



FACULTY OF ENVIRONMENTAL DESIGN

# Planning New Communities in Calgary

## Mahogany

Edited by  
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with the assistance of Cameron Salisbury

Faculty of Environmental Design

April 2005

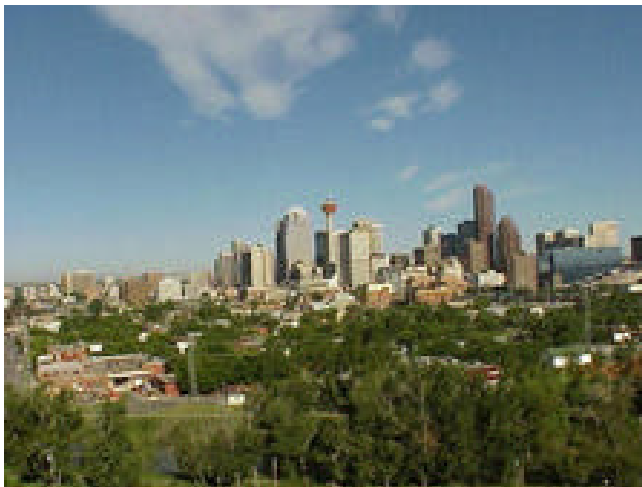


# ***Introduction***

*Dr Sasha Tsenkova*

## **Context**

During the 1950s, the movement of people away from urban centres led to the evolution of the suburban residential neighbourhood, and ultimately to strip commercial and office development. Continuing demand for lower density housing resulted in consumption of



large tracts of land at the expense of the environment and the increasing economic and social costs. In recent years, there have been concerted efforts in North America to deal with the urban sprawl that resulted from unchecked development and laissez-faire attitudes. The challenge of the 1990s, and in the future, is to accommodate growth through development that is marketable and economically feasible; development that is guided by the principles of ‘smart growth’; development that

creates a sense of community and identity through effective planning and design solutions.

## **Objectives**

The overall objective of the Community Planning course is to introduce students to land use planning and development issues in the suburban context.

Specific objectives are:

- To provide a step-by-step introduction to the community planning process and essential planning policies;
- To provide an opportunity to apply community planning and design approaches to the development of a concept land use plan of a suburban community;
- To enhance learning through a framework for efficient collaboration among student teams dealing with sector specific issues – housing, employment, transportation, community facilities, infrastructure.

## Learning by Doing: The Community Planning Project

The City of Calgary has plans for the development of 2,280 hectares (5,635 acres) of land located south of 22X and west of Deerfoot Trail SE. The area is expected to have a Town Centre with a regional health facility, office and retail uses providing 5,500 non-retail jobs. The Southeast Planning Area is further divided into five residential communities and is expected to serve as a primary growth corridor for the southeast sector of the city (Figure 1). Based on anticipated densities and patterns of suburban development, the projected population of this area is expected to exceed 90,000 people.

