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**IN PURSUIT OF A  
SUSTAINABLE SUBURB:  
A CASE STUDY OF  
McKENZIE TOWNE**

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**BY  
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# ABSTRACT

## **In Pursuit of a Sustainable Suburb: A Case Study of McKenzie Towne**

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April, 1999

Prepared in partial fulfillment of the requirements for the degree of  
Master of Environmental Design in Faculty of Environmental Design,  
The University of Calgary.

Supervisor: Professor Theresa Baxter

In 1995 the City of Calgary's Planning and Building Department prepared and presented to City Council, The Sustainable Suburbs Study: Creating More Fiscally, Socially and Environmentally Sustainable Communities. This report intends to facilitate the design of new residential communities that are in harmony with the fiscal, social and environmental costs associated with new developments. The report identifies guidelines and recommends policies for future suburban developments.

Neotraditional communities reflect many of the ideals contained in the Sustainable Suburbs Study. One of these neotraditional communities is located in the southeast area of Calgary. The basic premise of McKenzie Towne is that urban growth can be sustained within a limited infrastructure, provided that the pattern for such growth is that of a defined neighbourhood.

The purpose of this Master's Degree Project is to determine to what extent McKenzie Towne, a neotraditional community, fulfills the guidelines and recommendations presented in the Sustainable Suburbs Study. Criteria evaluated will include open space, housing, neighbourhood nodes, transportation and environmental issues. This project also utilizes survey findings to determine to what extent residents living in a neotraditional community feel that their community fulfills the guidelines presented in the Sustainable Suburbs Study. Another purpose of the questionnaire is to evaluate the level of satisfaction and desirability with living in McKenzie Towne and the reasons for this associated level of satisfaction and desirability. As well, the final purpose of the survey questionnaire is to formulate a resident profile.

Recommendations focus on improving neotraditional developments to ensure that the fiscal, social and environmental costs associated with suburban development are reduced for future generations.

### **Key words**

Sustainable Suburbs Study, sustainable suburb, McKenzie Towne, neotraditional development, open space, housing, transportation, environment, village square, Towne Centre.

# **ACKNOWLEDGMENTS**

Greatest gratitude to my family, especially my wife, Colette in having the patience and understanding during the completion of this project - all my love yesterday, today and tomorrow. A large thank-you to Professor Theresa Baxter for her continual support during my tenure in the Faculty of Environmental Design and for her endless motivation pushing me to fulfill the requirements of the masters program. One last thank-you to Professor Bill Zwerman for his insight serving as an advisor. Expressions of gratitude to all the residents of McKenzie Towne, without their thoughts, this project would not have been possible.

**Additional Acknowledgments to:**

**Carma Developments Ltd.  
The Staff and Owner of the McKenzie Towne General Store**

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# 1. INTRODUCTION

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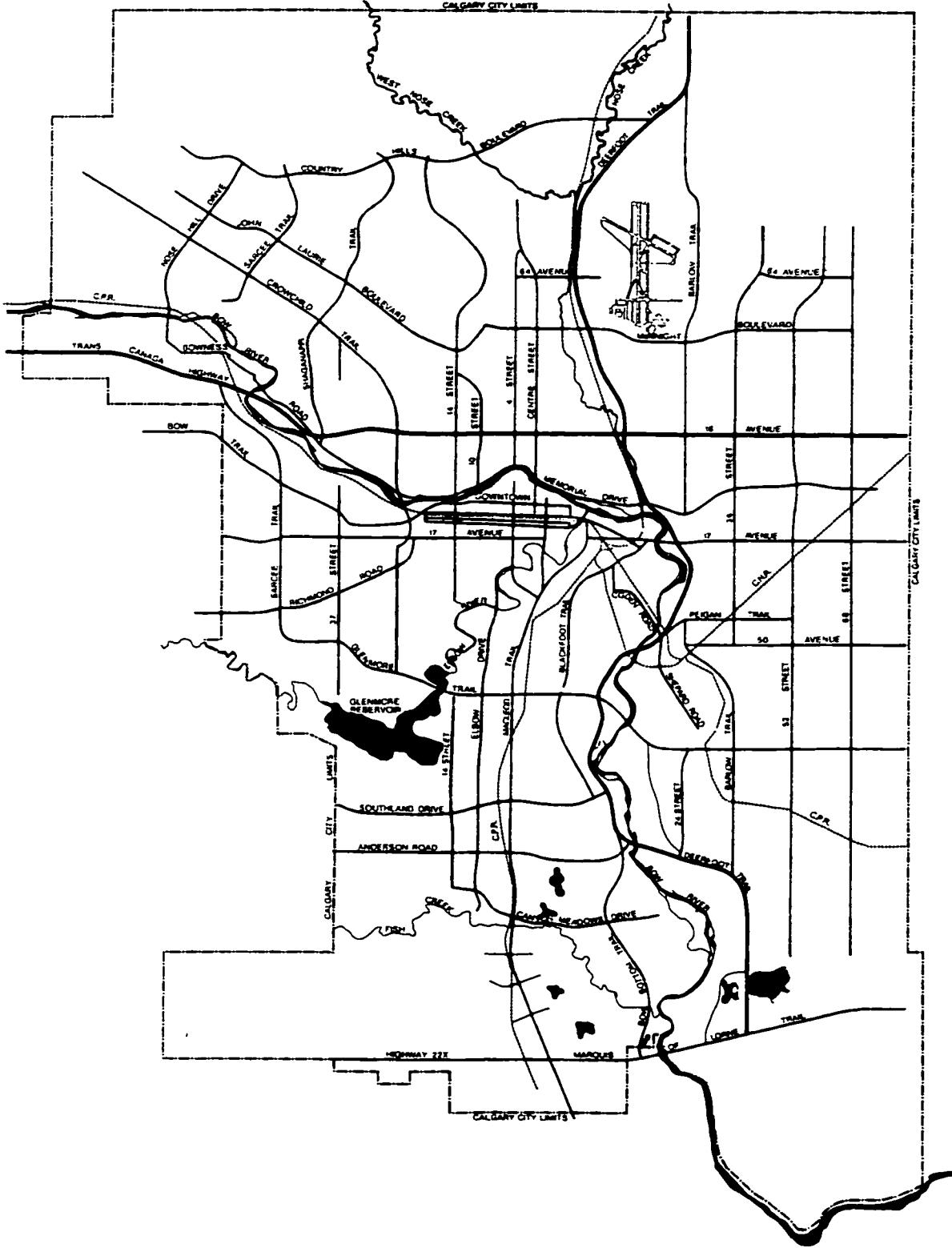
In 1995 the City of Calgary's Planning and Building Department prepared and presented to City Council, The Sustainable Suburbs Study: Creating More Fiscally, Socially and Environmentally Sustainable Communities. This report intends to facilitate the design of new residential communities that are in harmony with the fiscal, social and environmental costs associated with new developments. The report identifies guidelines and recommends policies for future suburban developments. It presents the organizing principles, community characteristics, design guidelines, and environmental issues for livable communities that enable present and future generations to maintain a high quality of life.

Neotraditional communities reflect many of the ideals presented in the Sustainable Suburbs Study. One of these neotraditional communities is located in the southeast area of Calgary. The basic premise of McKenzie Towne is that urban growth can be sustained within a limited infrastructure, provided that the pattern for such growth is that of a defined neighbourhood (Carma Developments Ltd., 1995).

McKenzie Towne is located within the City of Calgary planning area known as East McKenzie. The East McKenzie area is bordered to the west by the community of McKenzie Lake; to the north by the southeast industrial area and 130 Avenue S.E.; to the east by the City limits and the future Stoney Trail and to the south by Marquis of Lorne Trail and future development lands in the area commonly referred to as the Homesteads (see Figure 1).

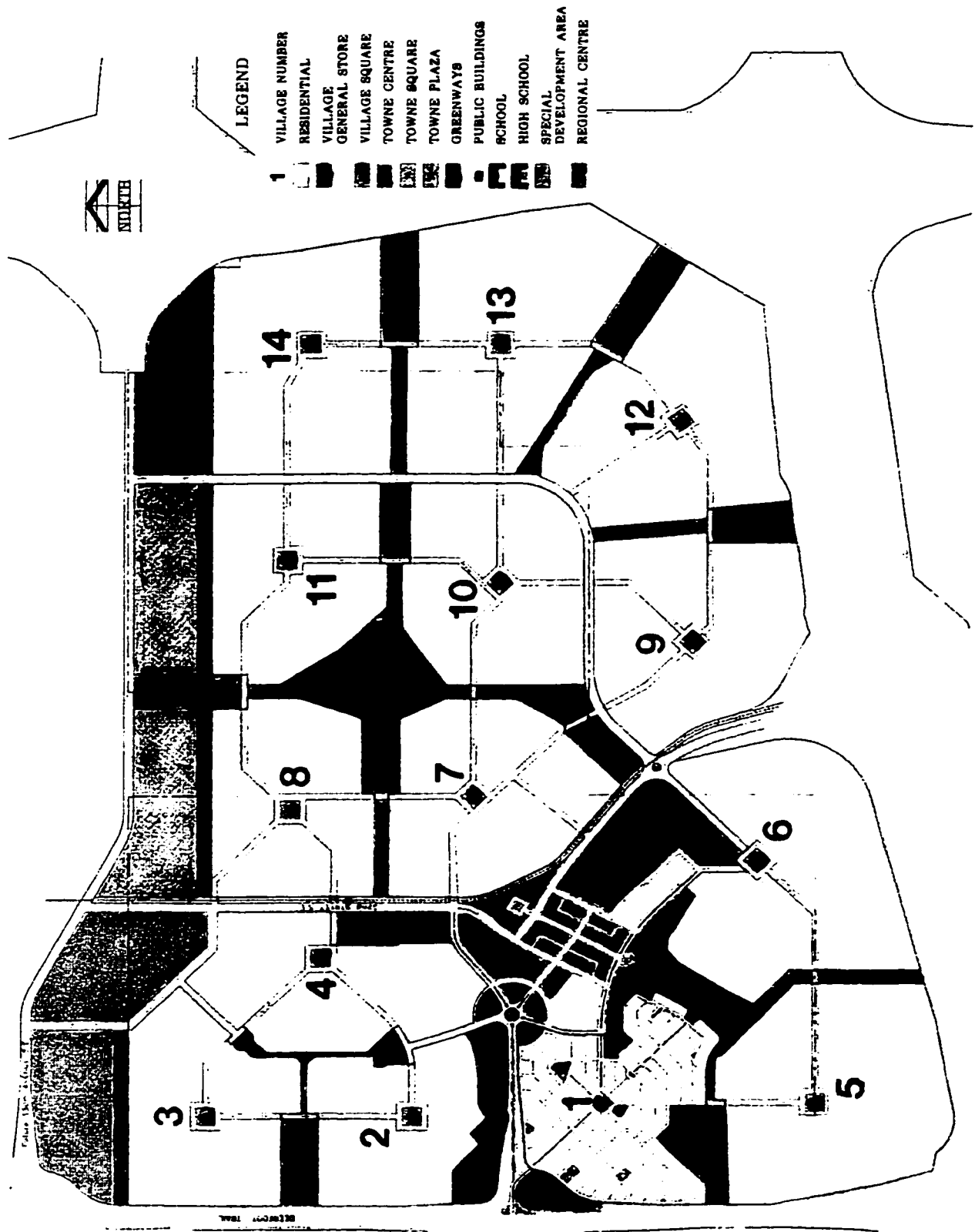
McKenzie Towne is envisioned to consist of 28,000 people in approximately 10,000 houses in 14 neighbourhoods on 970 hectares (2,400 acres) (see Figure 2) (Carma Developments Ltd., 1995). The assemblage of villages is to be as self-sufficient as possible with regard to daily human needs. Recognizing that the City of Calgary's major work area will continue to be downtown, "McKenzie Towne will ideally contain a well-balanced combination of work, shopping, and living opportunities" (Carma Developments Ltd., 1995, 2). Referring to the Towne Plan (see Figure 2), the Village of Inverness (village #1) is nearing completion with the Village of Prestwick (village #2) currently selling lots in the initial phase.

Figure 1 McKenzie Towne Local Context



Source: Carma Developments Ltd.

Figure 2 McKenzie Towne Plan



These neighbourhoods are placed within a continuous matrix of greenways. Open space is provided in the area through the development of parks, school yards, playing fields, greenways and formal squares. Ultimately, the open space system is intended to support a variety of recreational and educational uses. McKenzie Towne is intended to provide many of its residents with the potential of having housing, jobs, shopping, entertainment, education, and civic institutions within extremely short travel distances. One goal of McKenzie Towne is that in time, every resident within the community will only leave the area for medical care, cultural entertainment, specialized shopping, out of town business, or tourism. By utilizing the village system, it is intended that daily needs will be within walking distance, while longer trips between the neighbourhoods and to the Towne Centre may be accommodated by public transit or other local forms of transportation, reducing the socio-ecological problems of traffic congestion. This ideal is most "...effective in conjunction with a broad range of housing such that citizens of varied ages and incomes can be accommodated" (Carma Developments Ltd., 1995, 2).

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## **LIMITATIONS OF THE STUDY**

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The researcher encountered several difficulties during the completion of the Masters Degree Project which created the following limitations of the study. First, since McKenzie Towne is in its infancy of development, the researcher relied upon future plans and supporting documentation rather than built form as the basis of comparison to a sustainable suburb. Throughout writing the following Masters Degree Project, it was difficult to differentiate between what currently exists and what is planned. By completing the study this way, it begs the question as to whether McKenzie Towne will continue to evolve as planned or if sales fall short of projections, will Carma Developments Ltd. shift the focus of the community from a neotraditional development to a more conventional suburb to maintain their Calgary market share? As well, a similar problem was encountered with a few of the residents' survey questions as respondents expressed difficulty differentiating between what exists and what they think is planned.

The third limitation of the study is the lack of statistical validity of the residents' survey. Despite a two step survey process, the researcher only gathered 75 completed questionnaires from a total population of 275 households. This represents a response rate of only 27.3%. Thus, the survey results only represent the opinions of the respondents

and are not representative of all households living in McKenzie Towne at the time of the survey.

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## **OBJECTIVES OF THE STUDY**

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This Masters Degree Project has three objectives. First, the study will determine to what extent McKenzie Towne, a neotraditional community, fulfills the criteria in the Sustainable Suburbs Study, completed by the City of Calgary Planning and Building Department. Criteria evaluated will include open space, housing, transportation and environmental issues.

The second objective of the Masters Degree Project is to determine the views of McKenzie Towne residents about their community. Through the use of questionnaires, residents' perceptions of neighbourhood identity, housing, transportation, the village square and the environment are evaluated. The analysis will determine to what extent residents of McKenzie Towne feel their community fulfills the guidelines in the Sustainable Suburbs Study. The questionnaire will also determine the level of satisfaction with and desirability of living in McKenzie Towne and the reasons for this level of satisfaction and desirability. As well, the survey will provide demographic data used in the formulation of a resident profile.

The final objective of this study is to formulate recommendations, based on the findings of the study, to ensure that the fiscal, social and environmental costs associated with future suburban development are decreased.

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## **METHODOLOGY**

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A literature review, with a particular focus on McKenzie Towne and other neotraditional communities, was conducted. As well, a careful analysis of the Sustainable Suburbs Study, completed by the Planning and Building Department, comprises a major section of the secondary research. Additional secondary source research was undertaken in sustainable development and neotraditional communities.

Key informant interviews of people associated with implementing the principles of McKenzie Towne and of authorities on the techniques of consumer market surveys were completed. The interviews provided information used in the analysis of a



neotraditional community and further insight into the dimensions of surveying residents and visitors of McKenzie Towne.

The researcher conducted a door to door survey throughout the community of McKenzie Towne. The survey consists of thirty-nine questions, some with several parts. The structure of the survey consists of open ended questions and several types of Likert scale questions as respondents were asked to rank various responses.

Based upon the results of the analysis of the Sustainable Suburbs Study and the findings from the residents' survey, recommendations are formulated.

---

## **ORGANIZATION OF THE REPORT**

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The Masters Degree project is organized into four parts. Part One contains chapters two and three. Chapter two introduces the reader to the concept of sustainable development and highlights the three building blocks of the sustainable community model: environmental health, economic health and social health. As well, the reasons, characteristics and general strategy of the Sustainable Suburbs Study is introduced. Chapter three introduces the reader to neotraditional development. The key components of neotraditional development are described within the context of eight design considerations: land use mix, density, street patterns, pedestrian circulation, transit emphasis, open spaces, architectural character and sense of community. The final section of chapter three summarizes the similarities between a neotraditional community and a sustainable suburb.

Part Two contains chapters four through nine and is a detailed analysis of the guidelines recommended in the Sustainable Suburbs Study. The purpose of this analysis is to determine to what extent a neotraditional community such as McKenzie Towne fulfills the guidelines established in the City of Calgary's Sustainable Suburbs Study. Chapter four analyzes the policies of the Sustainable Suburbs Study that constitute the design and implementation of community centres and neighbourhood nodes. Chapter five evaluates the policies from the City of Calgary study in relation to open space within a sustainable suburb. Chapter six analyzes the policies and guidelines established by the City of Calgary in relation to housing. Chapter seven evaluates the policies and guidelines recommended for an effective transportation system in a sustainable suburb. Chapter eight evaluates the guidelines recommended for implementing environmental

initiatives into future sustainable communities. Chapter nine is a summary which compares McKenzie Towne to the three general building blocks of sustainability: economic health, social health and environmental health.

Part Three comprises chapters ten through seventeen and presents the findings from the McKenzie Towne residents' survey. Chapter ten introduces the reader to the purpose and methodology of the residents' survey. Chapter eleven presents the findings which comprise the resident profile. Chapter twelve presents a housing profile, evaluates residents' sense of community and analyzes McKenzie Towne by the housing guidelines presented in the Sustainable Suburbs Study. Chapter thirteen presents residents' views regarding the transportation system in McKenzie Towne. More specifically, the various forms of transportation such as transit, pedestrian walkways and cycling are reviewed. Chapter fourteen uses the suggested guidelines of the Sustainable Suburbs Study to evaluate residents' views regarding the first village square to be constructed in McKenzie Towne. Chapter fifteen uses the survey results to evaluate the open space system in McKenzie Towne based on the guidelines recommended by the City of Calgary. Chapter sixteen presents the findings from the environmental section of the residents' survey. Chapter seventeen is based on the findings from the residents' survey and evaluates the aspects of sustainability that residents accept and the aspects that residents are resistant to adopt.

Part Four comprises chapter eighteen which presents the recommendations of the researcher. The recommendations are based on the critical evaluation of McKenzie Towne by the policies and guidelines presented in the Sustainable Suburbs Study and the findings from the residents' survey. The recommendations may be used by future developers and policy planners of either neotraditional communities or sustainable suburbs to evaluate the opportunities and constraints that are apparent in unique communities such as these.

*PART I*

**SUSTAINABLE SUBURBS AND  
NEOTRADITIONAL COMMUNITIES;  
ARE THEY SIMILAR?**

---

## 2. SUSTAINABLE DEVELOPMENT

---

In its 1987 report, Our Common Future, the term sustainable development was popularized by the United Nations World Commission on Environment and Development (WCED or “Brundtland Commission”). WCED defined sustainable development as that “which meets the needs of the present without compromising the ability of future generations to meet their own needs” (Gurstein and Curry, 1993, 8). The commission identified developing world problems such as soil erosion and the lack of clean water as the most pressing issues and poverty as their cause. The commission postulated that in order to fix the environment, poverty would need to be reduced, and the cure for poverty is growth. However, Daly and Pearce et al contest the prescription of sustainability through growth, as they maintain that sustainability can be achieved only if human consumption does not surpass nature’s productivity, i.e. if global carrying capacity is not exceeded (CIP Discussion Paper, 1994). The WCED definition begs the question as to what is a “need” and focuses on human needs, not the interconnected needs of all life on the planet (City of Calgary, 1993).

The Canadian Institute of Planners (CIP) recognizes that if sustainability is to have meaning, it must start from the ecological perspective of carrying capacity (CIP Discussion Paper, 1994). The concept of unlimited and unrestrained growth must be replaced by a recognition that to be sustainable, human activities cannot exceed the ecological limits within which these activities take place. This statement is supported by Gurstein and Curry as they indicate that to achieve sustainability a state of ecological balance must be re-established between human kind and nature (Gurstein and Curry, 1993).

A review of the literature indicates that consensus is beginning to emerge as to a more clear definition of sustainable development. The Canadian Institute of Planners (CIP), Canada Mortgage and Housing Corporation (CMHC) and the City of Calgary all agree that promoting sustainability requires maintaining health in three spheres simultaneously. To achieve sustainability, society must secure ecological and/or environmental health, social and/or societal health and economic and/or individual health.

This is further supported by the British Columbia Round Table on the Environment and the Economy, "The three building blocks of the sustainable community model are ecological limitations, economic viability and social equity" (BCRTEE, 1991, 7).

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## **ENVIRONMENTAL HEALTH**

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Environmental health implies that humans are using nature's productivity without impairing it. The "...ecological bottom-line of sustainability is that in the long-run, society can neither consume more resources than nature produces nor produce more waste than nature can absorb" (CIP Discussion Paper, 1994, 3). However, Canadians and Calgarians continue to consume more resources than nature produces.

### **Land Consumption**

Natural capital and the earth's biophysical processes have evolved over millions of years to work in harmony and sustain all life on earth. In nature, when a tree dies, soil nutrients, water photosynthesis enable another to grow and for the natural capital to be replaced. But if you chop down all the trees on a mountainside, allowing the soil to wash away, the basis of production is lost and the forest may never recover. In Calgary, a loss of natural capital occurs each year as prime agricultural land is consumed by low density suburban sprawl. Between 1976-1990, 160,000 acres of agricultural land was annexed for Calgary's future growth (City of Calgary, 1994).

### **Energy Consumption**

Canadians consume more energy than anyone else in the world due to our climate and the modest cost of energy. There is little incentive to reduce gasoline consumption when it costs less than 50 cents a litre at the pump. "Several studies have concluded that if the cost of traffic control, traffic accidents, subsidized parking, road repairs, air pollution, oil spills were included, the true cost of gasoline is about \$1.40 a litre" (City of Calgary, 1994, 14).

## **Air Pollution**

Per capita, Alberta produces more CO<sup>2</sup> than any other province, while Canada is second in the world after the USA (GoPlan, Sustainability, 1993). Although tailpipe technology has reduced carbon monoxide levels, the improvements have been offset by the increased number of vehicles on the road. Over the past thirty years, vehicle occupancy has declined from 1.31 persons per vehicle to 1.13 persons per vehicle (City of Calgary, 1994).

To reduce the negative environmental impacts discussed above, the City of Calgary concludes, "...for reasons of cost, public health and a responsibility to future generations, the design of new communities, and the facilities provided, should encourage people to adopt more sustainable lifestyles without having to make unacceptable trade-offs to their quality of life" (City of Calgary, 1994, 17). To maintain an ecological balance and ensure that Calgarians do not consume more resources than nature produces, new communities need to be designed to minimize air, water and soil pollution, reduce resource consumption and waste and protect natural systems that support life (City of Calgary, 1995).

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## **SOCIAL HEALTH**

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Social health implies that our human settlements function as healthy communities which foster cooperation and well-being among their citizens. Any community that cannot meet its basic human needs cannot be considered "healthy". Therefore, one of the concerns of a "healthy" community must be social equity (CIP Discussion Paper, 1994).

Social equity is about treating people fairly, without prejudice or favoritism, regardless of gender, religion, race, nationality or wealth. If people are unjustly treated or frustrated in meeting basic needs such as health care, education, employment, housing or mobility, there will likely be increased social stress. The symptoms of stress often manifest themselves in a number of ways including unemployment, poverty, homelessness, increased crime, drug abuse and family violence (City of Calgary, 1993). For example, many low-income single mothers in Calgary have a difficult time finding affordable

housing close to daily required amenities. According to the City of Calgary GoPlan Discussion Paper, new suburbs are less expensive for homebuyers than established neighbourhoods. However, in new suburbs, conventional land use planning practice often results in the separation of housing from employment opportunities, schools, daycare, shopping, medical care and recreation facilities. At the same time, new suburbs are poorly serviced by transit as it is uneconomical to provide frequent service. Thus, a car becomes a necessity, which many single mothers simply cannot afford.

The aforementioned example illustrates the complexity between land use planning and social equity. Low density, auto-dependent suburban development may offer limited choice for the elderly, children and anyone who is unable to afford a car. A more socially equitable community would try to serve the needs of all residents, not just those with affluence and mobility.

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## **ECONOMIC HEALTH**

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Economic health implies "...that the economy of a sustainable community provides adequately for the food, clothing, shelter, education, health care, etc. of its citizens" (CIP Discussion Paper, 1994, 3). Today, governments seek ways of having users pay more of the hidden costs of their lifestyle choices: costs that in the past were paid by society at large. However, these hidden costs impact the economic health of many communities. For example, the hidden costs of motoring and suburban growth influence the economic health of each member of the community.

### **Hidden Cost of Motoring**

The Go Plan Discussion Paper on sustainability highlights many of the hidden costs of car dependency. Constructing a car consumes some 1,000 kilograms of steel and other metals and 100 kilograms of plastic. "The production of these ranks second and fifth respectively in energy intensity among American industries, while metal production is third in toxic emissions" (City of Calgary, 1993, 8). In Calgary approximately 86% of the air pollution is attributed to vehicle pollution. This increases acid rain, the incidence of cancer and respiratory diseases, global warming and impairs photosynthesis.

A study completed by the World Resources Institute estimated the annual cost of driving to American society as a whole at some \$300 billion per annum (City of Calgary, 1993). If we assume that Canada's population is one tenth of the US population, the annual cost of motoring in Canada is approximately \$30 billion per annum or about \$1 billion per annum for Calgary.

### **Hidden Cost of Suburban Growth**

To the average home buyer, the cost of a house and land on the city fringe seems inclusive, since the cost of local roads, water, gas, electricity, stormwater and sewerage connections paid by the developer will be reflected in the price of the home. What is not included is the cost of constructing major off-site facilities to accommodate the population growth. For example, emergency services, the extension of major expressways, LRT, interchanges and roadway improvements. In Calgary, accommodating growth accounts for roughly 45% of the city's capital spending budget (City of Calgary, 1991).

These examples suggest that the suburban lifestyle enjoyed by many Calgarians, may only be sustainable if the community is willing and able to continue to pay for those capital and maintenance costs that are not incorporated into the price of housing. As the Go Plan Discussion Paper states, "...there is arguably an equity issue here where those who can afford the single-family auto-dependent suburban lifestyle are being subsidized by those who cannot" (City of Calgary, 1993, 10).

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## **REASONS FOR THE SUSTAINABLE SUBURBS STUDY**

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In order to reduce many of the aforementioned environmental, social and economic costs associated with Calgary's growth, the City recognized the importance of creating sustainable development objectives. As a result, in 1995, the Sustainable Suburbs Study was completed and adopted by City Council as a planning policy document. The intent of the Sustainable Suburbs Study is to set forth policies which guide the planning of new communities to be economically, socially and environmentally sustainable.



According to the City of Calgary's Planning and Building Department, four main reasons existed for undertaking the Sustainable Suburbs Study. The first was to implement the Calgary Transportation Plan, which seeks to achieve a significant reduction in the number of vehicle trips that new suburbs will generate. As a result of the GoPlan, which reviewed the city's transportation system, City Council approved the Calgary Transportation Plan in 1995. According to this document, new suburbs would include community and neighbourhood centres, designed to be transit and pedestrian friendly and provide a mix of services and amenities for nearby residents. New suburbs would also accommodate a mix of compatible land uses: protected natural areas, a variety of housing, higher densities, and reduced costs associated with construction of infrastructure (City of Calgary, 1995).

The second reason for the Sustainable Suburbs Study was to control the future costs of growth. The City of Calgary's 10-Year Capital Spending Framework - 1991, concluded that there was a "...significant difference between the public's expectations for more and better services, as expressed in documents such as Calgary into the 21st Century, and the city's ability to pay for them" (City of Calgary, 1995). In addition, provincial cuts to funding transportation, health care, education and social services have resulted in responsibilities being downloaded onto the municipalities. The resultant competition for city revenue has prompted the city to rethink how it can manage growth while controlling related costs.

The third stimulus for undertaking the Sustainable Suburbs Study was to design communities that provide services to residents compatible with their daily living requirements. Although Calgary "...has some of the best housing found anywhere in the world, some of the stress in people's lives today is because the design of many communities built in recent years is incompatible with their real needs" (City of Calgary, 1995, 2). Services and shops are absent from many of these new communities or residents must commute long distances to acquire their essential daily needs, wasting time that could be spent with their families or other endeavors. Most importantly, many people are excluded from certain communities due to housing affordability and limited choice.

The fourth reason cited by the city for undertaking the Sustainable Suburbs Study was to encourage more sustainable lifestyles. Over the last thirty years, environmental issues are firmly entrenched in society through mediums such as the social and educational systems. “Broadly speaking, an awareness of visible pollution in the 60s, the need for energy conservation in the 70s and the threat to major biophysical systems in the 80s, together with a myriad of other environmental issues have led to a realization in the 90s of the need for sustainability” (City of Calgary, 1995, 2). Sustainability is a term used to define the interdependence between the natural, economic and social environments. The search for sustainability is for ways to change our social, economic and natural systems so they offer an acceptable future for further generations. Thus, sustainability addresses the causes of the problem, not just the symptoms (City of Calgary, 1995).

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## **CHARACTERISTICS OF A SUSTAINABLE SUBURB**

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According to the City of Calgary’s Planning and Building Department, sustainable suburbs are defined as communities that are capable of being sustained far into the future:

- Fiscally:** the costs of building, operating and maintaining new communities and their supportive infrastructure and services are affordable, having regard to other spending priorities, and will not become a burden on future generations;
- Socially:** communities are designed to be socially diverse, adaptable to changing lifestyles and to further the objective of providing all Calgarians with access to affordable housing, education, health care, essential goods, public amenities and services, such as their basic needs are met; and
- Environmentally:** communities are designed to minimize air, water, and soil pollution, reduce resource consumption and waste, and protect natural systems that support life. (Sustainable Suburbs Study, 1995)

**Table 1 Characteristics of a Sustainable Suburb**

	<b>A Less Sustainable Community</b>	<b>A More Sustainable Community</b>
Fiscal	<ul style="list-style-type: none"> <li>• High development costs</li> <li>• High infrastructure costs</li> <li>• High City maintenance costs</li> <li>• High City operating costs</li> </ul>	<ul style="list-style-type: none"> <li>• Lower costs through compact urban form, utilization of services and less infrastructure</li> </ul>
Social	<ul style="list-style-type: none"> <li>• Little sense of community, belonging or neighbourliness</li> <li>• Housing choices excludes certain household types and lifestyles</li> <li>• Design of public areas discourages walking and socializing</li> <li>• Few goods and services provided within community</li> <li>• Rigid separation of uses</li> <li>• Car essential</li> </ul>	<ul style="list-style-type: none"> <li>• Strong sense of belonging to a community</li> <li>• Wide housing choice for many household types</li> <li>• Attractive public areas encourage walking and socializing</li> <li>• Daily shopping needs met within the community</li> <li>• Mix of land uses</li> <li>• Need for car reduced</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>• Inefficient use of land</li> <li>• High level of air pollution through auto dependency</li> <li>• Community design promotes lifestyles where excessive water, energy and resource consumption are largely avoidable</li> <li>• No protection of environmentally sensitive areas</li> </ul>	<ul style="list-style-type: none"> <li>• More efficient use of land</li> <li>• Reduced air pollution through less use of the car</li> <li>• Design promotes conservation of resources</li> <li>• Sensitive environmental areas protected and integrated into the regional open space system</li> </ul>

Source: *Sustainable Suburbs Study, City of Calgary, 1995*

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## **GENERAL STRATEGY FOR A SUSTAINABLE SUBURB**

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The general strategy of the Sustainable Suburbs Study "...is to design communities along the lines of an urban village. An adequate choice of shops and services should be provided locally so that residents are not dependent on regional shopping centres for most daily needs and local business and employment are encouraged" (City of Calgary, 1995, iii). The design focus is on improving the public realm, making communities more attractive and livable for all ages and lifestyles, while reducing dependence on the automobile. The following summarizes the policies stated in

the City of Calgary's Sustainable Suburbs Study used to guide development of new City communities. The policies are grouped into the following five areas: community centres and neighbourhood nodes, schools and open space, housing, transportation and the environment.

### **Community Centre and Neighbourhood Nodes**

The Sustainable Suburbs Study encourages the design of new communities to incorporate a community centre and a number of neighbourhood nodes. The community centre and neighbourhood nodes should be located within a five minute walking distance from the majority of housing units and offer residents a variety of both public and private activities. The policies also stipulate that interim uses should be developed in community centres until such time as demand warrants the intended end use. For example, community centres and neighbourhood nodes may offer residents a centre for community activities until demand warrants the construction of retail uses. As well, they should be accessible by pedestrian and bicycle access and offer transit facilities.

### **Schools and Open Space**

The policies for open space and school sites include the integration of existing natural systems into the City-wide regional open space system. Built open space must be located, sized and configured to create places that are functional, safe and link to the community open space system and provide opportunities for people of all ages and interests. The policies state that school sites should be located close to the community centre and provide transit facilities.

The Sustainable Suburbs Study also recommends that shared use of sites and/or buildings for public facilities should be pursued and community residents should be involved in the design, construction and maintenance of community facilities and local open space.

### **Housing**

The Sustainable Suburbs Study recommends that all communities must achieve a minimum density of 7.0 units per gross acre and provide a wide variety of housing types in addition to single-family, while ensuring an adequate choice of low to medium income housing. The housing policies also state that multi-family housing should be located near community centres, neighbourhood nodes, recreational amenities, public amenities and transit stops.

## **Transportation**

The transportation policies stated in the Sustainable Suburbs Study recommend that the street system must provide all residents with direct links between key focal points such as the community centre, neighbourhood nodes and open spaces. A new package of street design standards are encouraged. For example, reduced road widths and right-of-ways, increased landscaping and areas for the free and safe movement of pedestrians and cyclists. As well, the transit system must be integrated into the community design and be a key component of the community centre and neighbourhood nodes.

## **The Environment**

The Sustainable Suburbs Study encourages builders to audit all new buildings for construction waste, use recycled materials in the construction of buildings, equip all buildings in new communities with bins for recycling dry waste, equip all new homes with water metres and water saving fixtures and design and locate buildings with the objective of reducing energy consumption. As well, developers are also encouraged to seek alternative approaches to traditional stormwater techniques.

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## **SUMMARY**

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According to the United Nations World Commission on the Environment and Development (WCED), sustainable development is defined as "...that which meets the needs of the present without compromising the ability of future generations to meet their own needs" (Gurstein and Curvy, 1993, 8). Many academics refute this definition as it assumes the need for growth. As Daly and Pearce et al state, "...sustainability can be achieved if only human consumption does not surpass nature's carrying capacity" (CIP Discussion Paper, 1994, 2). The concept of unlimited and unrestrained growth must be replaced by a recognition that to be sustainable, human activities cannot exceed ecological limits.

Since the WCED definition was first put forth, consensus on a refined definition of sustainable development has begun to emerge. Sustainable development must incorporate environmental health which implies that society cannot consume more resources than nature produces, social health which implies that society must meet its basic human needs to be considered healthy, and economic health which implies that the

economy of a sustainable community provides adequately for the food, clothing, shelter, education, health care, etc. of its citizens.

As a result of the Calgary Transportation Plan, the City initiated the Sustainable Suburbs Study which is consistent with the definition provided by the Canadian Institute of Planners (CIP) as it defines sustainability by three dependent and overlapping areas. **Fiscally**, the costs of building, operating and maintaining new communities will not become a burden on future generations; **socially**, communities are designed to be socially diverse, adaptable to changing lifestyles, and provide affordable housing and necessary daily services and **environmentally** communities are designed to minimize air, water, and soil pollution, reduce resource consumption and waste, and protect natural systems that support life (City of Calgary, 1995).

The following chapter introduces neotraditional design and describes the key components within the context of eight planning and design considerations: land use mix, density, street patterns, pedestrian circulation, transit, open spaces, architectural character and sense of community.

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### **3. NEOTRADITIONAL DEVELOPMENT**

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Postmodern urban design in neotraditional development shares many of the same characteristics as a sustainable suburb. Neotraditional design embraces pedestrian propinquity and small-scale communities, shared public cores, high-density housing, and mixed land uses as vehicles to restore face-to-face interaction and a lost sense of community. Neotraditionalism views the automobile as a necessary evil of modern living and relies on pedestrian propinquity to shops, jobs, and community facilities as a means to reduce car trips. As well, it recognizes the diversity of today's household composition, size, income and ethnicity and views mixing housing and open space as a means to integrate different age and social groups.

The key components of the neotraditional vision can be described within the context of eight planning and design considerations: land use mix, density, street patterns, pedestrian circulation, transit emphasis, open spaces, architectural character and sense of community.

#### **Land Use Mix**

Typical modern suburban developments have tended to be divided into a series of development pods, each designated for a particular housing type or commercial activity. While many neighbourhood units, striving for a balance in residential, commercial, employment, recreation and public service uses, offer a wide range of uses, they have often failed to truly integrate them. Automobiles usually continue to be required to move between clusters of single land uses.

The neotraditional approach is based on the concept of balanced uses but with a much finer grain of mixing. A primary goal of neotraditional communities is to make it easy for residents to walk between houses, jobs, and commercial services (Goodman, 1992). Residential units above storefronts are encouraged; commercial services, such as a convenience store, are considered appropriate on a residential street corner; and small offices are intended to be interspersed throughout the community.

The social and growth management advantages of mixed land use are documented by the codes established in Seaside Florida, the first neotraditional community. Class and age integration by pedestrian propinquity is achieved by travelling to work, commercial

and civic activities and residences; and by varying residential types, densities and values. Less pollution and traffic congestion is reduced from pedestrian propinquity. Since a balance of jobs and residences exists in a neotraditional community, "...bonds of an authentic community are formed" (Duany & Plater-Zyberk, 1989, 71). According to Kunstler, in Kentlands, Maryland, another neotraditional community, children are the biggest winners as they have access to a 24 acre lake, surrounded by a regional pathway system (1993). "Since it emphasizes mixed use, kids can easily get to stores without hitting any collector streets. This frees many parents from their roles as family chauffeur chained to the car" (Kunstler, 1993, 39).

### **Density**

The goal of a balanced mix of uses within walking range of each other necessitates a higher density than most suburban jurisdictions typically allow. Neotraditional planners put single-family houses on smaller lots and include relatively more townhomes and multifamily units in their plans. As well, apartments are located above shopfronts and garages, increasing the flexibility of density variation. The density factor is often driven by the objective of locating uses within 450 metres of one another; the common rule of thumb being walkability. Thus, most housing units are located within a five to ten minute walk of the town center, where commercial services are concentrated.

Ranging gross densities of 10-40 units per acre increases face-to-face interaction of residents, ideally creating greater bonds of community. Higher density variation also results in the increased potential for public transit, which further reduces automobile dependence and provides greater mobility to nondriving residents.

### **Street Patterns**

According to architect Victor Mirontschuk, President of Houston based EDI Planning and Architecture, "It is a myth to believe that a neotraditional community has to be laid out on a grid to achieve the desired planning objectives. Even Seaside does not follow a strict grid pattern" (Bookout, 1992, 11). Mirontschuk points to Lake Park in Union County, North Carolina, as an example of a neotraditional community in which grid streets and curving streets are used in combination. "The plan features a grid in the



vicinity of the town centre, but as distance increases from the centre, the plan becomes more organic, following the topography and other natural features” (Bookout, 1992, 24).

Neotraditional projects reject the curvilinear streets and cul-de-sac that have long dominated suburban development in favour of more formal street layouts. They emphasize providing a system of through connections that give drivers alternate routes between two points, rather than funneling all vehicles onto a few collector streets and arterial highways. According to Bookout, “...it is true that many neighbourhood units cause people to travel very directly and on a few number of streets and we have made a mistake by not providing a greater number of connections. For the good of the community as a whole, everyone can’t live on a cul-de-sac” (Bookout, 1992, 24).

According to the traditional neighbourhood development codes, the grid street network reduces street hierarchy, creates smaller blocks, reduces lateral clearance and curb radii, and allows for alleys to reduce curb cuts and provide service and utility easements (Duany & Plater-Zyberk, 1989). The aforementioned codes of neotraditional communities create many social advantages and growth management claims. The accessibility of the overall community is vastly increased as routes are available to neighbourhoods, the town center and external roadways. Street widths and road speeds are often reduced thereby encouraging pedestrian and social integration by de-emphasizing auto use. The allowance for onstreet parking creates a buffer for pedestrians from moving cars. Finally, “...less traffic congestion on internal and external streets due to gridded interconnections grants commuters increased personal time” (Kethcam, 1995, 106).

### **Pedestrian Circulation & Streetscape**

Neotraditional plans are formed in large part to benefit the pedestrian. After all, a primary objective of the concept is to get people out of their cars and onto the sidewalks. Conventional neighbourhood unit plans have long stressed off-street pedestrian circulation systems to connect residential and commercial uses and institutional uses like schools. As Mirontschuk observes, “...most PUDs are not pedestrian-oriented despite the best intentions of their planners and developers. There are too many big roads to cross and the pedestrian system often leads nowhere” (Bookout, 1992, 24).

