

Pine Creek Villages Community Profile

2.0 Employment and Retail Land Uses

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2.0 Employment and Retail Land Uses

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Executive Summary

The City of Calgary has experienced extraordinary growth in recent decades. Unfortunately, this growth has resulted in residents living in predominantly suburban environments while working in distant sectors, primarily the downtown core, creating traffic congestion and degrading infrastructure. The City of Calgary has recognized a need to fix the live/work imbalance with such documents as the *Jobs/Housing Balance Strategy* and the *GoPlan* through their determination to form employment centers that foster employment within viable communities. Equally important is the creation of suburban retail establishments that service the needs of communities.

It is through such measures that healthy, vibrant and sustainable communities can be promoted. The Pine Creek Villages offers the opportunity to develop both a strong retail component and an Employment Centre that will ensure the vitality of the community as it develops over the next twenty years, with an estimated population of 74,000 people. It is advisable that development should proceed at Pine Creek Villages so the community remains viable in the future, promoting a pedestrian and transit friendly environment.

From our research the following projections would be justified:

- 20 acres for an Employment Centre, comprising 250,000 square feet of office space, which would create 1000 jobs based on 40 jobs per 10,000 square feet
- 5% of labour force in Pine Creek Villages will be employed through home based occupations, (assuming the labour force will account for 55% of the total population, then 2035 people will be employed at home. (City of Calgary, 2000)
- 75 acres of retail space strategically allocated throughout the communities, which would create 2069 jobs based on 23 jobs per 10,000 square feet

- 9.8 acres would be allocated to a strategically placed semi-regional retail nodes, 6.8 acres would be allocated to five community retail nodes and the remaining 31.2 acres would be allocated to neighborhood retail

The Employment Centre is presently intended to be located in a position that will give it restricted access because of the proposed ½ interchange on Macleod Trail at 194 Ave. S. Locating it closer to 212 Ave. S. on Macleod Trail will give it better access as well as access to the proposed C-Train station for the community. Trends have shown that suburban office space within the south sector is viable; however with other employment centers in close proximity and with limited vehicular access, it will be necessary for the City of Calgary to take an active role in promoting the Employment Center. To ensure that an adequate supply of tenants are found, new companies to Calgary as well as companies that are presently located in suburban settings should be targeted. They could potentially be lured by the lower cost of rent and amenity value, which include excellent access to public transportation and the presence of green space.

2.1 Introduction

In the past 20 years the city of Calgary has been growing at astounding rates. This growth has caused increased traffic congestion through the city, primarily in the downtown core and commuter roads that service the downtown. The development of Pine Creek Villages is an opportunity for the City of Calgary to promote principles of sustainability, which will encourage fiscal, social, and environmental sustainability within the community (City of Calgary, 1995). A growing population and expanding workforce will also provide the opportunity for employment and retail centers in the South of Calgary, which will alternatively provide less reliance on both the downtown core and other regions of the city for employment purposes. Inevitably, Pine Creek Villages Employment Center and commercial retail nodes will provide the opportunity for individuals to work closer to their residents, decrease traffic congestion, and locate viable employment within the south-suburban area.

2.2 Objectives

The objective of the Employment Center and commercial nodes are as follows:

- Provide a commuter transit friendly oriented system that will encourage the increased use of public transit
- Encourage principles of sustainability in every aspect of development
- Provide commercial retail nodes that are strategically places in communities that will provide local amenities and residents as well as opportunities for local employment
- Present the Employment Center as a vibrant, and economically profitable area that will encourage niche industry development
- Encourage a pedestrian friendly focus, while recognizing the necessity of integrating vehicular traffic
- Creation of an Employment Center that will encourage employment in the South sector and decrease reliance on downtown center employment, created a greater balance of work/live environments
- Encourage a mixed-use design in community commercial retail nodes

2.3 General Methodology and Assumptions

Information for this project was collected from a number of written and oral sources. *The Calgary Plan, Employment Centers Strategy (1999), City of Calgary: South Macleod Trail Employment Center Study, Calgary GoPlan, Southwest Community 'A' and Employment Center Area Structure Plan (proposed)* were all key documents published by the City of Calgary that influenced the final analysis. *Trends and Patterns of Office Distribution, Employment Center Strategy Project: Calgary Suburban Office Supply & Demand, Southeast Center: Making it Happen, Calgary and region socio-economic outlook 2003-2008 and 2002-2007, and The Sustainable Suburbs Study* were also valuable documents that guided analysis. Websites such as the *Calgary Advantage* and *Calgary Inc.* were used in identifying trends and patterns that helped identify a viable and feasible employment strategy. Alongside written documents were selected lectures and

interviews that directed research, which are all including in the references for this document.

2.3.1 Employment Center Methodology

Employment Center methodology is used to establish the following projections:

- Total amount of land required to make an Employment Center feasible, including parking, green space and amenities that accompany the area.
- Total potential employment that will be generated from Pine Creek Villages Employment Center
- Total amount of home-based employment in Pine Creek Villages

There is no set methodology for determining the size of an Employment Center.

Different studies were carefully reviewed, along with trends and projections for suburban office growth. From this analysis came the methodology of determining office space by conservatively re-evaluating the total land which studies such as the *City of Calgary: South Macleod Trail Employment Center Study* proposed. Determining the total amount of square feet required, enabled us to determine the amount of employment that would be generated from the Employment Center (discussed more in section 2.54 and 2.55).

Employment Center Methodology makes these general assumptions in its calculations:

- Floor Area Ratio (FAR) of 0.4 is used to determine the amount of surface parking and open space that must be allocated to the Employment Center.
(PriceWaterHouseCoopers, 2001)
- Two acres of retail space have been allocated to the Employment Center, which will create greater amenity value for prospective tenants and their employees.
- Pine Creek Villages suburban office space will not have tenants which include; transportation outlets, light industry, or businesses which could harm the environment

Two types of methodology were looked at when determining the number of jobs expected as a result of the Employment Center.

- Employment targets of 300 square feet per Employment Center employee that would be expected to be employed in the Employment Centre. (Glenn Lyons, 2004)
- The assertion of 40 jobs for every 10,000 square feet that could be expected in suburban office environments. (Sasha Tsenkova, 2004)

South-suburban office space remains relatively new to the Calgary marketplace.

Evidence shows the reluctance of the major tenants of Calgary's predominantly oil and gas based industry to locate in more accessible outer regions of the city and away from the downtown. For this reason it is plausible that the forecasting of projected office work may be based on a more cautious projection. Edge city formations in Calgary will not become a reality until traffic congestion is too unbearable or people determine that the commute to the downtown core is too far. Until this happens, it is realistic to assume that Pine Creek Villages Employment Center should use methodology with conservative assumptions.

2.3.1.1 Other Employment Methodology

Outside of employment generated from Employment Center and retail employment the following employment types should be considered:

- 5% of labour force in Pine Creek Villages will be employed through home based occupations, (assuming the labour force will account for 55% of the total population, then 2035 people will be employed at home. (City of Calgary, 2000)
- Employment that will be generated from emergency services located in the area, as well as those working in schools and for other community services.

2.3.2 Retail Center Methodology

The retail methodology is used to establish the following projections:

- Establish the Retail Floor Area (RFA) that will be needed in Pine Creek Villages to support the communities.

- Determine the distribution of RFA in the proposed site area amid Regional, Community and Neighborhood commercial nodes.
- Determine the total land needed for retail use, which includes the amount of open space needed.
- Establish the total number of employment that will be generated from retail employment.

2.3.2.1 Retail Floor Area Calculations

The Retail Floor Area (RFA) can be determined by using the following formula:

- $$\text{RFA} = \text{Net Developable Land} * \text{Density} * \text{Household Size} * \text{Square Feet Per Person Located In The Area}$$

2.3.2.2 Regional Commercial Node

Regional Commercial Nodes, the largest in commercial hierarchy, are meant to service a population of over 100,000 people and is usually anchored by a big box store. Regional Commercial nodes are generally 35-45 acres and service a community within a four-mile radius and other individuals that commute to the area (Doug MacDonald, 2004). It is expected that regional retail centers will be destination centers where citizens from surrounding communities will come to shop.

2.3.2.3 Community Commercial Node

Community Commercial Nodes are meant to service a population of between 10-15,000 people and are usually around 10-35 acres. The location is usually within a two-mile radius of the entire community (Doug MacDonald, 2004).