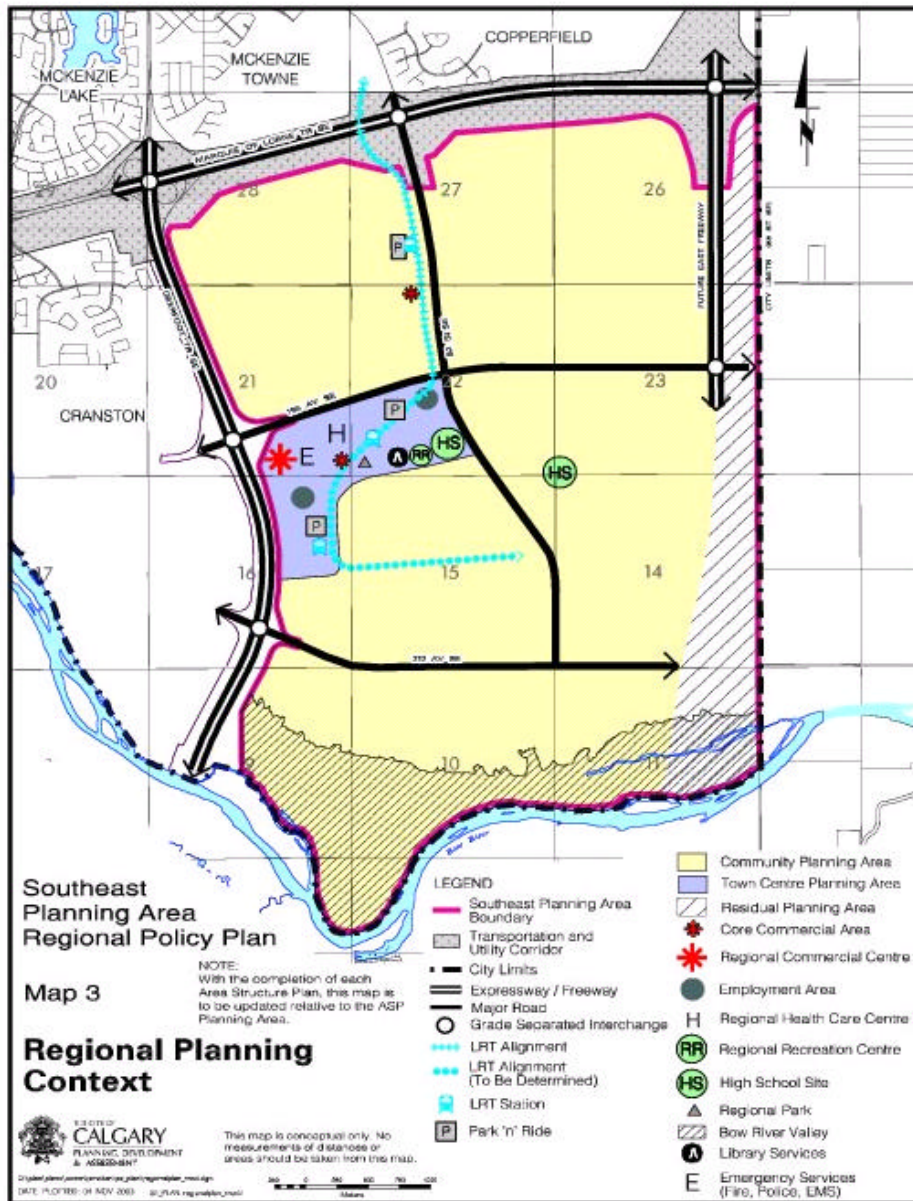


Figure 1: City of Calgary Southeast Area Policy Plan

Community 'B' – Mahogany -- is in the first phase of the development process. It will be bordered to the north by Highway 22X, to the east by the Alberta East Freeway (which is also the eastern city limit), to the south by 196<sup>th</sup> Avenue SE, and to the west by 52<sup>nd</sup> Street SE. The total area of Mahogany is 1108 acres. Within 15-20 years this community is expected to become home for more than 24,000 people/

### **Approach and methodology**

The development of a new community is one of the greatest challenges planners face today. In this context, the research explores the opportunities and alternative scenarios for the planning and development of Mahogany. It analyses the impact of demographic, economic, social, and spatial trends in suburban Calgary. In addition, it evaluates the effect of legal, institutional and policy planning frameworks on the future pattern of development.

The analytical framework of the report builds upon the concepts of comprehensive community planning. It brings together planning policies and design recommendations for important aspects of the community – housing, retail and employment, transit, schools, community facilities, and open spaces. Students are encouraged to apply the principles of sustainable development and smart growth in the evaluation of good practices and the development of alternative planning solutions.



*Field visit to Mahogany with Robert Ollerenshaw, January 2005*



The students were divided into six teams. Each explores different aspects of the community planning process through qualitative and quantitative methods of planning research and data analysis. Information is collected through literature review, analysis of city planning documents and policies, key-person interviews and focus group meetings. The recommendations of the six teams are brought together in the conceptual design of *Land Use Plan for Mahogany* exploring two principal alternatives.

A variety of teaching techniques were used to introduce the students to the basics of community planning -- lectures, seminar presentations, lab sessions, project work, design charrette and field visits. Figure 2 maps out the major stages in this process.

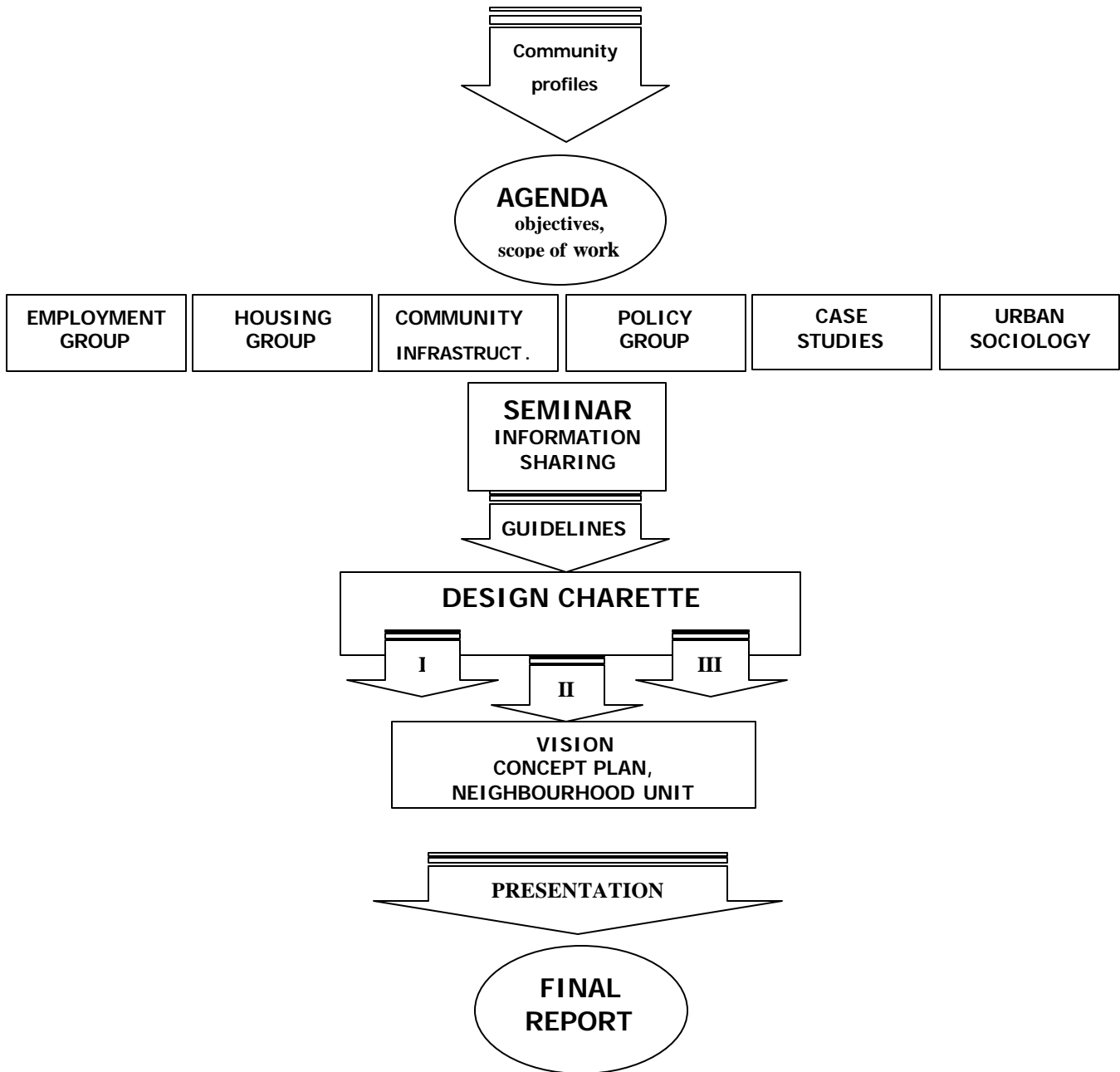
*Presentations by Paul Taylor and Brad Wright, Copperfield, January 2005*



