4.0 Housing Group

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Executive Summary

The population of the city of Calgary is to grow to 1,231,000 by 2033 from 922,000 in 2003. This population growth will be fuelled by immigration and will occur mainly in the new suburbs. As the city will continue to grow it will experience many changes such as:

- Long-term projection shows that south sector is forecasted to average 17% of the future population growth in Calgary (not including new annexation) compared to 22% in 2001

- Decreasing trend in percentage of total population of ages 0-14 from 19% in 2001 to 16% in 2033

- Aging population (boomers becoming old) as 45+ age cohort will be 44% of the total population in 2033 while it was 30% in 2001

- Changing household structure as currently 36% of households fit traditional image (couples with children) and by 2021 only 25% will fit this image

- Smaller households sizes today in the suburbs it is 3.2 and by 2028 it will be 2.9 people per household

Recommendations for *Pine Creek Villages* aim to provide for the changing demographics in Calgary and offer a better diversity of housing types. South Sector market trends show a supply of typical suburban housing stock (low density, high percentage of single family units). The main areas of focus for the housing group are; affordability, provision of a range of housing types and prices, and ensuring that smart growth development is the framework for *Pine Creek Villages*. The means to accomplish this is by:

- Provide a variety of housing options, including high quality multi-family units and medium to high density single-family (Price range $114,00 and up)

- Provide good rental stock, multi-family, starter homes and subsidies for lower income households (Price range $78,000-114,000)

- Recognize the need for assisted housing such as senior assisted, services, low income households, subsidies. Provided for through partnerships with private and public sector, as per policies

- Increase density to allow for sustainable development and increased affordability and diversity

- Encourage the development of innovative housing types such as flex housing, secondary suites and eco-villages (or green housing)

- Take advantage of alternative street designs to encourage smart growth development, pedestrian friendly, human scale development and transit oriented design

- Use progressive density and mixed use in neighborhood nodes to increase density and to ensure most of services are within a walkable distance

Through these recommendations, *Pine Creek Villages* will strive to offer housing that is diverse, innovative, and sustainable while at the same time reflecting what is needed in the Calgary housing market over the long term.

4.1 Introduction

For the past two or three generations, life in the suburb has been the preferred choice for Canadians. Providing large single detached-homes and private backyard, North Americans embraced suburban living for all that it was: space, prestige, and privacy. According to Ari Friedmann, the Federal Housing Administration (FHA) was largely responsible for promoting "single-family housing over multifamily dwellings, new construction over rehabilitation, all-white neighbourhoods over racially diverse neighbourhoods" through conservation policies (29). Despite their continued popularity, suburbs are no longer meeting the needs of the general population. Although single-detached family houses continue to dominate the market place, demographic trends and projections indicate that the suburban product must respond to growing needs for diversity and options within the communities. By considering alternatives and adjustments to the ever-popular suburb, new developments will be able to accommodate a range of needs, including: low income households, single-parent families, ageing boomers, single seniors, new immigrants and disabled citizens. The "typical" Canadian family is a growing minority; the successful development will embrace the changing neighbourhood and provide options for a variety of living needs.

4.1.1 Vision

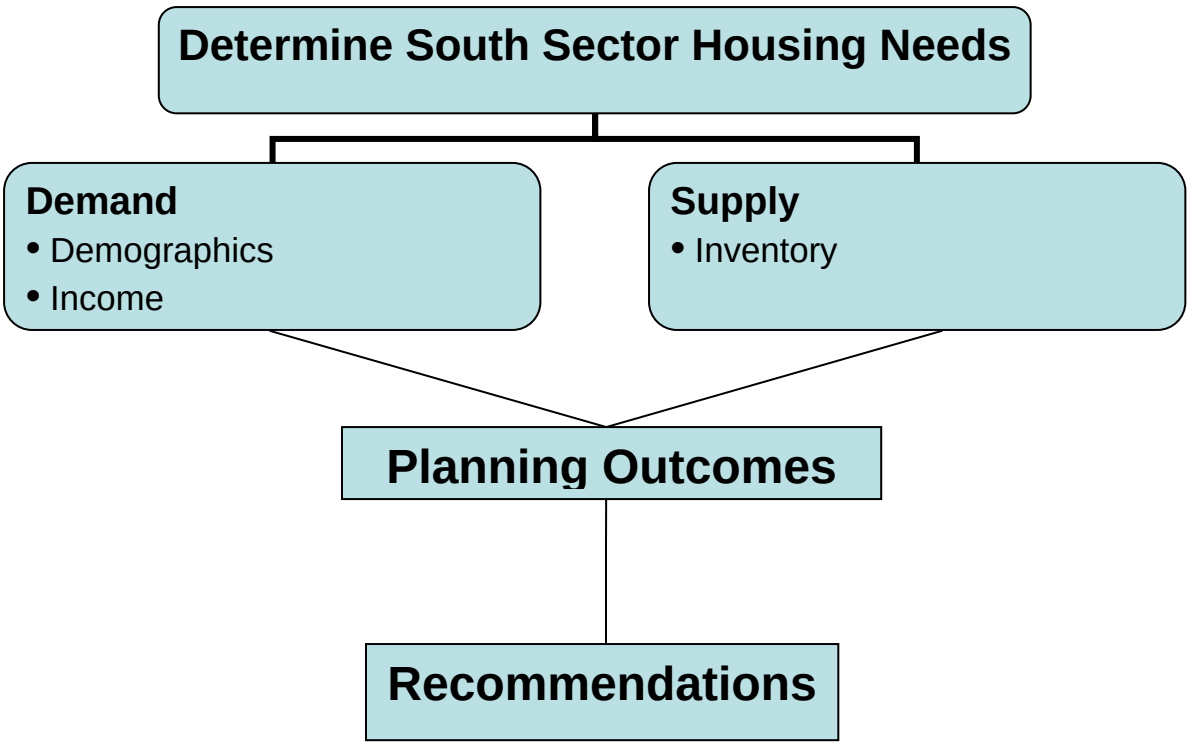
To develop a community that meets the needs of today's population but also caters to the needs of tomorrows. With a mix of housing and employment opportunities the new community should be economically, socially vibrant and environmentally conscious.

4.1.2 Objectives

- To determine housing strategy for south sector development
- Create diversity in housing to accommodate needs
- Create cohesive plan with other groups
- Use sustainable practices in building and design
- Transit efficient and pedestrian oriented community

4.1.3 Methodology

- Review documents to establish vision, goals, feasibility such as CMHC, CREB, City of Calgary, Community Profiles and Statistics Canada.
- Conduct analysis of supply and demand through analyzing demographics, housing demand, housing market trends.
- Comparing South Sector data to the City of Calgary to establish trends.



4.1.4 Assumptions

- Long-term community development for 75,000 people

- Community development will ensure wetlands are protected
- Automobile will remain main mode of transportation
- Will maintain buffer between spruce meadows
- Timely construction of LRT to Pine Creek Village
- Development of employment center

4.1.5 Typical Suburb

Based on the Calgary Plan and the Sustainable Suburbs Study, the City of Calgary encourages new development to provide alternatives to the *typical suburban development:*

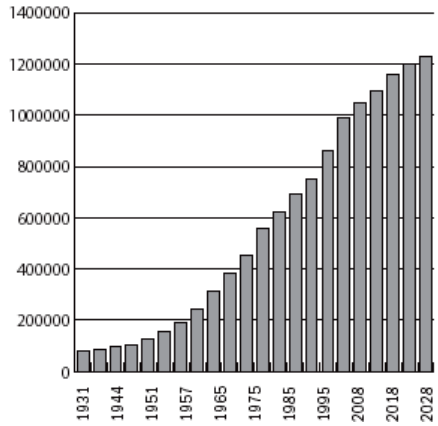
- Vehicle dependant
- Little choice in housing price and type
- A reluctance to build multifamily housing by developers
- Opposition to multifamily development by existing residents
- Segregation resulting in socially unhealthy communities
- Suburbs that are suited only to a particular group, income and household structure
- Lack of choice, mobility, and employment

4.2 Demographics

4.2.1 Population

The City of Calgary has encountered many boom/bust cycles. These cycles have affected the population growth. The post war boom in the 1940 created a generation of people known as baby boomers. These individuals helped the city prosper and grow over the years. The population of Calgary today is 922,000 and is forecasted to grow over the next 30 years.

Chart 4.1
City of Calgary Population

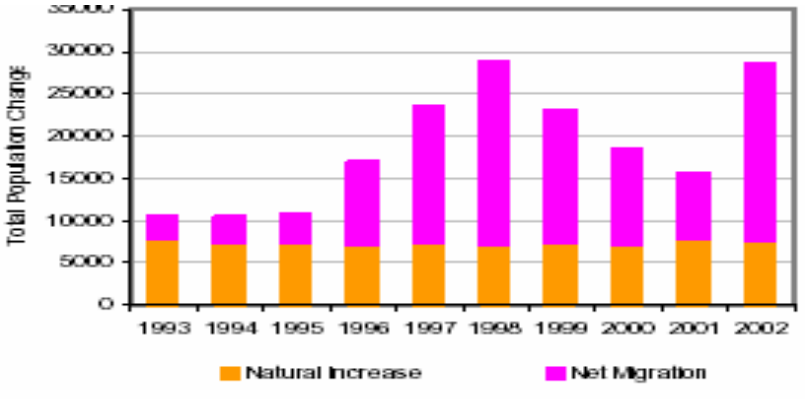


Source: City of Calgary, Accommodating Growth

The population of the City of Calgary is to reach 1,231,000 people by the year 2033. The main result of this population gain is due to positive net migration. This trend is in decline due to a declining total employment growth rate: in 2002 the growth rate was 1.6%, by 2023 1.0%, and by 2033 is to 0.5% (Accommodating Growth, 2003). The natural population growth rate of the City of Calgary is also declining, as in 2002 it was 2.2%, by 2023 1.1%, and by 2033 0.5% (Accommodating Growth, 2003). This result is mainly due to higher deaths and lower births over the time period as Calgary and the rest of Canada has an aging population. The natural increase is defined as the number of births less deaths, and this is projected to slow to 1,000 in 2033 from 9,000 in 2001.

Over the past decade natural population growth is stable while new growth comes from migration. Table 2 below shows that the natural increase of Calgary's population is growing at a stable rate, while the majority of new population growth comes from net migration. Net migration to Calgary is expected to remain strong as in 1998 it reached a peak of 22 000 and 21 000 in 2002, while it is expected to remain positive but will be much lower in the following years as from 2003-2008 net migration is expected to be about 10 000 (Socio-Economic Forecast, 2003). The majority of these new migrants are in the younger age cohort 25-44, who have fertility rates much higher than the rest of the population.

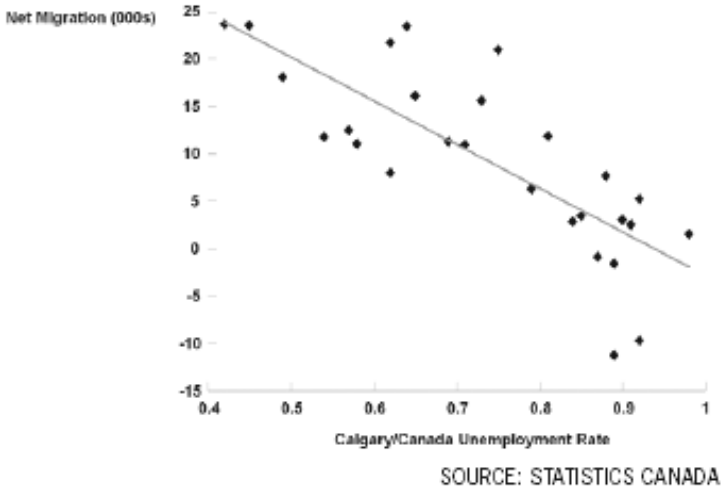
Chart 4.2
Calgary's Population Change 1993-2002



Source: City of Calgary, Accommodating Growth

The reason why Calgary experiences periods of high migration to the city is due the vibrant local economy. As the economy of the Calgary region is strong, many new migrants are attracted to the available jobs. Table 3 below shows the correlation between net migration and the unemployment rate.

