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Final Report

From Doyletech Corporation

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Barrhaven Market and Development Analysis Study:

Barrhaven Business Improvement Area (BBIA)

The technical validity of this contract report is entirely the responsibility of the contractor and the contents do not necessarily have the approval or endorsement of The Barrhaven Business Improvement Area (BBIA).

FINAL REPORT

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# Executive Summary

Doyletech Corporation was engaged by The Barrhaven Business Improvement Area (BBIA) to undertake a comprehensive economic development analysis of Barrhaven. The analysis is intended to provide the BBIA with the data needed to develop a strategy aimed at attracting new employment-based businesses to the area.

Our review of the demographic data revealed several key strengths that should work to Barrhaven’s advantage as it seeks to attract employment-based businesses and one major drawback that is currently constraining Barrhaven’s development:

* The population growth rate for Barrhaven in 2015 was 2.4%, compared to 0.9% for the City of Ottawa as a whole. Between now and 2031, the growth rate for Barrhaven is forecast to be 37%, compared to 19% for the City of Ottawa. As a whole, our research indicates that Barrhaven is a highly desirable place to live with a good quality of life for its residents.
* It has a very high average income and educational profile, representative of a highly skilled workforce
* However, in almost every industrial sector, the concentration of jobs in Barrhaven was well below that of the City of Ottawa in general, reinforcing the idea of Barrhaven as a bedroom community where people live but few work.

This final finding is in keeping with the premise that initiated this project. With the lack of jobs once again confirmed, the question moves to how to attract more?

A key aspect of the project approach involved outlining various scenarios for Barrhaven’s development, particularly in respect of the potential to develop “employment-based businesses” in industrial and commercial sectors. These alternates for future development emphasize job growth scenarios in contrast to continued enhancements of the retail and commercial services options in Barrhaven.

Employment-based businesses are especially attractive because with that employment they bring additional economic activity to the area, resulting in opportunities to improve the quality of life for residents. With more jobs situated in Barrhaven, more of the money earned is spent there. This strengthened economic capacity in turn provides the client/spending base needed for the wider variety of retail and commercial offerings identified as key objectives by the consumer focus group.

Our quantitative comparison of the relative economic impact of each scenario is summarized in the table below, but the highlights to note are:

* Of the four scenarios studied, retail and commercial services provided by far the smallest economic benefit for an equivalent amount of initial (construction) investment. In fact, retail and commercial services had a negative overall economic return compared to the employment-based scenarios.
* Similarly, for an equivalent amount of construction investment, the monetary return to governments (at all levels, in all forms) was much higher for the employment-based businesses over retail and commercial (by a factor of 2 or more).

Our objective with the scenario analysis was not to attempt to prescribe a particular direction for Barrhaven’s employment growth, but rather to show that there are several very viable approaches for the BBIA to consider and one they should avoid – namely significantly more retail/commercial development.

As communities grow and build a larger economic base, the scope and breadth of their retail and commercial offerings expands, so some continued expansion of the retail and commercial base will always accompany population growth. The question is how much expansion is needed and does that growth come at the expense of more economically-beneficial businesses. Our analysis shows that in fact a significant expansion of retail and commercial development comes at the expense of the land needed to support employment-based development.

From our consumer focus group, we identified that Barrhaven’s retail and commercial services sector lacked the diversity and range of offerings that people expect, and those offerings are not available in consumer-friendly manner (difficult to access, widely dispersed across the Barrhaven region). Our analysis showed a clear reason for this shortfall. For many unique or specialty offerings, there is a critical mass of economic activity needed to support them and Barrhaven is short of this requirement. Our analysis shows that employment-based businesses provide the fastest way to get to that critical mass.

Our findings support a key conclusion: the economic base for Barrhaven needs to grow before it can support many of the types of goods and services providers people expect to find, and for it to grow into the type of community its residents expect, Barrhaven must attract significantly more employment-based businesses.The strategy for that is to be developed, but our work suggests that any such strategy will have the following key characteristics:

1. While growth in retail and commercial inventory should not be stopped, it must not at any cost come at the expense of the ability to support employment-based development. The best way to do this is to focus retail/commercial development on the City Centre area.
2. The Prestige Business Park is a key asset of the community:
   * It is located on a transit corridor, meaning it is one of the few areas in Barrhaven that meets federal government rules for the location of services;
   * It is close to the 416, making it very attractive to many businesses. This location also makes Barrhaven a natural place to expand technology businesses that do not want to locate in Kanata, but which do want to maintain links there.
3. To that end, the Prestige Business Park must be maintained for its intended purpose.

Our alternate scenarios have shown that many types of employment-based businesses can improve the economic situation in Barrhaven, so it is not a specific type of business that will determine the success of the attraction strategy. It is the generally higher pay scales that make the difference. Emphasizing resident’s education level and high quality of life, concentrating retail and commercial development in the City Centre, preserving the Prestige Business Park, and maintaining a focus on transit will form the cornerstones of a successful employment-based business attraction strategy.

The following table summarizes the economic impacts by development scenario:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Development**  **Scenario** | **Construction**  **Investment**  **Requirement**  **($ millions)**  **(One-Time Impact)** | **Annual Operations**  **Revenue**  **($ millions)**  **(Continuing Impact)** | **Jobs**  **(#)** | **Spending**  **($ millions)** | **Annual Spending per job ($thousands)** | **Barrhaven**  **Municipal**  **Taxes**  **($ millions)** | **Provincial**  **Taxes**  **($ millions)** | **Federal**  **Taxes**  **($ millions)** | **Average (Fully Burdened) Wage per**  **New Worker**  **($/year)**  **in Barrhaven** | **New**  **Residences**  **Required**  **(#)** |
| 1. **Retail & Comm. Services Expan.** |  |  |  |  |  |  |  |  |  |  |
| A. Construction | 52.0 |  | 351 | 49.6 |  | 2.3 | 8.5 | 9.1 | $50,000 | 162 |
| B. Operations |  | 100.0 | 474 | 83.2 | 175 | 3.6 | 11.8 | 11.9 | $31,300 | 238 |
| 1. **Digital**   **Cinema** |  |  |  |  |  |  |  |  |  |  |
| 1. Construction | 32.8 |  | 144 | 41.0 |  | 1.0 | 5.2 | 4.8 | $53,300 | 66 |
| B. Operations |  | 104.3 | 433 | 126.6 | 292 | 2.0 | 17.0 | 15.9 | $88,200 | 191 |
| 1. **Government Facility** |  |  |  |  |  |  |  |  |  |  |
| 1. Construction | 11.5 |  | 52 | 10.2 |  | 0.34 | 1.5 | 1.0 | $50,000 | 23 |
| 1. Operations |  | 56.0 | 163 | 57.8 | 355 | 0.75 | 7.7 | 7.0 | $121,000 | 72 |
| 1. **Tourism Facility** |  |  |  |  |  |  |  |  |  |  |
| A. Construction | 39.0 |  | 221 | 45.4 |  | 1.1 | 6.7 | 6.7 | $57,400 | 118 |
| B. Operations |  | 54.0 | 377 | 80.3 | 213 | 2.0 | 11.6 | 11.3 | $47,500 | 175 |

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# 1. Introduction and Project Objectives

The key objective in Doyletech’s approach to this project was to provide the Barrhaven Business Improvement Area (BBIA) with an economic development analysis which they could use to generate a *strategic* *vision* of how to attract more employment-based businesses to the area. The core of our approach is to generate a set of alternate development paths and examine how they would affect the future quality of life and economic growth in Barrhaven.

To accomplish this, Doyletech proposed:

1. Developing a "baseline" of Barrhaven's current socio-economic standing and the state of business in the area.
2. Outlining various scenarios for Barrhaven development, particularly in respect of the potential to develop “employment-based businesses” in industrial and commercial sectors. These alternates for future development emphasize job growth scenarios in contrast to continued enhancements of the retail and commercial services options in Barrhaven.
3. Use of “expert stakeholder” focus groups, with participants drawn from both inside and outside Barrhaven, to project and validate the most realistic development paths available among the alternate scenarios. These focus groups were supplemented by interviews with selected key stakeholders and scenario-specific resource persons.
4. Use of the Doyletech EconWin incremental impact econometric model to assess quantitatively the economic value of the validated scenarios. The model’s outputs take into account the direct, indirect, and induced effects of the given development path on jobs, spending, growth, and taxes for all levels of government (municipal, provincial, federal).
5. Undertaking specific analyses of the data collected. One specific undertaking was the analysis of available land in Barrhaven noting the potential for employment-based businesses from the scenarios, focus groups and selected research, and comparing these potential requirements against benchmarks for land use in the entire Ottawa region.
6. From these analyses and the socio-economic data and focus group inputs, developing criteria to be used in framing the employment-based businesses attraction strategy.

In summary, Doyletech was proposing different visions of land-use development and future projections, as reasonable as could be, of what the economic impacts would be for each. These in turn provide a form of "pre-qualification" of the outcomes of the strategies to be generated by the BBIA.

***Why Use this Strategic Approach?***

The alternate scenario approach, with validation by expert stakeholders in focus groups, allows direct comparisons between different development strategies. It addresses what all the focus groups described as the major need of Barrhaven, which is to provide employment-based business development in the area, and hence diversify the economic base, increase job opportunities for local residents, and reduce commuter congestion, among others.

This strategic approach provides the following:

* An update of the 2013 Retail Market and Economic Study, by identifying the new construction that has taken place since then, and investigates how the quality and spectrum of Barrhaven’s retail and commercial services have changed, or not;
* Comparisons with a strategy of simply continuing retail and commercial services enhancements which has been the major Barrhaven development path up till now;
* A credible indication of to what degree a new strategy of attracting employment-based businesses to Barrhaven could turn out to be better in terms of jobs, growth, transit, commuting, and property values;
* It provides benchmarks and indicators for future development of business parks in the area.

A key factor that was assessed in the analysis was the overall use of available land in Barrhaven, and how best this land could be used to improve the social and economic quality of life for residents.

# 2. A Socio-Economic Profile of Barrhaven

In this section, we provide a socio-economic profile on Barrhaven. It should be noted that data specifically on Barrhaven is limited, owing to the fact that it is a component of the City of Ottawa and the data is often not segmented further. Nevertheless, in order to provide background context for some of the scenarios/options put forward in the focus groups, we developed a summary demographics model from the City of Ottawa’s data. This demographic model provides a broad outline of what can be expected by way of population growth. In turn this informs projections of what expansion of services will be required over the next 5-20 years.

Information on the retail environment is taken from the 2013 Retail Market and Economic Study and updated with data from private sources and stakeholder focus groups.

Using information provided by the City of Ottawa’s research and forecasting unit, we identify forecasts for population and household formation growth for South Nepean-Riverside South.[[1]](#footnote-1) Please note the following with respect to the data provided:

1. The term “South Nepean” appearing in the figures can be considered for the purposes of the report to be the same as “Barrhaven”.
2. When comparing “Barrhaven” to other areas of Greater Ottawa, many of the figures use the concept of “South Nepean-Riverside South”. This adds the data for South Nepean and Riverside South together. We feel this is appropriate for *comparison* purposes to other amalgamations (such as “Kanata-Stittsville”). With the new bridge connecting the two communities, the communities can be considered to be one; similarly, the City of Ottawa now considers “Kanata-Stittsville” to be a single amalgamation for municipal planning purposes. However, this report aims at Barrhaven specifically.
3. Data for 2006, 2011, and 2015 are known or estimated as actual; 2021 and 2031 are projected. All figures are mid-year.
4. Projections available to Doyletech were draft, have no official status, and are subject to revision.

## 2.1 Current Population and Household Trends

The City of Ottawa’s 2015 Annual Development Report (ADR) states that during 2015 population growth in South Nepean was +2.4% while in Riverside South it was +4.5%.[[2]](#footnote-2) (The only suburban area of the city to show larger population growth was in Leitrim (+8.7%) albeit from a small base of about 8000 people). By comparison, Kanata-Stittsville’s population grew by +2.4%. Interestingly, the area of Ottawa which grew the most in 2015 was the “Central Area” which is defined as part of the “Downtown” area (it is essentially the central business district). It experienced percentage growth in 2014-2015 of +9.2%.

This is significant for several reasons. First, population growth in 2015 for the entire City of Ottawa (which includes Downtown, Other Areas inside Greenbelt, Urban Areas outside Greenbelt, and the Rural Areas of the City of Ottawa) was only +0.9%. Accordingly, South Nepean-Riverside South is a growing population centre.

Second, the ADR also shows that the percentage growth in 2014-2015 in terms of the number of households was +2.8% in South Nepean and +4.5% in Riverside South. Household growth in 2015 for the entire City of Ottawa was only +1.5%. Clearly, growth in household formation in South Nepean-Riverside South is strong – significantly more than the City of Ottawa overall.

The major implication of this is that development in Barrhaven needs to be planned carefully in order to accommodate comparatively high population and household growth.

#### Population Projections

Figure 2.1 presents the City of Ottawa’s projections for population from 2006 to 2031. It compares data for South Nepean-Riverside South to that of the major suburban planning regions of Kanata-Stittsville, and Orleans, and draws comparisons to the urban City of Ottawa, as well as for the entire Ottawa-Gatineau region.

Figure 2.1: Population Forecasts by the City of Ottawa, 2006-2031



Between now (2015) and 2031, South Nepean-Riverside South’s population is forecast to grow by 37%, driven by projected growth in the Riverside South component of 78%, compared to South Nepean’s growth rate of 30%. Between now (2015) and 2031, Kanata-Stittsville’s population is forecast to grow by 36%.

Ontario Ministry of Finance population projections show Ottawa’s population growing from 957,000 in 2015 to 1,187,500 in 2031, a growth rate of 24%.[[3]](#footnote-3) The City of Ottawa’s projected growth rate for the same period is approximately 19% as deduced from Figure 2.1.

Figure 2.2 is a graphical representation of the data appearing in Figure 2.1. It shows the population of South Nepean-Riverside South growing to rival that of Orleans by 2031. While the population of South Nepean-Riverside South will still be below that of Kanata-Stittsville, it will exhibit similar growth trends.

Figure 2.2: Trend in Population Forecasts, 2006-2031



Figure 2.3 presents the percentage change in population between 2006-2031. Based on the City of Ottawa forecasts, South Nepean-Riverside South will experience growth of 110% overall compared to 78% for Kanata-Stittsville. During this time, the Riverside South component will grow by 246% whereas the South Nepean component will grow by 93%. Again, although Riverside South is projected to grow faster than South Nepean (Barrhaven), nevertheless the latter’s growth is still above the whole urban region’s number.

Figure 2.3: Percentage Change in Population, 2006-2031





#### Household Projections

Figure 2.4 presents the City of Ottawa’s projections for household formation from 2006 to 2031. It compares data for South Nepean-Riverside South to that of the major suburban planning regions of Kanata-Stittsville, and Orleans, and draws comparisons to the urban City of Ottawa, as well as for the entire Ottawa-Gatineau region.

While the number of households in South Nepean will grow by 32% between now (2015) and 2031, in Riverside South the growth rate will be 84%.

Figure 2.4: Household Forecasts by the City of Ottawa, 2006-2031



Figure 2.5 is a graphical representation of the data appearing in Figure 2.4. It shows the number of households in South Nepean-Riverside South growing to rival that of Orleans by 2031. While the number of households in South Nepean-Riverside South will still be below that of Kanata-Stittsville, it will exhibit similar growth trends.

Figure 2.5: Trend in Households Forecasts, 2006-2031



Figure 2.6 presents the percentage change in household formation between 2006-2031. Based on the City of Ottawa forecasts, South Nepean-Riverside South will experience growth of 118% overall compared to 91% for Kanata-Stittsville. During this time, the Riverside South component will grow by 231% whereas the South Nepean component will grow by 102%. These are all high growth rates.

Figure 2.6: Percentage Change in Number of Households, 2006-2031





## 2.2 Current Employment and Growth Trends

The most recent employment data for South Nepean-Riverside South is provided by the City of Ottawa’s 2012 Employment Survey.[[4]](#footnote-4) Between 2006 and 2012, employment in the area increased by 5,260 jobs (+69%) with the single largest employment gain experienced in the federal public administration sector owing to 2,600 new RCMP jobs in the former JDS Uniphase centre in the South Merivale Business Park. This increase of 2,600 represents approximately half of the total jobs gains for the region between 2006 and 2012.

The increase of 4,853 jobs in South Nepean represents a 70% increase between 2006 and 2012, the most of any of the urban centres during 2006-2012. This is explained by the new RCMP jobs mentioned above along with growth in the services sectors associated with South Nepean’s strong population growth.

The increase of 407 jobs in Riverside South represents a 65% increase between 2006 and 2012. The largest increase was in the Education sector (+189 jobs), followed by Other Services (+86 jobs).

Absent the RCMP jobs in Nepean South and new education jobs in Riverside South, job creation would have been only about half that described here, and would not have been especially strong in light of population trends.

Figure 2.7: Employment in South Nepean-Riverside South, 2006-2012



From the data, we can see that Barrhaven has shown strong job growth, and there is no reason to suspect that it will not continue. Based on forecasts in the Employment Lands Review, we predict 14,450 jobs in Barrhaven by 2031 (note that this is before the impact of specific employment-based attraction initiatives). See the Employment Lands Analysis in Section 4 for more details.

Another factor that influences the evaluation of the employment situation in Barrhaven is the education level of the population. As Figure 2.8 shows, the population of Barrhaven is strongly biased towards higher education, making the workforce particularly attractive to employment-based businesses.