2.3.2.4 Neighborhood Commercial Node

Neighborhood retail nodes are meant to service individual communities. It is commonly seen that 2-3 neighborhood retail nodes are located within a community. They are usually intended for residents within a half-mile radius and occupy up to 10 acres of land (Doug MacDonald, 2004)

2.4 Trends

2.4.1 Economic Trends

2.4.1.1 Canada

There will be an increasing trend towards office employment in Canada in the period leading up to the year 2020, reaching up to 40% of total employment. This trend is expected to be mimicked in Calgary (City of Calgary & Carma Developers, 2000). NAFTA has played a major role in developing an office industry in Canada, as well as North America, while driving industry outside of the country.

In 2003 the Canadian dollar increased substantially, weakening the export market and strengthening the import market. Employment growth in Canada is expected to increase, and remain stronger than the United States. The Canadian dollar is also expected to increase with strong commodity prices, making the dollar edge up to the US dollar. (City of Calgary, 2001)

2.4.1.2 United States

The U.S. economy has been hit hard since the terrorist attacks of 9/11. In 2001 the U.S. economy only grew 0.3%, but is expected to be above 3% by 2007 (City of Calgary 2001, 35). The war in Iraq, a large fiscal deficit, and an uncertain homeland security

environment have weakened the economy and brought in an era of conservative spending and downsizing in some industries, and a downturn in stockmarkets.

2.4.1.3 Alberta

Alberta is an economy driven by the oil and gas industry. Alberta Economic Development, in July 2002, estimated that of the \$85.3 billion spent on larger projects, \$55.2 billion are in the oil, gas and oil sands projects. (City of Calgary 2001, 16) Trends have shown that oil and gas revenues will provide vibrancy and prosperity in Alberta, with a budget surplus of \$330 million in the 2003 fiscal year. (CFCN News February 25, 2004) Alberta is also home to oil sands production, which represents 38% of Alberta's and 30% of Canada's total crude oil production (Calgary Advantages). Oil Sands production is expected to provide increased revenue in the province, which will be extremely beneficial for the province. However, the Mad Cow Crisis which began in 2003 had, and will continue to have, a negative impact on the ranching and rural communities in Alberta.

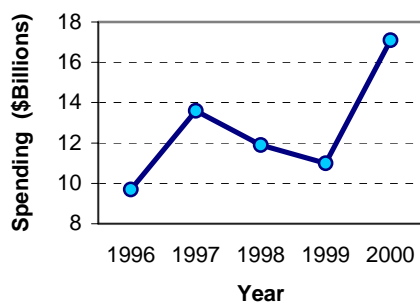


Figure 1.1 Alberta oil and gas capital spending
Source: Calgary Advantages

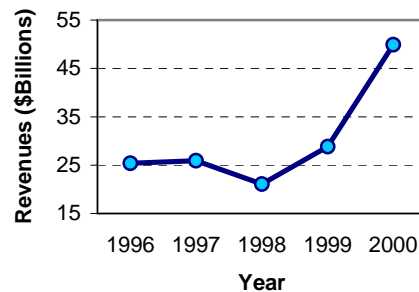


Figure 2.2 Alberta oil and gas industry revenues
Source: Calgary Advantages

2.4.1.4 Calgary

Calgary has the fastest growing economy in Canada, and similarly the fastest growing population. Calgary's economy grew 3% in 2002, 4.3% in 2003 and is expected to grow 3% in 2007. (City of Calgary 2001, 6) Calgary has an aging workforce, where the number

of people leaving the workforce exceeds the amount entering it. The driving industry in Calgary is the oil and gas industry, with most of the head offices for the industry located in the downtown core of Calgary. However, Calgary's economy has diversified bringing in other industries such as light manufacturing, information technology, and bio-technology.

Another reason people are moving to Calgary is its location. Calgary is becoming a destination city because of its close proximity to the mountains and other valuable amenities, which are coaxing young professionals to Calgary.

The City of Calgary has made it a priority to ensure that it is known globally as a place that is open for business, with lower tax rates, and relatively affordable housing prices. Many businesses have moved to Calgary and will continue to move because of its business friendly environment.

2.4.2 Population and Employment Trends

2.4.2.1 Calgary Population Growth

	2001	2002	2003	2013	2018	2023	2028	2033
Population	877,000	896,000	991,000	1,047,000	1,096,000	1,159,000	1,200,000	1,231,000
Net Migration	10,000	14,000	7,000	5,000	9,000	9,000	3,000	4,000
Natural Increase	7,000	7,000	8,000	7,000	5,000	4,000	3,000	2,000
Total Labour Force	525,000	539,000	600,000	625,000	645,000	682,000	706,000	721,000
Total Working Age Population	711,000	729,000	812,000	852,000	823,000	957,000	1,002,000	1,034,000
Total Labour Force Participation Rate	73.8%	73.9%	73.9%	73.4%	72.2%	71.3%	70.5%	69.7%
Total Women of Childbearing Age	283,000	288,000	303,000	305,000	315,000	334,000	330,000	320,000
Total Employment	498,000	506,000	576,000	607,000	637,000	662,000	6,888,000	705,000
Employment Rate	70%	69%	71%	71%	71%	70%	69%	68%
Total Population Growth Rate	1.8%	2.2%	1.4%	1.1%	0.9%	1.1%	0.7%	0.5%
Total Employment Growth Rate		1.6%	1.7%	1.1%	1.0%	1.0%	0.6%	0.5%

Table 2.1. Current and forecasted population and employment trends for Calgary.

Source: City of Calgary

Calgary has experienced continual population growth in recent years owing to a strong economy, which has made it an attractive market to migrate to. Although Calgary experienced a small decrease in population growth from 2002 to 2003, from a 3.2 percent

to 1.9 percent growth rate (see Table 2.1), it is still seen as a viable market. Data shows an increase in population between 2002 and 2003 of 17, 328. The population of Calgary is forecast to grow at 1.9 percent per year over the period 2003-2008 with the city reaching a population of 1 million in the year 2008. (City of Calgary, 2003). The city also forecasts continued population increases leading up to the year 2040. With the traditional suburban model being preferred it becomes imperative that the city identifies employment nodes that are located outside of the traditional locations, primarily the city centre.

It should also be noted that Calgary's population will remain relatively young with the 25-35 age group increasing the most between 2003 and 2008 (see Table 2.2). This population growth will allow Calgary's workforce to remain strong, especially as baby boomers begin to leave the workforce. Overall the majority of the population by 2008 will be under the age of 44, leaving Calgary as an attractive market to locate to for businesses, as there will be an abundance of potential labour.

Age Group	2003	Distribution %	2008	Distribution %	% Change
					Annual
Age 0 to 14	171,932	18.6	179,300	17.7	1
Age 15 to 24	135,278	14.7	143,100	14.1	1.2
Age 25 to 34	152,891	16.6	175,900	17.3	3
Age 35 to 44	160,524	17.4	152,800	15	[1.0]
Age 45 to 54	138,268	15	159,500	15.7	3.1
Age 55 to 64	77,147	8.4	101,100	10.0	6.2
Age 65+	86,275	9.4	104,100	10.2	4.1
Total Population	922,315	100	1,015,600	100	2

Table 2.2 Projected population change in the City of Calgary between 2003 and 2008.
Source: City of Calgary

2.4.2.2 South Sector Population Growth

The south sector of Calgary has historically seen 15% of housing starts in the city. Assuming the city's average growth of 16,000 persons is to continue over the next 25

years, then this could mean growth of approximately 60,000 in the South West sector of Calgary over the next 25 years (PriceWaterHouseCoopers 2001, p. 58).

Conversely, Figure 2.3 shows this sector has accounted for a steady portion of the city's growth over the previous decade, equaling between 22.0 and 23.9 percent of the city's population from the censuses that were conducted in 1991, 1996 and 2001 (Government of Canada census). It can be assumed that this is a trend that will continue, possibly even increase slightly owing to the large portion of growth that the city presently has planned for this region. Assuming this growth will continue at roughly 23 percent then this would mean a population of 276,000 people for the south sector by the year 2028. This is derived by basing the 23 percent increase on the projected population of 1.2 million for 2028. This would represent an increase of 82,485 people from the 2001 population of 193,515, or a 42.6 percent increase.