Chart 4.3
Unemployment and Net Migration

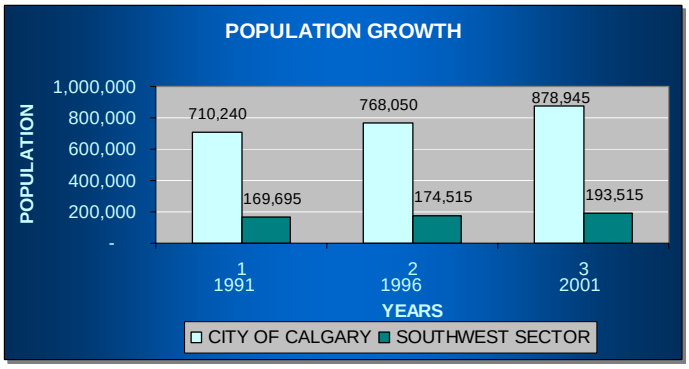


As the unemployment rate increases, net migration to Calgary decreases. As a result of these trends Calgary's future population growth is dependent to immigration to the city as the natural population growth trend is in decline.

The south sector of Calgary's population share is declining compared to the total city population. In 1991 the share of the south sector compared to the city was 24%, by 1996 it was 23%, and by 2001 it was 22% (Statistics Canada, 1991-2001). This decline over the time period 1991-2001 does not mean that the population of the south sector is declining, but rather that other sectors of Calgary are experiencing faster population growth.

Chart 4.4

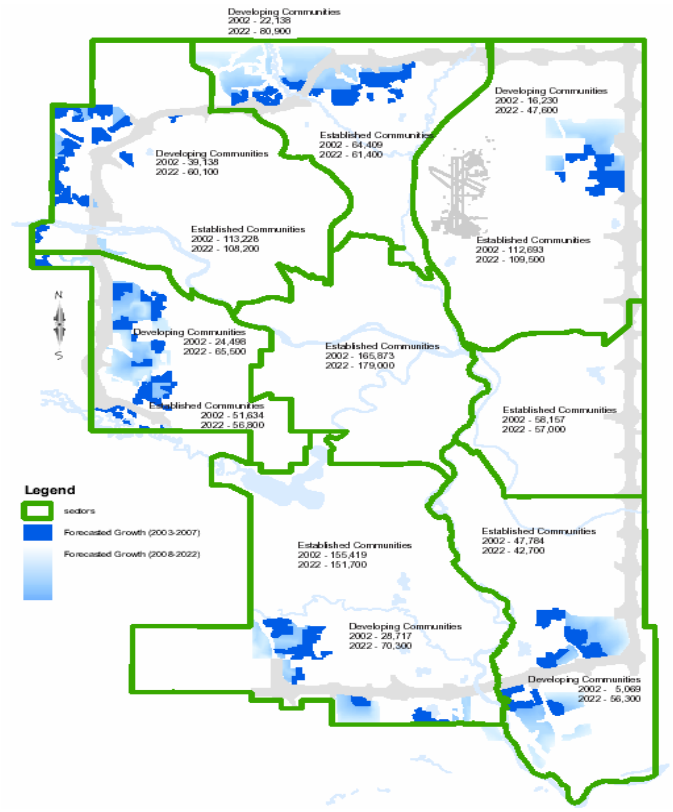
Population Growth



Source: Statistics Canada/Community Profiles, 1991-2001

Map 4.1

Developing and Established Communities Population 2002-2022

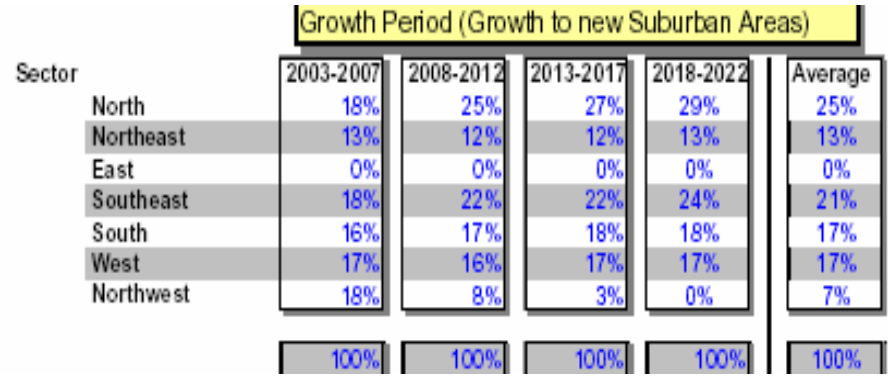


Source: City of Calgary, Accommodating Growth

As shown in the chart below, the south sector of Calgary is anticipated to capture about 17% of the future population growth until the year 2022. These numbers may seem low as previously the south sector share was 22% of the city's total population and now is forecasted to be much lower. The forecasted average does not include growth of the annexed lands to the south. With the new annexed lands the future average captured by the south sector should be higher than 17%.

Chart 4.5

Breakdown of Sector Market Shares



Sector	Growth Period (Growth to new Suburban Areas)				
	2003-2007	2008-2012	2013-2017	2018-2022	Average
North	18%	25%	27%	29%	25%
Northeast	13%	12%	12%	13%	13%
East	0%	0%	0%	0%	0%
Southeast	18%	22%	22%	24%	21%
South	16%	17%	18%	18%	17%
West	17%	16%	17%	17%	17%
Northwest	18%	8%	3%	0%	7%
	100%	100%	100%	100%	100%

Source: City of Calgary, Accommodating Growth

4.2.2 Changes in Age Cohorts

The demographic composition of Calgary is changing. In the upcoming years the age cohorts are experiencing changes. Currently the baby boomers are aging and will eventually make up a large percentage of Calgary's population. The 45+ age cohort is experiencing high growth as in 2001 this cohort was 30.3% of the population and by 2033 this cohort will increase to 43.5%. The higher growth in the 45+ age cohort is attributed to the ageing baby boomers and the declining future population. The 25-44 age cohorts over the same time period decreased from 50.8% to 40.5%. This trend is also seen in the 0-14 cohort as in 2001 18.9% of the population was in this cohort and by 2033 there will be 16% (City of Calgary, Accommodating Growth). This is due to birth rates lower than previous generations due to smaller family sizes. The chart below outlines the projected changes by age in the City of Calgary from 2001 to 2033.

Table 4.1

Total Projected Population by Age, Calgary

Total Projected Population by Age, Calgary

	2001	2006	2011	2016	2021	2026	2031	2033
0-14	166,000	173,000	188,000	201,000	202,000	199,000	196,000	197,000
15-24	138,000	145,000	133,000	124,000	145,000	155,000	149,000	148,000
25-44	308,000	332,000	357,000	370,000	367,000	361,000	352,000	351,000
45-64	182,000	220,000	245,000	257,000	280,000	309,000	338,000	346,000
65+	83,000	95,000	103,000	118,000	140,000	164,000	184,000	189,000
Total	877,000	965,000	1,026,000	1,070,000	1,134,000	1,188,000	1,219,000	1,231,000
0-14	18.9%	17.9%	18.3%	18.8%	17.8%	16.8%	16.1%	16.0%
15-24	15.7%	15.0%	13.0%	11.6%	12.8%	13.0%	12.2%	12.0%
25-44	35.1%	34.4%	34.8%	34.6%	32.4%	30.4%	28.9%	28.5%
45-64	20.8%	22.8%	23.9%	24.0%	24.7%	26.0%	27.7%	28.1%
65+	9.5%	9.8%	10.0%	11.0%	12.3%	13.8%	15.1%	15.4%

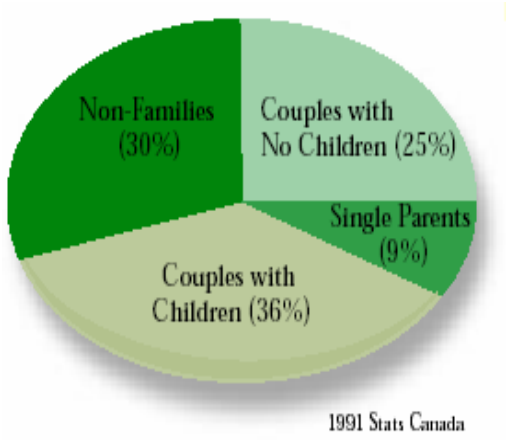
Source: City of Calgary, Accommodating Growth

4.2.3 Household Composition

4.2.3.1 Household Type

Chart 4.6

Calgary Household Types



The City of Calgary is experiencing changes in household types. Only 36% of Calgary households fit the traditional image of couples with children as shown above. By 2021

this will decrease as only 25% will fit this image (City of Calgary, The Calgary Plan, 1998). Non-family households will continue to increase to 34.1% in 2016 while it was 31.7% in 2001. From 1991 to 2001 it is shown below that the composition of household type has been changing. In 1991 78.1% of Calgary's families were married couples and this changed 12.5% as in 2001 it decreased to 73.1%. This decrease has led to a tremendous increase to other family types as Common-Law couples were 9.1% in 1991 and is 15.1% in 2001 a change of 55% over the time period. The Lone Parents family type has also increased from 12.8% in1991 to 15.1% in 2001 a change of 41.6% (City of Calgary, Accommodating Growth). This trend will continue as Lone Parent's will account for 16% of family types by 2016. The number of households is forecasted to increase to 586,000 by 2031 from an estimated 396,000 in 2001. The household growth is projected to slow from 2.7% in 2001 to 0.7% in 2001 in Calgary which follows similar national trends (City of Calgary, Socio-Economic Forecast). These trends over the last decade will continue in the future and will impact future housing trends.

Table 4.2

Families by Family Type, Calgary

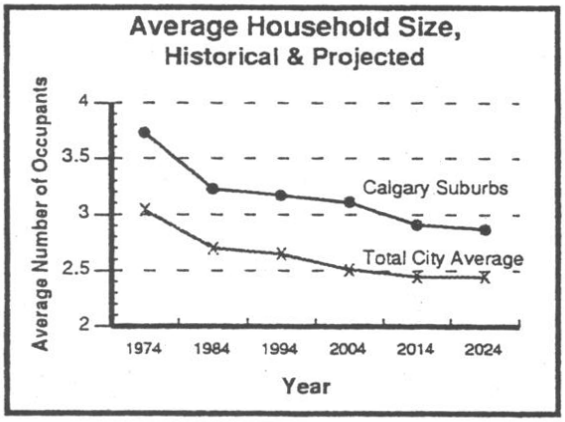
	1991		1996		2001		1991-2001
	Number	Per cent	Number	Per cent	Number	Per cent	% Chg
Married Couples	155,175	78.1%	168,495	76.9%	174,540	73.1%	12.5%
Common-Law Couples	18,090	9.1%	21,585	9.9%	28,035	11.7%	55.0%
Lone Parents	25,525	12.8%	29,005	13.2%	36,135	15.1%	41.6%
Total Families	198,785	100.0%	219,085	100.0%	238,710	100.0%	20.1%

Source: City of Calgary, Accommodating Growth

4.2.4 Average Household Size

Chart 4.7

Average Household Size

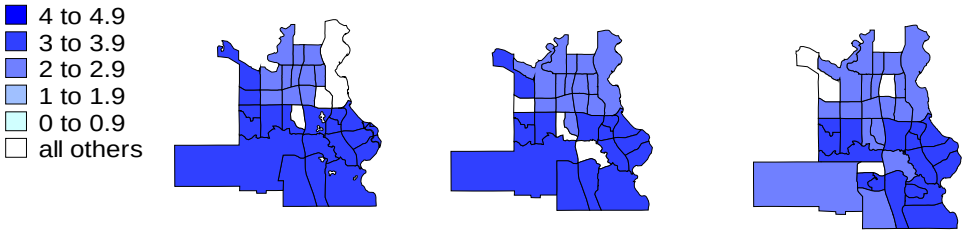


Source: City of Calgary, Sustainable Suburbs Study

In Calgary, average household sizes are in decline. Only 23% of the Calgary households are one person, and 32% are two people. The above graph shows the decline in the total city average and in Calgary suburbs. Today the total city average is 2.65 persons per household and this is forecasted to decline to 2.4. The suburban average is higher and expected to decline from 3.2 persons per household to 2.9 (City of Calgary, Sustainable Suburbs Study). In the south sector of Calgary these changes are occurring as well as shown below there are less people per household over the time period of 1991 to 2001. There a number of reasons for these declining households. The population is aging and the baby boomers children have moved out on there own. Many new households are singles or couples who have delayed having children. Many who do have children have less than previous generations. Also, a higher divorce rate splits many of the households. These trends are likely to continue and will be more pronounced.

