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**NEOTRADITIONAL NEIGHBOURHOOD
DEVELOPMENT IN THE WINNIPEG AREA:
EXAMINATION OF A THEORY**

BY

JENNIFER A. MOORE

A Practicum
Submitted to the Faculty of Graduate Studies
In Partial Fulfillment of the Requirements
For the Degree of

MASTER OF CITY PLANNING

Department of City Planning
University of Manitoba
Winnipeg, Manitoba

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**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree
of
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ABSTRACT

Neotraditional development (NTD) is an alternative to contemporary subdivision design. For inspiration it looks to the design of traditional small towns and includes their mixes of land use, grid street networks and architecture to help to create a sense of community. Although NTD communities are being constructed in various locations in North America, none have been built in the Winnipeg area. This study examines NTD theory, and explores the possibility of such a neighbourhood being created locally. It poses the question: Will the development industry in Winnipeg produce neotraditional developments?

The study includes an overview of historical, traditional and contemporary suburbs, NTD theory, and an examination of current development practices. Eight local developers were interviewed, and the results of the interviews are compared to NTD theory to serve as a basis for conclusions drawn.

The study concludes that the development industry in Winnipeg will not produce neotraditional developments in the foreseeable future. Such developments will not be constructed until the economics of NTD communities are attractive to developers, municipal development standards are viewed as negotiable, developers believe that they have the ability to affect the communities which they construct, and in their perception of the market there are benefits to developing land for people who would not buy a single-family house in a contemporary suburb.

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My Grandpa, Harold Sherritt, knew that I would be done by Spring.

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CHAPTER 1 INTRODUCTION

We invent nothing. We are only trying to revive the tradition, not beholden to any era or culture, of the mixed-use neighbourhood. This is not a new idea, but a remembered one (Duany in Miller 1994).

There is a contemporary theory of neighborhood design which rethinks relationships among form, scale and movement in modern suburban environments. It places an emphasis on establishing a sense of community often missing in modern neighbourhoods, by mixing land uses and getting people out of their cars and onto the streets. Streets play a central role: a grid layout is a tool to reduce automobile travel and increased pedestrian activity. Its intent is to increase the interaction of residents by increasing pedestrian traffic, and therefore create a sense of community in densely populated neighbourhoods (Crane 1996).

This alternative subdivision design is found in a model characterized by high densities, a mix of land uses, provisions for public transit, accommodation for the pedestrian and bicyclist, and an interconnected pattern of streets (Southworth 1997). The theory is called neotraditional development. Neighbourhoods built according to the neotraditional development (NTD) theory look to classic small towns for inspiration. The neighbourhoods are walkable and have clear civic structure, a mix of uses and housing types, and harmonious design of their buildings and spaces (Southworth 1997). They offer physical environments which invite community interaction with land-use and street patterns that permit travel by foot, in a manner consistent with our collective sense of a traditional

small town (Crane 1996). Survey evidence indicates that many suburbanites would prefer to live in towns, or at least in communities resembling them (Inman in Crane 1996). Therefore, this model of neighbourhood development may be attractive to consumers, developers and planners. It may not replace suburbs, but it may provide a viable alternative (Christoforidis 1994).

NTD as an alternative to contemporary subdivision design advocates designing suburban subdivisions to resemble small towns. It challenges zoning convention by writing codes that favour traditional patterns of placemaking. It is called neotraditionalism, because the theory invokes planning practices from a long time ago. In Canada, NTD has become a recognizable movement. In 1997 there were 14 neighbourhoods being constructed across the country, with various elements of the theory incorporated into their designs. Eight of the neighbourhoods were being built near such major centres as Vancouver, Calgary, Toronto and Montreal (Chidley 1997).

Although local growth occurs at a slow rate, there is development activity in and around Winnipeg. New neighbourhoods are being constructed in various parts of the city, and subdivisions are being constructed in several surrounding towns and rural municipalities. Considering the fact that NTD communities are being constructed elsewhere, it would be interesting to determine whether features of the alternative theory would be included in local developments. Therefore, this study will examine NTD as an alternative model for contemporary neighbourhood design in and around Winnipeg and will explore the question:

Will the development industry in Winnipeg produce neotraditional developments?

In discussing the question, several avenues are explored. In Chapter 2, historical, traditional and contemporary features of subdivisions are all reviewed. The historical aspects of suburbs denote the industrial revolution as the initial point at which suburbs were created. Then the Garden City theory of community design is compared to NTD design as some of the features they espouse are similar, and both theories act as alternatives to contemporary subdivision designs of their respective times. Traditional neighbourhoods are examined next, and are described as having been built along streetcar lines. Many of their qualities are supported by Jane Jacobs. Modern suburbs are also examined, primarily in negative terms, and critiques are included as commentaries. Finally, David Foot's thoughts on the coming of age of "baby boomers" and the resulting "echo" suggest that NTD may be an appropriate model for subdivision design following the turn of the 21st Century. All of these elements lay a base for Chapter 3 which relates to the claims made by NTD advocates.

The advocates claim that if neighbourhoods are built according to physical criteria outlined in Chapter 4 that there will be many benefits to residents of the communities. Benefits include a sense of community created by an eclectic population diverse in both age and socio-economic status; walkable communities with streets which are comfortable to pedestrians primarily and automobiles

secondarily; and a mix of land uses to create vibrant density, in an affordable community. Private and public space will be complimentary, and development will occur in an environmentally sustainable manner within a regional context. The means for achieving the goals are outlined in Chapter 4 which addresses physical elements of the communities.

