

Calgary Sustainable Suburbs Study

City of Calgary Planning and Building Department

As Canada becomes one of the most predominantly urbanized nations in the world, questions arise as to how to make cities and towns more livable while minimizing the effects of growth on the environment. The City of Calgary commissioned the Sustainable Suburbs Study to address these concerns over ten and twenty year periods. The process considered a number of elements of urban design including transportation, housing, community facilities, and environmental issues and provides sustainable alternatives to the present methods of planning and development.

Development Context

This study began in the Spring of 1994 by the City of Calgary to establish a future planning framework for Calgary's residential suburbs. The Planning Department identified four major reasons for its undertaking:

- to help to implement some of the policies emanating from the recently approved Calgary Transportation Plan,
- to determine how the costs of growth could be controlled through sustainable design principles,
- to better meet the needs of suburban residents,
- to encourage more sustainable lifestyles.

Calgary Transportation Plan: In 1992, the City embarked upon the GoPlan process. This major review of the City's transportation system was concerned with determining transportation and land use policies for a 30 year period when, compared to today, Calgary may have 540,000 more people, 260,000 more houses, and about 470,000 more cars. The GoPlan process has resulted in the Calgary Transportation Plan, approved by Council in May, 1995. During the preparation of the Plan, the public made it clear that it valued the mobility afforded by the City's present road system. However, a great many people expressed concern about the impact that certain road improvements and river crossings would have on natural areas and established communities if the predicted traffic volumes are to be accommodated.

The strategy of the Calgary Transportation Plan was to try and avoid these controversial road improvements, but success largely depended on achieving a significant reduction in the vehicle trips that new suburbs would normally generate. Reducing the need for vehicle trips was one of the major goals of the Sustainable Suburbs Study.

Control costs of growth: One of the major costs faced by the City is providing infrastructure and services to new growth areas. A financial report, The City of Calgary's 10-Year Capital Spending Framework - 1991, highlighted a significant difference between expectations of the public for more and better services, as expressed in documents such as Calgary into the 21st Century and Vision 2020, and the City's ability to pay for them. The Province of Alberta has cut back sharply on transportation grants as well as funding for health care, education, and family support services. These events have provided a stimulus for a fundamental rethinking of how the City manages growth and controls related costs.

Better Meet the Needs of People: There is growing recognition that many communities are not in sync with the needs of many residents. Shops, services, and a range of housing types are inadequate, inconveniently located, or missing entirely from many communities. Residents are required to drive outside of their communities for basic needs and many people are excluded from certain communities because there are not sufficient housing choices.

Encouragement of More Sustainable Lifestyles: While public knowledge and concern for environmental issues has evolved over the past 30 years and is now firmly established in social and educational systems, there is a need to create the realization of the importance of environmental and socio-economic sustainability principles in suburban design.

Defining a Sustainable Suburb

While there is no generally accepted definition of sustainability when related to a suburban community, many consider sustainability to be a useful adjective to describe a community that has been organized in such a way that the fiscal, social, and environmental activities

that take place within it are capable of being sustained far into the future. In this study, the words capable of being sustained mean that:

- **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 that 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.

Figure 1 compares more and less sustainable communities.

	A LESS SUSTAINABLE COMMUNITY	A MORE SUSTAINABLE COMMUNITY
FISCAL	<ul style="list-style-type: none"> • High development costs • High City infrastructure costs • High City maintenance costs • High City operating costs 	<ul style="list-style-type: none"> • Lower costs through: more compact urban form better utilization of services less infrastructure
SOCIAL	<ul style="list-style-type: none"> • Little sense of community, belonging, or neighbourliness • Housing choice excludes certain household types and lifestyles • Design of public areas discourages walking and socializing • Few goods and services provided within community • Rigid separation of uses • Car essential 	<ul style="list-style-type: none"> • Strong sense of belonging to a community; vibrant community life • Wide housing choice catering to many household types and lifestyles • Attractive public areas encourage walking and socializing • Most routine shopping needs met within community • Some mix of uses including employment • Need for car much reduced
ENVIRONMENTAL	<ul style="list-style-type: none"> • Inefficient use of land • High level of air pollution through auto dependency • Community design promotes lifestyles where excessive water, energy, and resource consumption are largely unavoidable • No protection of environmentally sensitive areas 	<ul style="list-style-type: none"> • More efficient use of land • Much reduced air pollution through reduced vehicle trips • Community design promotes lifestyles where consumption and waste can be reduced and conservation encouraged • Significant environmentally sensitive areas largely protected and integrated into the regional open space system