Neotraditional plans put the pedestrian back on the street, or at least next to it. To make streets more inviting, sidewalks are aligned next to the curbs; houses and other buildings are pushed closer to the curb to create the perception of narrower, friendlier streets; and buildings are scaled so as not to overwhelm pedestrians. A street becomes a public room to house social connections (Duany & Plater-Zyberk, 1988).

Formally arranged street trees and parallel parking help give pedestrians a sense of protection from passing cars. To reduce the negative effects that garages have on the streetscape, some neotraditional plans call for garages to be placed at the rear of the lot and accessed by long driveways or from alleys in the rear. As Mirontschuk explains, "...garage doors and curb cuts would have caused too many visual and functional interruptions" (Bookout, 1992, 24).

To better encourage pedestrian activity, street widths are often reduced; especially the widths of residential streets. Neotraditionalists argue that local standards force residential streets to be oversized which, in turn, promotes speeding, increases conflicts between pedestrians and automobiles, and poses a danger to children living in the neighbourhood (Bookout, 1992). Reducing the distance that pedestrians must traverse to cross a street at an intersection is important. Crossing distance is not only a function of street width, but also of the radius of the circle formed by the curb's corner curve. Duany argues, "...pedestrians do not want to walk across intersections that are designed to the standard radius of 25-35 feet. A more appropriate radius for accommodating pedestrians is eight feet" (Bookout, 1992, 13).

### **Emphasizing Transit**

While most traditional neighbourhood developments proposed or underway in North America focus on making communities that are more accommodating to pedestrians and bicyclists, some recent projects have begun to emphasize transit-oriented development. For example, in 1990, Sacramento County initiated an amendment to its general plan to incorporate Transit Oriented Guidelines (Bookout, 1992). The guidelines defined:

... a mixed use community within an average one-fourth mile (400 metres) walking distance of a transit stop and core commercial area. The design, configuration, and mix of uses emphasize a pedestrian-oriented environment and reinforce the use of office, open space, and public uses

within comfortable walking distance, making it convenient for residents and employees to travel by transit, bicycle or foot, as well as by car (13)

A study released from the University of Wisconsin-Milwaukee confirms that traditional neighbourhood developments are supportive of transit (Bookout, 1992). All of the projects studied featured a wide range of uses and a mixture of housing types. As well, the projects featured neighbourhood level commercial services within a quarter mile radius of residential areas; a logical location for a transit stop.

**Table 2 Vehicular Capacity in Prototype Conventional and Neotraditional Communities**

	<b>Conventional Suburban Development</b>	<b>Traditional Neighbourhood Development</b>	<b>Difference</b>
<b>Vehicle Miles Traveled</b>	<b>10,990</b>	<b>6,260</b>	TND is 57% of CSD
Arterial Streets	4,340	850	TND is 25% of CSD
Collector Streets	5,400	810	TND is 15% of CSD
Local Streets	1,250	4,600	TND is 4 times CSD
<b>Volume/Capacity Ratio</b>			
Arterial Street	0.92	0.83	TND is lower
Collector streets	0.94	0.87	TND is lower
Local Streets	0.21	0.22	TND is nearly identical
<b>Level of Service (LOS)*</b>			
Arterial Streets	D	B	TND had higher LOS
Collector Streets	D	D	Same
Local Streets	A	A	Same

\* On a scale from A (free flow) to F breakdown flow

Source: *Traditional Neighbourhood Development- Will the Traffic Work* (American Society of Civil Engineers, 1990)

Table 2 depicts the findings of a study completed by the American Society of Civil Engineers (ASCE). The 1990 study is based on two hypothetical 700 acre developments containing similar land uses: a traditional neighbourhood development or neotraditional community featuring a simple grid pattern and a conventional suburb with curving streets and land uses segregated into distinct development pods. The ASCE

study suggests that traditional neighbourhood design could produce 57% less vehicle miles traveled than a comparatively sized project laid out in a more conventional neighbourhood unit style. Table 2 also illustrates the tradeoffs that would come from vehicle miles traveled. The most notable difference is the traditional neighbourhood development's reliance on local streets for intracommunity travel. While internal travel could be expected to drop substantially on arterial streets within a traditional neighbourhood development, local streets could realize up to 400% more daily vehicle miles traveled. Even so, the study indicates, local streets would continue to operate at nearly the same volume/capacity ratio as they would under conventional neighbourhood unit developments. The reason is "...that traditional neighbourhood developments take better advantage of the unused volume capacities of local streets" (Bookman, 1992, 14).

### **Public Spaces and Town Center**

Neighbourhood unit developments have successfully encouraged the preservation of large blocks of open space with an emphasis on natural appearing features such as greenbelts. However, some planners have questioned the real value of much of that open space, which, they assert, often is simply the land left over from development: "...community residents or City Administrations have the problem of maintaining a preponderance of steep slopes, drainageway, and expansive greenbelts that serve little recreation purpose" (Bookout, 1992, 22).

Neotraditional plans treat open space in a more formal way, both locationally and functionally. Village squares, town greens, formally designed parks, and small but intensively used recreation areas are common features of a neotraditional town. These spaces are often partially enclosed so that they feel and function like an outdoor room.

The Town Centre is usually a designed area with mandatory civic and centralized public squares or parks, integrated with mixed uses such retail, service and residential. This integration increases a sense of place and community through the resultant increase in social interaction. As well, accessible public spaces are intended to increase socioeconomic integration and security as they allow residents to "...form authentic community bonds" (Duany, 1989, 71).

## **Architectural Character**

American small towns seem naturally to have a certain look, one that usually is embedded in their own history and regional tastes. Neotraditional towns modeled after these familiar places strive to capture some of the same architectural qualities. For example, Seaside draws inspiration from vernacular themes such as tin roofs, clapboard siding, wooden picket fences, screened porches, and pastel paint colours. According to Robert Davis, Seaside's developer, "...the architecture and streetscape summarize the best of Charleston, Savannah, Key West, Nantucket and Martha's Vineyard" (Patton, 1991, 92).

Participants in the design charette for Kentlands, Maryland, spent time in historic Annapolis trying to understand why that town endured the test of time so well. The houses and other buildings are placed in order to define and embellish that public space, particularly streets, which are scaled to feel like the streets of Annapolis or Georgetown (Kunstler, 1993). This accomplishes more than just architectural aesthetics; "...it increases a sense of place and neighbourliness through shared perceptions of a neighbourhood on a pedestrian, human scale, both intimate and familiar" (TND Codes, 1989).

## **Sense of Community**

Neotraditional theory concerns itself not only with the physical structure of urban areas, but also with how people should live, work, and move within them. It intends each city designed according to its principles, "...to be unified, a gestalt incorporating certain physical, social and cultural ideals" (Bookout, 1992, 25). Advocates believe a large segment of society is ready and willing to make fundamental changes in their daily routines: to drive less, walk more and live in more densely populated communities.

Implicit in neotraditionalists' planning for the ideal city is a belief that postwar planning has taken a heavy toll on family and other social values. Suburban development, they say:

...degrades family and social relationships by eroding the sense of community; by failing to mix housing types so that, in effect, families are segregated by income, by causing children to be reliant upon their parents automobiles to get to schools and other social activities; and by requiring breadwinners to endure long commutes to work. (Bookout, 1992, 15)

Traditional neighbourhood development codes are a declaration for new neighbourhood planning to be guided by the sensible and desirable attributes of traditional neighbourhoods. The codes promote independence from the automobile, by bringing the needs of daily living within walking distance of the residence. By reducing the number of automobile trips, certain social objectives are aspired to: increased personal time, reduced traffic congestion, and conservation of land and fuel. The codes also intend to promote security through neighbourliness. By walking instead of driving, citizens are supposed to come to know each other, increasing the bonds between residents and establishing a sense of community. Social integration of age and economic classes are a goal of traditional neighbourhood developments by providing a full range of housing types and commercial opportunities. Finally, traditional neighbourhood design, "...promotes the democratic initiatives of education, recreation, health maintenance, child care, and public assembly by providing incentives for civic facilities" (Duany & Plater-Zyberk, 1989, 71).

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## **ELEMENTS OF A SUSTAINABLE SUBURB AND A NEOTRADITIONAL COMMUNITY**

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The general strategy of both a sustainable suburb and a neotraditional community is to design communities along the lines of an urban village with shops and services provided locally. The design focus is on improving the public realm, making communities more attractive and livable for all ages and lifestyles, while reducing dependence on the automobile. Table 3 provides a general comparison of the main elements of a sustainable suburb and a neotraditional community.

**Table 3 Elements of a Sustainable Suburb and Neotraditional Community**

<b>SUSTAINABLE SUBURB</b>	<b>NEOTRADITIONAL COMMUNITY</b>
<ul style="list-style-type: none"> <li>• Community centres and neighbourhood nodes should be located within a five minute walking distance from the majority of housing units and offer residents a variety of both public and private activities.</li> <li>• Street systems must provide residents with direct links between focal points such as the community centre and neighbourhood nodes.</li> <li>• Achieve a minimum density of 7 units per acre and provide a wide variety of housing types.</li> <li>• Open space must be located, sized and configured to create places that are functional, safe and link to the community open space system.</li> <li>• The transit system must be integrated into the community design and be a key component of the community centre and neighbourhood nodes.</li> <li>• Increase sense of community by providing a range of housing options, attractive public areas and daily needs within the community.</li> <li>• Encourage recycling, reduce energy consumption and promote environmental awareness and responsibility within the community.</li> </ul>	<ul style="list-style-type: none"> <li>• Locate a mix of land uses around the Town Centre so residents can walk between houses, jobs and commercial services. Most housing units are located within a five minute walk of the Town Centre, where commercial services are located.</li> <li>• Encourage pedestrian activity by reducing street widths, reducing housing setbacks, align sidewalks next to curbs and provide connections to the Town Centre.</li> <li>• The goal of a balanced mix of uses within walking range of each other necessitates a higher density than conventional suburbs. Provide smaller lots with more townhomes and multi-family housing.</li> <li>• Open space is designed in a more formal way, both locationally and functionally. Village squares, town greens, formally designed parks are common features.</li> <li>• Design a mixed use community within an average one-fourth mile (400 metres) walking distance of a transit stop and core commercial area.</li> <li>• Increase sense of community by bringing the needs of daily living within walking distance of the residence and by providing a full range of housing types and commercial activities.</li> <li>• The only environmental initiative is to reduce the dependence on the automobile, which decreases traffic congestion, and fuel and land consumption.</li> </ul>

Table 3 highlights the many similarities of a neotraditional community and a sustainable suburb. The similarities between the two types of communities are based on the design focus of creating an urban village. Despite the similarities in design between a

sustainable suburb and a neotraditional community, the fundamental philosophical underpinnings of each type of community are different. Sustainable suburbs are driven by the three building blocks of sustainability: economic health, environmental health and social health. Sustainable development can only be achieved when all three building blocks are incorporated equally into the design of the community. Whereas, neotraditional communities are driven by encouraging a sense of community. They emphasize social health in the design of new communities with less emphasis on the environmental and economic costs of suburban development.

The following five chapters critically evaluate McKenzie Towne, the neotraditional community located in Southeast Calgary, by the policies and guidelines of the Sustainable Suburbs Study. This analysis describes in detail to what extent a neotraditional community satisfies the conditions of a sustainable suburb, as defined by the City of Calgary study.



*PART II*

**CRITICAL EVALUATION OF A  
NEOTRADITIONAL COMMUNITY BY  
GUIDELINES OF THE SUSTAINABLE  
SUBURBS STUDY**

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## 4. COMMUNITY CENTRES AND NEIGHBOURHOOD NODES

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“The suburban condition, says architect Peter Calthorpe, is a landscape of absolute segregation...not just in terms of income, age or ethnicity, but simple functional uses” (Newsweek, 1995, 47). This statement is obvious as people no longer see the absurdity of making a five mile trip to buy a loaf of bread. “That is, so long as they have a car; for anyone not so blessed- children, the elderly or handicapped, people who can not afford a car for every member of the family - it’s nuts” (Newsweek, 1995, 47).

What worked in a compact neighbourhood in a city: a dry cleaner, drugstore and a corner store became too much when applied to a whole country. Shopping strips stretched for dozen of miles along highways, while suburbia advanced further into the countryside. Obviously malls with their economies of scale will never be supplanted by neighbourhood shopping and corner groceries. But it is still possible to provide daily needs within walking distance in a community that residents will support (Newsweek, 1995). Town centres and neighbourhood nodes or villages are the answer for neotraditionalists and advocates of the Sustainable Suburbs Study. In neotraditional communities, each neighbourhood has a corner store which provides a transit stop, daily confectionery items, coffee, a newspaper and other daily services. The Towne Centre is located in a central area within the community providing civic, recreational, retail and other commercial services, housing and employment.

According to the Sustainable Suburbs Study, these centres form a mix of activities that satisfy more of the needs of daily living than today’s suburbs. The larger community centre is intended to serve a community of greater than 12,000 people, and consist of retail uses, and offices, as well as public uses such as open space, a community hall or facility, a clinic, public services, daycare, etc. The community itself would consist of several neighbourhoods, defined by a five minute walk to a neighbourhood node with a smaller mix of activities.

The Sustainable Suburbs Study recommends several policies and guidelines when designing community centres and neighbourhood nodes. The following policies, quoted from the Sustainable Suburbs Study, are used to evaluate to what extent McKenzie Towne fulfills the guidelines of a sustainable suburb.

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## **POLICY 1**

***Mixed use public activity centres must be located in all communities in the form of a community centre and a number of neighbourhood nodes.***

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Central to McKenzie Towne is the Towne Centre which provides a range of recreational, commercial, educational and transit activities. According to the Towne Centre Outline Plan, the Towne Centre within Neighbourhood #1, encompasses 31.9 acres of net developable lands accommodating a range of retail commercial and personal service uses. Figure 3 illustrates the land use designations for the Village of Inverness and the Towne Centre. The Towne Centre's land use designations include C-2/16, DC(C-2/16) and DC(C-1A). The Towne Centre is located north of the stormwater lake, south of McKenzie Towne Boulevard, east of the traffic roundabout and the two civic building sites designated PS- Public Service District.

The Sustainable Suburbs Study suggests four guidelines to consider which reinforce the first recommended policy: 1 square metre of commercial development per resident in a community; regional shopping centres at a minimum of 3.2 km driving distance from a community centre; 3 to 6 acres of commercial retail uses; and additional space for public uses such as a community facility, schools and open space within the community centre.

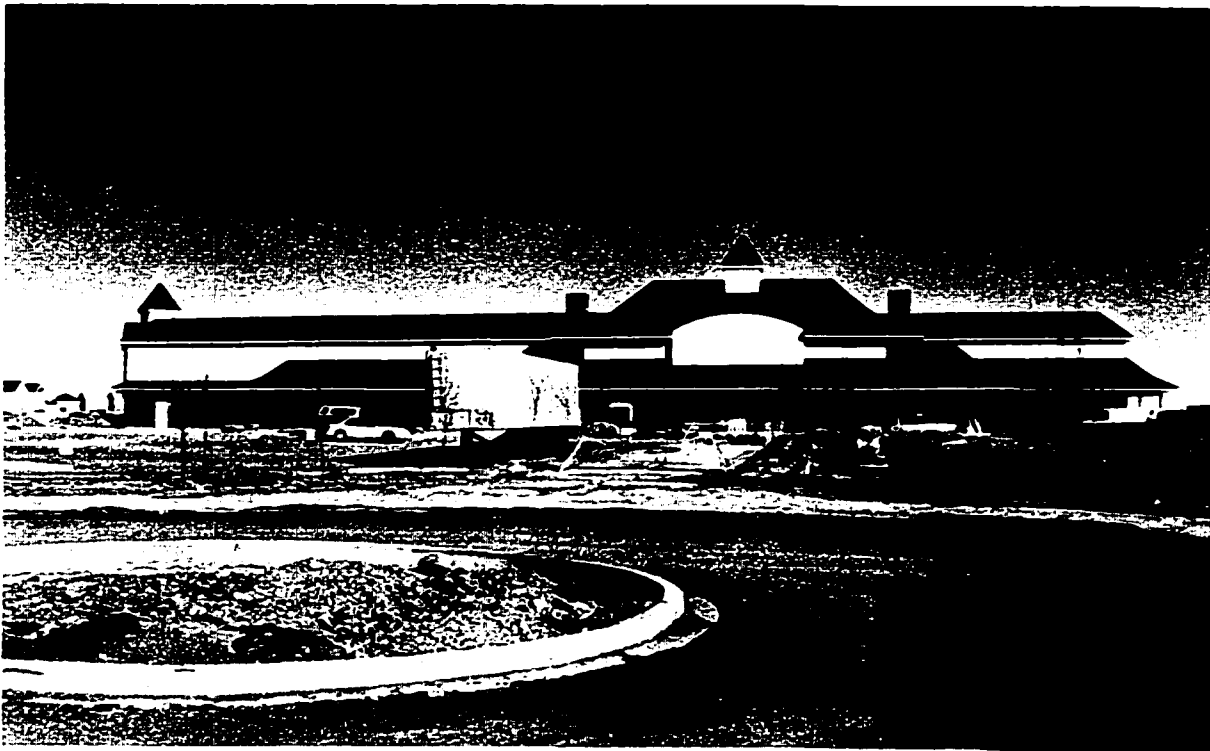
McKenzie Towne fulfills three of the four guidelines for the first policy in relation to community centres within a sustainable suburb. First, the Towne Centre will encompass a total gross leaseable floor of approximately 600,000 square feet of combined retail, office, commercial, medical, personal services, and civic uses (Carma Developers Ltd., 1995). Since McKenzie Towne will eventually house approximately 28,000 people, the recommended minimum of 1 square metre of commercial space per resident would be exceeded.

Second, the Sustainable Suburbs Study suggests that a regional shopping centre be located at least 3.2 km driving distance from the Towne Centre. According to the Outline Plan, in May 1986, Council approved the East McKenzie Area Structure Plan, which identified the potential location of a regional shopping centre along the Deerfoot Trail/130 Avenue S.E. intersection. In 1997, the Shepard Regional Shopping Centre was approved and is currently under construction. When the centre is completed, it will

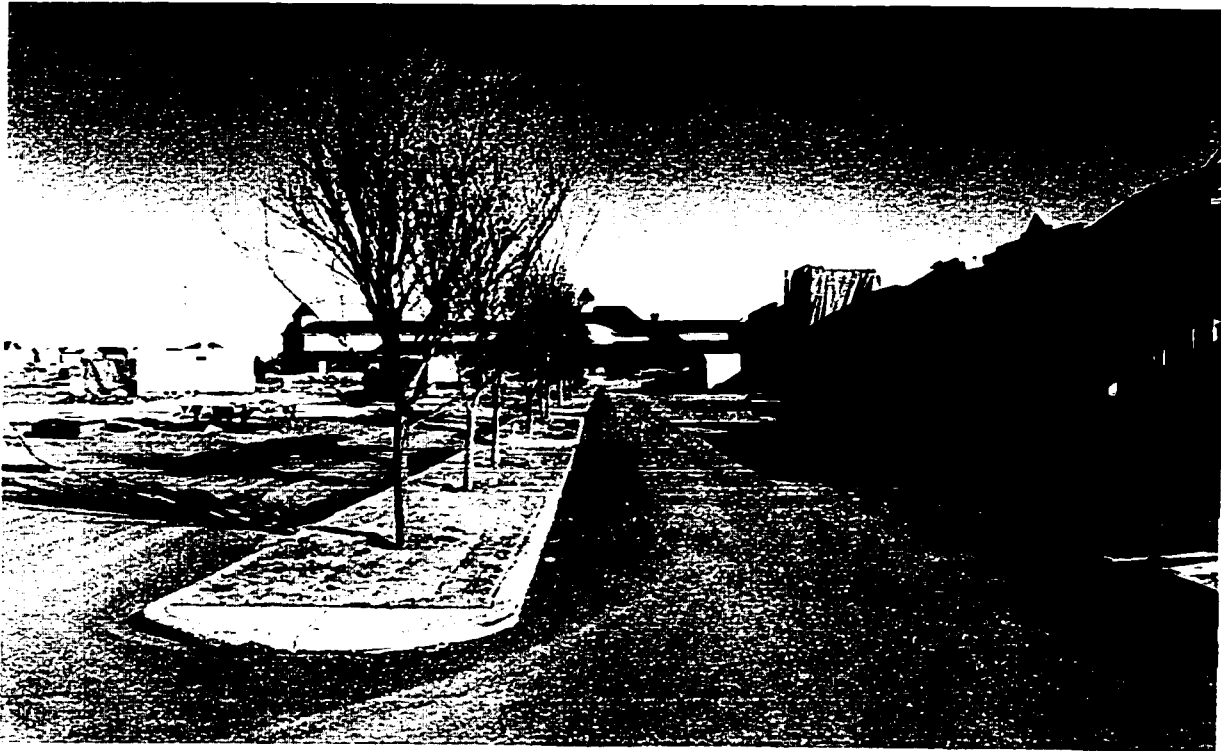


Third, guidelines from the Sustainable Suburbs Study state that community centres should function as the key shopping and public use attractions in the community with between 3 to 6 acres of commercial space. McKenzie Towne's Towne Centre exceeds the minimum requirements suggested by the city by providing 31.9 acres of net developable land for a range of commercial, retail, public and recreational services. Figures 4 and 5 illustrate that a portion of the Towne Centre, along High Street, is currently under construction with a 37,000 square foot IGA Grocery Store, Blockbuster Video, Super Drug Mart, TD Bank, Healing Alternatives Health Food Store as well as a drycleaner, hair salon, a coffee house, pizzeria, a pub and additional services including a dentist, an optometrist and an insurance broker (Your Towne Newsletter, 1998).

**Figure 4 Towne Centre IGA Grocery Store**



**Figure 5 A View of the Towne Centre**



The guidelines of the Sustainable Suburbs Study state that offices, open space, a community facility and schools will require additional acreage at the community centre. Within McKenzie Towne, landscaped spaces within the Towne Centre are the most formal of the open spaces and are the focal point to the community (Carma Developers Ltd., 1995). The Towne Centre is planned to include community facilities such as places of worship, a town fire hall, police station and meeting halls.

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## **POLICY 2**

*The community centre and neighbourhood nodes must be located strategically and should be as central as possible, while recognizing topographical constraints.*

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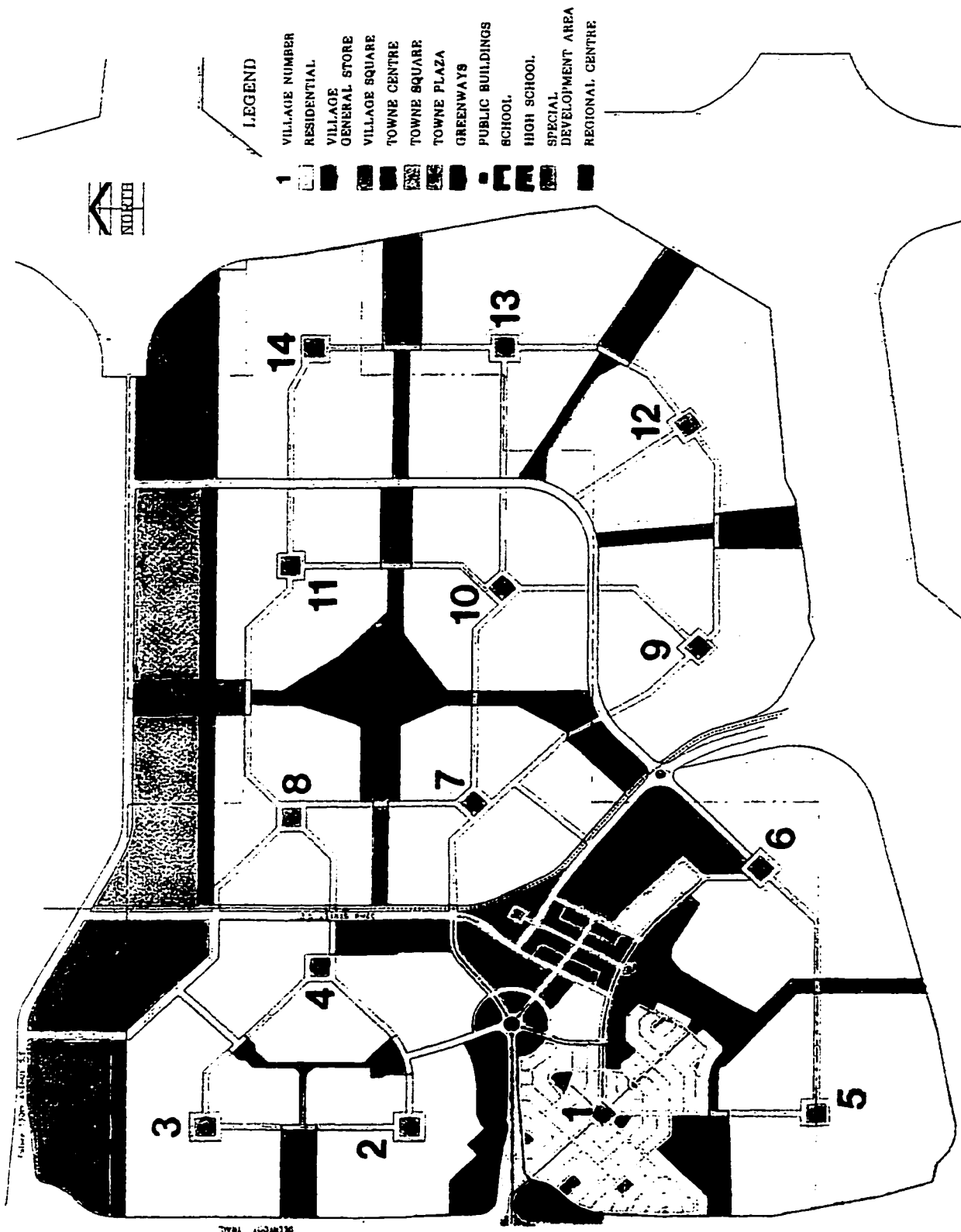
Within McKenzie Towne, neighbourhood or village size is determined not by population, rather by the distance from a village square. Typically, the village square will contain a general store and transit facilities. The size of the villages will not substantially exceed the area defined by a 450 metre radius from the square. The

Sustainable Suburbs Study recommends that the community centre and the neighbourhood nodes should be located within a five minute direct walk (400 m) for as many people as possible or from the furthest house in the neighbourhood. In short, residents living in each of the fourteen villages of McKenzie Towne will be located within the recommended five minute walking distance to the village squares suggested by the City of Calgary. Referring to the Town Plan of McKenzie Towne, it is clear that residents living in villages 7 through 14 will not reside within the suggested five minute walking distance to the Towne Centre (see Figure 6). However, these residents will have direct access to the Towne Square via pedestrian and bicycle paths and will have their own village square allowing convenient access to daily items.

The Sustainable Suburbs Study suggests two guidelines be considered when planning the community centre and centrally located neighbourhood nodes. The first guideline recommends that local streets should be as pedestrian friendly as possible (City of Calgary, 1995). McKenzie Towne fulfills this requirement by separating all sidewalks within residential areas from the street. In addition, these separated walkways will be lined with trees and other landscaping and will not be circuitous in nature. According to the Outline Plan, "...streets in McKenzie Towne function to accommodate cars, but with the important dual objective of creating a safe and effective pedestrian environment" (Carma Developers Ltd., 1995, 43).

The second guideline suggested by the City in relation to planning community centres and neighbourhood nodes is achieved within McKenzie Towne. There are a number of direct linkages that allow residents a choice of routes to community centres and neighbourhood nodes, rather than a hierarchy of streets that funnel traffic onto a collector street. McKenzie Towne proposes a hierarchy of streets which is critical to the design and the social and physical integrity of individual neighbourhoods (Carma Developers Ltd., 1995). The hierarchy of streets do not funnel traffic onto one main collector road, rather they act in a symbiotic relationship between pedestrian and vehicle traffic, allowing residents access to village squares and the Towne Centre.

Figure 6 McKenzie Towne Plan



Source: Carma Developments Ltd.



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## **POLICY 3**

***A mix of both public and private activities must be located in and around the community centre and neighbourhood nodes.***

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According to the Sustainable Suburbs Study a mix of public and private activities in and around the community centre and neighbourhood nodes will reduce the need to drive outside the community, provide a greater variety of activities in close proximity to residents and provide local employment, security and safety. As stated earlier under policy one, the land use for the Towne Centre of McKenzie Towne consists of retail, commercial, office, medical, personal services and civic uses for a total gross floor area of approximately 600,000 square feet. Thus, a variety of both public and private activities are planned for the Towne Centre of McKenzie Towne. The village squares will also contain commercial activities as well as supporting transit facilities and civic vitality (Carma Developers Ltd., 1995).

At the smallest scale, a general store could be located at a corner site associated with each village. "The contents of the general store will approximate those of the ubiquitous suburban convenience store, with the addition of tables and chairs, or a counter with stools. The general store is a component of the social structure, eliminating unnecessary automobile trips, providing a social centre for the village and enhancing the attraction of the village bus stop" (Carma Developers Ltd., 1995, 9).

The Sustainable Suburbs Study further suggests several guidelines when planning new communities to achieve a mix of private and public activities in and around the community centre and neighbourhood nodes. First, opportunities for housing should be explored in the community centre. According to the Village of Inverness Outline Plan, the Towne Centre was planned to contain approximately 180 residential dwelling units. However, according to Bill Bird, commercial development manager, "We did a survey and found that few people wanted it because of noise and, in some cases, cooking odours coming from the businesses" (Calgary Herald, 1999, G3). Referring to the Towne Plan (Figure 6), 3090 residential dwelling units would be located adjacent to the Towne Centre in villages one, two, five and six. (Based upon the assumptions gathered within the Transportation Analysis, 1995, village 1, 2, 5 and 6 would equal 3,090 households). With 3,090 residential dwelling units, a population of approximately 8,343 persons (2.7

persons per household) would reside immediately adjacent to the Town Centre. With 8,343 residents located next to the Towne Centre, a sufficient population exists to support a range of both private and public activities. Figure 7 illustrates the construction of one of the medium density sites adjacent to the Towne Centre in the Village of Prestwick.

**Figure 7 Medium Density Site Adjacent to the Towne Centre**



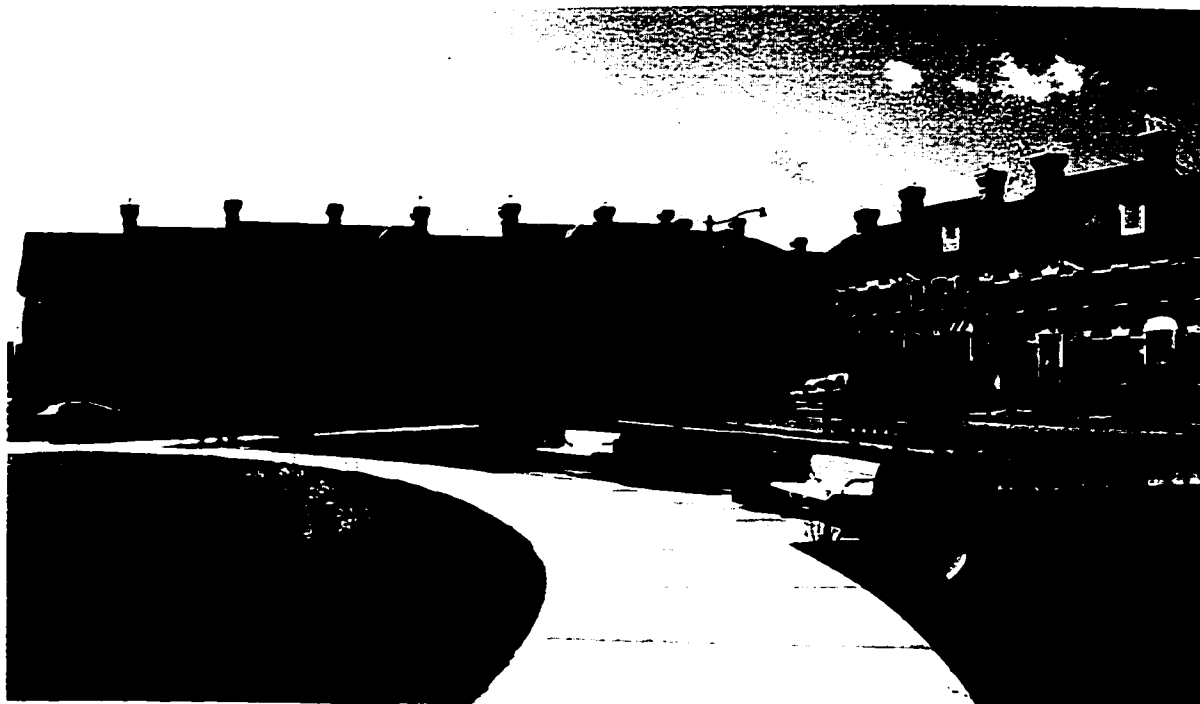
Another suggested guideline to create a mix of activities within the community encourages Permitted Uses, Certainty of Use and Direct Control designations for specific uses. In McKenzie Towne, the Permitted and Discretionary uses of R-2 Residential Low Density includes an additional Permitted Use of “Studio Suites”. The development guidelines are as follows: located above a private garage on a single family detached dwelling lot, no larger than 45 square metres in size (Carma Developers Ltd., 1995). With the inclusion of “Studio Suites”, McKenzie Towne provides housing for older relatives and young adult children who may wish to live in the proximity, but not intimately with, the nuclear family (see Figure 8).

**Figure 8 Studio Suite or Granny Suite**



McKenzie Towne fulfills the final suggested guideline of policy three contained within the Sustainable Suburbs Study to achieve a mix of private and public activities in the community. The community has higher density housing around the neighbourhood villages and Towne Centre. The intention of this guideline is to maximize the number of residents within the shortest walking distance to civic uses and transit facilities. In McKenzie Towne, the Direct Control designation of R-2A circles the village squares, contributing to an important element of the streetscape and providing an affordable housing alternative. The townhouse development, which by its built form, contributes key architectural, visual, and massing elements to frame the neighbourhood square (see Figure 9).

**Figure 9 Townhouses Surrounding Village Square**



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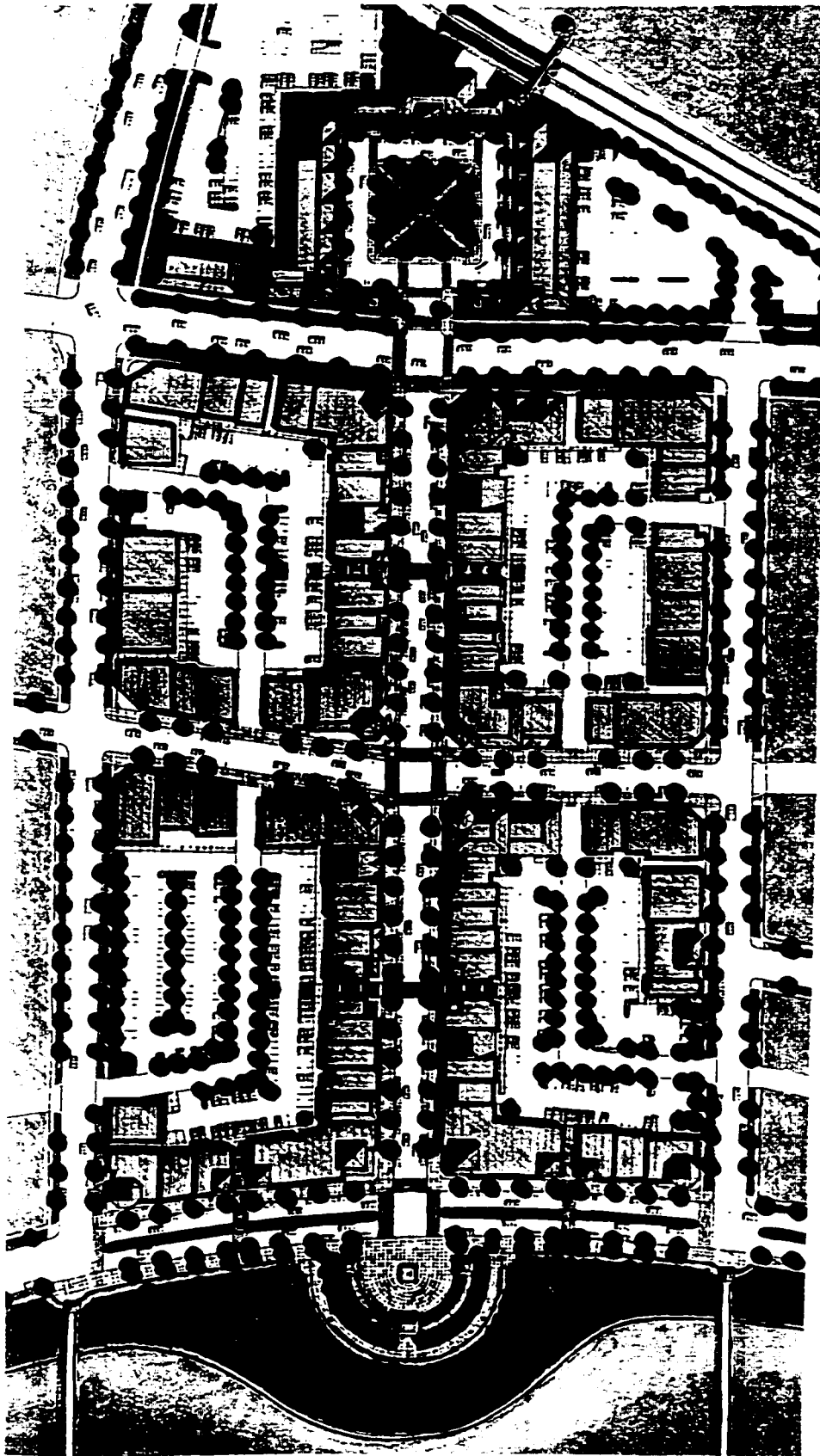
#### **POLICY 4**

*Community centre and neighbourhood node site design must encourage pedestrian and bicycle access and transit use.*

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To achieve pedestrian, bicycle and transit use, the Sustainable Suburbs Study suggests several guidelines to be considered in new communities. The first is that supermarkets in community centres should have rear or side parking to maintain the continuity of the pedestrian environment. Another similar guideline suggested by the City is that pedestrians do not have to cross a parking lot to get from a sidewalk or transit stop to shops and services. Referring to Carma's Principles of Town Planning, "...nothing destroys the desire to walk along a street more quickly than the boredom of walking past a parking lot" (Carma Developers Ltd., 1995, 10). In and around the Towne Centre of McKenzie Towne, parking is provided in the rear of the buildings (see Figure 10). However, the IGA Grocery Store, currently under construction, will have an extensive parking area located in front of the building with approximately 210 stalls (Calgary Herald, 1999).

Figure 10 Schematic of the Towne Centre Plan



Source: Carmia Developments Ltd.

As well, where pedestrian life is uncommon, on-street parking is mandatory on both sides of the traffic lanes (see Figure 11). This layer of parking "...provides a psychological shield of protection for the pedestrian on the sidewalk. Sidewalk life rarely occurs in the absence of on-street parking" (Carma Developers Ltd., 1995, 10).

**Figure 11 Parking on Both Sides of the Street**



Another suggested guideline to increase pedestrian life on the street is to provide on-street parking where there is a mix of uses with a staggered peak period of demand (City of Calgary, 1995). The Principles Of Town Planning encourages the following parameters which will provide continuity to the pedestrian street environment:

- a) by providing less parking than required for peak periods, automobile use is less desirable;
- b) by placing night-day and weekend-weekday uses in proximity, less parking is necessary. For example, office parking is largely unused on weekends, when religious and cultural buildings may use it, and retail parking is unused during evenings, when housing, meeting halls, and theaters need it;
- c) by providing lanes, garages may be approached from the rear and the street is free of curb cuts, thereby becoming entirely available for parking; and

d) all cars parked on the street count towards the parking requirements. These are the best kind of parking lots since they do not look like parking lots and allow double-use of traffic lanes (Carma Developers Ltd, 1995).

The Sustainable Suburbs Study further suggests that in a “main street” configuration, building frontage should be continuous and pedestrian unfriendly gaps, such as wide parking lots, avoided. An early Towne Centre rendering depicts continuous building frontage (see Figure 12). The Principles of Town Planning highlights four principles to achieve streets that feel like outdoor rooms, that are safe, effective and populated by pedestrians. They are: the facades of buildings fronting the street shall be aligned with each other and parallel to the street; the height of the facades shall be not less than one-sixth the distance between facades across the street; if the one-to-sixth height-to-width ratio is exceeded, it must be recovered by planting trees in a disciplined line to reduce it; and that street lights are to be selected for performance which is pleasant to the eye (Carma Developers Ltd., 1995).

