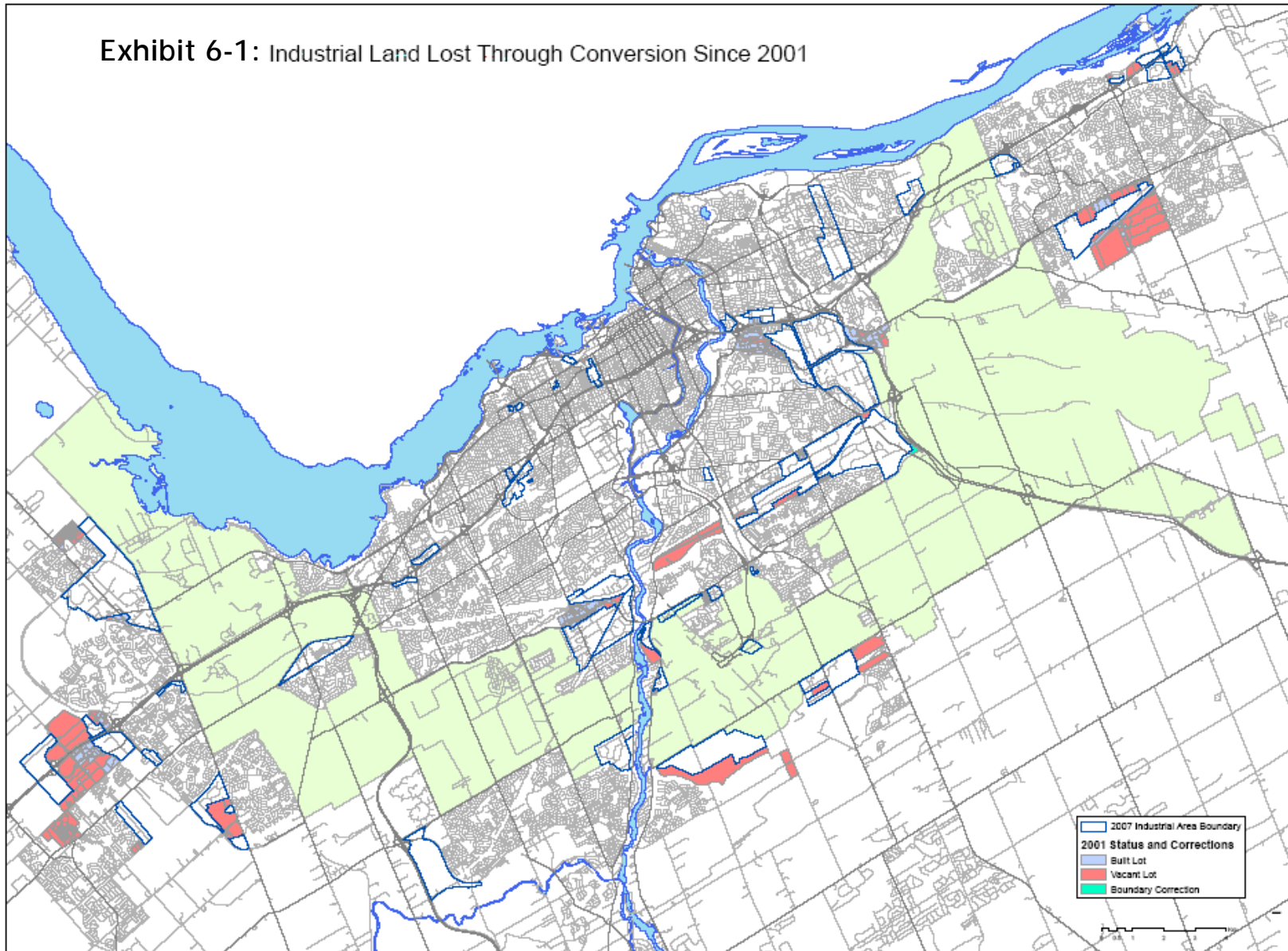




Exhibit 6-2: Vacant Industrial Land by Ownership

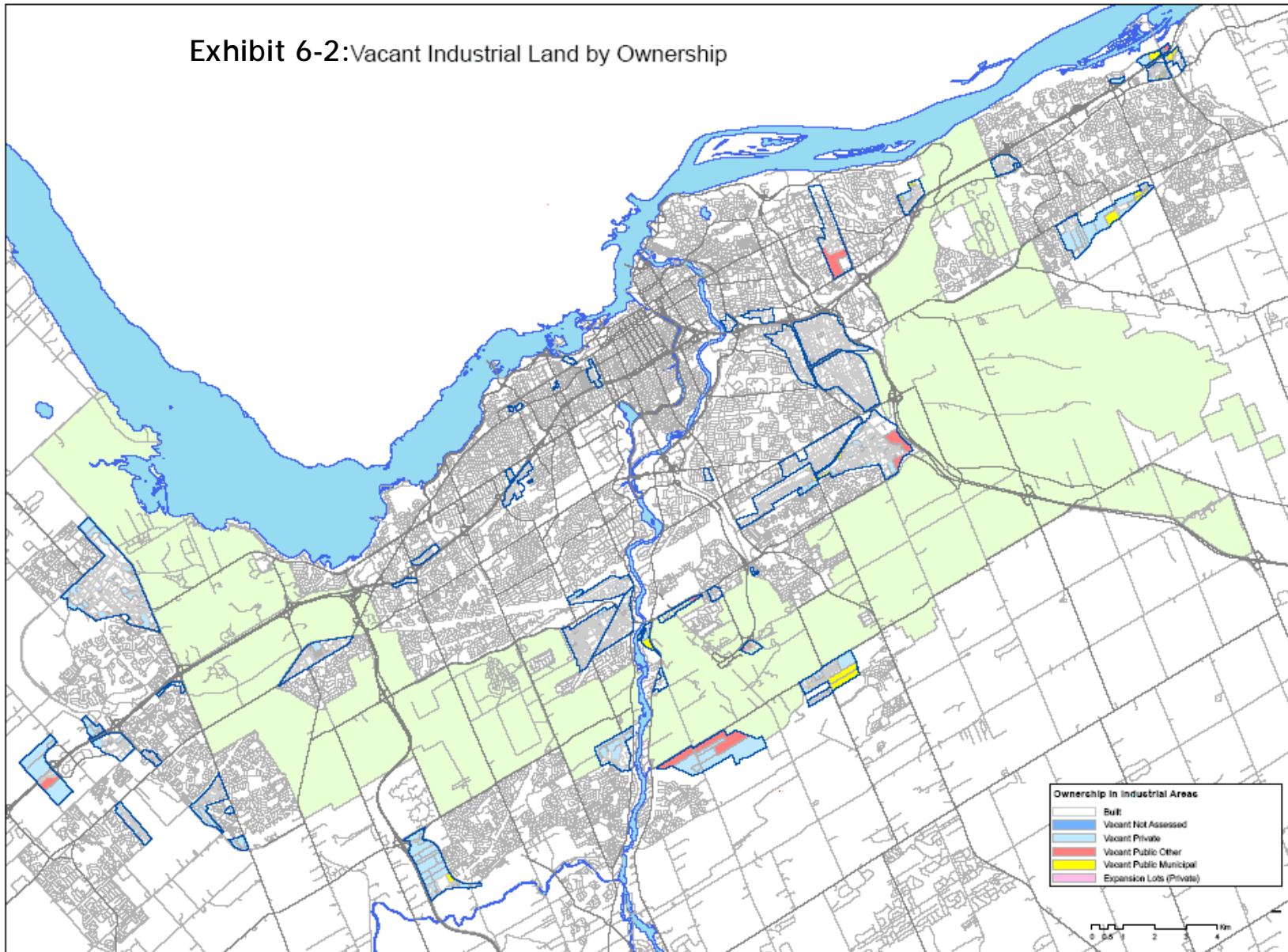
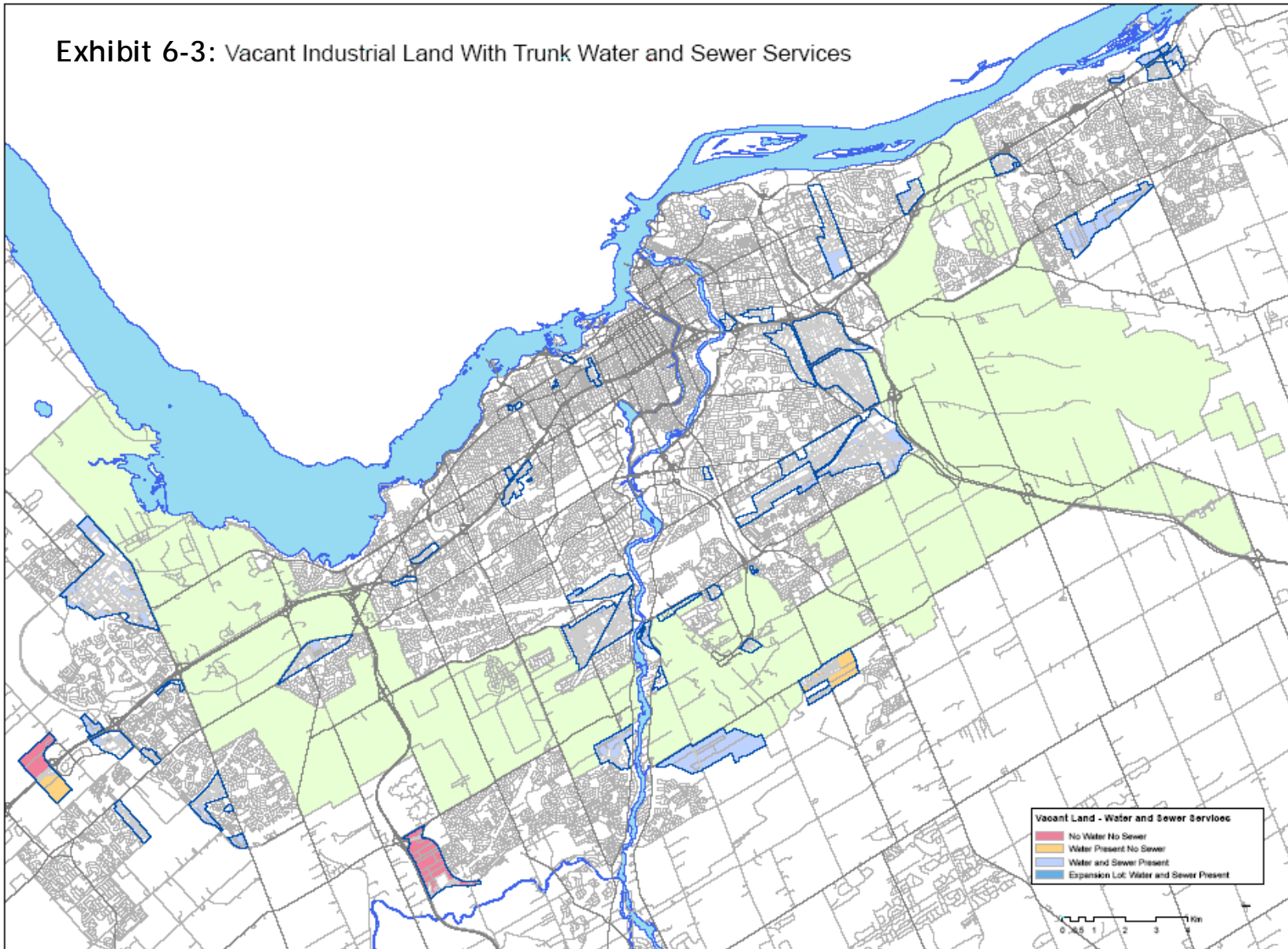




Exhibit 6-3: Vacant Industrial Land With Trunk Water and Sewer Services





7 Conclusions: Findings and Implications

This chapter summarizes the findings of the Phase 1 study, and addresses the following questions:

- What are the major trends shaping Ottawa's current economy and employment?
- What are the major sectors projected to grow in Ottawa?
- What requirements do these major sectors have?
- What do these trends mean for the demand for employment lands?
- What is the impact of these trends on employment lands supply?
- How adequate is the supply going to be to meet the projected demand?

7.1 Overview

An employment lands strategy should help the City in its efforts to maintain an employment base that is stable, diverse, well-paid and resilient to economic cycles. Such an employment base in turn contributes to quality of life, population growth and further economic development opportunities.

Since sufficient land in an appropriate location is an essential building block of economic growth, the current characteristics and expected changes to the City's employment base will determine the future demand for employment lands.

From the City's perspective, municipal policy should not only consider whether there are sufficient employment lands but also whether these lands are available and appropriately located for development. Appropriate measures may be required to address gaps identified between the supply and demand.

In addition, employment lands planning must reflect the planning objectives of the municipality, and support the creation of functional, compact and efficient urban areas.

To a great degree, it is within the City's scope of control to support and stimulate the preferred direction of growth through planning policies and regulations. The City can influence this process considerably by recognizing the location selection factors that create unequal demand for different lands and the reasons why certain factors bear more influence than others.

7.2 Existing Economy

What are the major trends shaping Ottawa's current economy and employment?