Figure 1

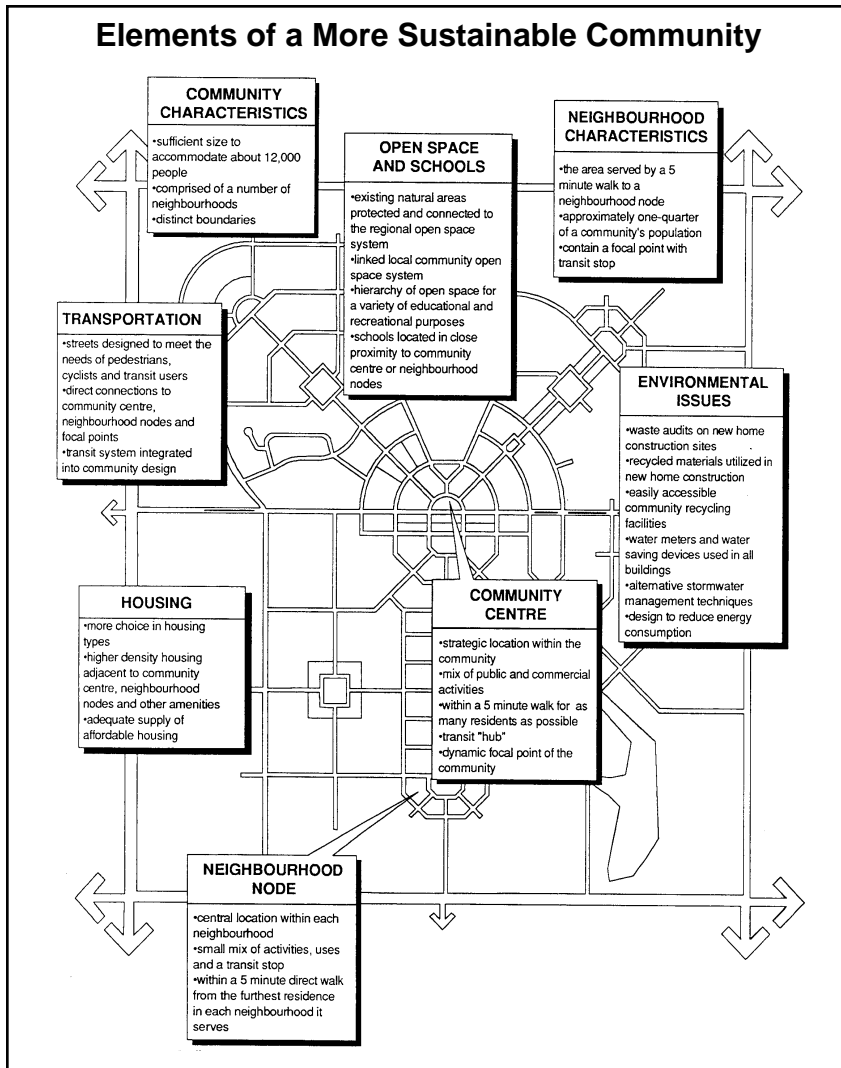


Figure 2

Central Problem or Opportunity

This Study defined the elements of a more sustainable community which are illustrated in *Figure 2*. The following major issues are discussed:

- The City's objectives for new communities had to be clearly identified.
- The City had to develop mechanisms to work more closely with developers, landowners, and others involved in planning new communities in order to offer flexibility where possible.

Planning and Design Issues

The Study focused on the following major issues:

- The need to minimize the City's costs of accommodating growth:
Over the next ten years, Calgary must spend at least one billion dollars on bridges, road widenings,

interchanges, water and sewer treatment facilities, parks and recreational facilities, etc. needed to support the growth and accommodate the traffic originating from new suburbs.

- The desire to minimize housing cost increases:

Developers have spent hundreds of millions of dollars on roads and utilities servicing new communities and these costs are reflected in the price of the serviced lot purchased by new home buyers. These infrastructure costs are based on municipal regulations and developers argue that City regulations must become more flexible if costs are to be reduced and innovative designs encouraged.

- The recognition of the need to use land more efficiently:

Calgary's sprawling city form means that greater lengths of roads, pipes, wires, etc. must be built and maintained. This sprawl results in higher per capita operating costs incurred for distance-sensitive services such as transit, police, fire, ambulance, garbage collection, and snow removal.

- Communities must be designed to facilitate modern lifestyles:

Many communities are still being designed for the postwar nuclear family lifestyle which no longer predominates. Household types are changing and

many communities have largely ignored the needs of non-traditional households which are the fastest growing household type of the 1990s.