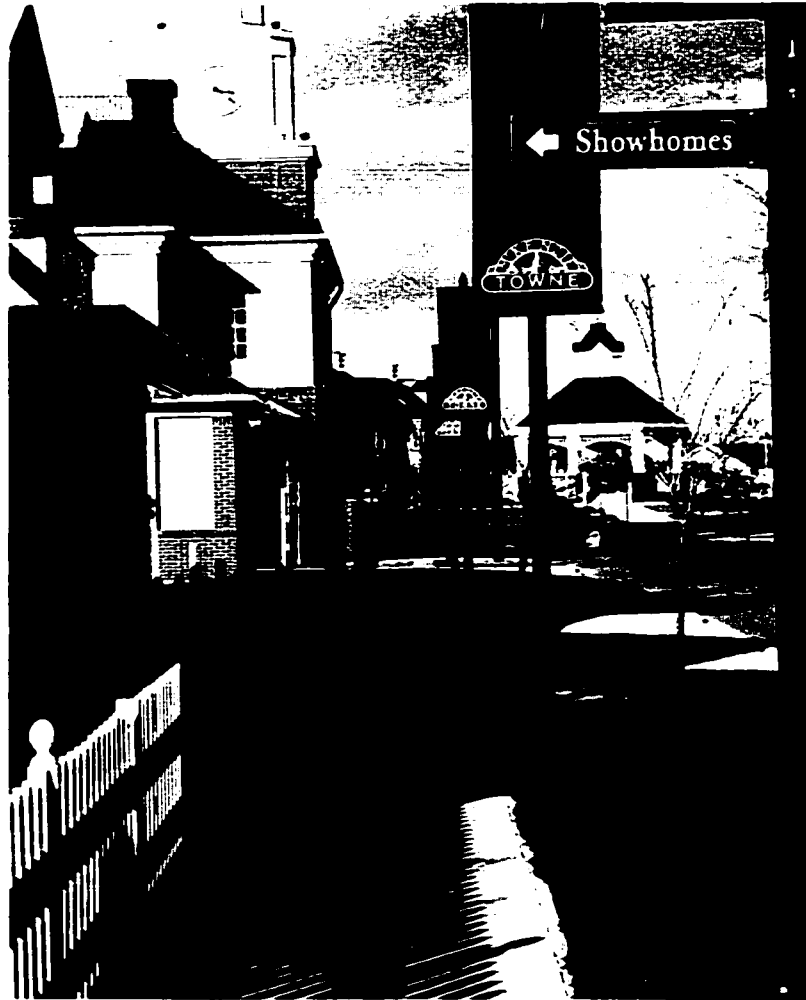
**Figure 12 Towne Centre Rendering**



Sidewalk widths in and around the Towne Centre of McKenzie Towne are generous as they accommodate the pedestrian nature of the street. The Sustainable Suburbs Study suggests that sidewalks should be a minimum of 2.0 m where street parking is parallel and 2.5 m where street parking is angled at 90 degrees. High Street,

the main street of the Towne Centre, provides sidewalk widths of 4.5 metres. Commercial Street, adjacent to High Street, has narrower sidewalks at 3.3 metres but has wider travel lanes. However, in the Village Square, the sidewalks are 1.4 metres in width, 0.6 metres less than the suggested design guideline of 2.0 metres in width (see Figure 13).

**Figure 13 Village Square Sidewalks**



The final suggested guideline to encourage pedestrian traffic is that street frontage building height should be no more than the right-of-way on which it fronts. Along High Street, the main street in the Towne Centre, the right-of-way width is planned to be 22 metres across. The “...C-2/16 designation provides the 16 m height required to accommodate the architectural and functional considerations associated with this type of use along High Street” (Carma Developers Ltd., 1995, 30). Therefore, the building



height of 16 m is planned to be less than the planned right-of-way of 22 m along the main street of the Towne Centre.

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## **POLICY 5**

***Compatible home occupations should be encouraged.***

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The fifth policy recommended by the City of Calgary in the Sustainable Suburbs Study is to encourage home occupations in new communities. This policy would reduce work trips outside of the community, decrease congestion and vehicle emissions, support local businesses catering to people working in their homes and foster a safer community through daytime resident/worker presence (City of Calgary, 1995).

In the Outline Plan for McKenzie Towne, a DC (R-2) designation identifies the land use potential for two-dwellings, being a principle dwelling and a self-contained studio-suite. The provision of studio suites allow many residents to occupy a principal dwelling while maintaining home employment in a separate dwelling. Since the designation allows for studio suites to be built up to 45 m, the size is sufficient for many residents to set up home offices above their garage. In addition, parking regulations in McKenzie Towne provide parking on the street or in the rear lanes adjacent to the garages of the residents. Similarly, building types with commercial potential such as shopfront buildings and townhouses, that are easily convertible to professional offices, shall be placed on the square in proximity to the general store. These are expected to be flexible in function over time. Parking for these small commercial uses can easily be provided around the village square.

Another source of employment in McKenzie Towne is the Towne Centre and neighbourhood villages. Since most residents are within a 5 minute walking distance to these sources, they provide convenient access to retail, medical, public services, commercial and office employment. Despite the fact that the majority of McKenzie Towne residents will continue to work outside the community, McKenzie Towne will offer a greater number of employment opportunities than a conventional suburb. Residents can travel to work on foot, bicycle or transit from their home via greenways and public corridors and be working in their offices in a matter of minutes. The objective is to increase time with one's family, reduce peak hour vehicle emissions, reduce

downstream traffic congestion, decrease dependency on the automobile and increase all-day resident and worker presence, resulting in a safer community environment.

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## **POLICY 6**

*Community centre and neighbourhood node sites may be developed with interim uses, provided that the eventual development of the preferred mix of uses is not precluded.*

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The Sustainable Suburbs Study recommends the necessity of interim uses in the neighbourhood nodes and community centre in order to avoid large vacant parcels of land during the phasing of development. The Study further suggests several recommendations to achieve this policy. Building interim uses in temporary or permanent buildings could provide functions such as as a transit shelter, mail pick-up, coffee shop or news agent. Other suggested uses include a tree nursery, community gardens, farmers' market or a central community mailbox (City of Calgary, 1995).

Presently in the first of fourteen neighbourhoods of McKenzie Towne, a general store provides the residents of the area with daily confectionery items. In addition, a dental office, Resident's Association, insurance office, church and information centre exist in the neighbourhood square. These commercial locations provide interim uses for several of the tenants until the Towne Centre is completed and encourage the residents in the area to utilize them on a daily basis, avoiding unnecessary automobile usage outside of McKenzie Towne (see Figure 14).

**Figure 14 Village Square Building**



## SUMMARY

**Table 4 Summary of the Towne Centre and Village Square**

<b>Sustainable Suburbs Study Recommended Policies and Guidelines</b>	<b>McKenzie Towne</b>	
	<b>Yes</b>	<b>No</b>
<i>Mixed use public activity centres located in the form of a community centre and neighbourhood nodes:</i>		
1 sq. m of commercial/resident	<b>X</b>	
Regional shopping centre 3.2 km from Towne Centre		<b>X</b>
3 to 6 acres of commercial space for retail	<b>X</b>	
Space for public use in community centre	<b>X</b>	
<i>Community centre and neighbourhood nodes strategically located and central:</i>		
Local streets pedestrian friendly by separating sidewalks from the street & lined with trees	<b>X</b>	
Direct linkages allowing residents a choice of routes	<b>X</b>	
<i>A mix of both public and private activities in and around the community centre and neighbourhood nodes:</i>		
Housing in and around the community centre	<b>X</b>	
Encourage Permitted Uses, Discretionary Uses and Direct Control designations	<b>X</b>	
Higher density housing around community centres and neighbourhood nodes	<b>X</b>	
<i>Community centres and neighbourhood nodes should encourage transit, pedestrian access and bicycle use:</i>		
Community centres provide rear or side parking	<b>X</b>	
Parking on both sides of street in low pedestrian areas	<b>X</b>	
On street parking integrated with staggered demand	<b>X</b>	
Building frontage continuous	<b>X</b>	
Sidewalks a minimum of 2.0 m		<b>X</b>
Building height no more than the right-of-way on which it fronts	<b>X</b>	
<i>Community centres and neighbourhood nodes should be developed with interim uses</i>	<b>X</b>	
<i>Compatible home occupations should be encouraged:</i>		
Studio Suites, shopfront apartments, etc.	<b>X</b>	<b>X</b>
Building types with commercial potential in proximity to the neighbourhood square and community centre	<b>X</b>	

Table 4 summarizes the recommended policies and guidelines from the Sustainable Suburbs Study for community centre and neighbourhood node development. McKenzie Towne, a neotraditional community, fulfills all but three of the suggested guidelines to achieve a sustainable suburb for community centre and neighbourhood node development. The community of McKenzie Towne will be within a 3.2 km drive from the nearest regional shopping centre (Shepard Regional Shopping Centre) when it is completed. The Towne Centre will not provide housing options above retail facilities as originally planned, but a medium density housing development is located immediately adjacent to the area. As well, the width of the sidewalks framing the Village Square are 0.6 metres less than the minimum suggested standard.

Overall, the Towne Centre and village squares of McKenzie Towne reflect the majority of the recommended principles in the Sustainable Suburbs Study.

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## 5. OPEN SPACE: A SYSTEMS APPROACH

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Neotraditional plans treat open space in a formal way, both functionally and locationally. Village squares, town greens, formally designed parks, and small but intensively used recreation areas are common features of a neotraditional town (Bookman, 1992). These spaces are often partially enclosed (for example, a village square framed with row houses) so they feel and function much like an outdoor room. There are four types of specialized open spaces associated with McKenzie Towne. Landscaped spaces within the planned Towne Centre are the most formal of the open spaces and are the focal point of the community. The existing landscaping surrounding the neighbourhood squares are the civic places at the geographic centre of each neighbourhood, within five minutes walking distance of all or nearby housing. The existing playgrounds are smaller areas specialized for more informal recreational activities within the neighbourhood setting, perhaps containing hard paving for ball games and sandy areas for younger children. The existing greenways are large continuous areas designed as parks to imitate a portion of the landscape captured within the town. The landscaping may be naturalistic or manicured and the traffic crossroads are minimized. Schools and their playing fields, lakes and other large open spaces are confined to the greenways in order to avoid the pedestrian discontinuities that would be caused by their placement within the neighbourhoods.

The Sustainable Suburbs Study indicates that the protection of existing natural areas strongly influences community design and connections to the city-wide regional open space system are very important (City of Calgary, 1995). At the regional level, the Area Structure Plan should determine the broader system context for establishing the open space hierarchy. At the community level, a Community Plan is useful in order to establish a linked system of local parks, plazas and public buildings, in balance with the needs of the residents, and strategically located to provide the stage for a vibrant community life (City of Calgary, 1995).

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## **POLICY 7**

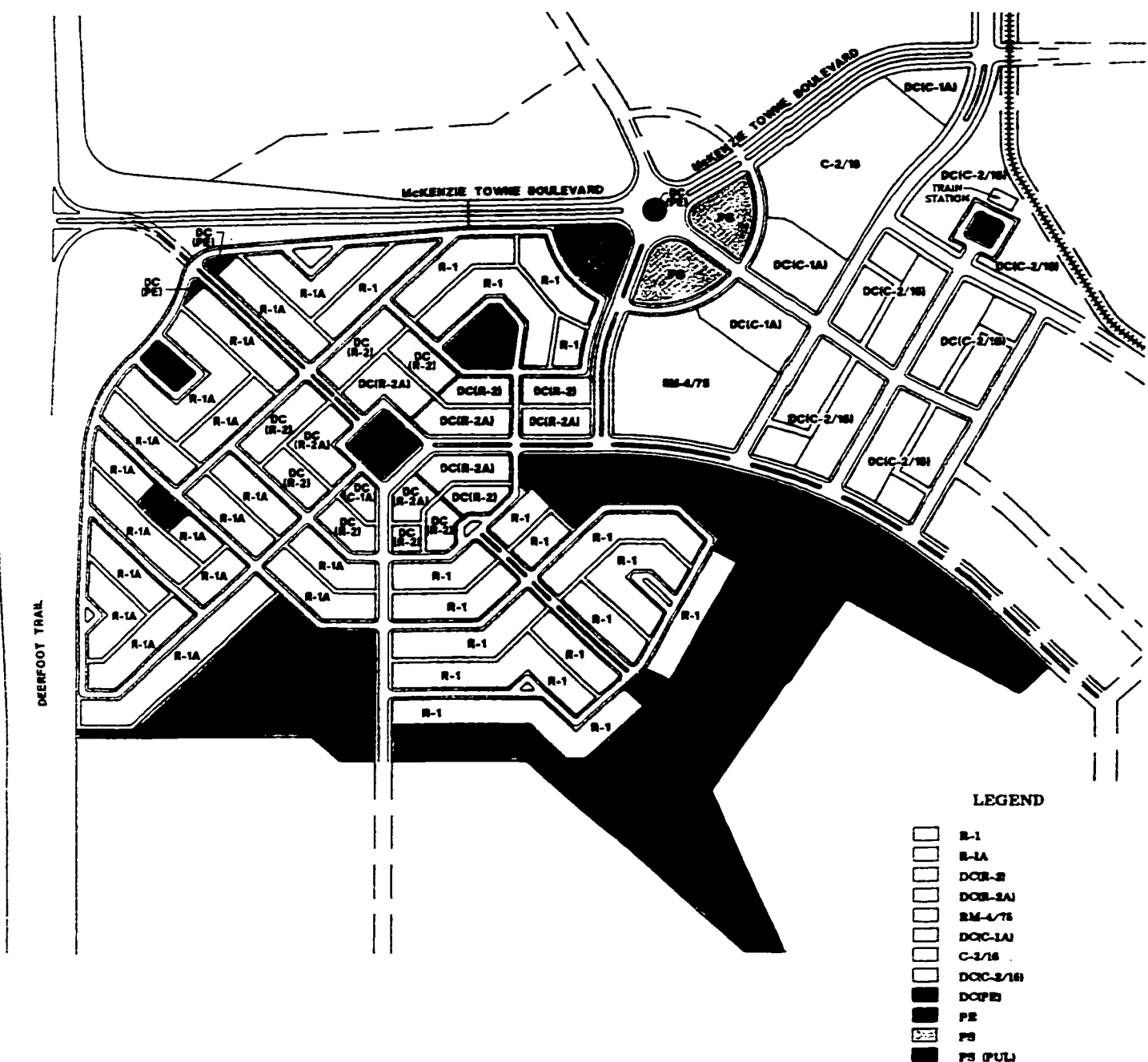
***Existing natural systems (including significant environmentally sensitive areas) must be integrated into new communities and will form part of a comprehensive and contiguous regional open space system.***

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This recommended policy by the City is intended to ensure the sustainability of natural systems by providing passive recreational areas and educational opportunities; encouraging visual relief and diversity that give an area its identity; supporting the regional pathway system; providing environmental benefits such as shading, soil stabilization, filtering of air pollutants; and contributing to the natural drainage system and stormwater management system. To achieve the sustainability of the natural system and ensure the aforementioned benefits, the Sustainable Suburbs Study suggests three guidelines for new communities.

The first guideline indicates that various components of an open space system, such as utility right-of-ways, linear parks, should be utilized so that a contiguous regional open space system is maintained. McKenzie Towne incorporates greenways which are large continuous areas designed as parks to imitate a portion of the landscape captured within the town. The McKenzie Towne Open Space and Public Spaces Plan (Figure 15) illustrates the location of a 4.04 ha joint use site within the first neighbourhood greenway. This school/playfield feature is designated as Municipal School Reserve (MSR) and is located to "...maximize the catchment between the first and future residential neighbourhoods, and is within safe and convenient walking distance, via the residential street system and the continuous greenway matrix, from the entire planning area" (Carma Developers Ltd., 1995, 38). Adjacent to this site, the lake greenway supplements the regional pathway system for the planning area of McKenzie Towne. This site is approximately "...35.7 acres and provides over 2300 m or almost one and a half miles of a McKenzie Towne pedestrian/bikeway system" (Carma Developers Ltd., 1995, 39).

Figure 15 Open Spaces and Public Spaces Plan



Source: Carma Developments Ltd.

The second and third suggested guidelines from the City complement each other as they seek to limit utility crossings and channelize the open space system to ensure a safe, viable option for transportation and recreation. In McKenzie Towne, the separate components of the open space system complement each other as they provide local

pedestrian and cyclist movement with connections to the regional pathway system of the Towne Plan. For example, two bridges over the canal portion of the lake are planned to provide linkages between the Towne Centre and the residential area over this water feature. Similarly, the greenways and other large open spaces "...avoid the pedestrian discontinuities that would be caused by their placement within the villages" (Carma Developers Ltd., 1995, 6).

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## **POLICY 8**

***Built open space (including joint use sites) must be located, sized and configured to create places that are functional safe, flexible and form a linked open space system.***

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This policy contained in the Sustainable Suburbs Study is intended to provide a safe, vibrant and healthy community, improve pedestrian and cyclist movement, reduce construction costs and provide a variety of outdoor recreational amenities (City of Calgary, 1995). Arising from the aforementioned benefits, a number of guidelines are suggested by the City to form a safe, functional and flexible linked open space system.

The first suggestion for effective community design is to distribute community and neighbourhood parks so all residents have access to a public activity centre. Figure 15 illustrates the distribution of the various parks in the Village of Inverness. It is evident that all residents living in this first phase of McKenzie Towne have adequate access to either a neighbourhood park or to the large central park and greenway with the stormwater lake.

The second suggested guideline is that parks and public spaces should respect and reinforce views and linkages to streets and other buildings. The village square in Inverness is a formal open space with orderly tree planting, paved areas and strong spatial definition which is provided by the buildings along the periphery. Included within the square as an important architectural symbol and providing a functional identity to the neighbourhood square, is a gazebo/bandstand (see Figure 16). The neighbourhood square is not a tot lot but provides a more passive and aesthetic urban function. To facilitate access, a series of crosswalks are provided at the intersections radiating from the neighbourhood square. A one-way traffic system, on the three sides of the square provides a more favourable pedestrian environment.



**Figure 16 Village Square Park**



Another suggested guideline is that joint use sites should facilitate safe, efficient pedestrian movement to major attractions and be bounded by local streets. This guideline is achieved within the Village of Inverness as the joint use site, designated Municipal School Reserve (MSR) lies adjacent to the first neighbourhood greenway. Figure 17 depicts the existing planned school/playfield which is located to maximize the catchment between the first and future residential neighbourhoods, and is within safe and convenient walking distance, via the residential street system and the continuous greenway matrix.

“A minimum of 170 m of collector frontage has been planned along the east boundary of the site, with a second residential street frontage of 144 m being provided along the north boundary of the site” (Carma Developers Ltd., 1995, 38). Since the park is bounded by residential streets, this public area is safe because it is visible from the surrounding residences fronting the streets and it further reduces traffic problems as on-street parking is provided.

**Figure 17 School/Playfield Site**



The fifth guideline to create a safe, functional and flexible open space system is to avoid developing single use parks. In McKenzie Towne, playgrounds are interspersed throughout the residential neighbourhoods ranging in size from .5 acres to 1.1 acres (see Figure 18). These parks are situated within the residential areas and are intended for active recreational and play areas for children in the community (Carma Developers Ltd, 1995).

**Figure 18 Children's Playground**



The last five guidelines are all similar in nature as they discuss the importance of linking the open space system through the use of the street system, pathway system, linear parks and utility right-of-ways. In hand with this, local streets must be designed to safely accommodate cyclists and linkages through parking lots or lanes should be avoided. The best example of fulfilling this guideline is McKenzie Towne's central park and greenway (see Figure 19). This feature surrounds the stormwater lake creating linear park linkages to the residential neighbourhood, Towne Centre, joint use site with a future school and vacant residential lands to the south. A resident living along the far west side of Inverness can travel by bicycle along the separated walkways of residential roads to the greenway and central park, over two future bridges of the canal portion of the lake, to the Towne Centre.

**Figure 19 Greenway Surrounding Stormwater Lake**



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## **POLICY 9**

*Local open space must provide a variety of opportunities for people of all ages, interests and abilities.*

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The ninth recommended policy in the Sustainable Suburbs Study is general in nature, but is intended to promote the various functions of the open space system: ecological, educational, recreational, health, civic, urban form and stormwater management. To achieve these various functions, the City has suggested three guidelines to consider when planning sustainable communities. The first guideline is that engineered stormwater facilities should be aesthetically pleasing and integrated into the open space system. McKenzie Towne provides a stormwater lake that will be used as a public utility lot and as a storm retention pond in accordance with the City of Calgary's Policy on Stormwater Lakes (Carma Developers Ltd. 1995). The lake represents a permanent waterbody serving as both an aesthetic (nonwater contact activities) and functional (stormwater catchment) feature central to the community (see Figure 20). As the guideline mentions, the stormwater facility should be integrated into the open space system. McKenzie Towne's stormwater lake is integrated into the open space system as it is surrounded by a continuous greenway and a regional pathway system of approximately one and a half miles in length catering to both the pedestrian and cycling environments.

**Figure 20 Stormwater Lake**



The second guideline is that stormwater ponds should incorporate natural elements such as varied topography and native plant material which enhance the recreational opportunities of the site and improve water quality. The stormwater lake in McKenzie Towne has a significant purpose in relation to the storm sewer servicing of the site. The lake fulfills the dual purpose of stormwater containment and passive recreational and educational activities. As a stormwater containment site, the lake receives storm sewerage outflow from gravity mains throughout McKenzie Towne (Carma Developers Ltd, 1995). Then, a gravity trunk will convey outflows from the lake to the McKenzie Towne Storm Trunk for discharge via a storm outfall into the Bow River. The McKenzie Towne Sanitary Master Plan, completed by IMC Consulting Group Inc., recognizes the topography of the site as sloping 20 metres from southwest to northeast. As well, the surficial geology of the site is fairly consistent with a thin layer of top soil underlain by a layer of silts, sands and clays. Below the silt/sand/clay zone is siltstone and mudstone.

The final guideline offered by the City in relation to the third policy on the open space system is to consider a broad range of possible activities in addition to the more common recreational pursuits. The landscaped spaces within the Towne Centre are planned to include paving patterns which act in conjunction with landscaped gardens to lead pedestrians from the future Town Square and Train Station along a mixture of shopfronts and commercial buildings to the Towne Plaza set in the open landscape, surrounded by a canal and pond. Thus, when this open space is completed, it will act as a passive recreational area offering socialization and relaxation.

The village squares are civic places at the heart of each village within five minutes walking distance of nearly all of the housing. They are urban and formal open spaces, generally having orderly tree plantings, paved areas and strong spatial definition which is provided by the surrounding buildings. Within each village square a gazebo acts as a architectural symbol of previous times and as a social place for relaxation and socialization.

The existing playgrounds, greenways, and stormwater lake are informal open space areas where residents can enjoy many different activities. Young children can play in their local tot lot on swings and 'Jungle Gyms', and young adults are able to throw the ball around one of the school yards. Adults can enjoy a walk or cycling trip along one of

the greenways. In winter, the lake may act as a recreational amenity for people of all ages who enjoy skating and as an educational opportunity in the summer for people who wish to learn more about stormwater management techniques and how the lake interacts with the surrounding environment.

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## **POLICY 10**

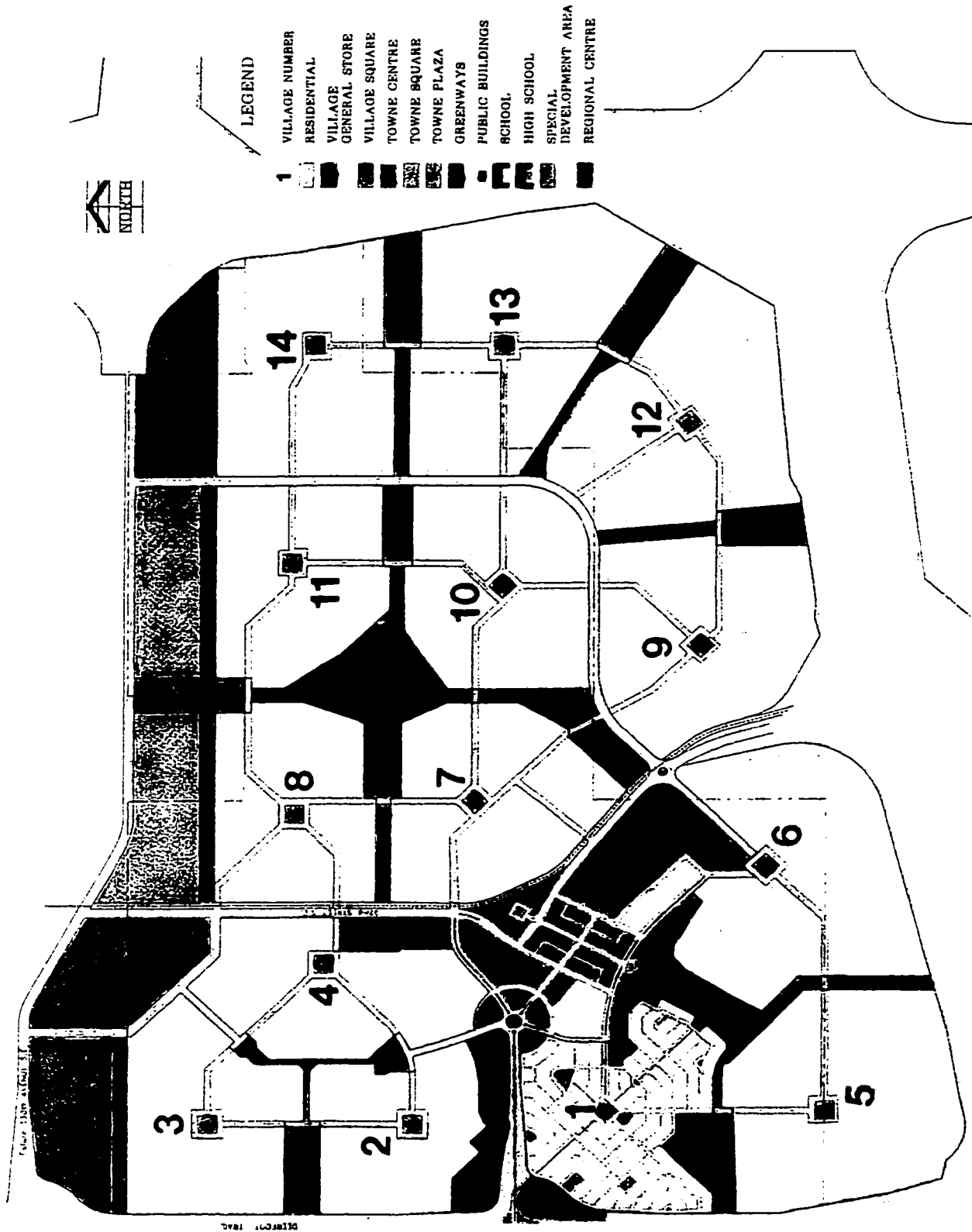
***Joint use sites (elementary and/or junior high school sites and playfields) should be located in close proximity to the community centre or neighbourhood nodes, on the transit route and close to daycare and other services.***

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The tenth recommended policy from the Sustainable Suburbs Study offers several public benefits when public schools are linked or in close proximity to either the community centre or neighbourhood nodes: enabling residents to combine trips; providing pedestrian access to joint use sites and allowing transit use for students; achieving fiscal efficiencies through compact urban form; providing a community focus and identity through a strong civic component; and creating a dynamic community centre.

Referring to the Towne Plan, the planned schools are highlighted in blue and they are clearly within a short walking distance from each of the fourteen neighbourhood villages. The schools/playfields are located to maximize the catchment between the residential neighbourhoods, and are within safe and convenient walking distance, via the residential street system and the continuous greenway matrix to the other residential areas and the neighbourhood villages (Carma Developers Ltd., 1995). This design feature fulfills the first suggested guideline in the Sustainable Suburbs Study: schools should be in a location that maximizes the number of students who can walk to school. However, as the Towne Plan indicates, nine schools are planned for the community upon completion of the fourteen villages. Based upon today's funding for the development of future schools, it is idealistic to believe that McKenzie Towne will receive support for the development of nine future schools.

**Figure 21 McKenzie Towne Plan**



Source: Carma Developments Ltd.

Each school/playfield is located along one of McKenzie Towne's Main Roads which have a 1.4 metre separated walkway with numerous trees providing a safe pedestrian environment for children to travel to school without interference from vehicular traffic. As well, the Main Roads are 12 metres in width with separated parking. This road size is sufficient to achieve the second suggested guideline by the City. Joint use sites should be bounded by streets to provide adequate road frontage and access to meet the needs of bus and vehicle loading in a safe and efficient manner (City of Calgary, 1995).

The final guideline for joint use sites is that when they are large, they can undermine efforts to achieve higher densities around the community centre. The Sustainable Suburbs Study recommends that since not all playfields are required for the school curriculum, they should be separated from joint use sites and provided elsewhere in the community. In McKenzie Towne, the joint use sites are planned for a school and large playfield connected to the greenways. "Schools and their playing field, lakes, and other large open spaces are confined to the greenways in order to avoid the pedestrian discontinuities that would be caused by their placement within the villages" (Carma Developers Ltd., 1995, 6). The Sustainable Suburbs Study suggests that large fields create barriers to pedestrian movement (City of Calgary, 1995). However, in McKenzie Towne, Duany and Carma planned for large school/playfields connected to greenways to improve pedestrian continuity throughout the community.

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## **POLICY 11**

*The community centre must accommodate a community hall or similar facilities and contain functional open space.*

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This recommended policy intends to provide a highly visible public component at the community centre, a public place for formal and informal gatherings and a functional community square or commons for recreation and relaxation in the core of the community.

The first suggested guideline from the Sustainable Suburbs Study is to provide a community facility in the community centre. In McKenzie Towne, public buildings will include meeting halls, churches, museums, sport facilities and schools. Sites are reserved



for public buildings in the McKenzie Towne Plan at "...locations such as village squares, at the termination of streets and avenues, and at the edge of parks" (Carma Developers Ltd., 1995, 8). McKenzie Towne meets the suggested guideline by providing community facilities in many of the village squares and throughout the entire planning area. For example, in the Village of Inverness, a resident association and church currently operate for the benefit of the community residents.

The second guideline suggested by the City is the residents of developing communities should be involved in the planning of their community. After interviewing Rich Western, Project Manager of McKenzie Towne, the residents will have little input in the future design of the community. Carma Developments Ltd. have submitted an initial Outline Plan for Villages two and three. This plan was completed by the developer within the ordinances suggested by Andres Duany without involvement by residents living in the Village of Inverness. However, Rich Western did state that when McKenzie Towne is completed, a Towne Council, comprised of members of Carma Developments Ltd. and residents of McKenzie Towne, will work with the fourteen residents associations in the maintenance and improvement of the community.

In McKenzie Towne, the Towne Centre will achieve the third suggested guideline by providing a commons or central park with opportunities for both passive and active recreation. Located at the south end of the Towne Centre, the future Towne Plaza is set in the open landscape, surrounded by a canal and pond linked to the greenway matrix. The future Towne Plaza will incorporate ornamental parks and gardens and boast active recreation along the greenway matrix.

The last City guideline is that neighbourhood nodes should contain a smaller public open space component. In McKenzie Towne, as stated earlier, the neighbourhood square in each of the villages is the "...social and civic heart of each residential neighbourhood, in which the functional and aesthetic importance of these reserve parcels cannot be over emphasized" (Carma Developers Ltd., 1995, 37).

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## **POLICY 12**

*Opportunities for long term community financing and involvement in the design, construction, operation and maintenance of community facilities or local open space should be pursued.*

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This policy recommended by the City will enable all residents to take responsibility for their public services, enable early construction of community facilities and reduce municipal costs for community services (City of Calgary, 1995). At present each new homeowner in McKenzie Towne is levied an annual community fee. This fee is collected by Carma Developments Ltd. and is used for the improvement of the community. According to Rich Western, eventually the Towne Council, with input from the various residents associations, will assess community fees for the maintenance and operation of open space and community improvements (Rich Western, 1996). At present, the Residents Association is not involved in the maintenance and operation of the community which would decrease City of Calgary maintenance costs.

When asked whether a community facility for the Towne Council and residents of the community would be one of the first structures constructed in the Towne Centre, Rich Western indicated that a building may be constructed when the necessary demand is achieved. He stated that until the community achieved a sufficient population, residents associations for each village would be provided with space in the village squares (Rich Western, 1996).

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## **POLICY 13**

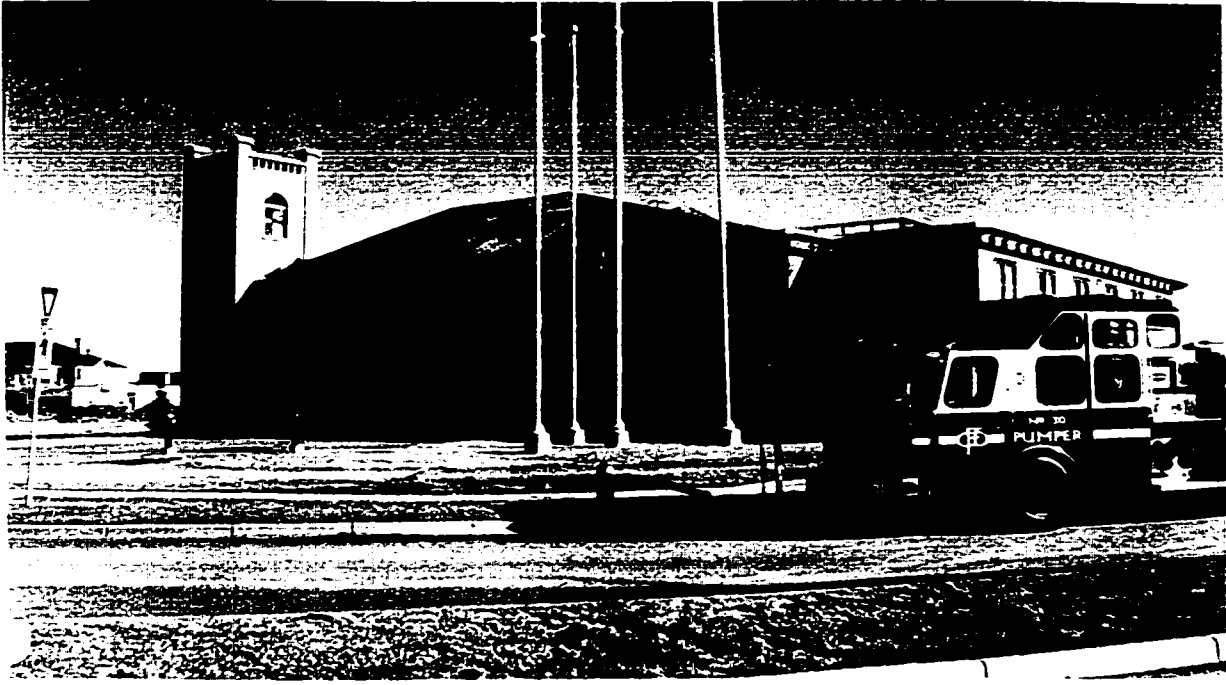
*Opportunities for shared use of sites and/or buildings for public facilities (e.g., fire, emergency services, library, police, schools, community facilities, social services, health services, etc.) should be pursued.*

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Within the Village of Inverness, two sites located around the traffic roundabout and designated as PS - Public Service District, accommodate civic and cultural buildings. Figure 22 is a picture of the new 13,000 square foot McKenzie Towne Fire Hall, which is a multi-purpose complex, sharing space with a storefront Calgary Police Service office and an Emergency Medical Services unit. The Fire Station is located adjacent to the site

of the McKenzie Towne Baptist Church planned to start construction in Spring 1999. Locating two public buildings on this site maximizes land efficiencies and provides a “...strategic importance in terminating, at the roundabout, important street vistas as you enter or leave McKenzie Towne” (Carma Developers Ltd, 1995, 35).

**Figure 22 McKenzie Towne Fire Hall**



**SUMMARY**

**Table 5 Summary of Open Space System**

<b>Sustainable Suburbs Study Recommended Policies and Guidelines</b>	<b>McKenzie Towne</b>	
	<b>Yes</b>	<b>No</b>
<i>Existing natural systems must be integrated into new communities and will form part of a comprehensive and contiguous regional open space system.</i>		
Components of an open space system should form a contiguous regional open space system.	<b>X</b>	
Limit utility crossings and channelization of the open space system to ensure a safe, viable option for recreation and transportation.	<b>X</b>	

<p><i>Built open space must be located, sized and configured to create places that are functional, safe, flexible and form a linked open space system.</i></p> <p>Distribute neighbourhood parks so all residents have access.</p> <p>Parks and public spaces should respect and reinforce views to streets and other buildings.</p> <p>Joint use sites should facilitate safe, efficient pedestrian movement and bounded by local streets.</p> <p>Avoid developing single use parks.</p> <p>Link the open space system with the street system, pathway system, linear parks and utility right-of-ways.</p>	<p><b>X</b></p> <p><b>X</b></p> <p><b>X</b></p> <p><b>X</b></p>	<p><b>X</b></p>
<p><i>Local open space must provide a variety of opportunities for people of all ages, interests and abilities.</i></p> <p>Engineered stormwater facilities should be aesthetically pleasing and integrated into the open space system.</p> <p>Stormwater ponds should incorporate natural elements such as topography and native plant material.</p> <p>Consider a broad range of activities.</p>	<p><b>X</b></p> <p><b>X</b></p> <p><b>X</b></p>	
<p><i>Joint use sites should be located in close proximity to the community centre or neighbourhood nodes, on the transit route and close to daycare and other services.</i></p> <p>Schools should be located to maximize the number of students who can walk.</p> <p>Joint use sites should be bounded by streets to provide road frontage, safe vehicle loading and transit.</p> <p>Separate playfields from joint use sites when not required by school curriculum.</p>	<p><b>X</b></p> <p><b>X</b></p>	<p><b>X</b></p>
<p><i>The community centre must accommodate a community hall or similar facilities and contain functional open space.</i></p> <p>Provide a community facility in the community centre.</p> <p>Involve residents in the planning process.</p> <p>Provide opportunities for both active and passive recreation in the community centre open space.</p> <p>Neighbourhood nodes should contain a small open space component.</p>	<p><b>X</b></p> <p><b>X</b></p> <p><b>X</b></p>	<p><b>X</b></p>
<p><i>Opportunities for long term financing and involvement in the design, construction, operation and maintenance of community facilities or local open space should be pursued.</i></p>		

Establish a homeowners' association where residents maintain local facilities and open space. Community facilities should be one of the first structures in the community centre.		<b>X</b> <b>X*</b>
<i>Opportunities for shared use and/or buildings for public facilities should be pursued.</i>		
Maximize land use, parking, lower construction and maintenance costs with shared use of sites.	<b>X</b>	

\* Until sufficient demand (population base), a community facility would not be one of the first buildings in the Towne Centre. Residents associations would be located in the village squares.

Table 5 summarizes the extent that McKenzie Towne achieves the recommended policies and corresponding guidelines of the Sustainable Suburbs Study. Based on the analysis, the following recommendations will not be achieved within McKenzie Towne. First, small playfields are developed with a single use. These playgrounds are similar to tot lots developed in many of today's suburbs. Second, in McKenzie Towne, playfields are not separated from school sites when not required by the school curriculum. According to both the Outline Plan and the Towne Plan, nine school sites are planned to be connected to the greenway matrix with a large playfield for various activities. The intent of the Sustainable Suburbs Study is that if school sites are not required, the highest and best land use would be for future residential development to increase community density.

More importantly, Carma Developments Ltd. to date has not involved residents in the planning process. The outline plan for villages two and three was completed without involvement of residents living in the Village of Inverness. The ordinances established by Duany for neotraditional communities are utilized as a framework by Carma for the development of future villages, without input from the existing community residents. If the existing Residents Association was involved in the planning, maintenance and operation of the community, it may reduce the fiscal costs incurred by the City of Calgary maintaining suburban growth.

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## 6. HOUSING: PROVIDING MORE CHOICE

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“Of all the ways to improve the social and physical organization of the suburbs, none would be as subversive as breaking the monopoly of single-family detached homes...the illusion of preference in buyers’ choosing between four bedrooms and three bedrooms plus a den” (Adler, 1995, 50). In the majority of today’s suburban neighbourhoods, homogeneity is the very essence of suburban living: attached houses, rental units, shops or businesses are rare as they might attract traffic and decline precious property values. A primary goal of neotraditional communities is to make it easy for residents to walk between houses, jobs, and commercial services. “Residential units above storefronts are encouraged; commercial services such as a convenience store are considered appropriate on a residential street corner; and small offices are intended to be interspersed throughout the community” (Bookout, 1992, 23).

Neighbourhoods in neotraditional communities should contain housing in a mixture of sizes, prices, and types, so that a variety of people and households can come together (Canty, 1995). In conjunction with diverse housing types and prices, houses should be placed on smaller lots, increasing density which will increase demand for public transit services. “This allows the old and young to get around more readily and generally reduces dependence on private automobiles” (Canty, 1995, 220).

The Sustainable Suburbs Study indicates that the major distinguishing characteristic of a more sustainable community is a focus on a rich diverse community life: the interaction of people with their neighbours, friends and local businesses. To encourage this, each community must provide a choice of housing so that people of different household types, income levels and age groups can find accommodation within the area. “In a more sustainable community, people live in houses that are oriented to attractive, pedestrian friendly streets and architectural styles and finishes along a street are compatible, regardless of building type” (City of Calgary, 1995, 45).

McKenzie Towne supplies a range of housing types, the most popular being the single family home which is expected to predominate the community. As well, non-traditional forms of housing are provided, such as studio suites or the backyard cottage,

which cater to older relatives and young adult children who may wish to live in proximity, but not intimately with, the nuclear family.