The final outcome of this learning process is presented in the Community Planning report for Mahogany. The research was carried out by a group of first year planning students from January 24th to March 7th, 2005 under the supervision of Professor Tsenkova.

*Good practices of suburban community design, discussion with Bela Seal, Robert Ollerenshaw and Brad Wright, February 2005*

**Figure 2: Learning by Doing: The Approach**



**Milestones:**

- Assignment 1: Presentations of key research findings; information sharing – February 16, 2005  
Group report – planning guidelines & recommendations – March 7, 2005
- Assignment 2: Design charrette: development of a Concept Land Use Plan – March 7, 2005

## **Organization of the Community Planning Report**

This report is intended to provide guidelines and planning policy recommendations for the development of Mahogany Community. The chapters that follow present a systematic exploration of real-life problems and policy outcomes in a simple, practical manner. Chapter 1 identifies a range of planning policies that will affect employment, housing, and transportation land use patterns. It highlights the importance of environmentally sensitive intervention and the importance of creating unique community identity. Chapter 2 reviews major factors affecting the suburban housing market and the implications for this community. It provides specific recommendations for housing and density targets in different neighbourhoods to encourage diversity and social interaction. Chapter 3 deals with employment generating land uses – retail, services and live-work environments. The analysis in Chapter 4 explores the possibilities for the development of schools, open spaces, community facilities and transit services advocating the benefits for joint use scenario. Chapter 5 draws on lessons learned from good practices in planning and policy innovation to provide recommendations for the design of Mahogany. Finally, the use of suburban spaces is explored using approaches from urban sociology to highlight specific challenges and opportunities for social interaction in the suburbs by different age groups. The analysis focuses on time, space and activity.

The outcome of a one-day design charrette process presents two conceptual design alternatives for Mahogany. Each team works with a different design brief – the ‘status quo’ team vs. the ‘ecological team’ – to articulate a vision for the community, design principles and a *Land Use Concept Plan*.

## **Acknowledgements**

The work on the Community Planning Project for Mahogany did benefit from the input from planners and design professionals from Hopewell Residential Communities, Section XXII Design and Brown & Associates. In particular, we would like to thank to our sponsors – Hopewell Residential Communities and Ollerenshaw Enterprise Ltd., whose generous support provided unique opportunities for planning students.

In addition, a number of planning professionals have assisted us in the Community Planning Project, providing information, working papers and reports. Robert Ollerenshaw, Paul Taylor and Brad Wright generously shared insights from their practical experience in the planning and design of communities in Calgary during our field trip to Mahogany. A review panel consisting of Lesley Conway (President, Hopewell Residential Communities), Robert Ollerenshaw (Section 23), Brad Wright (Urban Designer, Hopewell Residential Communities), Bela Seal (Brown & Associates), Glen Radley (Senior Planner, City of Calgary) and Ivan Robinson (Senior Planner, Cohos Evamy) provided helpful and constructive comments during student presentations and made this research professionally rewarding.



*Community planning charrette review panel, March 2005*

Professor Sinclair (Dean EVDS), Professor Levy and Professor Harper (EVDS Planning) actively participated in our charrette review panel. We thank them all for their collaboration and professional assistance. My special thanks to Cameron Salisbury for his excellent support in the preparation of presentation panels.

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## ***Executive Summary***

**Dr Sasha Tsenkova<sup>1</sup>**

### **1 Planning Policies**

The Community Planning Report for Mahogany includes policies and practices that encourage the development of a vibrant and diverse community. The planning and design of Mahogany is guided by the principles of sustainable development and smart growth.