Figure 2.8: Barrhaven Residents by Level of Education, 2013

|  |  |  |
| --- | --- | --- |
| **Level of Education** | **Number** | **% of Total** |
| In School or Below High School | 7,942 | 13.2 |
| High School, Certificates, Diplomas | 35,980 | 59.7 |
| University Below Bachelor Degree | 2,462 | 4.1 |
| University Bachelor Degree | 11,531 | 19.1 |
| University Masters & Higher Degree | 2,317 | 3.8 |
| **Total (15 years and older)** | **60,232** | **100.0** |

## 2.3 The Business Environment

In this section, we present data on the retail/business environment in Barrhaven. We update the current retail space allocations, potential for future expansion, and document the results of a consumer focus group on the retail environment in Barrhaven.

#### Updated Retail Space Inventory

The 2013 Retail Market and Economic Study identified that at the time the commercial and retail inventory consisted of approximately 1.5 million square feet of space allocated to retail and commercial businesses. Since that time, another 90,000 square feet have been developed, represented by:

* The new Movati athletic facility (30,000 sq. ft.);
* The Strandherd Centre at Crestway Street (40,000 sq. ft.);
* The Toyota dealership (20,000 sq. ft.).

Which brings the total to 1.587 million sq. ft. This inventory is divided into 11 major centres in the Barrhaven area, ranging in size from 593,000 sq. ft. for the largest (Trinity Common) to 25,000 sq. ft. for the smallest (Mulligan Centre). There are also 418,000 sq. ft. of active applications being considered for Barrhaven, representing a significant bump in the total retail inventory.

While the focus of this report is not for it to be used as a planning document, we nonetheless feel it important to understand how the retail inventory relates to the population and industry norms, since retail and commercial businesses form such a large proportion of the jobs in the area. Many retail studies use "spending potential" to evaluate the retail environment in an area. The problem is that these analyses tend not to account for leakage (e.g. spending done outside of Barrhaven) or export (spending done in Barrhaven by residents from outside the area). We feel that this is problematic since the missing metric is key and can significantly affect results. While very difficult to quantify exactly, we can get a sense of the value by looking at real data. Our approach is as follows:

* + The industry standard space requirements must also assume an industry standard rate of export/leakage (e.g., Barrhaven sales to people from outside the area and purchases by residents outside the area - such as Bayshore and downtown).
  + If industry standard space requirements are per unit population, let's look at the retail floor space in Barrhaven and the population of Barrhaven.
  + 2016 population of Barrhaven is 85,000. Current inventory is 1.587M sf with another 418,000 sf approved or otherwise active. This equals 23.6 sf of retail/commercial per person.
  + The allocation is heavily skewed towards larger entities. Of the current 1.587 million sq. ft. in the inventory, the top 5 occupy 510,000 sq. ft. (32%). The top 25 occupy 902,000 sq. ft. (57%).

This retail concentration is below the industry standard (30 - 40 sf/person) which would indicate a low export ratio: if a lot of people from outside Barrhaven were shopping in the area, then there would be a need for more stores. In other words, there are two reasons people from outside Barrhaven would shop there: a) because they work there (which we know is much less likely than almost anywhere else in Ottawa due to the low jobs concentration), or b) it offers stores and services not available in the shoppers’ home area. Since from the input of our focus groups we have the impression that the selection of retail in Barrhaven is generally poor, this is also not likely the case. The result of these two factors is that while the catchment area of Barrhaven may well extend from Stittsville to Riverside South and Leitrim, the economic data would suggest that in fact not many shoppers from these outside communities do in fact travel to Barrhaven to shop. Furthermore, as our retail analysis in Section 4 shows, this situation is not likely to change significantly until there are more high quality jobs located in Barrhaven proper.

#### Economic Base

Economic base analysis attributes all productive activity in a region to two categories. First, there are *basic or export activities* which sell in export (external) markets and bring additional employment and revenue into the region under study. Second, there are *non-basic and/or service activities* whose output is consumed totally within the region.

The importance for any region (such as South Nepean-Riverside South) to have, or to develop, basic or export activities cannot be overstated. Such activities are vital because they bring revenues and employment into the area. This exogenous expansion will in turn cause local service sectors to expand and prosper in accordance with regional and industry multiplier effects.

One methodology to determine the relative impact of sectors on the local economy is through location quotients. Location quotients (LQs) are ratios that allow an area’s distribution of employment by industry to be compared to a reference area’s distribution (in this case, the City of Ottawa). If a LQ is equal to 1, then the industry has the same proportion of its own employment as it does in the reference area. A LQ greater than 1 suggests an industry with a greater proportion of the local area employment than is the case in the reference area. Correspondingly, a LQ less than one suggests local employment is less.

However, this methodology has considerable restrictions. In particular, it does not of itself indicate whether any sector is behaving in accordance with modern “Agile Producer” principles. These principles are the basis for “industrial clustering” which is widely regarded as the dominant factor for sustainable economic development today. Industrial clusters show strong vertical and horizontal linkages between economic entities, and also between the commercial firms and the area’s public sector facilities: a logistics and trucking cluster needs roads and specialized industrial space and docking facilities; a high-tech telecom cluster needs certain skilled people, research labs, and local universities; and so forth. Nevertheless, LQ provides a useful first-cut at identifying what might be the local area’s economic focus.

Figure 2.9 develops location quotients for South Nepean-Riverside South using the 2012 employment data from the City of Ottawa (the most current data available), and utilizing the same major sector classifications employed by the City of Ottawa planning and growth management department. Essentially, calculating industry location quotient is a way of quantifying how concentrated an industry is in South Nepean-Riverside South compared to the surrounding, larger geographic area, in this case the City of Ottawa. In reviewing the figure, it is evident that many sectors are under-concentrated in South Nepean-Riverside South (that is, their LQ is less than 1). Industries in which South Nepean-Riverside South are over represented include Utilities, Retail, Education Services, and Accommodation and Food Services.

This profile suggests South Nepean-Riverside South is too dependent on its retail and service sectors, as well as its institutional activities, for its economic livelihood. Such sectors do not normally act as part of an economic base. They don’t “export”. In turn, this suggests the area is not sufficiently diversified economically.

Industries with high LQ should typically be export-oriented industries; they are important because they bring money into the region rather than simply circulate money that is already there. In this case, however, good export or economic base sectors like manufacturing, and professional, scientific, and technical services are woefully under-represented in the Barrhaven mix. There is also very little management of companies and enterprises. Despite the RCMP offices, federal public administration number is slightly below the benchmark and provincial one is apparently non-existent. By Ottawa standards, Barrhaven has little economic base. This is serious, regardless of how good a place Barrhaven is to live or play.

Figure 2.9: Location Quotients (LQs) for South Nepean-Riverside South Industries



#### Business Infrastructure and Trends

A review of the jobs profile of Barrhaven and the LQ of the region shows a preponderance of retail and commercial based jobs. This trend is confirmed by the Employment Land Review, which shows a job concentration in Barrhaven of 0.4 jobs/household, well below the target for the Ottawa region average of 1.9 jobs/household. The implications of this job profile are discussed in the analysis section: Employment Lands Review.

From a business infrastructure point of view, we note that the Prestige Business Park is a large parcel of land zoned specifically for what might be deemed “high-end” employment jobs. More typical uses such as warehousing are nominally precluded from the park. However, we further note that some of the land in the park has been given over to an automobile dealership and a Costco store. The implications of this are discussed in the strategic section of this report.

With a relatively low number of jobs in Barrhaven proper, and a relatively highly educated workforce, it is clear that the majority of Barrhaven’s residents work outside the region. As to the question of where people went for work, our focus groups would seem to indicate that most the jobs are split between Kanata and the downtown area.

## 2.4 Consumers Focus Group: Perspectives from Barrhaven Residents

Our approach is to drive towards the development of a strategic plan for the economic growth of Barrhaven. By its very nature, a strategic plan is about more than numbers: it is also a narrative about what the objectives of the exercise are and what the area will look like at the conclusion of the work.

For this reason, we feel that in preparing a "snapshot" of the social and economic environment in Barrhaven, qualitative inputs are as important as raw data. To that end we included a Consumers Focus Group in our work. In this section, we describe the results from the residents’ focus group on the development priorities of Barrhaven.[[5]](#footnote-5)

This was a very lively, engaged, and constructive focus group, representing a wide range of ages and length of time spent living in Barrhaven. A full representation of the comments provided by the focus group participants is included in Appendix B. Below, we have summarized the essence of the discussions in each of several key areas as they pertain to Barrhaven today and its growth in the future.

**General Observations on Barrhaven / Development Issues**

The following are general observations on Barrhaven, and its overall structure:

* Transit and commuting is a huge issue for residents of Barrhaven.
* There is strong support for the concept of the City Centre, both from the perspective of its impact on shopping and from the esthetic it would impact on Barrhaven in general.
* People felt that shops and services were too widely distributed: “you have to drive everywhere”. This supports the previous statement.
* There are poor interconnections between areas in Barrhaven with respect to road access (too small, congested) and bus/transit access (sometimes non-existent).

**Shopping in Barrhaven and What are People Leaving Barrhaven for?**

The following are comments received with respect to shopping in Barrhaven and what is missing:

* Shopping is an important part of the culture in Barrhaven but there is a weakness in specialty retail in the area.
* It’s not only choice: stores in Barrhaven are too widely spread-out.
* There is an impression that the Big Box stores dominate because they are in the best interest of developers, not consumers.

**City Centre Lands**

The following are comments received with respect to Barrhaven’s city centre development:

* The City Centre concept was strongly supported. With continued development there, participants felt Barrhaven could be like Manotick, or Almonte. There was a sense that a town core would provide the basis for more specialty stores of all types and smaller stores in general.
* The City Centre could also form the basis of an arts and culture focus in Barrhaven.

**What Has Changed about Shopping in Barrhaven in the last 3-5 years?**

The following are comments received with respect to how shopping has changed in Barrhaven in the last 3-5 years:

* In general, people felt that the shopping experience in Barrhaven has deteriorated in the last 3-5 years: Big Box stores continue to predominate, commuting and accessing the stores is becoming more difficult, and little of character is opening (or staying open if it does).

**General Layout of Retail and Related Issues**

The following are comments received with respect to general retail layout in Barrhaven:

* Participants observed that unlike other areas, the Big Box stores in Barrhaven are right in the middle of the area. This, along with poor road access to the malls, makes accessing them frustrating.
* There is poor signage of where things are located, and the general impression of the City Centre (Strandherd and Greenbank) is that it is not “welcoming”.
* Parking is non-optimal, involving long walks from car to store over expansive lots, a problem especially in winter weather.

**Business Attraction**

The following are comments received with respect to business attraction:

* There was strong support for attracting employment-based businesses to Barrhaven.
* The strong sense of community in Barrhaven contributed to a high quality of life, despite some of the planning and community drawbacks.

**Summary**

The Consumer Focus Group was a lengthy and very engaged 90 minutes. While many topics were covered, the following points highlight key findings from the focus group:

* A major issue is transit, both for residents to get to work in Ottawa, and equally for residents to get around Barrhaven.
* Retail and commercial services are generally satisfactory, but are unfocused and much too distributed. The widespread nature and the generally poor access makes shopping a sometimes-frustrating exercise.
* More employers in Barrhaven would materially aid the transit issue, both by reducing transit needs to Ottawa, and by improving chances for speciality retailers and service providers to survive.
* The City Centre should become the focus for development, including more high density residential, cultural spaces, and so on.
* City Centre needs “humanizing” through landscaping, windbreaks, streetlamps, etc.
* Signage for getting around in Barrhaven and parking in general are not good and not user-friendly.

# 3. Employment-Based Business Impact

This section addresses a key aspect of the project approach, namely outlining various scenarios for Barrhaven development, particularly in respect of the potential to develop “employment-based businesses” in industrial and commercial sectors. These alternates for future development emphasize job growth scenarios in contrast to continued enhancements of the retail and commercial services options in Barrhaven.

Employment-based businesses are especially attractive because with that employment they bring additional economic activity to the area, resulting in opportunities to improve the quality of life for residents. With more jobs situated in Barrhaven, more of the money earned is spent there. This strengthened economic capacity in turn provides the client/spending base needed for the wider variety of retail and commercial offerings identified as key growth by the consumer focus group.

To accomplish this evaluation, Doyletech took the following approach:

1. Outline several alternate scenarios for Barrhaven development, including both the status quo and several “employment-based businesses”.
2. Use “expert stakeholder” focus groups to validate the most realistic development paths for the alternate scenarios.
3. Use the Doyletech EconWin incremental impact econometric model to assess quantitatively the economic value of the validated scenarios.

This approach allows direct comparisons between different development strategies and a credible indication of the degree to which a strategy of attracting various employment-based businesses to Barrhaven could turn out to be better in terms of jobs, growth, transit, commuting, and property values.

For this project, a total of four (4) “sectoral” scenarios were selected for investigation, each based on a particular aspect of Barrhaven or the nearby Ottawa area. This approach is based on classic economic development cluster theory, which states that concentrating industries in specific regions creates several advantages, including more innovation due to complementary market focus and lower costs from the nearby presence of suppliers. Geographic concentration also creates more inter-company relations and increases the employee pool from which all companies can draw.

For this report, the four sectors investigated were:

* Continued Retail and Commercial Services Growth in Barrhaven;
* Film and Digital Media in Barrhaven;
* Attracting a Public-Sector Agency to Barrhaven;
* A Tourism-Oriented Service and Manufacturing Facility in Barrhaven.

The first scenario can be considered the “baseline” of current economic growth in Barrhaven. The last three are categorized as “employment-based businesses”.

Each scenario was supported by data validated by a dedicated focus group and/or interviews. This data was further supplemented by regional or city-wide economic and demographic data. As required, the data was also supplemented by dedicated interviews.

#### Focus Group Implementation

Participants in all focus groups were invited to participate by the BBIA. Doyletech acted as facilitator, highlighting key factors for each group as follows:

* Presenting alternative scenarios/options for “go-forward” development strategy in Barrhaven in respect of each of the chosen sectors;
* Emphasizing the objectives of generating consensus on which scenarios/options were most advantageous to Barrhaven in particular *and* Ottawa area in general, in light of both potential socio-economic benefits and feasibility of implementation.

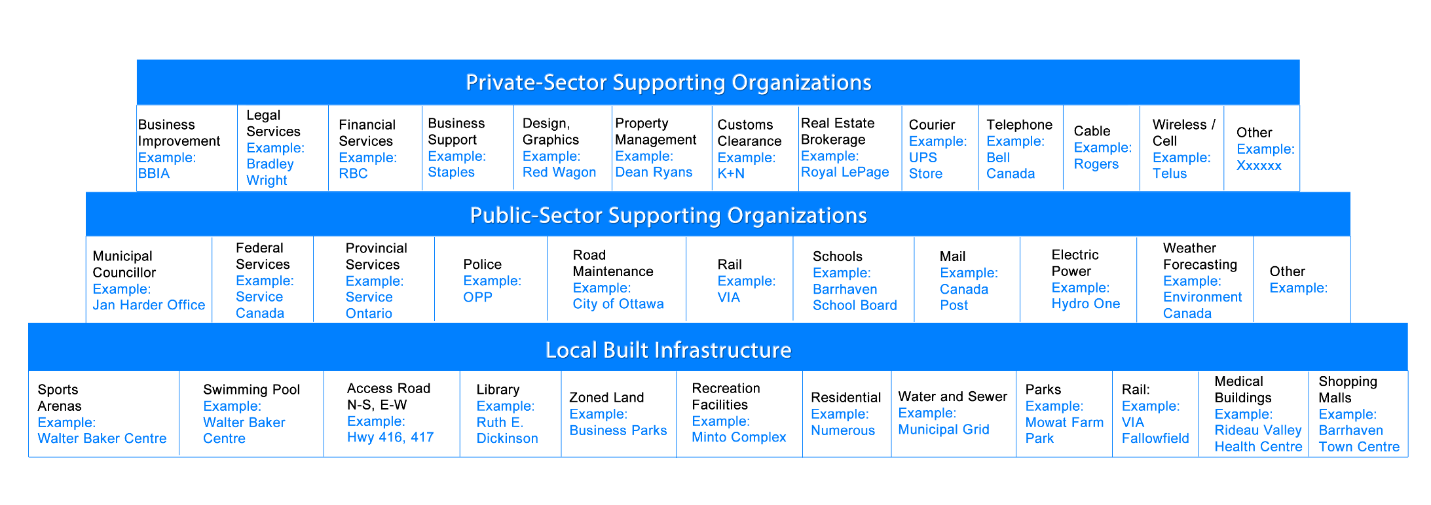
Doyletech also prepared in advance a structured list of questions to guide the discussion, and to ensure that necessary information was gathered, even at high level, with enough detail that it could be used to “drill-down” to Doyletech’s econometric model’s variables, in order to quantify the benefits of each scenario/option. It seems fair to say that each focus group, after constructive and lively discussion, did drive to a consensus, and did supply the vital data requirements for running the impact model.

As a preliminary stimulus to each focus group’s creative thinking, all participants were shown the graphic shown in Figure 3.1 entitled “Barrhaven Infrastructure Block”. The graphic is meant to capture the quality of life services and built environment available to Barrhaven residents. Key positive features of this graphic include:

* Wide-ranging consumer service offerings, with virtually all major private-sector functions available within Barrhaven;
* Equally wide-ranging public-sector supporting organizations and facilities;
* Generally, excellent built infrastructure (except for, perhaps, “right-sized” access roads to 400-level highways).