Other forms of housing in McKenzie Towne, with the exception of those noted above, will be built in small groupings, interspersed with housing of a higher economic range emulating the architecture of more expensive housing. These types of accommodation will include apartments, walk out flats, and starter or lifestyle homes.

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## **POLICY 14**

*All communities must achieve a minimum density of 17.3 units per gross ha (7 units per gross acre).*

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The Sustainable Suburbs Study proposes that an increase from the current suburban density of approximately 5.0 units per acre to 7.0 units per acre will accommodate the same number of people on 40% less land. As well, it will reduce per capita costs for public infrastructure, increase transit ridership and reduce the per capita operating costs of the transit department, reduce per capita costs for supplying distance sensitive public services such as the police and fire services, ensure a sufficient population base to support local commercial development and support the objectives of the Calgary Transportation Plan (City of Calgary, 1995).

The City suggests that 7 units per acre is the minimum density across the community but the various neighbourhood nodes can vary in density as long as the 7.0 units per acre is achieved within the community. As well, recreational facilities such as lakes, buildings or other public uses that have broad appeal and foster community life will be excluded from the density calculation, provided that they are available to all residents in the community.

According to the McKenzie Towne Outline Plan and Land Use Redesignation Plan, the developable area contains 219.0 acres comprised of the following: 32.3 acres of commercial areas, 72.3 acres of residential land use, 2.8 acres of private open space, 29.6 acres of credit reserve, 2.8 acres of civic building sites, 20.1 acres containing the stormwater lake, and 59.1 acres of roadway development. The gross anticipated density for the Village of Inverness is 9.7 units per hectare or 3.9 units per acre. This calculation is based upon an anticipated 860 units contained on 219.0 acres of land. The 3.9 units per

acre is well below the suggested 7.0 units per acre but the Village of Inverness contains the Towne Centre development, and the village square commercial development in its calculation. If we deduct the commercial development from the total acres of 219.0, the units per acre density value equals 4.6. This deduction in the calculation is valid because not all villages will contain the Towne Centre, which will have broad public appeal and foster community life. However, the adjusted density of 4.6 units per acre, in the Village of Inverness, is still well below the suggested density of 7.0 units per acre. Even if the 20.1 acre stormwater lake and the 32.3 acres of commercial development are deducted from the overall area, the adjusted density of 5.2 units per acre is well below the recommended 7.0 units per acre.

Thus, if McKenzie Towne is to conform to the suggested guideline of 7.0 units per acre across the entire community, the other 13 villages will have to exceed the suggested density of 7.0 units per acre.

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## **POLICY 15**

*All communities must provide a wide choice of housing types in addition to single family. Buildings should be predominately oriented to the street and be compatible in architectural style and finish.*

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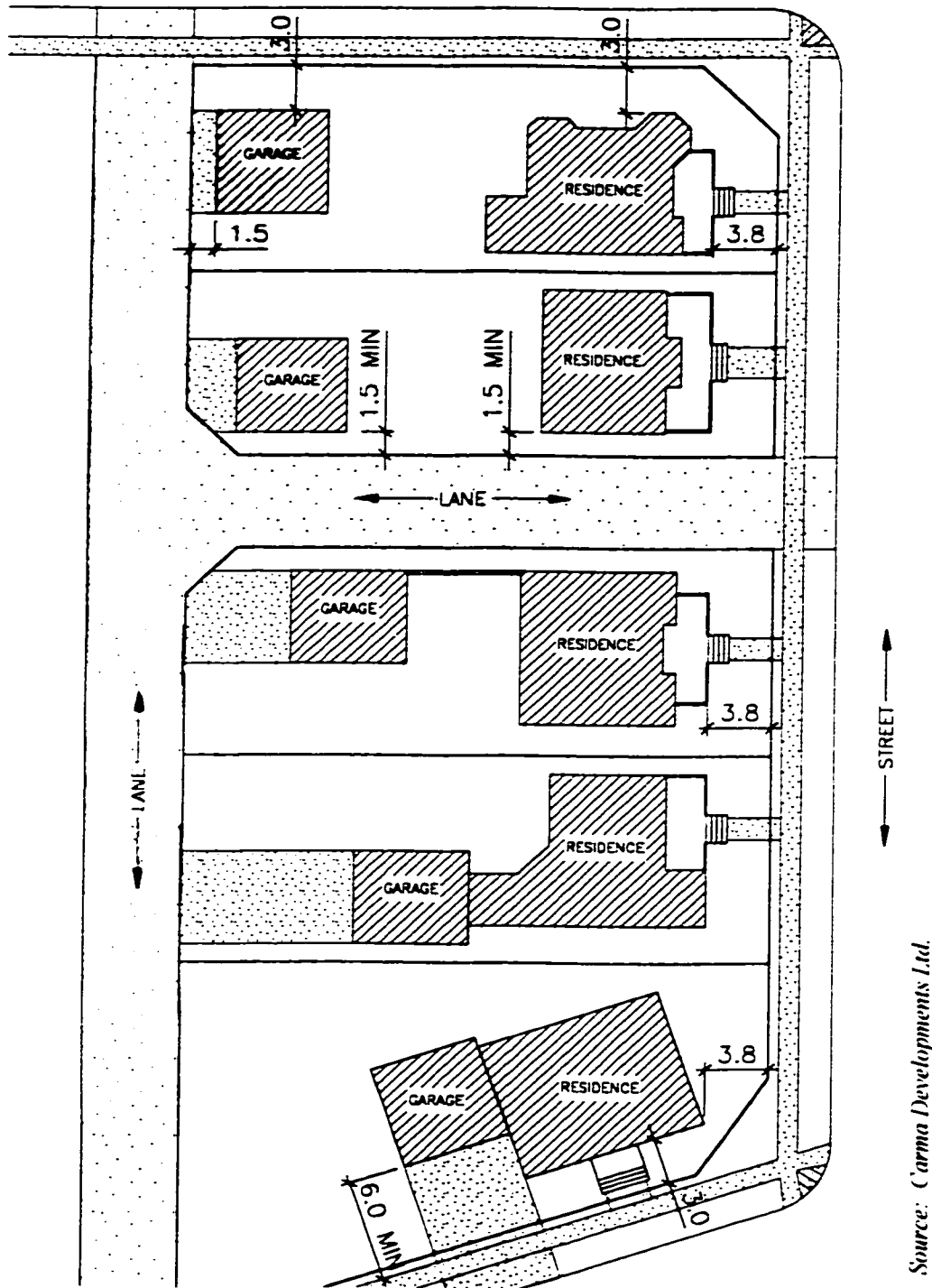
This proposed policy by the City intends to meet the needs of different age groups, family types, income levels and lifestyles to encourage social diversity. It also provides a better balance of socio-economic groups across the city and minimizes the community lifecycle swings that lead to fluctuations in the demand for community services and facilities such as schools, open space and public transit (City of Calgary, 1995). To achieve the aforementioned findings, the City suggests several design guidelines which will be evaluated through the use of the Architectural Guidelines and Outline Plan of McKenzie Towne.

The first suggested guideline is that the garage and driveway should not be the dominant architectural feature. Front drive garages should be discouraged and replaced by rear or side drive garages with access by a laneway. In McKenzie Towne, garages are attached and detached but accessed from the rear lane, except corner lots may be accessed from the side flanking street. Figure 23 is taken from the architectural



guidelines for McKenzie Towne which illustrates the appropriate siting and setbacks for rear and sideyard garages.

**Figure 23 Architectural Guideline Diagram Depicting Appropriate Siting**

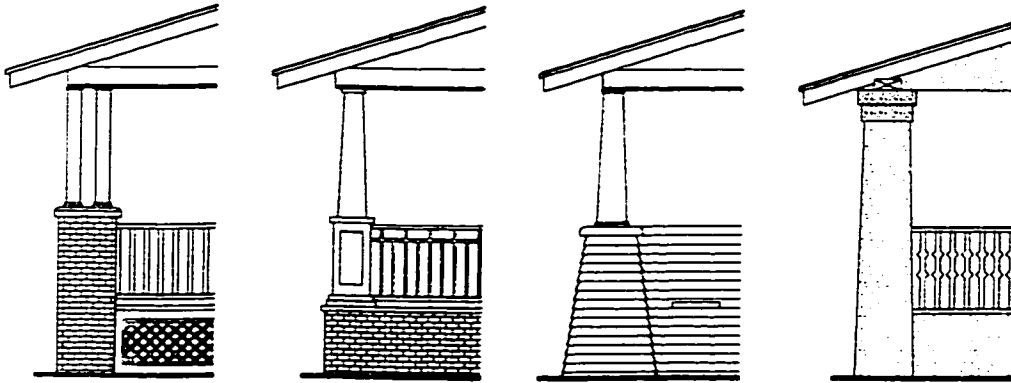


The second guideline is that front porches, bays and balconies are semi-private spaces that should be encouraged to provide interaction with pedestrians and 'eyes on the

street' security. The architectural guidelines for McKenzie Towne state that verandas or porches "...must be 3 to 6 risers (0.5 m to 1.0 m) above grade. All verandas must be skirted with lattice or other finishing detail" (Carma Developments Ltd., 1995, 8).

Figure 24 is a diagram, from the architectural guidelines of McKenzie Towne, illustrating the appropriate detailing for porches and verandas and Figure 25 is a picture depicting one of the existing homes with a verandas in McKenzie Towne.

**Figure 24 Diagram of Porch and Verandas Details**



**Figure 25 McKenzie Towne Verandas**



The City also states that small front yard setbacks are encouraged to bring houses close to the street and to provide human scale and visual interest. The front setback in

McKenzie Towne is a minimum 3.8 metres from the property line to the edge of the veranda. The rear setback is a minimum 7.5 metres from the property line to the foundation. Since these setback requirements are minimal, houses front the streets and provide human scale and visual interest.

Another suggested guideline contained in the Sustainable Suburbs Study is additional dwelling units in basements, lofts, or over garages should be provided, particularly in close proximity to transit facilities and the neighbourhood nodes. In McKenzie Towne, granny suites are above detached garages as secondary residences located on lots in close proximity to the Village Square (see Figure 26). According to the Regulating Plan, granny suites are located on each type of lot with a maximum dwelling size of 1600 square feet to 2000 square feet. Thus, smaller dwellings, that are naturally more affordable, have the luxury of building a granny suite for an extended relative if necessary. The suite may enclose a maximum gross floor area of 581 square feet with access via either an interior stairwell or exterior stair (Carma Developers Ltd., 1995).

**Figure 26 Granny Suite in McKenzie Towne**



The final suggested guideline cited by the City is that walled residential areas, which segregate parts of communities, should be avoided. In McKenzie Towne, a poured concrete sound wall separates Deerfoot Trail from the community. This wall is

utilized to decrease traffic noise associated with Deerfoot Trail from adjacent residents. However, this noise wall does not segregate the different residential areas of the Village of Inverness.

In McKenzie Towne, fences are common and encouraged in both the front and rear of the house. “A fence can define a home, creating a statement of individuality and a sense of privacy. A visual tie between the fence and home can be created by repeating on the fence a design element from the home such as the motif on a porch railing” (Carma Developers Ltd., 1995, 11). Figure 27, illustrates the picket fence details intended for the community.

**Figure 27 Picket Fence Details**



The height restrictions for front fences are 4' and 6' for rear and side fences stipulated by the architectural guidelines of McKenzie Towne.

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## **POLICY 16**

***Policies and guidelines ensuring that an adequate choice of low to medium income housing is provided in suburban communities shall be developed as part of a new comprehensive city-wide package of policies on affordable housing.***

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The median household income for Calgary in 1996 was approximately \$45,777 per annum, sufficient to obtain a mortgage on a home costing no more than \$150,000 with today's interest rates. Yet the median cost of a new single family suburban home was about \$180,000. This suggests that builders and developers are constructing homes for the upper income households and the move-up market, ignoring the requirements of the average first-time home buyer. As the Calgary Transportation Plan states, with 500,000 more people in Calgary over the next thirty years, growth in the suburbs is inevitable and the demand for a range of lower cost housing will be significant.

Today, developers build entire communities with medium to upper income housing options as residents tend to resist affordable housing options in their community. However, this type of housing should be made available in all communities and in all areas of the city, rather than concentrated in a few select areas. The Sustainable Suburbs Study recommends that developers provide a minimum of ten percent of all dwelling units in a community earning less than the median Calgary household income. This policy is encouraged as it will ensure that the basic human need of shelter is available to all Calgarians. The policy is intended to create a diverse group of people living in a community with various socio-economic backgrounds and alleviate the common problem of NIMBYism found in many of Calgary's communities.

In McKenzie Towne houses range in price from \$140,000 upwards to over \$350,000. Since many styles of houses are available in the range of \$140,000, Calgarians with incomes slightly below the median household income are able to afford a home within the community. Based on Canada Housing and Mortgage Corporation's

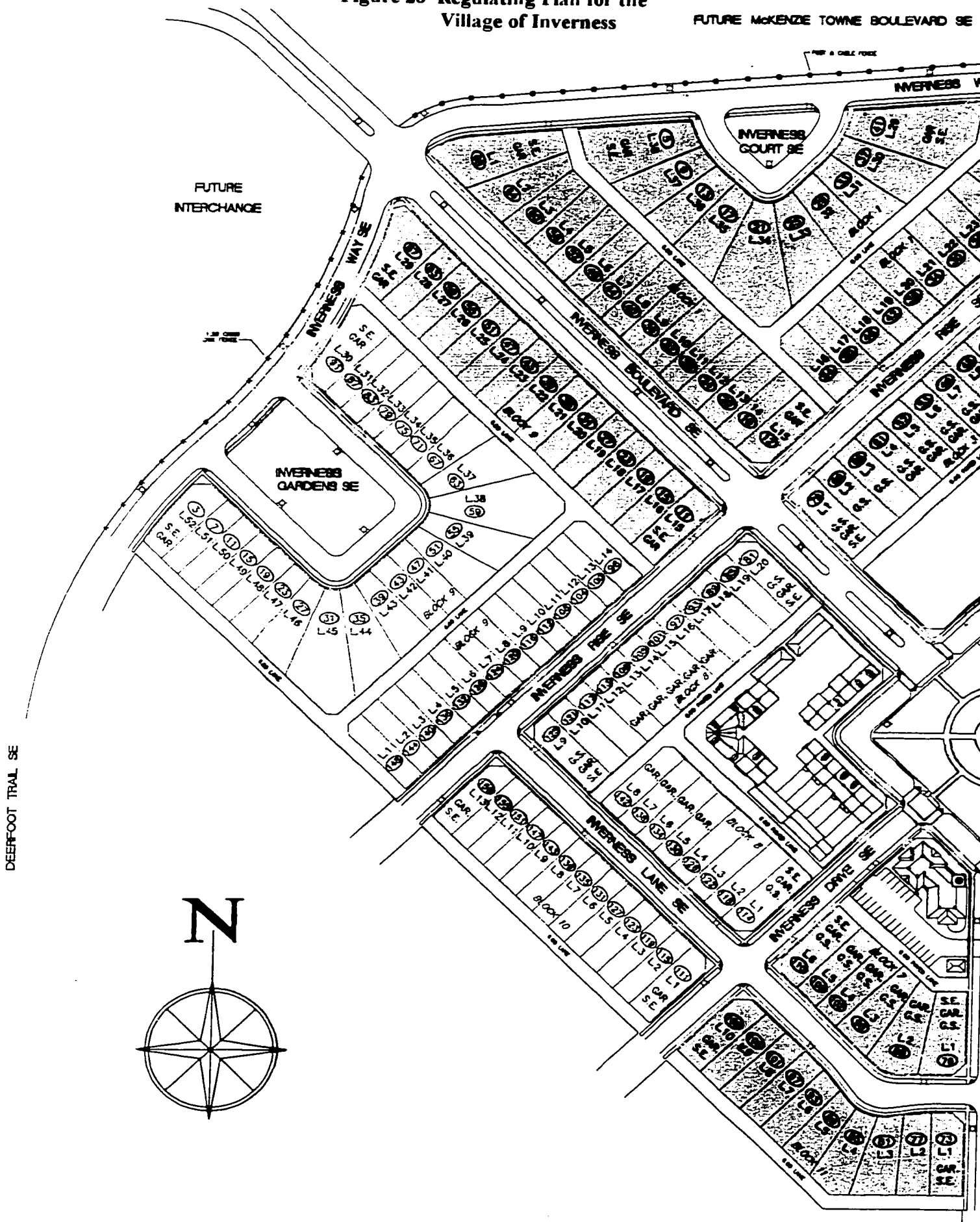
recommended 30% of gross income for shelter, taxes and heat, a family earning the median income of \$45,777 per year can afford a \$150,000 home assuming a 5% down payment amortized over twenty-five years with a 7% mortgage over a initial three year term. In McKenzie Towne, there are several housing options available to purchasers below \$150,000.

Referring to the Regulating Plan for the Village of Inverness, affordable housing options are not located on poor lots within the community, rather they are in close proximity to the Village Square (see Figure 28). The Regulating Plan illustrates that over 10% of the lots available (yellow lots on the Regulating Plan) can include housing options, between 1,200 and 1,600 square feet, that are affordable to Calgarians earning slightly less than the median Calgary household income.

However, housing options for low income families (earning approximately \$30,000 per annum) are not available in McKenzie Towne. One form of housing for low-income individuals, which was recently excluded from the long-term plan of the community, is apartments or studio suites located above store fronts. This form of housing could provide individuals, who can not afford a vehicle, the opportunity to work adjacent to their place of employment in proximity to daily items.

Figure 28 Regulating Plan for the Village of Inverness

FUTURE MCKENZIE TOWNE BOULEVARD SE



FUTURE INTERCHANGE

INVERNESS GARDENS SE

INVERNESS COURT SE

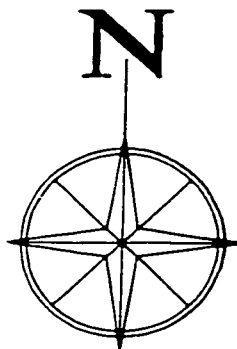
INVERNESS WAY SE

INVERNESS BOULEVARD SE

INVERNESS DRIVE W

INVERNESS LANE SE

DEERFOOT TRAIL SE

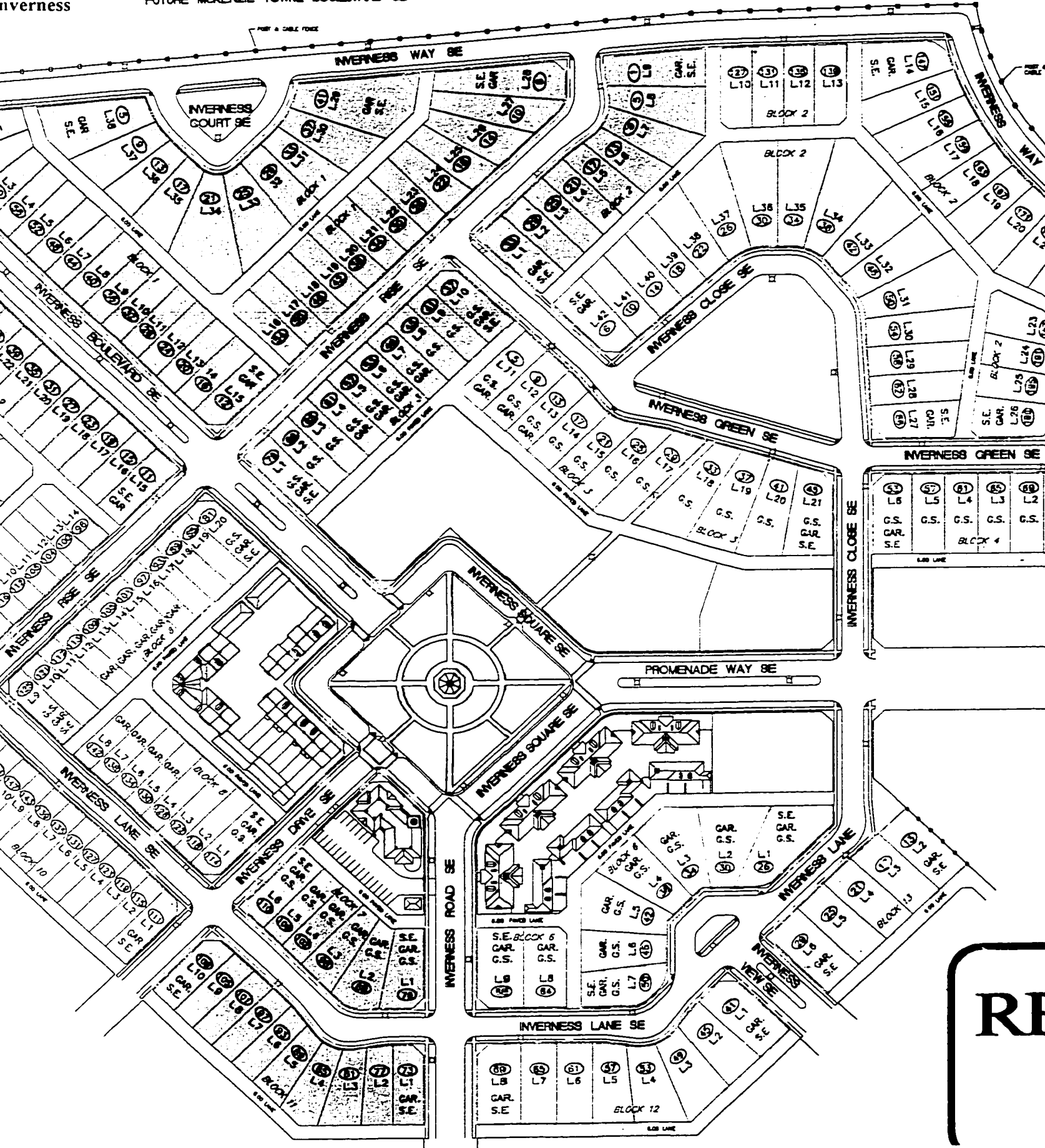




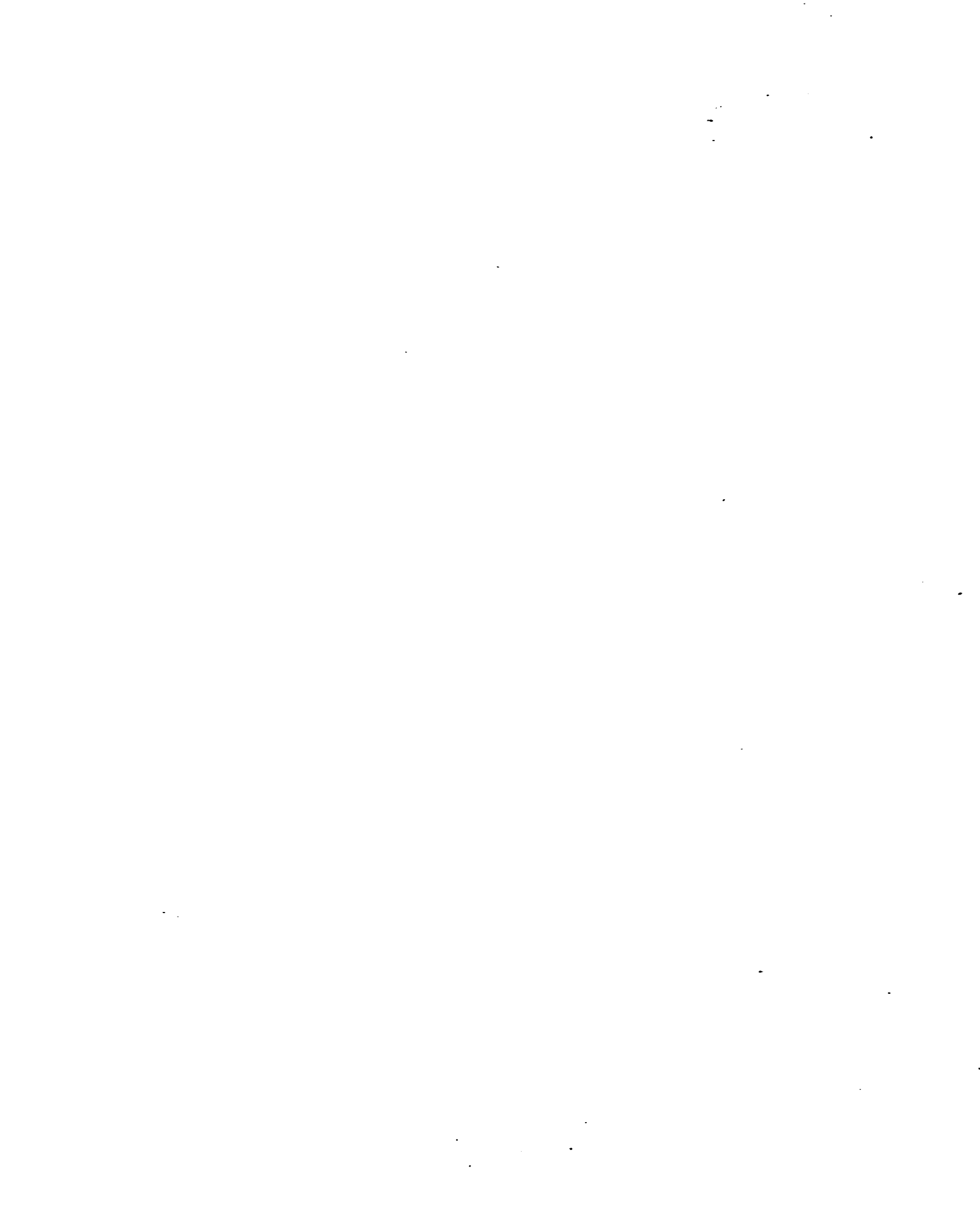


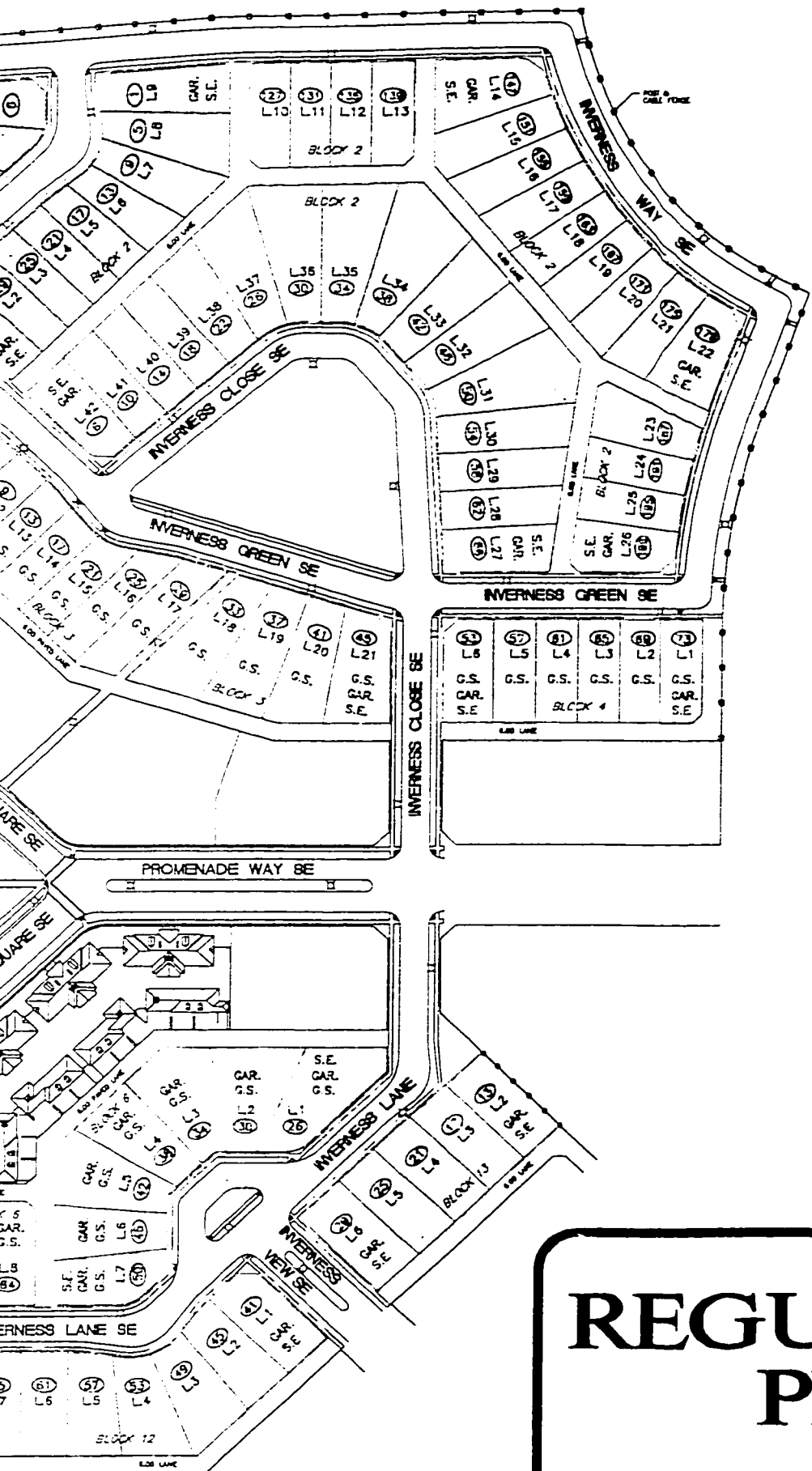
Plan for the  
Inverness

FUTURE MCKENZIE TOWNE BOULEVARD SE



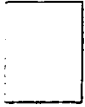





RE





# LEGEND

-  STREET ADDRESS
- L. 12 LOT NUMBER
- S.E. SIDE ELEVATION treatment required. Refer to paragraph "A".
- GAR. GARAGES on these lots must be built concurrently with the house. Refer to paragraph "B".
- G.S. GRANNY SUITES - refer to Paragraph "C".
-  STREET LIGHT LOCATION
-  DWELLING UNIT SIZE  
Bungalows - 1200 sq.ft.max.  
Multi-levels - 1600 sq.ft.max.
-  DWELLING UNIT SIZE  
Bungalows - 1500 sq.ft.max.  
Multi-levels - 2000 sq.ft.max.
-  DWELLING UNIT SIZE  
Bungalows - 1400 sq.ft.min.  
Multi-levels - 1800 sq.ft.min.
-  DWELLING UNIT SIZE  
Bungalows - 1400 sq.ft.min.  
Multi-levels - 1800 sq.ft.min.  
Refer to paragraph "F" for Lake District architectural requirements.

# REGULATING PLAN



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## **POLICY 17**

*Most multi-family housing should be located near community centres, neighbourhood nodes, recreational areas or other public amenities, and be close to transit stops.*

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The Sustainable Suburbs Study suggests that historically, multi-family housing has not sold well in Calgary suburbs because it is often unattractive and located on poor parcels of land. To alleviate this result, if multi-family housing is located around public areas and neighbourhood nodes, it would improve the marketability for this type of housing, support the goals of the Calgary Transportation Plan with increased densities around transit stops, reduce the need for car ownership and support local commercial stores with more people located around their services.

Surrounding the Village Square, in the Village of Inverness, there are two types of multi-family housing; walk-up flats and apartments which meet the requirements presented in the Sustainable Suburbs Study. They act as a buffer from vehicular noise, provide a greater number of residents around the neighbourhood nodes to support commercial services and public transit and are attractive in their facades and interiors. The following figures present the exterior design of the multi-family units.

**Figure 29 Walk-Up Flat (Townhouse)**



**Figure 30 Apartment Adjacent to Village Square**



The Sustainable Suburbs Study also suggests that multi-family sites should not exceed 3 acres in size. In McKenzie Towne, a 7.1 acre site is designated as RM-4/75. This site is adjacent to the Towne Centre and will provide a buffer between the commercial centre to the east and the residential areas to the southwest. Based on a site visit in late February, the future RM-4/75 site is planned to accommodate seniors apartments and ancillary uses. The anticipated number of units for this multi-family complex is approximately 215. With an average 2.0 persons per household, approximately 430 people will reside next to the Towne Centre, supporting the commercial services. Figure 31 depicts the residential land use designations for the Village of Inverness and the location of the RM-4/75 designated site.



## SUMMARY

**Table 6 Summary of Housing Policies**

<b>Sustainable Suburbs Study Recommended Policies and Guidelines</b>	<b>McKenzie Towne</b>	
	<b>Yes</b>	<b>No</b>
<i>All communities must achieve a minimum density of 17.3 units per gross ha (7 units per gross ac).</i>		<b>X</b>
<p><i>All communities must provide a wide choice of housing types in addition to single family. Buildings should be predominantly oriented to the street and compatible in architectural style and finish.</i></p> <p>The garage and driveway should not be the dominant architectural feature. Garages in the rear of the lot are encouraged.</p> <p>Front porches, bays and balconies are semi-private spaces that should be encouraged to provide interaction and increase security.</p> <p>Small front yard setbacks are encouraged to bring houses close to the street.</p> <p>Additional dwelling units in basements, lofts, or over garages should be provided.</p> <p>Walled residential areas, which segregate parts of communities, should be avoided.</p>	<p><b>X</b></p> <p><b>X</b></p> <p><b>X</b></p> <p><b>X</b></p> <p><b>X</b></p>	
<p><i>Most multi-family housing should be located near community centre, neighbourhood nodes, recreational areas or other public amenities and be close to transit stops.</i></p> <p>Multi-family housing should be located on attractive sites, comparable to single-family housing, and enjoy similar amenities.</p> <p>Large areas of multi-family housing are best avoided (3 ac +)</p>	<b>X</b>	<b>X</b>
<p><i>Policies and guidelines ensuring an adequate choice of low to medium income housing is provided in suburban communities shall be developed as part of a new comprehensive city-wide package of policies on affordable housing.</i></p> <p>Developers are encouraged to target a minimum of 10% of all dwelling units in a community at households earning no more than the median Calgary household income.</p>	<b>X</b>	



Table 6 summarizes the policies and design guidelines presented in the Sustainable Suburbs Study and whether McKenzie Towne embodies these principles. McKenzie Towne fulfills all but two guidelines in reference to sustainability. First, the gross density for the first neighbourhood in McKenzie Towne is anticipated at 3.9 units per acre. However, the Village of Inverness includes 32.3 acres of commercial development. Excluding these areas, the gross anticipated density would equal 4.6 units per acre, still well below the suggested 7.0 units per acre presented in the Sustainable Suburbs Study. Thus, if McKenzie Towne is to achieve 7.0 units per acre, the other thirteen neighbourhoods to be developed over the build-out period would have to achieve a density greater than 7.0 units per acre. Despite the fact that an Outline Plan for the remainder of the villages has not been prepared which indicates land use designations, it is highly unlikely that an overall density of 7.0 units per acre will be obtained in the community of McKenzie Towne. As density is one of the pillars of a sustainable suburb, communities based on typical suburban densities of approximately 5.0 units per acre impact many of the elements of economic and environmental sustainability. For example, they consume greater areas of land, require additional city infrastructure and cost more to maintain.

Second, a large multi-family development (7.1 acres) is planned adjacent to the Towne Centre, which exceeds the suggested size of 3.0 acres. This relatively large multi-family housing complex for seniors is anticipated to accommodate 215 units.

In addition, despite the fact that McKenzie Towne fulfills the recommendation of providing at least 10% of all dwelling units to households earning less than the median Calgary household income, housing options for low-income individuals or households are not provided within the community.

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## 7. TRANSPORTATION: ENCOURAGING WALKING, CYCLING AND TRANSIT

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An article in Newsweek claims that "...most of us actually know what we want in a neighbourhood - we just don't know how to get it, because developers have been building the wrong thing for fifty years" (Adler, 1995, 46). The article proposes fifteen ways to fix the suburbs, three of which relate to transportation planning. Modern subdivisions are designed to be driven, not walked. Streets that are 36 feet to 40 feet wide, with large sweeping curves at the corners are ideal for cars but for pedestrian movement, the distance is daunting. "Narrow streets - as little as 26 feet wide - and tight, right angled corners are a lot easier for walkers, and probably safer as well because they force drivers to slow down" (Adler, 1995, 47). This principle of smaller pedestrian friendly streets is central to transportation planning of neotraditional communities and to the principles of the Sustainable Suburbs Study. Another suggestion proposed in the Newsweek article that is common to neotraditional planning is to drop the cul-de-sac.

The cul-de-sac, a fancy term for dead end, has emerged as the street plan of choice for modern suburbs. "Its great advantage- the elimination of through traffic- is also its weakness, because it compels everyone in a given subdivision to use the same roads, often at the same time" (Adler, 1995, 49). Effective and efficient streets follow predictable routes interconnected with other traffic arteries with choice for residents to travel on various routes when entering or leaving the community. "The neotraditional concept is not radical- it acknowledges that Americans have a love affair with their cars. But it also acknowledges that Americans should be given a choice and not forced to use their cars for every travel need" (Bookout, 1995, 11). Choice is provided in both new urbanism planning or neotraditional planning as well as sustainable suburbs planning. One further suggestion listed in the article, relevant to transportation planning, is the notion of planning for mass transit.

Is there any way to get North Americans out of their cars and into buses and trains? "In Los Angeles, not even an earthquake sufficed; only about 2% of drivers switched to mass transit after their freeways fell down last year, and most of them went back to driving as soon as the roads were patched" (Adler, 1995, 51). The problem is

that transit requires a critical mass to be truly effective and cost efficient and many suburban cities are too spread out. Hence, Calthorpe's idea for the pedestrian pocket: a relatively dense settlement within a quarter mile walk to a transit stop. This idea is very familiar to McKenzie Towne's Village Squares where a transit stop is within a five minute walking distance to nearly all residents in the neighbourhood. As well, it is a central feature in both the recommendations of the Sustainable Suburbs Study and the land use strategies of the Calgary Transportation Plan.

"The overall objectives are to improve mobility choices for all suburban residents, whether or not they own a vehicle, and to reduce the total number and length of private vehicle trips, both within the community and on to the overall city street system" (City of Calgary, 1995, 51). To achieve this objective, the emphasis in street layout and design should shift from accommodating vehicles toward the requirements of other modes of transportation. Communities must be organized to link the connections between land use and pedestrian, cyclist, transit and vehicle transportation.

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## **POLICY 18**

*The street system in a community must provide all residents with direct links between key community focal points (community centre, neighbourhood nodes, schools, open spaces, major entrances).*

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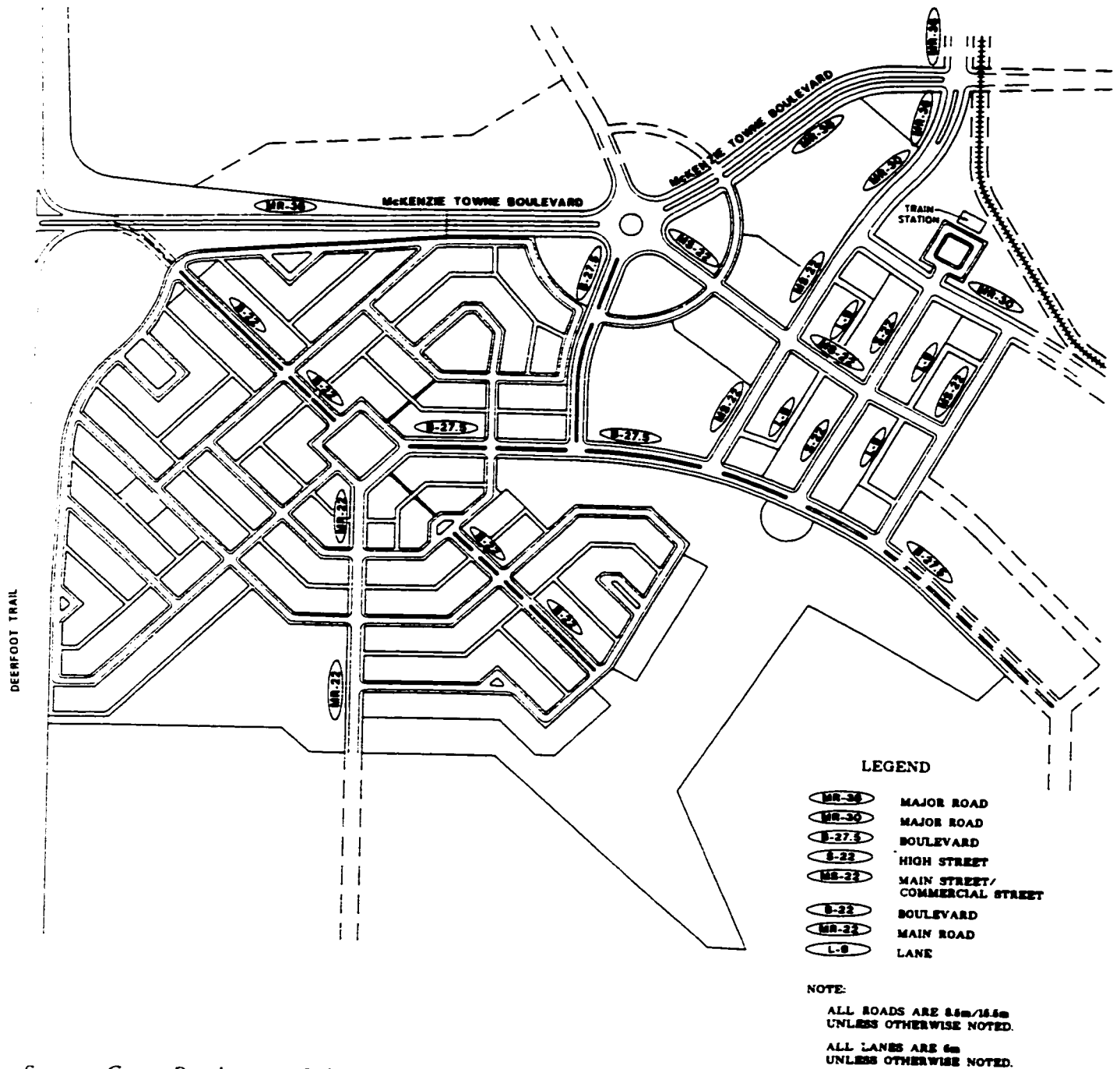
According to the Sustainable Suburbs Study, if this policy is followed in the design of suburban communities, it will provide a safe, comfortable walking and cycling environment, an efficient transit route and convenient access for residents to commercial facilities in the area. To achieve the aforementioned benefits, the Sustainable Suburbs Study suggests several guidelines that should be considered when planning new communities: street layout should be based on a system of connector streets that link major destinations and these connector streets should be developed without barriers to the pedestrian environment; features that moderate vehicle speed to make walking and cycling safe and comfortable should be incorporated; use of rear lanes as part of the

pedestrian environment should be avoided; and a modified grid pattern should be used to support the connector street system.