#### **Vision**

*Mahogany is home to a vibrant and diverse community where urban vitality is fostered by urban form. It is a community in which residents walk to services, enjoy recreation opportunities and social interaction. People come to Mahogany because it offers a range of housing opportunities, amenities and places to work.*

#### **Goals**

Goals and objectives of the Community Plan direct the choice of policy instruments and innovative planning techniques to facilitate effective implementation. The following thematic clusters are identified:

***Commercial development:*** To create an urban village through the development of vital and diverse commercial and retail areas that are well-integrated, mixed-use and pedestrian-oriented. Community identity

Photographs in the introduction and executive summary by  
Sasha Tsenkova

<b>Table 1: Development Projections</b>	
Population	23,000
Estimated time to develop	~25 Years
Density	7-8 units/acres
# of Neighbourhoods	5
<b>Total Area (acres)</b>	<b>1108</b>
Public Utilities @ 5%	55.4
Municipal Reserve @10%	110.8
Transportation @27%	299.16
Total	465.36
<b>Net Developable Land (acres)</b>	<b>642.64</b>

will be enhanced through the effective use of urban design standards and landscape features capitalizing on the unique legacy of the site and its environmental characteristics (see existing farm: photo James Davidson).

*Housing:* To create a healthy and vibrant and strong community by providing a diversity of housing types that meets the needs of different demographic and income groups.

*Environment:* To foster sustainable development through preservation of the natural environment, wetlands, landscapes of public open space, and planning practices promoting land stewardship and energy conservation.

*Transportation and infrastructure:* To encourage the use of alternative modes of transportation

and meet the challenges of creating a transit-supportive environment in a suburban community. To ensure the timely provision of technical infrastructure and services in accordance with major development phases in the Plan.

Major projections for Mahogany Community are presented in Table 1.

## **2 Housing in Mahogany**

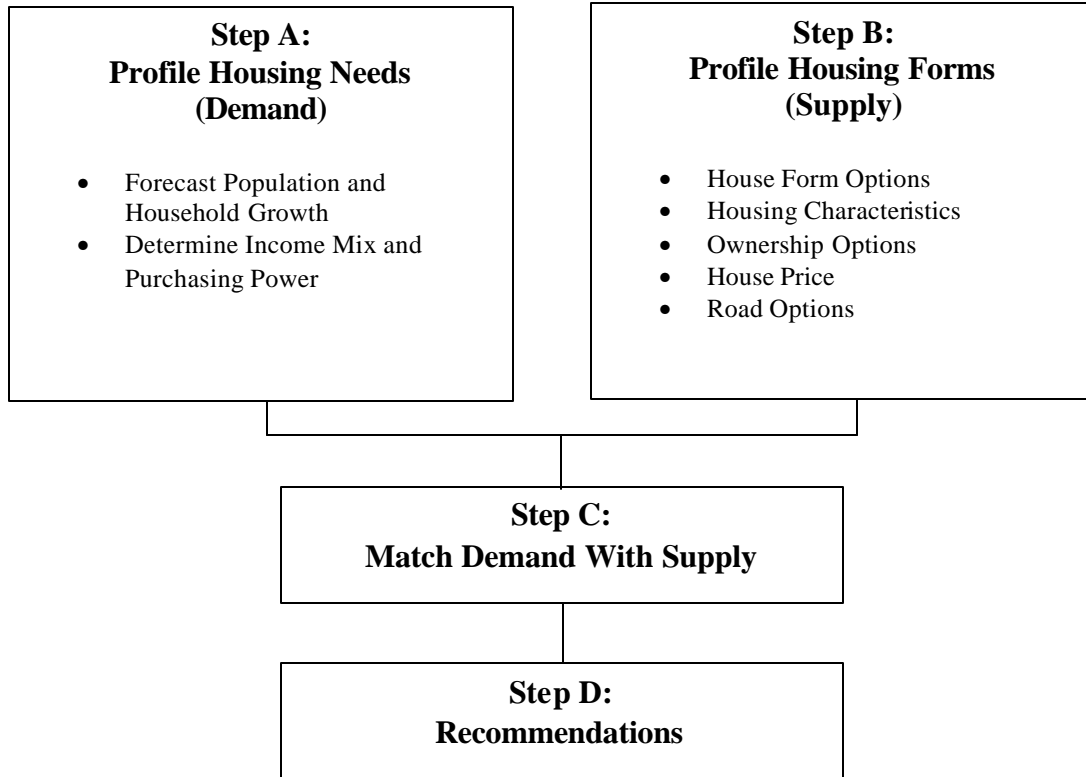
Housing projections for Mahogany are guided by the following objectives:

- Provide a mix of housing types to accommodate a range of income throughout the community;
- Create a compact, walkable community with higher densities and a legible streetscape;

- Allow for the development of a vibrant, adaptable community.

The process of developing these projections involved reconciling demand and supply elements schematically presented in Figure 1.

**Figure 1- Methodology for Housing Projections**



Higher densities mixed throughout the community would provide a range of housing options for people with different housing needs. Another important element is to promote equity and access for different households through a variety of housing types in the community, ranging from apartments to townhouses and single-family homes. Different ownership options are also considered to enhance affordability and diversity. A legible and walkable community is a critical component of the vision for Mahogany, as alternative transportation and pedestrian access to local services will make a difference in achieving environmental, economic and social sustainability.