Chapter 4 details the tangible structures necessary to create the intangibles of NTD communities outlined in Chapter 3. Streets are built on grids or modified grids; the communities are limited in size, and have identifiable public spaces and often have clear edges; and the neighbourhoods are built at higher densities than contemporary subdivisions. Ancilliary units are intermixed with single family houses, and multi-family dwellings are included within the neighbourhoods. All buildings are oriented toward the street. Land uses are mixed, and commercial properties are built into the designs. Public and private space are included in designs; regional plans are drawn; and environmental sustainability dictates that water should be allowed to flow as naturally as possible. The physical features of NTD communities were suggested to the developers interviewed, and they were asked about their features of developments with which they had been involved.

However, before the developers were questioned, a methodology had to be developed in order to obtain information. Chapter 5 explains that the questionnaire was developed, approved, and pre-tested before it was distributed to employees of eight development companies active in or around the Winnipeg

area. Interviews were conducted which focussed on the questions posed in the questionnaire, and the interviews were recorded, for ease of analysis of the material discussed.

The interviews resulted in interesting conversations, the results of which are explored in Chapter 6. Economic, geographic and social factors were all considered in terms of subdivision design. The developers were asked to comment on a series of features common to contemporary designs, and other features which were common in NTD designs. The results were the basis for Chapter 7, the analysis and recommendations of the project.

CHAPTER 2 HISTORICAL, TRADITIONAL AND CONTEMPORARY SUBURBS

2.1 OVERVIEW

Chapter 2 examines the Garden City theory of neighbourhood design, explores traditional neighbourhoods, discusses modern suburbs, and finally suggests that an appropriate time for NTD communities to be successful may soon be approaching.

2.2 HISTORY

In the medieval city, work, recreation and sleep often took place under the same roof. As early as the seventeenth century, according to urban historian Lewis Mumford, large scale industrial areas started to be set apart from the mixed uses of the ordinary medieval city (Fowler 1992). The age of living away from work was born. The Latin root for the word suburb is suburbium, which refers to a place beyond, or outside the city (Krieger in Duany *et al.*1991). Improved mobility led to explosions in the geographical scale of the cities of the eighteenth and nineteenth century as people lived further from their places of work.

2.3 HOWARD'S GARDEN CITY

At the end of the nineteenth century, the noted English reformer Ebenezer Howard insisted that the industrial city was ruining the English working class. He

believed that well planned “Garden Cities” on the periphery of the metropolis could provide an environment which would support the life-maintaining functions of inhabitants (Fowler 1992). Howard’s Garden City concept is pertinent to the current study because the turn of the last century was, like ours, a time of rapid change. His theory may suggest some ways for controlling contemporary urban sprawl (Knack 1998).

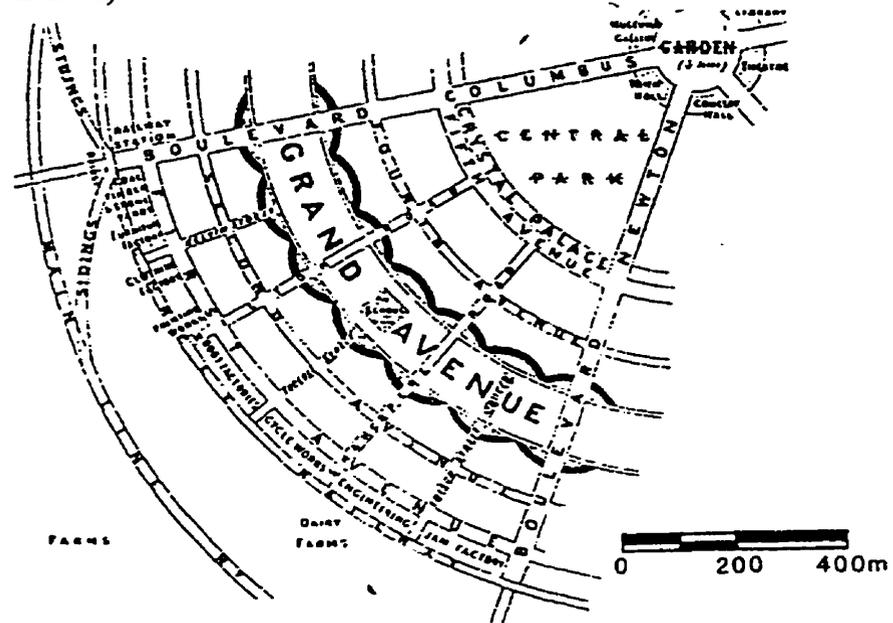


Figure 1 Howard’s Garden City. Source: Sewell 1993.

Additionally, the Garden City concept was a break from contemporary residential development at the time of its inception. Like NTD, Garden City theory suggested a deviation from the standard patterns of development for its time. Figure 1 illustrates the relationship between various features of the neighborhood features. Garden Cities had identifiable centers, with streets radiating from them to accommodate various land uses.

Others have made the link between Howard's work and contemporary theories of alternative subdivision design. In his book *Cities of Tomorrow*, Peter Hall states that Ebenezer Howard created the first and most important response to the Victorian city of the late 19th century.

The work of Howard is important to this study because many of the features embodied in his theory of Garden Cities are also incorporated in NTD neighbourhoods. He has been said to have been the oldest and wisest of new urbanists by Bob Fishman, of the American Planning Association. Fishman said that the Garden City theory embodies all the ideas championed by the current generation as it combines work and residence, provides housing for a range of incomes, and includes a town centre with a well-defined civic space, all at a walking scale with easy access to parkland. Another new urbanist, Peter Calthorpe voiced reservations about a close connections being drawn, because Howard's work was primarily focussed on greenfield development, and NTD can have a strong role to play in infill and redevelopment. Nevertheless, he stated that advocates of the theory see themselves as following some of the Garden City principles (Knack 1998).