McKenzie Towne has a great variety of traffic arteries. Criteria supporting the free flow of vehicular traffic predominate some streets, while others, the requirements of the pedestrian dominate. "The proper variety of street types is critical to the design objectives of McKenzie Towne, and the social and physical integrity of the individual neighbourhoods" (Carma Developers Ltd., 1995, 43). These variations affect lane width, curb radii, centre-line radii, intersection spacing and on-street parking. In total, there are ten varieties of street types within McKenzie Towne, each with its own functional expectations which dictate specific design standards. "The hierarchy of the street system has evolved to specifically address and achieve a primary goal contained within the Principles of Town Planning, in that not only do the streets in McKenzie Towne function to accommodate cars, but with the important dual objective of also creating a safe and effective pedestrian environment" (Carma Developers Ltd., 1995, 43).

Figure 32 depicts the various street types within McKenzie Towne. The street layout is based on a hierarchy determined by the function and relationship of its land use setting. In total, ten various types of streets and lanes are planned for the community. These ten street types are schematically illustrated in the Outline Plan, 1995 and depict how the street hierarchy of McKenzie Towne achieves the recommended policy and corresponding guidelines related to transportation in the Sustainable Suburbs Study.

**Figure 32 McKenzie Towne Traffic Arteries**



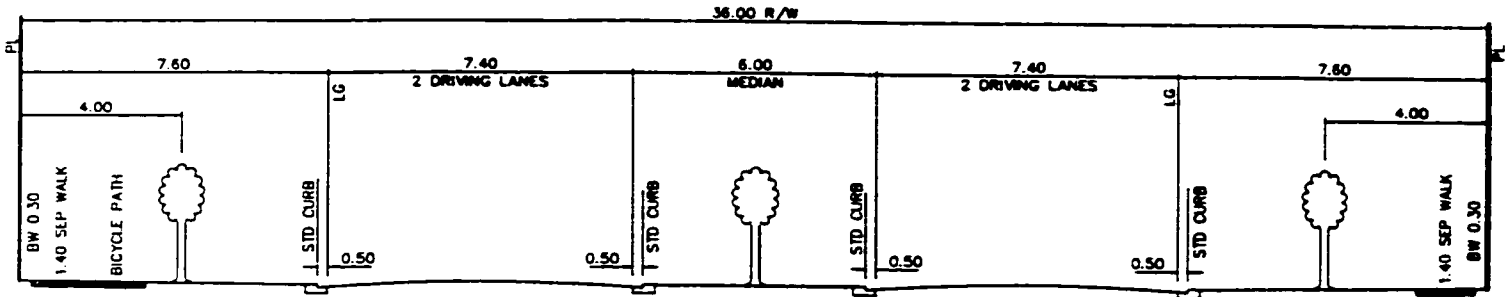
Source: Carma Developments Ltd.

**A) Boulevard (MR-36)**

The initial access to McKenzie Towne will be via Deerfoot Trail and the McKenzie Towne Boulevard. This street functionally corresponds to the standard City of Calgary's major roadway. The right-of-way is 36 metres with four driving lanes

separated by a centre median with walkway and bicycle paths separated by tree planting (see Figure 33).

**Figure 33 Major Road - Right-of-Way 36 Metres**



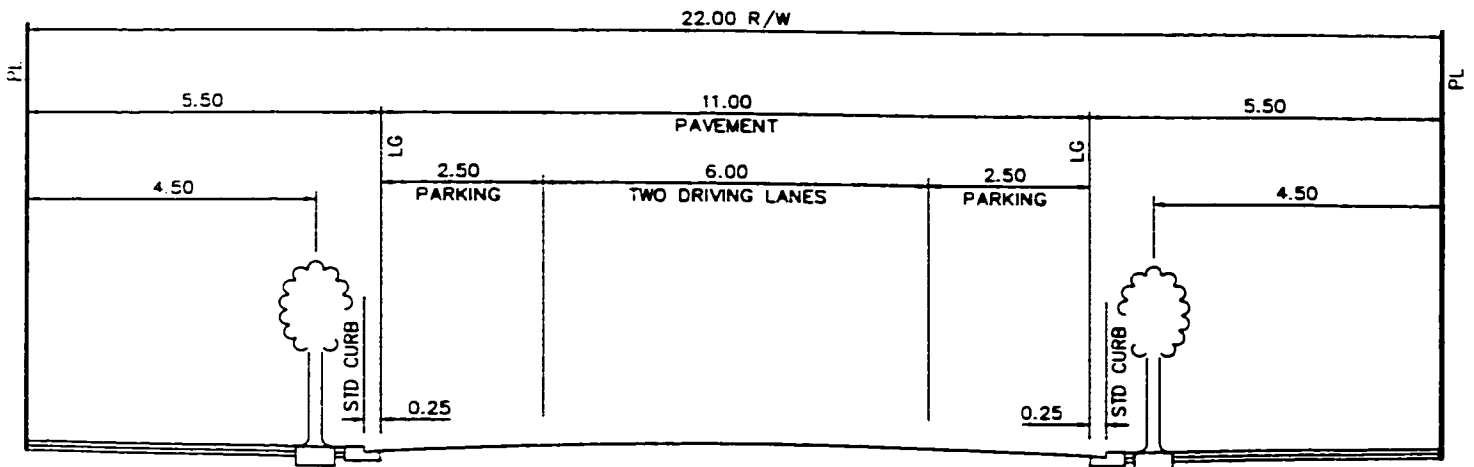
Source: Carma Developers Ltd.

## B) Commercial Streets

### 1. High Street (S-22)

High Street, as the most important pedestrian oriented street in the Towne Centre corresponds to the S-22 standard. Similar to many of the commercial streets in Calgary, the right-of-way is 22 metres but the carriageway is narrower at 11 metres. This provides two lanes of travel, on-street parking and wider sidewalks for the pedestrian nature of the area (see Figure 34).

**Figure 34 High Street - Right-of-Way 22 Metres**

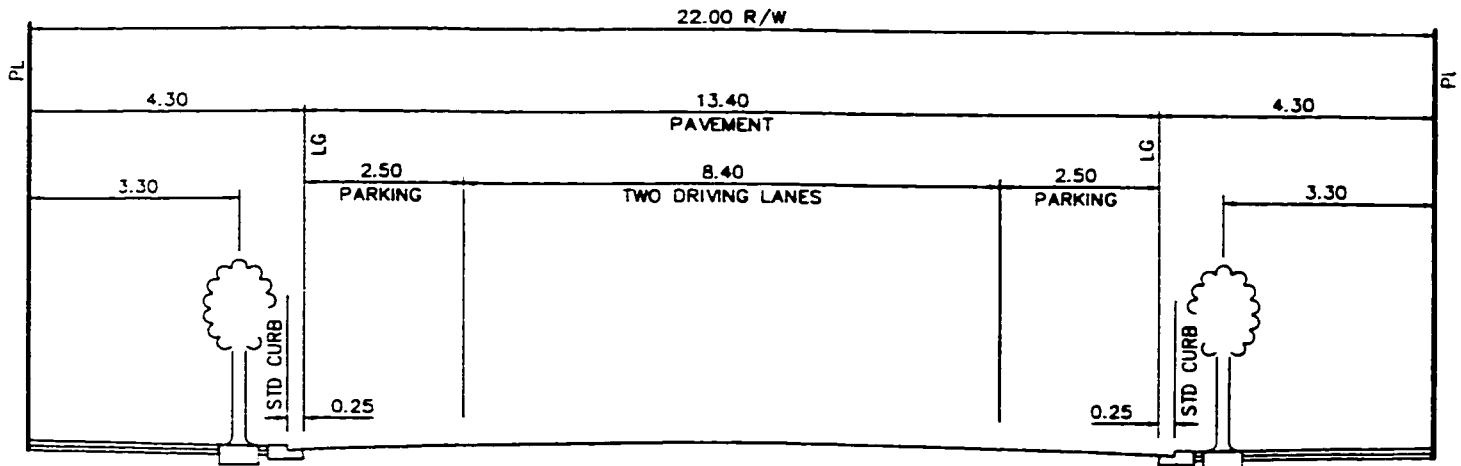


Source: Carma Developers Ltd.

## 2. Main Street (MS-22)

Main Street and similar commercial streets in the Towne Centre have a 22 metre right-of-way with two travel lanes, on-street parking on each side and narrower sidewalks than High Street. The sidewalks are still 3.3 metres in width, sufficient to accommodate the pedestrian environment of the Towne Centre. Parking on both sides of the street also provides a buffer between pedestrian movement and vehicle traffic (see Figure 35).

**Figure 35 Main Road - Right-of-Way 22 Metres**

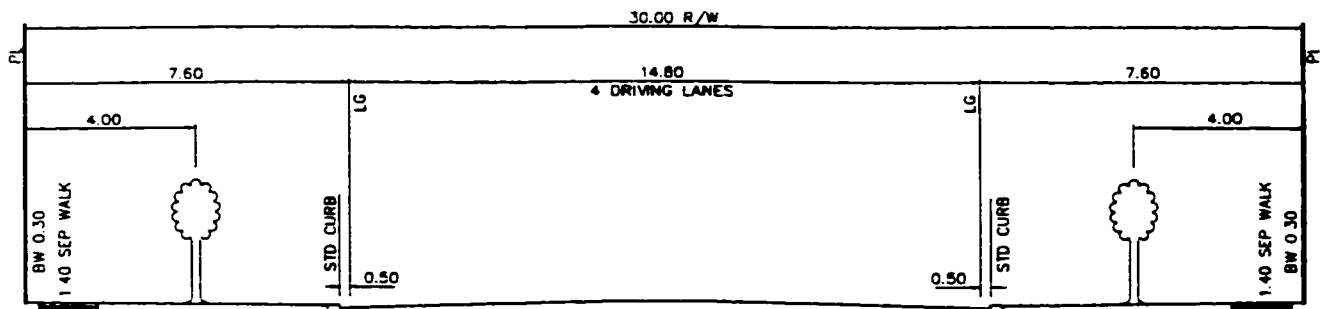


Source: Carma Developments Ltd.

## 3. 52nd Street and McKenzie Towne Drive (MR-30)

52nd Street and McKenzie Towne Drive is an undivided major street, which will accommodate access to the Towne Centre from the residential neighbourhoods to the north and south. This major traffic artery has a carriageway of 14.8 metres with separated walkways on each side to provide alternative modes of transportation (walking and cycling) to the Towne Centre (see Figure 36).

**Figure 36 Major Road - Right-of-Way 30 Metres**

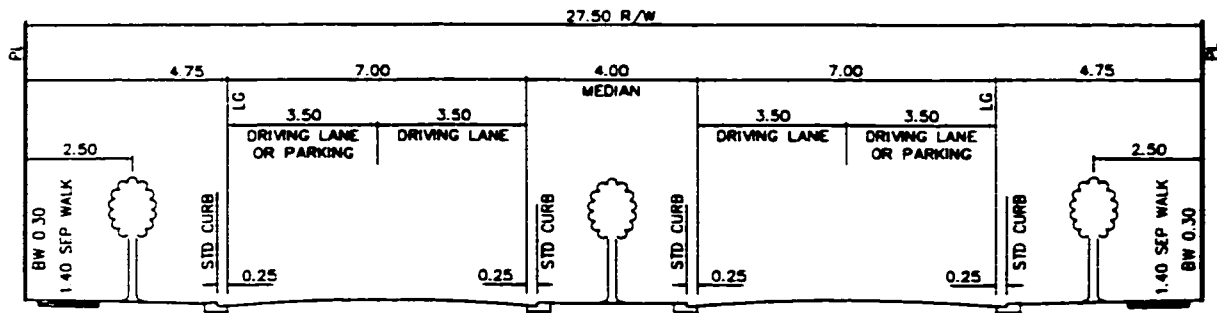


Source: Carma Developments Ltd.

#### 4. Marine Drive (B-27.5)

Marine Drive corresponds to the City of Calgary's primary collector standard street. It provides a link between the residential neighbourhoods, and acts as a transitional street between the Towne Centre and the amenity space. This divided road provides for one lane of travel in each direction with on-street parking, or the option for two travel lanes in each direction and features views of the Central Open Space/Lake Greenway and Towne Plaza (see Figure 37).

Figure 37 Boulevard - Right-of-Way 27.5 Metres

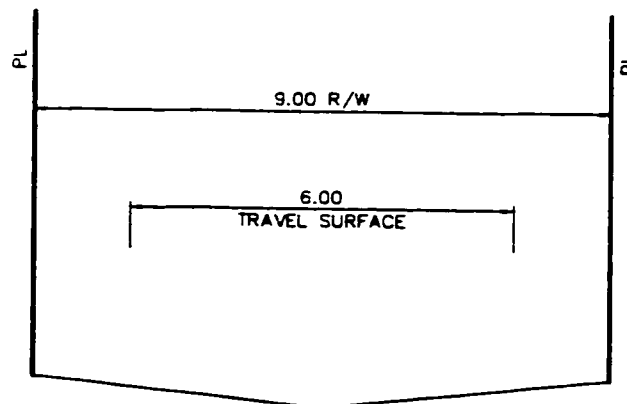


Source: Carma Developments Ltd.

#### 5. Commercial Lanes (L-9)

Within the Towne Centre, 9 metre lanes are provided which allow two way travel and access to onsite rear parking areas for the commercial buildings in the area (see Figure 38).

Figure 38 Commercial Lane - Right-of-Way 9 Metres



Source: Carma Developments Ltd.

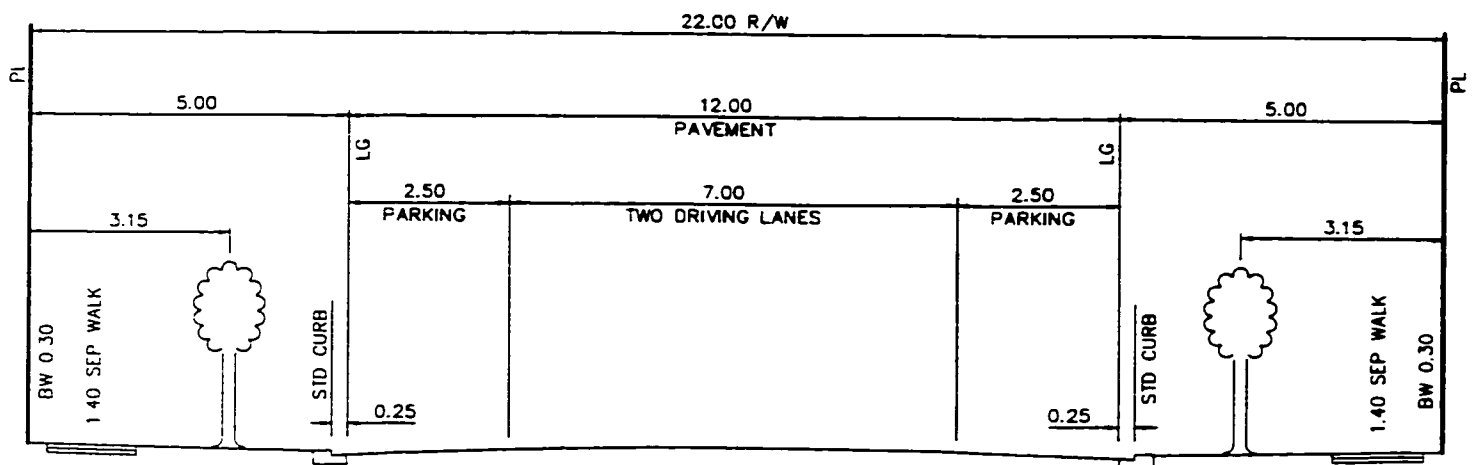


## C) Residential Streets

### 1. 40th Street (MR-22)

Located in the Village of Inverness, 40th Street connects the village square to the future joint use site and the future residential area to the south. This roadway has two driving lanes in either direction, on-street parking on both sides and a 3.15 metre separated walkway. Since it is one of the major streets in the residential areas of McKenzie Towne, it is developed for pedestrian and vehicle movement in and around the site. Since this roadway connects the village square to the joint use site, safe pedestrian movement is a necessity. The separated walkways allow safe movement and on-street parking provides a buffer from the vehicle traffic for the residents (see Figure 39).

**Figure 39 Main Road - Right-of-Way 22 Metres**

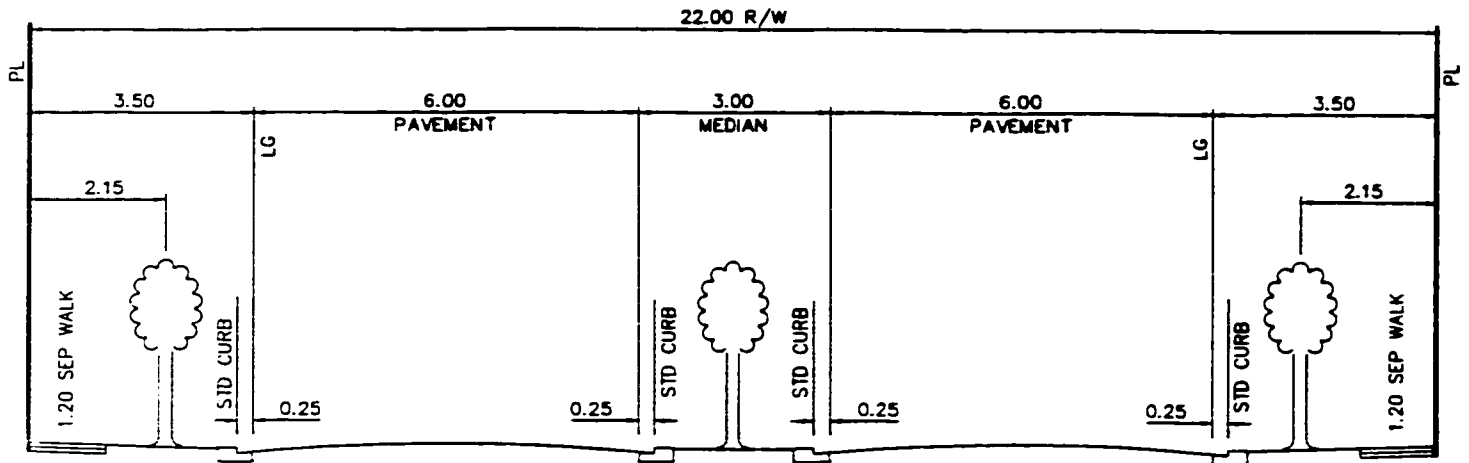


*Source: Carma Developments Ltd.*

### 2. Residential Boulevard (B-22)

The residential boulevards are landscaped roadways with a centre median separating traffic in each direction. The centre median and walkways are landscaped with shrubs and trees to improve the aesthetics of traffic arteries and provide a pleasant pedestrian environment for the residents (see Figure 40).

**Figure 40 Residential Boulevard - Right-of-Way 22 Metres**

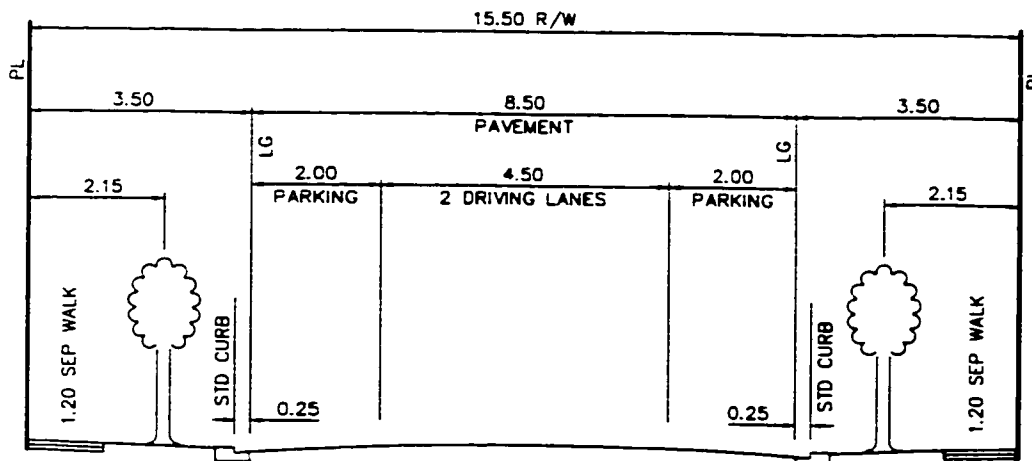


Source: Carma Developments Ltd.

### 3. Residential Road (R-15.5)

The remainder of the residential roads within McKenzie Towne correspond to the standard 15 metre residential roadway with minor changes. The changes to this road cross-section include a 0.5 metre wider right-of-way, and a 1.0 metre smaller carriageway, to accommodate wider boulevards which provide for required separate walks and tree planting, thereby inviting safer pedestrian travel (Carma Developers Ltd., 1995) (see Figure 41).

**Figure 41 Residential Road - Right-of-Way 15.5 Metres**

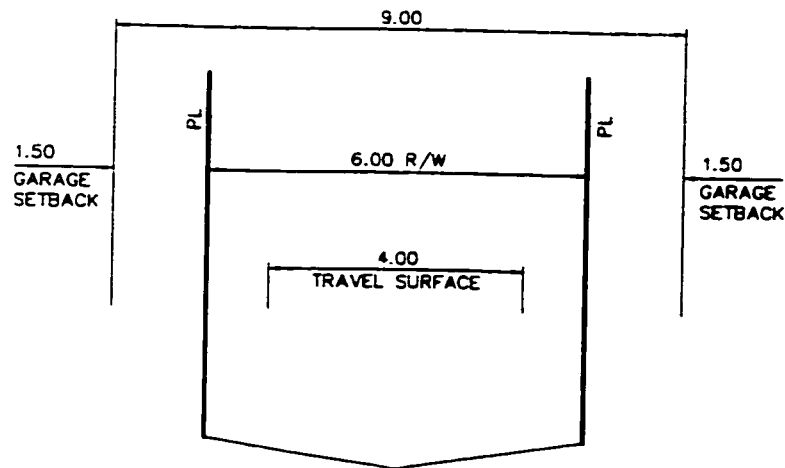


Source : Carma Developments Ltd.

#### 4. Lanes (L-6)

The travel portion of the lanes are 4.0 metres in width, the legal boundary is 6.0 metres, but the functional width will be 9.0 metres. This 3.0 metre additional area will be provided by establishing a 1.5 metre setback on each side of the lane from the rear property line for all garages in McKenzie Towne (see Figure 42).

**Figure 42 Residential Lane - Right-of-Way 6 Metres**

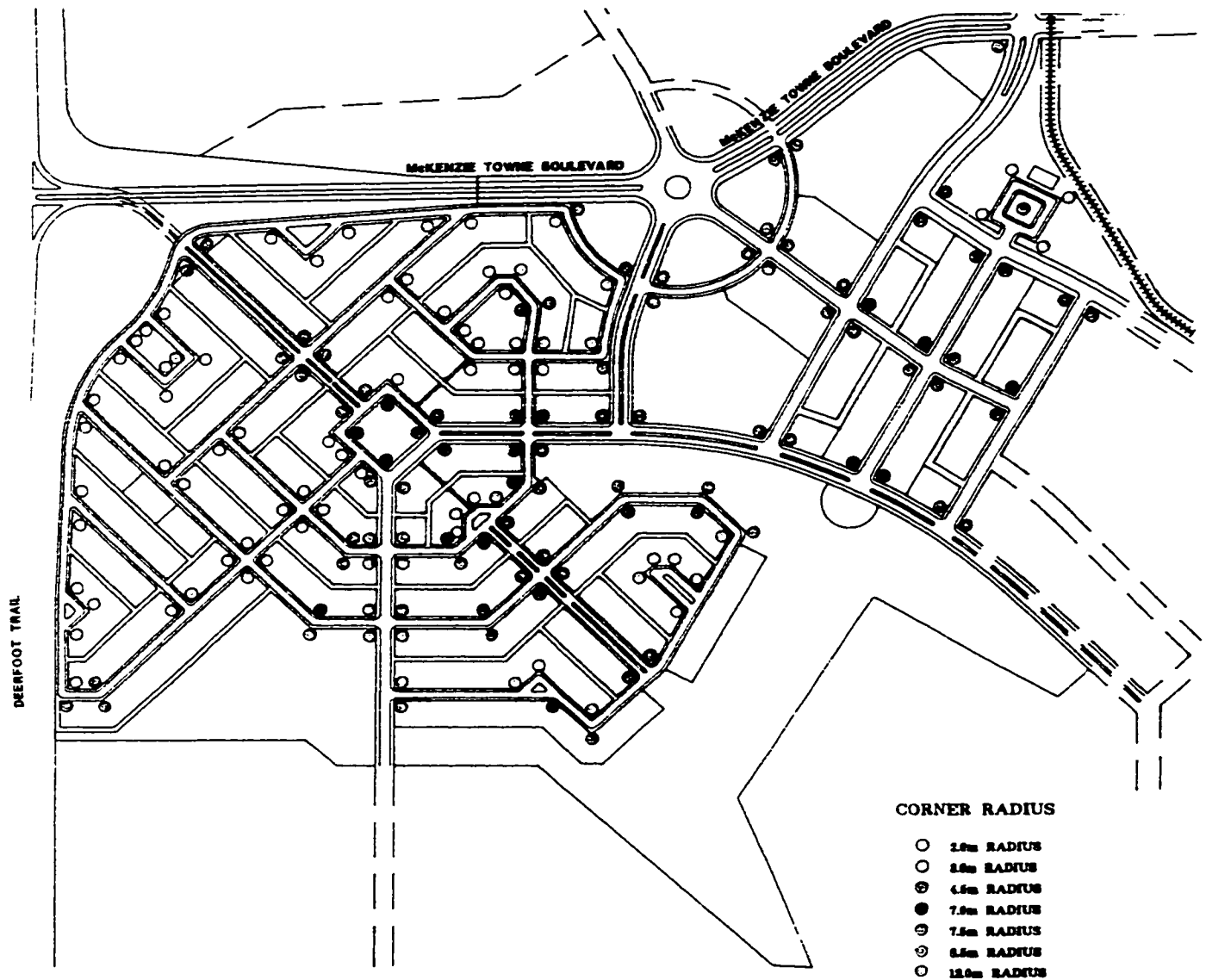


*Source: Carma Developments Ltd.*

#### D) Corner Geometry

Within each residential neighbourhood, pedestrian safety is predicated by the requirements for slow, attentive vehicular traffic and minimized street crossing times for pedestrians. Both of these design requirements are met substantially by the re-incorporation of corner curb radii commonly found in older neighbourhoods. Figure 43 provides a colour coded reference to the curb radius within both the Residential Neighbourhood and the Towne Centre. This reduced corner radii is one of the design guidelines suggested in the Sustainable Suburbs Study to moderate vehicle speed and create a safe and comfortable walking and cycling environment.

**Figure 43 Corner Curb Geometry**

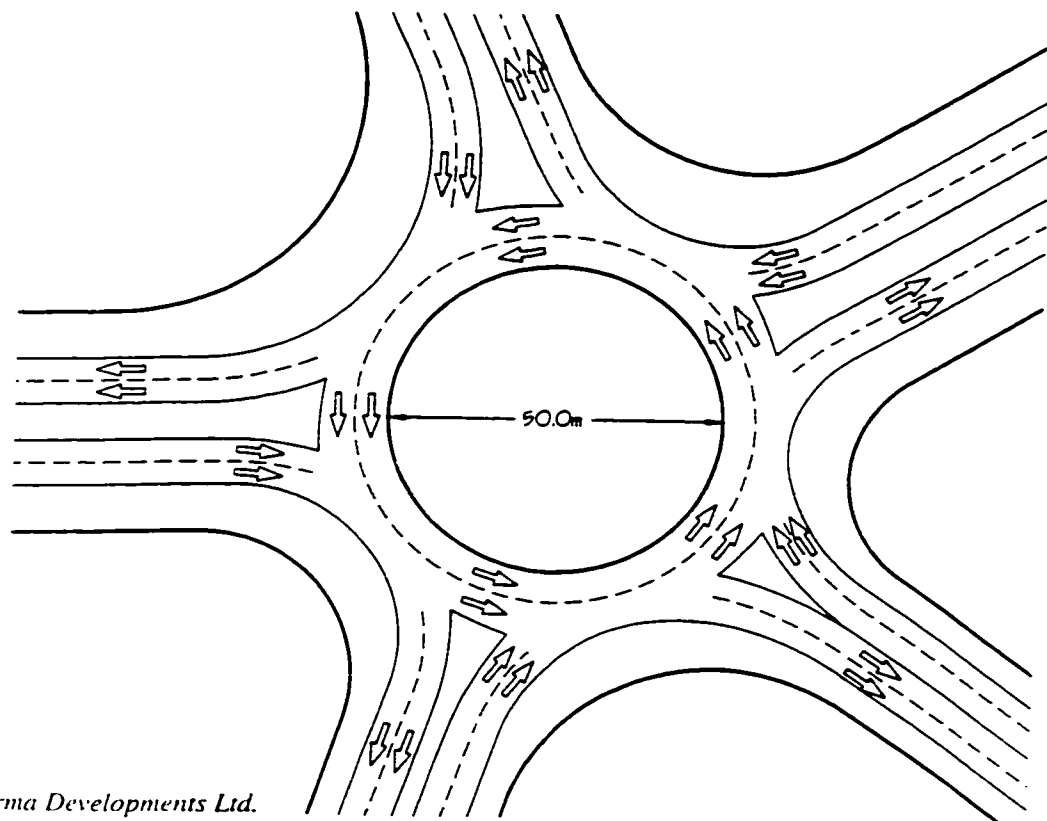


Source: Carma Developments Ltd.

### **E) The Traffic Roundabout**

The Roundabout in McKenzie Towne is a unique focal point which will provide the community with a distinct and formal vista at the entranceway (see Figure 44). “A monument marking the centre point of the roundabout and the Baptist Church and McKenzie Towne Fire Hall flanking the roadways will create a sense of place which the residents of McKenzie Towne will identify as the gateway to their home” (Carma Developers Ltd., 1993, 1).

**Figure 44 McKenzie Towne Roundabout**



*Source: Carma Developments Ltd.*

The roundabout serves to effectively distribute traffic from this focal point to the neighbourhoods and the Towne Centre with a minimum delay and with increased safety to automobile traffic. The roundabout causes motorists to automatically slow down as they enter the neighbourhoods at a speed which is conducive to the needs of pedestrians.

According to the Roundabout Analysis, conducted by IMC Consulting Group Inc., roundabouts are a viable alternative to traffic signals for the following reasons:

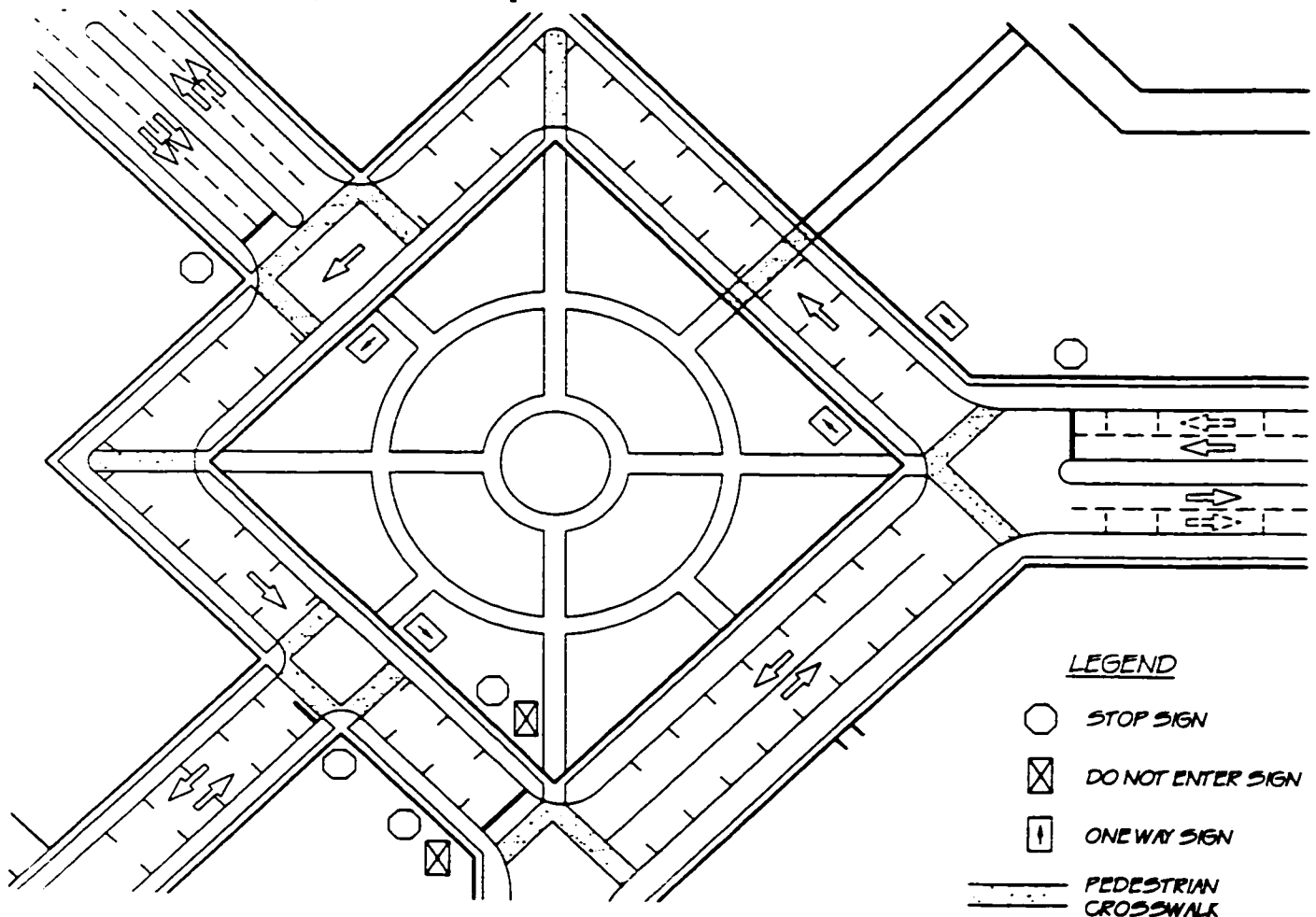
- reduced collision rates and in particular reduce injury and fatality collision rates;
- increased capacity due to reduced “lost time” during the all-red clearance phases used at intersections;
- increased flexibility to handle varying time of day traffic flows;
- allow for roadway layouts with more than four approaches;
- more aesthetically pleasing; and
- reduced operating and maintenance costs. Reduced driver frustration as vehicles approaching the roundabout can adjust their speed to enter the roundabout and minimize the need to stop. (IMC Consulting Group Inc., 1993, 2).

## F) The Neighbourhood Square

The Neighbourhood Square as the social and physical centre of each neighbourhood, must be safely and conveniently accessible for pedestrians within the neighbourhood, as well as accommodating traffic within this residential setting.

Figure 45 illustrates the pedestrian nature of the Neighbourhood Square as 13 crosswalks exist to accommodate pedestrian movement from the Square to the various sections of the neighbourhood. Since the Neighbourhood Square is primarily a one-way street, it funnels traffic around the site and increases pedestrian safety as cars are traveling in only one direction. Pedestrian safety is further enhanced as stop signs are placed at each intersection entering the square, decreasing vehicle speed and one way signs are placed along each side of the square to ensure correct vehicle travel.

**Figure 45 The Neighbourhood Square**



Source: Carma Developments Ltd.

---

## **POLICY 19**

***The transit system must be integrated into the community design and be a key component of the community centre, neighbourhood nodes and other community focal points.***

---

This policy related to the transit system is an integral part of both sustainable development and neotraditional design. According to the Sustainable Suburb Study, if the transit system is integrated into the design of new communities, it will increase the convenience and accessibility of transit, provide better opportunities for multi-use trips, increase ridership thereby lowering the City's operating cost per passenger and act in conjunction with the goals and strategies of the Calgary Transportation Plan.

To achieve the aforementioned benefits of the transit system, the Sustainable Suburbs Study suggests three guidelines to follow. The first is that the transit stops that are integrated into the neighbourhood nodes and community centre should be attractive structures, architecturally compatible with the surrounding buildings. "They should provide shelter and seating for pedestrians, convenient passenger loading/unloading, telephones, adequate lighting and bicycle storage" (City of Calgary, 1995, 54).

The second and third guidelines are transit stops not located in the neighbourhood node should be attractive structures with seating for pedestrians, adequate shelter and lighting and that when large structures such as a park'n'ride are developed, a large separation between transit stops and users should be avoided.

In McKenzie Towne, there are three village requirements for the success of a bus system, all of which are supplied by the village pattern. The first is that a substantial portion of the population live within five minutes walking distance from the bus stop. The entire population living in the Village of Inverness is located within five minutes walking distance to the bus stop located at the village square. The second is that the bus stop itself be a place of comfort and dignity. "A bus stop, consisting of a bench by the road, is a setting so undignified that anyone, concerned even minimally with their self-image, avoids it" (Carma Developers Ltd., 1995, 6). The existing bus stop in McKenzie Towne is associated with the general store at the village square. There, the passenger can wait, in a shelter with a seat, a newspaper, and a cup of coffee (see Figure 46) .

**Figure 46 McKenzie Towne Transit Stop**



The third is that time between bus arrivals must be short. This can be supplied only by the rational disposition of the bus routes. In McKenzie Towne, the routes coincide with the continuous network of roads connecting to the Village Square. As well, transit ridership ultimately will be determined by the scheduling of public transit. In this regard the City of Calgary will be a partner in achieving an increased modal split to transit, by the frequency of transit scheduling to this community (Carma Developers Ltd., 1995). McKenzie Towne is currently serviced by a Calgary Transit shuttle bus, Route 505, which runs daily from the General Store to the Anderson LRT Station. Once a resident reaches the Anderson Station, they can transfer to either another bus or the LRT to reach their final destination. Since Route 505 is a shuttle bus, it only services McKenzie Towne between 5:30 AM and 8:30 AM and between 4:00 PM and 7:00 PM. Thus, residents are unable to utilize Calgary Transit between 8:30 AM and 4:00 PM.

McKenzie Towne Square, in the Towne Centre, is planned to be the ultimate transit focus in the community accommodating a future LRT station, Kiss n Ride, Bus Transfer and collection, etc. "The goal of accommodating and promoting public transit is a principle of the McKenzie Towne Town Plan" (Carma Developers Ltd., 1995, 61).



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## **POLICY 20**

*A new package of street design standards (road hierarchy, right-of-way, boulevard and intersection design, landscaping) must be developed to meet the needs of pedestrians, cyclists and transit users, while continuing to provide for vehicle transportation.*

---

To ensure adherence to this recommended policy, the City has suggested several guidelines that will enhance the accessibility of varying modes of transportation. The first guideline is that the streetscape should incorporate features that are more aesthetically pleasing: buildings which front the street, porches, front windows, small front yard setbacks and shade trees along the street.

In McKenzie Towne, 3.8 metre front yard setbacks and porches on the front of the house create a more pleasant streetscape, bring people to the front of their homes and make streets safer due to "...subconscious neighbourhood watch" (Carma Developers Ltd., 1994, 2). The streets in McKenzie Towne also incorporate tree lined boulevards. Many of the residential streets and Towne Centre boulevards have separated walkways to accommodate the pedestrian nature of the street and to encourage the "...spatial relationship between pedestrian activity and social interaction" (Carma Developers Ltd., 1994, 2). Figure 47 is a picture which illustrates many of these elements.

**Figure 47 Reduced Front-Yard Setback**



The second guideline in the Sustainable Suburbs Study is rear lanes should be considered in residential areas for garage access. In McKenzie Towne, all residents have access to lanes as their garages are set back 1.5 metres in the rear of their property. Orientating the garage to the rear enhances the streetscape, broadens the design possibilities for the house design, improves natural light and permits a greater range of detail options for the house (Carma Developers Ltd., 1994).