Based on this analysis, the project team recommends the following income and housing mix:

**Table 2: Income Mix and Available Housing Types**

	Mix	Price Range*	Possible Housing Type
<i>Less than \$20,000</i>	8%	-	Apartments: Co-operative, Rental
<i>\$20,000-\$39,999</i>	17%	\$63,000-\$120,000	Small Townhouses, Condos
<i>\$40,000-\$59,999</i>	20%	\$120,000-\$196,000	Medium to high-end Townhouses, Small to Medium Single Family
<i>\$60,000-\$79,999</i>	17%	\$196,000-\$272,000	Medium Single Family
<i>\$80,000-\$99,999</i>	15%	\$272,000-\$348,000	Medium to Large Single Family
<i>\$100,000+</i>	23%	\$348,000+	Large Single Family

\*Price range estimates based on Canada Mortgage and Housing Corporation affordability guidelines.

Using extensive analysis of data related to prices of new homes, types and density requirements in new communities in Southeast Calgary, we have made the transition to definition of different housing submarkets in Mahogany. Specifically, we project that a total population of 23,000 can be accommodated over 20-25 years at an average net developable density of 13.6 units per acre, consuming 584 acres of land (54% of the total). Assuming an average household size of 2.9, we project that the total number of units could be 7,931. These estimates, as well as the links to land allocation for different housing types are presented in Table 3.



It is recognized that this framework allows for internal adjustment within different clusters: income mix targets (Table 2) as well as housing types (Table 3) to respond to market demand.

**Table 3: Housing Units and Net Residential Density for Mahogany**

<b>Housing Type</b>	<b>% of Total</b>	<b>Units</b>	<b>Total Space (acres)</b>	<b>Net Res. Density (units/acre)</b>
Apartments: Condo, Co-op, and Rental	20%	1586	27.0	58.8
Townhouses/Rowhouses	10%	793	30.1	26.3
Small Single Family	15%	1190	66.6	12.3
Medium Single Family	21%	1666	113.3	10.3
Large Single Family	18%	1428	165.6	7.0
Large Single Family Lots	16%	1269	181.5	6.3
Total Residential Land (acres)			<b>584</b>	
Average net residential density (units per acre)			<b>13.6</b>	
Share of Total Developable Land (%)			<b>53.1</b>	
<i>Population (Average household size)</i>			23000 (2.9)	
<i>Total Number of Units &amp; Land</i>		7931	1108	

### **3 Retail and Employment**

Retail projections for Mahogany assume that regional demand will be accommodated in the Towne Centre and that each person will require a minimum of 10 ft<sup>2</sup> of retail space.

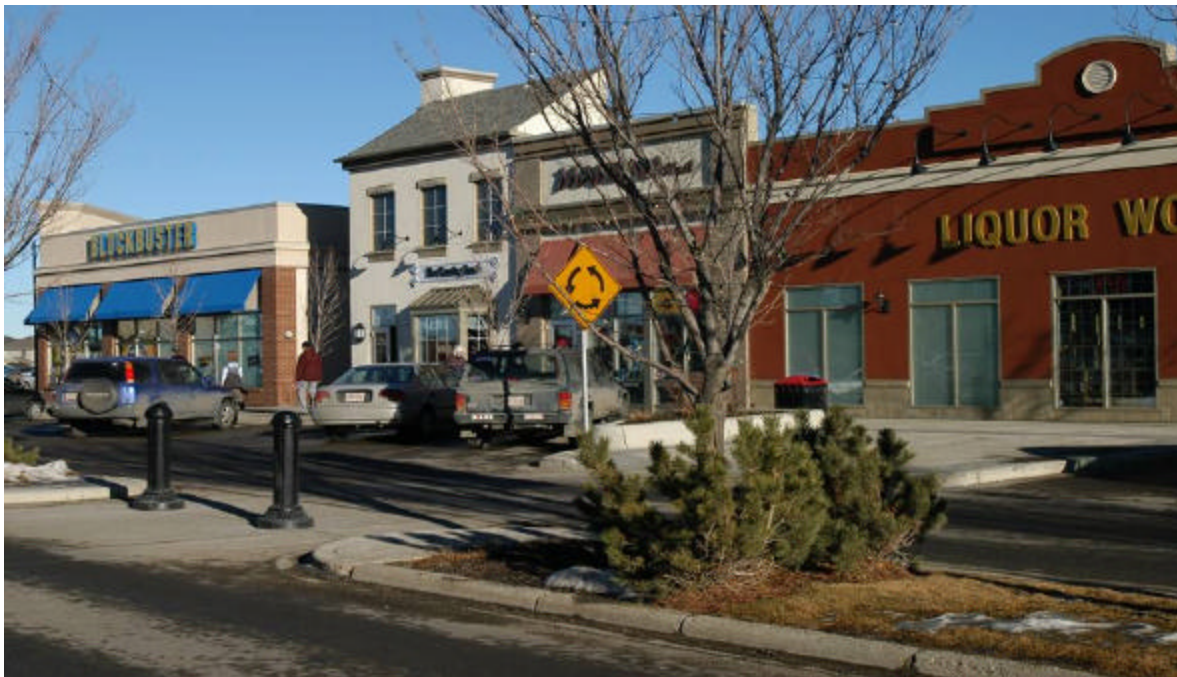
Two scenarios are considered:

- 232,000 ft<sup>2</sup> community retail, assuming a density of 8 Units Per Acre and a population of 23,000 (with a provision of 5.3 acres for retail, 3.5 acres for parking and 4.5 acres for landscaping/roads);
- 288,750 ft<sup>2</sup> community retail, assuming a density of 10 UPA and a population of 28,875 (with a provision of 6.6 acres for retail, 4.3 acres for parking and 5.6 acres for landscaping/roads).