Map 4.2

South Sector Household Size

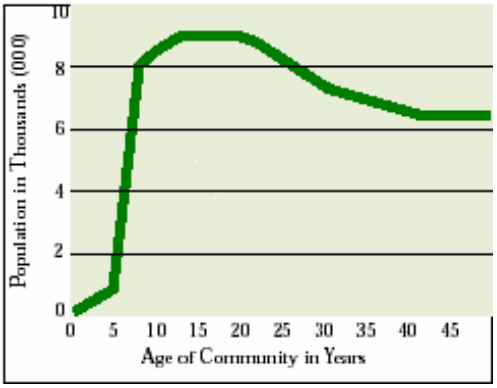


1991 1996 2001

Source: Community Profiles, 2004

Chart 4.8

Community Lifecycle



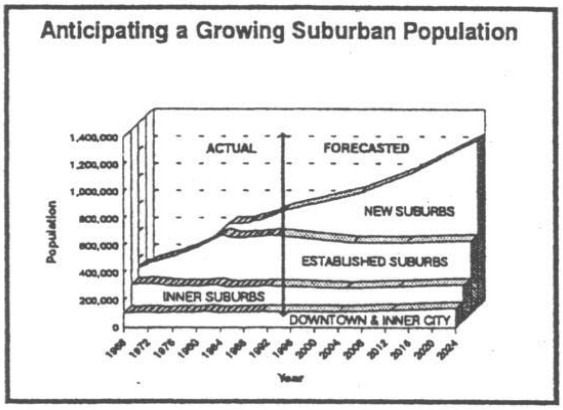
Source: City of Calgary, Sustainable Suburbs Study

The community lifecycle pattern shows the changes experienced by a typical community. This pattern is useful in identifying community trends and remedies for future decline. The initial growth of a community is seen over the first 10 years. This pattern of population gain is followed by peaking, leveling off and eventual decline. These communities grow to a peak population then children leave home which starts the decline. It is important for communities to have a diversity of housing types, services and facilities to accommodate the needs of the changing demographic base. This will prevent

eventual decline as the population can be accommodated with changing lifestyles and needs.

Chart 4.9

Anticipating a Growing Suburban Population



Source: City of Calgary, Sustainable Suburbs Study, 1995

The increasing population in Calgary is acommodated in the new suburbs. 100% of this future population growth is to occur in these new suburbs (City of Calgary, Accommodating Growth). It is also shown that the inner suburbs will maintain current population, and the established suburbs will likely decline somewhat.

4.3 – Income Mix

As a fundamental human need, everyone has the right to adequate housing. However, the types of housing available to various households range significantly. One of the most important inputs into housing is household income. This following section will examine the current market trends in Calgary, the South sector and the new South sector community profiles to project future market demands for *Pine Creek Villages*. Based on the results of the community profiles and market trends, a recommendation will made for three general incomes ranges, including assisted housing, affordable housing and market housing. Although a balance between various incomes will be encouraged within the community, households shall not be limited by their income to only certain housing types. Indeed, the goal to provide a diversity of housing options shall be extended to all incomes

and needs. Finally, this information will be used to determine the mix of housing and densities desirable in *Pine Creek Villages*.

4.3.1 Calgary Trends

4.3.1.1 Rising Calgary Incomes

Over the past thirteen years, there has been a modest increase in average and median income[1]. In 2000, Census Canada reported that the median family income (All Census Families) was $65,488 while the median household income (All Households[2]) was $58,861; both of which were substantially higher than the $52,605 and $45,777 respective median incomes in 1996 (Stats Canada, City of Calgary). Although these figures have not been adjusted for inflation, the following graph shows the increase in average and median family and unit income in Calgary adjusted to 2001 constant dollars.

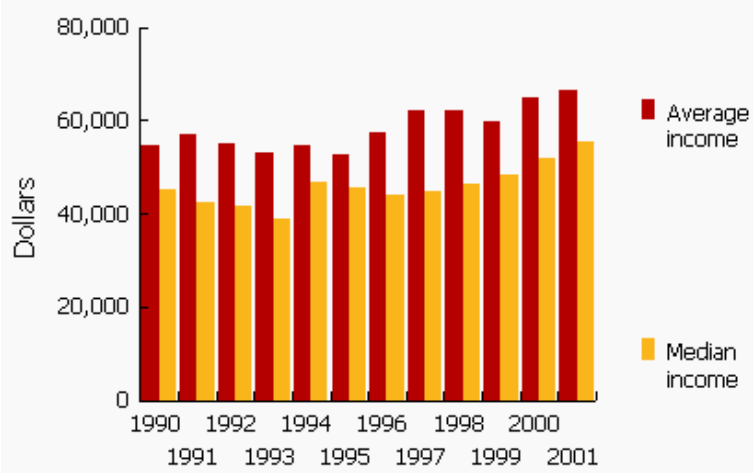
Although both sets of data suggests a trend of increased income, the distinction between average and median incomes will be important in determining what the general market can afford. The median income is lower than the average income, but is a more accurate description of what the typical Calgary family or households can afford. Additionally, the housing section will base the majority of its findings on household trends and affordability, since the demographic section reports a decrease in the traditional or nuclear family. At the same time, the suburbs remain a popular location for families, who generally report slightly higher incomes than a household of non-related individuals.

[1] Median Family Income of Census Families and Non-family persons 15 years of age and over refers to the median income of a specified group of census family or non-family person 15 years of age and over is the amount which divides their incomes size distribution into two halves.

[2] Includes multiple family households, lone-parent households, and non-family households, including one-person households

Chart 4.10

Total Income for Families & Households – Calgary 1990-2001



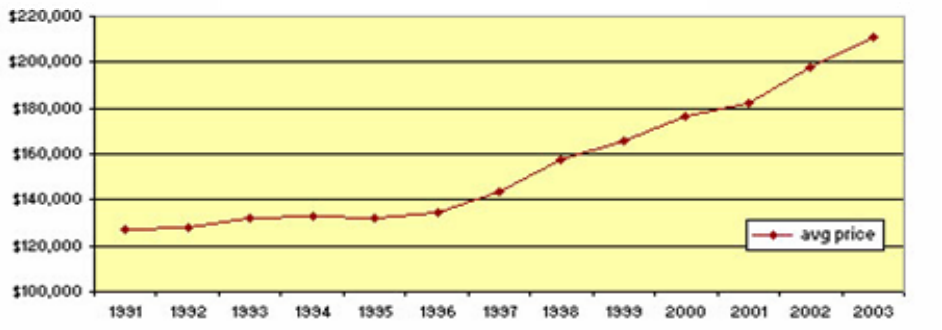
Source: E-stats

4.3.1.2 Rising House Values

There has been a steady increase in the price of housing over the last 13 years. In 1991, the average residential house sold for less than $130,000; within twelve years, this figure had risen to above $200,000. Although these figures are not adjusted for inflation, they nevertheless indicate a trend of higher housing costs. Stats Canada reports similar findings, although the cost of housing is based on household value rather than the market sale price. Nevertheless, in 2000, the average value of owner-occupied dwellings was $201,651, which is substantially higher than the 1995 value of $154,203 (Stats Canada, Community Profiles). The important finding is that the cost of house ownership is continuing to increase, as the demand for housing stays high in Calgary.

Chart 4.12

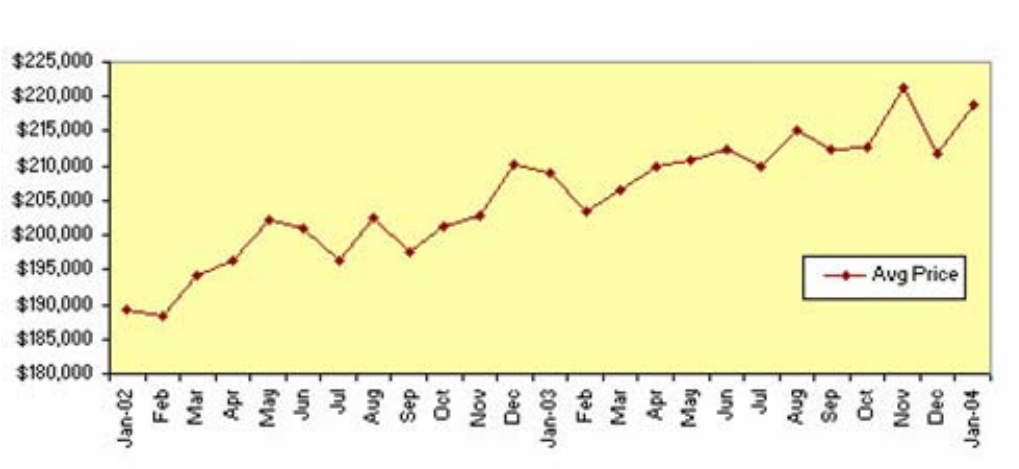
Average Sale Price per Year (1991-2003)



The chart below indicates a closer examination of the monthly variations of the market place. The overall twenty-four month trend was an increase in household values, with the average house sale prices almost $30,000 higher at the end of 2003 than the beginning of 2002.

Chart 4.13

Average Sale Price per Month (2002 & 2003)



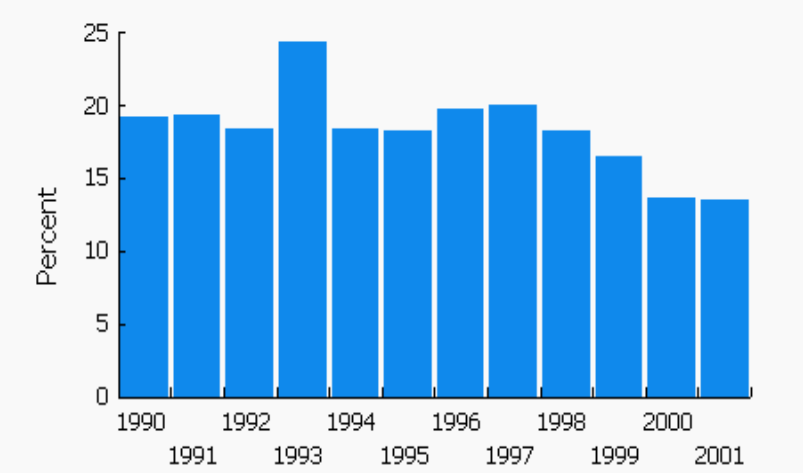
Source: www.creb.ca

4.3.1.3 Low Income & Affordability

As another important input into our demand analysis for *Pine Creek Villages* housing, the information surrounding low income households and families provides valuable information on the need to provide diverse housing within our new community. Although the percent of families in low-income households has declined over a thirteen year period, the inability for some households to provide adequate housing for themselves remains a challenge. Although the rate of low-income families has not following a predictable trend over the 1990-2001 periods, the prevalence of low-income families remains a concern for housing analysts. The following chart, which has been adjusted to 1992 dollars, indicates that in 2000 and 2001 the rate of low-income families was 15%.

Chart 4.14

Low Income Families 1990-2001



Source: E-stats

4.3.2 Community Profiles

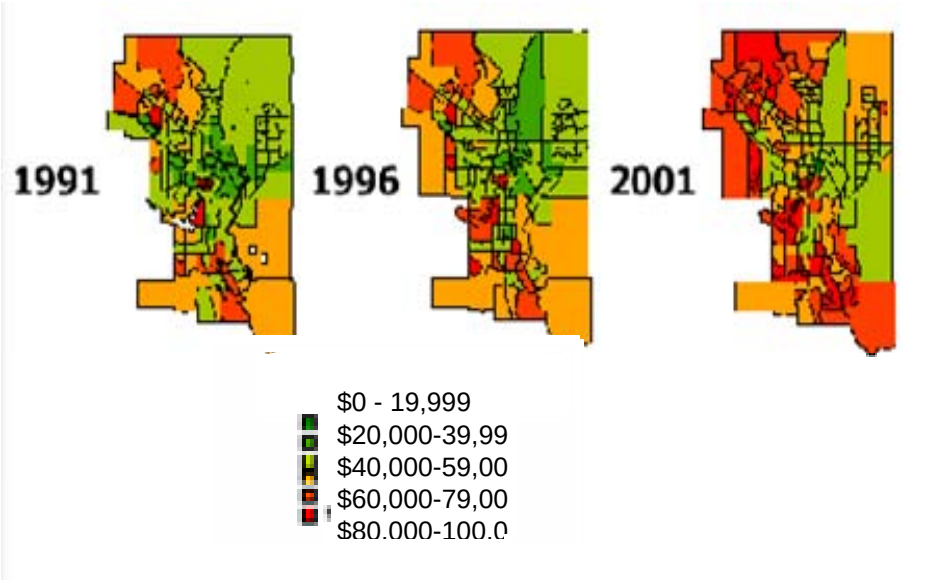
4.3.2.1 Income

A series of Stats Canada results show a concentration of wealth in the fringes of the city. The South sector study area has become increasingly prosperous over the last three census years (1991, 1996 and 2002) with average household incomes in 2001 being between $60,000 and $100,000 per year. As a result of higher incomes, households in the South are able to devote more of their annual income to housing needs.