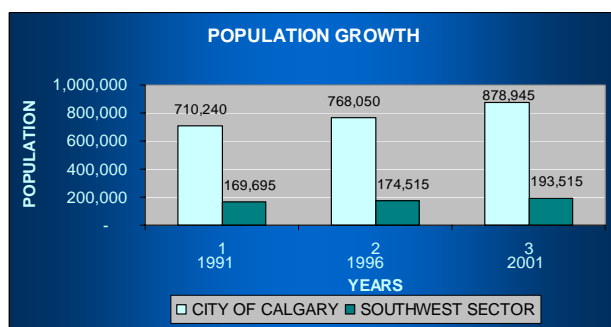


Figure 2.3 Population growth in Southwest sector of Calgary 1991 to 2001. (Source: 2004 EVDP 636 MapInfo assignment)

In either scenario the south sector is forecast to grow by roughly 60-80,000 people over the next twenty-five years. If this growth is to continue in the traditional suburban model seen in Calgary in recent decades, continued stress will be placed on the city's transportation infrastructure, with a large portion of this growth commuting to the downtown core daily. It is imperative that this growth be fostered on a new model where work is readily available within the community where residents reside.

2.4.2.3 Calgary Employment Growth

Employment growth in Calgary has been strong in recent years. From 1995 to 2001 total employment in the Calgary region increased from 454,000 to 604,700. This represents an

increase of 5.4% annually, compared to Canada (2.2% increase) or Alberta as a whole (3.2% increase) (City of Calgary, 2001). Thus job creation within Calgary has remained among the strongest in Canada and has been a strong impetus for the increased immigration that has been experienced. This has been led by strong growth in industries such as Alberta's burgeoning oil and gas industry, construction industry, and Calgary's position as location for corporate head offices. Over the next five years the economic growth rate is expected to slow somewhat however, it is still expected to grow at roughly 2% per year that would see job growth reaching 676,000 by 2007 (City of Calgary, 2001).

As expected with such high levels of employment growth, Calgary has maintained a relatively low unemployment rate over the last few years although it did increase slightly in 2002. Overall, the unemployment trend is predicted to remain relatively low into the foreseeable future (City of Calgary, 2001).

2.4.3 Industry Trends

2.4.3.1 Gross Domestic Product in Calgary

Gross Domestic Product is used as an indicator that represents economic health. Looking at GDP can identify clusters of growth in the economy as booming, while addressing what industries are stagnant or declining. Understanding GDP will help identify which clusters are viable and could possibly be prosperous for long-term growth in the South Sector.



Figure 2.4 Calgary GDP by industry.
Source: Calgary Advantages, 2004

2.4.3.2 Industry Cluster Analysis

The city of Calgary has adopted the development strategy of economic clusters. Five major clusters that are present in Calgary region are the oil and gas cluster, information technology cluster, wireless-telecommunications cluster, transportation, warehousing and logistics cluster, the geomatics cluster, and the agriculture and health biotechnology cluster. It is important to identify why they cluster together, where they are clustering and which clusters could provide potential development of employment in the area.

2.4.3.3 Oil and Gas

Calgary is a city that is primarily centered around the oil and gas industry, a fundamental economic driver in the city. With most of the offices located in the downtown core, it is a guiding principle in city policy to maintain Calgary's downtown as the primary employment center (City of Calgary, 2004). While recognizing this, it is important to encourage some growth related to oil and gas activity to move outside of the downtown core. However, cluster analysis has identified two key trends affecting the oil and gas industry that could have some impact on the Employment Center. First, the global outsourcing of technical work could be done at areas outside of the downtown, and second, industry consolidation could reduce the number of office headquarters in the downtown core. (Metropole, 2004)

2.4.3.4 Information Technology

There has been a trend that high-tech businesses are clustering in specific locations (City of Calgary, 2004). The Information Technology cluster in Calgary is a growing industry. These businesses represent an excellent opportunity as tenants for office space around the city, including suburban offices such as the Employment Center proposed in Pine Creek Villages.

2.4.3.5 Wireless-telecommunications

The wireless-telecommunications cluster is considered another established and expanding cluster. Calgary is Canada's major center for wireless communications development and manufacturing (Metropole, 2004). A wireless-telecommunications cluster would be an excellent tenant for the Pine Creek Villages Employment Center. It is an industry that has requirements for a large amount of land, which is possible within optimistic projections of the Employment Center.

2.4.3.6 Transportation, Warehousing, and Logistics

In the last few decades Calgary has materialized as a major distribution center for Western Canada. With a growing economy and current population trends the need for a cluster of transportation, warehousing, and logistics will also grow accordingly. However, Pine Creek Villages does not have proper access and the vast amounts of land needed for this growing cluster.

2.4.3.7 Geomatics

The geomatics cluster is newly emerging in Calgary and will continue to grow as long as the oil and gas industry remains strong in the province. Currently, there is no employment cluster for this industry. There is the possibility of incorporating a small geomatics cluster into Pine Creek Village (Metropole, 2004).

2.4.3.8 Agriculture and Health Biotechnology

The Agriculture and Health Biotechnology cluster is relatively new in Calgary. Calgary is an excellent location for this cluster and there is opportunity for growth. At the present time only a few companies are working in the Calgary region (Metropole, 2004). These industries could be potential tenants for Pine Creek Villages Employment Center; however, more research is needed to assess the environmental impact of the industries with six potential communities being in close proximity to the location.

2.4.4 Suburban Office Trends

There has been a growing trend within The City of Calgary to encourage the growth of suburban office space. Many indicators have shown that the demand for suburban office will be higher in the next 15 years.

Accordingly, Calgary will require an additional 18.8 million square feet of office space within the next 20 years, with the South market accounting for 1.8 million square feet of the total (PriceWaterHouseCoopers 2001, 2). The suburban market could reach as high as 50% of the share of office development within this period (City of Calgary & Carma Developers 2000, 6). This has been seen in other Canadian cities where suburbs play an increasingly important role as places of employment rather than solely places of residence.

Consistent with other major North American cities, there will be continued expansion of office jobs towards 40% of total employment. This trend should increase over the next twenty years within Calgary (City of Calgary & Carma Developers 2000).

There is reluctance from major corporations within the oil industry to relocate industry outside of their present downtown locations. Despite such reluctance, it is forecast that by 2020 the suburban market share will comprise a much larger percentage than is presently seen (50 percent). These forecasts will be influenced by the following current trends:

- Present economic growth is similar to that seen in the previous suburban office boom of the late 1970s early 1980s.
- Increasing downtown traffic congestion will result in growing preference for suburban office space. Commuters may choose to locate closer to their residence to avoid traffic congestion.
- The amount of suburban office supply will increase as Calgary continues to expand.

- Current economic growth has focused on a more diversified portfolio. Such industry will be more likely to accept suburban locations (Metropole, 2003)

Calgary's land use plan will encourage the growth, as policy dictates, of Inventory I-2 land which relatively inexpensive. As a result suburban expansion will emerge as more desirable (City of Calgary & Carma Developers, 2000)

Recent increases of high tech firms may allow for the relocation of large amounts of employment into suburban office environments should the correct policies be pursued. According to a KPMG study the most desirable outcomes for recent technology graduates focused on salary with the quality of the community ranking second in formulating students decisions to locate within a specified community (Metropole, 2003).

Surprisingly, the factors which have influenced location of talented workers focus on the creation of an environment which will suit the creative needs of workers. Key assets included:

- environmental quality
- natural amenities
- recreational amenities
- lifestyle amenities
- progressive, youth-oriented regions
- cultural diversity (Metropole 2003, 7)

Respondents identified aspects of quality environments as good transit system and a protected environment. To encourage relocation of an educated workforce into a suburban environment it will be useful to identify the resources which will create an attractive environment to live in.

2.4.5 Suburban Retail Trends

Consumer spending in Calgary is increasing (see Figure 2.5) because of employment and population growth, rising incomes and relatively low interest rates, which directly

correlates into consistent strong retail growth, primarily in new suburban communities (City of Calgary, 2001). “New supply of residential retail space is expected to be concentrated in the Towne Center format, especially in the emerging communities at the periphery, while the larger regional shopping centers continue to renovate in an attempt to regain some market share.” (City of Calgary, 2001)

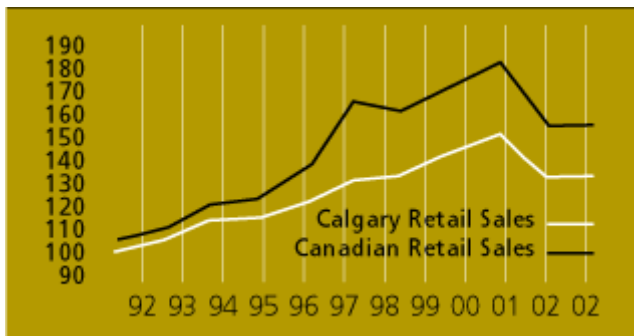


Figure 2.5 Calgary and Canadian retail sales 1992-2002.

Source: Calgary Inc.