The third and fourth guidelines by the City are similar in function as they state that, where possible, streets, acting as pedestrian routes, should frame vistas of the community centre, parks, and natural features. In McKenzie Towne, the roundabout is an example of a street that reinforces and defines the essence of the community. The roundabout is a traffic intersection marked at its centre with a civic monument or feature and spatially defined by a mix of civic and cultural buildings. The Towne Fire Hall and Baptist Church are located on the roundabout at terminations to important street vistas which run through the town.

Another example of the streetscape defining the area is High Street in the Towne Centre. When completed, at the one end of the street, the light rail transit station visually and functionally anchors the Towne Centre. Along the axis leading from the rail station a mixture of shopfronts, retail and commercial buildings scale the pedestrian oriented centre. High Street will terminate at the Towne Plaza surrounded by a canal and pond.

The final guideline to achieve a street standard that meets the needs of pedestrians, cyclists and transit-users is that local pedestrian and cyclist routes should be incorporated along the street instead of rear and sideyard pathways. As discussed previously, many of the streets within McKenzie Towne have a separated, tree lined walkway sufficient for cyclist and pedestrian travel. By separating and increasing the size of the walkways, pedestrian safety is increased and, by lining the streets with trees, it reinforces the creation of an outdoor room.

## SUMMARY

**Table 7 Summary of the Transportation System**

<b>Sustainable Suburbs Study Recommended Policies and Guidelines</b>	<b>McKenzie Towne</b>	
	<b>Yes</b>	<b>No</b>
<p><i>The street system in a community must provide all residents with direct links between key community focal points.</i></p> <p>The street system should be based on a system of connector streets linking major destinations.  Connector streets should be designed without barriers.  Features that moderate speed to make walking and cycling safe and comfortable should be incorporated.  Use of rear lanes as part of the pedestrian system should be avoided.  Modified grid pattern should be incorporated.</p>	<p><b>X</b></p> <p><b>X</b></p> <p><b>X</b></p> <p><b>X</b></p> <p><b>X</b></p>	
<p><i>The transit system must be integrated into the community design and be a key component of the community centre, neighbourhood nodes and other community focal points.</i></p> <p>Transit stops should provide seating, convenient passenger loading/unloading, telephones, adequate lighting and bicycle storage.  Transit stops not at the neighbourhood nodes should be designed in a similar nature.  Park 'n' ride facilities should be designed so as not to create a larger separation between transit stops and transit-users.</p>	<p><b>X</b></p> <p><b>X</b></p> <p><b>N/A</b></p>	
<p><i>A new package of street design standards must be developed to meet the needs of pedestrians, cyclists and transit-users, while continuing to provide for vehicle transportation.</i></p> <p>Incorporate features that are aesthetically pleasing into the streetscape.  Rear lanes should be considered in residential areas.  Streets, acting as pedestrian routes, should frame vistas of the community centre, parks and natural features.  Local pedestrian and cyclist routes on the street are preferred to rear and sideyard pathways.</p>	<p><b>X</b></p> <p><b>X</b></p> <p><b>X</b></p> <p><b>X</b></p>	

Table 7, Summary of the Transportation System, illustrates that McKenzie Towne reflects all of the principles of the Sustainable Suburbs Study in relation to a sustainable transportation system. McKenzie Towne offers a broad range of mobility choices including vehicle travel, walking, cycling and public transit which are attractive options for many of the daily trips, including the journey to work. Criteria supporting the free flow of vehicular traffic predominate some of the traffic arteries, while on others, the requirements of the pedestrian and cyclist dominate.

The street layout and design is critical to both neotraditional planning and sustainable planning, in that, the social and physical integrity of the neighbourhood nodes or villages is maintained by utilizing a modified grid pattern. The fundamental character of traffic arteries will vary through the interface with adjacent buildings, landscaping, and boulevard planting. Curb radii, lane width, intersection spacing, on-street parking, laneways and separated walkways enhance this fundamental character in both types of communities.

The transit system within McKenzie Towne has been incorporated into the design of the community. However, Calgary Transit, Carma Developers Ltd. and the Residents Association should work closely together to offer the residents of McKenzie Towne transit service between the hours of 8:30 AM and 4:00 PM. This would provide seniors and stay-at-home parents, without access to a vehicle, mobility choices they deserve.

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## **8. ENVIRONMENTAL ISSUES: REDUCING WASTE, POLLUTION AND CONSERVING ENERGY**

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The City of Calgary's Environmental Policy, Principles and Goals identifies four objectives related to reducing waste and pollution: protecting water quality through effective wastewater management; protecting surface water quality through stormwater management; encouraging water conservation through metering and education programs; and encouraging waste audits by the City and business community. Arising from these goals, the Sustainable Suburbs Study emphasizes, "...the need to be concerned about the quality of the water discharged into our rivers and the long term impact of urban water consumption" (City of Calgary, 1995, 59).

As well, recycling, the reuse of materials, composting, conservation of energy and stormwater management policies will not only protect the environment, but it will increase municipal savings and decrease pollution (City of Calgary, 1995).

Neotraditional communities, such as McKenzie Towne, are not predicated and marketed on sustainable principles such as composting and recycling. After interviewing Rich Western, Project Manager of McKenzie Towne, it is apparent that the community does not embody environmental policies as he expressed concern that McKenzie Towne is often misconstrued as a sustainable suburb. However, the interview also indicated that McKenzie Towne does achieve a few of the suggested guidelines proposed in the Sustainable Suburbs Study.

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### **POLICY 21**

***Builders are encouraged to ensure that all new buildings in new communities are audited for construction waste.***

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This policy suggested by the City will reduce the amount of waste generated during construction, decrease blowing debris and reduce the municipal costs for landfill sites and overall construction costs. The Sustainable Suburbs Study suggests that waste audits should be completed for dimensional lumber, drywall, masonry and tile, manufactured wood, cardboard, asphalt, fiberglass, metal, plastic and foam. The

Sustainable Suburbs Study indicates that dimensional lumber and manufactured wood products account for 35 percent of all waste material, equating to nearly 1000 Kg of waste per household constructed. This, in turn, is equivalent to about 10 percent of all lumber required for one house (City of Calgary, 1995). According to Rich Western, builders working in McKenzie Towne do not audit construction waste (Rich Western, 1996).

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## **POLICY 22**

*Builders are encouraged to use recycled materials in the construction of new buildings when supplies are available, existing standards allow and the cost of materials is feasible.*

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According to the Calgary Home Builders' Association, innovative concepts for converting recyclable materials into useable construction products are entering the marketplace. For example, carpeting and underlay recycled from plastic bottles and tires and paving stones manufactured from tires have been produced (City of Calgary, 1995). The Project Manager of McKenzie Towne, Rich Western, indicated that the contractors use recycled concrete for the base material in the construction of the laneways and alleys. He also stated that to his knowledge, contractors working on behalf of the developer do not utilize any other recycled materials in the construction of the site.

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## **POLICY 23**

*Provision of a recycling depot must be included in the design of the community centre.*

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By integrating a recycling depot into the community centre, users are encouraged to combine trips, and use the facility as part of a daily/weekly routine. The Sustainable Suburbs Study suggests two guidelines to be considered when constructing a recycling depot in the community centre. The first is that parking at the depot should be restricted. The second guideline is that community associations should establish a collection program for those people who cannot, or choose not to drive to the recycling depot.

According to Rich Western, a recycling depot may be constructed in the Towne Centre if market conditions are favourable. Thus, if demand by the residents of the community is sufficient to support this type of development and the City of Calgary initiated the construction of a recycling area, a recycling depot may be constructed. Rich Western expressed concern that policies dictated by the City must be logical in that they should be driven by market demand by consumers who wish to have these amenities in their communities.

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## **POLICY 24**

*Builders are encouraged to equip all buildings in new communities with bins for sorting of recyclable dry waste and to locate a permanent composter on site for degradable wet waste and yard waste.*

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This recommended policy by the City will maximize the recycling potential of certain products, promote business opportunities relating to the production of recyclable materials, reduce the demand on municipal landfill sites and encourage recycling to become a way of life (City of Calgary, 1995). The document states that composters can either be located in each residence or a large centrally located unit in the community centre. If located in the community centre, the opportunity exists for a community to run a collection program which would provide additional revenues to the association.

The Sustainable Suburbs Study suggests four various guidelines which together comprise the recommended policy. First, measures should be considered for the collection of composting materials. In McKenzie Towne, composting units will not be installed in either the Towne Centre or on residential lots. According to Rich Western, only when market demand is created by purchasing home owners, will composting units be installed.

The second guideline is that community associations should coordinate recycling programs as a source of revenue for community improvement projects. Presently, McKenzie Towne has a community association comprised of residents from the Village of Inverness and employees from Carma situated on the Board of Directors. When McKenzie Towne is completed, one large Towne Council will exist and fourteen

community associations representing their respective villages. Until McKenzie Towne is completed, members of Carma Developments Ltd. will work with the Towne Council on policy issues and community concerns. Thus, if all of the various village associations wish to initiate a recycling program, the Towne Council would work with them to coordinate a community program in conjunction with the City of Calgary. At present, the Village of Inverness' Residents Association has not initiated a recycling program within the community.

The third policy is difficult to evaluate, as it states that community associations should work with agencies collecting household goods such as appliances, furniture and clothing. Only when McKenzie Towne's population is sufficient can this policy be evaluated.

The fourth policy again can not be evaluated at this time. It states that commercial outlets in the community should be encouraged to promote the use of biodegradable products. Only when the commercial component of McKenzie Towne is constructed and market forces push for this demand can this policy be properly critiqued.

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## **POLICY 25**

*All homes in new communities should have water saving meters and manufactured water-saving fixtures.*

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In 1991, Calgary introduced a water meter incentive program which allows homeowners to try out a water meter for one year at no financial risk. At the end of the year, the homeowner is provided with a statement comparing the total water meter charges to the amount the homeowner would have paid with the flat-rate calculation. If the metered cost is more expensive, the homeowners' account is credited with the difference and the meter is removed without penalty. According to the Sustainable Suburbs Study, current statistics indicate that 97 percent of homeowners enrolled in the program decide to keep the meter after the one year trial period. "Since its introduction in 1991, the water meter incentive program has saved the City about 15.7 million in capital costs (City of Calgary, 1995, 66).



The use of water-saving devices can also contribute to substantial savings. Toilets flush approximately 23-37 litres of water per flush. Compared to a manufactured low flow toilet at 12-14 litres per flush, a substantial amount of water can be saved in each household per year. As well, a showerhead typically delivers 15 litres of water per minute. This can be reduced by 33 percent by installing an inexpensive flow restrictor.

McKenzie Towne's builders do use water saving fixtures such as toilets and faucets which are supplied from manufacturers such as Moen and American Standard. Presently, many new houses incorporate taps and shower heads with water restrictors and toilets which limit water use, but these innovations remain at the discretion of the homebuyer.

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## **POLICY 26**

*Alternative methods to traditional stormwater management techniques must be examined, in terms of appropriateness and cost, for use in new communities.*

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The City of Calgary's Policy on Stormwater Lakes recognizes the need for innovative designs to improve the environmental, aesthetic and recreational features of future urban developments. The stormwater lake within McKenzie Towne will "...be provided as a public utility lot and storm retention pond developed in accordance with the City of Calgary's Policy on Stormwater Lakes" (Carma Developers Ltd., 1995, 39). The stormwater lake and surrounding greenspace will comprise 32.4 acres providing functional recreation and an environmental amenity.

The Sustainable Suburbs Study proposes several guidelines to consider when constructing a stormwater lake. First, where site conditions allow, natural drainage systems should be used in contrast to artificial stormwater management systems. The stormwater lake in McKenzie Towne is built in an area that is very flat and contains primarily gravel, silts, and clay. Thus, an artificial system is proposed as a natural stormwater system is unavailable on the McKenzie Towne site as the lands are gently undulating and generally slope from southwest to northeast, with a modest elevation difference of approximately 20 metres (Carma Developments Ltd., 1992).

The second guideline suggested is that the stormwater system should complement the open space system and accommodate public access. According to McKenzie Towne's Outline Plan, the entire area will "...be 100% in public ownership" (Carma Developers Ltd., 1995, 39). As well, since the lake is surrounded by a continuous regional pathway system, recreation opportunities are provided. The lake will be connected to the Towne Centre via two bridges which will allow employees of the commercial centre the chance to enjoy a relaxing walk around the lake.

The third guideline states that natural vegetation should be used to enhance the stormwater feature. McKenzie Towne's stormwater lake will be constructed in an area with little or no natural vegetation. According to the McKenzie Towne Stormwater Master Drainage Plan, the surficial geology of the area is fairly consistent throughout the site. The site consists of a thin layer of topsoil, underlain with silts, sands and clays (Carma Developers Ltd., 1992).

The final guideline proposed by the City is that impervious services such as asphalt and cement should be reduced and alternative materials that allow water percolation should be used. Rich Western, stated that since the site is comprised primarily of clay which is not a permeable substance, if they utilized impervious surfaces the water would sit between the surface and the clay causing cracking along the top layer (Rich Western, 1996). Thus, similar to other suburbs, McKenzie Towne utilizes asphalt and cement as the primary substances for roadways and walkways.

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## **POLICY 27**

*Builders are encouraged to design, locate and construct all buildings in new communities with the objective of reducing energy consumption.*

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The final policy analyzed relates to energy consumption in the built environment which is comprised of site planning and building design. Site planning refers to the orientation of buildings and landscaping in the context of the streetscape. For example, Calgary's solar pattern dictates that an ideal building would be located facing South, with little obstructions to the southern horizon. Landscaping can also influence the climate

surrounding a building. Trees have the greatest effect on energy consumption as they provide windbreak in the winter and cooling and shading in the summer.

Building design is the second component of energy consumption in the built environment. Areas of heat loss occur around doorways, windows and in basements. Thus, air movement or leakage can be controlled by insulating space with air barriers such as drywall and insulation. The Sustainable Suburbs Study suggests a comprehensive list of guidelines which will reduce energy consumption in and around the home. The guidelines referring to energy consumption outside of the home include: positioning of houses to reduce sun blockage, attached greenhouses to trap passive solar heat, and minimizing the surface exterior of buildings.

The architectural guidelines and principles of town planning do not make reference to greenhouses and positioning of buildings on the site. The lots within McKenzie Towne are available facing all directions and some will be obstructed while others are not. The suggestion of attached greenhouses is not prevalent in McKenzie Towne. Rich Western indicated that builders would build them if consumers indicated a demand for this type of product. Since the costs for items such as a greenhouse would be the responsibility of the homeowner, it would increase the cost of a home, impacting affordability for many.

The guidelines referring to energy consumption within the home include: energy saving appliances, mudrooms to minimize heat loss, open floor plans with maximum natural light, skylights, radiant in-floor heating and centralized mechanical ventilation. The builders in McKenzie Towne follow the demands of the consumer when designing a new home. Many of today's homes do have open floor plans, skylights and mudrooms but are not available in every home design because builders rely on consumer preferences. As Rich Western asserts, "...if the typical home buyer demands these items in their home, builders will provide them" (Rich Western, 1996).

## SUMMARY

**Table 8 Summary of Environmental Issues**

<b>Sustainable Suburbs Study Recommended Policies and Guidelines</b>	<b>McKenzie Towne</b>	
	<b>Yes</b>	<b>No</b>
<p><i>Builders are encouraged to ensure that all new buildings are audited for construction waste.</i></p> <p>Waste audits should address the following:</p> <p>Dimensional Lumber</p> <p>Drywall</p> <p>Masonry and Tile</p> <p>Manufactured Wood</p> <p>Corrugated Cardboard</p> <p>Asphalt</p> <p>Fiberglass</p> <p>Metal</p> <p>Plastic and Foam</p>		<p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p>
<p><i>Builders are encouraged to use recycled materials in the construction of new buildings</i></p>		X* <sup>1</sup>
<p><i>Provision of a recycling depot must be included in the community centre.</i></p> <p>A recycling depot in the community centre.</p> <p>Community associations establish a collection program for recycled material.</p>		<p>X</p> <p>X</p>
<p><i>Builders are encouraged to equip all buildings with bins for sorting of recycled dry waste and composters for wet waste.</i></p> <p>Consider measures for storage and collection of composting materials.</p> <p>Community associations should consider recycling as a means for revenue.</p> <p>Community associations should work with other agencies for collecting household goods.</p> <p>Commercial outlets should encourage the use of biodegradable products.</p>		<p>X</p> <p>X</p> <p>X</p> <p>X*<sup>2</sup></p>

<i>All homes in new communities should have water saving meters and fixtures.</i>	<b>X*<sup>3</sup></b>	
<i>Alternative methods to stormwater management must be examined.</i>  Where site conditions allow, natural drainage systems should be used. Stormwater management should complement the open space system. Natural vegetation should enhance stormwater feature. Impervious surfaces should be reduced.	<b>X</b> <b>X</b> <b>X</b>	<b>X</b>
<i>Builders are encouraged to design and locate buildings to reduce energy consumption.</i>  Position houses to reduce sun blockage. Attach greenhouses. Minimize surface exteriors. Mudrooms, open floor plans, energy saving appliances, skylights, radiant floor heating, centralized ventilation.	<b>X</b> <b>X</b> <b>X*<sup>4</sup></b>	<b>X</b>

\*<sup>1</sup> McKenzie Towne utilizes recycled concrete in construction of laneways.

\*<sup>2</sup> When Towne Centre is constructed this policy can be evaluated.

\*<sup>3</sup> It remains the discretion of the homebuyer

\*<sup>4</sup> McKenzie Towne home design is determined by the consumer, if a resident requires these amenities, they will be provided.

Table 8 summarizes the extent to which McKenzie Towne fulfills the policy directives of the Sustainable Suburb Study in relation to environmental guidelines. The information contained within the table was ascertained from an interview with Rich Western, Project Manager of McKenzie Towne, and from the Stormwater Master Drainage Plan. Table 8 depicts that the neotraditional community of McKenzie Towne fulfills only a few of the recommended policies for environmental management of new communities.

According to Rich Western, contractors utilize recycled concrete for laneways in an attempt to reduce costs. One environmental issue that McKenzie Towne fulfills is stormwater management methods. The community's stormwater system complements the open space system, utilizes existing vegetation and natural drainage when it is appropriate.

However, McKenzie Towne as a neotraditional community could easily achieve many of the City's recommended policies with little effort or additional cost. Builders within the community could recycle wasted materials such as drywall, cardboard, tile and

fiberglass in separate containers provided by the developer. After construction, these containers could be utilized by the residents of the community in recycling their daily items such as cardboard, cans, bottles and paper. When the community is completed, the fourteen separate village associations and Towne Council could use these recycled materials as a source of revenue for community events or maintenance and upgrading of the area. As well, since the City recommends a recycling depot in the Towne Centre, the revenue generated from these products could alleviate some of the costs of development.

Recently, the community of Rocky Ridge began to recycle wood, cardboard, drywall and metal from new house construction. Approximately 160 tons of residential construction waste has already been hauled from the development, midway through the pilot project (Calgary Herald, 1998). The cost of recycling these products is comparable to the cost for hauling excess material to a landfill. The actual cost to recycle most of the materials from a house - plus a profit margin is between \$400 and \$600 (Calgary Herald, 1998). As the cost to recycle waste from new home construction is comparable to the fees of hauling the material to a landfill (\$393), McKenzie Towne's developer Carma Developers Ltd. should work with its builders to implement a construction recycling program.

The Sustainable Suburbs Study puts much of the responsibility for environmental management on builders of new communities. They are encouraged to provide water meters, water-saving fixtures, centralized mechanical ventilation, composters, skylights, energy saving appliances and greenhouses. Only when market demand increases for products such as radiant floor heating and greenhouses will builders provide these items in new houses. The cost of these items will eventually be passed onto the consumer and thus, will have to be affordable for the average new homeowner to consider purchasing.

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## 9. RELATING THEORY TO REALITY

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According to the City of Calgary, the Canadian Institute of Planners and Canada Mortgage and Housing, promoting sustainability requires maintaining health in three spheres simultaneously. A sustainable suburb must be capable of being sustained far into the future, fiscally, socially and environmentally. Despite the fact that McKenzie Towne meets or exceeds the majority of the design guidelines and recommendations presented in the Sustainable Suburb Study, analyzed in Part II of this study, when one compares the community to the general theory of sustainability which comprises three building blocks: fiscal health, social health and environmental health, a different picture emerges.

Fiscally, McKenzie Towne is only partially sustainable. Fiscal sustainability is defined as "...the costs of building, operating and maintaining new communities and their supportive infrastructure and services are affordable, having regard to other spending priorities, and will not become a burden on future generations" (City of Calgary, 1995, 3). The adjusted gross anticipated density of McKenzie Towne is 4.6 units per acre, well below the suggested density of 7.0 units per acre. Fiscally, a community with an adjusted gross density of 4.6 units per acre is far more expensive to maintain than a community with a density of 7.0 units per acre as the urban form is more compact. Compact urban form leads to a greater utilization of utility services and infrastructure such as roadways and parks. As well, the cost of emergency services, extension of expressways, LRT, interchanges and roadway improvements are decreased when urban form is more compact. As stated earlier, to accommodate Calgary's new suburban growth, with a typically density of less than five units per acre, 45% of Calgary's capital spending budget is utilized.

On a community or micro level, McKenzie Towne is fiscally sustainable as residents can travel about the community without depending on the automobile for daily items. Once the Towne Centre is constructed most daily items and services will be available in McKenzie Towne within walking distance of the majority of residents, resulting in a decrease in the annual cost of motoring. On a macro level, the majority of McKenzie Towne residents work outside the community and rely on their automobile for transportation to work. This ultimately adds to the annual cost of motoring in Calgary which is estimated at \$1 billion per annum. The dependency on the automobile could be

further reduced if employment opportunities are generated within the community, Calgary Transit provides residents with convenient transit service and residents ultimately support Calgary Transit initiatives to utilize transit as a means to reach their place of employment.

McKenzie Towne exceeds the objectives of social sustainability. Social sustainability is defined as "...communities that are designed to be socially diverse, adaptable to changing lifestyles and to further the objective of providing all Calgarians with access to affordable housing, education, health care, essential goods, public amenities and services, such as their basic needs are met" (City of Calgary, 1995, 3). In McKenzie Towne, there is a wide choice of housing for many different household types including granny suites for an extended family member, three storey apartments, walk-up flats and single-family housing. As stated earlier, many of the housing types are affordable for households earning slightly less than the median Calgary household income. However, housing options for low-income households earning approximately \$30,000 per annum are not available in McKenzie Towne. The community boasts attractive public areas such as the village square with the formal gazebo to the greenways located around the stormwater lake connecting to the large joint use site and future Towne Centre. McKenzie Towne will provide educational amenities as nine joint-use sites are planned upon community build-out. Basic shopping needs are available within the community as a resident can walk to the general store to pick-up mail, buy a quart of milk and sit and have a coffee. Once the Towne Centre is completed, the majority of daily goods and services will be available to all residents within the community. As well, the Regulating Plan for McKenzie Towne illustrates a mix of land uses. Residential uses located adjacent to commercial uses are encouraged and small offices are intended to be interspersed throughout the community.

The need for an automobile within the community is reduced as residents can travel along the walkways and greenbelts to other areas within the neighbourhood. The open space system within McKenzie Towne is designed for pedestrians and cyclists to travel throughout their neighbourhood. The street network and reduced setbacks within McKenzie Towne also encourage socialization within the community. Sidewalks are aligned next to curbs, houses are pushed closer to the street, garages are placed at the rear



of the lot and buildings are treated with architectural elements such as front porches and verandas.

McKenzie Towne does not meet the objectives of environmental sustainability. Environmental sustainability is defined as "...communities that are designed to minimize air, water, and soil pollution, reduce resource consumption and waste, and protect natural systems that support life" (City of Calgary, 1995, 3). The stormwater lake represents a permanent waterbody serving as both an aesthetic and functional feature central to the community. The lake as an environmental feature has a significant purpose as it fulfills the dual purpose of stormwater containment and passive recreational and educational activities. As stated above, McKenzie Towne reduces the dependency on the automobile as daily services continue to be developed and provided in the community within walking distance of the majority of residents. By decreasing automobile use within the community, fuel consumption and air pollution are reduced.

With the exception of the stormwater lake and automobile dependency, the community of McKenzie Towne is not designed to minimize water and soil pollution, reduce resource consumption and waste and protect natural systems that support life. As an example, McKenzie Towne is not equipped with recycling depots, builders do not recycle construction waste and buildings are not fully equipped to reduce energy consumption.

In summary, despite the fact McKenzie Towne meets the majority of the recommendations presented in the Sustainable Suburbs Study, when one applies the general theory of sustainability to McKenzie Towne, the community does not meet the fiscal or environmental objectives of a sustainable suburb. The strength of the community lies in its ability to exceed the social objectives of a sustainable suburb.

*PART III*

**THE McKENZIE TOWNE RESIDENTS'  
SURVEY**

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## 10. McKENZIE TOWNE SURVEY

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An integral component of this project is to determine the views of McKenzie Towne residents' in relation to their community. Through the use of questionnaires, the researcher will analyze residents perceptions of neighbourhood identity, housing, transportation, the village square, open space and the environment. The analysis will determine to what extent residents of McKenzie Towne feel that their community fulfills the guidelines suggested in the Sustainable Suburbs Study. The questionnaire will also determine the level of satisfaction and desirability with living in McKenzie Towne and the reasons for this level of satisfaction and desirability. Moreover, the survey, through the use of open ended questions, will provide residents' suggestions for improvements and offer ideas for future developers of neotraditional communities. As well, the questionnaire will provide demographic data used in the formulation of a resident profile.

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### METHODOLOGY

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The researcher conducted a door to door survey throughout the community of McKenzie Towne. The survey consisted of thirty-nine questions, some with several parts (see Appendix A). The structure of the questionnaire consisted of open ended questions and several types of Likert scale questions as respondents were asked to rank various responses. Prior to survey distribution, the researcher pretested the survey to determine problems with wording and eliminate possible misinterpretations of questions.

The researcher gathered completed questionnaires via a two prong process. In January, 1998, the researcher went door to door and dropped off a questionnaire, an envelope and instruction sheet at every residence in McKenzie Towne. Once the questionnaires were completed, the respondents were to drop off the survey in a box the researcher had placed in the McKenzie Towne General Store in the village square. The researcher received 41 completed surveys, out of a possible 275 households, in the drop-off box after a period of three weeks. Since the surveys were coded, the researcher was able to determine which households in McKenzie Towne had completed a survey. With only 41 completed questionnaires, in March, 1998, the researcher conducted another door

to door survey of those residences which did not leave a completed survey in the drop-off box. The researcher provided each of these households with a questionnaire, instruction sheet and a self addressed envelope to mail the completed questionnaires to the researcher. After one month, the researcher received an additional 34 completed surveys.

From the two step survey process, the researcher gathered 75 completed questionnaires from a total population of 275 households. This represents a response rate of only 27.3%. Accordingly, the survey findings are not considered statistically valid, but represent the opinions of the respondents. Nonetheless, the findings are important as they identify the respondents' perceptions of their community.

Based on comments received from respondents, there were several problems with the questionnaire. First, several respondents expressed confusion between questions A7 and A9 as they could not distinguish between satisfaction and desirability. Thus, the analysis will focus on the level of satisfaction respondents have with living in McKenzie Towne. Second, a problem which permeates throughout the survey is differentiating between what exists and what is planned. For example, question C3 refers to a community hall. Many residents stated that there is not a community hall but one is planned. The researcher should have been more direct and careful in the phrasing of many questions as respondents were to base their responses on what existed at the time of the survey. This may skew the responses of several questions as respondents expressed satisfaction for something which is planned for the community and not yet a reality.

The subsequent five chapters provide an evaluation of the survey data organized by the same main headings as the Sustainable Suburbs Study guidelines analyzed earlier. For example, chapter twelve evaluates residents' perceptions of housing in McKenzie Towne and derives the level of agreement for the various policy guidelines suggested in the Sustainable Suburbs Study in relation to their community. Chapter thirteen evaluates residents' perceptions of transportation, chapter fourteen analyzes the village square, chapter fifteen evaluates the various components of McKenzie Towne's open space and chapter sixteen evaluates the environment. Chapter seventeen, based on the findings from the residents' survey, highlights the guidelines residents support and the recommendations residents do not support. The following chapter provides a resident profile based on demographic data received from the survey responses. As stated earlier, the survey is not statistically valid and thus the following profile applies only to the 75

respondents which completed the survey and not every resident and household in McKenzie Towne.

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## **11. RESIDENT PROFILE**

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The resident profile section of the survey consists of nine questions which establish important characteristics such as age, household composition, marital status, employment status, occupational status, education level and income. The researcher gathered these various demographic components to establish a resident profile and cross reference some of the various responses to characteristics of a sustainable suburb. For example, one attribute of a sustainable suburb is to create a community with diversity in household income. According to the Sustainable Suburbs Study, an adequate choice of low to medium income housing should be provided to create a balance of socio-economic groups throughout a community. Household income dictates the level of housing one can afford, thus in a sustainable suburb, there should be diversity of household income which creates diversity in housing. The following analysis provides a resident profile for the 75 respondents who completed the survey.

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### **SEX**

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Of the 75 respondents who completed the survey, 61% are female and the remaining 39% are male. The disproportionate number of females may be a result of a large number of stay-at-home mothers and possibly a large number of single women living in the community. Due to the length of time to complete the survey, many households may have had the stay-at-home mother complete the survey under the pretense that they have more time. According to the findings of employment status, 10% of respondents ranked as home-makers.

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### **AGE COMPOSITION**

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The survey findings indicate the following relative to the age of the respondents:

**Figure 48 Age Composition (n=75)**

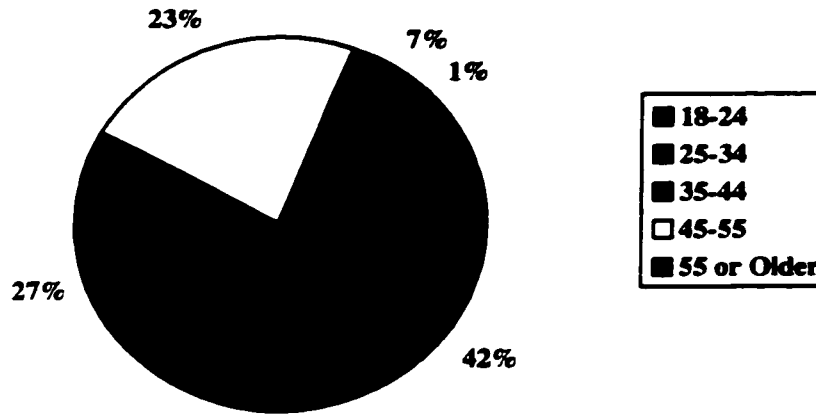


Figure 48 depicts that 42% of all respondents are between the ages of 25 and 34. The second largest age cohort (27%) of those surveyed are 35-44 years of age, while 23% of respondents are between the ages of 45 and 55. The above figure also indicates that only 1% of respondents are between the ages of 18 and 24 and from all the respondents surveyed, there are no residents below 18 years of age. In summary, the majority of McKenzie Towne residents surveyed are between 25 and 34 years of age which indicates a large proportion of residents in the family formation years of the lifecycle. It is also interesting to note that only 1% of those surveyed are below 25 years of age. This may be a result of a lack of rental accommodation and the location of the community in relation to post-secondary institutions such as the University of Calgary and SAIT.

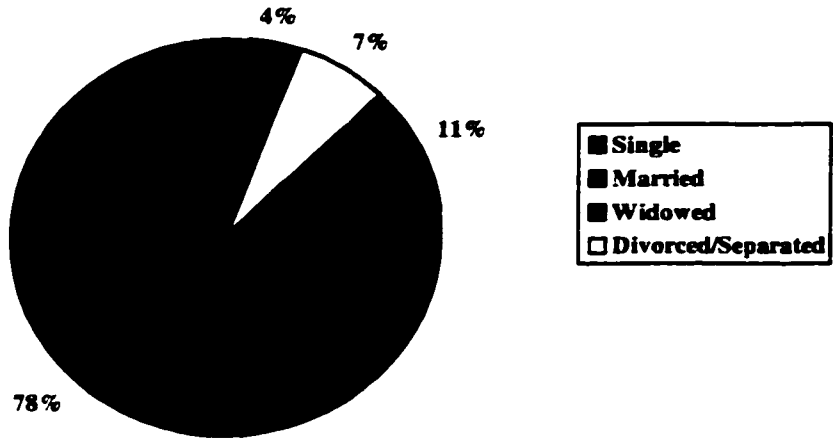
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## **MARITAL STATUS AND FAMILY COMPOSITION**

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The following figure depicts the marital status of 74 residents who responded to the survey.

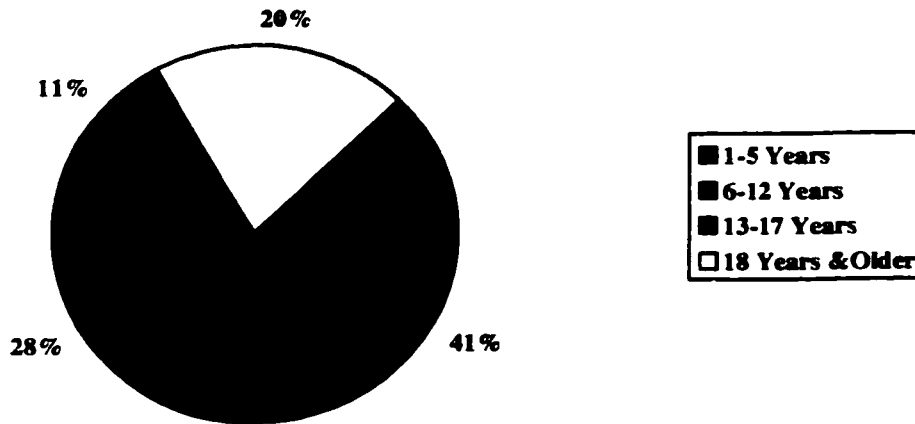
**Figure 49 Marital Status (n=74)**



As Figure 49 illustrates, 78% of those surveyed are married, 11% are single, 7% are divorced or separated and 4% are widowed. Consistent with the age composition of those surveyed, it is expected that the majority of residents would be married as the preponderance of those surveyed are between the ages of 25 and 34.

Of 74 respondents surveyed, 57% do not have children while the remaining 43% have at least one child. Figure 45 depicts the total number of children by age for all respondents with children living in the household.

**Figure 50 Percentage of Children by Age (n=54)**



Of the 32 residents surveyed with children living in the home, there are a total of 54 children. Of the 54 children, 41% are between the ages of 1 and 5, 28% are between



the ages of 6 and 12, 11% are between the ages of 13 and 17 and 20% are greater than 18 years of age. Thus, the largest proportion (41%) of children are under the age of 5.

Of the 32 residents surveyed with children living in the home, 47% have only one child at home, 41% have two children living in the home, 9% have three children at home and 3% have four children living at home. As well, cross referencing marital status and the number of children living at home, there are no single families with children. Of the total 32 residents with children at home, 88% are married with the remaining 12% widowed or divorced.

Of the 42 residents surveyed without children living in the home, 19% are single, 71% are married, 5% are widowed and 5% are divorced or separated.

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## **EMPLOYMENT STATUS**

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74 respondents indicated the following employment status:

**Table 9 Employment Status**

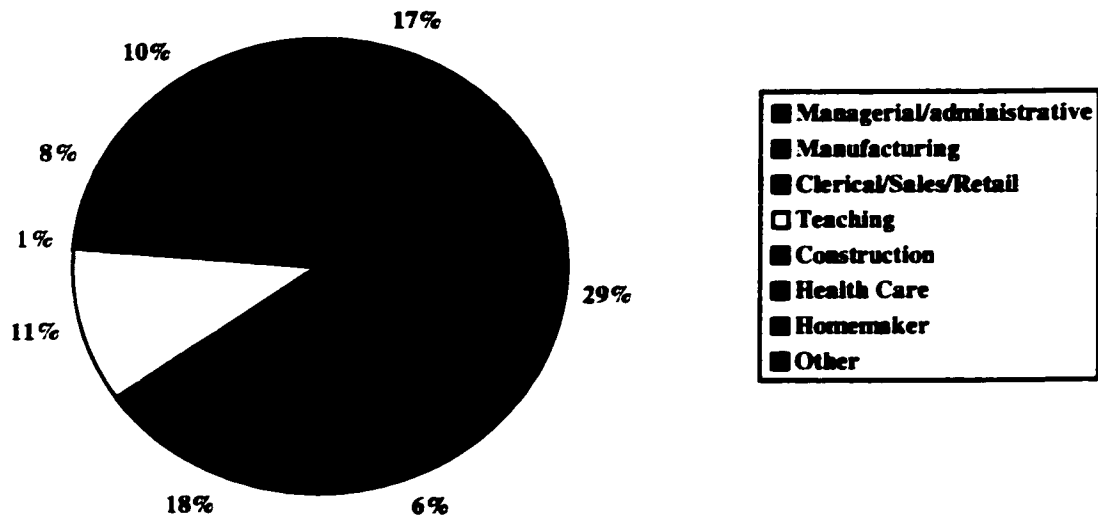
<b>EMPLOYMENT STATUS</b>	<b>N</b>	<b>%</b>
Employed Outside the Home - Full Time	46	62%
Employed Outside the Home - Part Time	6	8%
Self-Employed - Full Time	7	9%
Self-Employed - Part Time	2	3%
Home-Maker	7	9%
Retired	3	4%
Semi-Retired	1	1%
Student	0	0%
Unemployed	2	3%
Total	74	100%

Table 9 depicts that 62% of surveyed residents are employed full-time outside the home and 9% are self-employed full-time. The remaining 29% of surveyed residents are

either part-time employees, retired, semi-retired, homemakers or unemployed. Only 3% of those surveyed stated that they are unemployed. According to survey data, 13% of residents work from their homes either full-time or part-time.

The following figure depicts the occupational status of 71 respondents surveyed.

**Figure 51 Occupational Status (n=74)**



The largest proportion (29%) of surveyed residents are employed as managers or administrators. The second largest employment sector is clerical/sales/retail, with 18% of surveyed respondents. 17% of those surveyed classified themselves as working outside of the occupational fields provided. The 'other' category includes responses such as engineering, law and technical occupations. 11% of those surveyed are employed as teachers, 10% are homemakers, 8% work in healthcare, 6% work in manufacturing and only 1% are employed in construction.

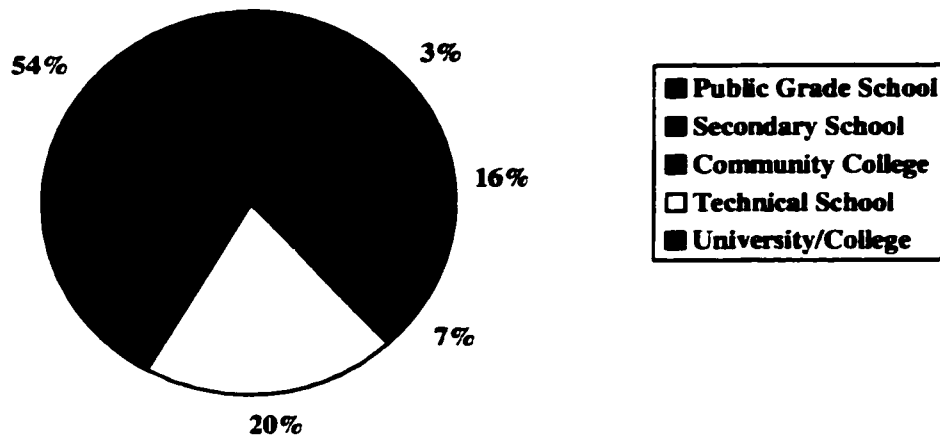
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## **EDUCATION**

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As part of the resident profile, respondents were asked to identify the highest level of education completed. Figure 52 provides these findings.

**Figure 52 Highest Level of Education Attained (n=74)**



Of the 74 residents surveyed, 54% have completed university or college, 20% have completed technical school, 7% community college, 16% high school and 3% public school.

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## INCOME

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Of the total 75 surveys returned to the researcher, 71 respondents indicated their total household income before tax. The following figure illustrates the findings.

**Figure 53 1996 Pre-Tax Household Income (n=71)**

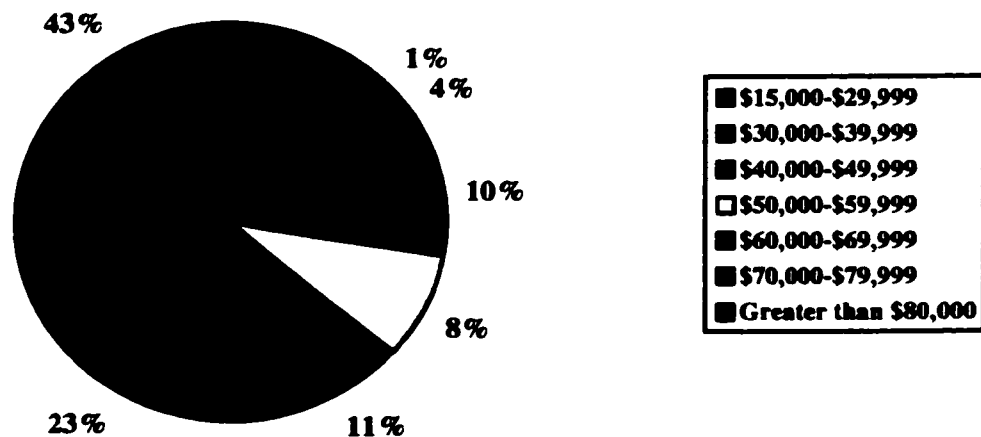


Figure 53 illustrates a relatively high household income of those residents surveyed. 66% of the residents surveyed have a household income in excess of \$70,000. 77% of the residents surveyed have a household income in excess of \$60,000. Only 1 resident indicated a household income less than \$30,000. The median household income of those surveyed is approximately \$77,000, approximately \$31,000 higher than the 1996 Calgary median household income of \$45,777.