The following maps show the concentration of households with higher incomes towards the Northern and Southern fringes of the city. In fact, between 60-80% of South sector households have an income over $50,000.

Map 4.3

Calgary & South Sector – Average Income by Census Tract



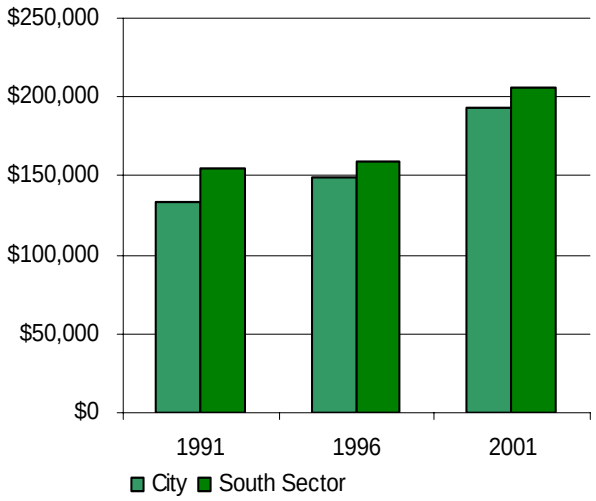
Source: Community Profiles

4.3.2.2 House Value

The South sector has a slightly higher average dwelling value than the rest of the city. Obviously, new developments in other parts of the city, particularly the Northwest, increase the average household value of "the city". As with household income, the fringe of the city reflects higher household values than the inner city and older suburbs do. People with higher household incomes are choosing to live in the new developments in the fringe of the city, which have newer and often larger homes. The increasing price of home ownership is again apparent in this chart:

Chart 4.15

Calgary versus South Sector House Value



Source: Community Profiles, 2004

It is also important to note is that the average maximum and average minimum value of households reflect a much more significant spread than simply the averages. The Average maximum dwelling value in the South is much lower than the City ($358,389 compared to $517,301) indicating that the very wealthy are not choosing to live in the South. On the other hand, the minimum average dwelling is approximately $44,000 higher ($137,285 versus $93,003) than the city, indicating that low-income households are not as prevalent in the South (see Affordability section). Overall, these dwelling value averages demonstrate that the South is a predominately middle class sector, with household dwelling values appropriate for most middle-income earners.

Table 4.3
Calgary and South Sector – Average, Max & Min Values

	City 1991	Sector	City 1996	Sector	City 2001	Sector
Average	$133,380	$154,450	$148,997	$159,707	$193,155	$205,556
Maximum	$285,635	$252,315	$363,135	$285,119	$517,301	$358,389
Minimum	$41,644	$104,499	$84,578	$104,583	$93,003	$137,285

Source: Community Profiles, 2004

4.3.2.3 Low-Income & Affordability

According to the Canadian Mortgage and Housing Corporation, a household should not devote more than 30% of its net annual income to housing costs – including rental and mortgage payments, utilities, taxes, repairs and other miscellaneous costs associated to comfortable living. Based on these calculations, CMHC recommends that:

- A household with an income of $37,621 can afford a maximum price of $110,000 for a condo ownership, assuming a %10 down payment and monthly fees of $150, 7% property tax at 1% of home's value, and %32 of gross income spent on housing.
- A household with an income of $37,621 can afford slightly more expensive home with a maximum price of $114,000 for non-condo home ownership (CMHC).

According to CMHC, Affordable Housing initiatives target those with an income below $30,000/yr, based upon 65% of the $45,879 median income in 1996.

The following chart gives a breakdown of the price range available for home ownership to various income levels:

Table 4.4

Maximum Home Price Based on Household Income

Household income	10% Down-payment	Maximum home price	25% Down-payment	Maximum Home Price
$30,000-40,000	$6,300-5,700	$78,000-114,000	$24,700-$36,000	$98,800-144,000
$40,000-50,000	$5,700-7,500	$114,000-150,000	$36,000-47,400	$144,000-189,600
$50,000-60,000	$7,500-9,300	$150,000-186,000	$47,400-58,800	$189,600-235,200
$60,000-70,000	$9,300-11,050	$186,000-221,000	$58,000-70,100	$235,200-280,400
$70,000-80,000	$11,050-12,500	$221,000-250,000	$70,100-81,500	$280,400-326,000
$80,000-90,000	$12,500	$250,000	$81,500-92,800	$326,000-371,200
$90,000-100,000	$12,500	$250,000	$92,800-104,300	$371,000-417,300

Source: CMHC Website

In 2002, the average price for a single-detached dwelling in Calgary was $215,000, requiring a household income of at least $65,000 (City of Calgary, AHFF). According to the City of Calgary, households earning below $50,000 can only afford 14% of homes available for sale in Calgary, but represent 41% of the population (City of Calgary, AHFF). Even entry-level prices for houses and townhouses were above the median household income in Calgary:

- The average *entry-level house* price in 2002 was $178,000 requiring a household income of approximately $60,000.
- The average *entry-level townhouse* price in 2002 was $144,000 requiring a household income of approximately $46,000.

In 2002, the only available housing option to average single household income of $49,321 (Stats Canada, 2001) was the entry-level condo, at an average price of $112,000 (City of Calgary, AHFF). Although a condo would not be suitable to most traditional families seeking a spacious single-detached dwelling, suburban condominiums do provide reasonable accommodation for many other segments of the population.

4.3.3 Recommendations

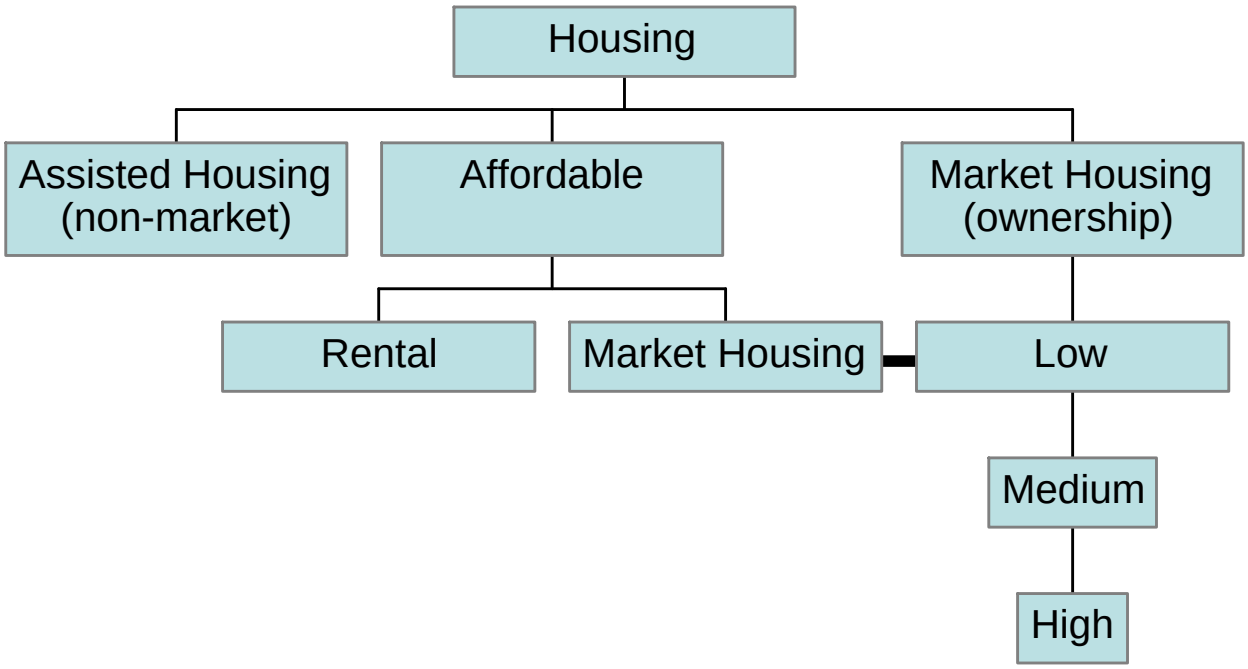
4.3.3.1 Housing Categories

Based on the cost of a purchase, maintenance, taxes, and utilities, market housing is only reasonable to households with an income above $40,000. As such, affordable housing,

rental stock and assisted living must also be included within a community in order to promote integration of income and needs. The following housing scheme recommends three categories to include different incomes and housing needs:

Chart 4.16

Recommended Housing Categories



Based on the Chart *Recommended Housing Categories,* the household incomes needed to afford certain houses are:

Table 4.5

Household Categories and Incomes Ranges

Income Ranges		home prices	income ranges
Assisted housing		N/A	>$30,000
Affordable housing		$78,000-114,000	$30,000-40,000
Market housing	Low	$114,000-189,000	$40,000-50,000
	Medium	$189,000-280,400	$50,000-70,000
	High	$>280,500	>$70,000

4.3.3.2 Market Housing

Based on the above table, average and median household incomes in Calgary can afford a medium to high market housing; homes which are prevalent in the new South communities. The market demand for homes in the $180,000 and up range is high; as such, the new communities specialize in providing modest single-detached dwellings in this price range. The Calgary trends and South sector community profiles indicate that the medium to high market housing category is the highest demand in new developments.

4.3.3.3 Affordable Housing

The South sector, and in particular the new communities, are not as good at providing Low Market Housing or Affordable Housing options. Household incomes below $40,000 are hard-pressed to find housing, especially in the new suburbs. The City of Calgary has identified the need to provide housing for lower and moderate income through a variety of means, including: emergency shelters, transitional housing, non-market rentals, formal and informal rentals and affordable housing ownership. As outlined at the beginning of the Income & Affordability section, in any given year between 15-20% of households are considered *Low Income*. Based on Calgary Census data, low income is especially prevalent among female lone-parent families, seniors and single persons.

According to the cutoffs for Low-Income Cutoffs, market housing ownership is impossible. Indeed, affordable rental opportunity is out of reach for most-low income persons or households:

Table 4.6

Low Income Population Groups

Incidence of Poverty for Selected Population Groups (LICO)						
	1990		1995		2001	
	Calgary	Canada	Calgary	Canada	Calgary	Canada
All Persons	17.5	15.1	19.2	17.7	12.5	14.7
People under the age of 18	17.3	17.4	19.2	20.7	11.7	26.5
In two-parent families	10.4	10.9	20.4	14.1	9.9	11.4
In female lone-families	60.5	62.8	78.7	61.9	30.4	47.6
Person aged 18 to 64 years	16.3	13.2	18	16.3	12.3	13.7
Seniors 65 years and over	27.6	21.1	26.4	18.8	16.4	16.4
Unattached seniors	69.9	50.7	69.2	44.8	46.2	43
Economic Families	12.7	11.9	15.2	14.4	8.1	11.2
Unattached Individuals	40.6	37.9	41.3	39.5	38.3	37.3

Declining Rental Stock

Declining rental stock is due to a number of reasons, including: conversions to condos; little new rental stock added; low vacancy rates; increasing population and increasing rent; making adequate rentals are increasingly limited in Calgary. According to a City of Calgary report, the average rent for a 2 bedroom apartment has risen 26% between 1995-2001 (City of Calgary, Corporate Affordable Housing Strategies). Based on the *Annual Incomes and Affordable Rents* table below, the 2000 average rental price of $766 (Stats Canada) requires an annual income of $30,000-40,000. As such, true low income households are unable to even meet monthly rental payments based high demand and low supply of rental stock.