Current retail trends are towards the building of major non-enclosed shopping centers that contain several popular big-box tenants and a variety of other retail stores, services, and restaurants in the same area (Price Water House Coopers 2001, 59). The South Sector of the city has this type of market already in place (ie. the big-box retail near the end of Macleod Trail and in the Shawnessy commercial area) (Harris & Hudema, 1999).

However, the demand for more neighborhood-oriented commercial development that will satisfy day-to-day needs of residents in the community, as well as being the focal point in the community is growing (Price Water House Coopers, 2001).

2.5 Policy Assumptions and Projections

In order to ensure prosperous and vibrant employment commercial activity, it is important for public institutions, private sector and Calgary Economic Development to cooperate to promote new business in the area for both office and retail development. Effective policy and accurate projections will help ensure a strategy that can be properly implemented.

2.5.1 Employment Center Policy Assumptions

Suburban Employment Center development in the South must possess the following characteristics:

- **Live/Work Environment.** The focus of suburban office development in recent years has been prompted by increasingly problematic traffic congestion within the city. In response the City of Calgary formulated the GoPlan, in which means were identified to effectively deal with the traffic problems. The City of Calgary produced two documents encouraging employment close to the community of residence thereby reducing pressure on transit infrastructure (Employment Centres Strategy, 1999 & Jobs/Housing Balance Strategy, 2004).
- **Provide Local Employment.** The Employment Center proposed for the Pine Creek Villages site will work within this framework and foster employment opportunities for the residents of the community. With this plan the amount of commuting that is present in other communities can be reduced within Pine Creek Villages and alternatives to automobile travel to work will be available. As an example, transit use will be fostered and opportunities for travel to work by bike and walking will exist as employment will be located within the community. One of the central tenets of this community's policy is the opportunity to live and work within the same community. (City of Calgary, 2004)
- **Anchor Tenant.** To successfully achieve the development of a vibrant Employment Center, anchor tenants must be sought out and identified that will act to draw other tenants to locate within the development. As a matter of policy this anchor must be influential in their respective field to necessitate other corporations locating nearby. Examples of such anchor corporations are telecommunications companies such as Shaw Cable Telus or other IT firms. Smaller companies which work closely with anchor tenants would find it in their best interest to locate within the Employment Centre. In some cases it will be

necessary for institutional structures of the city to locate within the community and act as the anchor should no private corporations relocate into the development. Public/private partnerships will be necessary for success in some cases to encourage development within the Employment Centre. It may be necessary for government subsidies to encourage companies to locate in Pine Creek Villages. (PriceWaterHouseCoopers, 2001)

- **Mixed-Use Policies.** Creation of a successful Employment Centre requires active pursuit of mixed use policies to promote the presence of necessary amenities for attracting potential tenants. To reach this goal Campus Style development could be promoted as a means of encouraging mixed use residential and office areas within the Employment Centre (refer to case studies 2.8.3). Conversely, some office employment will be located within the retail nodes, thereby creating amenities within the retail sector as well.
- **Leadership.** The overarching theme of this development is the presence of strong City of Calgary leadership throughout all periods of the development, including the possibility of holding adjacent land to possibly develop if Employment Centre becomes more feasible than expected. In a situation where corporate appetite for such development is weak, but development plans are fulfilled regardless, another failed attempt at an employment centre, similar to the Crowfoot Employment Centre, may result. Thus, it is vital that city leadership remain focused on ensuring successful realization of an Employment Centre and take the appropriate actions to achieve this. (Metropole, 2003)
- **Proper Infrastructure.** Lastly, it is imperative that the infrastructure required to build an Employment Centre at Pine Creek Villages is made available. The required services and roads must be developed so that the development becomes an attractive proposition for potential tenants.

2.5.2 Suburban Retail Policy Assumptions

Suburban retail development in the South must possess the following characteristics:

- **Accessibility.** LRT, automobile, and pedestrian traffic should all have easy access to the site. Even though the retail development in the area will primarily be used by citizens living within the Pine Creek area, the interchanges along Macleod trail must be modified to ensure easy access for communities outside the site. Consideration must also be given to future development of residential communities in the area and the ability to access Pine Creek from them. (Price Water House Coopers 2001, 62).
- **Visibility.** The major retail center must be in a location that is easily visible from as many communities as possible and could act as a major vista in the community. (Price Water House Coopers 2001, 62).
- **Mixed-use retail nodes.** Mixed-use retail environments provide excellent synergies that will set Pine Creek Villages apart from other retail centers in the area.
- **Strategic neighborhood and community retail.** Strategic development of retail clusters at the neighborhood and community level is extremely important to ensure viable retail. Different models of retail development, such as mixed-use “mainstreet” retail, integrating retail within close proximity to the Employment Center, and retail within the Urban Village concept should be considered.
- **Local amenities.** Encourage the development of local amenities, including smaller scale office space and professional services that fulfill the needs of the local population and encourage the residents of Pine Creek Villages to shop within their walkable communities. This also provides an environment that is pedestrian friendly where retail is in close proximity to residential developments. (Harris & Hudema, 1999)

2.5.3 Projected Land Required for South Employment Development

Between 1996 and 2000 suburban office space has increased as a percentage of total office space in Calgary. The share of suburban office space has increased to 18 percent of the market by 2000, from a low of 16 percent. Overall, downtown remains dominant within the marketplace for Calgary although the share is decreasing slightly (PriceWaterhouseCoopers, 2001).

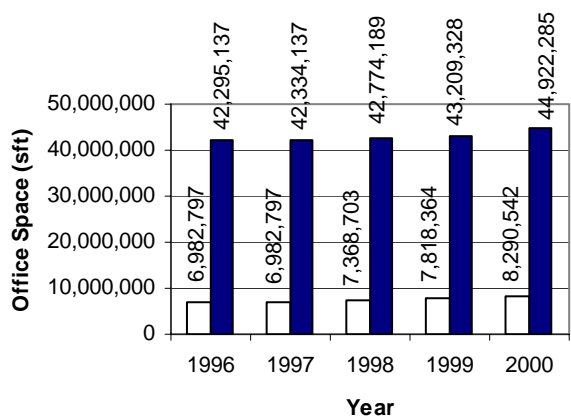


Figure 2.6 Supply of office space in downtown Calgary and surroundings. Blue lines represent inner city office space; white lines represent suburban office space.

Source: PriceWaterhouseCoopers

Within the supply for suburban office space the south sector had increased its share to 43.8% of the total market by 2000, something which has increased since 1996 (see Figure 2.6). Although the south sector is slightly smaller in terms of office space supply than the northeast sector, the south sectors vacancy rates have remained lower than that of the northeast.

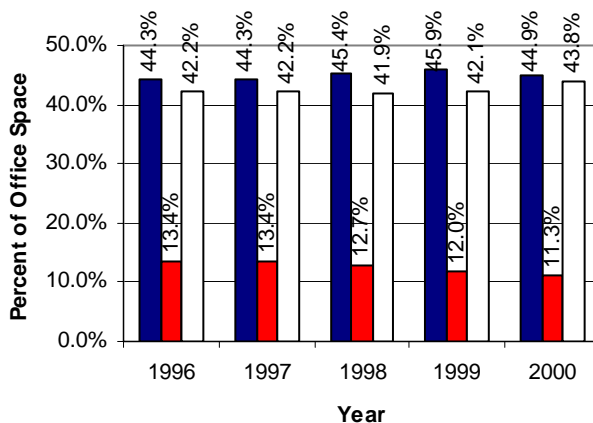


Figure 2.7 Share of suburban office space by region. Blue lines represent Northeast; red lines represent Northwest; white lines represent South.

Source: PriceWaterhouseCoopers

2.5.3.1 Demand & Supply for Office Space

As seen in Table 2.3 the total supply of office space has increased substantially since 1996, totalling roughly 1.3 million square feet. At the same time there have been relatively low vacancy levels. Within the South sector demand for office space has increased (see Table 2.4) equaling 3.4 million square feet by 2000 with supply totaling 3.6 million square feet (PriceWaterhouseCoopers 2001). The resulting .2 million square feet reaffirms the notion that the vacancy rates in the south sector have remained relatively low.

Total Suburban Demand & Supply for Office Space (sf)					
	1996	1997	1998	1999	2000
Supply	6,982,797	6,982,797	7,368,703	7,818,364	8,290,542
New Supply	n/a	0	385,906	449,661	472,178
Demand	6,123,737	6,665,855	6,782,432	7,090,174	7,556,351
Absorption	n/a	542,118	116,577	307,742	466,177
% Vacancy	12.3%	4.5%	8.0%	9.3%	8.9%

Table 2.3 Suburban demand and supply for office space in the City of Calgary.