In summary, participants were shown that Barrhaven was an excellent place to live from the standpoint of advanced municipal infrastructure. Significantly, all focus groups accepted this characterization of Barrhaven.

**Figure 3.1: Barrhaven Infrastructure Block**



#### The Doyletech EconWin Model

Full details of how our quantitative analysis for each scenario was developed are included in Appendix A.

However, some key factors in our analysis were as follows:

* Two separate model runs were made for each scenario. The first was to assess the impact of a construction phase, in which the necessary built infrastructure was set up but which has an economic impact for only a fixed period of construction time. The second was a projected annual operations phase, after the infrastructure has been put in place, and for which the economic impact would be continuing annually into the future.
* Inevitably, some assumptions and numbers used in the model runs are debatable, and there are frequently wide ranges of estimates for some data (e.g. construction costs per square foot). The relevant focus groups frequently identified these sorts of wide ranges of estimates as well. However, the great strength of the Doyletech approach is its *consistency*: our assumptions for construction costs were carried over to *all* scenarios for similar types of buildings: our assumptions for labour costs were equally carried over to all scenarios for similar lines of work, and so on. Accordingly, the scenarios were developed on a consistent, comparable basis.
* Consistent assumptions were also used in the model in respect of multipliers, share of total income spent locally by workers, and average tax figure per household or worker. These assumptions were the same as for our recent assessment of the economic impact of Kanata North work activities.
* Use of “export ratio” numbers that we believe are very realistic for each scenario (i.e., how much revenue is brought in from outside and how much revenue would be brought in locally?) This is described in greater detail in the individual scenario sections.

In sum, Doyletech aimed at making consistent analyses that allowed fair and reasonable comparisons between the alternate scenarios evaluated for this report.

## 3.1 Sector Scenario: Continued Retail and Commercial Development

In this section, we describe the research and results conducted in terms of a representative expansion of retail and commercial services development.

#### Focus Group Optimal Scenario for Barrhaven

Figure 3.2, Barrhaven Consumer Retail and Commercial Services Pyramid, was used to stimulate discussion.

Based on information provided by the participants, we have settled on a hypothetical 300,000 square foot build, dedicated to retail and commercial services development. This would represent an expansion from current 2016 levels.

Retail development in Barrhaven since 2012 has been moderate, and includes the following additions:

* Movarti Fitness;
* The Village - 200 Kenneville;
* Minto Plaza;
* Strandherd & Fallowfield development – Costco December 2016 (Citigate);
* Richcraft – small retail plaza in Riverside South.

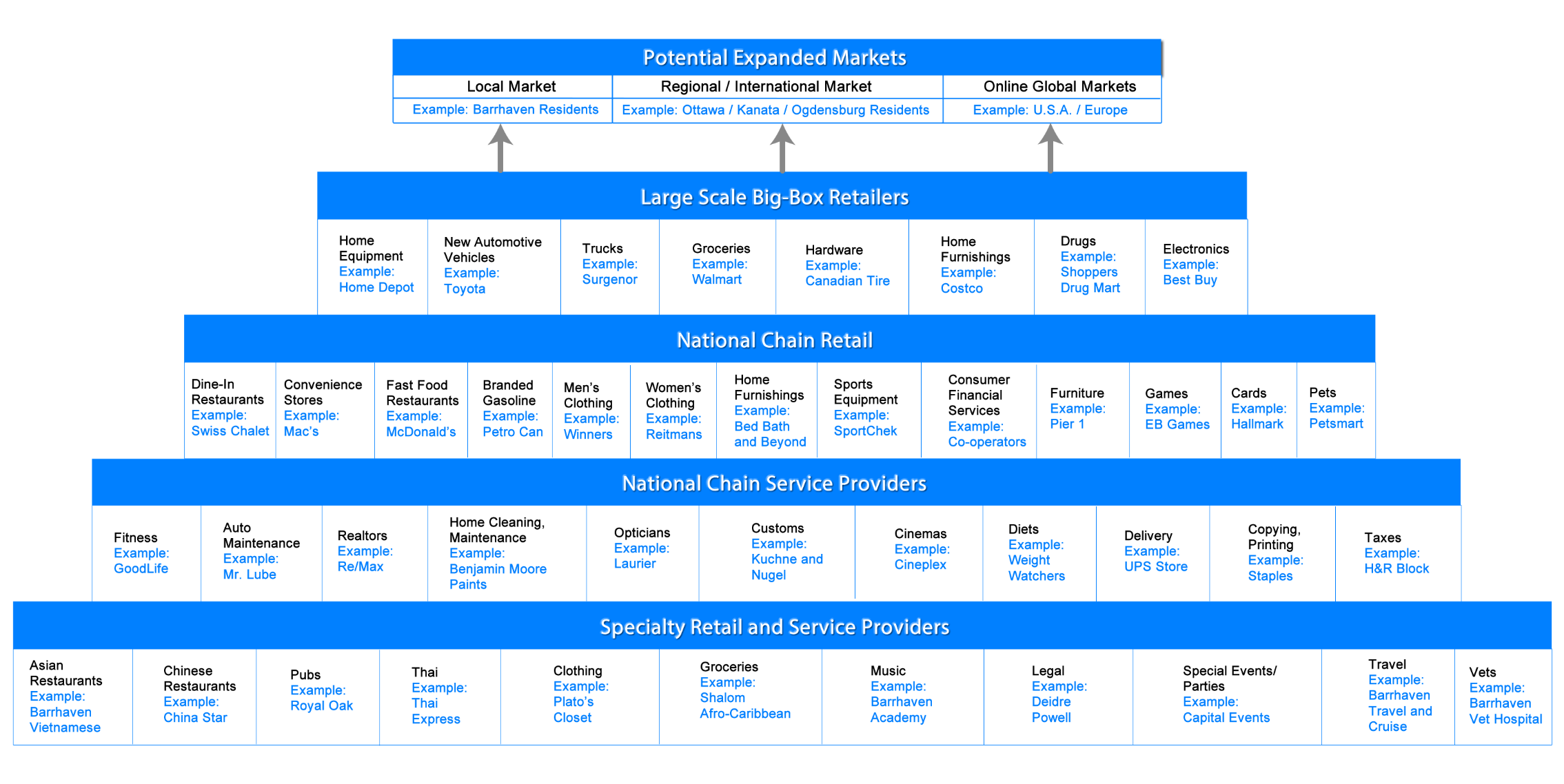
Detailed plans have been created to guide new commercial build by at least one developer in the Barrhaven area. However, our scenario here should be taken as a generic, representative, projection of expanded retail and commercial services in Barrhaven and not identified as representing any particular development, or firm.

It should be noted that this scenario refers to one contiguous parcel of land, and not distributed across varied locations. This assists analysis of expanded retail and commercial services in the area by simplifying the parameters, but might not be optimum from developers’ point of view.

Certain key limitations were brought out in the focus group’s discussion of retail and services expansion as follows:

* While the participants accepted that there was an overall good range of retail and commercial services in Barrhaven, they also accepted that there was nothing unique about the shopping experience in the area.
* However, niche businesses are not good candidates for a typical new ‘big box’ or suburban mall development, owing to financial limitations. There is a need for specialized developers who can meet the needs of niche specialist boutiques, particularly in respect of costs.
* Retail is distributed across the whole Barrhaven area, and hence, does not provide a focus for the city centre as well as such concepts are normally expected to do.
* Signage is poor.
* Participants specifically mentioned that a major hurdle for developing a vibrant retail and commercial service sector in Barrhaven was the lack of local jobs. In turn, this lack created

Figure 3.2: Barrhaven Consumer Retail and Commercial Services Pyramid



“load factor” problems for retailers and service providers. Business was slow during the day.

* Population growth was encouragingly high, but it was not enough on its own to drive optimal retail and commercial services activity. The area needed a central core including relatively high-density residential acting as a focus for outlets and as a main pick-up / discharge point for transit. This was a higher priority.

Nevertheless, we have projected the economic impact of a new retail development, based on participants’ discussion, to act as a reference point for comparisons.

#### Continued Retail and Commercial Development - What Would be Required

In breaking down the potential development for our analysis, we have made some assumptions about the gaps in the current offerings and how they might be addressed. The focus groups made many mentions of the lack of specialized, non-chain stores. Unfortunately, as our later analysis shows, support for these types of shops is conditional on the economic base of Barrhaven expanding from its current state. We have also realistically assumed that some “Big Box” development will continue to occur, as will expansion of national retail chain type stores.

Since we are working at a higher, strategic level, we have not made attempts to prescribe the specific types of stores that may eventually fill the gaps. For our purposes, such definition is immaterial and does not contribute to the overall analysis.

We have taken a representative 300,000 square feet in future development as having three components:

* 100,000 square feet dedicated to a so-called “Big Box” chain store(s);
* 100,000 square feet dedicated to expansion of national chains but with defined product lines (e.g., women’s fashions, sporting goods, specialized foods, etc.);
* 100,000 square feet dedicated to specialized, non-chain, boutique retailers or specialized and/or professional services.

#### The Representative Construction Investment

We have taken the ‘Big Box’ component at a construction cost of $80 per square foot excluding land. This would be $8 million in construction costs. The 200,000 square feet dedicated to the defined-product chains and the specialist outlets we took as costing $120 per square foot or $24 million construction costs. Total value of construction would accordingly be $32 million. We assume that fitting-out would add an additional $4 million and $8 million respectively. Finally, we assume site development would be approximately $8 million. The grand total investment would come to $52 million. This would not include retailers’ stock or service providers’ equipment.

#### The Direct Economic Impact of Continued Retail and Commercial Development

Based on the focus group discussions, we took rents as being $20 per square foot for the ‘Big Box’ store(s). This reflects the large size of the facility and the stronger negotiating power of this category of retailer. Accordingly, annual rent would be $2 million. Given the new construction, we took rents as $35 per square foot for the other two components of the new development. Accordingly, annual rent would be $7 million.

For sales, we took annual sales for the ‘Big Box’ store(s) as $300 per square foot or $30 million.

We took annual sales for the specialized outlets as $350 per square foot or $70 million. The focus groups acknowledged that there was a very wide range of figures that could be used for these factors. We have tried to use reasonable representative numbers, but the reader is cautioned that the precise figures are debateable. However, we think that the precise input figures are not critical to the analysis. More important are the “export ratios”.

For the construction phase, we took the export ratio as 50%. This was the same figure we took for the digital cinema studio, and the same logic applies. It is likely that local or regional developers would invest a sizable proportion of the requisite $32 million capital investment in Barrhaven anyway (e.g. residential construction). Moreover, they might even use local Barrhaven bank branches to find debt investment for the project. However, some of the funding might represent genuinely new funds flowing into the Barrhaven economy. Hence, we took the export ratio for the construction as 50% although we feel this may be a bit optimistic from Barrhaven’s perspective directly.

For the operations phase, however, we took the export ratio at 20%. This is low, but even this could be optimistic. Expansion of retail outlets and commercial services in Barrhaven would still likely serve the local community. It could be justified from a retailer’s or a developer’s perspective owing to population or household growth, but it would only contribute to Barrhaven’s “economic base” if more than 50% of the new mall’s customers came from outside Barrhaven; e.g. from Ottawa, Kanata-Stittsville, Kemptville, Ogdensburg NY, or elsewhere. This would require unique stores offering products not available in any of these other locations. Unfortunately, the evidence does not support the possibility. Both the dedicated retail and commercial services focus group, and the consumer focus group listed many examples of unique boutiques, restaurants or other services that failed in the Barrhaven environment.

Another problem is the nature of modern retailing. As the Canadian manufacturing sector generally has diminished as a share of total Canadian employment and output in light of global trends, an increasing share of Canadian purchases of manufactures has been imports.

There are some exceptions to this. For example, more Canadians today than a generation ago are looking for professional services such as accounting, tax return, family law, etc. These would be high in Canadian content, but would still not necessarily “export”; they might merely cannibalize existing services’ sales in other Barrhaven locations.

All considered, we think the 20% export ratio figure is reasonable, but unfortunately this reduces the positive benefits of investment from the standpoint of the Barrhaven community’s economy.

#### Model Results – Construction and Operations Phases

The following presents the model results for the construction and operations phases:

* Construction Phase: Fixed-Term Benefits (estimated 2 years)
  + There would be $49.6 million in new spending in Barrhaven and the region, including visitor/tourism revenue ($17.1M local/$32.5M region).
  + There would be 351 new FTE jobs created (325 local/26 region).
  + Municipal tax returns would be $2.3 million.
  + Provincial government returns would be $8.5 million.
  + Federal government returns would be $9.1 million.
  + 162 new residences required in Barrhaven.
* Operations Phase: Annual Benefits (ongoing)
  + There would be $83.2 million in new spending annually in Barrhaven and the region, including visitor/tourism revenue ($36.8 M local/$46.4 M region).
  + There would be 474 new FTE jobs created (457 local/16 region).
  + Municipal tax returns would be $3.6 million.
  + Provincial government returns would be $11.8 million.
  + Federal government returns would be $11.9 million.
  + 228 new residences required in Barrhaven.

## 3.2 Sector Scenario: Film and Digital Media – “Digital Cinema”

In this section, we describe the research and results conducted in terms of attracting what started out being described as a “Film and Digital Media Facility” to Barrhaven.

#### Options Considered

The Ottawa area has major capability in film and digital media, to a considerable extent coming out of both long-standing artistic development and supplemented by digitization from the Ottawa region high-tech sectors. Options considered by focus group participants included feature film studio; speciality TV program studio; online broadcasting facility; or hybrids.

These Ottawa area strengths were captured by the focus group in the expression “Digital Cinema”, and that is what became the focus of the group’s discussion.

Digital cinema and related fields are illustrated in Figure 3.3, the Barrhaven Film Production and Digital Media Prospective Attraction Pyramid.

#### Focus Group Optimal Scenario for Barrhaven

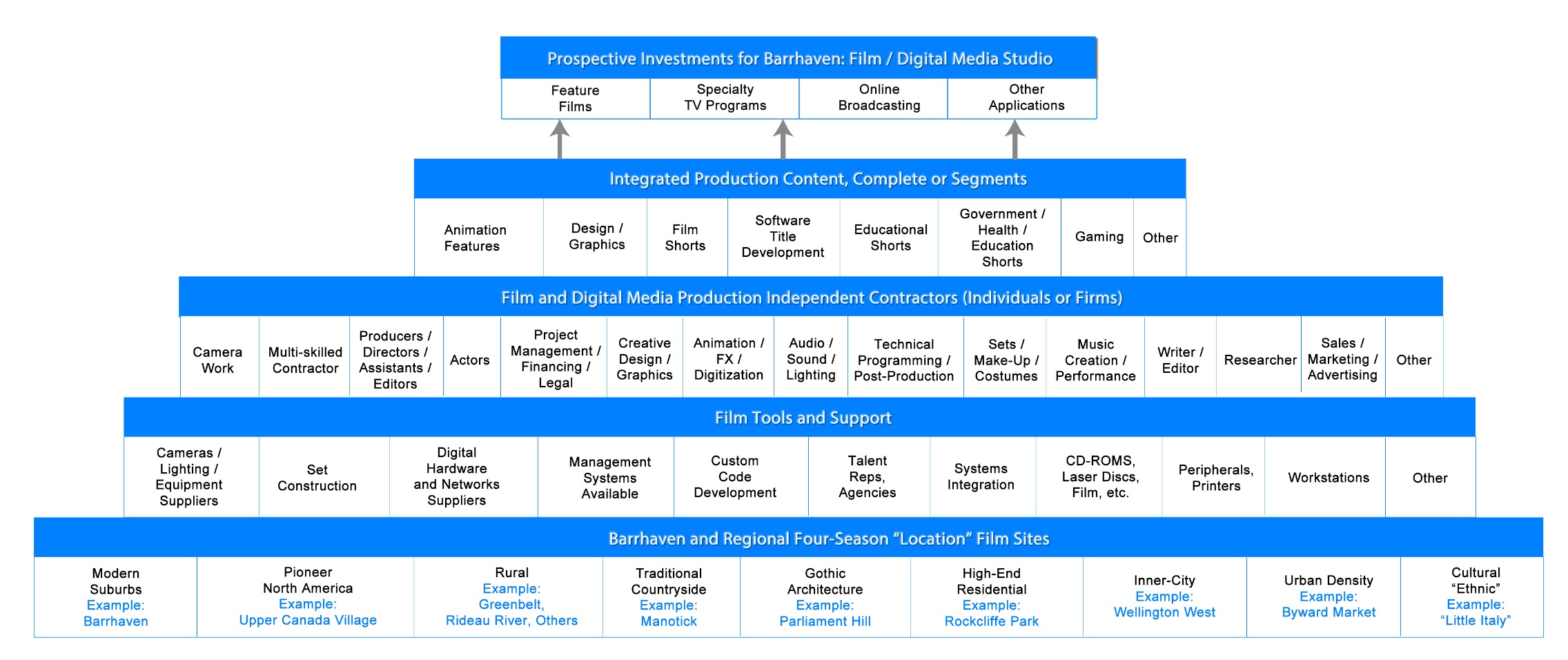
The optimal scenario envisioned by focus group experts was to develop a “Digital Cinema” studio in Barrhaven with an included incubator for gaining “hands-on” experience. This studio would be a diversified operation including digital TV and film studio, a digital animation studio, in addition to the incubation centre.