- The need to provide more housing choices:
In a community which maintains housing choices, people are able to obtain housing that meets their needs at different stages of the life cycle.
- The need to encourage people to commute by transit:
There are many reasons why people commute to work by car rather than transit including status, speed, and usefulness of the transit system to the present needs of the people. Citywide travel is illustrated in *Figure 3*. Changing suburban design can encourage people to use transit for commuting.
- Encouraging residents to also walk and cycle instead of only driving within a community:
Providing activities, services, and other destinations on convenient pedestrian and cycling routes will encourage these modes of transportation.

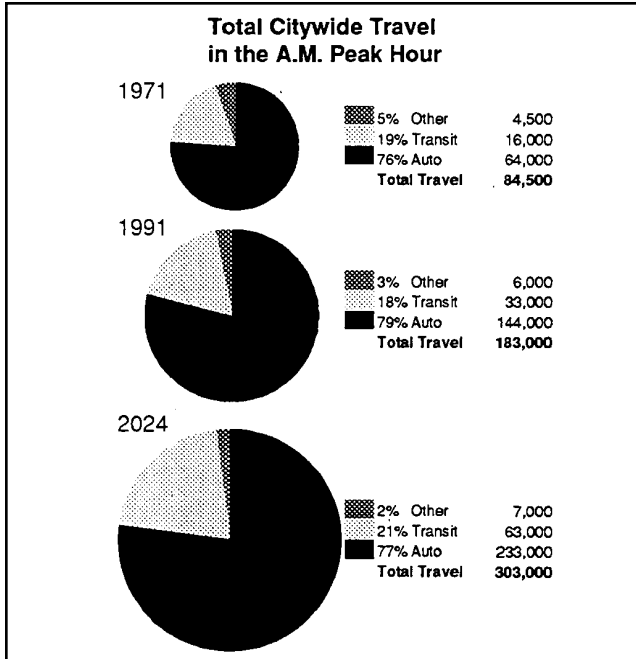


Figure 3

The need exists to design the local streetscape for people first and the movement of cars second.

- **Protect natural systems of high public value:**
Surveys have shown that Calgarians place a high value on the City's parks and natural areas. The study identifies that it is important to find ways of incorporating such spaces into public systems, protecting them from development, and ensuring broad public access.
- **Encourage home builders and home buyers to reduce waste and pollution:**
Waste begins with the construction process as illustrated in Figure 4. As much as 1,016 kg. (1 ton) of lumber per house is currently wasted with little being recycled. Canadians produce approximately 2 kg. (4.4 lbs.) of solid waste per day and use more water and energy than other countries.

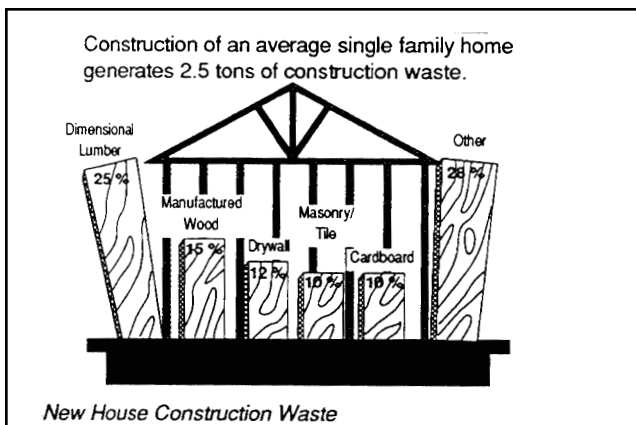


Figure 4

- **Improve the planning process:**
The present process for planning suburban communities is apt to be slow, expensive, and confrontational. There is a limited common vision or sense of partnership and public input is minimal.

Actors and Stakeholders

A Sustainable Suburbs Round Table on Sustainable Community Development was formed in October, 1994 to explore the issues discussed in this report. The Round Table Working Group had nineteen members with representation from the Urban Development Institute, the Calgary Home Builders' Association, the Public and Separate School Boards, the Federation of Calgary Communities, the Alberta Association of Architects, and The University of Calgary. As well, the Directors of Calgary Parks & Recreation, Engineering and Environmental Services, Transportation, and Planning & Building Departments were included. The Round Table was chaired by the Director of the Planning & Building Department. In addition, numerous land-owners, consultants, marketing experts, and staff from City departments attended the Round Table meetings.

Organizational Framework

In this study, the major components of a more sustainable community were assessed under the following headings:

Policy: A general statement of what was required.

Public Benefit Intended: The public purpose behind the policy.

Acceptable Performance: A set of performance standards essential to ensuring that the policy is acted upon.

Design Guidelines: Suggested ideas for use by developers, consultants, builders, City staff, and decision-makers involved in planning, developing, and building communities.