Howard published *To-morrow: A Peaceful Path to Real Reform* in 1898, and it was reissued in 1902 with some substantial changes under the title *Garden Cities of To-morrow*. His books expounded the thesis that town and country must be married to form communities in which people live and work. In Howard's

scheme, land would be owned co-operatively by residents, and their rent would pay for civic improvements, health care, and pensions. Although many of the social claims of Garden City theory are also espoused in NTD theory, and some of the physical features have been adopted, the economic element of his concept has not been adopted in modern theories of neighbourhood design.

Howard's ideas are discussed by Lewis Mumford in his book *The Culture of Cities*. In Garden Cities, Howard pictured a leafy suburb, between the city and country (Krieger in Duany *et al.* 1991). He envisioned self-sufficient regions, as communities banded together to provide services to their residents. Garden Cities were envisioned to include mixed-use communities surrounded by greenbelts. The region created by several of these communities would offer a range of jobs and services and they would be connected to each other with a regional transportation system called the Inter-municipal railway (Hall 1996). As illustrated in Figure 2, the magnetic draws of people to live in cities and the countryside were both thought to have some positive and some negative qualities shown in the top two magnets. At the bottom of the diagram the advantages of city life with the beauty of the countryside were combined to form an alternative to either the city or the country, in a townsite. Over time, small townsites would form into communities, and the relationship between the communities was what formed the third magnet, and contained the benefits of both city and country.

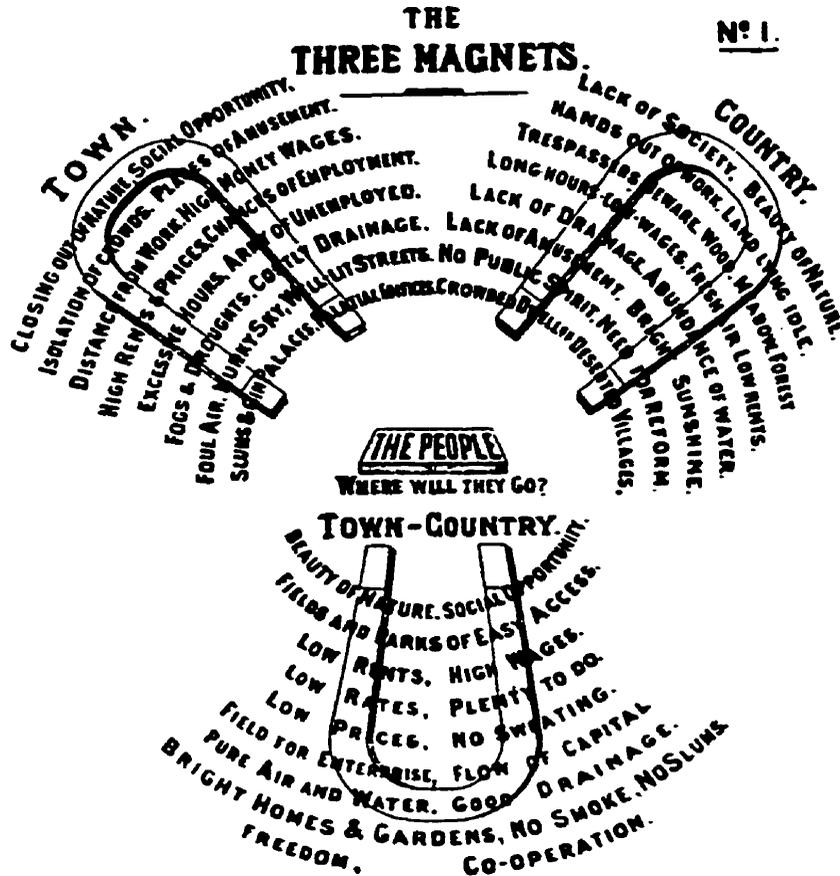


Figure 2 Howard's Three Magnets. Source: Sewell 1993

Howard's designs had the towns surrounded by countryside, which he called a Country Belt, Agriculture Belt, and Rural Belt. The townsite itself was to occupy 1 000 of the 6 000 acres that Howard considered necessary for a community. When the city reached a population of 32 000, another town would be established a short distance away, separated from the first by another country belt (Knack 1998). In time, a cluster of towns would all be grouped together.

A Garden City townsite was built in England, during Howard's time. Raymond Unwin and Barry Parker, an engineer and an interior decorator, created

Letchworth in 1903 on 3,818 acres of land approximately 35 miles from London (Hall 1996). The community was constructed to keep a number of houses together around quadrangles which opened one into the other, and the houses were all oriented to permit ample sun into their chief rooms. Pedestrian ways ran between the cottages. Village greens and a folk hall were prominent central features of the community. Natural elements were abundant in the community, as there were trees and a small brook incorporated into its design. Howard lived in the community until 1921, after which maintained an address in Welwyn, another Garden City community, until his death in 1928.

The Garden City concept was one theory which affected suburban development patterns in some areas. There were other factors which determined neighbourhood designs in other places. The traditional neighbourhood is one example.

2.4 THE TRADITIONAL NEIGHBOURHOOD

Industrialization and transportation technology affected settlement patterns, as “streetcar suburbs” were developed in many parts of North America. Figure 3 shows an electric streetcar which operated on rails and was powered by wires which ran through the cities and out to the suburbs to carry passengers from home to work and back. These early suburbs were built because commuters could travel farther to work on streetcars than would have been possible on foot, so they could live outside of the downtown or industrial areas where they worked, and ride the streetcars to and from home. Houses were built a comfortable walking distance

from the streetcar lines. During the pre-WWII era, a time of commuter railroads and recreational automobile use, people walked or rode the streetcar for transportation, and lived close to the commercial centres of their communities. The scale of communities was geared to individual houses, stores and parks and therefore, to the pedestrian (Rowe 1991). After the Second World War, the form of residential development was altered and is discussed in section 2.5 dealing with The Modern Suburb.