*Why Selected?*

The following reasons were brought forward by the participants for why this was the optimal scenario:

* Ottawa has the professional personnel and the outside-studio locations for filming (see Figure 3.3). These are the two most important considerations in the absence of a studio.
* But Ottawa, unlike Halifax, Sudbury, Montreal, Calgary, and Vancouver, lacks an integrated, large-scale, studio facility.
* The focus group reported that other studios in Canada are currently turning away work.
* Ottawa is well-positioned to get ‘spin-off activity’, simply from work being turned away in Toronto, Montreal, and even Vancouver. The provincial government of Nova Scotia has reduced its cultural industries incentives, but the focus group believes that the Halifax studio is still at capacity or close to it.
* Canada is very cost-competitive, particularly at current exchange rates.
* At least one Ottawa-area venture capitalist has expressed interest in helping to fund a facility.
* A particular strength in Ottawa is digital animation. Several major firms exist in the southwest quadrant of the city, comparatively close to Barrhaven. They typically do work for major foreign studios/companies.

Figure 3.3: Barrhaven Film Production and Digital Media Prospective Attraction



* Barrhaven has close proximity to shoots in suburbia, the downtown core, as well as in the countryside. Locations are excellent.
* Excellent suitable business park land is currently vacant.

Participant experts in the Ottawa film and media industry believe growth opportunities will be limited in Ottawa without the studio, despite significant optimism about the area’s skills and experience.

#### Digital Cinema Studio – What Would Be Required

A digital cinema studio would require physical space of about 15 acres, with a 40,000-square foot building segmented into three sections (different “anchor” sets). As well, a dedicated “incubator” area would be very desirable and helpful, to bridge the gap between current-generation graduates of tertiary educational facilities (e.g., Carleton University and Algonquin College) who are well-trained, and obtaining “hands-on” experience in the Ottawa area. This was taken as requiring another separate built facility of about 15,000 square feet.

Finally, it would be desirable for Barrhaven to have a hotel. This would be to accommodate certain specialized actors, producers, etc. There are none in the area currently, although plans for two in Barrhaven have been developed.

A digital cinema studio would work well during the work week when prospective hotel guests are currently judged to be relatively few, and still allow weekend space for sports and hockey tournament visitors, arriving for the leading-edge facilities at the Walter Baker Centre, for example. This represents a prospective ‘win-win’ for the hotel. An appropriately sized hotel would have approximately 150 rooms totalling 30,000 square feet with a mix of single and two-bed rooms, along with suites with kitchenettes for comparatively long stays by visiting film crews and others in the industry.

#### The Representative Construction Investment

The film and digital media studio ‘shell’ would be equivalent to industrial building code and estimated to cost, at $80 per square foot, including the incubator, about $4.4 million. However, interior partitions, soundproofing, etc., and necessary connections, power lines, etc. (the “fit-up”) would cost at least the same again at $4.4 million. Land costs would be extra, estimated at $6 million including site development. Equipment costs and indoor set materials are estimated at $8 million. Hence, the total costs for the studio and incubator in Barrhaven are accordingly estimated to be $22.8 million.

The recent 50,000 square foot Calgary studio including land cost $26 million, which was funded: (1) $10 million including the land as “in-kind” from the City of Calgary; (2) $5 million from the Province of Alberta; (3) $1 million from one private-sector production company; and (4) $10 million in debt financing (a P3 structure).

The attendant hotel would cost, at $200 per square foot, $6 million. Fit-out is estimated at $4 million more. We have assumed current developers with plans for a hotel already own the required land. The grand total construction investment for this sector scenario is accordingly $32.8 million including the hotel.

TV and Animation Studios for Community Economic Development

The benefits of TV and film production and related studio development are now apparent to economic development agencies across the globe. While the success stories of Toronto and Vancouver are now known world-wide, other Canadian communities are following in their footsteps. For example, clusters in Montreal, Calgary, Edmonton, and Halifax now have critical mass and are gaining strength.

Perhaps less known is the success being experienced in smaller centres such as Kelowna, British Columbia, which should give a small centre such as Barrhaven reason for hope that it can enter this growing, but competitive, market.

Kelowna is a very revealing case study for purposes of this study for the BBIA. Kelowna has a 9,000-square foot state-of-the-art digital animation facility which is driving growth of the entire local technology cluster. Thanks in part to companies expanding out from Vancouver, the existence of very high-speed broadband access, and the development of a local incubator, Kelowna has come a long way in a very short time.

With no limits on bandwidth, the fibre network allows firms to deal with infinite amounts of digital animation data not only within their firm, but also with their partners internationally. No wonder Kelowna is becoming a satellite or expansion location for firms from Vancouver and the lower mainland of British Columbia. Competition for workers has become fierce among Vancouver-based animation companies; another attraction for Kelowna.

A key local anchor firm is Bardel Entertainment. In 2012, Bardel expanded to Kelowna and in approximately four years, they have grown from 4 to 54 local employees. Their two Vancouver studios employs 600. According to CEO Delna Bhesania, Bardel moved to Kelowna because of regional tax incentives, the area’s rapid growth, access to dark fibre, and the existence of a local tech accelerator (Accelerate Okanagan - AO)”.1 Initially the Kelowna studio employed key animators, but with dark fibre, the studio can now support whole production teams for each stage of the animation process.

This statement from Bardel’s CEO reinforces what focus group participants in our BBIA project had to say. They said an incubation/accelerator facility must be part of the Barrhaven facility. Not only would such an operation help develop the practical business skills that prospective private-sector firms are looking for; it can be a launch pad for new start-ups as young people gain valuable business skills. AO in Kelowna was able to provide Bardel a launch pad and foothold in the community; the Barrhaven incubator must do the same for the entire Ottawa region.

While Kelowna has the Centre for Arts and Technology (CATO) which provides a source of new animation graduates, in Ottawa the Algonquin College School of Media and Design can perform a similar role.

As this case study shows, the Okanagan is rapidly becoming a high-tech hub in animation, and Bardel Entertainment is helping lead the way. The existence of a local studio was a key initial driver for the entire cluster.

Why can’t the same happen in Barrhaven, leveraging the strong skills and resources already here in the Ottawa region?

1. https://www.accelerateokanagan.com/community/blog/blog/innovative-animation-studio-growing-kelownas-tech-economy/.

#### The Direct Economic Benefits of a Digital Film Studio’s Operations

While the studio itself would only require a few people (3-5) for operational maintenance and security, the real benefits would be that current Barrhaven film-related professionals and artisans could now find work in their own community, and visiting crews would come to Barrhaven to do production work.

Digital cinema-related output from Ottawa is currently estimated at approximately $100 million annually. Much of this is animation which is not surprising in light of Ottawa-area digital high-tech skills.

With a dedicated digital cinema studio, the focus group estimated that the value of total potential output in the Ottawa area could go to $500 million annually or even up to $1 billion if the facilities were available. We have assumed that total output with the 40,000-square foot studio only would be $100 million after 5 years of operation. This would be an increase of $100 million. The total potential would still be much greater but the 40,000-square foot studio would have to be expanded substantially. The point is a Digital Cinema studio would stand an excellent chance of creating a true industrial cluster in Barrhaven. There would be a long-term growth path.

To illustrate, just one representative TV show series would make $2 million worth of production work per episode (example: Heartland). For a typical run of 18 episodes, that alone would add $36 million annually – just from one show. The described studio could do several such in one year.

The hotel would have a tariff averaging $100/night with 65% occupancy (both conservative numbers). This would give $3.6 million annually in revenues, and account for 50 employees. These numbers were used as inputs to the Doyletech model to capture the total economic impact of the facility.

With labour at 70% of total costs, and an average of $100,000 annual output per worker, total production at the studio of $100 million throughput implies 700 direct person-years of work. (By comparison, it should be noted that the landmark move of RCMP employees to Barrhaven in 2010 was some 2,600 workers.) However, we have assumed only a 33% proportion of this would represent workers living in Barrhaven, slightly over 200 jobs. There would be another 50 jobs at the hotel for a local total of 255. Another 33% would work in Barrhaven, but were assumed to live in the Ottawa region. Finally, about 33% would be related in some way to the work of the Barrhaven studio, but would live outside the Ottawa area completely. However, some of the latter would stay in the new hotel. We assumed one half of the person visits at the hotel would be related to the studio and incubator.

For the construction phase, we estimated the “export ratio” of the digital cinema studio at 50%. This implies that, for Barrhaven’s economy, 50% of the capital investment would represent a genuine transfer of new funds to the community, but that the other 50% would, in effect, cannibalize from other investments. The model is sensitive to the export ratio, so this dimension is important to the result.

We believe a 50% export ratio is fair for the construction phase. It implies that an investment equivalent to 50% of the $36.8 million for the digital cinema studio ($18.4 million) would happen anyway – it would not be going to the digital cinema studio uniquely. This takes into account:

* The opportunity costs of alternate developments in Barrhaven; and
* There could be a share of the financing that came from within Barrhaven e.g. from a local bank branch, or from local pension savings, etc. The fact that it got invested in the digital cinema studio means that the funds are not available for something else, such as more residential investment. These alternate possibilities reduce the real, net benefits of the construction investment to Barrhaven of a digital cinema studio.

However, for the operation phase of the digital cinema studio, the export ratio is assessed at 100%. The output from the studio facility would be sold globally. Only a small fraction would eventually end up being sold in Barrhaven. This is a very positive and very important benefit to Barrhaven of such a facility owing to the “export” orientation of the product. It would be a substantial contributor to Barrhaven’s economic base.

#### Model Results – Construction and Operations Phases

The following presents the model results for the construction and operations phases:

* Construction Phase: Fixed-Term Benefits (estimated 2 years)
  + There would be $41 million in new spending in Barrhaven and the region, including visitor/tourism revenue ($16.2 M local/$24.8 M region).
  + There would be 144 new FTE jobs created.
  + Municipal tax returns would be $1 million.
  + Provincial government returns would be $5.2 million.
  + Federal government returns would be $4.8 million.
  + 66 new residences required in Barrhaven.
* Operations Phase: Annual Benefits (ongoing)
  + There would be $124.6 million in new spending annually in Barrhaven and the region, including visitor/tourism revenue ($58.7 M local/$65.9 M region).
  + There would be 433 new FTE jobs created (382 local/51 region). \*
  + Municipal tax returns would be $2 million.
  + Provincial government returns would be $17 million.
  + Federal government returns would be $15.9 million.
  + 191 new residences required in Barrhaven.

\* Note: This number needs some further explanation. The locational focus of this research is strictly Barrhaven; and the 433 figure refers to job creation in Barrhaven only: the workers associated with the studio/incubation centre but still living in Ottawa are *not* included in this total. The 51 regional jobs are indirect and induced employment coming out of the new jobs created in Barrhaven. The actual total number of jobs in the whole Ottawa region would be larger. However, the spending from the wages and salaries of the Ottawa-based workers is included in the spending numbers, because their pay cheques are coming from the Barrhaven studio. But we don’t count their jobs because we assume they stay in Ottawa to live. The interested technical reader is directed to Appendix A for more discussion of this accounting.

## 3.3 Sector Scenario: Attracting a Public-Sector Agency

In this section, we describe the research and results conducted in terms of attracting a public-sector agency or dedicated research facility to Barrhaven.

#### Options Considered

Figure 3.4, the Barrhaven Government Services Prospective Attraction Pyramid, presents a variety of government-related services, products and professional/clerical skill sets available in Barrhaven to operationalize this concept.

Options considered by focus group participants included federal or provincial department decentralization to Barrhaven; a federal or provincial department’s new regional office; department-specific research agency; provincial ministry functional unit; or, “other”.

These options were deliberately designed to capture both small and large operations (with, of course, corresponding cost implications), greater or lesser reliance on very-highly qualified personnel, and federal- or provincial-level orientation.

#### Focus Group Representative Scenario for Barrhaven

The focus group took numerous dimensions into account in developing a representative scenario for in-depth consideration. Included were: Barrhaven’s southwest location near Highway 416, a provincial government priority focus on GHG reductions and ‘green’ technologies, the “Internet of Things” (IoT) concept and its relation to Ottawa region’s high-tech sector, and finally the area’s agricultural research facilities. The end result was an agri-food-specific research node leveraging new-gen ICT national networks focusing on “Big Data” and the “Internet of Things” for use in agriculture: Barrhaven as the place where “Big Data meets the Farm”.

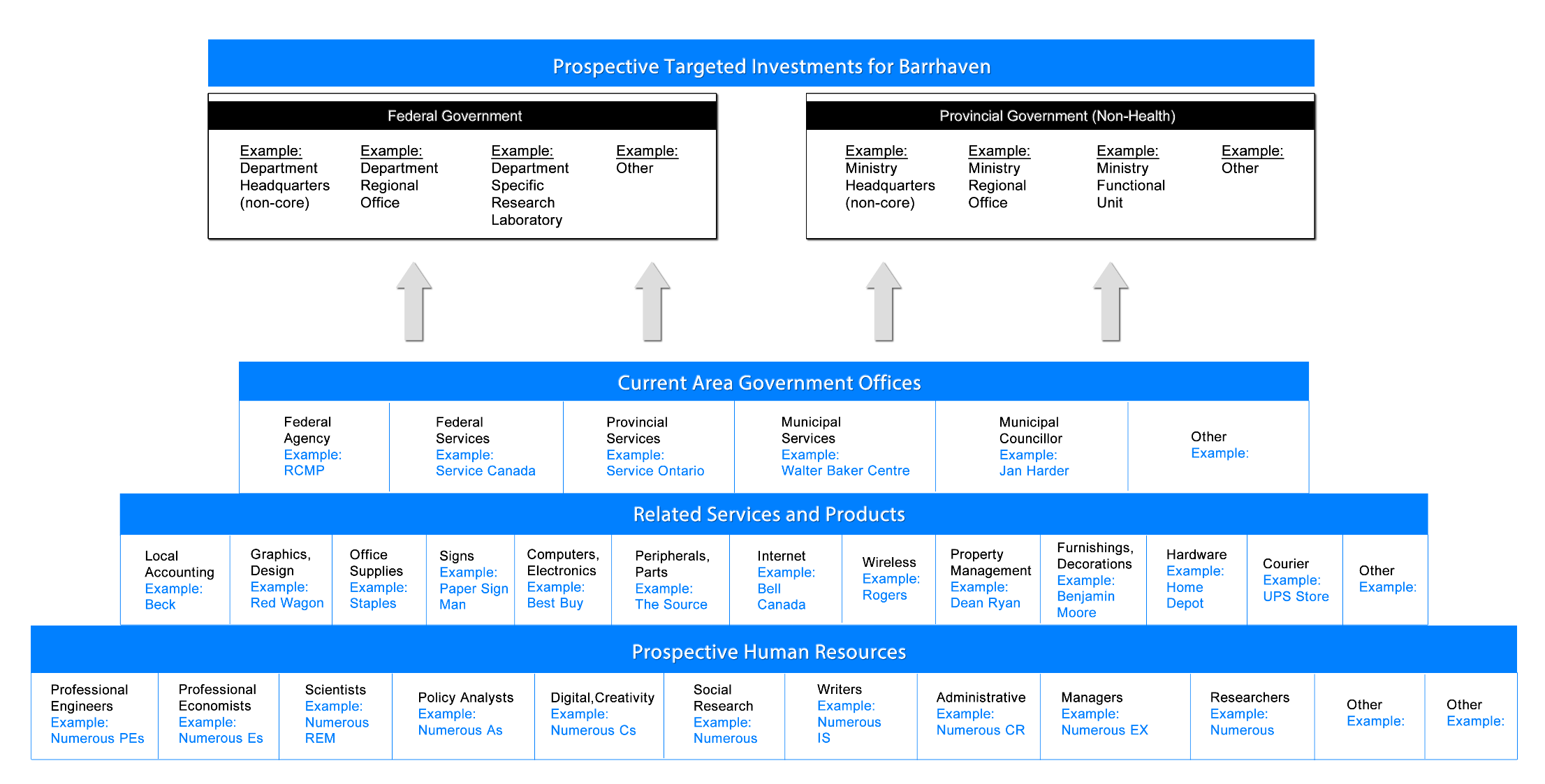
The exact nature of a prospective IoT research facility or ‘centre of excellence’ in Barrhaven needs further investigation. Nevertheless, the general concept is for some kind of an interdisciplinary research hub to drive forward Canadian research in the Internet of Things (IoT) as it relates to agriculture. This could be a private or public-sector facility or some kind of P3. It could also be a consortium that includes university and academic partners; Carleton University is developing its expertise in ‘Big Data’, as is IBM Canada. Obviously, Ottawa is home to many Canadian and MNEs in the telecommunications field who represent excellent potential partners. But there are others as well; for example, Ottawa is home to several leading geoscience firms. In terms of public-sector potential partners, NRC and the Ottawa R&D Centre of AAFC would have to be on any prospective list. A potential non-profit partner is Orion.

Courtesy of a $1.8-million grant from Cisco, Carleton University has established the “Cisco Research Chair in Sensor Technology for the Internet of Things”.

A working demonstration of the potential of IoT is provided by Cisco’s new downtown Toronto head office. It has an array of occupancy sensors, connected via advanced fixed and mobile networking into PoE lighting and blind systems, and networked heating and cooling systems. The Cisco Internet of Everything Innovation Centre in Toronto is one of three IoT research hubs for Cisco globally.

While the exact mandate of the Barrhaven facility would be dependent on who the funding partners are, in its broadest form it would serve to stimulate creativity, identify productivity gains,

**Figure 3.4: Barrhaven Government Services Prospective Attraction Pyramid**



develop revenue streams while addressing the critical surrounding societal issues such as privacy, trust, ethics, regulation and policy. We note that there are now some venture capital funds that explicitly focus on IoT.