Ontario's economy is continuing to change. Since the 1980s, a series of structural changes at the global and national level have affected goods producing sectors in Canada, particularly the manufacturing sector. Globalization and free trade; automation; and changes in production processes have led to much slower growth in manufacturing.

At the same time, growth in service sectors has driven economic expansion. In recent years, these changes have been exacerbated by the rise in the Canadian dollar and new competition from emerging economic superpowers such as China and India. Demographic changes in the Canadian population itself are changing domestic demand with implications for economic growth across sectors.

Ottawa does not have a dominant manufacturing or primary sector, nor a rapidly growing warehousing and distribution sector, as do several other Ontario municipalities. Instead, a relatively larger share of the City's employment is office based.



The public sector has traditionally been a major source of employment in Ottawa. The City's employment and economy have been more stable and less influenced by the business or economic cycles that impact employment in other urban areas. Nonetheless, the public sector only accounted for about 22% of all employment in Ottawa in 2006. The majority of the City's labour force can be impacted by regional, national and global economic trends for employment, as evident in Ottawa's recent experience in the IT high-tech sector.

The significant proportion of federal employment and professional services firms as key employers has considerable implications on the type of employment lands required to accommodate Ottawa's workforce, particularly with respect to location.

7.3 Employment Trends and Sector-Specific Land Requirements

What are the major sectors projected to grow in Ottawa? What requirements do these major sectors have?

Employment projections by sector to 2031 indicate that economic and employment growth will continue at a steady pace in Ottawa. By size, the four largest employment sectors in 2031 will be:

- (1) Federal public administration;
- (2) Health care & social assistance;
- (3) Professional, scientific & technical services; and
- (4) Retail.

In combination, these four sectors are estimated to account for about half of all employment in the City in 2031 and more than two-thirds of all the incremental employment growth from 2006 to 2031. The implications of the growth of these and

other sectors on the demand for employment lands are summarized below.