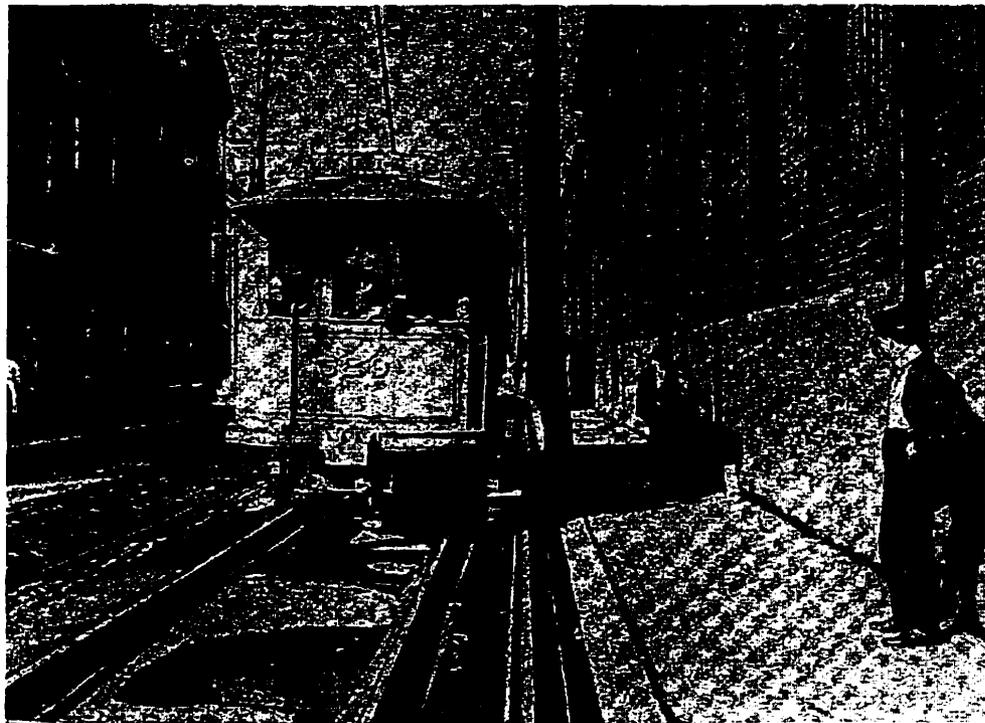


Figure 3 Streetcars were the primary vehicles for early suburban residents. Source: Granatstein, 1990.

2.4.1 JANE JACOBS

In her book *The Death and Life of Great American Cities*, Jacobs advocates neighbourhood designs congruent with traditional neighbourhood design. She

says that there are a variety of factors which determine how much diversity, and therefore how much vitality, a city will have.

Continuity of movement is dependent upon a mixture of land uses. When people are put on the street at different times of the day for various purposes, diversity is created. Districts need to have more than one primary function. Physical diversity creates urban vitality. Land uses must be concentrated and dense. There must be provisions for residential, commercial, recreational and industrial activities. There must be a mixture of old and new buildings so that the costs of developments can be kept down. When old buildings can be used for new purposes, construction costs can often be kept low. In addition to financial advantages, neighbourhoods benefit from the character of old buildings.

She also says that short blocks maximize the number of path crossings which people may encounter. At crossings, there is more activity and interaction. For that reason, street corners have always been the most desirable locations for businesses. Long blocks reduce an area's vitality by minimizing the number of path crossings which may occur, and isolate one street from the next. There must be frequent opportunities to turn corners. Small blocks also create pedestrian interest by providing a variety of path options. Short blocks do not take pedestrians out of their way, and they permit people to be offered a variety of path options so they will not always have to travel the same route.

Although Jacobs thought that Howard's Garden Cities were too paternalistic, and islanded people off into self-contained units to resist change, there can be many similarities drawn between her theories and NTD design. For example, in *Life and Death of Great American Cities*, Jacobs states that sidewalks and streets are the main public places of a city, and they are its vital organs. Sidewalks need to be wide enough to accommodate rope-jumping and bike riding. When sidewalks are narrow, society becomes sedentary. The role of streets and sidewalks is to keep the city safe. When people fear streets, they become less safe. Streets are made safe by being heavily used by numerous people with different backgrounds.

She also states that streets in successful neighbourhoods have three qualities. First, they have a clear demarcation of public and private space. A good street has a balance between privacy and contact with other people. A public place allows public things to naturally be done in public. Too much private space breeds insularity. Second, there must be eyes on the street belonging to the natural proprietors of the street. Buildings must be oriented toward the street. Children tend to misbehave when not under the watchful eye of responsible adults. Children require community surveillance. Third, there must be street activity. Stores and public spaces must be used at various hours.

People on the street attract other people to the street. Streets are public places which bring people together who do not know each other. Casual contact gives a

feeling of public respect and a casual public trust. All of these ideas compliment NTD theory relating to streets and their uses.

2.5 THE MODERN SUBURB

The invention and implementation of the motor bus and the post-war prevalence of automobiles helped to further suburbanize neighbourhoods, and continued the trend of people living away from city centres (Rowe 1991). Inexpensive labour and building materials, long-term mortgages, and federal government incentive programs made the costs of new housing affordable. Canada Mortgage and Housing Corporation provided insurance for mortgages, which created a situation in which 95 per cent of the cost of a house could be borrowed from commercial lenders. Insurance, therefore, made home ownership a reality for many families with modest incomes, who could afford 5 per cent of the cost of a house for a downpayment, and mortgage the remainder.

Municipalities also had a role to play in the growth of suburban areas. As municipal services were extended out from cities' cores, outlying areas were provided with water and sewer services. Suburbs were the beneficiaries of the extension of municipal services. Both the affordability of mortgages and the extension of municipal services led people to be suburban dwellers.