Source: PriceWaterhouseCoopers

South Sector Suburban Demand & Supply for Office Space (sf)					
	1996	1997	1998	1999	2000
Supply	2,949,670	2,949,670	3,085,598	3,290,688	3,628,087
New Supply	n/a	0	135,928	205,090	337,399
Demand	2,623,511	2,828,508	2,866,132	3,019,216	3,378,180
Absorption	n/a	204,997	37,624	153,084	358,964
% Vacancy	11.1%	4.1%	7.1%	8.2%	6.9%
% Share	42.2%	42.2%	41.9%	42.1%	43.8%

Table 2.4 South sector suburban demand and supply for office space in the City of Calgary. Source: PriceWaterhouseCoopers

2.5.3.2 Forecasted Demand for Office Space

To forecast the resulting demand and supply of suburban office space that is required within the south sector over the next twenty years projections were formulated based on population, employment and trends for office space (see Figure 2.8). The population method was based on the city's forecasted growth. The employment method used the city's expected employment growth to formulate the projections. The trend method looked at the city's past trends for office supply (PriceWaterhouseCoopers, 2001).

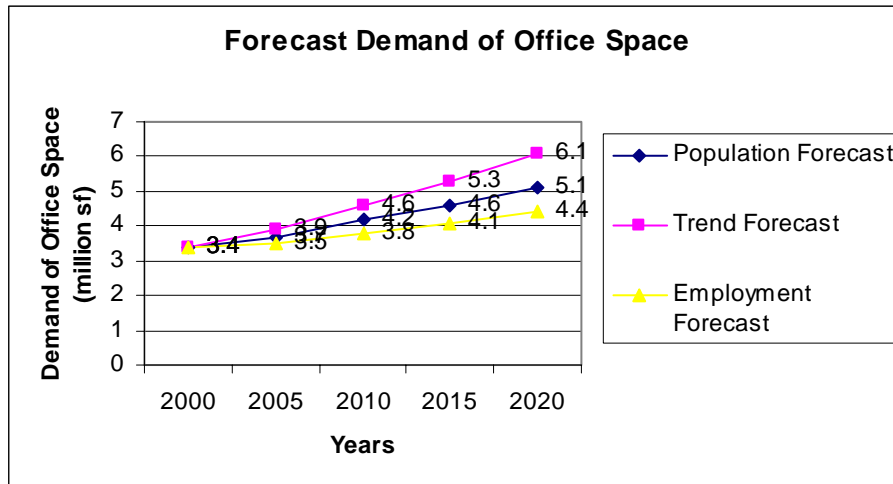


Figure 2.8 Forecast of office space demand in the City of Calgary.
Source: PriceWaterhouseCoopers

By basing projections this way (as seen in figure 2.8) it is estimated that by 2020 demand will equal between 4.4 and 6.1 million square feet. Similarly the supply of office space for the south market totals between 4.7 and 6.5 million square feet (see Figure 2.9).

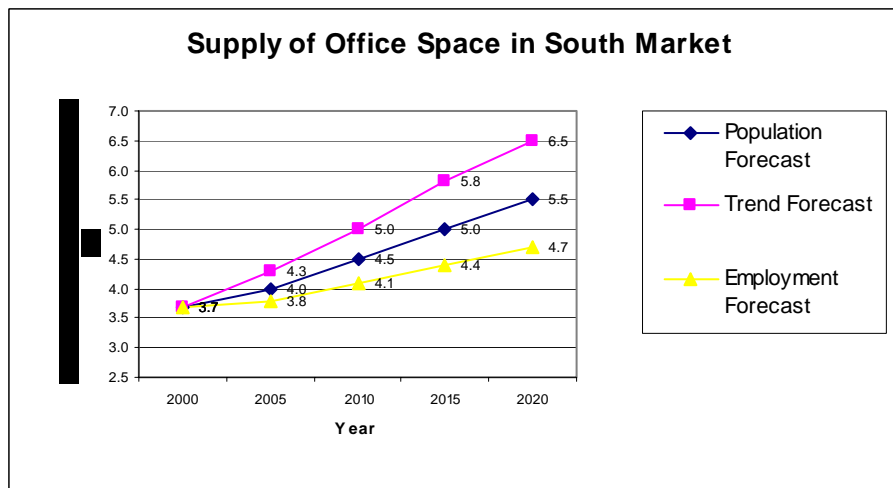


Figure 2.9 Supply of office space in the South Market area of the City of Calgary.
Source: PriceWaterHouseCoopers, 2001.

It should be noted that this analysis takes into account all development that is proposed for the South sector over the next 20 years.

2.5.4 Projected Optimistic View for Employment Center Land Required

PriceWaterhouseCoopers have developed a projection that in our opinion is unrealistic for Pine Creek Villages. They have posited that an Employment Centre of 500,000 square feet is warranted should public holdings be willing to act as an anchor for the development (PriceWaterhouseCoopers, 2001). In their opinion the development would then warrant between 40 and 80 acres depending on the development efficiency and site coverage. This assertion is questionable owing to the land requirements that are required to build. In fact, based on an FAR of 0.4 and with residual development accounting for roads, amenity and open space equal to 75%, 38 acres would be the maximum warranted. PriceWaterhouseCoopers (2001) in their document assert that 80 acres is in fact preferable.

Complicating the Employment Centres development is difficult access to the site. Unfortunately the most restrictive part of the development is the large competition for office space that is projected to develop over the next twenty years. Developments such as Sundance Place, Sovereign Towers and the Southeast Employment Centre among many others, make the viability of the Pine Creek Employment Centre questionable. In fact, taking into account the amount of office space that will be available in the South market by 2020 the supply will outnumber demand (PriceWaterhouseCoopers, 2001).

2.5.5 Projected Realistic View for Employment Center Land Required

Taking into account the constraint of limited access as well as the plethora of competition that is present from other developments, it is imperative that some form of “niche” employment is made available within the Pine Creek Villages development. This is needed to make the site more livable and to encourage less commuting to other parts of the city. If the city is to pursue a policy to encourage a viable Employment Centre then a smaller development is warranted. For these reasons 250,000 square feet has been identified as a more reasonable amount of development to maintain viability.

In our estimation, should the same guidelines of an FAR of 0.4 and residual development of 75% be applied to our projection then it would make a development of approximately 20 acres vital. This would take into account 6 acres for the office space and 9 acres for green space and parking. The remainder is taken up by the 75% residual development. It should also be noted that as part of our plan we envision two acres of retail being included into the Employment Centre to create amenity value for the development.

2.5.6 Projected Retail Employment Land Use

There is no need for a regional retail center in Pine Creek Villages. A population of over 100,000 is needed to sustain a regional retail center, and there are other regional and larger community retail locations in close proximity to the site. Residents of Pine Creek Villages will most likely shop at these alternative retail centers eliminating the need for a regional commercial node at Pine Creek.

We are proposing that six community commercial retail nodes be strategically located within the site area. Retail land use will include the development of one major semi-regional retail center and five other community centers. The site of the semi-regional retail center is to be centrally located to effectively serve a large but highly localized area including the future residential and employment population of the area (PriceWaterHouseCoopers 2001, 63). There will be six communities with 10-12 thousand residents in each community. Every community will have a community retail node.

There will also be 2-3 neighborhood nodes located among the neighborhoods of Pine Creek Villages. These are intended to be small in size but provide desired amenity value and promote neighborhoods as more walkable communities.

2.5.6.1 Optimistic View

The present norm for retail development in Calgary is based on an FAR of 0.25 which to much consternation leaves the remainder of the lot designated as parking. Presently retail calculations are based on between 20-40 square feet per person projected to live in the

community. The Pine Creek Village plan lacks a regional component, because of competition from other developments; the lower projection of 0.20 square feet per person has been used to develop our projections.

By basing the projections on a higher FAR of 0.4, automobile use will be discouraged within Pine Creek Villages, promoting a more pedestrian oriented community. This is due to the lower percentage of the total acreage that would be allocated to parking and instead could be used for intensification of retail nodes. Thus, optimistic projections have been used to calculate a higher FAR.

Commercial Development			Land Requirements for Retail				
		Sq. Feet	Acres	Retail	Parking	Retail	Parking
				(FAR .25)		(FAR .4)	
7 upa, 20 sft	817,085	3,268,339	75	19	56	30	45
7 upa, 30 sft	1,225,627	4,902,509	113	28	84	45	68
7 upa, 40 sft	1,634,170	6,536,678	150	38	113	60	90

Table 2.5 Land requirements for retail given varying commercial development specifications.