Table 4.7

Annual Income	Affordable Rent	Rental Type	Number of Households	Percentage of Households
>$20,000	max $500	transitional housing, social housing, subsidized housing, shared market rental	25,595	25.20%
20,000-30,000	$500-750	near market rental, small studio rentals, below market affordable housing ownership, subsidies	15,605	15.50%
30,000-40,000	$750-940	market rental ownership, small subsidy for multifamily homeownership, deeper subsidy for single family dwellings	15,605	15.40%
40,000-50,000	$1000-1,250	market rental apartments, including 1-3BR	12,990	12.80%
50,000-60,000	$1,250 +	market rental apartments, including 1-3BR	31,665	31.20%

Minimum Wage and Rent

Calgary is especially vulnerable to high percentages of low-income earners because of Alberta's low minimum wage. A single person working full time at the minimum wage rate of $5.90/hour will earn an annual income of $12,172, which is $6,500 less that the low income cut-off for a single person. Based on the CMHC recommendations, affordable rent for minimum wage earners in Calgary would be a maximum of $306/month, much lower than the average market rental price. In Calgary, there are 15,000 minimum wage earners (Poverty Fact Sheet). Over the last eleven years, rent has increased 34-38%, while the minimum income has only increased 18%. Obviously, many of the 15,000 minimum wage earners are teenagers and part-time workers; however, for those trying to support themselves on minimum wage, housing is a major challenge.

City Roles

In 2002, The City of Calgary identified three target groups with high housing needs:

- Households earning below $20,000 cannot afford rental market housing (32,450 households)
- Households earning between $20,000 and 29,999 have difficulty affording rental market housing (16,105 households)
- Households earning below $37,621 cannot afford most forms of home ownership (approximately 40,000 households)

Despite Calgary's growth and economic prosperity, many people are struggling to provide adequate housing for themselves and their families. The increase in the number of poor Calgarians is causing a significant strain on the housing market, in addition to a segmentation of Calgary communities. As Calgary continues to attract new residents, the demand for both suburban and inner-city housing continues to rise. The unintended consequence of a growing population and economy is decreased affordable living opportunities for a significant portion of the population. The income needed to afford reasonable market housing – both rental and ownership – is not in line with what many people can afford. Given the prevalence of low income households and the high cost of rentals and home ownerships, it is important that Pine Creek Villages include both a mix of low cost market housing and encourage formal and informal rental stock.

4.3.3.4 Assisted Housing

Although assisted housing generally refers to Senior Assisted Living, in this context it will refer to housing subsidies and grants, social housing, and housing services for the elderly and disabled. In short, it recommends that services and programs be implemented to provide housing for those whose needs are not met within the market housing supply, whether it is financially, physically, or programmatically.

Financial Assistance

Although the City of Calgary does not require that new developments designate land or space for affordable housing and assisted living, *Pine Creek Village* is recommending that there is a need in Calgary for suburban non-market housing initiatives. As indicated

in the Affordable Housing section, there is a demand for affordable housing. Although many of low-income households may be single people (30%) who may not desire a suburban lifestyle, there are 27,265 families in the Calgary Census Metropolitan Area who meet the LICO requirements. Inner-city dwellings are often not appropriate for families with children; as such the resources and facilities provided by *Pine Creek Villages* would better suit many of the low-income family needs. The housing report therefore advises a close partnership with the public sector and NGOs to provide subsidies for families unable to meet market ownership to achieve adequate housing in a desirable environment.

Currently, the Calgary Housing Company is working to provide housing for Calgary households earning less than $20,000. From this group:

- 20% families
- 37% were single
- 36% were employed
- 28% on social assistance
- 14% on Assured Income for the Severely Handicapped

According to the National Council of Welfare, *the level of social assistance or welfare payment in Canada guarantee that recipients live below the LICO level.* Calgarians earning minimum wage, SFI, AISH, or GIS cannot afford market rent. At the same time, vacancy rates for social housing rental units is extremely low (0.6% in 2002), making it difficult to acquire social housing as well (Poverty Fact Sheet, 2003). Housing for seniors is also a concern in Calgary. Currently there are 1200 units available for seniors, with 662 people on the wait list (Poverty Fact Sheet).

Seniors

With an ageing population, providing adequate housing for seniors is also important. According to the demographic section, the 55 and older cohorts are a major planning consideration for the next 20-30 years. Apart from financial assistance for some seniors,

the community must also plan for adequate housing for financially-assured seniors. As the population ages, it is crucial that alternative housing options, designs and services are available within the community so that seniors do not have to leave the community when it no longer meets their needs. Potential options for seniors should include accessible and well-designed housing, self-contained living quarters with nearby services and medical, and secondary suits within existing homes to live with extended family if desired.

Although the Housing Report realizes the need for affordable and assisted housing within the community, it is not able to provide these resources without partnership with the City of Calgary and other public groups. Certain initiatives will be pursued within the community to encourage a diverse mix of housing. Nevertheless, the community will work towards providing social housing programs based on a mixed-income model which provides a range of housing throughout the community.

4.3.4 Summary

Market Housing

- Typical suburban housing stock, based on South Sector market trends and demands
- Provide a variety of housing options, including high quality multi-family units and medium density single-family
- Price range $114,00 and up

Affordable Housing

- Provide good rental stock, multi-family, starter homes and subsidies for lower income households
- Price range $78,000-114,000

Assisted Housing

- Senior assisted, services, low income households, subsidies
- Partnerships with private and public sector, as per policies

Realizing the demand for traditional single family housing in South Sector, *Pine Creek Villages* will continue to provide desirable single family housing for the above average income group. However, affordable housing will also be provided for those in the low to average income household categories, with a good supply of multifamily, small homes, and rental opportunities. Finally, the community will work together with public organization and the City of Calgary to provide a certain percentage of assisted housing for low-income households, seniors, and disabled persons. This can be achieved through programming, as well as house designs that are adaptable and flexible for a variety of needs.

4.4 Housing Supply

How should a residential development be designed to consider the changing needs of the population? The estimated characteristics of the population over the physical life expectancy of housing and development types must be considered. The supply of housing best meets the demand if the various dwelling requirements are fully considered and provided for in a range of types, sizes, and costs. This way of planning and developing avoids substantial inefficiencies in the use of physical and human resources to the end that improvement of society is facilitated through its residential environment.

Calgary has experienced a period of growth in the last 15 years. Typical growth in the housing sector has been single family, suburban developments. According to demographic and income trends and forecasts, the housing market is not paying attention to what is really needed. The following section takes into account the changing demographics in Calgary overall and applies it to the study section to justify what we are proposing as housing types and densities.

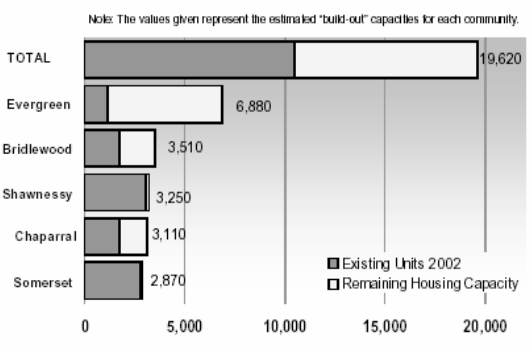
4.4.1 Context: Calgary and South Sector

According to Calgary's Short Term Growth Management Strategies Report, "the South sector of Calgary has accommodated a 16% share of the single family/duplex market growth since 1996, adding 1,000 single family/duplex units per year, on average. The

sector's share was 18% for 2000, adding 1,016 units through new building permit applications" (STGS, 2003). Most of Calgary's new suburban developments fall into line with this percentage of growth. The following graph represents the estimated build out capacity for each new south community. This 2002 data shows that the sector closest to Pine Creek Villages is close to capacity. Therefore, developers will be seeking to develop the next plannable area which is *Pine Creek Villages*.

Chart 4.17

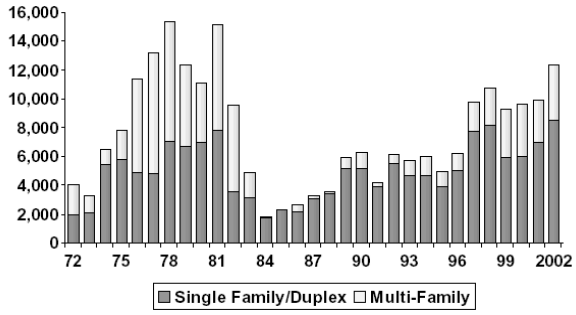
South Sector Housing Capacity



Source: STGMS, 2002

Chart 4.18

Calgary Housing Starts Single-Family/Duplex and Multi-Family (1972-2002)



Source: STGMS, 2002

The previous graph shows the dominance of single dwelling units in Calgary from the early 1980s to 2002. The South sector and the new South communities are following this

trend. In 1996, multi-family units represented only 3% of all housing types and in 2000, multi-family units represented 8% of all housing types (New South Community Profiles, Calgary Census, 2000). Although this data shows a slight increase in the percentage of multi-family homes, it does not coincide with what demographic and income trends and projections in Calgary are telling us. As outlined in the demand section regarding demographics and income, the market is not providing for the changing needs of Calgarians. Average income in the South sector remains on the higher end while in Calgary there is an increasing need for more affordable, diverse housing options. Family structure is changing. Age cohorts are changing. As 'baby boomers' age a large number of them will move from their single dwelling homes and will need to be provided for via alternative housing types such as smaller, more flexible units as in condominiums, secondary suites or apartments. If we project even further into the future, family sizes are getting smaller, there is a rise in non-married people and single parent households. In twenty to thirty years the family structure will no longer be dominated by the traditional family household. Population projections show that there will be more single parent families, more common law couples and fewer children. These household types will not be able to afford or need today's typical single family home.

4.4.2 Housing Density

Pine Creek Villages aims to be a vital, diverse community and density is a major contributor to create vitality and variety. The following chart breaks down the total land in the study area to net developable land. From the net developable land, densities can be projected for *Pine Creek Villages*.

Table 4.8

Net Developable Land

Total Area (acres)	**3600**
Environmental Reserve	397
Pine Creek	75
High Schools	40
Total	512
Developable Gross Land	**3088**
Municipal Reserve @10%	309
Transportation @27%	834
Total	1143
Net Developable Land	**1945**

Table 4.9
Projected Population and Units

Gross Developable Area	**Projected Population**		
	3.4 ppl/household	3 ppl/household	2.7 ppl/household
3088 gross developable acres	7 units/acre	8 units/acre	9 units/acre
	74,000	74,112	75,038
	21,616 units	24,704 units	27,792 units

The above chart shows the number of units depending on gross density figures. The recommended density is slightly higher than what the City of Calgary aims for at 6-8 units per acre. For Pine Creek Villages, the goal is 7 – 9 units per acre. The population projections mentioned in the first section of the report outline that household sizes will diminish over the next 20 years. Developing a community with higher densities and a higher ratio of multi-family to single family units will accommodate the diminishing household size.

Table 4.10
Gross Density and Dwelling Type

Dwelling Type	Gross Density
Low Density	**5-8 upa**
Single detached on:	
60' lots	5 upa
50' lots	6 upa
40' lots	**8 upa**
Medium Density	**11-18 upa**
Small Singles on 30' lots	11 upa
Semi-detached on 30' lots	11 upa
Semi-detached on 27' lots	12 upa
Interlots, Quattroplex, Uniquattros	14 - 16 upa
Street Townhouses	15 upa
Courtyard Townhouses	18 upa
High Density	**20+ upa**
Stacked Townhouses	20-25 upa
Walk-up Apartments	20-25 upa
Low-rise Apartments	**30-40 upa**
Four to eight storey	40-80 upa
Eight + storeys	80+ upa

Source: CMHC, Increasing Density Through Lot Size and Design

The previous chart from CMHC shows how the type of dwelling affects the gross density. The housing group aims to achieve a high density throughout *Pine Creek Villages.* Therefore, the dwelling types chosen to base the scenarios for the multi-family, single family split were the 40 foot lots at 8 gross units per acre; the low rise apartments would range from 2 – 4 stories at an average of 35 gross units per acre.