The period after 1950 marked a watershed in North American life, as the majority of people became suburban dwellers for the first time in history (Rowe in Duany

and Plater-Zyberk 1991). Between 1950 and 1955, the proportion of suburban dwellers pushed past fifty per cent of the population, and was sixty-five per cent by the early 1980s. Almost eighty per cent of the houses in contemporary suburban areas are single-family, detached houses. Today, almost 80 per cent of Canadians live in urban areas, and of them, well over half live in the suburbs (Chidley 1997). A trend which began with the Industrial Revolution has created an urban form which has come under scrutiny.

The trend of suburbanization was buoyed by automobile ownership. As automobiles continued to increase in popularity, suburbs became increasingly accessible. Shopping centres began to be located along superhighways, only accessibly by automobile, thus the relationship between suburban dwellers and their cars was cemented (Rowe in Duany and Plater-Zyberk 1991). History has affected the existence of contemporary suburbs.

Not everyone was as enamoured with suburbs as their residents. In his book *Building Cities that Work*, Edmund Fowler suggests that there are three negative features of North American suburbs. He has indicated that the scale, concentration and homogeneous nature of the suburbs are related, and are leading to the ultimate destruction of the cultural fabric of both Canada and the United States. Fowler said he wrote his book out of a desire to counteract the tendency to accept contemporary urban development as normal. He thought that land use separation and homogeneity of neighbourhoods was not normal, and was in fact, a

perverse and unnatural way to build but that people had become unconscious of it and the way that it was ruining them and their environment. In addition to the three categories suggested by Fowler, the system of streets and transportation, other infrastructure, the role of the auto, and use of public and private space also help to determine the form and function of the modern suburb.

2.5.1 SCALE

The forms of suburbs are determined by their scale. Large scale housing developments are more common than small ones, and communities are becoming large and larger all the time (Fowler 1992). The best way for contemporary developers to achieve economies of scale is to build on the urban periphery, where land is most inexpensive. Therefore, most new development occurs on the urban fringe, as greenfield development. For the purposes of this study, greenfield development is defined as taking up previously undeveloped land, with new houses.

2.5.2 CONCENTRATION

Concentration affects suburbs' function. From their inception, most suburbs have been extremely deconcentrated. One researcher wrote, in 1955, Canada's average suburban development was putting not more than 15 people to an acre. The big metropolitan centres of Montreal and Toronto with 1 000 000 people or more each, occupied a land area that in Tokyo or London would have held ten times that number (Fowler 1992).

Decentralized cities are expensive to develop and maintain. Both infrastructure and soft services have high costs when cities are spread out over great distances.

2.5.3 HOMOGENEITY

Homogenization is defined as an area with a single land use. Many places in suburbs look the same, and the same as other suburbs. The curvilinear streets



Figure 4 Curvilinear streets in a contemporary suburb. Source: Genstar, 1998.

shown in Figure 4 could be in almost any contemporary subdivision in North America. Zoning was introduced in the early 1900s to prohibit certain land uses in some areas, thus protecting residential areas from noxious industries (Fowler 1992). However, zoning has evolved from being a tool to prevent industries from

blowing smoke into people's yards, to a barrier which prevents people who live in semi-detached duplexes from being neighbours with people who can afford detached, single family dwellings. By having stringent zoning regulations, and only permitting detached, single family dwellings in large parts of new developments, municipalities exercise powerful effects on the diversity of neighbourhoods, socially and physically. The opposite of homogeneity is diversity. Few zoning by-laws tolerate, much less encourage, multiplicity of uses and therefore, diversity, which make communities memorable (Krieger in Duany and Plater-Zyberk 1991). Diversity and density can be created with mixed land uses which can be used at various hours of the day. Diversity is a necessary ingredient in urban vitality. Diversity perpetuates vitality.

The trend in North American cities has been toward an increase in the scale of developments, a decrease in the concentration of land uses, and as a result an increase in homogenization. Separation of activities and urban transportation problems defeat the purpose of an urban environment, which ought to be a place that people get together for culture, commerce and companionship. Peter Hall has criticized homogeneous suburbs by saying that because population densities are low, the possibilities for human interactions are reduced from those which would be available in more populous neighbourhoods (Hall in Fowler 1992). He adds that homogeneity reduces the quality of shopping and entertainment options. He believes that when subdivisions are inhabited by people of the same age, education and social background, their awareness of different life styles is

diminished. When social relationships are restricted to an immediate neighbourhood, the potential for fear of the unusual and the unknown is high. One of the causes of homogeneity in suburbs is the large scale in which the developments are constructed: when homes are built, technology and architectural styles of the day dictate how the homes will look. Therefore, when huge neighbourhoods are constructed at the same time, or within relatively short periods of time, such as two or three years, the structures look similar to each other. The result when entire sections of the city are built simultaneously, and concentrated in large scale developments, is a degree of aesthetic homogeneity.

In addition to being similar physically, modern suburbs are homogeneous socially. People of the same economic class tend to reside together in similar houses and commute to work in similar cars to similar offices and other environments (Rowe 1991.) There is nothing wrong with similar people congregating together in a spirit of goodwill and common interest. However, there may be value in residents asking themselves if it is in their best interest to reside in exclusion of other members of society, defined as people of different ages, social classes, and income levels. However, predictability and control can induce monotony and precludes unexpected confrontation which should be natural in every day life (Rowe 1991). Richard Sennett has written of this phenomenon, and espouses the belief that social patterns and special structures which insulate, create situations in which people do not grow socially, or individually.

Sennett, a sociologist, explains in his book *The Uses of Disorder* that the residential environment that many suburban dwellers think they might want, is in fact, something they do not, or should not want. He uses the metaphor of an adolescent turning into an adult. When people are adolescents, and their adult personality is being formed, it is common to strive for purity of self-image. The world intrudes upon that purity over time, and adults are left with a compromise between what they would like to be, and what living in society demands. Similar to a young person growing up, neighbourhoods develop a personality. In the wealth of post-war North America, communities have been able to be constructed as purely residential neighbourhoods, which shield their occupants from the intrusions of urban diversity and have produced a rigid identity (Sennett 1970). Therefore, North Americans built what they wanted, but the costs may be higher than the financial ones which have been paid. The purity they have achieved is unnatural, unsustainable, and undesirable.