IoT applications in agriculture are many and varied, but in general it can be stated that wireless sensor technology can boost productivity, create economies of scale for farmers and others, thereby providing much-needed growth opportunities for rural communities.

Specific applications in agriculture include precision steering and guidance, precise irrigation flow control, crop surveillance for precision harvesting, tailored fertilizer and pesticide

application, animal feedlot controls and tagging, farm security and asset management, Wi-Fi connectivity in remote areas and inside farm vehicles, among others. According to one article, “it’s a little-known fact that farming has been, and continues to be, among the most fertile laboratories for Internet of Things (IoT) innovation and large-scale adoption”.[[6]](#footnote-6)

The following large IoT firms have Ottawa research operations: Honeywell, Broadcom, Cisco, Skyworks, IBM, Huawei, Siemens, Rockwell Automation, Schneider Electric, Siemens, and Dell. It would appear that Ottawa, and Barrhaven, could be well-positioned to take advantage of the burgeoning Internet of Things industry. The region’s high-tech knowledge base and research facilities makes it a natural hub for the industry.

*Why Selected?*

The following reasons were brought forward for why this was the representative scenario:

* Barrhaven is unique in being located immediately next to both Agriculture and Agri-Food Canada (AAFC) research fields, and the high-tech digital sector of Kanata. As well, there is the near-by Canadian Food Inspection Agency labs.
* There is major technology growth potential in both “Big Data” and “Internet of Things”. Ottawa’s high-tech firms are well positioned to capitalize on this growth.
* Barrhaven has the land and the professionals (see Figure 3.4).
* Eastern Ontario is developing new-generation agriculture and agri-food infrastructure (e.g., new food hubs in Smiths Falls, Winchester, and soon-to-be in Prescott-Russell).
* Local agriculture production could double over current values according to current academic, but “hands-on”, research.[[7]](#footnote-7)
* Meshes with federal and provincial science policy initiatives and funding priorities.

#### Facility for Researching Big Data and Agri-Food – What Would Be Required

A “Big Data in Agri-Food Applications Research Facility” would require a moderate physical space and built environment, plus the ability to simulate great data flows between very large numbers of agriculture elements and agri-food supply-chain units and equipment (e.g., individual farm plants over large distances, to specific tractors, harvesters or refrigerators, and under the full range of soil conditions, weather parameters, and to-the-second time scheduling, and with real-time calculations of economic sustainability). This could be the future of the farm.

The facility would have to be connected to an appropriate very large data centre, or it could possibly use its own virtual data centre (relying on simulation protocols) to model the data accumulation, manipulation and transmission, or both. It would have to have the capability to test individual modules within larger systems. There would be numerous other technical considerations.

#### The Representative Construction Investment

The participants estimated that the prospective research facility would need to be large enough to house 200 employees. At an average of 150 square feet per employee, and taking a total head-count of 200 persons, the facility would need to be 30,000 square feet. Accordingly, this is not a very large facility by public-sector major department standards. However, it is a more realistic prospect in the short run than having Barrhaven endeavor to orchestrate the de-centralization of a major Department or Ministry from downtown Ottawa or Queen’s Park. Moreover, it would be feasible to build out the facility in distinct phases, meaning capital commitments could be sequenced over time for budget purposes.

The outer shell is estimated to cost $100 per square foot, or $3.0 million. Land costs are estimated at $0.5 million (including taxes) and site development at $0.4 million. Fitting-out with interior partitioning, furniture, flooring, required insulation, etc. would cost an additional $1.6 million. Equipment costs would include workstations with advanced, state-of-the-art computing and data manipulation boxes, local servers, staff laptops and devices, very-high-speed connectivity to the outside world and specifically the chosen data centre location, and numerous other technical capabilities. These are all estimated at $5 million. Initial software costs are projected to be $1 million. Hence, total investment costs would accordingly be $11.5 million.

#### The Direct Economic Benefits of a Big Data in Agriculture Research Facility

Under this scenario, the research facility would create 200 continuing jobs. Approximately 90% of these jobs (180) would be professional grade (what is called HQPs – highly-skilled personnel). A representative budget would be $300,000 per professional employee equivalent. This would be an average of $110,000 annual salaries for professional researchers (PhD-level), with 16% benefits, and using 2.3 factor for all overhead costs. Total value of 180 professional employees would be accordingly $54,000,000 annually.

Total costs of non-professional employees (20) at $50,000 annual salaries with similar scale-up would be $2 million annually. Accordingly, the total operating budget for the facility would be $56 million annually and this would represent new revenues coming into the Barrhaven area.

If half the workers moved to Barrhaven, net value to the Barrhaven economy would be 100 new jobs and $28 million annually.

The total value of just the Eastern Ontario agri-food sector is estimated at $1.87 billion. About half is believed to be supplied within Eastern Ontario. Although not considered in our analysis for Barrhaven, it may be worth noting that, if such a research facility raised Eastern Ontario’s agricultural productivity by 10%, total new agri-food value of annual Eastern Ontario output would be approximately $90 million higher than at present. That would be a substantial return.

Big Data and Internet of Things (IoT)

Many technology experts believe that ‘Big Data and Internet of Things (IoT)’ will be one of the key technologies driving innovation over the next few years.

The ‘IoT’ refers to devices of any kind (sensors, actuators, cameras, etc.) connected directly or wirelessly to networks, enabling machine-to-machine communications (M2M). IoT or M2M communications is the networking of intelligent, communications-enabled remote assets, allowing key information to be exchanged automatically without human intervention. The remote assets can be fixed or mobile, include cars and truck fleets, utility meters, copiers and printers, ventilation and air-conditioning sensors, agricultural fields, home medical devices, fitness monitors and CCTV cameras, among many other devices. According to Machina Research, global M2M connections will increase from two billion at the end of 2011 to 18 billion at the end of 2022.

The conditions they monitor can include temperature, soil conditions, location, consumption, heart rate, stress levels, light, movement, altitude and speed – or anything else. This can be used to gain immediate feedback on how a particular remote asset is being used, which features are most popular and what problems typically arise.

Matt Hatton, Director of Machina Research, says “M2M, in all its diversity, is little short of a second industrial revolution. The growth in connected devices over the next few years will fundamentally change the way we live and work. The potential to save money, generate new revenue streams, and create sustainable cities will drive businesses, governments, and individuals to embrace M2M. The potential impact is huge.”

The result of all these connected machines will be ‘Big Data’ – the need to interpret the huge number of data points that will be generated. This will create new business intelligence and reporting systems realizing new operating efficiencies, new revenue streams, and new economic development opportunities.

For the construction phase we estimate the “export ratio” would be 90%. This is high. We believe this figure is fair as a result of the funding. From Barrhaven’s perspective, the construction investment financing would virtually all be coming from outside the community (there would be a small proportion that would in theory be drawn from Barrhaven’s taxes). It would be investment from public-sector budgets, not involving a local bank or local sources of equity. Similarly, from Barrhaven’s perspective, there would not be any opportunity costs: the alternatives to a public-sector agency investing in a new Barrhaven facility would be to not invest in Barrhaven at all.

For the operations phase, the same logic would apply. The facility would be paid out of a public-sector budget based in Ottawa (federal) or Toronto (provincial). Only a tiny part would be paid out of Barrhaven’s taxes. Hence, from an economic base perspective on Barrhaven, attracting such a research facility or other public-sector facility is a positive contribution to the economic base.

#### Model Results – Construction and Operations Phases

The following presents the model results for the construction and operations phases:

* Construction Phase: Fixed-Term Benefits (estimated 2 years)
  + There would be $10.2 million in new spending in Barrhaven and the region, including visitor/tourism revenue ($4 M local/$6.2 M region).
  + There would be 52 new FTE jobs created (46 local/5 Ontario).
  + Municipal tax returns would be $337,000.
  + Provincial government returns would be $1.5 million.
  + Federal government returns would be $1.5 million.
  + 23 new residences required in Barrhaven.
* Operations Phase: Annual Benefits (ongoing)
  + There would be $57.8 million in new spending annually in Barrhaven and the region, including visitor/tourism revenue ($20.2 M local/$37.6 M region).
  + There would be 163 new FTE jobs created (145 local/18 region). \*
  + Municipal tax returns would be $745,000.
  + Provincial government returns would be $7.7 million.
  + Federal government returns would be $7.0 million.
  + 72 new residences required in Barrhaven.

\* Note: Again, as for the Digital Cinema scenario, this refers solely to jobs created in Barrhaven. Any workers associated with the facility but still living in Ottawa are not included in the jobs numbers, but their salaries, wages, and benefits do count toward regional spending.

In its discussions, the focus group also noted the possible opportunity to build on the recent relocation of the RCMP offices to the old JDS complex in Barrhaven. While focus group participants believed this was a credible opportunity, it likely won’t be an easy one. With ongoing government cutbacks and space consolidations, opportunities with federal and provincial government departments and agencies may not be the best at the current time. As one focus group participant stated, the relocation of the RCMP offices to Barrhaven was “a very rare occurrence for us, that came about because the perfect building just happened to be available at the perfect time”. Despite these difficulties, the fact remains that Barrhaven is now home to a very significant public-sector agency and there is a huge potential economic impact if more such operations can be attracted. These reasons alone justify a serious investigation into whether further public-sector development may be possible in the area.

There are several potential development opportunities for Barrhaven in terms of public-sector entity attraction. While the most obvious opportunity is to leverage the RCMP gain and seek other government offices, whether they be federal or provincial or municipal, or a combination thereof. But this idea could be developed further. For example, as one focus group participant suggested, there may be an opportunity to eventually leverage the RCMP relocation into the development of a ‘safety and security cluster’ in Barrhaven.

The world’s best-known clusters have taken a long time—often decades—and were unplanned until they reached a level of activity that attracted attention. The roots of clusters can be found in one or two successful companies with entrepreneurial and resourceful employees, in the development of value-added chains around very large employers.

Most clusters have been historical accidents.

While fortuitous, could the relocation of the RCMP to Barrhaven be the beginning of something special?

Public-Sector Entity Attraction and Community Economic Development

## 3.4 Sector Scenario: Attracting a Tourism-Based Facility and Attendant Infrastructure Provider

In this section, we describe the research and results conducted in terms of attracting a tourism-based facility, with an attendant infrastructure provider to Barrhaven.

#### Options Considered

A number of options could be referenced in respect of a potential tourism facility in Barrhaven. Some illustrations include:

* A dedicated gaming facility concentrating on gaming stations and players in one place. This option could also include spaces suitable for game developers (these are fairly numerous in Ottawa), and of course technical support development such as wireless, mobile, group play, etc.
* A resort-style simulation experience facility, focusing on developing a synthetic tropical and sub-tropical environment complete with artificial beach, waterfront, sunshine and related activities. A good illustration of this concept is Centre-Parc International in Europe, who have constructed a number of “villages” providing the sensation of winter escapes within appropriate physical structures that offer relaxing environments even in northern European weather.
* A tourist water park facility. This option resembles the one previously described, but would be less ambitious in terms of capital requirements (it could easily be adapted for inclusion into the synthetic tropical resort concept later).

#### Representative Scenario for Barrhaven

The third option of a deliberate water park in Barrhaven was chosen after several interviews and secondary research.

A major factor contributing to this choice is that such a seasonal facility is already being planned, and appropriate logistics assembled, in the Barrhaven area. However, the planning for this facility puts it on the west side of Highway 416 (i.e., technically not in Barrhaven’s jurisdiction). However, following discussions with the proponent, it was clear that the new water park, even if not technically in Barrhaven, would be an important contributor to the local economy and hence from an impact perspective was an important development and a legitimate investment for inclusion in this research.

Even more importantly, there are very interesting attendant economic possibilities associated with the water park development that could be situated on Barrhaven employment-based lands. These include a water park infrastructure fabrication and development shop, and a research and development facility that could improve and enhance the recreational value of future water parks.

#### Why Selected?

Our research and interviews indicated this was a very feasible representative scenario for a tourism-oriented development in Barrhaven for the following reasons:

* The new water park is already designed and development is underway near Barrhaven.
* Water parks are rapidly becoming a global growth industry. This means that the opportunities to develop more, bigger, and better water parks should evolve faster than the growth of the global economy as a whole.
* A major and successful proponent of water park developments is based in Ottawa, and has already identified the Barrhaven area as a good one for water park development. This proponent has already supplied other water parks near Ottawa. He is also actively involved in global development.
* At present, this proponent outsources the fabrication of the water park infrastructure. He has more than one available supplier. As the demand for water parks grows, he indicated he would certainly look to develop his own in-house fabrication capability. Raw materials could readily be shipped to the Barrhaven area either by rail or road.
* Even if the water park itself is technically outside the Barrhaven jurisdiction, the fabrication, design, and research and development shops could be placed in close proximity on Barrhaven employment lands. This is ideal for a proponent wanting to develop and transfer speedily new innovations, colours, designs, safety equipment, etc.
* Developing the infrastructure facility in Barrhaven will aid the prospective tourism elements in Barrhaven also, such as the proposed hotel (or a second accommodation capability), restaurants, entertainment venues, etc.

In sum, this looks like a win/win scenario.

*The Representative Construction Investment*

The water park and infrastructure development facility would need to have investment as follows.

First, construction of the water park itself is very near to Barrhaven. This is estimated at approximately $15 million. The relevant land is already owned by the proponent. This would include approximately $9 million in fabricated materials and other inputs and would cost $6 million for labour to build (figures based on recent experience with other water parks).

Second, construction of the infrastructure fabrication facility, estimated to require approximately 100,000 square feet of built space, including 20,000 square feet for the R&D component.

We have assumed construction cost at $80 per square foot for the outer shell of this fabrication facility. (This is the same figure as for the Digital Cinema studio outer shell.) This makes a total investment in the building of $8 million. Fitting-out with site development, wall partitions, electrical, heating, etc., but not fabrication machinery, would be equivalent to 50% more, for a total investment in a working building of $12 million.

To this building cost would also have to be added production and fabrication machinery and equipment to supply components and systems for water parks. The materials used to date are mostly fibreglass and other petrochemical engineering polymers. These are comparatively easy to use and form, and take colour well for an attractive appearance. We assume this machinery and equipment would cost approximately the same as the building itself, i.e., an additional $12 million, for a grand total of $24 million.

We have not at this stage differentiated between the fabrication facility proper and the R&D shop. We have assumed the basic materials and research equipment would resemble the larger fabrication facility’s equivalents.

It should be noted that, at 100,000 square feet, this would be a relatively large facility. Accordingly, this may take a few years to grow to this level.

*The Direct Economic Benefits of a Tourism-Based Infrastructure Provider*

We estimate that the 100,000 square feet fabrication facility for water park components and systems would be able to supply $45 million worth of product annually, but this figure has to be taken with considerable caution. Water park systems manufacturing is still a relatively new activity, even if basic fibreglass components are a well-known technology, and accordingly data is limited on the prospective value of throughput that could be expected.

Moreover, it should be borne in mind that fibreglass and engineering polymers (and composite materials more broadly) are typically not optimum for very-large-scale manufacturing. They do, however, offer great advantages in custom and semi-custom applications, which seems a fair description of water park development at the present time. Of course, this just supports a business plan that incorporates R&D as an ongoing component, and this is explicitly included in the planned Barrhaven development.

In any event, while the precise numbers are debateable and may turn out to be considerably different as water park development grows, the precise numbers are not critical for illustrating the prospective economic roll-out of the water park and the fabrication and R&D facility on Barrhaven employment lands.

At 40% of production value going to labour, $18 million would go to support salaries and wages. At an average of $60,000 cost per job, this implies about 300 persons would be employed between the fabrication facility and the R&D lab. The balance of 60% would go to EBITDA, materials, and overhead.

#### Model Results – Water Park Construction and Operations Phases

The following presents the model results for the construction and operations phases for the water park itself. This should be understood as being the economic impact on Barrhaven and the Ottawa region. As before with other scenarios, we have assumed that 50% only of the jobs created would be individuals living in Barrhaven, although the salaries and wages of the remainder, assumed to be living in the Ottawa region are included in the regional spending numbers.

* Construction Phase: Fixed-Term Benefits (estimated 2 years)
  + There would be $17.9 million in new spending in Barrhaven and the region.
  + There would be 91 new FTE jobs created over the two-year construction period.
  + Municipal tax returns would be $480,000. \*
  + Provincial government returns would be $2.7 million.
  + Federal government returns would be $2.7 million.
  + 60 new residences required in Barrhaven.

\* A cautionary note is required here: since the water park is technically outside Barrhaven, the direct municipal tax return to Barrhaven would be less – we estimate about $100,000 less. Workers living in Barrhaven would be contributing to municipal taxes, however.

* Operations Phase: Annual Benefits (ongoing)
  + There would be $14.2 million in new spending annually in Barrhaven and the region.
  + There would be 65 new FTE jobs created.
  + Municipal tax returns would be $675,000. \*
  + Provincial government returns would be $2.0 million.
  + Federal government returns would be $1.9 million.
  + 40 new residences required in Barrhaven.

**\*** See previous note, immediately above.

#### Model Results – Water Park Fabrication Facility Construction and Operations Phases

The following presents the model results for the construction and operations phases for the fabrication facility (including the R&D lab). This should be understood, as before, as being the economic impact on Barrhaven and the Ottawa region. The same condition that only 50% of the jobs will be for individuals actually living in Barrhaven was carried over.