By basing the projections in this manner the requirements for retail based on 20 square feet per person and an FAR of 0.4 equal 75 acres. Of these 30 acres is allocated for actual retail development with the remaining 45 acres being designated as parking, green space and roads to service the development.

Calgary's present trends show a preference for automobile use. Given this fact it may be optimistic to expect that Pine Creek Villages will be able to successfully develop as pedestrian oriented. Unfortunately this means that the development should proceed with a lower FAR of 0.25 with a preponderance of parking from the overall land that is allocated to parking. Having based our projections on the lower FAR results in 19 acres being allocated for retail with the remaining 56 acres being designated as green space, parking and roads. As with the optimistic projection the resultant land requirement is 75 acres.

2.5.6.2 Breakdown of Retail

As previously mentioned there will be no regional retail centre in Pine Creek Villages. As a result the remainder of the developable land is to be developed on a 60/40 split between community and neighbourhood based retail (see Table 2.6).

Required Land for Retail Nodes	
	Retail
	(7 upa, 20 sft)
Community/ Neighbourhood Node (60/40 split)	75
Retail in E/C as amenity	2
Total	73
Allotted for Community Nodes	43.8
Allotted for Neighbourhood Nodes	29.2
Each Community Node (6 equal nodes)	7.3
Each Neighbourhood Node (18 equal nodes)	1.6
Each Community Node (5 equal, 1 semi-regional)	6.8, 9.8
5 @ 6.8 ac, with .5 ac removed from 7.3	

Table 2.6 Land required for retail nodes in Pine Creek Villages.

Of the remaining 73 acres that is designated for retail throughout the community 43.8 acres is allocated as community retail with the remaining 29.2 acres designated for neighbourhood retail. Having six communities within Pine Creek Villages, there is the requirement that each community will require three neighbourhood retail nodes. As a result, eighteen neighbourhood nodes have been identified, each totaling 1.6 acres in size.

2.5.6.3 Retail Scenario 1 (Semi-Regional)

With Pine Creek Villages lacking a regional retail, there is the opportunity to create a semi-regional retail component. This could be done in the form of a “main street” type development. It is our contention that this development will act to mitigate the loss of regional retail within the community. At the same time it should be located centrally to service the outer lying communities and not simply the community that it is located

within. In this scenario it is proposed that there will be one community node that will be larger totaling 9.8 acres in size with the remaining five nodes totaling 6.8 acres.

2.5.6.4 Retail Scenario 2 (Status Quo)

The other scenario takes into account the same restrictions for land use however they would be distributed retail more equitably throughout the community. From this breakdown there would be six equal nodes of 7.3 acres each dispersed throughout Pine Creek Villages.

2.5.7 South Employment Center Locations

The City of Calgary has identified an Employment Centre to be located along Macleod Trail, south of Highway 22x running south to 194 Ave. S (refer to red shaded area of Figure 2.10). The development is constrained on its western perimeter by a conservation area and by the city's transit utility corridor to the north (City of Calgary, 2004). It is our contention that the location should be revised owing to the original location not taking into account the true size of the conservation area, as well as the sites limited transportation access.



Figure 2.10 City of Calgary proposed location of Employment Centre (in red).

Source: City of Calgary

The Employment Centers location lacks adequate access owing to the interchange at 194 Ave S. and Macleod trail being designated a ½ interchange. This is in response to the cities guidelines, which specify that there must be 400m between interchanges. There is a full interchange located further south along Macleod Trail at 212 Ave. S. that will provide the main access to the Employment Centre.

2.5.7.1 Macleod Trail Location

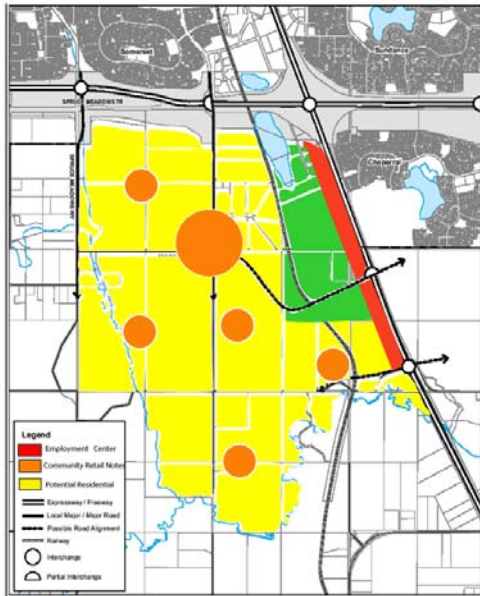


Figure 2.11 Pine Creek Villages proposed location for Employment Center development (in red).

To combat the limited access that results from having only a half interchange at 194 Ave. S. an alternative solution has been identified that will also pose less of an environmental threat. The environmental threat emerges because of the wetlands being larger than was originally thought (Azim Jivraj, 2004) The ½ interchange restricts access from the south along Macleod Trail with only those traveling Southward able to access the interchange. For Northbound access the full interchange at 212 Ave. S. must be used thereby creating an increased level of traffic through Pine Creek Villages. If the exit at highway 212 Ave. S. is missed then access is completely lacking and one must travel to Highway 22x and exit at Spruce Meadows Way as the exit at Sheriff King St is also limited by a ½ exit which cannot be accessed from Westbound traffic. For these reasons we have identified an alternate location which should help to alleviate some of these concerns.

The first alternate location (Macleod Trail Location) of the Employment Centre will extend from the original location on the northern frontier along Macleod trail to the full interchange at 212 Ave. S. Similarly the new location will also be much narrower than was originally thought, being as little as 1/3 of that envisioned in the original development. This will result in less overall land being used, which was an identified need in our projections for land requirements. By locating in this manner we will have

less of an impact on the community with a full interchange accessing the Employment Centre, something which should benefit both the residents of the community through less traffic, but also act to entice corporations to locate in this location with good access to the transportation infrastructure. There also will be better visibility from Macleod Trail, something that suburban office tenants have identified as a benefit in their choosing to locate there.

2.5.7.2 Southern Employment Center Location

The second location will also take into account the constraints which are posed by locating at the Macleod Trail Location. This location is between 194 Ave. S. and 212 Ave. S. and constrained by Macleod Trail on its Eastern Frontier and the proposed Road that runs parallel to Macleod Trail. By locating in this alternative site the environmentally sensitive area is avoided and there is better access to transportation.

Although this location is also constrained by the ½ interchange on its northern frontier, in this scenario it makes more sense as the second access point at 212 Ave. S is much closer and able to accommodate through traffic. In this location there will be less need to travel through the community as other locations may encourage. Similarly there is also the added benefit of access to the second proposed C-Train station that will be developed within Pine Creek Villages. Transit use will be encouraged within the community given the close proximity of the stations. Transit access will help to encourage corporations to locate within the Employment Centre as the amenity value of locating near public transportation has been identified as a positive benefit by knowledge based workers. For the same reasons, the amenity value of the green space will also act to encourage locating here.

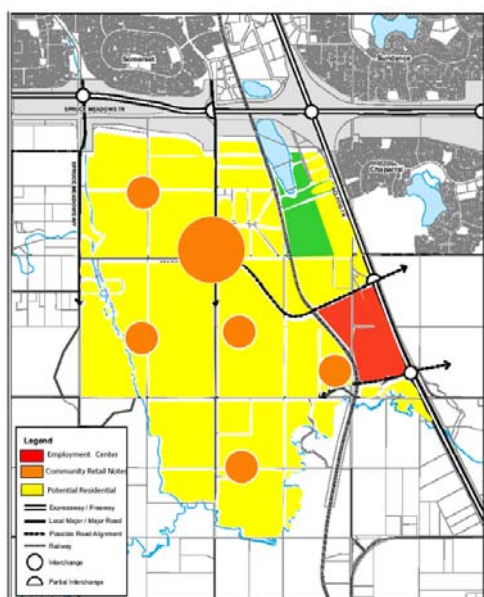


Figure 2.12 Southern Employment Centre location (in red).

2.5.8 Retail Employment Location

Retail employment locations are strategically dispersed among the communities. The major semi-regional retail node is located at the intersection of Sheriff King Road and 194th Ave. S. Putting the semi-regional node in this area will provide access for residents within the community, individuals from the Employment Center, and citizens working with Emergency services and schools in the area. The location is also in close proximity to the proposed LRT station.