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## **SUMMARY OF RESIDENT PROFILE**

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The majority (61%) of respondents are female, 42% of respondents are between the ages of 25 and 34, 78% of those surveyed are married, 57% of respondents do not have children, 62% are employed full-time outside of the home with 29% employed as managers or administrators, 54% have completed university or college and 66% of those surveyed have a household income in excess of \$70,000.

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## 12. HOUSING & NEIGHBOURHOOD IDENTITY

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The Sustainable Suburbs Study states, "...the major distinguishing characteristic of a more sustainable community is a focus on a rich, diverse community life: the interaction of people with their neighbours, friends, local business, schools and services within the community" (City of Calgary, 1995, 45). The questionnaire administered by the researcher measures several different aspects of housing and neighbourhood identity. The survey findings indicate the level of satisfaction and desirability with living in McKenzie Towne and offer recommendations for improving the various aspects of housing in the community. Moreover, the findings provide the following housing profile which identifies ownership patterns and suggests the reasons residents choose to live in McKenzie Towne.

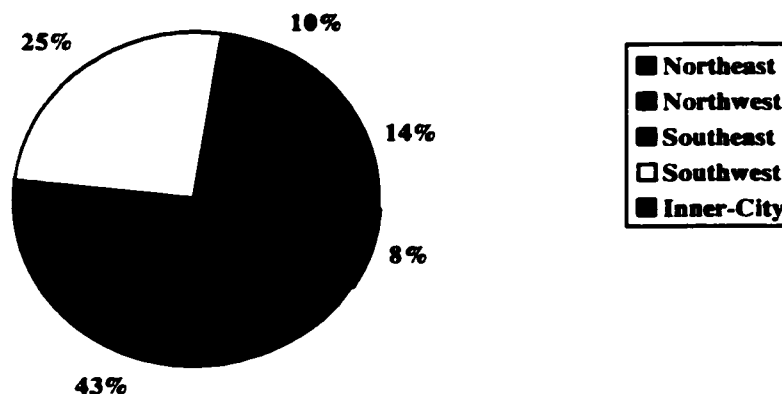
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### HOUSING PROFILE

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As part of the survey, respondents were asked to indicate where they resided prior to moving to McKenzie Towne and how long they lived there. The following figure depicts which part of Calgary 53 respondents resided prior to moving to McKenzie Towne. The remaining 22 respondents resided outside of Calgary prior to moving to McKenzie Towne. For purposes of analysis, Calgary is divided into the SE, SW, NE, NW quadrants and the inner city which included the communities lying south of the Bow River, north of 17th Avenue, west of the Elbow River and east of Crowchild Trail.

**Figure 54 Percentage of Residents by Prior Location (Calgary Residents Only) (n=53)**



As Figure 54 displays, 43% of respondents who lived in Calgary resided in the Southeast prior to moving to McKenzie Towne. Whereas, less than 8% of residents who lived in Calgary prior to moving to McKenzie Towne lived in the Northwest. It can be inferred that when people choose to move from one community to another, the area of the city is an important factor. Residents are more likely to move from one community to another within their particular quadrant of the city. The survey findings also indicate that 22 of the 75 respondents moved to McKenzie Towne from another city. Of these 22 residents, 40% moved from another city in Alberta, 23% from British Columbia, 18% from Ontario, 5% from Quebec, Saskatchewan, Manitoba and the southeastern United States. The average length of stay for all respondents in their prior community was 6.7 years.

Respondents were asked to indicate whether they owned or rented both their previous home and their new home in McKenzie Towne. Of the 75 respondents, 41% rented and 59% owned their previous property. Home ownership increased substantially when the respondents moved to McKenzie Towne. Of the 75 residents who responded to the survey, 97% own their home and only 3% rent their current property. The reasons for this may include today's economic climate with low unemployment and low interest rates as well as the lifecycle of the respondents. Many residents may have moved into McKenzie Town to raise a family in their first single family home. This is supported by the number of families with children and the number of married couples between the ages of 25 and 34.

The survey asked respondents to indicate the three most important reasons for moving to McKenzie Towne. Of the 74 respondents, 52% indicated that the style of the community was the most important reason. Many residents suggested that the small town concept and architectural style of the community was an important reason for choosing McKenzie Towne. Moreover, 33% of respondents indicated that the second most important reason for choosing the community was again the style of McKenzie Towne. The third most important reason for choosing McKenzie Towne was the location of the community as many respondents indicated a preference for living in the southeast quadrant of Calgary. This confirms the findings discussed earlier that when people choose to move, they prefer to live within the same area of the city.

Respondents were asked to rank the three most important reasons for choosing their present home. 46% of the respondents indicated that the most important reason for selecting their home was the interior floor-plan. The second most important reason indicated by 24% of the respondents was the affordability of their home. This may explain the proportion of renters versus owners as many residents moved to McKenzie Towne to make the transition from rental property to ownership of their first home. The third most important reason cited by respondents for choosing their present home was the architectural style. Residents stated that they preferred architectural elements such as front porches, rear garages, dormers and pitched roofs.

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## SATISFACTION AND SENSE OF COMMUNITY

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An important part of the questionnaire asked respondents to rank their level of satisfaction with McKenzie Towne and to provide reasons for their satisfaction and/or dissatisfaction. Figure 55 depicts the level of satisfaction respondents have with living in McKenzie Towne, compared to their previous neighbourhood.

**Figure 55 Level of Satisfaction (n=74)**

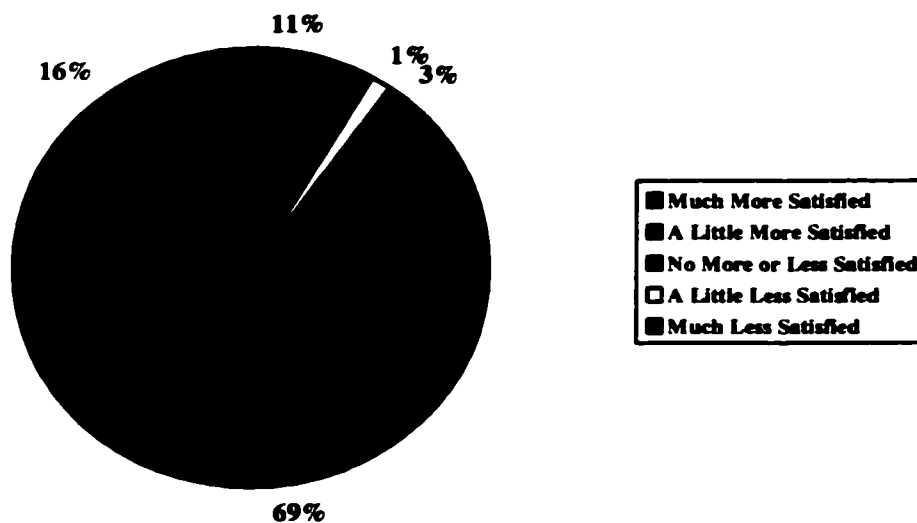


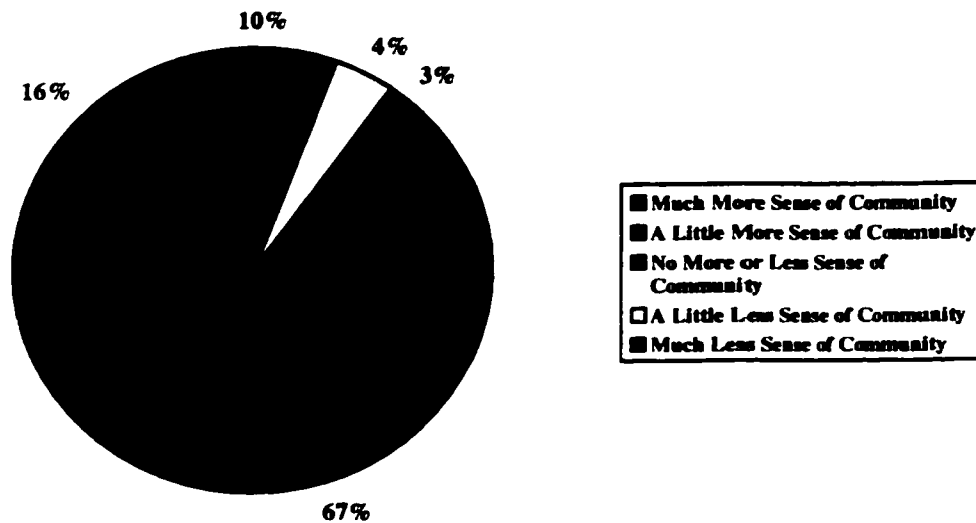
Figure 55 indicates that 69% of respondents are much more satisfied with living in McKenzie Towne compared to their previous neighbourhood. As well, another 16% of the respondents are a little more satisfied with living in McKenzie Towne when compared to their previous neighbourhood. Only 4% of respondents, when compared to

living in their previous neighbourhood are a little less or much less satisfied with living in McKenzie Towne.

The three most important reasons cited by residents who are much more or a little more satisfied with living in McKenzie Towne are the friendliness of the residents and or neighbours, the architectural appearance and style of the neighbourhood and the small town atmosphere of the community. The 4% of residents who indicated dissatisfaction with living in McKenzie Towne stated that the lots are too small, the community was too far away from amenities and there are too few large trees.

Based on the 73 respondents, the following figure illustrates that residents feel a greater sense of community when compared to their previous neighbourhood.

**Figure 56 Sense of Community (n=73)**



83% of respondents indicated that they feel a little more or much more sense of community when compared to their previous neighbourhood. This compares to only 7% of respondents who feel a little less or much less sense of community in McKenzie Towne when compared to their previous community.

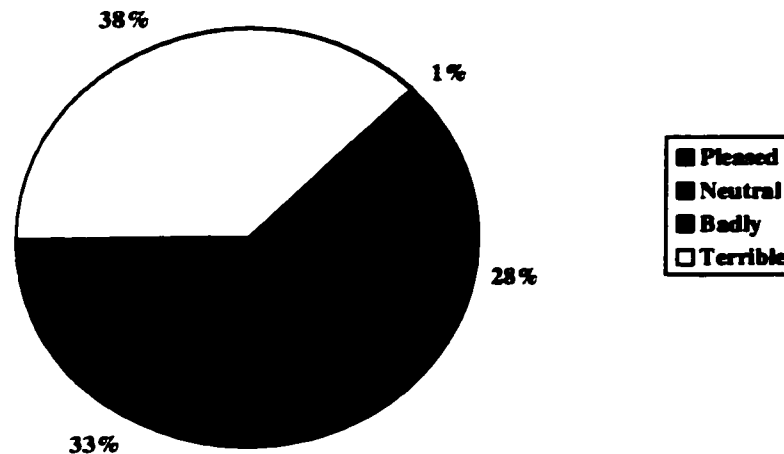
Respondents were asked to rank the three most important reasons contributing to their sense of community. Based on the respondents who feel a greater sense of community, the three most important reasons, in order of importance, are the friendliness of the residents and neighbours, events such as Stampede Parties and Winter Festivals are planned throughout the year and the small town atmosphere of the neighbourhood. The



7% of respondents who indicated less sense of community stated that in comparison to their previous neighbourhood, McKenzie Towne lacked amenities, the people are not as friendly and the residents are too young.

The questionnaire asked respondents to rank how they would feel if they had to move away from McKenzie Towne. The following figure graphically displays the findings of 72 respondents.

**Figure 57 How Residents Would Feel if They Had to Move (n=72)**



71% of residents surveyed would either feel badly or terrible if they had to move away from McKenzie Towne. In comparison, only 1% of respondents indicated that they would feel pleased and none of the residents surveyed stated that they would be delighted to move away from their community. These findings are consistent with the level of satisfaction and sense of community residents have with McKenzie Towne.

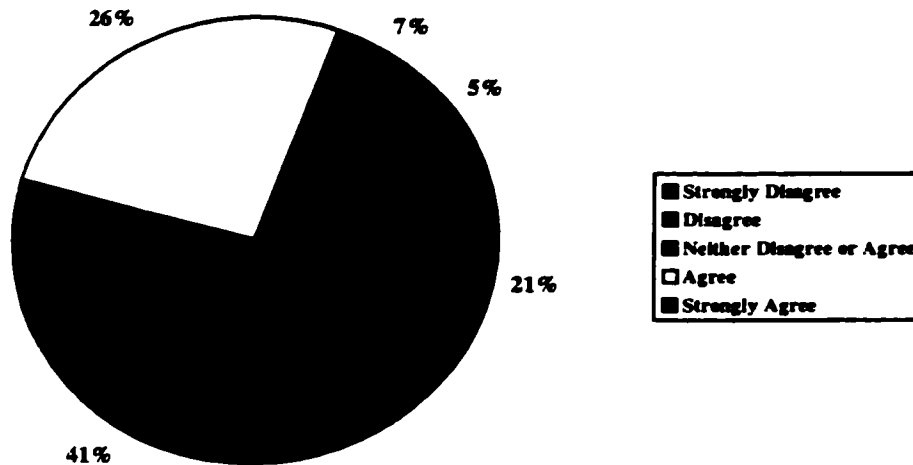
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## **HOUSING GUIDELINES OF THE SUSTAINABLE SUBURBS STUDY**

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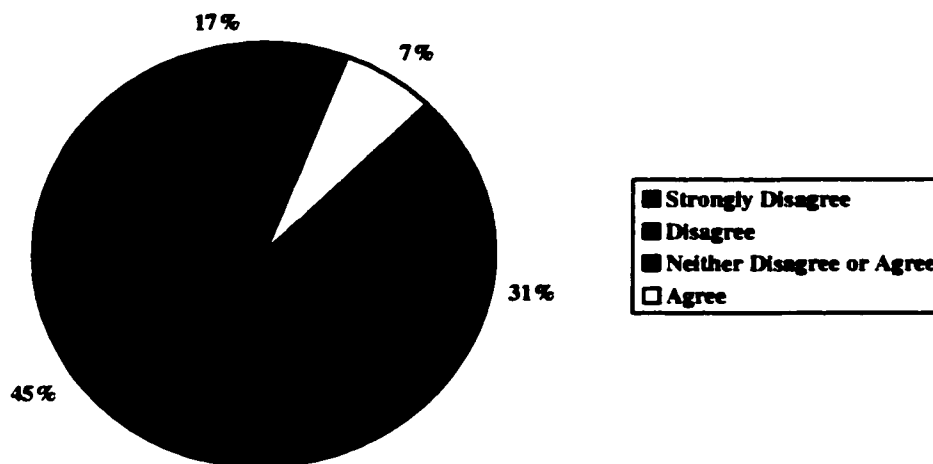
Based on 73 residents surveyed, the following figure illustrates the extent of agreement with increasing the size of lots in McKenzie Towne.

**Figure 58 Increasing the Size of Lots (n=73)**



The surveys indicate that 33% of the respondents either agree or strongly agree with increasing the size of lots in McKenzie Towne. This is contrary to the guideline of the Sustainable Suburbs Study which encourages an increase in density. In contrast, 26% of surveyed respondents stated that they either strongly disagree or disagree with increasing the size of the lots. As well, 41% of residents surveyed indicated that they neither disagree or agree with increasing the size of the front yard.

**Figure 59 Housing for Lower Income Families (n=73)**



As Figure 59 illustrates, 76% of residents surveyed stated that they either disagree or strongly disagree with the statement that McKenzie Towne should provide more housing for lower income families. This is inconsistent with one of the guidelines of the Sustainable Suburbs Study which encourages affordable housing for households with lower incomes. It is inferred by the researcher that many residents of McKenzie Towne resist the notion of affordable housing for lower income families because of the negative connotation associated with lower income people. It is evident that NIMBYism is a common attitude projected by many of the surveyed residents.

The researcher asked residents to provide their level of agreement with various design guidelines stipulated in the Sustainable Suburbs Study in relation to McKenzie Towne. For example, surveyed residents were asked if McKenzie Towne should provide front drive attached garages. According to the survey findings, of the 75 respondents, 93% either strongly disagreed or disagreed with the statement that McKenzie Towne should provide front drive attached garages. This is consistent with the Sustainable Suburbs Study which suggests that the garage and driveway should not be the dominant architectural feature. 87% of surveyed residents indicated that they agree or strongly agree that McKenzie Towne should encourage front porches and balconies.

Of the 75 households surveyed, only 5 have “granny-suites” located above their garage. Of the five granny-suites, 2 are for extended family, 2 are occupied by a rental tenant and 1 is for guests.

According to the survey, only 6% of the 75 respondents indicated that they strongly agree or agree that McKenzie Towne should increase multi-family housing near the neighbourhood square. The surveyed respondents feel that a sufficient number of multi-family housing units have been constructed in the village square.

Surveyed residents were asked to suggest three improvements in regards to housing in McKenzie Towne. Of the 75 households surveyed, 37% indicated that housing in McKenzie Towne is fine and they would not suggest any improvements and 9% of respondents did not answer. Of the 40 residents which provided a number one recommendation, 23% suggested that the lots and front yards should be larger. This is somewhat consistent with earlier findings that indicated that 33% of respondents agree or strongly agree with the statement that McKenzie Towne should increase the size of the lots. The second most suggested improvement cited by 22% of the 31 respondents is for

builders to increase the selection of house plans. The third most suggested recommendation by 41% of the 17 respondents is to increase shopping amenities within the community so residents do not have to travel outside the community for goods and services.

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## **CONCLUSIONS ON HOUSING IN McKENZIE TOWNE**

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Survey findings reveal the following relative to housing in McKenzie Towne. First, the housing profile revealed that the majority of residents who have moved to the community of McKenzie Towne resided in the Southeast and Southwest quadrants of Calgary. Moreover, home ownership increased from 59% in their previous home to 97% for households surveyed in McKenzie Towne. The housing profile also revealed that the style of the community was the most important reason for moving to McKenzie Towne. Many residents prefer the small town atmosphere reinforced by architectural elements such as the clock tower, gazebo and general store. The most important reason for selecting their home was the floor-plan. This was followed closely by affordability and architectural style.

Second, the housing portion of the survey also measured satisfaction and sense of community in McKenzie Towne. 85% of residents surveyed are a little more or much more satisfied with living in McKenzie Towne when compared to their previous neighbourhood. The three most important reasons for this level of satisfaction are the friendliness of the residents, the architectural appearance of the community and the small town atmosphere of the community. This high level of satisfaction is supported by the findings measuring sense of community. 83% of respondents indicated that they feel a little more or much more sense of community when compared to their previous community. The three most important reasons for this sense of community are the friendliness of the residents, the frequency and variety of community events and the small town atmosphere of the community.

The survey findings reveal two inconsistencies with the suggested guidelines of the Sustainable Suburbs Study. First, 33% of respondents either agree or strongly agree with increasing the size of lots in McKenzie Towne. This is further supported by the fact that the number one recommendation for improving housing in McKenzie Towne would be to increase the size of the lots. By increasing the size of the lots, the density would

decrease even further below the current adjusted density of 4.6 units per acre; well below the recommended density of 7.0 units per acre. Second, 80% of surveyed residents stated that they either disagree or strongly disagree with the statement that McKenzie Towne should provide more housing for lower income families.

The survey findings also suggest that McKenzie Towne residents support the housing design guidelines recommended in the Sustainable Suburbs Study. 93% indicated that they either strongly disagree or disagree with providing front drive attached garages in their community. Moreover, 87% strongly agree or agree that McKenzie Towne should encourage front porches and balconies.

Fourth, the survey findings offer recommendations from residents in regards to housing in their community. The top three improvements recommended by surveyed residents are to increase the size of the lots, increase the selection of house plans and increase the shopping amenities within the community.

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## 13. TRANSPORTATION

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According to the Sustainable Suburbs Study, the overall objectives of the transportation system in a sustainable suburb are to "...improve mobility choices for all suburban residents, whether or not they own a vehicle, and to reduce the total number and length of private vehicle trips, both within the community and on the overall city street system" (City of Calgary, 1995, 51). This means shifting the emphasis in street layout and design from accommodating more vehicles and more toward the requirements of other forms of transportation. The questionnaire, administered by the researcher, seeks to gather residents views regarding the various alternate forms of transportation such as transit, pedestrian walkways, and cycling. As well, residents offer recommendations for improving the transportation system in McKenzie Towne.

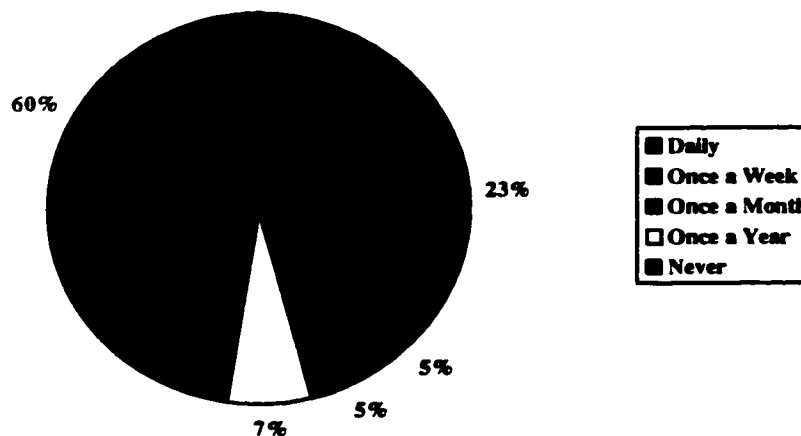
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### TRANSIT

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One of the main recommendations of the Sustainable Suburbs Study is the transit system must be integrated into the community design and be a key component of the community centre and neighbourhood nodes (City of Calgary, 1995). Based on the survey findings, Figure 60 illustrates the frequency of transit ridership which includes the LRT, bus or shuttle bus.

**Figure 60 Transit Frequency (n=75)**



As Figure 60 depicts, 60% of those surveyed never ride transit, 7% use transit once a year and 5% only use transit once a month. Only 23% of residents surveyed use transit on a daily basis with another 5% using transit once a week. According to the residents surveyed who do not ride transit, the most important reason for not using transit is because they have a car which they use as their mode of transport. The second most important reason for not riding transit is the transit schedule is inconvenient and limited to only peak times such as morning and evening rush hour. The third most important reason for not using transit is that it takes too long to get to the final destination point.

According to residents surveyed who do use transit, the most important reasons for using transit is the convenience. According to the Sustainable Suburbs Study, transit ridership will increase if 85% of houses are located within a five minute walk or 400 metres of a bus stop. According to the survey, 33% of residents who use transit walk less than one minute to the transit stop. Another 43% walk less than 3 minutes to their transit stop and 17% walk less than 5 minutes to the transit stop. Only 7% of residents who use transit walk more than 8 minutes to their bus stop. The second most important reason residents use transit is that it is cost effective. Many residents stated that they can not afford to pay for parking downtown. According to the survey, 50% of residents surveyed who use transit, ride the bus or LRT on a daily basis to work. The third most important reason for using transit is that it is less stressful than driving on Calgary's congested roadways. Since McKenzie Towne is located adjacent to Deerfoot Trail near Highway 22X, residents who work downtown are forced to travel a great distance on expressways, such as Deerfoot Trail, with four lanes of traffic and a posted speed limit of 100 km/h. Residents stated that they find driving on Deerfoot Trail intimidating and dangerous in winter.

The Sustainable Suburbs Study recommends that transit stops should be integrated into neighbourhood nodes and should be attractive structures that provide shelter, seating for pedestrians, convenient loading/unloading, telephones and adequate lighting. According to the survey findings, 34% of respondents either agree or strongly agree that transit stops in McKenzie Towne provide adequate seating and lighting. Whereas, 8% either strongly disagree or disagree that transit stops provide adequate seating and lighting. As well, of the 74 respondents, 57% neither disagree or agree that transit stops provide adequate seating and lighting. The high proportion of respondents

who neither agree or disagree may be supported by the small proportion of residents who use transit regularly. Residents who do not use transit regularly cannot offer an informed opinion.

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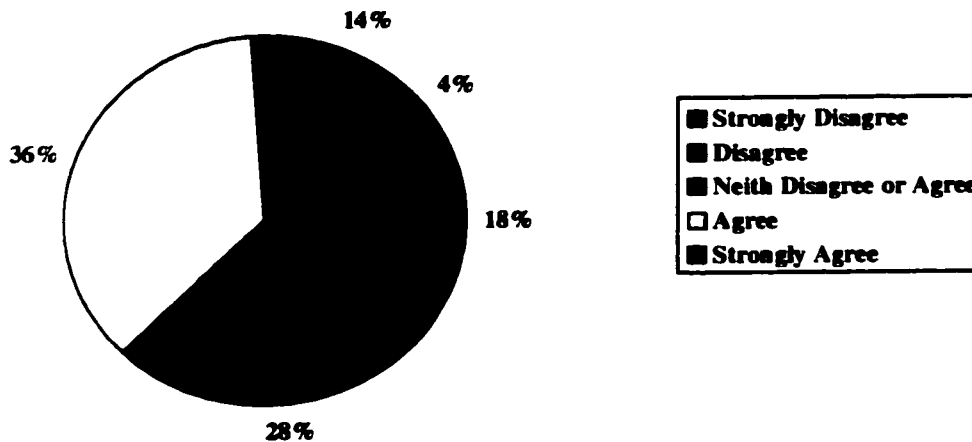
## TRANSPORTATION GUIDELINES OF THE SUSTAINABLE SUBURBS STUDY

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The questionnaire asked residents of McKenzie Towne to indicate their level of agreement with various statements regarding the transportation system in their community. The statements are based on design guidelines suggested in the Sustainable Suburbs for creating an effective transportation system within a new community. The statements are measured using a Likert Scale ranging from strongly agree to strongly disagree.

Respondents were asked to indicate their level of agreement with the statement that in McKenzie Towne transit is accessible to all community residents. The following figure depicts the findings:

**Figure 61 Accessibility of Transit (n=74)**



50% of those surveyed either agree or strongly agree that transit is accessible to all community residents. Whereas, 22% either disagree or strongly disagree with the statement that transit is accessible to all community residents. The findings are somewhat inconsistent with the findings indicating that 93% of residents who use transit walk less than five minutes to the nearest transit stop. The findings therefore beg the



question as to the meaning of accessible. Some residents will view accessible as how far they must travel to a transit stop, whereas other residents may view accessible as their travel time on the bus or LRT.

One of the objectives of a sustainable suburb is to provide for efficient, safe and comfortable walking and bicycling as an alternative to the private vehicle. One design guideline suggested by the Sustainable Suburb Study to achieve the aforementioned objective is to separate cyclists and pedestrians from vehicles via narrower roadways, reduced corner curb radii, rear lanes and separate pathways. The questionnaire asked respondents to indicate their level of agreement with the statement, that in McKenzie Towne, walkways effectively separate cyclists and pedestrians from vehicles. The following figure depicts the findings.

**Figure 62 Walkways Separate Cyclists and Pedestrians from Vehicles (n=74)**

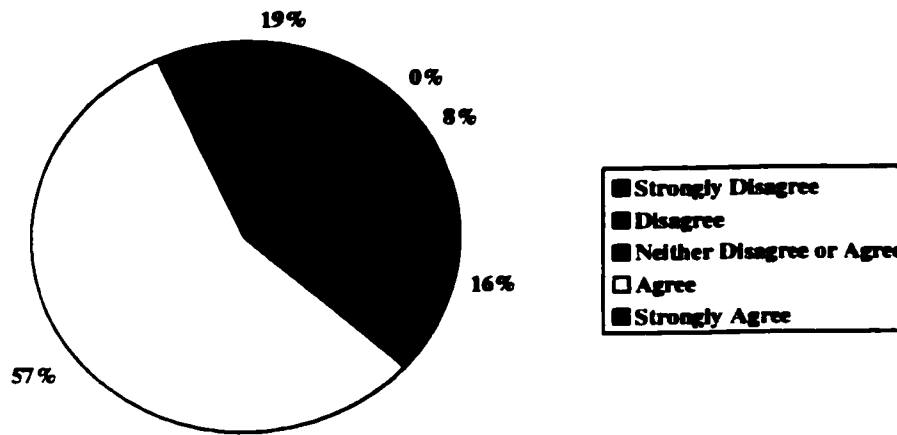
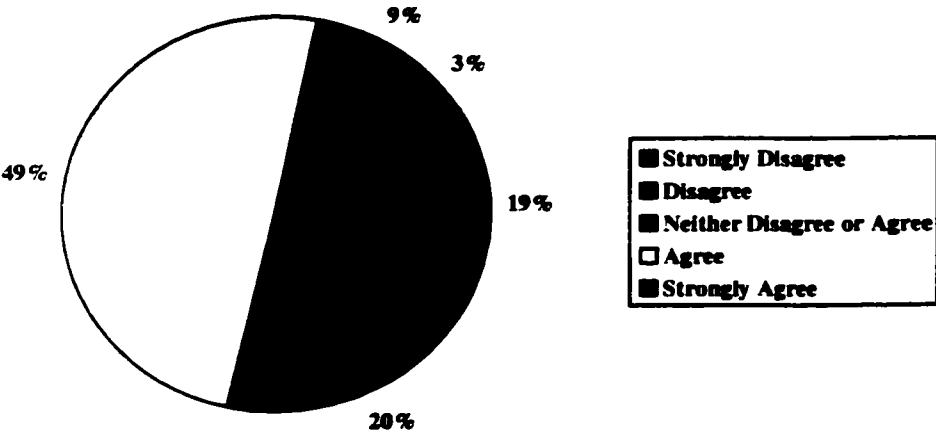


Figure 62 illustrates that 76% of respondents strongly agree or agree that in McKenzie Towne pedestrians and cyclists are effectively separated from vehicles. Of the 74 respondents, only 8% disagree that walkways effectively separate cyclists and pedestrians from vehicles. Respondents were asked to indicate their level of agreement to a similar statement that cyclists and pedestrians can travel about safely. The findings are consistent to the previous statement as 80% of respondents either agree or strongly agree that cyclists and pedestrians can travel about safely. Only 5% of respondents disagree that in McKenzie Towne cyclists and pedestrians can travel about safely.

Back lanes are integral to sustainable suburbs as they reduce the interaction between pedestrians and vehicles by removing traffic from the front of houses to the rear of the house. The survey asked respondents to indicate their level of agreement with the statement that in McKenzie Towne, rear lanes remove traffic from the street. Figure 63 depicts the findings.

**Figure 63 Rear Lanes Remove Traffic from the Street (n=74)**



As Figure 63 illustrates, 69% of respondents agree or strongly agree that rear lanes are effective in removing traffic from the street. Only 22% of respondents disagree or strongly disagree that in McKenzie Towne, the rear lanes do not remove traffic from the street.

The Sustainable Suburbs Study suggests that the pathway system should provide links to all areas of the community. The survey asked respondents to indicate their level of agreement with the statement that in McKenzie Towne the pathway system provides adequate linkages to all areas of the community. Figure 64 depicts the findings.

**Figure 64 Effective Pathway System Linkages (n=74)**

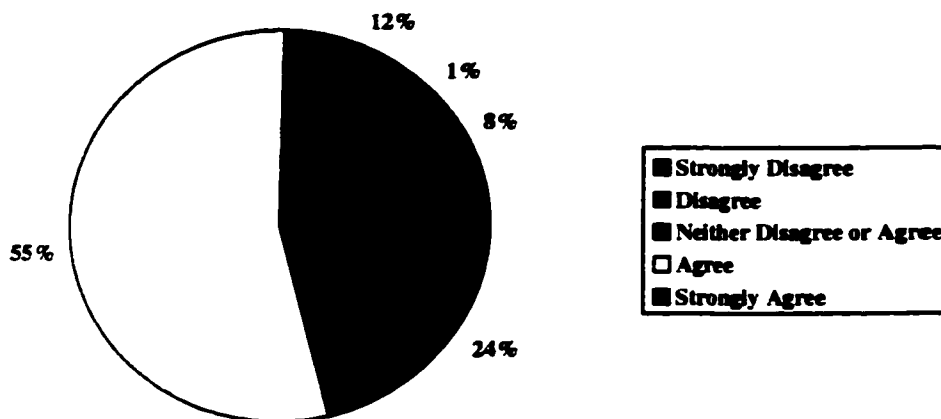


Figure 64 illustrates that 67% of respondents either agree or strongly agree that in McKenzie Towne, the pathway system provides links to all areas of the community. Only 9% disagree or strongly disagree and the remaining 24% are neutral in their opinion that the pathway system provides links to all areas of the community.

Surveyed residents were asked to suggest three improvements in regards to the transportation system in McKenzie Towne. Of the 75 households surveyed, 23% indicated that the transportation system in their community was fine and they would not suggest any improvements and 9% of respondents did not answer. Of the 51 surveyed residents who provided a number one recommendation, 63% suggested that the frequency of the transit system should be increased and the time period of service should be extended. This is consistent with earlier findings that indicate that the second most important reason for not riding transit is the schedule is inconvenient and limited to only peak times such as morning and evening. The second most suggested improvement cited by 32% of the 38 respondents is identical to the most suggested improvement: increase the frequency of transit service and extend the hours of service. The third most suggested recommendation by 63% of the 8 respondents is to provide an express transit service to downtown.

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## **CONCLUSIONS ON THE TRANSPORTATION SYSTEM IN McKENZIE TOWNE**

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Survey findings reveal the following main findings relative to the transportation system in McKenzie Towne. First, only 23% of residents surveyed use transit on a daily basis and 60% of surveyed residents never ride transit. According to residents surveyed who do ride transit, the three most important reasons for using the service are convenience, cost effectiveness and reduced stress when compared to driving. For those residents who do not use transit, the top three reasons are they have a car, inconvenience due to the limited schedule and lengthy travel times.

Second, the survey findings also suggest that McKenzie Towne residents support the transportation guidelines recommended in the Sustainable Suburbs Study which encourage walking, cycling and transit. According to residents surveyed, only 8% either disagree or strongly disagree that transit stops in McKenzie Towne provide adequate seating and lighting. As well, 76% of respondents strongly agree or agree that in McKenzie Towne pedestrians and cyclists are effectively separated from vehicles. Moreover, 80% of residents surveyed either strongly agree or agree that cyclists and pedestrians can travel about safely in McKenzie Towne. Another design guideline suggested in the Sustainable Suburbs Study is to create back lanes to remove vehicles from the front of the street. According to residents surveyed, 59% of respondents strongly agree or agree that rear lanes are effective in removing traffic from the front street. Only 22% of respondents disagree or strongly disagree that in McKenzie Towne the rear lanes do not remove traffic from the street. One further design guideline suggested in the Sustainable Suburbs Study is to create a pathway system that links together all areas of the community. 66% of respondents surveyed either strongly agree or agree that in McKenzie Towne, the pathway system provides links to all areas of the community. Only 9% of surveyed residents disagree or strongly disagree that the pathway system provides links to all areas of the community.

Third, residents suggested three improvements to the transportation system in McKenzie Towne. The most frequent recommendation and the second most recommended improvement is to increase the frequency and extend the period of service for transit servicing McKenzie Towne. The third most recommended improvement is to have an express bus from McKenzie Towne to downtown Calgary.

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## 14. THE VILLAGE SQUARE

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Central to both the design of neotraditional communities and sustainable suburbs, neighbourhood nodes or village squares provide for more of people's daily needs within the community, allow trips to be combined and reduce the need to drive outside the community. Another benefit of a village square is that it creates a dynamic and vibrant core to the community that provides a sense of place or community identity. In McKenzie Towne, the village square provides commercial activities as well as supporting transit facilities and civic vitality.

The following chapter presents residents' views regarding the first village square to be constructed in the neighbourhood of Inverness. As well, surveyed residents offer their recommendations for ways to improve the village square.

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### VILLAGE SQUARE GUIDELINES OF THE SUSTAINABLE SUBURBS STUDY

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According to the Sustainable Suburbs Study, neighbourhood nodes must be as central as possible to allow all residents access to community facilities, foster neighbourhood identity and shorten trips within the community. The study suggests that neighbourhood nodes or village squares should be located within a five minute walk from the furthest house in the neighbourhood. According to the residents surveyed, 37% are located less than one minute from the village square, 40% are between 2 and 3 minutes from the village square, 19% are between 4 and 5 minutes from the village square and only 4% are located more than 6 minutes from the village square.

The Sustainable Suburbs Study suggests that for village squares to be effective in reducing vehicle trips outside the community, they must provide sufficient retail services and goods for daily items. The survey findings indicate that 61% of surveyed residents agree or strongly agree that in McKenzie Towne, the village square provides sufficient retail services for daily items. This compares with 26% of surveyed residents who strongly disagree or disagree that the village square provides sufficient retail services for daily items. The survey analysis also reveals that 65% of the residents surveyed use the general store five or more times a month, 13% four times a month, 4% three times a

month, 5% two times a month, 1% once a month, 3% never and 5% do not know that the general store is located in the community.

One further design guideline suggested by the City of Calgary to create sustainable suburbs is that village squares and community centres should be accessible by pedestrian and cyclist travel. Of the 75 residents surveyed, 93% either agree or strongly agree that in McKenzie Towne the village square is accessible by pedestrian and cyclist travel. Moreover, 89% of the residents surveyed either agree or strongly agree that the village square can be traveled to by a number of direct routes.

The Sustainable Suburbs Study recommends that in order to achieve an effective pedestrian environment where residents can travel to the village square by bicycle or foot, sidewalks should be a minimum of 2.0 metres in width where street parking is parallel and 2.5 metres in width where street parking is angled at 90 degrees. The survey findings do not support increasing the sidewalk widths, from the current 1.4 metre width, as 97% of residents either strongly agree or agree that sidewalks are wide enough for pedestrian travel around the village square. Only 1% of the residents surveyed strongly disagree that the sidewalks around the village square are sufficient in width.

The Sustainable Suburbs Study suggests that neighbourhood nodes should provide adequate on-street parking on both sides of the street. Despite the fact that there is parallel parking on both sides of the drive aisle for the roadway framing the village square, 22% of surveyed residents strongly disagree or disagree that there is adequate on-street parking on both sides of the road surrounding the village square. This compares to 62% of surveyed residents who agree or strongly agree that there is adequate on-street parking surrounding the village square.

Another component in the creation of sustainable suburbs is that village squares should provide both public and private activities, which provide a greater variety of activities in close proximity to residents, provide local employment and security and safety. According to the survey, only 9% of residents strongly disagree or disagree that the village square provides adequate public and private activities. Whereas, 49% of surveyed residents either agree or strongly agree that the village square provides adequate public and private activities. As well, 41% neither agree or disagree that the Inverness Village Square provides adequate private and public activities. As well, 43% of residents

surveyed use the village square park at least four times a month. Only 13% of residents do not use the park located in the village square.

In conjunction with providing private and public activities in the village square, the Sustainable Suburbs Study suggests that high density housing should be located around the square. The intention of this guideline is to maximize the number of residents within the shortest walking distance to civic and transit facilities. The survey analysis reveals that 77% of residents either agree or strongly agree that the village square contains sufficient high density housing. Only 3% of residents surveyed stated that they strongly disagree that sufficient high density housing is located around the village square.

One further design element recommended for sustainable suburbs is to locate residential uses above retail uses. Currently in McKenzie Towne, there are no residential units located above the commercial uses in the village square. Despite the fact that there are no residential uses above retail uses in the village square, 20% of those surveyed agree or strongly agree that McKenzie Towne provides a sufficient number of apartments above storefronts.

One last important policy recommended by the Sustainable Suburbs Study is that village squares and the Towne Centre should encourage local employment opportunities. According to the survey analysis, 31% of the residents surveyed either disagree or strongly disagree that the village square provides sufficient employment opportunities. This compares to 16% of residents who agree or strongly agree that the village square provides sufficient employment opportunities.

Surveyed residents were asked to suggest three recommendations for improving the village square in McKenzie Towne. Of the 75 households surveyed, 40% indicated that the village square was fine and they would not suggest any improvements and 13% of respondents did not answer. Of the remaining 35 respondents, the most frequent suggested improvement is to increase the number of retail services. This will not be accomplished until the Towne Centre is constructed and retail stores, such as IGA, open. The second most frequent suggestion, recommended by 29% of the 21 respondents, for improving the village square is to limit or decrease the parking. This is contrary to one of the design guidelines which encourages parking in the village square to provide safety for pedestrians and increase sidewalk life which rarely occurs in the absence of on-street

parking. However, the residents who suggested limiting or decreasing parking stated that it poses a safety risk for children playing in the village square. Only 7 respondents indicated a third most frequent response for improving the village square. The seven residents suggested the following seven various improvements: increase the number of retail services, construct a community centre for the residents, provide more activities in the village square, increase the lighting, provide waste bins for animal excrement, construct a skating rink in the winter and provide additional seating in front of the general store.