Peter Rowe is another critic of the contemporary suburb. In his book *Making a Middle Landscape*, he details the qualities of the areas which have been constructed in the post WWII era. The characteristics of traditional city streets and their provision of public life are absent in the contemporary suburb. Instead, contemporary suburbs offer wide, lifeless separations between residential areas and office parks. There must be a decision whether the middle landscape, that is the area between the city and the country, belongs to the former or the latter.

Whichever is chosen, that character must be expressed in the resultant architecture of the structures created.

2.5.4 STREETS AND TRANSPORTATION

There is a cyclical relationship between large, deconcentrated, homogeneous neighbourhoods and the necessity of automobiles. In addition to large scale neighbourhoods taking huge amounts of urban space, decentralized neighbourhoods make the deconcentrated areas seem larger, as there are wide spaces between dwellings, and few homes per acre. Walking across large neighbourhoods is impractical, if not impossible. The third element of the equation is homogeneity: homogeneous single-family neighbourhoods require people to leave the area to acquire services.

Both moving and parked cars require roadways for driving, and parking areas. Planning consultant Victor Gruen said that the more space is provided for cars, both moving and parked, the less concentrated cities become, and the greater the need for cars (Fowler 1992). The cycle is evident. The more transportation is done in automobiles, the less of an “urban area” there is, with a mix of land uses near each other. Cities which are compact and have mixed land uses spend less on transportation systems, either automobiles or public transit, than cities with large scale, deconcentrated, homogeneous urban development (Scully in Duany *et al.* 1991).

The concept of deconcentrated homogeneity is relevant in the local context. Winnipeg is far more dispersed and car-oriented than large Canadian cities like Toronto and Montreal. Winnipeg streets are expensive to maintain in relation to other cities, because of Winnipeg's sparsely populated land, high costs associated with snow removal, and the maintenance costs associated with problems caused by freezing and thawing.

2.5.5 PUBLIC/PRIVATE

Shopping malls are private complexes which have replaced traditional, public sites as the realm of civic activities (Rowe 1991). They are private, not public spaces. As shown in Figure 5, they are pedestrian oriented and have plants, benches and trees. They are worlds unto themselves, often with make-believe qualities. For example, the Polo Park shopping mall in Winnipeg has artificial flags which are reminiscent of a fair, carnival or castle bringing an element of



Figure 5 Shopping malls are pedestrian-oriented environments. Source: River Park South.

fantasy to the environment. The interior worlds created by malls are detached

from the exterior landscape, and although the fantasy created within them may be visually delightful, one must recognize they are a private area, and not a public street. They lack a sense of public responsibility (Rowe 1991).

2.5.6 ROLE OF THE AUTO

Cars are necessary in many communities which are so sparsely populated that transit service is infrequent, or non-existent. In his book *A Better Place to Live*, author Philip Langdon has calculated that a family that brings home \$36 000 annual income after taxes, will spend 25 per cent of the household's income on automobile transportation. Suburban homes nearly always have driveways and garages. A two car garage is larger than the living room or family room of a typical house. The automobile plays a major role in modern suburban life, and in the design and planning of communities.

2.6 THE RIGHT TIME FOR NTD

Upcoming years may be prime for the development of NTD communities. In his book *Boom, Bust and Echo*, David Foot predicts that the western Canadian market may be promising ground for the kind of alternatives that NTD theory espouses. The market is not yet ripe, but it will be soon after the turn of the 21st century.

There is a very large bulge, and a smaller bulge in the Canadian population pyramid which affects community development, and will continue to affect it in

the future. The first bulge is made up of people who were born between 1947 and 1966. This group is called the “baby boom.” The second bulge is comprised of a group which was born between 1980 and 1995, and is called the “echo.”

In the first two decades of the 21st century, many baby boomers will be entering retirement, and looking to move from the large homes they now occupy. It is anticipated that after their children leave home, many of them will want to sell the large suburban houses they own, and move to places where they can live in a small-town atmosphere, without having to give up the urban amenities of good restaurants and convenient shopping (Foot 1996). As seniors are generally interested in quality and service, this group will be likely to support small neighbourhood stores offering good products and friendly service, and will be less likely to drive long distances looking for bargains at discount megastores. They may be willing to support local stores. They may therefore be prospective residents of town-houses or condominiums in a NTD community, as they will have the equity from the sale of their large houses to purchase a new dwelling.

At the same time, people of the echo cohort will be ready to leave their parents’ homes. When young people first move out on their own, they usually cannot afford to purchase accommodation, so they rent for several years. The rental market which could be provided in an NTD community could accommodate these new residents. They may be potential renters of apartments above retail space, or accessory apartments above people’s garages, until they get their finances in

order, and move into other apartments. The combination of the two cohorts could be accommodated in a well-rounded, NTD community if it were ready to accommodate them after the turn of the 21st century.

This draws to a conclusion the examination of the Garden City theory's relationship to NTD theory, traditional neighbourhoods built along streetcar lines as supported by Jane Jacobs, modern suburbs as deconcentrated, homogeneous entities, and the timing associated with the successful implementation of NTD communities due to the coming of age of large numbers of the population. It will provide background and context for Chapter 3, which discusses the claims made by NTD theorists.

CHAPTER 3 CLAIMS MADE WITH RESPECT TO NTD NEIGHBOURHOODS

3.1 OVERVIEW

Chapter 3 details the claims made by NTD theorists. Claims relate to the composition of the population of the communities, the composition of streets, size and density, the goals of mixed land uses, the intention of providing a variety of housing and building types and the roles of both the pedestrian and the automobile. The intentional relationship between public and private spaces will be discussed, as will goals for the region, environmental sustainability, and economic considerations.