The *federal government* is currently the largest office user in Ottawa. Federal government offices are predominantly located in the downtown core. The Central Area is characterized by a dwindling supply of office space, low vacancy rates and increasing rents. Certain federal employment nodes are also located outside the Greenbelt, in Bells Corner and Ottawa's west end. By 2031, the federal government is expected to retain its position as the largest employer in the Ottawa market. As current offices continue to age and ongoing relocation continues, more office space is likely to be needed.

The rising costs of office development in the Central Area and the location of the greater proportion of vacant designated employment lands outside the Greenbelt create a scenario wherein the City might consider attempting to partner with other public entities to direct public employment locations to lower cost areas of Ottawa such as the east end where the development community is reluctant to invest due the risk associated with speculative development. Successful office development in areas perceived to have lower marketability will likely need to be accompanied by investment in additional infrastructure such as transit and amenities catering to office workers.

Professional, scientific & technical services as a sector is projected to be one of the fastest growing sectors for employment in Ottawa. Currently firms in this sector are typically located in the downtown core and in the west end (generally supporting federal government clients and the IT high tech cluster respectively). Similar to the federal government, these businesses primarily require office space, valuing locations in proximity to major customers and their labour force. It is important to note that



their location decisions are dependent in part on client location. This increases the incentive for professional services firms who have the federal government as their major clients to follow where federal offices may establish, for example, the east end of the City. As in the case of federal employment, adequate access to transit and transportation routes will assist in supporting this sector and also help achieve land use objectives, such as transit-oriented development.

Both *health care & social assistance* are largely population serving and will generally locate in areas accessible to large residential areas with transit and road transportation. While much of the growth in the health care sector can be expected to be institutional (e.g., hospitals and long-term care facilities), emerging trends such as home-based personal support workers, indicate that it is likely that some of this employment growth will be accommodated off employment lands.

With more than 15,000 new employees forecast in the *retail sector* by 2031, the City should establish planning policy to determine the long term location and density of retail growth. This certainty of location combined with strong policies to preclude the conversion of the employment lands base should assist both retail and other employment sectors in the future. The City has experienced the loss of employment lands to both residential and retail development (a combined loss of approximately 35% of vacant designated employment lands supply since 2001). The development community recognizes that in areas such as Enterprise Areas, residential and retail development trends tend to drive land values higher, in turn creating comparative disadvantages for traditional employment uses and leading to issues of regional competitiveness.

Traditional Industrial Sectors are not forecast to provide significant new

employment to the City. However, new facility requirements in these sectors are expected to significantly influence the locational decisions of industrial developers and end users. Traditional industrial sectors include primary, utilities, manufacturing, wholesale, and transportation & warehousing, all of which combined are projected to account for approximately 10% of Ottawa's total employment in 2031.

As existing industrial facilities become obsolete through gentrification and technological changes, industrial employers may be faced with the challenge of finding serviced lands to develop new facilities. It is important to understand this sector's need for locations that provide quick highway access and congestion free traffic flow, and parcel sizes and building configurations that could accommodate an evolving facility format (e.g., high ceiling clearances, large column spacing, large number of loading docks and high onsite parking ratio). Planning for such uses is important to ensure that Ottawa retains its existing industrial base and remains competitive with nearby municipalities that are marketing themselves as relatively lower cost alternatives that offer similar facilities.

7.4 Overall Supply and Demand

What do these trends mean for the demand for employment lands?

Based on the sector forecasts, the supply and demand analysis indicates that Ottawa has more than a sufficient supply of designated employment lands in the planning horizon. With a strong trend towards intensification, only between 799 and 817 net hectares of the approximately 1,970 net hectares of vacant employment lands will be required to 2031.

However, our evaluation of the quality of the vacant designated employment lands



supply in Ottawa indicates that while certain geographic areas are experiencing employment growth, other locations with considerable vacant land are perceived as undesirable. The marketability of these lands is dependant on various factors, as summarized in Section 7.5. Importantly, as a large proportion of the existing designated employment lands supply is unserviced, additional servicing will be required during the forecast period to bring this supply on stream.

7.5 Challenges to Absorption of Vacant Land

What is the impact of these trends on employment lands supply?

Development trends in Ottawa appear to favour areas inside the Greenbelt over areas outside the Greenbelt, due to already developed clusters and the extensive infrastructure in place. However, the same central location and infrastructure provision that increase the appeal of areas inside the Greenbelt are now being countered by constrained supply and rising development costs. The development community confirmed that small parcel sizes, parcel fragmentation and fragmented ownership of the existing supply are resulting in development constraints.

Outside the Greenbelt, the City's employment lands market is perceived to be divided into the west and east ends. The west end's strong growth as an IT cluster is well known. The east end has seen some degree of industrial development but is characterized largely by residential land uses and associated population-serving retail uses. There are many reasons for these trends, including the history of the west end as a location for government research facilities, the presence of "anchor" firms, and strategic transportation access to major highways as well as transit. Both areas offer lower

development costs and a greater range of appropriately sized parcels than employment areas located inside the Greenbelt. The lack of servicing is an overarching factor that currently hinders the absorption of vacant land in both areas.

These trends obviously impact employment lands development in Ottawa, and could be addressed through a combination of measures, such as the following:

- Expansions and intensification will likely house a large proportion of employment growth. Focusing on making efficient use of the remaining supply inside the Greenbelt, as well as encouraging redevelopment and expansions in the Central Area, should be at the core of the employment lands strategy.
- Servicing of new business park areas, such as Riverside South, offers an opportunity to create new office nodes.
- Co-development or incentives in the east end, linked to transit expansion, are a major opportunity.

7.6 Strategic Direction

How adequate is the supply going to be to meet the projected demand?

The adequacy of the supply to meet the demand is determined by both the quantity and quality of the existing supply.

Simply in terms of quantity, the land budget indicates that the currently designated supply of employment lands in Ottawa is more than adequate to accommodate the projected demand for employment lands in the planning horizon to 2031. However, with regard to quality, our assessment indicates that the City needs to work proactively towards improving the quality of this current supply to increase its marketability. Servicing is a key issue in this regard.



In addition to the need to improve the overall quality of the designated supply, development trends and developer interviews have pointed out a clear distinction between employment areas inside the Greenbelt, the west and east ends of the City outside the Greenbelt, and the rural area. Exhibit 7.1 summarizes key strengths, weaknesses, opportunities and threats associated with employment lands located in these four areas. Overall, the difference in land values between employment lands and non-employment lands is likely to continue to create pressure to convert employment lands to other uses. Without addressing the identified weaknesses and threats, the City may run the risk of a declining employment lands base which, in turn, could lead to job losses and declining tax revenue.

Based on the study's findings, the City's employment lands strategy should encourage redevelopment and intensification of existing employment areas, and be aligned with transit plans to develop employment nodes inside the Greenbelt. Outside the Greenbelt, improving the quality of the existing supply will depend largely on measures to prioritize, support, and phase servicing for select employment lands with strong locational qualities that provide potential for the growth of specific sectors.

Approaches to accomplish the above objectives can range from municipally led approaches to beneficial partnerships between the City, other public entities and private developers. In Phase 2 of this study, the needs of the federal government - the largest employment sector - will also be further investigated. These needs could help provide direction for the City as it establishes priorities and strategies for employment lands. Direction will also be required to ensure the location of future retail development does not affect other employment sectors negatively.