* Construction Phase: Fixed-Term Benefits (estimated 2 years)
  + There would be $27.5 million in new spending in Barrhaven and the region.
  + There would be 130 new FTE jobs created over the two-year construction period.
  + Municipal tax returns would be $625,000.
  + Provincial government returns would be $4.0 million.
  + Federal government returns would be $4.0 million.
  + 58 new residences required in Barrhaven.
* Operations Phase: Annual Benefits (ongoing)
  + There would be $66.1 million in new spending annually in Barrhaven and the region.
  + There would be 312 new FTE jobs created.
  + Municipal tax returns would be $1.3 million.
  + Provincial government returns would be $9.6 million.
  + Federal government returns would be $9.4 million.
  + 139 new residences required in Barrhaven.

***Combined Model Results – Water Park and Fabrication Facility***

In this section, we have simply added the two construction phases and the two operations phases, to get a combined total effect for both projects. The reader is cautioned that it is not likely that the water park and the fabrication facility would be constructed at the same time, or that the operations phases would correspond in time from the start; in fact, we are sure they would not. However, the combined totals give a better sense of the economic impact over the long haul of tourism facilities in Barrhaven overall.

* Construction Phase: Fixed-Term Benefits (estimated 2 years)

During the respective construction phases of the water park and the related fabrication facility, there would be total benefits as follows:

* + There would be $45.4 million in new spending in Barrhaven and the Ottawa region over the two-year construction period.
  + There would be 221 new FTE jobs created over the two-year construction period.
  + Municipal tax returns would be $1.1 million.
  + Provincial government returns would be $6.7 million.
  + Federal government returns would be $6.7 million.
  + 118 new residences required in Barrhaven.
* Operations Phase: Annual Benefits (ongoing)
  + There would be $80.3 million in new spending annually in Barrhaven and the region.
  + There would be 377 new FTE jobs created.
  + Municipal tax returns would be $2 million.
  + Provincial government returns would be $11.6 million.
  + Federal government returns would be $11.3 million.
  + 179 new residences required in Barrhaven.

# 4. Analysis

In this section, we follow on our socio-economic data and our scenarios to present our analysis of the Barrhaven economic picture.

## 4.1 Employment Lands Analysis

#### Objective

As part of the RFP for this project, the Barrhaven Business Improvement Area (BBIA) requested that an economic analysis be done on their Employment Lands. Specifically, the RFP asked:

* Provide an Economic Generator Outlook regarding Barrhaven's employment development lands currently (as-is) and when fully developed and commercialized. Include such analytics as: net revenue value, net spending value, employment (direct and indirect), average contribution to GDP, and tax revenues to the City of Ottawa, the Province, and the Federal Government;
* Strategize on development of employment lands;
* Evaluate vacant lands and development capacities in Barrhaven; and
* Consider major applications and proposed OP, CDP, and zoning bylaw changes (including Minto proposal to rezone a 12-hectare parcel of employment land to mixed use/retail).

This section presents our analysis of the Employment Lands in the Barrhaven area. In addition to primary and secondary research conducted by Doyletech (3 industry focus groups, one consumer focus group, interviews, and data collection) this analysis also incorporates data from three publicly-available studies:

* City of Ottawa / Hemson Consulting Ltd. / Urban Strategies Inc.: Ottawa Employment Land Review Final Report (August 2016). Occasionally referenced as the ELR report;
* Barrhaven Business Improvement Area / Shore-Tanner & Associates: Retail Market and Economic Study (November 2013). Occasionally referenced as the ST report; and
* City of Ottawa 2012 Employment Survey.

To the largest extent possible we have used data from these three studies as presented in order to allow a direct comparison between our conclusions and theirs. Where we have reinterpreted data or made different assumptions this is clearly stated.

The economic impact analysis was conducted using our Doyletech economic modelling tool, DT EconWin. Details of the model and how it works are provided in Appendix A, but in summary, DT EconWin is a bottom-up economic impact computer model that evaluates the impact of targeted economic entities (companies, institutions, geographic/civic areas) by aggregating the effect of jobs, salaries, taxes, investment, and the "export ratio".

The export ratio is the percentage of the revenue an enterprise generates that originates from outside the study area. This revenue is the main contributor to the positive economic impact of an enterprise. The converse to the export ratio is “leakage”, which is the proportion of economic activity lost to locations outside the subject area. This metric is important especially for entities such as the RCMP headquarters, which technically generates no "revenue" in the traditional sense but does have a budget that meets payroll and local expenses, but which also spends some portion of those expenses outside Barrhaven. In addition to the component values, the model presents a total dollar value economic impact (a localized GDP as it were) of the area or activity under study.

Our approach to this task was as follows:

1. Current Economic Impact. Before making recommendations on Employment Lands, our first step was to evaluate the economic impact of the Barrhaven economy as it stands today.
2. Impact of Increased Job Growth. Incorporating job growth figures with our own representative models (supported by our industry focus groups) we repeated our economic impact evaluations assuming different rates of job growth and employment type mix in the Barrhaven Area.
3. Supporting Land Needs. Using industry standard assumptions, we converted our jobs growth assumptions into a corresponding land requirement.
4. Conclusions. Based on the outputs of our model, we present our results in the context of the recommendations of the Employment Lands Review.

#### Current Economic Impact

Since different types of jobs will have different economic impacts, our first step was to categorize all the jobs in Barrhaven. This categorization was based on the Employment Lands Review Report and the City of Ottawa Employment Survey. This data was then further subdivided by our own categorization to which we applied salary information sourced from our own research. Note that, while for our purposes we require a categorization of jobs principally by salary range, rather than by land use, we include the ELR categorization (Major Office, Employment Lands, Population Lands) in order to do our analysis of land needs.

Our breakdown of the current employment in Barrhaven is based on the following groupings of the City of Ottawa Employment Survey numbers, as shown below in Figure 4.1.[[8]](#footnote-8)

**Figure 4.1: Barrhaven Employment Group Breakdowns, 2012 and 2031**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Job Category | Skill Category | Quantity of Workers in Barrhaven (2012) | Average Fully Burdened Wage Per Worker in Barrhaven ($Thousands) | Average Export Ratio | Quantity of Workers in Barrhaven (2031) |
| Major Office | HQP - 50% | 1,400 | 125 |  | 1,400 |
| = 2,800 jobs | Skilled - 40% | 1,120 | 100 | 70% | 1,120 |
|  | General - 10% | 280 | 60 |  | 280 |
| Employment Lands | HQP - 20% | 517 | 125 |  | 402 |
| = 2,584 jobs | Skilled - 50% | 1,292 | 85 | 90% | 1,005 |
|  | General - 30% | 775 | 60 |  | 603 |
| Population Lands | HQP - 10% | 645 | 80 |  | 964 |
| = 6,451 jobs | Skilled - 20% | 1,290 | 45 | 20% | 1,928 |
|  | General - 70% | 4,516 | 30 |  | 6,748 |
| Total |  | 11,835 |  |  | 14,450 |

For our model, we also made the following assumptions regarding the workforce in Barrhaven:

* Major Office includes 2,600 employees at the RCMP facility and those in the South Merivale Business Park;
* Population-Based Land Employment (retail and commercial services) in 2012 is taken as 1 job per 11.1 persons on a population of 71,603. This is the Ottawa average of 3.42 persons/job but scaled by the ratio of jobs/household in Ottawa (1.3) vs jobs/household in Barrhaven (0.4);
* Employment Lands are taken to make up the remainder of the jobs in Barrhaven;
* 2031 figures based on ELR growth rates;
* Strong forecast population growth dictates a larger percentage of Population Lands jobs in 2031 (keeping the same 11.1 ratio) which, to keep total employment in line with the ELR report, requires a reduction in Employment Lands jobs. This assumption is in keeping with the current preponderance, and growing number, of retail and commercial services jobs in Barrhaven.

While the average salary of a Barrhaven resident is among the highest in the region, the mix of employment in Barrhaven shows a single, troubling trend. Of the total economic activity in Barrhaven (calculated to be $2,036 million), the net economic impact is only $2,013 million, a net negative value of $23 million. In other words, despite its rapid growth, the economic prosperity of Barrhaven is declining owing to “leakages” in spending patterns.

Having examined the current situation, we then expanded the number of jobs to reflect the growth projections of the ELR report, but kept the proportions of the types of jobs the same. Not surprisingly, the results were again the same. If Barrhaven continues its current growth path, the net negative economic impact by 2031 will increase to - $183.8 million.

From our analysis of the data, the cause of this is the preponderance of low paying retail and commercial jobs, the very low export ratio of this sector, and the high leakage rate of the area. In other words, retail jobs contribute (comparatively) little to the economy, a very low percentage of Barrhaven’s retail sales are to persons from outside the area, and many of Barrhaven’s residents shop outside the area.

For our analysis, we took the export ratio at 20%. This is low, but even this could be optimistic. Expansion of retail outlets and commercial services in Barrhaven would still likely serve mainly the local community. This expansion might be justified from a retailer’s or a developer’s perspective owing to population or household growth, but it would only contribute to Barrhaven’s “economic base” if more than 50% of the new mall’s customers came from outside Barrhaven; e.g. from Ottawa, Kanata-Stittsville, Kemptville, Ogdensburg NY, or elsewhere. Generating sales from this expanded trade area would require unique stores offering products not available in any of these other locations. Unfortunately, the evidence does not support this possibility. Both the dedicated retail and commercial services focus group, and the consumer focus group (see elsewhere in this report) listed many examples of unique boutiques, restaurants, or other services that failed in the Barrhaven environment.

This lack of diversity and “uniqueness” also contributes to the leakage problem. For a certain number of retail products and services, Barrhaven residents must go outside the area because the needed items are just not available. As well, with the large number of residents working outside the area, a certain amount of purchasing can be expected to occur during “working” hours, which again causes people to spend outside the Barrhaven area.

In principle, any given community does not have to have a neutral or surplus balance of economic activity. Barrhaven exists within the context of Ottawa spending patterns. These patterns may be balanced or even in surplus with the outside world. But the problem is the ability of the Barrhaven local economy to support an *increasing* array and spectrum of services and opportunities (including retail shopping opportunities) that would enhance Barrhaven’s quality of life. Barrhaven’s deficit now and later in 2031 indicates that too much of Barrhaven’s income goes to support jobs in Ottawa and elsewhere, even outside Canada. This in turn means that the money leaking outside Barrhaven is no longer available to support local businesses. Moreover, the picture is getting worse. The 2031 projections show an increasing proportion of the total jobs will be retail and commercial services.

In addition, there is a great deal of anecdotal evidence from all our focus groups that this limitation on Barrhaven’s offerings is indeed happening. It has led to closings of at least two restaurants and numerous stores, according to local Barrhaven residents.

If Barrhaven had unique proposition retailers, then other-area Ottawa residents and shoppers from outside Ottawa altogether would enter the Barrhaven marketplace. But Barrhaven doesn’t have such. Accordingly, while in principle economic theory would suggest a “trade balance” is not necessary, in a case like Barrhaven *in practice* it is a serious liability because Barrhaven’s development options are being compromised by accelerating “leakage”.

Another problem is the nature of modern retailing. As the Canadian manufacturing sector generally has diminished as a share of total Canadian employment and output in light of global trends, an increasing share of Canadian purchases of manufactures has been imports. There are some exceptions to this. For example, more Canadians today than a generation ago are looking for professional services such as accounting, tax return, family law, etc. These would be high in Canadian content, but would still not necessarily “export” (e.g. service customers outside Barrhaven); in that case they will merely cannibalize existing services’ sales in other Barrhaven locations.

An important conclusion of this result is that continued growth in Barrhaven along the lines of the existing population/employment mix will only exacerbate the problem. Barrhaven clearly cannot subsist on retail jobs alone. Without more local employment-basedjobs, Barrhaven will continue to grow, but will continue to get poorer as it does.

#### Impact of Increased Job Growth

The results of the previous section should not be surprising. They are supported by the analysis done for the individual representative growth sectors evaluated elsewhere in this report, as well as much anecdotal evidence from our focus groups. On the upside, we know from those evaluations that in general, employment-based jobs are a net positive overall economic contributor to the community. The jobs/household ratio in the ELR report is another clue. While the target ratio for the City of Ottawa as a whole is 1.3, Barrhaven sits at 0.4. Without jobs, there can be no net positive economic impact. The question that follows naturally is: *How many employment jobs does Barrhaven need to halt its economic decline?*

To address this question, we started with the representative growth sector models. These models detail different types of businesses that could be located in Barrhaven. They were selected for having characteristics that are complementary to the Barrhaven community, or for representing opportunities for growth based on industries that have a strong presence in the general Ottawa area. For the purposes of this evaluation, we used three sectors: a Digital Cinema Studio, a Government-Supported Research Lab, and a Destination-Based Tourism Attraction. Note that the intention is not to suggest that these specific examples will, or should be, the future of employment growth in Barrhaven. Rather, they are representative, for our purposes, of investment requirements, job concentration, average salaries, and export/leakage mix. Using them to predict accurately the illustrative effects of future job growth in Barrhaven is the objective. We next developed a proportional mix of these three scenarios, plus a representative amount of commercial/retail, acknowledging that a certain amount of commercial/retail economic activity is required to support a local population.

In a normal run of our DT EconWin model, we start with a specific number of jobs in each sector and investigate the economic impact. For this exercise, we necessarily took a slightly different approach. We ran multiple iterations, each time varying the total number of jobs (but keeping the same proportions) until we reached a positive economic impact value that virtually matched the negative value of the baseline model.

The result of our analysis is that for Barrhaven to have a net neutral economy, it must attract 4,155 direct and indirect employment-based jobs by 2031, over and above the ELR forecast growth rates.

#### Supporting Land Needs

The final step in our analysis is to convert our jobs requirement into a land requirement. For this section we turn to the metrics of the Employment Land Review.

The review includes an average number of jobs per hectare to support forecast growth. We have used two values for our analysis to provide a range of requirements. For the first, we used 30 employees per hectare. This is the low end of the range, but is consistent with two of the representative growth sector models we used. The digital cinema model requires a large studio (40,000 to 120,000 sf) as part of its infrastructure. The water park and tourism scenario could require up to 50 ha for its infrastructure. Together, they are low density sources of jobs that support the low end figure. For the second value in the range we used the City of Ottawa average value of 38 jobs/ha to allow comparison to other analyses.

Lastly, from the ELR Report we used the fact that about 7% of population-related jobs will be located on employment lands. The total requirements are shown in Figure 4.2 below.

**Figure 4.2: Barrhaven Job Growth and Land Requirements**

|  |  |  |
| --- | --- | --- |
| Job Category | Job Growth | Land Requirements |
| Employment Lands - low density | 4,155 | 138 ha |
| Employment Lands - average density | 4,155 | 109 ha |
| Proportion of Population Lands Jobs | 7% of 3,189 | 6 ha |
| Total Range |  | 115 - 144 ha |

The current space in the 416 Business Park is 113.8 ha, but a significant portion has already been given over to non-employment land development (car dealerships, Costco).

**Figure 4.3: Current and Projected Economic Impacts on Barrhaven and Ottawa Region**



Total Impact includes direct, indirect, and induced effects.

Jobs, predominately in Barrhaven, include some outside the area.

#### Conclusions

In our analysis of the use of employment lands in Barrhaven, we noted that Barrhaven has a very low jobs/household ratio (0.4) compared to the City of Ottawa target (1.3). This combined with the employment mix causes Barrhaven’s economy to be a net negative contributor to the well-being of the local population.

The adverse effects of a net negative economic impact are well documented. They include such long term effects as weak support for established businesses and a general decline in the economic vitality of the area. A negative economic impact constrains the ability of vendors in the community to add new services and product lines and invest in upgrades to physical plant and stock. It constrains the quality of jobs that will be available to residents, and the ability to support local civic works such as recreational and sports facilities. Finally, it deteriorates the ability to attract visitors to Barrhaven and that in turn compounds the problem. Feedback from focus groups has in fact verified that many of these effects are seen in Barrhaven today.

Without a change to the employment mix, the situation will not change. Our data clearly show that more growth with the same predominantly retail base will only exacerbate the problem. While we acknowledge the City of Ottawa’s official approach is to consider job growth in the context of the city as a whole, this conflicts with the other stated goal of promoting employment and residential uses in close proximity in order to create complete communities and limit the ability of urban communities to sprawl. In the 416 Business Park the city has a parcel of land that is exceptionally well matched to many of the key objectives for such zoning. This fact is reflected in the number of times the 416 Business Park is referred to in the ELR Report.

As shown in Figure 4.3, our analysis has shown a forecast economic deficit of $183.8 million in Barrhaven by 2031. To counteract this deficit 4,155 extra employment jobs will be required, with 115 - 144 ha of employment lands needed to support them. To meet this clearly demonstrated requirement for employment land in the local Barrhaven area, the Employment Land Review recommendation to convert a parcel of the 416 Business Park to General Urban Use has to be retracted and the 17 ha of employment lands recommended for conversion selected from elsewhere in the city.

Without more local employment-based jobs, Barrhaven will continue to grow, but will continue to get poorer as it does. The answer is more employment jobs, and the civic planning for the Barrhaven area must not do anything to fetter the work of those seeking to achieve that objective.

## 4.2 Retail Analysis

The focus of this project is not on land use planning. However, it is clear that Barrhaven has a challenge with the conflicting objectives of retail development versus employment land infrastructure development. One of the prevailing arguments in this back and forth is to analyze the amount of land/retail that the area can support.

As we point out in our Employment Land use section, this approach is fraught because at the core retail/commercial development needs an economic base to support it, and the current jobs situation in Barrhaven just doesn’t make the case for a vast expansion of retail space.