Discussion: Comments to help in understanding the rationale for what was being proposed.

These components were then applied in the analysis of the following issue areas: mixed-use activity centres, open space, housing, transportation, and environmental issues.

Options for Action

The result of this process was a methodology for preparing Community plans intended to bring together expertise from the development industry, the City, school boards, and other public agencies in a collaborative approach to designing better communities:

1. When new suburbs are being developed, the City should appoint a team to work with developer(s) and

consultant(s) in the preparation of the plan. Staff should be appointed to the team from Engineering and Environmental Services, Transportation (including a transit specialist), and Calgary Parks & Recreation Departments, with the Planning & Building Department acting in a leadership role.

2. The Public and Separate School Boards, other public agencies, ward alderman, and representatives of adjoining communities affected by the plan should be invited to participate in the community planning process at appropriate stages.
3. The community planning process should commence with design charettes during which the team would consider opportunities and constraints and develop a collective vision. The public should be invited to provide input, perhaps through a design charette.
4. Oral presentations to the Calgary Planning Commission and Council should be made by the developer and City staff jointly.

Implementation Strategies

Developers and the City administration believe that the policies for sustainable suburbs should be demonstrated in a few new prototype communities. These criteria form the basis for evaluating plans submitted over the next three to five years, during which developments would be monitored and acceptable performance criteria revised as required. It was determined that the following work be undertaken:

1. Develop new street design standards:

The development of a new set of street design standards is an essential element to create communities that work successfully for pedestrians, cyclists, and transit. This review will be undertaken through technical workshops and a Round Table at which all parties with an interest in the application of the standards be invited to participate. It should be carried out in parallel with the planning of new communities in order to assist all parties in understanding how the new standards would be applied on the ground. This study is now underway.

2. Develop an affordable housing policy:

It is recommended that a study be undertaken involving the Planning & Building Department, the Corporate Properties Group, Social Services Department, the development and building industry, and other agencies and interests concerned with the provision of housing. A Round Table format, as used in the Sustainable Suburbs study, was suggested.

3. Develop Indicators of Sustainability:

If communities designed in conformity with the recommendations in this report are any more sustainable than other communities, it is necessary to develop some

measurable indicators of sustainability. For example, there is the need to know if people really are using transit more and their cars less, shopping locally, recycling more waste, etc.

4. Review other requirements, standards, and practices:

Rules about separation of land uses, density, building setbacks, open space, school sites, storm water treatment, and vehicle parking combine to produce physical constraints on achieving sustainability. Some of the standards that need to be reviewed and revised are: commercial land use, to ensure that local community shopping can survive as a critical spatial component of the sustainable suburb; housing, where the Land Use By-Law is reviewed to allow additional dwelling units such as basement suites and garage lofts; schools and open space, where an exploration of other opportunities in joint-use site planning is performed; transportation, where policies are developed to allow transit stopovers for shopping and other multi-purpose trips at community centres; and reducing waste and pollution, where the assessment of the anticipated capital and water savings related to mandatory water metering in new communities and universal metering is examined.

Lessons Learned

The recommendations of this study will be applied to all new suburban communities, however, it must be recognized that:

- The study recommendations are a considerable departure from the status quo and as such would require that all parties involved adopt new approaches to the planning and development of suburban communities.
- With the exception of McKenzie Towne (a new Duany/Plater-Zyberk designed suburb in south-east Calgary), most of the proposed criteria have not been used previously as a package in planning new communities in Calgary.
- The successful implementation of these policies would require the City, being responsible for the provision and long-term operation and maintenance of infrastructure, to take some risks and be prepared to find alternative ways of doing things.
- The development industry would also have to look at doing things differently in achieving creative and innovative solutions.
- Many of the criteria are fairly specific (due to the fact that vague generalities are too open to interpretation) but they have to be monitored and adjustments made as required.

Conclusion

It is unreasonable to assume that the implementation of this study will resolve all of the issues discussed in this case study, nor will it likely produce suburbs that satisfy everyone's vision of what sustainable communities should look like and how they should function. Calgary will, however, have taken a major step in the direction of more sustainable community planning, which can be built upon through experience.

It has just been announced that the first suburb planned using the City's sustainable suburbs guidelines could have as many as 30,000 residents living with some elements that are now seen in southeast McKenzie Towne. Two community cores and nine neighborhood nodes have been indicated in a suggested concept for Midnapore III.

Also key in the planning process is housing density. Midnapore III's population could be living in seven residential units per square acre which is well above the current average of five, but definitely part of the sustainable suburbs goal of gobbling up less land.

Further Reading

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