7.7 Policy Considerations

A total of 175,311 new jobs are projected for Ottawa to the year 2031 with 60% of the projected new growth in four sectors. The land use requirements of these sectors indicate that new employment growth will translate mainly into a demand for office and population-related uses. The federal government, which is projected to remain Ottawa's largest employer in 2031, currently has an aging office inventory and re-fits will likely be required to federal employment locations such as the Parliamentary Precinct, West Memorial, Lorne, L'Esplanade Laurier and Tunney's Pasture over the short term.

The two land budget scenarios generated for this assignment have identified that demand for employment lands in Ottawa will be slightly slower than experienced over the past decade. A total of 799 to 817 net hectares of greenfield land has been identified as required to 2031 for major office and employment lands uses, broken down as follows.

The forecasting exercise has identified that a substantial proportion of employment can be accommodated through expansions, additions, and redevelopment (roughly 60% in both scenarios). This is an unusually high proportion for Ontario municipalities (but not for large municipalities with strong central business districts, such as Toronto). The distribution reflects the nature of the sector forecasts for Ottawa's employment by sector. The sectors that are forecast to grow include many that accommodate a disproportionate share of employment through infill, redevelopment, and intensification, particularly office-based sectors such as professional services and public administration, and institutional sectors such as health care and education. If achieved, this level of employment intensification will help realize many of the City's other planning goals, such as



increasing transit ridership and planning for a more compact urban form.

It is also necessary to consider the location of future retail development and the ability of the urban area within the Greenbelt to accommodate population serving employment. The results of this study should contribute to the municipal comprehensive review of the adequacy of the supply of employment lands. Once completed and incorporated in the Official Plan, no private applications for conversion of employment lands to non employment uses (which include major retail uses) which are refused by Council can be appealed to the Ontario Municipal Board under the provisions of the Provincial Policy Statement and the Planning Act.

The Official Plan revisions currently underway recognize and attempt to use provincial provisions for the "comprehensive review" to prevent conversion of employment lands for retail uses. Phase 2 will explore whether they may benefit from the addition of more restrictive provisions (e.g., zoning) that seek to address potential trends, such as the effect of high retail land values on other types of employment lands development (e.g., as noted in Enterprise Areas).

It is also important to plan for retail employment growth, especially given that this employment should not be housed on employment lands. A retail land need study is outside of the scope of this assignment, but would allow the City to ensure that the right amount of land is available for retail, and is reasonable distributed and appropriately located. Commercial policy would follow such an analysis. In general, however, retail lands need less protection from conversion to other uses, as retailers pay much higher prices for land and can therefore compete effectively in the market.

In developing the implementing Official Plan policies, careful consideration should also be given to the range of uses permitted in employment lands to ensure that like, compatible uses can develop as one or more forms of employment communities - office concentrations, service industrial areas, heavy industrial groupings, etc. Allowing a very broad range of employment uses in all locations may limit the availability of land to users unable to pay higher land rents.

Overall, development trends indicate that the Central Area is the preferred location for office users. This establishes a need to support reuse, redevelopment and intensification and policy considerations for development around transit stations, and overall redevelopment and intensification inside the Greenbelt.

With Official Plan revisions currently underway, employment lands initiatives should be viewed within the broader planning context of future transit routes, brownfield redevelopment targets and intensification potential. Through this perspective, the City can determine appropriate locations to create employment nodes for office, industrial and institutional uses or a combination thereof, providing incentives through the use of density provisions in relation to transit access.

Finally, the availability of "shovel-ready" employment lands in desirable locations is critical to absorption. If Ottawa wishes to maximize competitiveness and drive up the amount of employment in employment areas, it may be wise to consider servicing lands deemed desirable by the market, even if this contributes to geographic imbalance. This is essentially the City's internal decision regarding the relative priority of maximizing competitiveness versus limiting supply/choice to attempt to shift the relative proportion of employment geographically within the City.



7.8 Next Steps

The findings of this study provide background and direction for Phase 2 of the Employment Lands Strategy study.

Phase 2 of the Employment Lands Strategy study will build upon Phase 1 by investigating in detail the strategic role that the City might play in expanding its employment base through a combination of measures including policy provisions, financial incentives, partnerships, and other means of active participation in directing employment lands development.

Phase 2 of the study will consist of the following steps:

1. Employment Strategy Review - A review of five other municipal employment strategies relevant to Ottawa.
2. Role of federal government in Ottawa's economy - Consultation and analysis to determine the federal government's long term strategies regarding employment, and the City's role with regard to this employment base.
3. Potential role of City in expanding the employment base - Determination of the City's role in employment land ownership, preservation, development, expansion, and overall direction of Ottawa's growth.
4. Actions, policies and incentives to expand and protect the employment base - Identify necessary measures to discourage conversion, financial incentives and tools to encourage employment investment, priority areas for municipal infrastructure investment, expansion areas to accommodate future demand, and other initiatives to encourage new development, redevelopment and intensification.



Exhibit 7-1: SWOT Analysis by Major City Area

Area	Strengths	Weaknesses	Opportunities	Threats
Inside Greenbelt	<ul style="list-style-type: none"> • Central location • Transportation/transit infrastructure • Serviced land • Dominant federal government presence • Strong office-based professional services sector 	<ul style="list-style-type: none"> • Diminishing supply • Constrained parcel characteristics • Congestion 	<ul style="list-style-type: none"> • Infill • Redevelopment • Aligning intensification around transit nodes 	<ul style="list-style-type: none"> • High retail and residential land prices driving costs up • Conversion pressures
West e.g. Kanata	<ul style="list-style-type: none"> • Strong office environment • IT cluster • Transportation/transit infrastructure 	<ul style="list-style-type: none"> • Lack of servicing in some areas 	<ul style="list-style-type: none"> • Parcel availability on major transportation corridors • Major office development • Federal office potential 	<ul style="list-style-type: none"> • Dependant on one major sector, which is experiencing significant contraction • Land unusable because of lack of servicing • Potential conversion pressures due to demand for retail
East e.g. Orleans	<ul style="list-style-type: none"> • Availability of larger parcels • Lower land costs 	<ul style="list-style-type: none"> • Weak transportation infrastructure • Lack of existing business base • Perceived as risky market • Lack of servicing 	<ul style="list-style-type: none"> • Servicing and transportation improvements expected to improve quality of supply • Potential partnership with other public organizations on office and institutional development 	<ul style="list-style-type: none"> • Lack of momentum to drive development in area • Retail and residential driving land prices up • Land unusable because of lack of servicing
Rural Area e.g. : Richmond	<ul style="list-style-type: none"> • Availability of larger parcels • Low land costs 	<ul style="list-style-type: none"> • Lack of servicing and infrastructure • Limited labour force • Lack of peripheral industries 	<ul style="list-style-type: none"> • Servicing certain areas could promote industrial development • Potentially attractive to major distribution and warehousing uses near major transportation corridors 	<ul style="list-style-type: none"> • General weakening of Ottawa's regional competitiveness in industrial development



8 Appendix A - Glossary

Ottawa-Gatineau CMA - Refers to the Ottawa-Gatineau Census Metropolitan Area as discussed in the Corporate Research Group's Economic Outlook Q1 2008, based on the Statistics Canada Labour Force Survey. The Ottawa-Gatineau CMA is comprised of both the Ontario and Quebec parts of the CMA. The municipalities in each of these parts are listed below:

Ottawa CMA - Terminology used in the Corporate Research Group's Economic Outlook Q1 2008, based on Statistics Canada Labour Force Survey. This refers to the "Ottawa-Gatineau CMA (Ontario Part)" which includes the municipalities of Ottawa, Clarence-Rockland, and Russell.