Instead, we have taken a different approach in our analysis. We looked at the amount of retail currently supported by the population of Barrhaven and what will be needed as it grows. The reader should note that his approach may not fit with urban planning orthodoxy, but the results do match with what our investigations have revealed and they also do seem to align with the retail/commercial reality in Barrhaven today.

Looking forward, the population of Barrhaven is forecast to grow to 107,000 by 2031. Using the same sf/person metrics as in Section 2, we can estimate the required amount of retail/commercial space will be:

* 2.52M sf at current usage rates (500,000 sf net increase from 2016);
* 3.21M sf at the industry standard 30 sf/person (1.2M sf net increase);
* 4.28M at the industry standard 40 sf/person (2.28M sf net increase).

A study of existing applications and industry standard metrics shows approximately 3.0 - 4.0 ha is required for every 100,000 sf of space developed (depending on parking, business type, etc.). This gives a range of future development land in Barrhaven needed for retail/commercial of 15 to 91 hectares.

The existing undeveloped/unallocated inventory in Barrhaven is 92 hectares (not including the Clarke lands or the land for the 418,000 sf in active files). This would seem to suggest that the amount of land currently zoned for retail/commercial in Barrhaven is sufficient for the maximum potential need looking out to 2031.

We do not have a current inventory for Riverside South, but we can do a somewhat similar analysis:

* Population growth in Riverside South from 2016 to 2031 will be approximately 11,000;
* Using a maximum of 40 sf/person, this is an additional requirement of 440,000 sf of retail /commercial space. Using the high end of the land requirements, this is an additional 18 ha of undeveloped land to support the population of Riverside South;
* There are currently 315,000 sf of active applications in Riverside South, which accommodate almost all the forecast growth to 2031, leaving a net requirement of 6 ha;
* The current undeveloped/unallocated inventory in Riverside South is 36.2 ha.

In summary: combining the population growth of Barrhaven and Riverside South to 2031 and using the high ends of the industry space metrics of 40 sf/person and 4.0 ha/100,000 sf, the two communities will need about 100 ha of retail/commercial land against a currently-zoned inventory of just under 130 ha.

## 4.3 Transit

A full discussion of transit is beyond the scope of this report. However, we would be remiss if we did not mention it. In our Consumer Focus Group, previous market studies of Barrhaven, and news reports, transit is one of the most important issues to consider for Barrhaven’s future growth options.

The key impact of transit is on quality of life. It has been stated that many spend up to two hours a day doing the commute,[[9]](#footnote-9) a direct result of the heavy dependence of Barrhaven residents getting to work, either in Ottawa or in Kanata, by car. This concentrates vehicle traffic in fixed directions in the morning and evening.

While more employment opportunities in Barrhaven would be invaluable at reducing or forestalling growth in the amount of road congestion in Barrhaven, the issue is more fundamental. Notwithstanding the availability of employment-based lands and a strong and educated work force, a lack of transit alone can be a stopper in any strategy to attract new employment-based businesses to the area.

This is because of the impact transit can have on decisions by employers to locate businesses in the area. For some the availability of transit is a lifestyle choice of their employees they want to support. For organizations such as the federal government, it is a strict criteria: the availability of public transit is a mandatory condition for the establishment of government offices. For many retail employers, the issue is at the opposite end of the scale: with the low wages mandated by the economics of their industry, many employers have difficulty finding employees. The problem is that if they have to drive to their jobs (as opposed to taking transit) the jobs often don’t make economic sense: the added cost of driving to work makes it more feasible to not work at all.

## 4.4 SWOT of the Barrhaven Economic Area

The 2013 Retail and Market Study included a SWOT analysis of the Barrhaven area. For the most part we find that the analysis holds true today. We have reproduced highlights of that analysis here, with our own additional factors as they relate to SWOT beyond just the retail market.

Barrhaven’s major strengths are:

* 1. Its young and growing population.
  2. High level of affluence in general, and thus a higher potential for spending at retail and service businesses.
  3. Large number of working residents.
  4. The availability of many popular and standard businesses.

Major weaknesses of Barrhaven’s market are:

1. Lack of sufficient number of specialty and/or eclectic, independent businesses.
2. Lack of any main street, a walkable type of commercial area, resulting in an almost exclusive dependence on the automobile for shopping.
3. Lack of entertainment and cultural options, and more generally, lack of night-life businesses and institutions.
4. The fact that the majority of Barrhaven’s labour force work outside, and as is normal, do some of their shopping at businesses located at or near their place of work.
5. Unattractive look/poor atmosphere for shopping, browsing, leisure, dining, night-out activities.
6. An abundance of average/standard retail and restaurant businesses (expressed another way: lack of enough good retail stores and better restaurants from the viewpoint of shoppers).
7. Despite high incomes, the limitations in actual spending in Barrhaven owing to many residents being "mortgage poor" (i.e., many households have only recently moved to Barrhaven and may be carrying substantial mortgages which are inevitably a priority on cash flow, constraining retail and services consumptions). A high level of low paying retail jobs exacerbates this problem.

The threats include:

1. … more generally, lack of significant improvements in transportation access to Barrhaven, and traffic congestion within it.
2. These threats will become more severe as Barrhaven’s population grows. As well, residential, office, industrial and institutional (i.e., employment) growth will be curtailed and/or postponed if these threats are not addressed soon and in substantial ways.
3. Bayshore Shopping Centre, Merivale Road, West Hunt Club Road, and Riverside South are growing threats to Barrhaven’s retail market. The first two are expanding, have attracted new businesses (e.g., H&M), and their overall attractiveness has been increasing.
4. There is a new shopping centre under construction on West Hunt Club Road east of Merivale Road, anchored by a Lowe’s Store, and the T&T centre further east on West Hunt Club Road has the space for additional businesses. Riverside South is a young and rapidly growing community, and likely to attract more commercial developments.
5. The continued development of retail outside the City Centre will likely exacerbate the poor opinion of the retail environment in Barrhaven held by residents and described in our consumer's focus group.
6. Rezoning of employment lands to general urban use, and the subsequent development of further commercial/retail at the expense of “employment”-based development, will erode the economic base of Barrhaven and continue to threaten the viability of second tier specialty retail shops for which the focus group expressed a strong desire.

There are significant opportunities for the growth of Barrhaven’s retail market:

* 1. The scenarios Doyletech developed for the use of Barrhaven's employment lands all show positive potential. For any given level of investment, they show better return in terms of economic impact to the Barrhaven economy than at present, which shows a projected, on a consistent basis, continued retail and commercial services development. There are several good options for using Barrhaven's employment lands that work well for bringing investment into Barrhaven.
  2. Non-retail growth and developments ultimately contribute positively to retail markets… These developments … will increase the Barrhaven retail market’s size, sales, and profits in substantial ways when completed.

# 5. Strategy Conclusions

The primary objective of this project was to conduct an economic analysis that would inform an employment-based development strategy.

For our analysis, we prepared a socio-economic profile of Barrhaven that showed it to have a higher than average growth rate based on a population with a higher than average level of education. Together these indicators tell us that residents generally like to live in Barrhaven and that they perceive it to have a generally high quality of life. Moreover, this population base is highly attractive to the types of jobs the strategy is targeting.

We examined the impact of continued retail/commercial development and contrasted that with several employment-based scenarios. Because of the low wages it pays, the retail/commercial sector in fact has a negative impact on the economy of Barrhaven. Each of the other scenarios we examined were positive contributors. The current economic situation is the key driver of one of the gaps we identified, namely that Barrhaven residents find the retail options available to them to be lacking compared to what they find in other communities. As well, the layout of the offerings they do have are suboptimal from the perspective of access and convenience.

We also looked at the land use requirements associated with an expansion of employment-based businesses. It showed that Barrhaven must ensure it maintains an adequate supply of land zoned to support the types of businesses it is trying to attract.

In summarizing our findings, we can suggest the following elements should inform any attraction strategy:

1. The people of Barrhaven and their perception of the quality of life they enjoy is a major selling point for any employment-based business.
2. While growth in retail and commercial inventory should not be stopped, it must not come at the expense of the ability to support employment-based development at any cost. The best way to do this is to concentrate retail/commercial development in the City Centre area.
3. The Prestige Business Park is a key asset of the community. It is located on a transit corridor, meaning it is one of the few areas in Barrhaven that meets federal government rules for the location of services. It is close to Highway 416, making it very attractive to many businesses. This location also makes Barrhaven a natural place to expand technology businesses that do not want to locate in Kanata, but which do want to maintain links there. To that end, the Prestige Business Park must be maintained for its intended purpose.
4. Our alternate scenarios have shown that many types of employment-based businesses can improve the economic situation in Barrhaven, so it is not a specific type of business that will determine the success of the attraction strategy. It is the generally higher pay scales and sustainability of the business that make the difference.

Emphasizing resident’s education level and high quality of life, concentrating retail and commercial development in the City Centre, preserving the Prestige Business Park, and maintaining a focus on transit will form the cornerstones of a successful employment-based business attraction strategy.

# Appendix A: Methodology – The Doyletech EconWin Model

For this project, the Doyletech EconWin computer model was used to do the calculations for assessing the economic contribution of various development scenarios in Barrhaven. This econometric model is able to isolate individual investments (as well as aggregated entities), and then calculate what the returns would be to the community as a whole in terms of increased economic activity. The model assumes that the local and regional economies are effectively in a state of equilibrium, and therefore the new investment impact can be illuminated as a strictly-incremental impact on both. Our model is a form of Input-Output Economic Impact Model, but deliberately constructed to calculate specific, single-project or single-area, investment scenarios and their respective impacts.

Although Doyletech has made use of several different econometric models, we suggest that DT EconWin is ideal for this project, for the following reasons:

* It has been accepted for economic impact requirement purposes by all of municipal, provincial, and federal governments and the private sector on many occasions.
* Although very detailed, it is strictly incremental – it expresses the impact of a project or sector or sub-sector, totally separately from the activities of the local economy as it otherwise exists, or of an entire district economy, like Barrhaven as separate from the City of Ottawa as a whole.
* It is very flexible, in that it can be applied to projects in numerous construction, technology, or market domains, and it can be applied to a broad range of technologies, processes, and inputs.
* It can calculate the economic impacts of both the total investment or to its component parts – useful for deriving estimates of “optional” extras to a project, or alternative roll-out scenarios.
* We have applied it to other geographic areas that are similar to Barrhaven such as Sault Ste. Marie, North Bay, Sudbury, Thunder Bay, Timmins, Les Coteaux, Quebec, St. John’s, NF, Victoria, B.C., Markham, Vaughan, Sarnia, and Kingston as well as other Ontario communities, and found it to be very relevant and relatively easy to apply.
* The results are easy to understand by both specialists and generalists.
* The results can be tracked over any given period of time.

**A.1 Overview of the Structure of the Doyletech Impact Model**

The critical inputs and assumptions required for doing a model run fall into two (2) key categories:

* First, all revenues from business operations have to be assigned within six (6) “bins”:
  + Local;
  + Regional (for this project this would be the greater Ottawa area economy);
  + External or “outside”; and,
  + In turn, each of these has to be divided between employment salaries/wages on the one hand, and purchases of necessary inputs on the other.

Hence, there has to be an accurate accounting of (3 x 2 =) 6 different sums of money.

Of course, the more that the operating revenues get spent locally, or at least regionally, and the less they are spent on “external” inputs or costs, the more beneficial the economic impact is to the local economy.

* Second, the revenue generated from outside “external” sources, and the investment sources for the committed capital, have to be calculated. This is called in the model the export ratio.

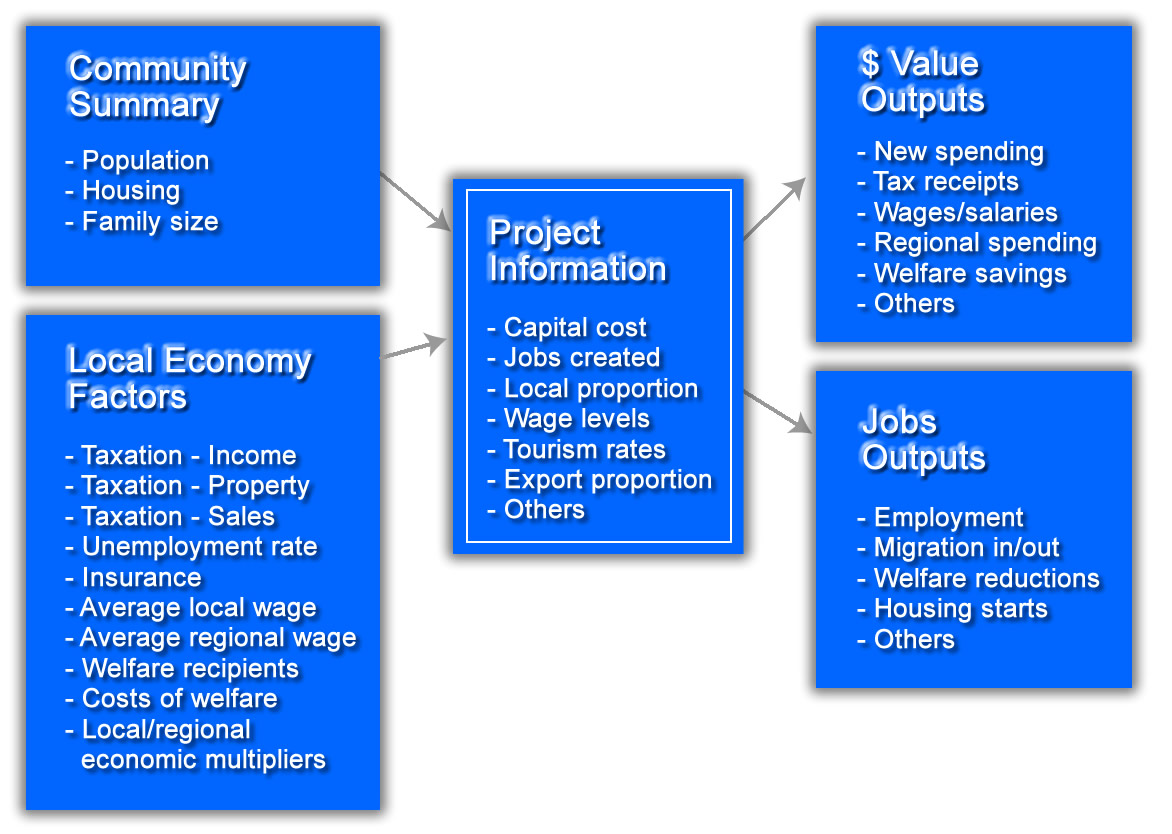
Again, of course, the greater the committed capital is funded by external sources, the better for the local economy. Outside investors are funding local jobs. But this carries some danger of back-firing on the local economy: revenue has to be diverted back to the external investors for return of their capital, plus profit/interest income. This would be a loss to the local economy. So foreign ownership is both good and bad.

On the other hand, during the operations phase, the greater the revenues that can be generated from external sales, the better the impact for the local and regional economies: to illustrate, hotel stays at (say) the prospective new hotel which were booked and paid for by a visitor to Canada would count as an export. (The EconWin model has an explicit subroutine that calculates the impact of tourism, such as business visitors to Barrhaven.)

Considerable care has to be taken to ensure that the inputs and outputs are properly and fully accounted, and that the numbers add up accurately. This data is usually gathered through direct interviews and detailed review of relevant planning documents. However, the results are very robust, because the model impact runs reflect local conditions and data, and not merely generic economic assumptions about a provincial or small-city economy.

Figure A.1 provides a simplified schematic of the model.

**Figure A.1: The Doyletech EconWin Model – Conceptual Design**



In the next section, we describe certain critical economic assumptions and economic indicators that Doyletech used in this particular research.

**A.2 Critical Issues, Assumptions, and Calculations in Running the Model**

The technical economics reader may be interested in critical details of these impact model runs.

***Incremental Impact Model***

Our EconWin model is an incremental impact model (as opposed to a general equilibrium model). The model works to assess the economic impact of a change in investment or operations in a given geographic area – in this case, Barrhaven. As an incremental impact model, it calculates the total effect of such changes locally, without reference to how economic equilibriums in the larger national economy are affected; e.g. EconWin cannot forecast how the operations of Barrhaven affect the Ontario or Canadian total unemployment rates, or what will happen to general price inflation coming out of Barrhaven’s activities (although the latter can be inferred to a certain extent). The model can tell how jobs, spending, and taxes are affected by the local activities. This is useful for isolating specific projects, investments, or limited geographic areas.

***Defining “Local”, “Regional”, and “Outside”***

The model is specifically designed to deal with communities of less than 100,000 people. (It can certainly be run for larger ones, but is meant to provide a high level of detail down to small areas or projects.) The model differentiates between “local”, “regional”, and “outside” areas. The “local” is the specific target area or project – in this case, Barrhaven. The “region” can be defined flexibly. Commonly, Doyletech finds it useful to consider the province as the region, but we took solely the eastern Ontario (greater Ottawa area) as the “region”. There are a few implications to this. In general, taking only “Ottawa” as the region slightly reduces the economic impacts of Barrhaven. This is because other places in Ontario (e.g., Toronto) are now equivalent to completely outside-locations like California or France. The model counts input purchases within the region as a benefit (albeit at an attenuated rate than the same from properly “local” suppliers): hence, since Barrhaven does make input purchases from the GTA, if we defined “region” as the province, we could claim slightly larger impacts from any outside-Ottawa-region inputs. Accordingly, our definition of “region” should be seen as a realistic, even conservative, assumption.