Advocates of NTD claim that designing communities according to a defined set of criteria will bring about affordable homes, safe communities, and a weave which integrates the complexities of home and work. They promote the restructuring of public policy and development practices to support the following principles: neighbourhoods should be diverse in use and population; communities should be designed for the pedestrian and transit as well as the car; cities and towns should be shaped by physically defined and universally acceptable public spaces and community institutions; and urban places should be framed by architecture and landscape design that celebrate local history, climate, ecology, and building practice (Congress for the New Urbanism, 1997). The result will be a new paradigm of development which contains the ideal of an integrated and

heterogeneous community (Calthorpe 1993). People in NTD communities will experience increased face to face interaction compared with people in contemporary subdivisions. The combination of mixed land-uses, a pedestrian-oriented street network, and a densely populated, vibrant community will lead to people having casual encounters on the streets and in the shops of the community. This casual interaction will be the basis for the development of bonds of an authentic community (Audirac and Shermeyen 1994).

Proponents of NTD have produced voluminous literature which makes claims with respect to several topic areas. In this chapter, these are grouped according to population, streets, size, density, mixed land-uses, housing types and building features, pedestrians, the role of the auto, public and private space, the region, the environment, and economics.

These factors, it is argued, help to create neighbourhoods, not merely subdivisions. The following elements are claimed to be the benefits to communities which are built with the criteria outlined in Chapter 4.

3.2 POPULATION

The small town philosophy of NTD is not just an architectural paradigm, but a social synthesis, which, if applied on a large scale, would allow a large range of people to become active citizens (Krier in Duany *et al.* 1991). People who will live in the community will be those who relish an urban lifestyle, with its many

options made available by an eclectic mix of land-uses and residents. The things that residents will like best about the communities will be the neighbourliness and orientation toward people (Southworth 1997).

3.2.1 AGE

Populations will be diverse. Diversity of age will result from people being able to stay in the community throughout various phases of their lives. It is likely that NTD communities will have people who are at various stages of their lives living in a variety of accommodation, at any given time. The communities can create links between younger and older generations, as the developments would typically enable families in single-family houses to live close to their older relatives living in townhouses (Wagner 1997).

3.2.2 INCOME

Populations will also be diverse in income. Socio-economic diversification will be a result of the variety of housing options available within the community. Residents will be people who can afford to live in an accessory suite above someone's garage, and those who will benefit from the rental income generated by that property. Wealthy professionals and struggling students should all be able to find accommodation in the variety of options available within the community.

3.3 STREETS

The purpose of streets is to make the pedestrian feel comfortable, and provide for automobile travel (Lennertz in Duany *et al.* 1991). Streets will be public rooms, and will help to provide a strong sense of safety within the community. Safety is provided to pedestrians as they are shielded from the slow-moving traffic in narrow streets by parked cars, and from any danger which may come to their security of person by large numbers of people on the streets at various hours. Streets will be safe from any real or perceived danger. When alleys and paths are well supervised by the windows of nearby outbuildings, they create the perception of safety and security, and are well used by pedestrians (Duany in Miller 1994).

Street patterns contribute significantly to the quality and character of a community (Southworth 1997). A gridded street layout will offer benefits to the pedestrian and the community. It will shorten trip lengths for pedestrians. When walking trips are shortened, auto travel will decrease in compact and grid-like land-use developments. A grid-like layout of streets, and a transit-based circulation make efficient use of neighbourhood streets and improve overall neighbourhood access. Intersections create route choices and thus an explorable, fine-grained network. Multiplicity of contact points allow people to enter easily into social relations (Sennett 1970). The result will be overall community accessibility and multiple available routes within the neighbourhood and with external roads (Audirac and Shermeyen 1994).

3.4 SIZE

Communities will be walkable. They will be of such a size that they contain an ample population to support local stores, services, and public transportation, but not so large that they would be impossible to walk across to use the services provided. That is, people should be given the option to go to their destinations either as a pedestrian, or as a cyclist in good weather, and not have to drive their cars to get a litre of milk.

3.5 DENSITY

Communities will be both dense and vibrant. They will have residents and commercial occupants who will use the neighbourhoods during hours which are both varied and compatible, to maximize the use of the buildings, streets, sidewalks and parks. Density must not be confused with overcrowding. High density is defined as a large number of units in an acre; overcrowding is defined as too many people in a dwelling for the number of rooms it contains (Jacobs 1961). The two concepts are not necessarily related, and should not be confused. NTD communities will be dense, not overcrowded. Densities are too high or too low when they frustrate, not abet diversity (Jacobs 1961).

Compact organization reduces the requirements for infrastructure, automobile use, and pollution. It also facilitates public transit, as transit stops can be located in compact community centres. Buses do not have to have routes through

residential areas, but rather can maximize their efficiency by picking up and dropping off passengers in the village centres.

3.6 MIXED LAND USES

There will be mixed land-uses. The concept of mixed land-uses is complimentary to the concept of high density. Neighbourhoods will have lands within them designated for residential, commercial, recreational and educational purposes. Unlike many contemporary subdivisions, NTD communities will have the land-use designations intermingled, so that there will be no areas exclusively zoned for single purposes. Zoning of building types will reflect the principles of integration, rather than separation. There may be residences or offices above street-level retail shops, and professional offices near the town square. Squares or parks will be designed as settings for informal social activity and recreation. The mixed land uses will allow parking structures to be shared by daytime and night-time drivers, and will result in busy, active public areas. Connectedness and continuity of movement will encourage mixing of uses in the city.