Gatineau CMA - Terminology used in the Corporate Research Group's Economic Outlook Q1 2008, based on Statistics Canada Labour Force Survey. This refers to the "Ottawa-Gatineau CMA (Quebec Part)" which includes the municipalities of Gatineau, Cantley, Chelsea, Denholm, La Peche, L'Ange-Gardien, Pontiac and Val-des-Monts.

OMATO - Ontario municipalities adjacent to Ottawa. These include the City of Clarence-Rockland, Township of Russell, The Nation Municipality, Village of Casselman, Township of Alfred and Plantagenet, Township of North Grenville, Village of Merrickville-Wolford, Township of North Dundas, Township of Montague, Township of Beckwith, Town of Carleton Place, Town of Mississippi Mills, Town of Arnprior, and Township of McNab/Braeside.

OMAG - Quebec municipalities adjacent to Gatineau. These include MRC Les-Collines-de-l'Outaouais, Municipalité de Denholm, Municipalité de Low, Municipalité de Mayo, Municipalité de Mulgrave-et-Derry, Municipalité de Lochaber-Partie-Ouest, Ville de Thurso, Municipalité de Val-des-

Bois, Municipalité de Bristol and Municipalité de Allevyn-et-Cawood.

NCC - National Capital Commission i.e., the Crown corporation created by Parliament in 1959 as the steward of federal lands and buildings in the National Capital Region.

Ottawa's Employment lands - These include urban and rural industrial and business park land either zoned industrial and/or designated as Employment Area or Enterprise Areas in the Official Plan at the end of 2007. Source: City of Ottawa's Inventory of Vacant Industrial and Business Park Lands 2006-07 Update (August 2008)

Urban Centres - Major urban areas outside the Greenbelt in the City of Ottawa. These include business parks and industrial areas in Kanata, Stittsville, South Nepean, Riverside South, Leirtrim and Orleans.

Real Gross Domestic Product (GDP) - An economic measure of the size of an economy adjusted for inflation.

Community Based Jobs/Employment - A category of jobs/employment that exist to support the residents within a particular community (i.e., population serving).

Export Based Jobs/Employment - A category of jobs/employment that produces goods and services consumed by those outside the community where the jobs are located.



9 Appendix B - Opportunities for Intensification

This section identifies opportunities for intensification in various areas of the City, and suggests how overall and area-specific density targets in planning policy could help ensure that the City's growth is aligned with broader objectives. The analysis informs the supply and demand analysis in Chapter 4.

Intensification on employment lands through infill and redevelopment initiatives should likely play a dominant role in the City's strategy to direct employment lands planning. Through intensification, opportunities can be created to enhance the currently constrained supply within the Greenbelt and particularly in the Central Area, as well as to ensure that development on the considerable supply outside the Greenbelt is directed in a compact and sustainable manner. Intensification of employment areas occurs through several processes:

- (1) Existing employment uses are redeveloped at a higher density - such as office buildings replacing lower-density uses
- (2) Existing employment uses are expanded - such as a manufacturing plant expanding its operations on site, or adding another shift of employees
- (3) Long-term vacant areas within employment areas are developed
- (4) Uses with a low number of employees are replaced with uses with a higher number of employees in the same building.

At the root, these types of development occur when a particular employment area increases in value. Where land is more valuable (and rents are higher), the built form changes to reflect this value. For example, development in the Central Area has taken the form of high-rise office buildings with underground parking; this is due to the area's higher rents, which makes higher-density development (with its higher costs) economically feasible. Similarly, parcels of land with exposure to a major highway have value due to their visibility; these may also develop at higher densities.

In general, there is always a gradual degree of intensification in existing employment areas, as long-term vacant sites are eventually filled and as existing uses expand through additional phases of development. More dramatic forms of intensification occur where an area becomes desirable due to the presence of a catalyzing factor. Catalyzing factors can include new infrastructure (a highway interchange or a transit station), an "anchor tenant" (such as has happened in the past near major tech companies in Kanata, or near health-care facilities), or through a cluster effect (as has happened in some government and high-tech campus areas).

Key among these potential catalysts is the proposed expansion of the higher-order transit network in Ottawa. Tying together policies to support employment intensification and investment in rapid transit is probably the most significant element of planning for employment lands.

The following section provides an analysis of recent building permit activity, examining the degree of intensification that can be isolated within the data. It then turns to a brief assessment of a series of typical employment land typologies, which illustrates the nature of intensification potential within typical



employment areas in Ottawa. Finally, it addresses the particular opportunity presented by the rapid transit network, and concludes by using these typologies to generate a high-level assessment of the potential for future employment to be accommodated through intensification.

9.1 Building Permit Data Analysis

Non-residential building permit data can be an instructive source for identifying current trends in employment intensification. Permit data can be used to identify the number of jobs that are housed through expansions to existing employment uses (additions and addition/alterations) and by identifying new construction projects that are occurring within built-up areas.

9.1.1 Additions and Expansions

Non-residential building permit data provided by the City of Ottawa was used to isolate the amount of square footage of expansions to industrial and office buildings in Ottawa. As in most municipalities, the total amount of employment housed in expansions is relatively modest, as the amount of floor area constructed per year is relatively minimal.

The table in Exhibit B-1 shows the amount of floor area constructed over a five year period (2003 to 2007) through additions and additions/alterations, for industrial, commercial, office, and institutional development. This has been converted into

an estimate of employment by dividing the floor area by typical ratios of floor area per employee.

At these factors and at the current rate of construction of additions, over the next 25 years:

- 2,800 employees would be housed in industrial additions
- 1,600 employees would be housed in office additions
- 14,000 employees would be housed in institutional additions
- 13,800 employees would be housed in commercial additions

The discussion above provides an instructive benchmark for current trends in employment intensification, and can be applied to the forecast of demand for employment lands on a preliminary basis.

9.1.2 Infill and Redevelopment

The amount of intensification through infill development, and redevelopment of existing sites was also examined using building permit data. City staff analyzed permit data for new construction to isolate developments that constitute either infill (development on vacant sites within the urban area, including within existing developed parcels) or redevelopment (removal of prior buildings/uses for redevelopment). The total gross floor area constructed by use is shown in Exhibit B-2.

Exhibit B-1 - Floor Area and Employment Added Through Additions

Building Type	Area Constructed, 2003-2007	Annual Average	SF/Emp	Added (Ann.)	25 Year Total
Commercial/Retail	1,106,948	221,390	400	553	13,837
Industrial	444,803	88,961	800	111	2,780
Institutional	2,253,597	450,719	800	563	14,085
Office	97,212	19,442	300	65	1,620
	3,902,560	780,512		1,293	32,322

Exhibit B-2 - Floor Area and Employment Added Through Infill and Redevelopment

Building Type	Area Constructed, 2003-2007	Annual Average	SF/Emp	Added (Ann.)	25 Year Total
Commercial/Retail	1,116,553	223,311	400	558	13,957
Industrial	51,855	10,371	800	13	324
Institutional	1,786,732	357,346	800	447	11,167
Office	2,144,970	428,994	300	1,430	35,750
	5,100,110	1,020,022		2,448	61,198



Infill and redevelopment can accommodate a substantial portion of employment, particularly in Ottawa where there is a strong focus on office space in the Central Area. However, it is important to note two caveats on this data. First, although redevelopment frequently results in substantially higher densities on a given site, by definition it replaces some existing space which may have been in use to house existing employment, which will be displaced. To capture a true sense of the new floor area created through redevelopment, the amount of employment displaced should be subtracted from the amount housed by the redevelopment. However, data was not available to make this calculation (and results will differ by project). The results should therefore be treated with caution, in recognition of this shortcoming.