***Local Spending***

On average, the model works on the figure of 60% of “local” income getting spent in the local area. (This figure does vary, but seems reasonable based on Statistics Canada data for 100,000-population communities in Ontario.) The 60% takes into account, for example, housing and mortgage costs, which tend to be local. Some food, entertainment, and other costs also tend to be local. On the other hand, in Ottawa, most automobile costs represent “imports”, there not being any auto manufacturing in this part of Eastern Ontario (although there is considerable auto servicing available locally).

***Multipliers***

The model requires an assumption about the effective spending multiplier in the local area (Barrhaven). The question of “spending multipliers” is a slightly controversial one among economists. It is particularly referenced in debates over the value of government stimulus spending. In the past, Doyletech has seen studies suggesting a factor of three (3) could be used: i.e., any given direct spending amount makes, when indirect and induced effects are taken into account, three times more dollar economic activity than the direct stimulus.

However, in recent years, it seems fair to say that economists now would doubt multiplier effects are that high. Doyletech has used a figure of 1.5 for the local spending multiplier. This refers to the assumed increase in economic activity, arising from the Barrhaven business activities, as wages, salaries, and procurements get spent. We used 1.7 for the provincial multiplier, which is the assumed benefit of extra economic activity that is spent within Ontario. In our model, the local multiplier, however, cannot be higher than the provincial multiplier, i.e., no community can fill needs better than the province as a whole. It is a brake on excessive optimism. This seems reasonable or even conservative based on the current economic literature. It is certainly not contrived optimism.

***Economic Base and Export Ratio***

The model is very sensitive to an input variable called “export ratio”. The “export ratio” is a statement of how a given project or sector contributes to trade and investment externally, i.e., whether it is a net contributor to the local area’s economic base. This goes to the extent to which Barrhaven’s work is paid for by external, “outside” purchasers. A high “export ratio” is good: outsiders are paying for Barrhaven jobs.

***Employment***

The EconWin model requires the operator to define from where all the relevant workers come. There are four choices:

* Currently receiving EI;
* Currently receiving welfare;
* Newly entering the workforce;
* Arriving from outside.

The model assumes that every worker has to come from one or other of these four sources; if someone is already working in the local community, but leaves his existing job, the model is essentially assessing he in turn is replaced in his old job by someone coming from the above four categories.

Doyletech believes that, on this logic, the overwhelming majority of workers in Barrhaven would be “arriving from outside”. The development of Barrhaven over the next 10-20 years is what will bring in these workers.

Accordingly, we have assessed the workforce as being effectively 50% from outside the local community, and 40% entering the workforce. Finally, we have allowed for 10% that would otherwise be unemployed – this could be true for categories of lower-skilled workers in particular.

***EBITDA***

The reader may well be familiar with the accounting concept Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA). It is a useful benchmark for expressing gross earnings on a consistent basis by any commercial unit. Doyletech usually reckons EBITDA should be in the range of 20% of revenues. However, it can vary quite widely. In our interviews, Doyletech asks participants to indicate what an appropriate range of their EBITDA numbers were. For publically-traded companies, which were many of the large ones, this information is generally available. For privately-held ones, this information is not normally given out and hence Doyletech usually advances a number and ask the respondent if he could “live with” the Doyletech assessment. It must be said that the cooperation from private firms is extremely good. Very often the Doyletech number, projected from much previous experience, was allowed to stand, understanding that it was our projection and did not, therefore, involve disclosure of precise commercially-confidential data.

The issue of EBITDA goes to the distinction between:

* Relatively labour-intensive (such as R&D) firms and relatively capital-intensive (such as manufacturing firms); and
* Canadian-owned versus foreign-owned firms.

For the former case, if a labour-intensive R&D firm has an EBITDA of 20% that suggests better net profits than a capital-intensive manufacturer with the same benchmarks. The latter will inevitably have higher D&A provisions. So the former will be able to preserve more profits from any given revenue stream.

On the other hand, for the Canadian versus foreign-owned firms, the EBITDA goes to “leakage”, because the net profits component of EBITDA will tend to flow back to its parent owners, as they naturally reap the benefits of their investment.

All this has to be taken into account in assigning total sector revenue into the appropriate “bins” in our six-cell impact matrix. Firms that were foreign-owned had their net profit component, derived from deducting Interest, Depreciation and Amortization (I, D&A) components of EBITDA from their EBITDA numbers[[10]](#footnote-10), assigned to “outside”, i.e., it was a leakage and Barrhaven lost that revenue stream for impact purposes. (Subsequently, we also did a similar assessment of “D&A” based on from where we believed the capital equipment came.) Firms that were Canadian-owned were assumed to have the net profit stay in Barrhaven and it did become part of the positive impact effect.

# Appendix B: Representative Consumer Focus Group Comments

In this appendix, we provide comments from the Consumers Focus Group. They have been edited somewhat to provide clarity and avoid duplication. We have also grouped them by topic for easier reference.

**General Observations on Barrhaven / Development Issues**

The following are general observations on Barrhaven, and its retail structure:

* “Big transit issues in Ottawa, and in Barrhaven”.
* “Express bus is not an express bus; it stops just as much as a regular bus”.
* “If Barrhaven is not on the LRT, I believe there will be a strong disincentive for employment and other forms of development”.
* “Barrhaven will miss out on the opportunities of the future if it is not on the LRT”.
* “The most intense development is around transit nodes reflecting the ease of getting around”.
* “Living, working, playing in Barrhaven – not a good place to work in terms of restrictions on what types of jobs are available. Great place to live and to play”.
* “Shopping is an important part of the culture in Barrhaven”.
* “The weakness in shopping in Barrhaven is in specialty retail”.
* “Wouldn't it be nice to have a little cluster of independent retailers somewhere in the community that people would come to Barrhaven to shop at? Something like Stouffville or St. Jacobs”.
* “We need to bring a critical mass of people to the city centre – especially during the day – for smaller retail to survive”.
* “Seniors have a hard time because they don’t have relatives here and we don’t know where to go to shop in Barrhaven”. “We need better transportation too because not all retirement facilities provide transportation, or that we can afford to use”.
* “Many in Barrhaven are mortgage poor – especially when you first move here”.
* “Denny’s restaurant in Barrhaven: few local residents actually went there”.
* “While there are high incomes in Barrhaven, there are high mortgages too”.
* “You even have to drive between the big box stores”.
* “I understand that ownership concentration of retail space in Barrhaven and resulting high rents are a problem”.
* “It's unfortunate that Barrhaven didn't have a focal point like Manotick, Merrickville, Arnprior or other small communities, but that doesn't mean one couldn't be created”.
* “Problem is everyone wants to develop their own land – big box development is the least risky type of development so that is what is built here – it is relatively easy for them to do, so they do it”.

**Shopping in Barrhaven and What are People Leaving Barrhaven for?**

The following are comments received with respect to shopping in Barrhaven and what is missing:

* “People go to Bayshore, Carlingwood, Tangers Oulet in Kanata”.
* “Missing from Barrhaven's offering are more clothing stores (a wider range of offerings based on selection, quality and demographic), outdoor goods (e.g. such as MEC) and specialty foods (e.g. no international food section in Walmart)”.
* “It's not only choice, it is about convenience - stores are far apart”.
* “General impression that many of the stores are "C" level: smaller than others (e.g. Walmart)”.
* “There are some unique consignment stores for clothing”.
* “Groceries even, clothes, most of the shopping I do is in Ottawa, SAIL, MEC, LeBaron, Bushtukah are not here so you have to leave to get those options”.
* “We have C Stores here - limited selection compared to A stores which are larger. Even the LCBO in Barrhaven is a C-store”.
* “Grocery stores are a strength in Barrhaven, but no good bakery. No superstore in Barrhaven”.
* “Lack of fashion range; we need a GAP, or a Justice, etc.”.
* "Loblaw's in Centrepointe has a huge kosher section which we don't have here".

**City Centre Lands**

The following are comments received with respect to Barrhaven’s city centre development:

* “Highly supported; could be like Manotick, Kemptville, etc.”.
* “Include street lights, courtyards, benches: make it a walkable, livable space”.
* “Acknowledge that a town core would provide the basis for more specialty stores of all types and smaller stores in general”.
* “We need walkable malls”.
* “Our downtown core has no character”.
* “I understand the concept of the Barrhaven Town Centre but don't see that it provides a downtown feeling. It is a collection of box stores”.
* “Most are identical to the stores you would find anywhere else as they are franchises or company owned stores of retail chains. They do provide everything a busy family needs, but provide little reason to poke around or linger while shopping”.
* “There are few independent retailers of the type that make areas like the Glebe and Westboro appealing”.
* “Do an arts thing and make the downtown core welcoming”.
* “Barrhaven needs an arts core. One of the essences of a vibrant community is a healthy arts scene”.
* “Arts should be a focal point of any downtown core that is developed in Barrhaven. I'm not much of an arts person, but I do recognize the value of arts to a community. Centrepointe is not in Barrhaven”.
* “We need specialty retail to make the city centre viable and different so people will go there. Unique retail like a consignment store would help too – Plato’s Closet is here”.
* “Problems are deeper than retail – the way it is configured is a problem, the parking”.
* “Parking is a nightmare near the Kelsey’s / Walmart / Staples part of the city centre; this needs to be addressed”.
* “Parking lot design is terrible – and not enough room for parking”.
* “We should have angled parking here”.
* “Why does the city centre not have more unique features like courtyard street lights?”
* “It seems the BIA is doing this study to preserve the city centre development as our downtown core. There are several planning applications going on right now; they could be a huge risk to our core (town centre lands)”.
* “Should we be concerned with various safety and security issues.”
* “We need to make a community centre that is accessible to those with vision, hearing, and mobility challenges”.
* “Eventually the town centre will be much higher density – it has to have character, ambiance, trees, etc.”.
* Integrate green features into planning: “…increased infrastructure for bicycle use such as safe and secure bike racks at public gathering places; green and 'white' buildings; bee-friendly areas on building rooftops; increased use of solar or alternate source power and how to feed (solar) power back into the grid, and incorporating green features into parking lots”.

**What has Changed about Shopping in Barrhaven in the last 3-5 years?**

The following are comments received with respect to how shopping has changed in Barrhaven in the last 3-5 years:

* “Definitely more people in Barrhaven”.
* “Small stores come and go. The big box stores continue to multiply”.
* “Things are worse, more traffic, more parking problems, small stores are closing, big box are staying so we have mostly big box now – no character”.
* “Commuting problem is getting worse”.
* “Business is getting worse here – some are going out of business here. Tweet & Hickory, The Smoke House, Bimbo café all closed; a lot of businesses have gone under, including several in the food industry and even some large chain stores”.
* “We are not far from Manotick now”.
* “We go to a different Walmart and a different Home Depot because they don’t have the selection they should have”.
* “Strandherd Bridge is a good thing and has solidly added Riverside South to the Barrhaven catchment area (rather than visa-versa). Much as people complain that there is “nothing in Barrhaven” there really is nothing in Riverside South”.
* “Everyone loves the new bridge”.
* “Everyone from Riverside South now comes to Barrhaven to shop with the bridge, they don’t have anything”.
* “There is a business operating right under the new bridge – rent a kayak (2 ladies run the business)”.

**General Layout of Retail and Related Issues**

The following are comments received with respect to general retail layout in Barrhaven:

* “Stores are generally too spread out. You have to drive to everything”.
* “There are poor interconnections between areas in Barrhaven with respect to road access (too small, congested) and bus/transit access (non-existent)”.
* “Unlike Orleans (for example) the big box stores are not on the fringe, but right in the middle of where people live. This gives a bad impression”.
* “There is poor signage of where things are located and the general impression of the main city centre (Strandherd and Greenbank) is that it is not “welcoming”.
* “Car access to the malls at City Centre is chaotic, creating delays in entering/exiting, frustration in transiting through the mall and parking there”.
* “Every time I come here I get lost”.
* “Restaurants and many of the stores are chain operations, therefore local managers can’t do stuff with us because their hands are tied by head office”.

**Business Attraction**

The following are comments received with respect to business attraction:

* “Rather than compete with Kanata, we would like to find other growth industries that leverage our strengths here and those of the technology environment throughout the Ottawa area”.
* “Barrhaven needs to attract an anchor for high quality employment generation.”
* “We need something to serve as an anchor for economic development instead of just being a bedroom community for Ottawa with a retail sector”.
* “We should target medical sciences”.
* “Folks downtown are moaning about the Civic Hospital location. The city should make a strong pitch for it to be located in Barrhaven where it could serve as the anchor to attract medical sciences businesses.”
* “Barrhaven is closing in on 100,000 population and does not have a hospital (sorry, the Queensway-Carleton is not in Barrhaven)”.
* “It could be a university campus or any of a number of other things”.
* “The human resources available here are excellent so that is good for employment-based business attraction as talent is the number one issue for business attraction”.
* “Employment-based businesses would also help make sustainable the town centre development”.
* Branding - “Welcome to Barrhaven”.
* “The strong sense of community in Barrhaven overcomes the negatives”.
* “With nearby Algonquin College having a reputation for turning out high quality computer graphics graduates and with Kanata housing the high tech sector, the filming/ animation/gaming worlds should fit right in for us, offering employment opportunities and providing an output of products”.

Following the Consumer Focus Group, we received a written submission that contained elements we felt would contribute positively to the report. We have included edited excerpts below:

One important area is quality of life. Just as shopping centres with large department/box stores and a variety of specialty stores housed in a winter friendly enclosure with ample parking speak to ease of life, what are we looking at that speaks to quality of life?

There is no single answer to this question, but some items for consideration are:

1. Environmental concerns. Reduce traffic congestion and/or reduce environmental pollution and energy consumption (e.g. accessible public transportation; increased infrastructure for bicycle use, green and ‘white’ buildings; increased use of solar or alternate source power, and incorporating green features into considerate parking lots),
2. Developing experiences within the community (e.g. provide ‘adventure’; provide a place for the general populace to meet such as integrated community centers;),
3. Growth (e.g. health, fitness and wellness centres; promote an intellectual life and learning across people’s ages, skills and abilities; facilities/ways to support development of skills and creativity; development on a spiritual level such as places of worship and places to commune & interact with nature),
4. Aging (e.g. accessibility to age-friendly facilities; promoting interaction amongst the young and the seniors; supportive services such as graduated living arrangements; public and affordable commercial transportation),
5. Identify and define the community (e.g. landmarks of significance such as the Vimy Memorial Bridge); cultural events; architecture that is not all cookie-cutter; green space; community gardens; cultural ‘centre’; developing and knowing what the community values are; and,
6. Contribution from the community to the community (e.g. ways of giving back; acknowledging those who come from the community who have done the community proud).

There are cities that have pulled off some amazing tangible community developments. Take Winnipeg, Manitoba as an example. The Forks was an empty patch of inaccessible land that was turned into a tourist area and a local specialty area with both indoor and outdoor activities ranging from Farmer’s Market, Craft Centres supporting various cottage industries, clothing and jewelry outlets, local & chain full-service restaurants, and ‘quick’ food places.

The area around Calabogie has been revitalized to be more than a destination spot for downhill skiing. They now have the car track and timed races in the warmer months, have played up local specialty eating/treats in the area, have a budding artists’ alley spilling over into nearby small towns, and are continuing to work on developing and expanding their music festival.

In Ottawa, the Train Yards has become an attractor of major retailers and consequently a gathering place for those across large portions of the city, as has Tangers Outlets in Kanata. Place d’Olreans has easy public transit access from Ottawa’s west end communities and St. Laurent Shopping Centre is a crossroads from multiple areas. Rideau-Carleton Raceway attracts people from within the city, outlying areas, and from the tourist industry.

The face of the community is changing. Two years ago, who would have thought we would see car dealerships in the area? We cannot be all things to all people. I am very glad to see that the BIA is bringing people in from different areas of life in Barrhaven to make life in the community increasingly beneficial to our residents.

1. We are grateful to Mr. Ian Cross, RPP, MCIP Program Manager, Research and Forecasting Policy Development and Urban Design, City of Ottawa, who provided data and insight to the project team. [↑](#footnote-ref-1)
2. 2015 Annual Development Report, City of Ottawa Planning and Growth Management Research and Forecasting Unit, April 2016. [↑](#footnote-ref-2)
3. Ontario Population Projections Update, 2015-2041, Ontario Ministry of Finance, Spring 2016. [↑](#footnote-ref-3)
4. Ottawa Employment Survey 2012, City of Ottawa, September 2013. [↑](#footnote-ref-4)
5. Consumer Focus Group, Barrhaven, Tuesday, August 23, 2016. [↑](#footnote-ref-5)
6. http://venturebeat.com/2014/12/07/surprise-agriculture-is-doing-more-with-iot-innovation-than-most-other-industries/. [↑](#footnote-ref-6)
7. Doyletech, A Business Plan for a Food Hub in Prescott-Russell, August 2016. [↑](#footnote-ref-7)
8. See https://documents.ottawa.ca/sites/documents.ottawa.ca/files/documents/employment\_survey.pdf. [↑](#footnote-ref-8)
9. Consumer Focus Group in Barrhaven, August 23, 2016. [↑](#footnote-ref-9)
10. The Doyletech EconWin model automatically calculates the “T” component endogenously although a limitation on the model is that it does not have an explicit corporate tax calculation. This simplification is based on the incremental nature of the model. In effect, it is assuming that corporate income tax payments flow out of the local area to central governments. However, the model does calculate HST payments by the corporate sector, both directly and indirectly. The “I” was usually assumed to be derived from 50%/50% debt/equity in the capitalization. [↑](#footnote-ref-10)