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## **CONCLUSIONS OF THE VILLAGE SQUARE IN INVERNESS**

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The village square is one of the main components in creating both sustainable suburbs and neotraditional communities. Village squares which are centrally located provide recreational, social and environmental benefits for a community. According to the survey, 96% of residents are located less than five minutes from the village square which satisfies one of the design guidelines suggested in the Sustainable Suburbs Study. One of the main findings of the survey in relation to the village square is that despite 61% of the residents stating that they agree or strongly agree that the village square provides sufficient retail services, the most frequent suggestion for improving the village square was to increase the number and variety of retail goods and services. This recommendation will be accomplished when the Towne Centre is constructed and commercial uses such as a grocery store, bank, video store and pharmacy open to the public.

The Sustainable Suburbs Study suggests several design guidelines to follow when designing a village square. In McKenzie Towne, several of these guidelines are achieved. More specifically, village squares should be accessible by cyclists and pedestrians. Of the 75 residents surveyed, 93% either agree or strongly agree that in McKenzie Towne, the village square is accessible to pedestrian and cyclist travel. Moreover, 89% agree or strongly agree that the village square can be traveled to by a number of direct routes.

The City's policy document suggests a minimum sidewalk width of 2.0 metres for walkways surrounding the village square. In McKenzie Towne, the sidewalks which surround the village square are only 1.4 metres in width, less than the minimum standard.



However, 97% of the surveyed residents either agree or strongly agree that the sidewalks are wide enough for pedestrian travel around the village square.

Another paradox of the survey findings is the design requirement for on-street parking on both sides of the drive-way around the village square. 62% of surveyed residents agree or strongly agree that there is adequate on-street parking around the village square. Whereas, 22% of residents strongly disagree or disagree that there is adequate on-street parking. However, the second most frequent suggestion for improving the village square is to limit or decrease parking around the village square.

Other conclusions based on the survey analysis include the majority of respondents agree that the village square in McKenzie Towne provides both private and public activities and that it contains sufficient high density housing. Whereas, the majority of respondents disagree that the village square provides sufficient employment opportunities. Currently, the only employers in the Village of Inverness include the general store, dental office and insurance company.

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## 15. OPEN SPACE

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In a sustainable suburb, the protection of existing natural areas strongly influences community design and connections to the city-wide regional open space system are very important (City of Calgary, 1995). Neotraditional plans treat open space in a formal way, both functionally and locationally. Village squares, town greens, formally designed parks and recreation areas are common features of a neotraditional town (Urban Land, 1992). There are four different types of specialized open spaces associated with McKenzie Towne: formal landscaped spaces in the Towne Centre, formal open space areas in the centre of each village, playgrounds interspersed throughout the neighbourhood and large continuous greenways areas which link together to form a pathway system throughout the community.

The following chapter presents residents' views regarding the various types of open space in McKenzie Towne. As well, residents provide suggestions as to how the open space system may be improved within the community of McKenzie Towne.

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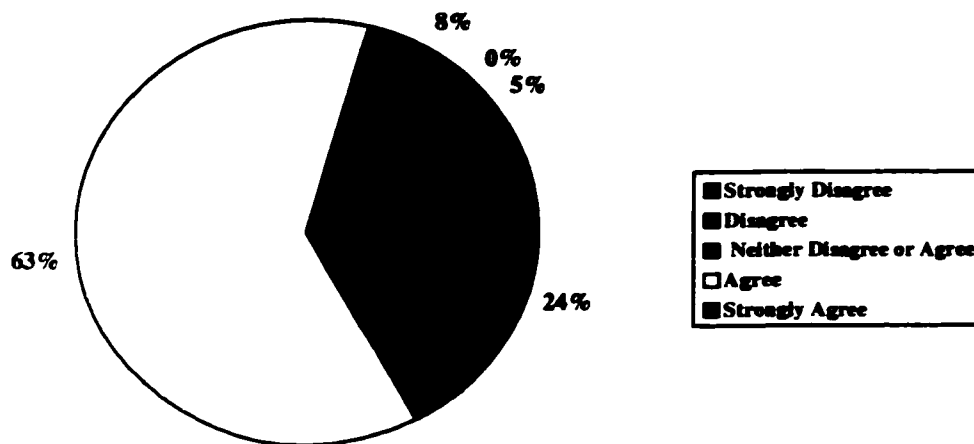
### OPEN SPACE GUIDELINES OF THE SUSTAINABLE SUBURBS STUDY

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According to the Sustainable Suburbs Study, an adequate variety of open space areas are necessary to improve pedestrian and cyclist movement, provide a variety of outdoor recreational activities, and contribute to a safe and vibrant community (City of Calgary, 1995). According to residents surveyed, 92% either strongly agree or agree that in McKenzie Towne, there are a variety of open space areas. Only 3% of residents surveyed disagree that there are a variety of open space areas.

The Sustainable Suburbs Study suggests that the various components of the open space system should link together through the use of the street system, pathway system, linear parks and utility right-of-ways. The survey findings suggest that the majority of residents feel that in McKenzie Towne the open space areas are effectively linked together. The following figure depicts the findings:

**Figure 65 Effectiveness of Open Space Linkages (n=74)**



Only 5% of respondents disagree that in McKenzie Towne open space areas are linked together. Whereas, 71% of respondents either agree or strongly agree that the open space areas are linked together in the community. According to the residents' survey, 81% of respondents either agree or strongly agree that the pathways are effectively integrated into the open space system. Only 3% of respondents disagree that the pathway system in McKenzie Towne is not effectively integrated into the open space system.

Coupled with the importance of linking the open space system, the Sustainable Suburbs Study suggests that neighbourhood parks should be accessible to all residents. Based on the survey analysis which indicated that 96% of surveyed residents travel less than five minutes to the village square, which contains a formal park, the researcher can infer that open space is accessible to all residents. According to the residents surveyed, 93% either agree or strongly agree that neighbourhood parks are accessible to all residents.

The Sustainable Suburbs Study suggests that open space systems should provide a sufficient number of recreational activities. The following figure illustrates the level of agreement to the statement that in McKenzie Towne the open space system provides a sufficient number of recreational activities.

**Figure 66 Sufficient Recreational Activities (n=73)**

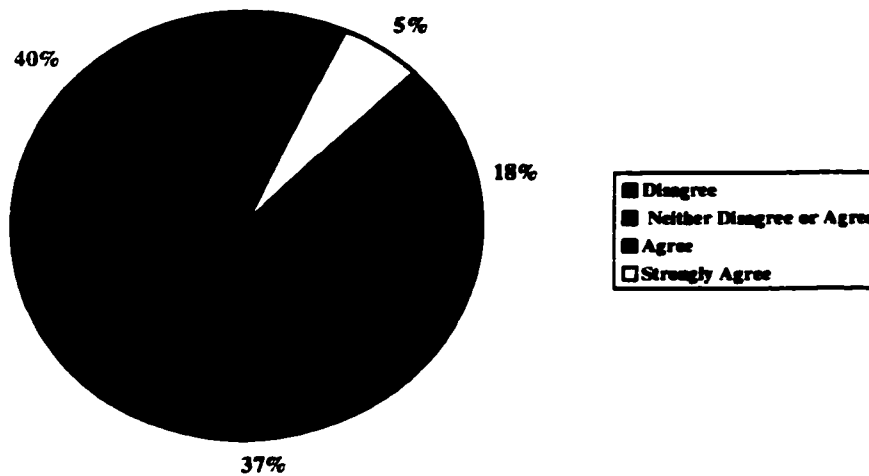


Figure 66 illustrates that of the 73 residents surveyed, 18% disagree, 37% neither disagree or agree, 40% agree and 5% strongly agree that there are sufficient recreational activities available in McKenzie Towne. The survey findings are low in comparison to previous findings from the residents' survey. This may be explained by the fact that at the time of surveying, the stormwater lake and joint use site were not constructed and available for public use.

One further recommendation of the City's study on sustainable suburbs is to locate joint use sites close to the community centre of neighbourhood nodes. At the time of surveying, the first joint use site was not open to the public. Nonetheless, of the 73 residents surveyed, 20% either disagree or strongly disagree, 38% neither disagree or agree, 16% agree and 5% strongly agree that a school site is conveniently close to the village square.

The Sustainable Suburbs Study recommends that residents living in sustainable suburbs should be involved in the planning of their community facilities. Despite there being very little opportunity for residents to be involved in the planning of McKenzie Towne, the survey findings indicate that 21% of respondents either agree or strongly agree with the statement that residents living in McKenzie Towne are actively involved in the planning of the community. Whereas, 7% strongly disagree and 26% disagree with the statement that in McKenzie Towne, residents are actively involved in the planning of the community.

Surveyed residents were asked to suggest three recommendations for improving the open space system in McKenzie Towne. Of the 75 residents surveyed, 12% did not answer and 48% of the respondents indicated that they would not suggest any improvements. The remaining 40% of respondents indicated that the most frequent suggested improvement is to provide more recreational activities by building a large green space area. Residents expressed the desire to be able to play football or soccer with friends and family. This recommendation is consistent with the design guideline that in a sustainable suburb, there should be a number of recreational opportunities for residents. In McKenzie Towne, the first joint use site has recently been constructed, providing residents access to a large green space area for recreational activities such as soccer and baseball. The second most frequent recommendation, offered by five of sixteen residents, is that the pathway system in McKenzie Towne should link to the city-wide pathway system. In order to achieve a contiguous pathway system an overpass will have to be constructed across Deerfoot Trail to the community of Lake McKenzie, which lies immediately east of the city-wide pathway through Fish Creek Park. Only four respondents offered a third most frequent recommendation and due to the insufficient response their responses are not provided.

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## **CONCLUSIONS OF THE OPEN SPACE SYSTEM**

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The residents surveyed agree that McKenzie Towne provides a variety of open space areas. However, 18% of residents surveyed disagree that there are sufficient recreational activities in the community. This is further supported by the fact that the most frequent recommendation for ways to improve the open space system is to provide more recreational opportunities by constructing the joint-use site with a baseball field and soccer field. As stated earlier, the first joint use site has recently been completed, providing recreational activities such as baseball and soccer to the residents of the community.

Residents agree that the various components of the open space system in McKenzie Towne are linked together, as 62% either agree or strongly agree with the statement that in McKenzie Towne open space areas are linked together. As well, a further 81% of respondents either agree or strongly agree that the pathways are effectively integrated into the open space system. Furthermore, the second most frequent

recommendation for ways to improve the open space system is to link the existing pathway system established in McKenzie Towne to the city-wide pathway system.

The Sustainable Suburbs Study recommends that residents should be involved in the planning of their community. Despite the lack of opportunity for residents to participate in the planning of their community, 21% of residents surveyed either agree or strongly agree with the statement that in McKenzie Towne, residents are actively involved in the planning of the community. Of the 73 respondents, 7% strongly disagree and 26% disagree with the statement that in McKenzie Towne, residents are actively involved in the planning of the community.

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## 16. ENVIRONMENTAL ISSUES

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One of the three building blocks of a sustainable community is environmental health. Environmental health implies that humans are using nature's productivity without impairing it. Neotraditional communities, such as McKenzie Towne, are not predicated and marketed on sustainable principles such as recycling, energy consumption and waste water management. The following chapter presents the findings from the environmental section of the residents' survey. The findings clearly indicate that there is support from McKenzie Towne residents to adopt several of the City's recommended policies to decrease energy consumption and waste generation.

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### ENVIRONMENTAL GUIDELINES OF THE SUSTAINABLE SUBURBS

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The residents' survey indicates support for the idea that builders in McKenzie Towne should audit all new buildings for construction waste. The findings indicate support from residents for a program similar to the one initiated in the community of Rocky Ridge in which 71% of construction waste was removed from site and recycled at one of the recycling companies (Calgary Herald, 1998).

**Figure 67 Support for Auditing Construction Waste (n=72)**

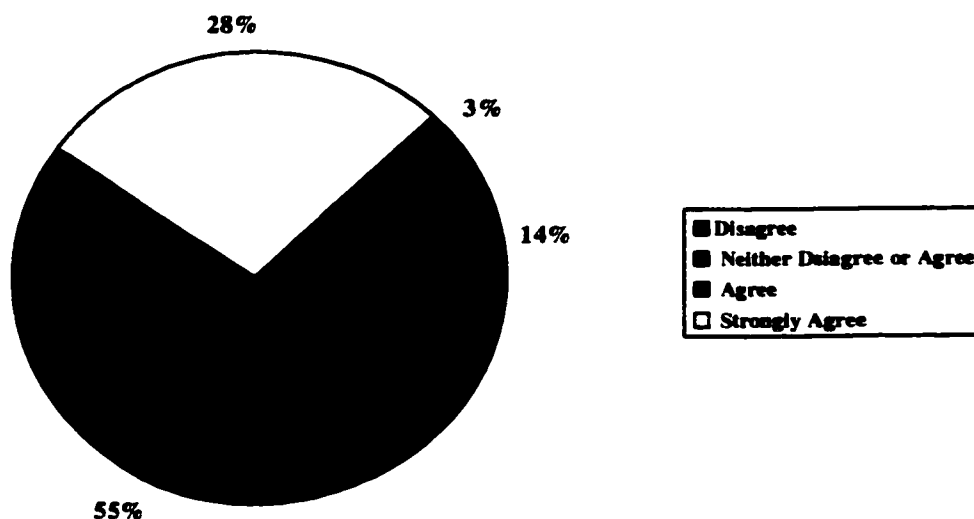


Figure 67 illustrates that 83% of residents surveyed either agree or strongly agree that builders in McKenzie Towne should audit all new buildings for construction waste. As well, the survey findings indicate that 77% of respondents either agree or strongly agree that recycled materials should be used in the construction of new homes.

The Sustainable Suburbs Study suggests that a recycling depot must be included in the design of the community centre. The residents' survey indicates overwhelming support for a recycling depot in McKenzie Towne. Of the 74 respondents, 38% agree and 57% strongly agree that McKenzie Towne should be equipped with bins for dry waste recycling. Of 63 surveyed households, 43% of them recycle dry goods such as newspapers at a location outside the community. The percentage of McKenzie Towne households which recycle dry goods would increase if facilities were present in their community. As well, 66% of surveyed residents either agree or strongly agree that McKenzie Towne should have a wet waste composter for degradable wet waste and yard waste. However, 14% of surveyed residents either disagree or strongly disagree that McKenzie Towne should have wet waste recycling facilities. It is interesting to note that of 63 households, 14% of them presently compost wet waste.

The Sustainable Suburbs Study recommends that all new homes should be equipped with water-saving fixtures and toilets. The residents' survey indicates that of the 73 respondents, 89% either agree or strongly agree that builders should equip all new homes with water saving fixtures and toilets. Only 3% of residents surveyed disagree with the initiative. As well, 52% of the 63 respondents indicated that they have water saving toilets and fixtures installed in their McKenzie Towne home.

Surveyed residents were asked to suggest three recommendations for improving environmental initiatives within the community. Of the 75 residents surveyed, 13% did not answer and 25% indicated that they would not suggest any improvements. Of the remaining 46 respondents, the most frequent recommendation cited by 80% of residents is to install recycling bins in the community. Many residents stated that the green recycling bins could be placed behind the general store in the village square. The second most frequent recommendation cited by 41% of 17 respondents is to audit builders for construction waste to decrease the amount of waste material. The third most frequent suggestion recommended by 33% of the 9 respondents is to install wet waste composters in the community.



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## **CONCLUSIONS ON ENVIRONMENTAL ISSUES**

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Findings from the residents' survey clearly indicate support for increasing environmental initiatives in McKenzie Towne. For example, 83% of respondents either strongly agree or agree that the builders in McKenzie Towne should audit all new building for construction waste. As well, the second most frequent recommendation by surveyed residents for improving environmental initiatives within the community is to audit builders for construction waste. A program similar to the one initiated in Rocky Ridge could easily be implemented in McKenzie Towne with a joint effort between Carma Developers Ltd., the Residents Association, the Calgary Home Builders Association, builders such as Albi, Cedarglen, Heartland, Jayman, and Hawthorne Homes and a waste management company such as Allwaste Systems. If a program is implemented within the community, approximately 70% of all construction waste could be recycled and used in the construction of new homes at a cost similar to haul the excess construction materials to a landfill site.

The Sustainable Suburbs Study also suggests that new communities must have recycling facilities within the community centre. In McKenzie Towne, there are presently no facilities for residents to recycle dry goods such as cans and newspapers. Carma Developers Ltd. could place green recycle bins behind the general store in the village square for residents living in the Village of Inverness to recycle materials. In addition, once the Towne Centre is completed, and a large grocery anchor such as IGA is open to the public, a recycling program could easily be implemented within the community. The residents' survey indicates that there is a strong degree of support for a recycling program within the community, as 95% of respondents agree or strongly agree that McKenzie Towne should be equipped with bins for dry waste recycling. These findings are supported by the fact that the most frequent recommendation for improving environmental initiatives within the community is to install recycling bins.

One further recommendation arising from the survey findings is that residents support the recommendation to equip all new homes with water saving fixtures and toilets. Presently, builders do offer these products in their homes at the discretion of the homebuyer. The survey findings indicate that 89% of respondents either agree or strongly agree that builders should equip all new homes with water saving fixtures and toilets.

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## **17. RESIDENTS' SURVEY CONCLUSIONS**

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The residents' survey indicates the level of support for the guidelines recommended in the Sustainable Suburbs Study in relation to housing, transportation, the concept of a village square and Towne Centre, open space and the environment. The following chapter summarizes the guidelines, established in the Sustainable Suburbs Study, that residents of McKenzie Towne are resistant to support and the guidelines the residents are likely to accept.

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### **GUIDELINES RESIDENTS SUPPORT**

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In regards to housing, residents overwhelmingly supported design guidelines which encourage front attached porches, front drive garages and the construction of multi-family housing surrounding the village square. The surveyed respondents feel that there are a sufficient number of multi-family units surrounding the village square. As well, one characteristic of a neotraditional neighbourhood and a sustainable suburb is the notion of a greater sense of community. According to the survey findings, 83% of respondents indicated that they feel a little more or much more sense of community when compared to their previous neighbourhood. The reasons for this greater sense of community include the friendliness of the residents, the frequency of community events and the small town atmosphere of the community.

Survey results also suggest that McKenzie Towne residents support the transportation guidelines which encourage walking, cycling and transit. A large majority of those surveyed indicated that transit stops are comfortable with adequate lighting, pedestrians and cyclists can travel safely through the community, rear lanes are effective from removing vehicles from the street, and that the pathway system provides links to all areas of the community.

The village square is one of the main components in creating sustainable suburbs and neotraditional communities. According to the survey findings, 96% of residents are located less than five minutes from the village square which satisfies one of the design guidelines of the Sustainable Suburbs Study. As well, the survey findings conclude that the village square is accessible to pedestrians and cyclists; that sidewalks are sufficient in width for pedestrian and cyclist travel; there is adequate on-street parking around the

village square; and that the village square provides both private and public activities. One of the guidelines which the respondents support is to provide employment opportunities within the community. However, the majority of respondents do not agree that the village square provides sufficient employment opportunities.

Survey results also suggest that McKenzie Towne residents support the open space guidelines established in the Sustainable Suburbs Study as the majority of respondents feel that the open space system in McKenzie Towne is linked together, there are a sufficient number of open space areas within the community and the pathway system is integrated into the open space system.

Results from the residents' survey clearly indicate support for increasing environmental initiatives in McKenzie Towne. Based on the guidelines recommended by the City of Calgary, respondents support auditing all new building for construction waste, community recycling programs such as the "Green Box" program, equipping all new homes with water saving fixtures and toilets and establishing a wet waste composter in the community for wet waste and yard waste.

The Sustainable Suburbs Study recommends that residents should be involved in the planning of their community. In McKenzie Towne, 33% of residents strongly disagree or disagree with the statement that in McKenzie Towne residents are actively involved in the planning of the community. It is evident that residents of McKenzie Towne support guidelines which encourage participation in the future planning of their community.

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## **GUIDELINES RESIDENTS DO NOT SUPPORT**

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Based on the residents' survey findings, many of the guidelines recommended in the Sustainable Suburbs Study received little or no support. The following summarizes the guidelines which McKenzie Towne residents do not support in relation to their community.

In regards to housing, 33% of respondents either agree or strongly agree with increasing the size of lots in McKenzie Towne. This is further supported by the fact that the number one recommendation for improving housing in the community is to increase the size of lots. By increasing the size of lots, the density would decrease even further below the current adjusted density of 4.6 units per acre, well below the recommended

density of 7.0 units per acre. The second guideline which residents of McKenzie Towne do not support is providing more housing for lower-income families. An overwhelming 80% of respondents either disagree or strongly disagree with the statement that McKenzie Towne should provide more housing for lower income families.

The residents' survey also indicates a lack of support for increasing transit within the community. Only 23% of residents surveyed use transit on a daily basis and 60% of surveyed residents never ride transit. The three top reasons for not using the transit system are they have a car, inconvenience of the service schedule and excessive travel time. Despite the lack of support for transit within the McKenzie Towne, the top three improvements to the transportation system include increase the frequency, extend the period of service and provide an express service to downtown from the community.

To overcome the recommendations and guidelines of the Sustainable Suburbs Study that residents do not support, public education is necessary. Policy planners, face an uphill battle to overcome prejudices related to low-income housing, density and public transportation, require public education tools and programs. Until educational programming is established, the negative attitudes expressed by surveyed residents and the general public at large, will interfere with the objectives of sustainability.

*PART IV*

**DEVELOPING NEOTRADITIONAL  
COMMUNITIES INTO SUSTAINABLE  
SUBURBS**

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## 18. RECOMMENDATIONS

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The similarities between a neotraditional community such as McKenzie Towne and a sustainable suburb as defined by the Sustainable Suburbs Study cannot be ignored. It is the researcher's conclusion that McKenzie Towne fulfills the majority of the guidelines and recommendations of the Sustainable Suburbs Study by utilizing the village square as the basis of design. Despite the similarities between a sustainable suburb and McKenzie Towne, the philosophical underpinnings of the two types of communities are different. McKenzie Towne is philosophically based on striving to achieve a strong sense of community, reinforced by the architectural elements incorporated in the design of the community. By striving to achieve a strong sense of community, McKenzie Towne exceeds the attributes which create social health or social sustainability. However, achieving economic and environmental health are not paramount objectives of McKenzie Towne. For example, since the density within McKenzie Towne is significantly less than 7.0 units per acre, many of the environmental and economic elements of sustainability are sacrificed.

Whereas, sustainable suburbs are philosophically based on achieving sustainability simultaneously within three dependent spheres: environmental health, social health and economic health. If one of the three main building blocks of sustainability is not achieved in the design of a new neighbourhood, a sustainable suburb is an aberration. In order to develop future neotraditional communities that meet all of the characteristics of a sustainable suburb, many improvements are necessary in the building blocks of fiscal and environmental sustainability. The following chapter offers recommendations that should be incorporated in the development of future neotraditional communities to achieve the ideal of a sustainable suburb. The recommendations may be useful for future developers of neotraditional communities or sustainable suburbs and policy planners working in the arena of sustainable urban design.

**Issue: *Phasing of Development***

**Recommendation:**

Commercial operations to be constructed early in the development process of a neotraditional community, in order to increase the variety of retail goods and professional services and generate local employment opportunities. If residents are able to work and use services provided within their community, it reduces congestion and vehicle emissions, increases walking and cycling within the community and reduces demand on City infrastructure.

**Issue: *Large Joint Use Sites***

**Recommendation:**

Limit the development of large joint use sites that accommodate schools, playfields and community facilities as they undermine efforts to achieve higher residential densities. Not all playfields are required for the school curriculum; therefore separation of non-essential playfields from joint use sites should be considered. The Town Plan indicates the future development of nine joint use sites which can be accommodated in the future greenways dispersed throughout the community. This would increase the opportunity for future residential development, increasing the overall community density to the recommended 7.0 units per acre.

**Issue: *Resident Involvement in Community Planning***

**Recommendation:**

Carma Developments Ltd. and other future developers of neotraditional communities should encourage residents to be involved in the planning of the community. This would allow residents to take responsibility for the public facilities provided in the community and potentially decrease maintenance costs as community groups could manage all common property.

**Issue: *Density***

**Recommendation:**

All communities should try to achieve a minimum density of 7.0 units per acre. This would encourage more efficient land use, slow the absorption of agricultural land, reduce per capita costs for infrastructure, increase transit ridership and reduce costs for supplying public services such as police, fire and ambulance.

**Issue: *Affordable Housing***

**Recommendation:**

Continue to provide housing options targeted at 10% of all dwelling units in a community at households earning no more than the median Calgary household Income. As well, provide housing options for low-income households or individuals. Affordable housing options promote diversity within the community and allow lower income families access to jobs, shops, schools, parks and transit.

**Issue: *Convenient Transit***

**Recommendation:**

The City of Calgary should review the current schedule for transit to McKenzie Towne and offer residents a more convenient schedule. If residents were provided with longer hours of service, increased frequency of service and an express bus to downtown Calgary, transit ridership would invariably increase, reducing vehicle emissions, traffic congestion, driver's stress, fuel consumption and future roadway infrastructure costs.

**Issue: *Recycling of Construction Waste***

**Recommendation:**

A recycling program for construction waste should be implemented in the community of McKenzie Towne. A joint effort between Carma Developers Ltd., and builders such as Albi, Cedarglen, Heartland, Jayman and Hawthorne Homes and a waste management company such as Allwaste Systems could result in recycling up to 70% of all construction waste to be used in the construction of new homes.



**Issue: *Community Recycling Facilities***

**Recommendation:**

Carma Developers Ltd. should initiate a green box recycling program in conjunction with the City of Calgary for sorting recyclable dry waste (paper, plastic, metal and glass) and to locate a permanent wet composter on site for degradable wet waste and yard waste. This would maximize the recycling potential for certain products and reduce the costs for future landfill requirements.

**Issue: *Water Saving Fixtures***

**Recommendation:**

Equip all new homes with water saving fixtures and toilets. Builders in McKenzie Towne should not rely on the discretion of the homebuyer to install water saving fixtures, but instead make them a mandatory item in the construction of new homes.

**Issue: *Reducing Energy Consumption***

**Recommendation:**

Encourage builders to provide more landscaping with the purchase of a new home and provide energy saving appliances and lighting fixtures in all new homes. Trees have the greatest effect on energy conservation because they lower air temperature in summer by shading and act as windbreak in winter. In addition, by providing energy saving appliances in new homes, it conserves non-renewable resources and reduces energy costs.

**Issue: *Public Education***

**Recommendation:**

Encourage policy planners to implement public education programs aimed at decreasing public prejudices of low-income housing, density and public transportation. The objectives of a sustainable suburb can not be achieved at the community level as long as residents continue to resist greater residential densities, low-income housing options and public transportation alternatives.

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# APPENDIX I

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## SECTION A NEIGHBOURHOOD IDENTITY AND HOUSING

A1. How long have you lived at your current address? (**place an X on the scale**) N= 75

<b>44%</b>	<b>28%</b>	<b>24%</b>	<b>4%</b>	<b>0%</b>
Less than 6 months	6 mths -1 Year	1 Yr - 2 Yr	2 Yr - 3 Yr	Greater than 3 years

A2. What are some of the reasons why you chose your present community? (**list the three most important reasons**) N= 74

most important - style of the community  
second most important - style of the community  
third most important - location of the community

A3. What are some of the reasons why you chose your present home? (**list the three most important reasons**) N= 74

most important - interior floor plan  
second most important - affordability of the home  
third most important - architectural style

A4. Please indicate the residential area you resided in prior to moving to McKenzie Towne N = 72

Calgary = 69%      Other = 31%      Average period of time = 6.7 years

A5. Please indicate if you rent or own your house in both your previous and present neighbourhood. (**place an X on the appropriate line**) N= 75

	Owned	Rented
Previous House	59%	41%
Present House	97%	3%

A6. **Compared** to your last neighbourhood or community you lived in, **how satisfied are you** with the neighbourhood you are now living in? (**place an X on the one that applies**) N = 74

69% **much more satisfied** with this neighbourhood that the previous neighbourhood  
16% **a little more satisfied** with this present neighbourhood  
11% **no more or less satisfied** with this neighbourhood that the previous neighbourhood  
1% **a little less satisfied** with this present neighbourhood  
3% **much less satisfied** with this neighbourhood that the previous neighbourhood

A7. Based on the previous question, what are the reasons for this **level of satisfaction** with McKenzie Towne? (**list the three most important reasons**) (*dissatisfaction*) N = 72

most important - friendliness of the residents  
second most important - the architectural appearance  
third most important - small town atmosphere

A8. **Compared** to your last neighbourhood or community you lived in, **how desirable as a place to live** is your present neighbourhood? (**place an X on the one that applies**) N = 73

63% **the most desirable** when compared to my previous neighbourhood  
21% **a little more desirable** when compared to my previous neighbourhood  
12% **no more or less desirable** when compared to my previous neighbourhood  
4% **a little less desirable** when compared to my previous neighbourhood  
0% **much less desirable** when compared to my previous neighbourhood

A9. Based on the previous question, what are the reasons for this **level of desirability** with McKenzie Towne? (**list the three most important reasons**)

The responses to this question were very similar to question A7. By the number of comments received from participants, it was clear that respondents could not distinguish between desirability and satisfaction.

A10. **Compared to your last neighbourhood or community you lived in, do you feel a stronger sense of community in your present neighbourhood? (place an X on the one that applies) N = 73**  
 67% **much more sense of community** when compared to my previous neighbourhood  
 16% **a little more sense of community** when compared to my previous neighbourhood  
 10% **no more or less sense of community** when compared to my previous neighbourhood  
 4% **a little less sense of community** when compared to my previous neighbourhood  
 3% **much less sense of community** when compared to my previous neighbourhood

A11. Based on the previous question, what are the reasons that contribute to this **sense of community** in McKenzie Towne? (**list the three most important reasons**) N = 65

most important - friendliness of the residents  
 second most important - events in the community  
 third most important - small town atmosphere

A12. How would you personally feel if for some reason you had to move away from McKenzie Towne next month? (**mark an X on the scale to show how you would feel**). N = 72

0% delighted                      1% pleased                      28% neutral                      33% badly                      38% terrible

A13. The following questions relate to housing in your community. I will make a statement and please indicate to what extent you agree or disagree. (**circle the letter that best applies**)

**McKenzie Towne should ....**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Disagree or Agree</b>	<b>Agree</b>	<b>Strongly Agree</b>
a) increase the size of lots N = 73	5%	21%	41%	26%	7%
b) provide more housing for lower income families N = 75	31%	45%	17%	7%	0%
c) provide front drive attached garages N = 75	75%	19%	4%	0%	3%
d) allow more choice of architectural styles N = 75	25%	39%	23%	12%	1%
e) encourage front porches & balconies N = 75	1%	1%	11%	39%	48%
f) increase the size of the front yard N = 75	8%	33%	41%	9%	8%
g) increase multi-family housing near neighbourhood squares N = 75	20%	41%	32%	5%	1%

A14. If you could suggest three improvements in regards to housing in McKenzie Towne, what three recommendations would you suggest? (**please list three recommendations**) N = 68

most important - the lots should be larger  
 second most important - builders should increase the selection of floor plans  
 third most important - increase shopping amenities in the community  
 None, it is fine the way it is - 28

A15. Do you have a "Granny Suite" located on your property? N = 75

Yes 7% No 93%

If yes, is it? (Circle the one that best applies)

- a) Occupied by a rental tenant 2 or 40%
- b) Occupied by a home business 0
- c) Occupied by an extended family member 2 or 40%
- d) Other (please specify) - Guest Suite 1 or 20%

## SECTION B TRANSPORTATION

B1. How often do you use transit? (LRT, bus or shuttle service) (Circle one) For those persons who circled never, please proceed to question B5. N = 75

- a) daily 23% b) once a week 5% c) once a month 5% d) once a year 7% e) never 60%

B2. How far (in time) do you walk to get to transit in your community? (Circle one) N = 30

- a) less than 1 minute 33% b) 2-3 minutes 43% c) 4-5 minutes 17% d) 6-7 minutes 0%  
e) over 8 minutes 13%

B3. Where do you ride transit to? and how often? (For each one please circle the appropriate letter) N = 30

	Daily	Once a week	Once a month	Few Times/Year	Once a year	Never
Work	50%	7%	3%	10%	0%	10%
Shopping	0%	10%	7%	3%	0%	80%
Clinic	0%	0%	3%	0%	0%	97%
School	7%	3%	3%	0%	0%	87%
Entertainment	0%	3%	13%	13%	10%	60%
Other (please specify) library = 1	0%	0%	3%	0%	0%	97%

B4. For those people who DO ride transit, what are some of the reasons why you DO ride transit. (list the three most important reasons) N = 30

- most important - convenience
- second most important - cost effective
- third most important - less stressful than driving

B5. For those persons who DO NOT ride transit, what are some of the reasons why you DO NOT ride transit. (list the most important reasons) N = 45

- most important - I have a vehicle
- second most important - transit schedule is not convenient
- third most important - Takes too long to get to my destination

B6. The following questions relate to the transportation system in your community. I will make a statement and please indicate to what extent you agree or disagree (circle the letter that best applies)

In McKenzie Towne .....

	Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
a) transit is accessible to all community residents N = 74	4%	18%	28%	36%	14%
b) walkways effectively separate cyclists and pedestrians from vehicles N = 74	0%	8%	16%	57%	19%

c) back lanes are effective in removing traffic from the street N= 74	3%	19%	20%	50%	9%
d) the pathway system provides adequate links to all areas of the community N = 74	1%	8%	24%	54%	12%
e) transit stops provide adequate seating and lighting N = 72	1%	7%	57%	26%	8%
f) cyclists and pedestrians can travel about very safely N = 74	0%	5%	15%	61%	19%

B7. If you could suggest three improvements in regards to the transportation system in McKenzie Towne, what would be your top three recommendations? **(please list three recommendations) N = 70**

most important - increase the frequency of transit and extend the hours of service

second most important - increase the frequency and extend the hours of service

third most important - an express bus to downtown

None, it is fine the way it is - 17

## SECTION C THE VILLAGE SQUARE

C1. How far **(in time)** do you walk to get to the Village Square in your community? **(Circle one) N = 75**

- a) less than 1 minute 37%   b) 2-3 minutes 40%   c) 4-5 minutes 19%   d) 6-7 minutes 4%  
e) over 8 minutes 0%

C2. The following questions relate to the Village Square in your community. I will make a statement and please indicate to what extent you agree or disagree **(circle the letter that best applies)**

**The Village Square.....**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Disagree or Agree</b>	<b>Agree</b>	<b>Strongly Agree</b>
a) provides sufficient retail services for daily items N = 74	3%	23%	14%	54%	7%
b) is very accessible by pedestrian and cyclist travel N = 75	0%	1%	5%	61%	32%
c) can be traveled to by a number of direct routes N = 75	0%	5%	5%	64%	25%
d) provides adequate public and private activities N = 73	1%	8%	41%	44%	5%
e) provides sufficient high density housing N = 73	3%	0%	21%	62%	15%
f) provides a sufficient number of apartments above storefronts N = 68	6%	7%	66%	16%	4%
g) provides sidewalks that are wide enough for pedestrians N = 74	1%	0%	1%	77%	20%
h) provides sufficient employment opportunities N = 72	6%	25%	54%	13%	3%
I) provides adequate on-street parking on both sides of the road N = 71	7%	15%	15%	54%	8%

C3. Of the following kinds of facilities which may be located in your community, please indicate how often you typically use or attend activities in them.

	Facility is Not in my Area	Never	Less Than once a Month	Once a Month	Twice a Month	Three Times a Month	Four Times a Month	Five or More Times a Month
a) Convenience Store N = 75		3%	3%	1%	5%	4%	13%	65%
b) Community Hall N = 71		54%	32%	13%	0%	1%	0%	0%
c) Medical Office N = 73	36%	47%	16%	0%	0%	1%	0%	0%
d) Village Square Park N = 72	3%	13%	19%	14%	4%	4%	10%	33%
e) Other (specify) dentist (4 responses all less than once a month)								

C4. If you could suggest three improvements in regards to the Village Square in McKenzie Towne, what would be your top three recommendations? (please list three recommendations) N =67

- most important - Increase the number of retail services
- second most important - Limit or decrease parking
- third most important - see study - a number of single items noted
- None, it is fine the way it is - 30

## SECTION D OPEN SPACE & THE ENVIRONMENT

D1. Similar to the previous question, I will make a statement and please indicate to what extent you agree or disagree (circle the letter that best applies)

In McKenzie Towne.....

	Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
a) an adequate variety of open space areas are provided N = 74	0%	3%	5%	70%	22%
b) open space areas are effectively linked together N = 74	0%	5%	24%	62%	8%
c) neighbourhood parks are very accessible to all residents N = 74	0%	3%	4%	73%	20%
d) the pathways are effectively integrated into the open space system N = 74	0%	3%	16%	69%	12%
e) the open space system provides a sufficient number of recreational activities N = 73	0%	18%	37%	40%	5%
f) a school site is conveniently close to the Village Square N = 72	10%	10%	38%	33%	10%
g) residents are actively involved in the planning of their community. N = 73	7%	26%	45%	16%	5%
h) the Village Square provides adequate public open space N = 74	0%	7%	9%	73%	11%

D2. If you could suggest three improvements in regards to the park and pathway system in McKenzie Towne, what would be your top three recommendations? (please list three recommendations) N = 66

- most important - provide more recreational activities
- second most important - Link the pathway system to the City-wide system
- third most important - n/a
- None, it is fine the way it is - 36

D3. The City of Calgary proposes several environmental policies for builders in new communities. This question asks to what extent you agree or disagree with the following policy initiatives. (circle the letter that best applies)

**Builders in McKenzie Towne should.....**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Disagree or Agree</b>	<b>Agree</b>	<b>Strongly Agree</b>
a) audit all new buildings for construction waste N = 72	0%	3%	14%	56%	28%
b) use recycled materials in construction N = 73	5%	8%	19%	53%	14%
c) equip communities with bins for dry waste recycling N = 74	0%	0%	5%	38%	57%
d) equip all homes with water saving fixtures and toilets N = 73	0%	3%	8%	47%	42%
e) design and locate buildings to reduce sun blockage N = 73	0%	7%	12%	53%	27%
f) equip communities with composters for wet waste recycling N = 73	3%	11%	21%	41%	25%

D4. Based on the previous question, have you incorporated any of the mentioned policies into your present lifestyle? Example. water saving toilets, wet composting, recycling, etc. (please list any environmental initiatives you incorporate into your lifestyle) N = 63

- Water saving toilets and fixtures 33
- Recycle dry goods such as newspapers 27
- Recycle cans and bottles 25
- Compost 9
- Utilize a digital thermostat on my furnace 2
- Energy efficient appliances 1
- Nothing 7

D5. If you could suggest three improvements in regards to the environmental initiatives in McKenzie Towne, what would be your top three recommendations? (please list three recommendations) N = 65

- most important - Install recycling bins
- second most important - audit builders for construction waste
- third most important - Install wet waste composters
- None, it is fine the way it is - 19

## SECTION E INFORMATION

E1. Are you? (a) female 61% (b) male 39% N =75

E2. Please indicate the category which corresponds to your age. (please circle) N =75  
 (a) Under 18 years of age 0% (b) 18-24 1% (c) 25-34 43% (d) 35-44 27% (e) 45-54 23%  
 (f) 55 or older 7%

E3. Please indicate your marital status. (please circle) N = 74

(a) Single 11% (b) Married (Includes Common-law) 78% (c) Widowed 4% (d) Divorced/Separated 7%

E4. If you have children, how many are *presently living in your home, in the age groups listed?* (please write down the number of children in the age groups listed) 32 families with children

(22) 1-5 years (15) 6-12 years (6) 13-17 years (11) 18 years and over  
 one child family = 47%  
 two child family = 41%  
 three child family = 9%  
 four or more children = 3%

E5. Which of the following categories describes your current employment status? (place an X beside the appropriate situation) N = 74

62% employed outside the home, full-time	9% home-maker	0% unemployed
8% employed outside the home, part-time	4% retired	
9% self-employed, full-time	1% semi-retired	
3% self-employed, part-time	3% student	

E6. If you work part-time or full-time, do you work from your house? Yes 13% No 87% N = 70

If yes, please list how many days per week

1 day/week = 2  
 2 days/week = 2  
 3 days/week = 2  
 4 days/week = 0  
 5 days/week = 2  
 6 days/week = 1

E7. Please indicate your type of occupation. (place an X beside the appropriate situation) N = 71

30% Managerial/administrative	0% Military
6% Manufacturing	1% Construction
17% Clerical/Sales/Retail	0% Transportation
11% Teaching and related fields	35% Other (specify)

Other categories include (some respondents did not specify, thus it does not equal 25 responses - 35%) medical dental (6), service (2), professional (3), technical (2), real-estate (1), homemaker (3)

E8. Which of these is the highest level of education you have attended, or completed? N = 74

	ATTENDED	COMPLETED
Public Grade School		3%
Secondary School		16%
Community College		7%
Vocational/Technical School		20%
University/College		54%

E9. Please check off the letter that matches your total household income from all sources before tax deductions for 1996 (please circle letter that applies to your household income) N = 71

0% a) Under \$15,000	10% d) \$40,000 - \$49,999	23% g) \$70,000 - \$79,999
1% b) \$15,000 - \$29,999	8% e) \$50,000 - \$59,999	42% h) Greater than \$80,000
4% c) \$30,000 - \$39,999	11% f) \$60,000 - \$69,999	



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