The figures in Exhibit B-2 would indicate that a very substantial amount of employment could be housed over the next 25 years through infill and redevelopment:

- About 14,000 employees could be housed in redevelopment/infill commercial/retail projects
- 300 employees could be housed in redevelopment/infill industrial projects
- 11,200 employees could be housed in redevelopment/infill institutional projects
- 35,800 employees could be housed in redevelopment/infill office projects.

The totals from Exhibit B-1 and B-2 have been incorporated into the forecasts for demand for industrial land in Chapter 4 of this report.

9.2 Analysis of Employment Land Typologies

Four employment area typologies are outlined on the following pages. Each

represents a different type of employment area with different influencing factors. The typologies are representative of four basic types of employment areas, which share physical and/or economic characteristics:

- Rural employment area
- Business Park
- Urban industrial area
- Central area

The four typologies also roughly correspond to the categorization of employment areas used in the City of Ottawa's Vacant Industrial Lands Inventory.

9.2.1 Typology: Rural Employment Area

Rural employment areas are by their nature generally very low density employment zones. These areas play an important economic role by allowing firms that do not require an urban environment (or urban services) to locate in low-cost locations with few constraints on their operations.

Intensification in these areas rarely occurs through redevelopment, as it is rare that a catalyst exists to drive land values that



Exhibit B-3: Typology - Rural Employment Area



A.G. Reid Industrial Area (2005 air photo). Coverages are low and outdoor storage uses reflect lower land value.

would support higher density forms of development. Instead, intensification is often a matter of expanding existing employment uses by encouraging firms to grow on-site, and allowing for additional employment to be accommodated on the current premises. An analysis of building permit data indicates very few additions or addition/alterations of industrial buildings in rural areas; only one permit was issued in 2006, for a 6,900 square foot one-storey addition in West Carleton, and three permits in 2007, totalling 5,700 square feet for additions to storage sheds in West Carleton and Rideau.

Generally, rural employment areas are not priorities for intensification, as they lack the transit infrastructure and urban context that create an appropriate location for intensification.

9.2.2 Typology: Business Park

Business parks are suburban or urban areas characterized by light industrial and office uses. From a built form perspective, these are typically areas with considerable intensification potential. Ottawa is somewhat unique in that business parks have been constructed, primarily in the west end of Ottawa, at relatively high building densities in some areas. However, the ubiquitous massive surface that parking areas occupy leaves overall densities much lower than could be accomplished.

As noted in the introduction, the key to intensification in this type of area is a catalyst for higher land values. In the suburban business park typology, this uplift needs to be substantial enough to generate sufficiently higher rents to accommodate the costs of constructing structured parking at office complexes. To achieve transit-supportive densities, some structured parking is usually required.

Exhibit B-4: Typology - Business Park



Kanata North Business Park (2005 air photo). Intensification potential is extensive, requires structured parking.



Catalysts for this uplift could include the introduction of higher-order transit, the arrival of a new anchor tenant, or the presence of a strong cluster. In the Kanata North Business Park, for example, a self-reinforcing tech cluster emerged in the late 1980s and 1990s. The desire to be located near similar firms and near a skilled workforce allowed the emergence of a higher-density office park in a location otherwise lacking in the pre-requisites for employment intensification (at the time, the area had no highway exposure, higher-order transit service, and limited urban amenities).

Intensification will be most successful in business parks with one or more economic and infrastructure catalysts in place to support it.

9.2.3 Typology: Urban Industrial Area (Inside Greenbelt)

Many urban industrial areas (those inside the Greenbelt) have little opportunity for employment intensification. This may seem surprising, given that the existing built form is often of a very low density in terms of employment per hectare. However, many urban industrial areas have relatively high levels of site coverage, making expansions of the existing buildings impossible. Secondly, rents in these areas rarely increase over time to the point where they make intensification economically viable. Related to this is the nature of uses in industrial areas; by definition, medium and heavy industrial uses suppress land values in the immediate area due to noise, emissions, and/or extensive truck traffic.

However, opportunities can exist for intensification through expansion on those sites that can accommodate it, and on underutilized or vacant parcels. The example below, from the Sheffield

Exhibit B-5: Typology - Urban Industrial Area



Sheffield Industrial Area (2005 air photo). Intensification potential exists, but no catalyst for higher land values.

Industrial Area, shows the relatively high density of urban industrial areas (note the very high site coverage on the uses in the central and northern portions of the photograph). There are opportunities on vacant sites, however, and on underutilized sites within the area.

Where the nature of existing uses would permit office redevelopment, and where transit and/or highway infrastructure exists, urban industrial areas can become nodes for higher-density employment uses.

9.2.4 Typology: Central Area

The Central Area of Ottawa is a key focus for office development serving both the public and private sector. In this area, intensification opportunities are primarily realized through the replacement of older, lower or medium density buildings with high-rise offices, and construction of new buildings on existing surface parking lots.

An excellent example is the new Telus Building. This site was formed through the amalgamation of four existing, low-rise buildings at Bank and Slater: 119-127 Bank Street, and 215 Slater Street. The 105,000 square-foot, eight-storey building



Exhibit B-6: Typology - Central Area



Central Area (2005 air photo). Intensification requires high land values, but opportunities continue to exist linking Employment Intensification to the Transportation Master Plan

consolidates 300 Telus employees in Ottawa to one high density site.

Building permit data indicates a total of just over 1.5 million square feet of office space has been constructed in the five year period between 2003 and 2007 in the Central Area, an average of 308,000 square feet per year. It can be assumed that virtually all of this construction constitutes intensification, as there are no greenfield lands in the Central Area (in fact, virtually no vacant lands of any type exist, although many sites are under-utilized).

At this rate of development, some 7.7 million square feet of space would be constructed over the planning horizon to 2031. This is enough space to house 31,000 employees, at 250 square feet per employee (a lower ratio than suburban offices, due to higher land values). Achieving this level of development would require both investment in transportation capacity for Ottawa's Central Area and ongoing efforts to support redevelopment of lower density sites.