4.4.3 Recommendations

Table 4.11
Scenario I

Scenario I	10% Multi-Family	90% Single Family
Units	2470	22,234
Density	50 upa	12 upa
Required Acres	57	1861
Total	2078 acres	

Although high, Scenerio I is close to what is recommended by the City of Calgary for suburban density (City of Calgary, Calgary Plan, 1998). It recommends a 10%- 90% multifamily split for *Pine Creek Villages*, based on on a gross density of 8 units per acre. As mentioned previously, the surrounding new south communities achieved an 8%, 92% split in 2000. The build out capacity for these areas shows that there are not many multi-family units that will be built by the time capacity is reached.

Table 4.12
Scenario II

Scenario II	25% Multi Family	75% Single Family
Units	6716	18,528
Density	50 upa	11 upa
Required Acres	123	1684
Total	1807 acres	

Scenario II recommends a 25% multifamily to 75% single family split based on a gross density of 8 units per acre. Although this figure may seem extreme considering what the surrounding communities' current supply split is (approximately 8% multi family and 92% single family) and the City of Calgary's policy to maintain an average of 6 gross units per acre, scenario II is justified according to the demographic and income trends outlined in the demand section. The City of Calgary advocates that we pay attention to community residential density because, as development progresses, more roads, pipes, wires, etc., must be built and maintained; and higher per capita operating costs are incurred for distance-sensitive services such as transit, police, fire, ambulance, garbage collection, snow removal, etc. (City of Calgary, City Wide Planning Information Package).

4.4.4 Smart Growth Developments

Pine Creek Villages strives to be unique while also taking smart growth principles into account. Smart growth developments minimize air and water pollution, facilitate brownfields cleanup and reuse, and preserve open space. One principle of smart growth is to take advantage of compact building design. Building higher density places with good design is not just an abstract theory – it is a practical approach to growth that is being used in diverse places across North America and other countries. There is an increasing recognition nationwide that density is an integral component to the creation of neighborhoods that offer convenience, value and a high quality of life.

Cities that prohibit higher density create an environment where low-density development is the only option: as such open spaces are consumed at alarming rates; traffic congestion increases on major roads; and subdivisions evolve without a town center, a corner store or a sense of community. As communities confront the consequences of low-density development, a more balanced perspective emerges. People are beginning to realize that nodes of more intense development can help achieve local economic development goals, provide housing options, create walkable neighborhoods, and protect their air, water and open space (EPA, 2004). This balance helps create a sense of place – a place to walk, a place to talk to neighbors, a place to know the children are safe to walk to school. To create these great places, communities are zoning some areas for higher density and a mix of houses, with parks, schools and shops.

Communities that allow only low-density development limit housing choices and may drive up housing costs. By balancing lower, medium and higher-density projects, communities offer a wider range of housing types. In contrast to conventional development in which housing tends to be similar in style and size, higher density projects can provide townhouses, apartments, accessory units and even live-work spaces to accommodate a broader range of lifestyles. This greater range of housing types expands housing choices within a neighborhood. This allows residents to choose housing that meets their changing needs and preferences over their lifetime. Also more housing

choices at different densities increase affordability. Higher densities mean less land per unit, thus reducing site preparation, and lowering per unit infrastructure costs, all of which reduce the hard costs of construction while encouraging reasonably priced housing. (US, Environnemental Protection Agency)

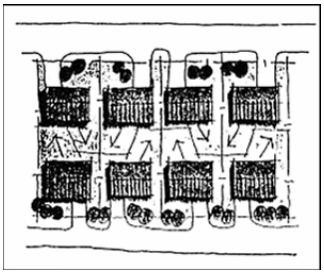
For these reasons we recommend that scenario II be adopted in *Pine Creek Villages*, with an eventual build-out of 25% multi-family units. Several ways to achieve high density and affordability include lot design and various types of housing not widely available in traditional suburban developments.

4.4.4.1 Alternative Lot Design

A means of creating greater density in an area is by utilizing alternative lot design, such as zipper lots. As shown below, zipper lots create open space by staggering the rear lot line. In this configuration, the zipper lot house can achieve up to the same gross density as on-street townhouses (approximately 15 units per acre).

Figure 4.1

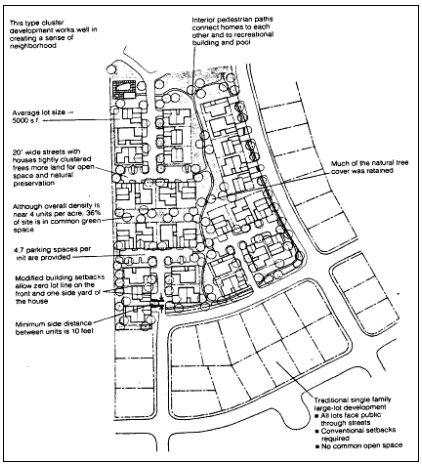
Zip Lot Design



Source: CMHC, Increasing Density

Figure 4.2

Cluster Design



Source: CMHC, Increasing Density

Cluster designs use small private lots combined with shared common open space and is also a way of reducing land costs. By sharing open space, utility servicing is minimized and construction costs are reduced because less paving, sidewalks, curbs and gutters are needed.

4.4.4.2 Flex Housing

Flex Housing appeals to many different segments of the population including:

- Young families who benefit from the reconfiguring of rooms to meet their changing spatial requirements.
- An ageing population who is are able to convert their home as they lose mobility and vision.
- Disable people who need a home that is fully wheelchair accessible, with wide corridors. For visually impaired residents, the Flex Home also provides options.
- Single adults who want to use space communally.

Flexible housing is a built form with an interior configuration that can be modified over time to adapt to the needs of the homeowner. As the needs of the household

occupants change, so does the design of the home. For example, the house may be adapted to include: an addition or removal of a secondary suite; a change in room configurations to create a new bedroom for a child or elderly parent; or, an addition of an office. Flex housing looks like a conventional single-detached dwelling. All of the conversion takes place on the interior.

Figure 4.3
Flex House

Source: CMHC, Improving Quality and Affordability

4.4.4.3 Secondary Suites

Since the 1980s, secondary suites have been recognized by policy makers as one of the most cost-effective ways of providing affordable rental housing. Furthermore, they benefit younger households for whom the extra income makes housing affordable in high cost areas. Such income also helps older households continue to live in their neighbourhoods.

The advantages of permitting secondary suites are:

- Secondary suites provide relatively affordable rental housing in a neighbourhood setting without major government assistance.
- Secondary suites in owner occupied houses are generally well maintained which avoid the difficulties of maintenance in other forms of assisted housing.

- Secondary suites are a cost-effective way of addressing rental housing needs.
- Secondary suits are a means by which low-income people can find dwellings offering smaller amounts of housing services (hence lower total cost) within cities. Relatively large in relation to the current price of housing.
- Secondary suites help to make homeownership affordable for first time homebuyers.
- Secondary suites provide additional income and security for older households with extra space.
- Secondary suites make better use of existing infrastructure including the housing stock and are a means to create higher density in areas dominated by single family units.

The issues related to permitting secondary suites are:

- It is expensive to bring units up to current standards if a home has not been originally built with a secondary suite in mind.
- There is often strong opposition to legalizing accessory apartments from local residents but if secondary suites were included as part of the development of *Pine Creek Villages* from the beginning; residents moving into the area would have knowledge of that feature.
- In neighborhoods where parking is limited, secondary suites increase pressure on crowded streets. This could possibly be addressed by ensuring most secondary suites are built in units close to public transit.
- Many homeowners, especially older people, are reluctant to go through the complex procedures associated with creating a secondary suite including getting proper approvals, obtaining all the trades required for the alterations and obtaining financing. It would be advantageous for homeowners, city regulators, and developers/builders to offer this option prior to the building phase of the homes.

4.4.4.4 Sustainable Community Design – Eco-villages

Sustainable Community Design (SDC) refers essentially to a practice of planning, designing, building and managing, and the social-economic development of communities following the precepts of sustainable development set out by the UN Brundtland Commission in 1986.

A good number of residential community- and housing-demonstration projects have been built -- largely in European Union jurisdictions; and from these, a knowledge base of experience and approaches in SCD is now emerging (see, for example, Perks and Van Vliet, 1994). According to William T. Perks, Professor Emeritus of Planning, Faculty of Environmental Design, University of Calgary,

> "[a] growing number of consumers are looking for housing choices and community settings designed for sustainability and ecologically-productive and diverse values; neighbourhoods and community centres built for workplaces and economic vitality as well as homes; places serviced by resource-conserving and bio-efficient technologies and where environmentally-friendly lifestyles can be enjoyed throughout the family cycle" (Perks).

Ecovillages are considered one form of SDC. According to the Global Ecovillage Network,

> "Ecovillages are urban or rural communities of people, who strive to integrate a supportive social environment with a low-impact way of life. To achieve this, they integrate various aspects of ecological design, permaculture, ecological building, green production, alternative energy, community building practices, and much more" (Global Ecovillage Network website, http://gen.ecovillage.org/).

Ecovillages are one solution to the major problems of our time - the planet is experiencing the limits to growth. Ecovillages strive for lifestyles which are "successfully continuable into the indefinite future", and are living models of sustainability. They represent an effective, accessible way to combat the degradation of our social, ecological and spiritual environments. They show us how we can move toward sustainability in the 21st century (Agenda 21).

The recommendation of an ecovillage development in *Pine Creek Villages* will address the growing concern for sustainable development in our society. It is forward thinking

and innovative. The *Pine Creek Ecovillage* would be the first of its kind in Calgary. Global examples of ecovillages can be found at, http://gen.ecovillage.org/index.html, "Find Ecovillages". Closer to home, the proposed development at Southeast False Creek in Vancouver is an excellent example of what an ecovillage can accommodate and accomplish. It encompasses density, walkable, transit oriented community, variety of housing types, affordable units, high income units, live/work units and green building practices (SEFC). It is located in an urban setting but pays close attention to the environmental context which in some was is similar to the *Pine Creek Villages* wetlands.

4.4.5 Summary

The current housing supply in the South Sector of Calgary is predominantly low density, single family units in suburban neighbourhoods. This supply does not address what Calgary as a whole is requiring. *Pine Creek Villages* has the opportunity to increase density and offer a range of housing types and prices for a diversity of Calgarians. The housing group recommends a density of 8 gross units per acre with a 25%, 75% split between single and multifamily homes in order to accommodate for various income ranges, and the changing structure of households.

4.5 Roads and Residential Design

4.5.1 Roads and Nodes

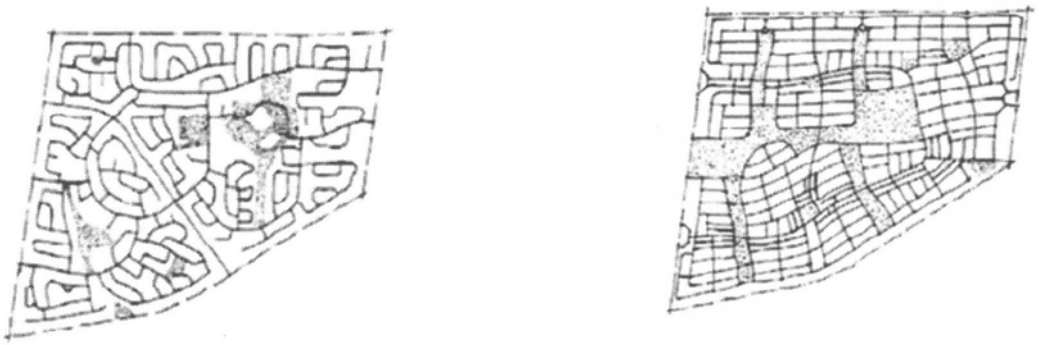
Roads are an important factor in community plan, which contribute to the quality and character of a community. At a macro level, the predominant suburban street patterns are curvilinear and grid. Although loops and cul-de sac provide safety, sociability and efficiency, grids are important for connectivity and easy orientation. A modified grid combines the benefits of the two street patterns, as well as the following advantages:

- Respects the flow of the natural landscape
- Conserves land by reducing total paving needed for road system
- Emphasizes a Pedestrian-Oriented Development with separate sidewalks and narrower streets
- Traffic Calming techniques which slow traffic

- Encourages alternative forms of transportation, such as walking, cycling and bussing (Learning from suburbia, 2001)

Figure 4.4

Loop and Cul-de-sac (L)
Modified Grid (R)