It would be ideal for the semi-regional node to act as a Town Center and stretch main street retail along 194th Ave. S. in an eastern direction. This would provide the area with a strong entrance presence and would attract traffic coming from Macleod Trail. At the same time, it would provide Pine Creek Villages with the opportunity to become a unique suburban environment.

Each Community within Pine Creek Villages will have a retail community node. They are strategically placed in each community so all citizens will have access to the location. Each neighborhood will also have three neighborhood retail nodes that will provide access to retail within a moderate walking distance.

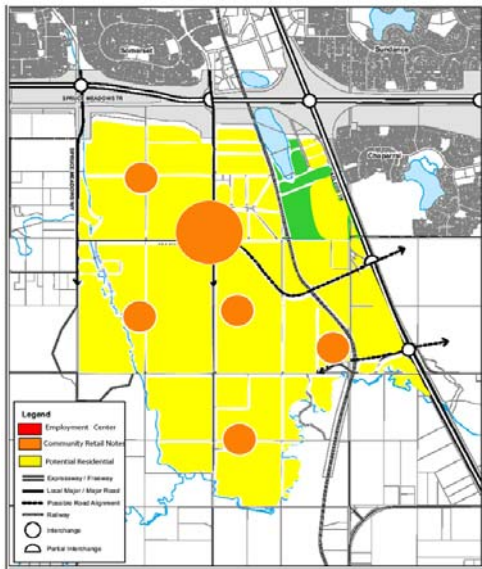


Figure 2.13 Commercial retail centre locations (orange circles).

2.6 Challenges

2.6.1 Retail and Employment Center Challenges

2.6.1.1 Location

Restricted access poses challenges to the location of the retail and Employment Centre. The Employment Center location also poses an environmental risk due to the larger than expected wetlands that could be adversely impacted. To alleviate these concerns we have identified alternative locations for the Employment Centre that are within the specified constraints. By moving the development to the alternative location there will be increased access to the full interchange at 212 Ave. S thereby decreasing traffic within the community, but also acting as a positive attribute to market the Employment Centre. The semi-regional Retail Center must also be in a location that is visible from the communities of Pine Creek Villages as well as from Macleod Trail.

2.6.1.2 Competition

The retail and Employment Centre will face stiff competition from other developments that are either proposed or currently being developed. This will pose a direct threat to the

viability of the project, and calls into question whether the demand for the project in fact warrants the development of a new Employment Centre at Pine Creek Villages. Retail competition located in close proximity will also decrease the amount revenue generated. If the development is in fact to proceed we feel that it will be necessary for the City of Calgary to play an active role in promoting it the Employment Center and retail sector of Pine Creek Villages. To encourage development it may be necessary that they be willing to locate an anchor within the Employment Centre that will take the place of private sector firms and act to stimulate the development (PriceWaterHouseCoopers 2001, 57-58). Competition from other developments may be viewed positively in that the proposed South East Employment centre will utilize the forthcoming hospital as a source of potential job activity to spur other suburban office development there. Owing to the relatively close proximity to Pine Creek Villages, the forthcoming hospital can also be viewed as a source of employment for Pine Creek residents. It should be actively pursued as policy that opportunities such as clinics and services to facilitate the hospital be pursued. In this manner the hospital can also serve as a source of office space that can be located within the Pine Creek Villages Employment Centre.

2.6.1.3 Employment Center Tenants

With Calgary's traditional office tenants reluctant to relocate to suburban office locations it will be difficult to identify potential tenants that would be willing to relocate to the Pine Creek Villages Employment Centre. It will be imperative to identify new companies that are relocating to Calgary that would be willing to locate in a suburban setting. This should be aided by lower rent that will be available in suburban settings (Metropole, 2003). Similarly companies that presently have taken up residence in suburban settings should be targeted as potential companies that would be willing to move to the Pine Creek Villages Employment Centre. Finally it will be imperative that proper amenities that will service the centre are developed in advance to attract potential tenants. This includes both green space amenities and such features as a strong public transit infrastructure. This becomes especially important as we wish to distance ourselves from other developments and make Pine Creek Villages Employment Centre a success.

2.6.1.4 Land Use Challenges

The retail center will face many challenges in the years to come. One of the main challenges will be to decrease the amount of temporary development in prime commercial locations. This type of development results in inefficient land use, which have low employment ratios and high commercial value, such as car dealerships. (City of Calgary , 2004a)

2.7 Opportunities

2.7.1 Retail and Employment Center Opportunities

2.7.1.1 Live/Work Environment

Pine Creek Villages Employment Centre will allow residents to live and work within the same community and therefore meet the guidelines that were set out in such documents as the *GoPlan* and the *Jobs/Housing Balance Strategy*. In this way the burden that is placed on the transportation infrastructure will be alleviated, allowing residents to work closer to home and avoid commuting into the downtown or to other parts of the city. At the same time it is feasible that residents will be able to utilize other modes of transportation, such as bikes, to travel to work owing to the relative close proximity. The opportunity to work and live within the same community should help make Pine Creek Villages a desirable place in which to reside.

2.7.1.2 Unique Retail Sector

The retail sector at Pine Creek Villages has the opportunity to identify itself more different than other suburban retail areas in the South. The town center design and incorporating principles of mixed use will provide vibrant retail nodes that differentiate it from other suburban developments. It will also provide Pine Creek Villages with a sense of place and create a sense of community in the area.

2.7.1.3 Amenity Value

To increase the attractiveness of the Employment Centre there should be emphasis placed on increasing the amenity value that is found within the development. As part of this, it has been identified that two acres of retail/commercial space should be integrated into the Employment Centre to increase its attractiveness to potential suitors. With a plethora of other office space available throughout suburban locations in the city, it becomes increasingly vital that Pine Creek Villages can offer an alternative, which gives potential tenants good reasons to locate there. High amenity values will attract quality tenants making the development successful, a feature crucial to employees

2.8 Case Studies

In suburban commerce planning, planning concepts play important roles and need to be considered. Appropriately, employing them will help create different dynamics that will have a lasting effect on the way many of us live, work and play.

Various planning concepts can facilitate how commercial activities are organized to meet the objective of providing employment while also accommodating the service needs of the residents. Physical layout and the variety of land uses in the following conceptual design will have a lasting effect on how we live, work and play. The "Main Street", "Urban Village" or "Campus Style" will foster a different built form, character and vitality in the urban context.

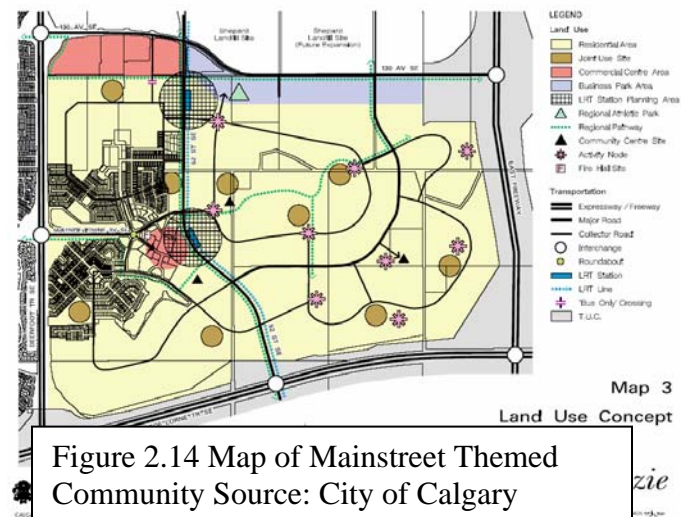
2.8.1 "Main Street" concept

"Main Street" planning, in most cases, refers to "community-based economic development initiatives based around specific commercial localities, [and] typically traditional strip shopping areas."

(<http://www.ncc.nsw.gov.au/council/plans/service/mainstreet.cfm>). Main streets or High Streets are the traditional major shopping streets in towns or cities. The Alberta Main Street Program is based on the concept of vitalizing the old and declining commercial centres of towns in the Province. The main purpose of mainstreet

planning is to revitalize the economic base and amenities of local communities. However, a similar concept is used in new areas. For example, this concept has been used in East Mckenzie, a developing community in the south-east section of Calgary. About 5.9 acres in size was proposed to a main street bordered by a mixture of residential, commercial, institutional and public uses. A mix-used shopping, living and working environment was encouraged along the main street. In CFB West Master Plan, main street form of development is recommended along Caen Road SW, the major entrance way to the CFB West community. Main street commercial development is usually characterized by a fine-grained mix of uses, including retail, residential, office, institutional and other services. The development is generally pedestrian oriented with improved streetscape. Major benefits include the following:

- Through more concentrated and compatible forms of development, main streets potentially permit a wide variety of retail, offices, housing and community-oriented facilities to residents, employees and visitors.
- With a lively mix of uses, mainstreets provide a more design-oriented approach to planning; therefore, they create variety, vitality and character for the community and increase the communities' visibility and recognition.