Projections for the total number of jobs in Mahogany for the two scenarios show that:

- 928 people will work in Mahogany’s retail, 638 in Mahogany’s live-work units, and 1276 will work in the Southeast Centre;
- 1151 people will work in Mahogany’s retail, 794 in Mahogany’s live-work units, and 1581 will work in the Southeast Centre.

These estimates do not include number of employees in local services – schools, recreational and community facilities, small businesses which could be as high as 300-500 people.



The recommended location of retail and local employment spaces in Mahogany is as follows:

- One community retail node in a ‘high street’ format will be located near the proposed LRT line;
- Six neighborhood retail nodes will provide local convenience services throughout Mahogany;
- One retail node, in the form of a farmers’ market, which will build upon the legacy of the existing farm in Mahogany.

- Live-work units positioned in a block fashion will be encouraged close to neighbourhood nodes.

## 4 Community Services in Mahogany

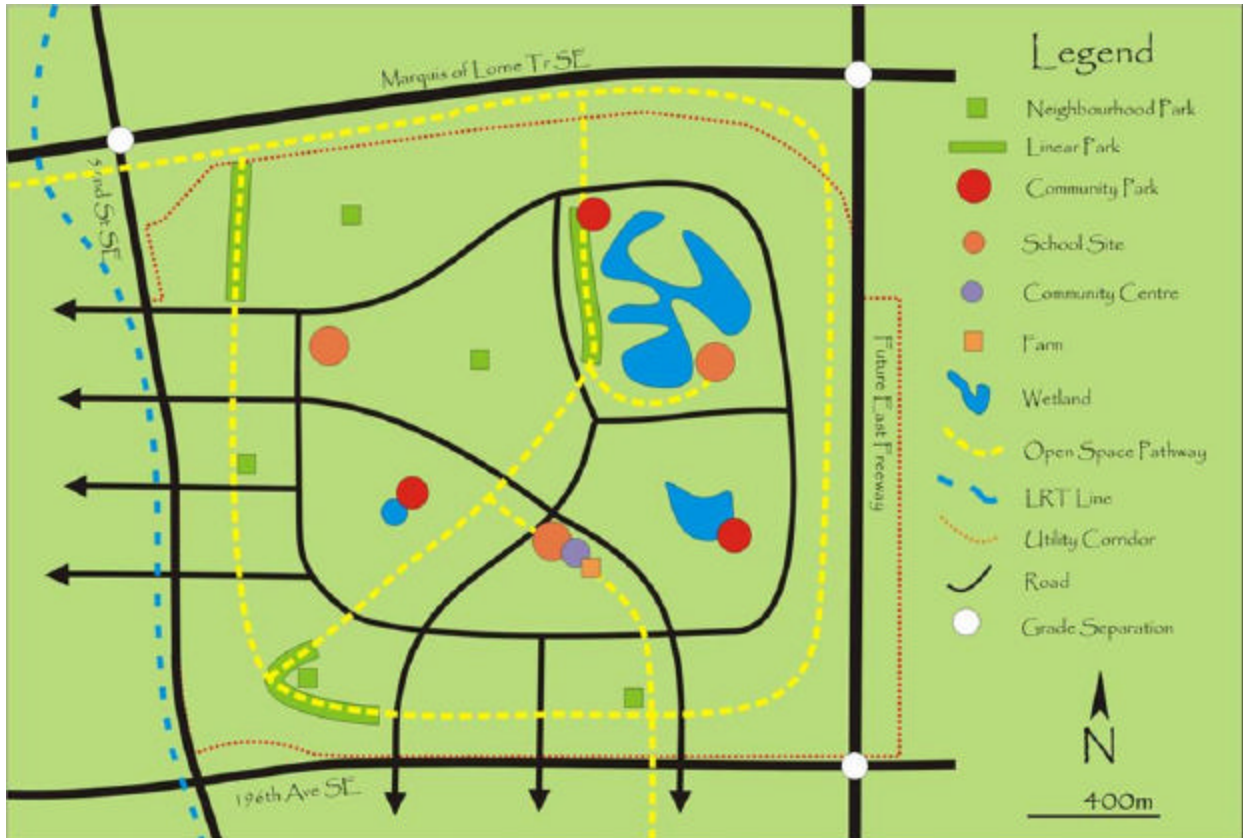
**Schools.** Projections for the provision of schools provide both a descriptive and normative analysis of the options for Mahogany. Schools of the future are not the schools of the past and this is reflected in the normative scenario. This section attempts to reconcile the ideal scenario for schools with the practical realities of funding and management faced by school authorities and local communities. We advocate for the provision of joint-use sites and integrated community campus which is more than centers of learning (Table 4).