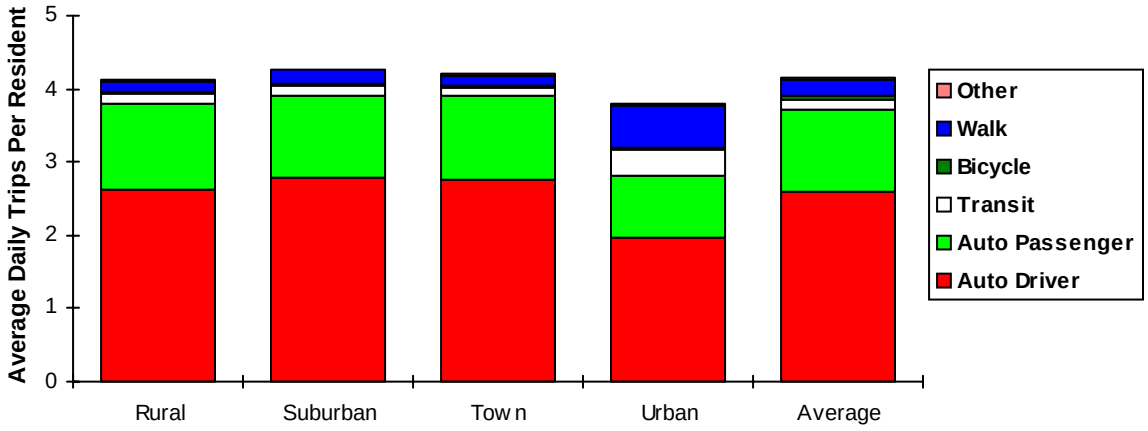


(Source: Learning from Suburbia, 2001)

Chart 4.19

A Vehicular-Dependant Society

Average Daily Trips Per Resident by Geographic Area (NPTS, 1995)



Source: http://www.vtpi.org/tdm/tdm20.htm

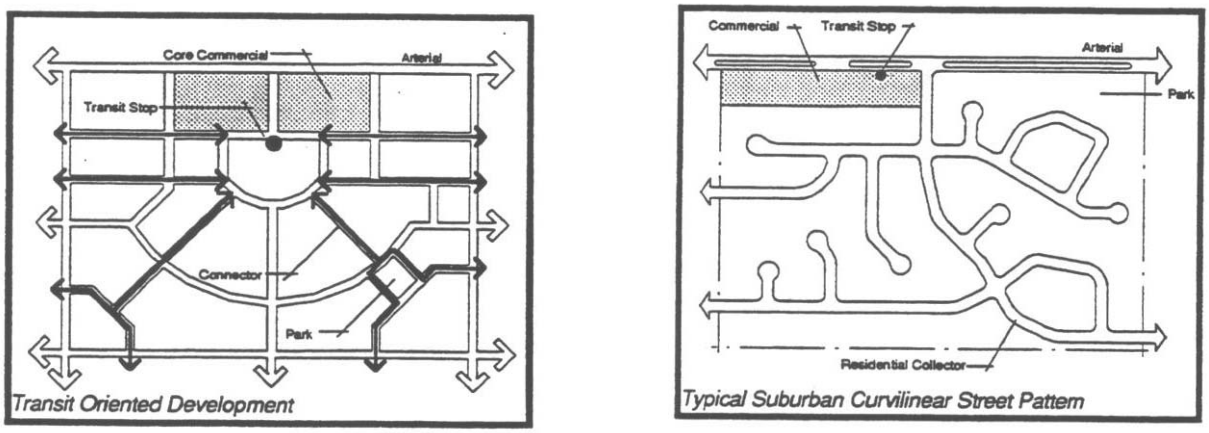
This chart indicates that suburban residents drive more and use transit, cycling and walking less than their rural, town, and urban counterparts. Suburbs are particularly dependant upon vehicles because of low residential densities that do not support transit.

By increasing densities to the levels recommended in the previous section, it is possible to promote a Transit Oriented Development (TOD) in Pine Creek Villages.

4.5.2 Transit-Oriented Development

Transit Oriented Development is important to the vitality of a community. Not only does it provide options to those who may not be able to afford other modes of transportation, it also alleviates pressures on families with car-juggling issues and restless teenagers. By providing convenient, frequent and reliable transportation, some families may even be convinced not to rely exclusively on a vehicle. Even for those who do rely on public transportation for any of their transit needs, a higher density, transit oriented development encourages a more interesting social fabric, with a focus on human scale developments. By encouraging mixed-use and retail near transit hubs, the community will be more active and interesting. Additionally, pedestrian-focused communities create an environment where walking to the corner store is not only possible, but desirable. Finally, by designing Pine Creek Villages around transit and pedestrians, we will hopefully reduce the air pollution, resource depletion and energy consumption of typical new communities (www.transittown.org).

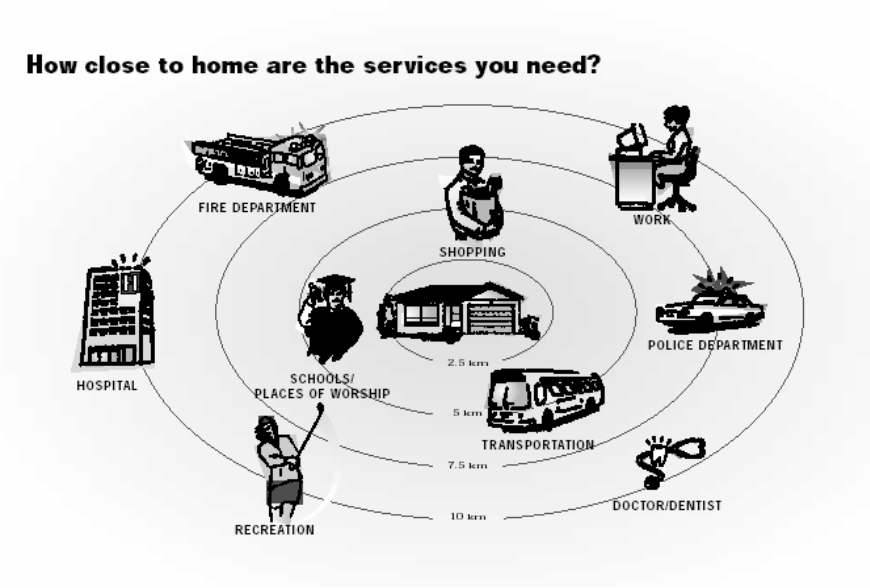
Figure 4.5
Comparison of two street patterns



(Source: Sustainable Suburb Study, 1995)

A TOD neighborhood has a central rail or bus station, which is surrounded by relatively high-density development. According to this model, the neighborhood center consists of a main transit station, surrounded by multi-family commercial and residential buildings, townhouses, small-lot single-detached dwellings, and finally, larger-lot single-detached dwellings farther away. Ideally, the TOD neighbourhood places transits stops within 400m to 800m of each home.

Figure 4.6



Source: CMHC

4.5.3 Density

TOD requires approximately 7 residential units per acre in residential areas and 25 employees per acre in commercial centers to support ridership. For premium quality transit, such as rail service, the densities required are closer to 7 and 25 units per acre, respectively (Ewing, 1999). Proper density is necessary to justify regular and frequent service. With an approximate density of 8 units per acre being the goal, this development would easily be able to support TOD.

4.5.4 Streets

By connecting private homes with the public area and various parts of the community, good street design has the following characteristics:

- Creates safe and health environment
- Reduces traffic speed through traffic calming features
- Provides pedestrians with attractive paths to community facilities and amenities
- Encourages cycling and walking through well-designed paths and sidewalks
- Reduces the need for large surface parking lots with adequate on-street parking

4.5.5 Roads Standards

We chose the types of roads that are used in residential areas such as Garrison Woods. It is a relatively new standard approved by the City of Calgary. It emphasizes separated sidewalks, tree lined streets and a narrower street.

Figure 4.7
Grand Boulevard

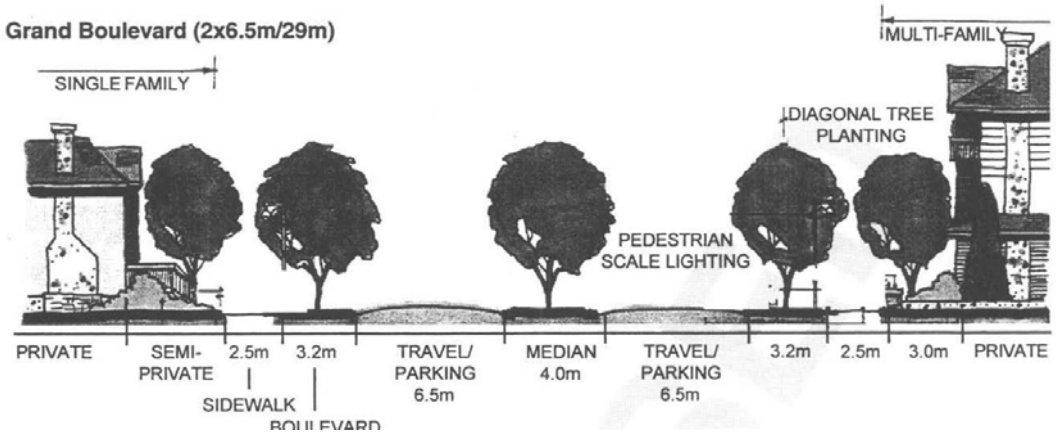


Figure 4.8
Lane

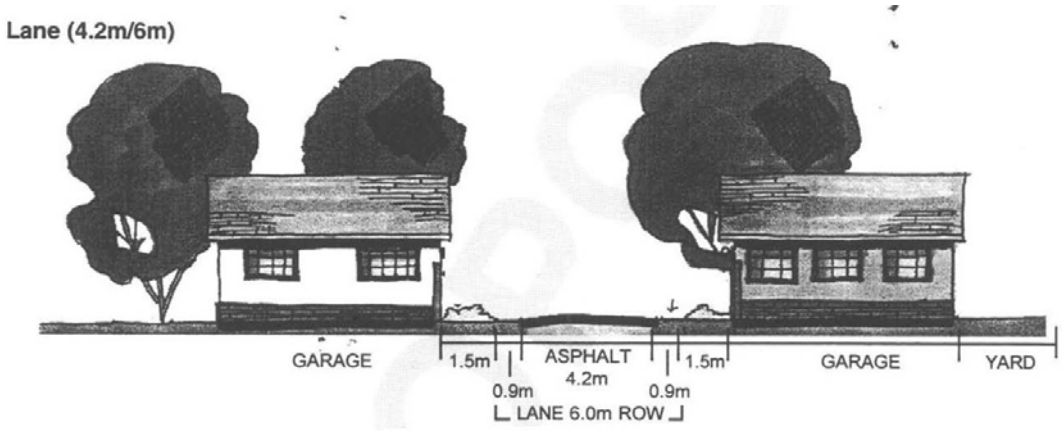
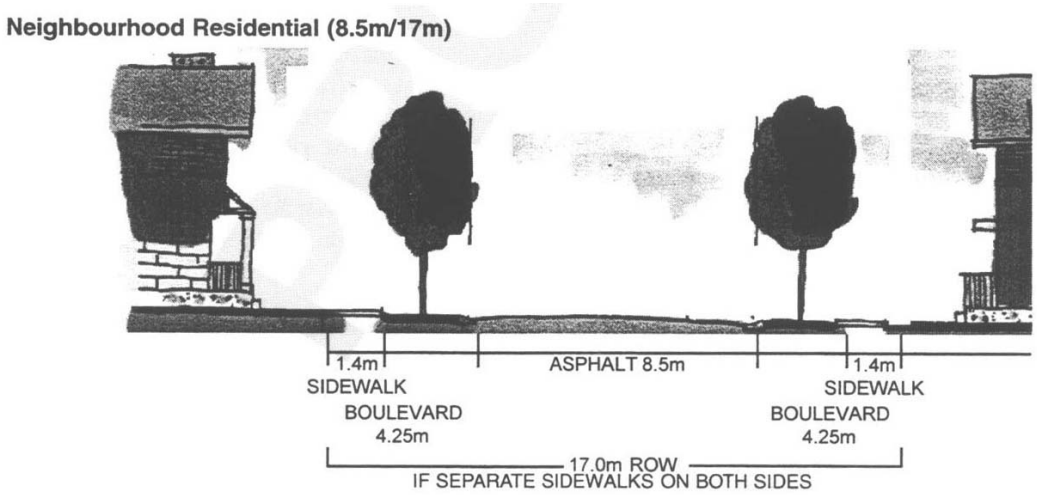


Figure 4.9
Neighbourhood Residential



4.5.6 Recommendations

4.5.6.1 Land Use Mix

A community designed around mixed-use, higher residential densities, transit and pedestrians will help achieve our objective of a creating a diverse, inclusive and interesting community. By locating shops and services near residential areas, the distance residents need to travel for many of their daily needs will be reduced. As such, many residents will be able to use their bikes, feet, or bus passes for trips that would typically require a car trip.