9.3 Linking Employment Intensification to the Transportation Master Plan

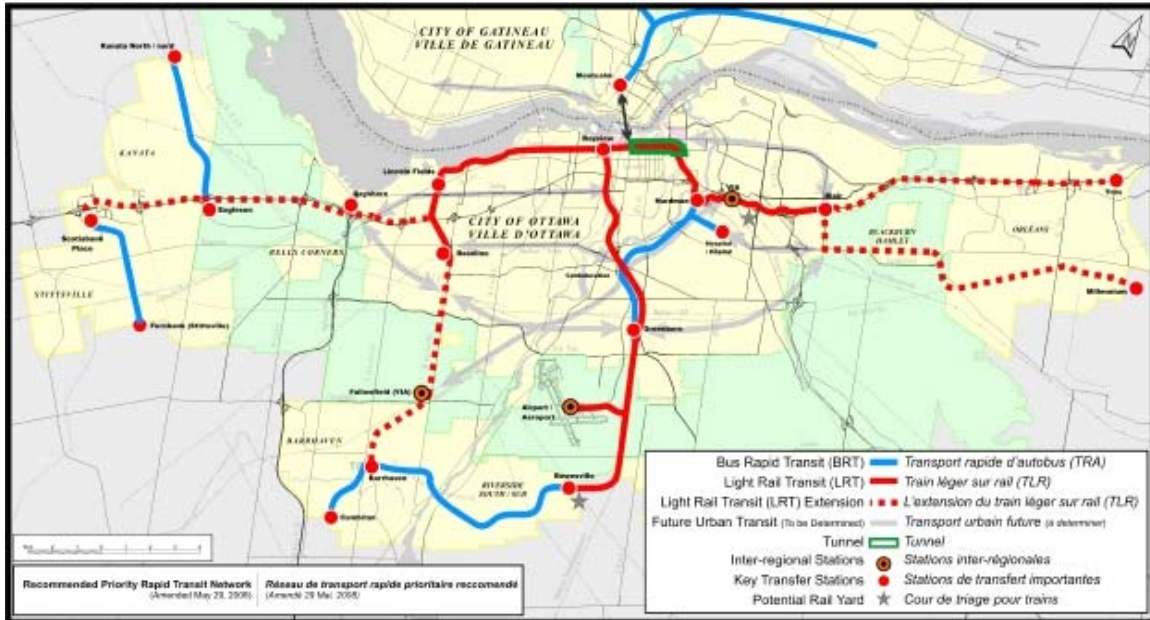
As noted in the typologies above, the potential for substantial employment intensification is driven by the presence of catalysts for increased land value. These include factors within the city's control, such as the location of major transportation infrastructure (transit stations, access to arterial roads and highways), and factors generally outside the City's control, such as the formation of localized supply chains and the emergence of clusters. Further intensification of the Central Area also requires additional transportation capacity, as existing roads and transit facilities are becoming heavily congested.

The 2008 update to the Ottawa Transportation Master Plan has established a new preferred rapid transit network for the City. The preferred network is shown in Exhibit B-7.

The preferred rapid transit network serves a number of employment areas, including:

- The Central Area - the DOTT (Downtown Ottawa Transit Tunnel) and associated infrastructure will support LRT service
- Riverside South - Spratt East station is located immediately adjacent to the employment area and will be served by LRT
- Eagleson Road - a new transit station will be built in 2009 to complement the Terry Fox Station and Park and Ride Lot, serving the Kanata West Business Park
- The Kanata North Business Park will be served by BRT in the future (current service in AM and PM peak only and in

Exhibit B-7: Preferred Rapid Transit Network



combination mixed traffic/Transitway, via the station at Hertzberg/March Road)

- Orleans South employment area is served by proposed BRT
- Newmarket/Cyrville Industrial area is served by the existing Cyrville station
- Employment lands adjacent to the planned BRT route between the General Hospital and Innes Road

Each of these locations represents an opportunity to examine the potential for higher density employment uses adjacent to transit stations. A more detailed examination of this potential will be completed as part of Phase 2 of this study.

9.4 Intensification Targets and Policies

In supporting employment intensification, the most substantial gains are to be made where redevelopment for higher-density uses can occur. Key among these is the need to encourage the ongoing development and redevelopment of the

Central Area. Encouraging office development in urban and suburban employment areas to occur in a more compact manner is also one of the best chances for success.

Also of note is that the Provincial Growth Plan for the Greater Golden Horseshoe, now guiding development in Southern Ontario, has an explicit policy stating that “major office and appropriate major institutional development should be located in urban growth centres, major transit station areas, or areas with existing frequent transit service, or existing or planned higher order transit service” (Sec. 2.2.6.4). Major office is defined in the Growth Plan as office buildings larger than 10,000 square metres or with more than 500 jobs. Urban Growth Centres, as referenced in the plan, are areas with specific density targets that municipalities are required to plan to achieve by 2031.

The City of Ottawa could consider similar policies in the Official Plan, in support of employment intensification. In fact, it may be appropriate to consider the above policy



without allowing this form of development in areas with “frequent transit service.” Ottawa could also consider setting an overall density target for the Central Area. An Ottawa-specific version of the policy could be as simple as:

“Major office and appropriate major institutional development should be located in the Central Area or areas with existing or planned higher order transit service”.

The Central Area should continue to be the focus for office development and thereby, employment intensification. Transit mode shares are high in the core area and development interest continues to indicate there is an ongoing market for new offices in the core. While capacity on transportation networks must be addressed to allow sufficient capacity to support intensification, employment growth in the Central Area is both likely and desirable from a planning perspective.

Specifically, employment areas within the City of Ottawa that are served by stations on the new LRT and BRT lines should be prioritized for employment intensification. The Council approved rapid transit network will see LRT technology serving several employment areas in the short term, and a considerably greater number in the longer term. Many of these areas already feature some higher density office development.

Based on the initial LRT and BRT corridors, the employment areas that could be targeted for intensification could include:

- Central Area
- Riverside South
- Orleans South
- Terry Fox/Kanata West Business Park
- Newmarket/Cyrville Industrial area is served by the existing Cyrville station

- Lands near the General Hospital and Innes Road Industrial area

These are the areas where intensification targets may be appropriate for planning purposes. Generally, significant employment intensification is both unlikely and inappropriate in rural employment areas, and urban and suburban industrial areas characterized by medium or heavy industry, and in employment areas without higher-order transit access.

Setting specific density targets for the above areas (and others as deemed appropriate) could help guide development and provide a clear signal to the market of the City’s expectations for office location.

Ottawa might also consider enshrining a hierarchy of office locations in the Official Plan and/or secondary plans. This type of approach is being considered by several municipalities in the Greater Toronto Area. An example of a hierarchy could be:

- Central Area - as Ottawa’s central business district, this would continue to be the first priority for major office development.
- Office Hub - suburban nodes with excellent higher order transit and/or road accessibility. Structured parking and densities of 150 jobs/hectare or greater would be targeted. Examples would be Kanata West and Riverside South.
- Office Park - in this context, an office park is an area characterized by light industrial and office uses, but not served by higher order transit. Major office uses would not be permitted in business parks, but smaller offices would be.
- Local Office - A node for office-based uses serving a local neighbourhood.



10 Appendix C - Developer Interviews

This appendix discusses the findings of interviews conducted with eleven non-residential developers and landowners in the City of Ottawa as part of this study. The interviews were conducted to ensure that industry perspective informs this study. The table below lists the interviewees, the organizations they represent, and areas of specialization. The accompanying text highlights common themes that emerged from the developer interviews.

	Company	Specialization	Contact
1.	Colonnade Development	Primarily office development	Cal Kirkpatrick
2.	Giffels Design Build Inc.	Primarily industrial in the east end	Steve Martin
3.	CBRE	Real estate broker - mainly office development	Bob Perkins
4.	Manulife Financial	Primarily office development	Stephen Nicoletti
5.	Brookfield Properties	Predominantly federal buildings and high rise office buildings in the City core	Ian Donnelly
6.	Canderel	Industrial	Wayne Jennings
7.	CLV Group	Residential and commercial	Mike Kelly
8.	Sakto Group	Primarily	Brian Murray

	Company	Specialization	Contact
		office development	
9.	R.W. Tomlinson	Primarily heavy industrial and residential development	Jim Blake
10.	Broccolini Construction Inc.	Retail, commercial, industrial	Derek Howe
11.	Ottawa International Airport Authority	Development on airport lands	Ann Tremblay

10.1 Themes

The main themes that emerged from the developer interviews are as follows:

- **Priorities in location selection:** Developer interviews consistently confirmed that the marketability of the employment lands supply is determined more by non-financial factors such as the land's proximity to congestion free highway infrastructure and connectivity and transit access than by the capital costs of development.
- **The office market:** Ottawa is perceived overall as a branch office city, with the exception of the IT sector. The suburban office core is growing westwards, and Kanata is currently the IT-dependant office hub. Accessibility and visibility of major office, made possible by locations well-served by transit and in proximity to employee locations contribute to Kanata's office strengths and explain to a degree Orleans' lack of appeal for the same. The average office tenant in office parks is estimated to occupy



facilities of approximately 5,000 square feet.