<b>Scenario A- Descriptive School and Land Requirements for Mahogany</b>			
<b>School Type</b>	<b>Number of Schools Required</b>	<b>Land per school (acres / ha)</b>	<b>Total Land required (acres / ha)</b>
Elementary (CBE)	3	10 / 4.1	30 / 12.3
Elementary (CCSB)	0	10 / 4.1	0 / 0
Junior High (CBE)	2	12 / 4.9	24 / 9.8
Elementary / Junior High	2	12 / 4.9	24 / 9.8
% Of Municipal Reserve	71%	<b>Total Acres / Hectares</b>	<b>78 / 31.9</b>
<b>Option- Revised School and Land Requirements for Mahogany</b>			
Elementary / Junior High (CBE)	3	16 / 5.7	48 / 17.1
Elementary / Junior High (CCSB)	2	12 / 5.7	24 / 11.4
% Of Municipal Reserve	65%	<b>Total Acres / Hectares</b>	<b>72 / 28.5</b>
<b>Scenario B- Community Knowledge Campus Land Requirements for Mahogany</b>			
CKC (CBE & CCSB)	2	24 / 9.7	48 / 19.4
Swing / Flex Site	1	10 / 4.1	10 / 4.1
% Of Municipal Reserve	53%	<b>Total Acres / Hectares</b>	<b>58 / 23.5</b>

**Table 4: School Requirements for Mahogany**

**Public Open Space.** The plan for open space allocation in Mahogany assumes that joint-use school sites will leave 47% of MR -- 52 acres --available for a wide variety of trails and open spaces. These spaces in Mahogany will provide active and passive recreational opportunities, ecological functionality, green transportation options, connectivity to

larger open spaces and facilities inside and outside of the community, community interaction through an open spaces hierarchy system connecting neighbourhood, community and regional functions through the system of pathways and parks. These ideas as well as the connectivity of the open space system to schools, transit and other essential elements of community infrastructure in Mahogany are presented in Figure 2.



**Figure 2: Schools, Open Spaces and Community Infrastructure in Mahogany**

**Transportation.** Different roadway systems and types are adopted in Mahogany based on traffic volume, residential density and adjacent land use. Two major roads, 52<sup>nd</sup> Street SE and 196<sup>th</sup> Avenue SE, allow access to the community with a possibility of incorporating additional access through the Future East Freeway converted to a 6-lane major road. Within the community, a curvilinear system of roadways is used for the low-density, northeast section. For the medium density and retail sectors on the southwest part of Mahogany, a modified grid system is adopted to disperse high volume of traffic. The



internal collector roads are designed to connect and cross the community node and neighbourhood nodes in Mahogany to provide multiple access points to these destinations. Transit stations will be located in the nodes to meet the transportation needs of residents. Bus stops will be strategically situated according to the Transit Oriented Development (TOD) guidelines to ensure all residents have access to transit within a five-minute walking distance.

**Community Facilities.** Community facilities provide for the recreational, health and safety needs of residents, as well as add to the vitality and uniqueness of a community. Many of the essential community for Mahogany will be provided in the Town Centre.



Recommended facilities at the community level include:

- i) Community Centre
- ii) Day-Care Facilities
- iii) Recycling Facilities
- iv) Medical Facilities
- v) Social Services
- vi) Churches/Faith Facilities
- vii) Senior’s Residence
- viii) Community Gardens
- ix) Organic Farm.

While land for community centers is allocated from the MR,

projected land requirements for other community facilities are summarized in Table 5.

Facility Type	Land Requirement (acres)	Total Land Requirement (acres)
Senior’s Residence	3	1.5
Medical Facility	1	1
Churches/Faith Facilities	6	6
<b>Total</b>	<b>10</b>	<b>8.5</b>

## 5 Learning from Good Practices

Based on review of award-winning communities, and personal communication with industry professionals, we selected three suburban communities that apply sustainable development principles -- *Orenco Station*, *Kentlands* and *East Clayton*. These plans are evaluated using a set of criteria established in the evaluation matrix. These communities strive to achieve a balance of increased density, open space, housing diversity, and mixed land uses to form a sustainable, tight knit community.

**Figure 3: Orenco Station Concept Plan**



*Orenco Station*, just outside of Portland-Oregon, is promoted as a model transit oriented suburban community. Serviced by Portland's MAX Light Rail system, the community planning area incorporates a strong commercial core with mixed uses, public open spaces and a range of residential densities (Figure 3).