Additionally, a mix of land use will reduce commuter distances, by providing jobs in nearby businesses. According to Modarres, employees who work in mixed-use commercial areas are much more likely to commute by alternate modes than relying solely on their vehicle for work (Modarres, 1993).

4.5.6.2 Safety and Security

Safety and security can be provided to the community through careful design of streets and buildings. The following suggestions provide ways to increase community safety and security through a few simple design interventions:

- Buildings with good visibility and vistas
- Clear signage
- Well-configured streets and squares to encourage walking
- A pedestrian-oriented community which encourages interaction between all members

4.5.6.3 Pedestrian Friendliness

Pedestrians are much more likely to walk if the streetscape is inviting, interesting and safe. The following suggestions provide ways to increase pedestrian friendliness through a few simple design interventions:

a. Place buildings close to the street

b. Garages and parking lots should be hidden from street when possible

c. Street layout should be the modified grid to disperse traffic

4.5.6.4 Reduce Street Width

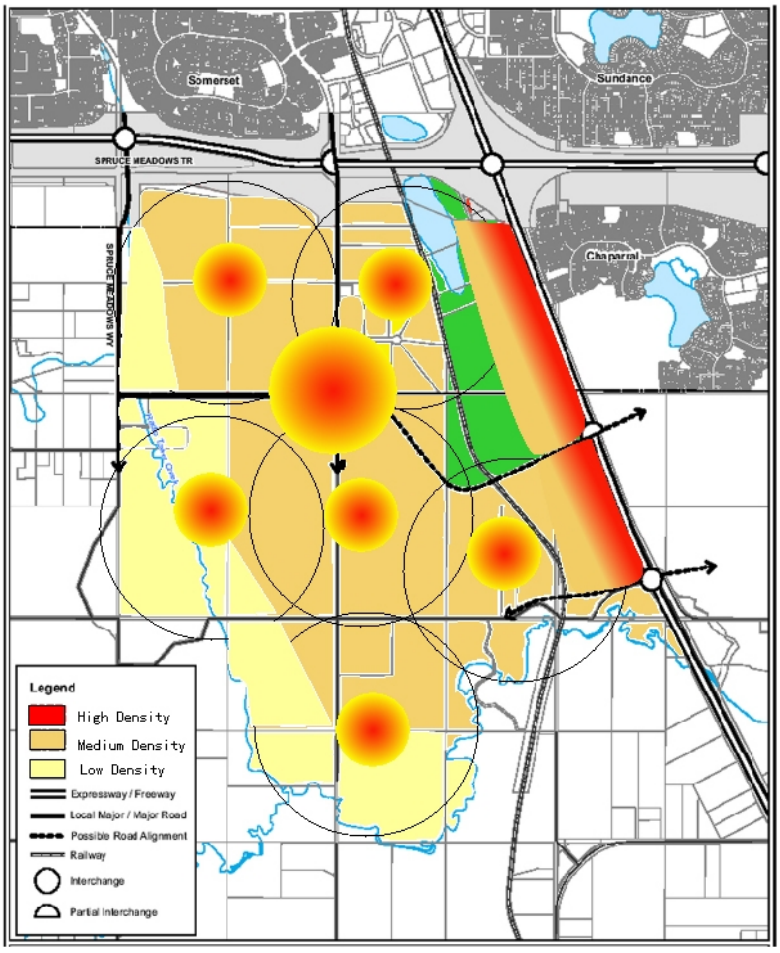
Reducing street widths can also contribute to the human scale and attractiveness of the community, by providing more space for landscaping, bike paths and sidewalks. Also, reducing the radii and providing rear lanes will reduce the speed of traffic on residential streets.

4.5.7 Summary

Based on the research and recommendations regarding housing, we developed the following concept plan:

Map 4.4

Concept Map



By providing concentrated areas of density, we are able to utilize our land base and provide a mix of housing types that would range anywhere from estate homes to an ecovillage and multifamily housing with work/live accommodations.

4.6 Case Study: McKenzie Towne, Calgary, AB

As a newly developed suburb in Calgary, McKenzie Towne is a good example of a new development built on the principals of sustainable design. McKenzie Towne is a departure from the typical Calgary suburb by integrating concepts of mixed-use, pedestrian-oriented, and diverse housing options within the community. Although its failures in some areas have led to criticism by some New Urbanists, McKenzie Towne has challenged Calgarians to a new way of suburban life, which includes an emphasis on pedestrians, mixed-use and community-living. McKenzie Towne is a particularly important case study for *Pine Creek Villages*, as it is dealing with similar demographic, political and social issues. Although other key developments across Canada and the United States provide excellent examples and studies, McKenzie Towne developers successfully lobbied changes in Calgary planning regulations, which will be beneficial to the planning and design of *Pine Creek Villages*.

4.6.1 Innovative Design

- Storm water retention
- Narrower street dimensions and carriageways
- Second dwelling units on some single-detached units
- Back lanes with narrower ROW and narrower street dimensions
- Relaxed-site development standards with narrower lots
- Reduced street block dimensions
- Combined utility and tree planting alignments
- Boulevards with sidewalk on both sides of street

Table 4.13
McKenzie Towne Goals & Outcomes

Goal	Implementation	Outcome
Housing Options	60-70% of total dwellings are single-detached, with options including townhouses, duplexes, condos, and secondary suits.	A greater variety of housing options than the typical Calgary suburb.
Integration of Housing and higher density	Higher density units towards the center of town, with lower density at the periphery.	Net residential density is approximately 6 units/acre, which is not higher than other Calgary communities.
Transit-Oriented Development	Bus stops within 450m of most units and paths & streets designed for cycling and walking. LRT planned for future.	Community is still heavily dependant upon vehicular transportation, with limited options for use of alternative transportation. LRT is scheduled to arrive in 2016 at the earliest.
Pedestrian-Oriented Development	Attractive streets, sidewalks, and paths to encourage walking.	No front garages, tree-lined streets, sidewalks, narrower lots for pedestrian interest.
Traffic Calming	On-street parking and traffic calming design	Attractive place for walking and safer streets.
Community Design	13 Neighbourhoods to converge at Towne Centre, each neighbourhood has major civic space at end. Town Centre to be accessible and convenient.	Town Centre located near expressway and first 2 communities built, not at centre of town. As such, 40% of eventual population will not be within convenient walking/cycling distance.
Greenways and Connectivity	Layouts and connectivity are subordinate to the street layout and configurations.	
Increased Open Sapce	375 acres to Green Space, approximately 16% of site	No different than other suburbs
Mixed Use, Retail & on-site employment	High Street provides retail and services conveniently located for community.	High Street has good local shopping, however is best accessed by vehicle. Employment opportunities are limited.

4.6.2 Areas of Improvement

Although McKenzie Towne was praised for many of its design ideas, *Pine Creek Villages* has the opportunity to utilize many of these ideas and improve upon them. For example:

- The location of the retail and pedestrian walk-ways must actually be within walking distance of all residences
- Assisted housing programs, low-income and affordable housing must be an integral part of the housing structure
- Technological innovations, such as energy conservation, etc, must be part of the housing design
- Employment will not be limited to entry-level retail, but also include opportunities which would pay well enough to live within the community
- Density of housing will be higher and better integrated throughout the community

Pine Creek Villages could use McKenzie Towne as a good starting point for sustainable, suburban community planning, with room for improvement in housing supply, pedestrian design and retail/mixed-use integration.

4.7 Appendix

Some good examples of housing and community design in other cities:

4.7.1 Affordable Housing and Mixed Income

Angus Shop Redevelopment, Montreal, QB
http://www.cmhc-schl.gc.ca/en/imquaf/afho/afadv/rere/resi/case2.cfm

- A redevelopment project to provide affordable housing opportunities on a former industrial site in Montreal
- 2,587 units developed by 1991, whereby 40% is social housing and 60% market housing
- different forms of tenure include coops, condos, single-detached, rental housing and public housing
- funding depends on government funding and municipal regulation and initiatives

The Convertible House
http://www.cmhc-schl.gc.ca/en/imquaf/afho/afadv/cohode/deflho/case2.cfm

Information regarding the feasibility and benefits of a house easily converted from a one to two unit dwelling. Through providing convertible housing, affordable homeownership

is possible, in addition to the increase in rental stock. This article provides a cost-benefit analysis of the investment in a convertible home.

Income Mix Zoning in Vancouver, BC
http://www.cmhc-schl.gc.ca/en/imquaf/afho/afadv/pore/usinhopo/case2.cfm

- An income-mix policy in Vancouver requiring developers of large redevelopment projects and new residential developments to set aside sites for non-market housing
- The city negotiates with developers to set aside 20% of base density of project to non-market housing to provide for those who cannot afford market housing or who have other special needs
- Through a partnership between the City, the developer and a non-profit group, housing is built specifically for non-market housing supply

4.7.2 CMHC Reports

"Affordable Housing Mandates: Regulatory Measures Used by States, Provinces and Metropolitan Areas to Support Housing", CMHC. Socio-Economic Series, Issue 95: November 2001.

- A report on how 4 states, 2 provinces and 2 metropolitan areas integrated affordable housing policy into the planning process for new developments. Includes suggestions on incentives provided to developers for the provision of housing suitable for low to moderate-income earners.

"Municipal Planning For Affordable Housing", CMHC. Socio-Economic Series, Issue 63.

- Exploring ways of providing affordable housing in Canadian municipalities, by implementing the following land-use planning policies: inclusionary zoning, linkage programs, density bonusing, alternative development standards, flexible planning approaches and cost charges on area basis.

"Southeast False Creek Design Charrette: Exploring High Density, Sustainable Urban Development", CMHC. Socio-Economic Series, CMHC, Issue 63: May 2001.

- Charrette process provides ideas for sustainable redevelopment in an inner city development. Includes ideas for high-density, mixed land-use strategy with a

variety of housing options. Social, economic and environmental sustainability are key considerations to design and policy.

4.7.3 Additional Case Studies

Windsong – Cooperative Development in Walnut Grove, BC
http://www.umanitoba.ca/academic/faculties/architecture/la/sustainable/contents.htm

- Cluster townhouses with 38 units
- Units are market rate between $144,000 and $250,000 CND
- Sense of identity and space by place by sharing common space and contributing to overall group well-being
- Large industrial area within close walking distance
- Diversity of people/ages/incomes
- Energy sources – building orientation was carefully considered to maximize solar energy, natural ventilation, light and outside pedestrian protection
- Innovative use of building material
- Shared common space and green space
- High density – preserves 4 of 5.8 acres for green space, habitat and vegetation

4.7.4 South Sector Housing Examples

New South Communities
Multi-Family Dwelling Examples

• Lake Chaparal - Condominium
• $111,500
• House Size 743.79 sqft
• Approximate Net Density: 30-40 upa
• Built in 2000

• Somerset - Condominium
• $119,900
• House Size 802.99 sqft
• Approximate Net Density: 20-25 upa
• Built in 1999

• Shawnessy - Townhouse
• $272,900
• 1266.92 sqft/ 117.70 m2
• Approximate Net Density: 11-12 upa
• Built in 2000

Source: CREB Website

New South Communities
Single Dwelling Examples

•Shawnessy – Single Detached
•$159,000
•1045.94 sqft/97.17 m2
•Lot Size: w: 9.200m/ 30.184ft
•Approximate Net Density: 11upa
•Built in 1982

•Evergreen - Single Family
•$359,900
•2285.20 sqft/ 212.30 m2
•W:13.400m D:37.500m
•Built in 2000

•Single Family
•$169,888
•1026.99 sqft/ 95.41 m2
•Lot Size: W: 8.000m/26.247ft
•Approximate Net Density: 11-12 upa
•Built in 2002

Source: CREB Website

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