- ***The evolving industrial market:*** Developers agreed that the industrial land market in Ottawa is relatively small and localized but there was also strong consensus that Ottawa's current employment lands supply is constrained for industrial uses, making it difficult for this market to develop. Industrial user requirements are changing in line with worldwide and provincial trends. While existing supply is dominated by older buildings, higher rents, low ceilings, etc, industrial developers are competing in an increasingly more sophisticated market. They are seeking sites that provide potential for more volume (through higher ceilings and clearance, more loading docks, big column spacing, and increased parking space) and consequently greater square footage in locations with optimal transportation access for rapid goods movement. Average site requirements for industrial uses range from local tenants looking to establish 5,000 to 10,000 square foot facilities and cover a wide range of up to approximately 150,000 square feet for newer facilities. The presence of industrial uses in the Hawthorne-Walkley area was believed to likely be linked to its proximity to Highway 417.
- ***Constrained industrial development potential:*** Developers agreed that Ottawa's employment lands constraints and the industry's requirements together would result in a scenario where larger industrial uses would necessarily need to locate outside the Greenbelt. A major problem commonly identified was that land value is too high for the industrial product to be developed viably, partially because of scarcity of land and also because of the heavy demand for retail and residential development.
- ***Competitiveness and Development Charges:*** It was believed that while financial factors are overall not the prime determinant in location selection, high industrial Development Charges in Ottawa are prohibitive for distribution and transportation facilities, in comparison with smaller neighbouring municipalities (which offer large parcel sizes, low land prices, serviced lots and low or negligible Development Charges) and would likely influence location decisions.
- ***The retail market:*** Retailing is also a sector with evolving needs. Land requirements for retail uses are project driven and range from big box development to mixed use projects. Retailers prioritize lower costs (e.g., lower rents, lower operating costs, surface parking as opposed to structured underground parking). The provision of transit infrastructure is important for retail development to be directed towards a more compact framework in areas such as Kanata where overall population growth is being accompanied by demand for more retail space.
- ***Infill, redevelopment and intensification:*** While a fair number of infill and intensification sites could support intensification in business parks within the Greenbelt, developers pointed out that infill sites in the urban core were often in the wrong areas (e.g., oddly shaped, narrow parcels) and had poor infrastructure (e.g., highway accessibility). Parking was identified as a major element that made intensification prohibitive. Some pointed out that it was becoming relatively unfeasible to develop such sites for uses other than retail because



of inflated land prices in the urban core. Developers also indicated that appropriate zoning measures (e.g., removing height limitations) similar to the removal of density caps, would increase coverage and make redevelopment in the downtown more viable.

- ***Encouraging development in Orleans:*** Although Orleans is one of the fastest growing residential areas of the City, it is not perceived as a viable location for office development. The comparatively lower cost of housing and the lack of existing business clusters in the east end of Ottawa have attributed to Orleans' poor reputation as a business location. Developers were of the common view that the federal government would be the natural leader of development in this area, given that private developers were highly unlikely to risk investing in the area.
- ***The federal government's locational interests:*** Developers indicated that few sites for federal office development remained within the Greenbelt. Following the development of these, it was considered that redevelopment of existing federal buildings and movement of federal office outside the Greenbelt would be the next steps.
- ***NCC lands:*** There was strong consensus in the development community that, if freed up for employment development, NCC lands on the Queensway would be an optimal location for high-profile office development. The proximity of the NCC lands to major highway infrastructure in the east contributes to their appeal as strategic employment lands. Developers argued that certain areas in the Greenbelt near major interchanges is no longer environmentally or aesthetically

strategic and that it would be more economical to pull infrastructure into the Greenbelt than to leapfrog across it.

- ***Servicing:*** The existing lack of servicing was believed to be a significant deterrent to development outside the Greenbelt. While development is trending westwards and areas like Orleans have less appeal, neither are believed to have appropriate servicing. The development community agreed that servicing strategic parcels in appropriate locations such as the Kanata West Business Park would spur development to a great degree.
- ***The role of the municipality:*** A range of views on the City's role pointed towards the need for the City to create and take forward a strong strategy to improve and market Ottawa's employment lands. This included suggestions that the City needed to take an aggressive approach towards providing servicing, as well as others that the City adopt a role similar to the former City of Ottawa's business park development (wherein it developed and sold parcels). Developers saw a need for the Economic Development department to recognize the lack of competition between Ottawa and neighbouring municipalities in certain sectors, and to retain existing industry and support the growth of industrial based sectors in particular. They also identified a need to improve and streamline the site plan approval process.



11 Appendix D - Bibliography

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12 Appendix E - Study Limitations

12.1 Sector Forecasts

The forecasts presented in this study are based on a series of assumptions which are based on a set of economic conditions or anticipated courses of action that may be reasonable and appropriate in the judgment of MKI, C4SE and the City of Ottawa at the time when this assignment was completed, are consistent with the purpose of the projections, but which may not materialize as set out therein.

In addition, other unanticipated events and circumstances may occur which could influence future outcomes. Therefore, the actual number of employed persons in the future will vary from the analysis of economic conditions as set out herein.

12.2 Land Budget

Pending further guidance on forecasting methodologies from the Province, possibly this fall, the current starting point for the approach to calculating land needs is the Provincial Guideline for Projecting Population and Employment. This dates to the mid-1990s and its obsolescence has caused there to be diverging approaches to land budgeting in the interim. We are also aware that over the past decade this Guideline has had little credibility when subjected to the scrutiny of an Ontario Municipal Board hearing. At the many hearings dealing with employment land issues methodological assumptions have been debated at length with increasingly sophisticated and/or complex assumptions and calculations.

It is our perspective that there is no one 'best' methodology for use in every context. There are different perspectives, different experience, vastly different

geographies and economies throughout the GGH. We believe that the approach to the methodology should reflect the Provincial and municipal interest in doing the work in the first place. In the case of planning for employment lands the primary purpose, and the single most important objective that drives the need for the work, is to provide sufficient land for job creation in support of complete communities, by ensuring that sufficient employment lands are available in appropriate locations, and not lost to conversion to other uses. Ideally the need for employment lands can be informed by several forecasts or methods.

Using more than one method of estimating the need for employment lands informs the planning decision on the consequences and risks of a particular choice. Therefore, the forecasts are checked using other approaches (such as extrapolating current absorption rates) to determine if the primary forecasts are reasonable.

In reviewing different means of projecting employment land need and in assessing the results it should be the objective to minimize any inherent risks. In the case of employment land projections the only significant risk is a shortage of such lands, or a shortage of lands with the needed characteristics such that job creation cannot occur. For this reason the assessment of need must always be conservative, that is, employ assumptions that accurately reflect economic realities.

Given the 25-year time frame of the forecasting, this risk is relatively low. With five year reviews any potential shortage can be foreseen well in advance of the need. However, both private sector location decisions and planning for major infrastructure requires certainty, and as such establishing the location for major employment uses several decades in advance is a significantly important component of planning for economic health. The same conservative approach



should be taken to the mechanics of forecasting need to ensure that the risks are minimized.

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