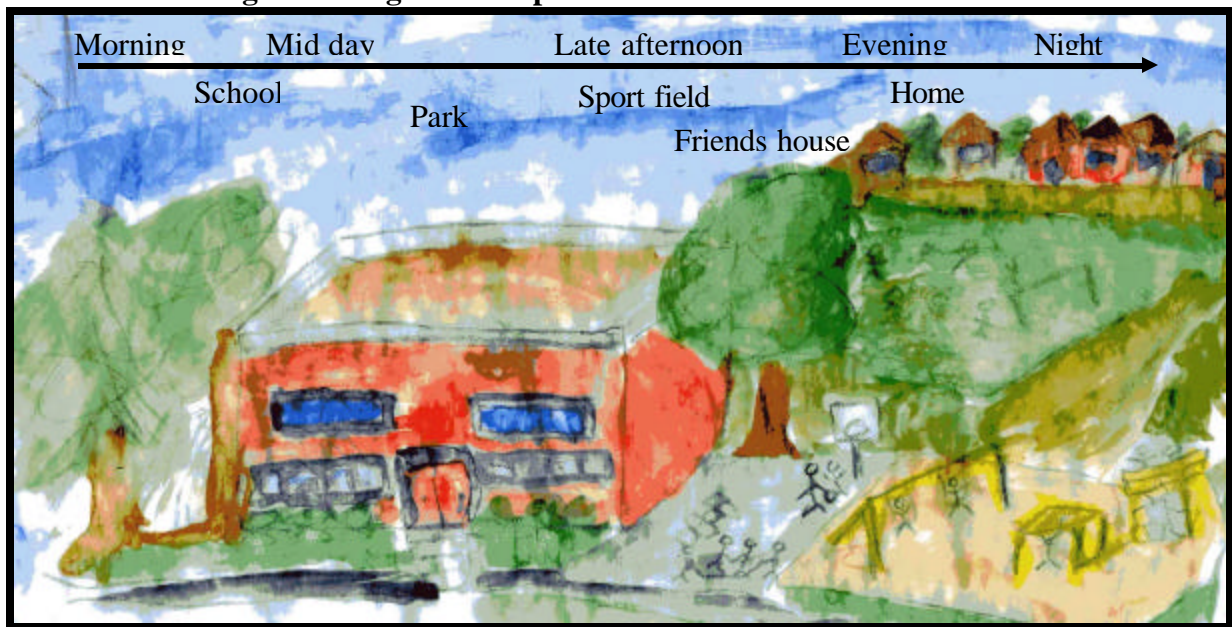
*Kentlands*, located in Gaithersburg, about 20 miles from Washington, D.C., is one of the largest neo-traditional New Urbanism projects in North America that has successfully incorporated distinct residential neighbourhoods with commercial and recreational land uses. It has a thriving economic center at the edge of the development, surrounded by high-density dwellings and mixed-use buildings.



## 6 Exploratory analysis of the daily suburban experience

Looking at the world through the lens of different people’s perspectives allows us to evaluate what they find to be engaging or alienating places in an urban setting. To develop planning and design recommendations for Mahogany, we considered a “day in the life” of each of four types of future residents: i) children aged 3 to 13; ii) teens aged 14 to 18; iii) working aged adults aged 25 to 45; and iv) retired adults aged 55 to 75. Cognitive maps were constructed for each type to explore opportunities for community interaction. Figure 5 presents one of these maps highlighting the suburban experiences of children.

**Figure 5: Cognitive Maps of Children in the Suburbs<sup>2</sup>**

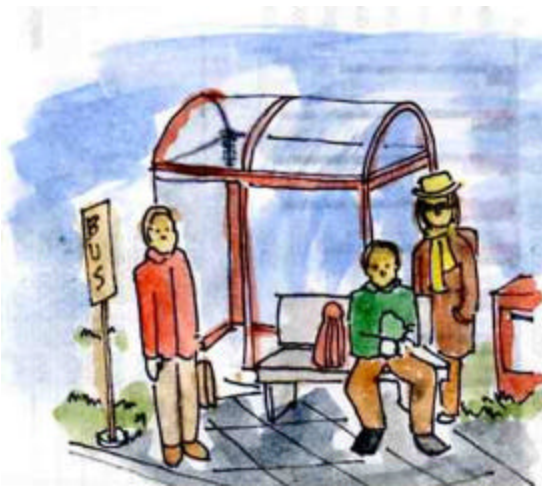


Children have less choice in where and how they live; leaving the decisions promoting “better places” to people who have the power to create an environment that fosters or hinders their development and social interaction. Safety and freedom of movement is critical, having a variety of activity places to meet and talk with friends, or play informal games, sports is essential. These places in the suburban setting vary but could include coffee shops, the mall, sport centres, civic centers, parks, schools or sport fields.

<sup>2</sup> Drawings by Kevin Krakowski, March 2005.

Design strategies that enhance social interaction build on concepts developed by Kevin Lynch and his exploration of people's mental maps of the city. Legibility is enhanced through the use of paths, districts, edges, landmarks and nodes. We strongly advocate the use of these elements in the suburban neighbourhoods of Mahogany to enhance the making of "place" with its own identity. This will enhance people's experiences and creates more opportunities for meaningful social interaction. Neighbourhoods in mahogany should be a place where people have safety and freedom of movement, social integration, a variety of interesting activity settings, peer gathering places, green spaces, and cohesive community identity.

We recommend physical planning and design alternatives that focus on:



***Semi-public places for neighbours:*** Knowing the neighbors increases a sense of caring and safety in a community. Opportunities for casual interactions can be increased if local activities take place in shared areas (mailboxes, community gardening, recycling, etc).

***Kids places:*** Children often act as a catalyst for community social interactions. Supporting social activities for children can have far reaching effects, bringing the adult population together. Places for loud, boisterous physical activities, as well as quiet, intensive, imaginary play enhance a child's experience of place and society.

***Public transit facilities:*** Communities of commuters will develop with increased use of public transit in Mahogany. Design could encourage the interaction of commuters to work or school which will follow similar schedules.