- Small scale development tends to attract specialty stores, restaurants and offices that tend to add to the interest, character and vitality of the area.
- Residents are able to take advantage of existing public transit service and functions.
- With a tightly-knit urban fabric that is small-scale, narrow frontage and close to the street, mainstreets developments are able to create a pedestrian-friendly environment.

Some of the challenges in carryout the Main Street concept include:

- Large commercial and auto-related uses and services present a design challenge for a pedestrian-oriented street.
- Interface issues with adjacent residential uses require special attention. Location of parking, landscaping and vehicular access to commercial or mix use on Main Street would require design solutions to address potential negative visual impacts, overspill parking, shadowing, and overlooking.
- Density may be restricted because sites are generally smaller in scale, making provision of underground or surface parking uneconomical.
- Significant amount of employment along Main Street development is difficult to achieve because of the limited amount of redevelopment. In some cases, e.g. in East McKenzie, the main street development is to serve the local community market.

2.8.2 “Urban Village” Concept

“A vision for the urban village is to create a people sensitive development that strives to promote community by integrating walkable scale retail and restaurant projects within commercial workplaces and residential areas while still realizing the impact of the automobile and transportation.” (<http://www.daedaluscorp.com/urbanvillage.asp>) It is based on the idea that people will be able to live within walking distance of working, entertainment venues and restaurants.

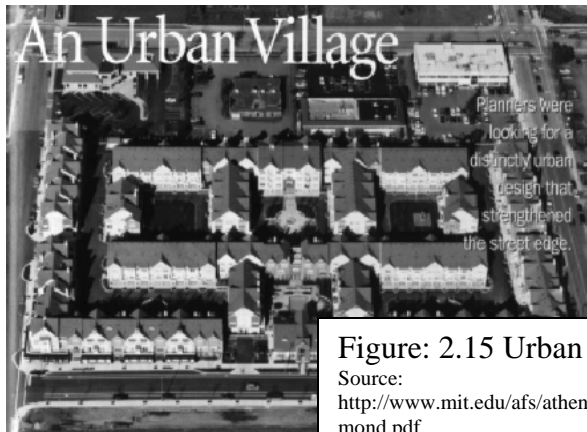


Figure: 2.15 Urban Village Concept

Source:
<http://www.mit.edu/afs/athena/course/11/11.332/www/pdf/redmond.pdf>

- The urban village model provides a convenient, safe community within which people can live and work; therefore creating a high quality community with

traditional values of village life.

- The urban village draws detailers, workers and residents with its live/work concept, and animates the community with a variety of mixed-uses.
- With small-scale building footprints and human-scale detailing, the communities with village-like characteristics offering pedestrian orientation.
- By creating an urban village, the development becomes a living, evolving community micro-center that has the flexibility to evolve and succeed long term as a part of the community.(<http://www.daedaluscorp.com/urbanvillage.asp>)

Example: Community of East Clayton, Surrey BC.

East Clayton is located in Surrey's South Newton district, south of Vancouver. Build-out target of East Clayton neighbourhood concept plan is 13,000 populations. The concept plan involves the urban village concept:

- Through the idea that basic services (e.g., schools, parks, transit, etc.) and commercial services are within a five- to six-minute walk of all residents, provide convenience and encourage pedestrian activities
- Provide land use flexibility in the development to accommodate business
- Provide enough job locations to supply one job per household.

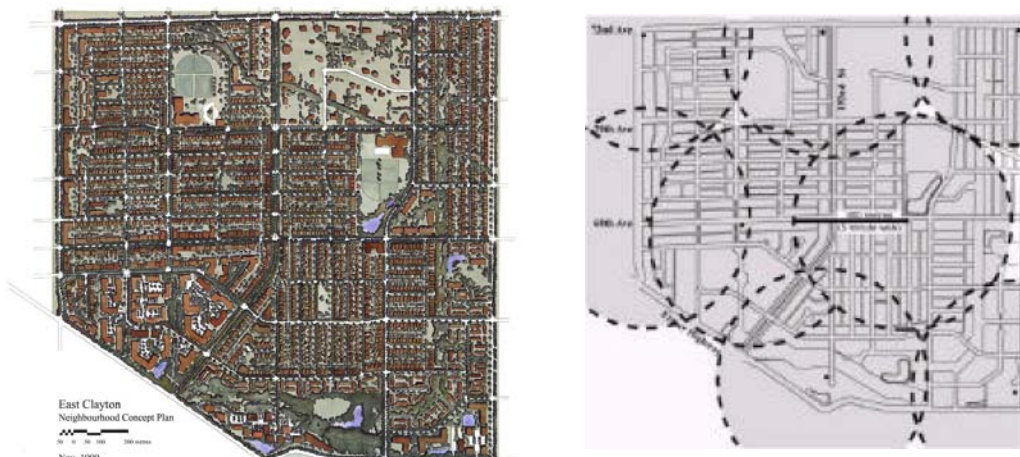


Figure 2.16, and 2.17: Urban Village Frameworks
Source: http://www.sustainable-communities.agsci.ubc.ca/projects/Headwaters/HI_localcontext.html

2.8.3 “Campus Style” Corporate Development

Campus-style communities are a kind of self-contained community that provides a continuum of housing, employment, shopping, recreation, culture and other services within a lively location. (<http://www.panpha.org/findinganewhome.html>). The potential benefits of this kind of corporate campuses are followings:

- They encourage mixed use facilities and land use.
- Usually in suburban areas, where land that is available in the needed quantity and has land costs that are significantly lower than in the central business district, campus style developments reduce business costs and attract employment opportunities. Residents may take advantage of a wide variety of activities and services conveniently provided within the community.
- Major shopping, recreation needs can be fulfilled within the campuses. And also residents may continue to work, travel, and enjoy life outside.
- Corporate facilities provide potential employees or residents a high quality of life.

Example: Microsoft corporate campus

15 miles from Seattle, the Microsoft corporate campus is located in Redmond, Washington. The development area is 16.6 sq miles, currently accommodates 45,000 residents, and provides 53,000 job opportunities.



Figure 2.18,2. 19 Campus Style Developments
<http://www.mit.edu/afs/athena/course/11/11.332/www/pdf/redmond.pdf>

- Incorporating facilities and amenities are attractive to both of the work force and businesses. Over the last 20 years, the population in Microsoft Redmond campus increased by 254% to 39,100 and employment increased by 930% to 40,000, and
- The number of businesses grew by 708% to 3,190 firms.
- The campus Provides housing, working, shopping, recreation, within a lively and compatible setting. Commercial areas fulfill the community's major shopping, and recreation needs.

However, campus style developments are usually office-oriented and large scale. They need companies and manufactories to sponsor. The flexibility to evolve has been challenged by the large scale.

Conclusion from Case Studies

All these community planning concept models have their own characteristics and benefits. A mixed-use main street located in the community core center will provide vitality for the whole area; Village-scale neighborhoods integrated with retail or office space will be very convenient for the residents and benefit the community. Campus style may encourage employment opportunities. A collaborative inclusive approach in Pine Creek Villages Employment and Retail Land Use planning will ensure a high quality community plan.

2.9 Conclusions

It is advisable that development should proceed at Pine Creek Villages so the future viability of the community is ensured. Calgary has developed a strong economy, which although it still revolves around the energy sector, has begun to diversify. The energy sector has shown reluctance to locate in suburban locations and should not be overtly targeted as a potential tenant, although some of the industries which service this sector could be targeted, including geomatics. Industries such as the burgeoning high tech industry are also potential tenants that would be willing to locate in suburban locations, provided required amenity. It is thus imperative that transit efficiency as well as green space and potential retail to service the Employment Centre be developed.

Calgary's population growth and suburban development are expected to continue well into the foreseeable future, making it imperative that employment and commercial activity be developed at Pine Creek Villages. This is especially important as the community is expected to grow to 74,000 people by build out. If measures are not taken much of this population can be expected to be added to the commute to other employment destinations within the city, particularly the down town core, thereby increasing the congestion that is presently seen in Calgary. Although suburban office development has grown in Calgary over the previous decade, when looking at examples from other North American cities it is feasible that this growth could rapidly expand over the next twenty years. Although Pine Creek Villages has a few constraints, it is evident that the opportunities clearly outweigh potentially negative factors.

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