Mixed land use neighbourhoods also make walkable connections strong, because there are many destinations which are linked, and easily accessible by foot. They will make it possible for children to go independently to their activities and not have to be chauffeured by their parents. The resultant benefits are increased independence, and reduced auto use.

3.7 HOUSING TYPES/BUILDING FEATURES

A variety of housing types will allow communities to be used for entire life-cycles, so that people may become established and not have to move from the community, as their housing needs change. Architectural features of the houses such as windows oriented to the street, will lend themselves to safe streets. Front porches and rear garages will help people to know their neighbours, and therefore, for community bonds to be formed.

Structural features on fronts of houses bridge public and private space. The result is the creation of a sense of community by people knowing each other through casual interactions (Audirac and Shermeyen 1994). NTD theory contains the viewpoint that design affects behaviour, and that structure and function of a community are interdependent (Duany and Plater-Zyberk 1991). Streets, parks and squares near houses with porches close to the street will create comfortable public spaces, and in turn strong community bonds.

Accessory apartments above garages as shown in Figure 6, and townhouses shown in Figure 9 may suit older people who may be seeking small living quarters which would require little maintenance. They will allow people to live in the communities through various stages of their lives. Apartments above retail and office spaces will permit people with various incomes to live in the same community.

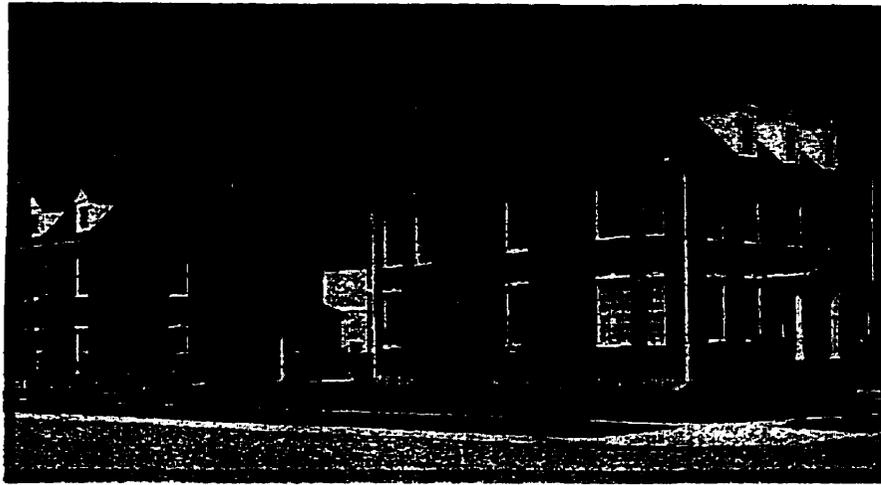


Figure 6 A single family house with an accessory suite above the garage. Photo by author.

Public buildings prominently located at the end of boulevards and vistas will help residents to identify with their community and foster civic pride. Buildings should be constructed with their architectural character modelled on traditional architecture of the region in which they are being constructed (Christoforidis 1994). Buildings and structures are not the only features to be considered.

3.8 PEDESTRIANS

In addition to buildings and structures, people have a role to play. Pedestrians will be the catalysts to make the essential qualities of communities meaningful (Calthorpe 1993). People will be given the opportunity to become pedestrians for their affairs within the communities, in walkable neighbourhoods. Casual encounters will be plentiful, as there will be several corners and intersections where paths may cross. Eyes and activity on them will make the streets safe, so pedestrians will be comfortable using them. Street safety will be cyclical: the

more people use the streets, the safer they will become, and the safer the streets become, the more people will be willing to use them. Auto dependence will be reduced from current levels, and people will own fewer cars.

The design of a community to be pedestrian-oriented can be very important to those who do not drive. Children are the people for which the suburbs are supposedly intended (Langdon 1994). Children will have the ability to walk to their destinations, rather than require a ride from a parent. They will experience greater mobility, as they walk or ride their bikes to school, music lessons, sports, local parks and recreational activities, without having to be chauffeured. Mobility and independence of children is one of the attractive features of a NTD community. The network will work well for children as they play and visit friends, and for adult recreation. In contemporary subdivisions, children have little autonomy and low levels of mobility, especially those from double-income families in which parents have to allot time to drive children to activities. Children watch television, when the only alternative is hanging around the cul-de-sac. In an NTD community, children can experience going to retail areas, parks and schools without crossing arterials, and therefore without parental supervision. The option of walking also works for the elderly.

Elderly people without cars will be given an opportunity to age with dignity, as they retain independence, and walk or ride transit to doctors' appointments and to

buy groceries. They will have basic access to all services provided within their community, and will not have to rely on others for transportation.

Children and the elderly are not the only ones who will enjoy pedestrian-oriented neighbourhoods. Commuters will find stress and time in traffic can be decreased when people have a choice to walk to work in their communities. A network connecting destinations such as parks, schools, civic facilities, shops and services will give the opportunity to walk through the community (Southworth 1997). Retail and office space in the neighbourhood will permit people to shop and work in the area, and will be accessible to pedestrians in the centre of the development. Most homes will be a 5-to-10 minute walk from the centre as the neighbourhoods will be built on 0.4 km or 0.8 km radii (Southworth 1997).

3.9 ROLE OF THE AUTO

Pedestrians will help to reduce auto use. In a NTD community, people will be given the opportunity to get out of their cars, and use other forms of transportation. They may walk, take transit, ride a bicycle, or use a combination of forms. Traffic will be reduced from present levels in modern suburbs, as people walk, or ride to their destinations. Streets will be built primarily for the pedestrian, not the car, and garages will be moved from their prominent location on the fronts of houses. Neighbourhoods will be built at a human scale. Regional access by public transit is advocated. Both bus service and light-rail service will be provided to the public space in densely populated neighbourhoods.

3.10 PUBLIC/PRIVATE SPACE

Communities will contain both private and public space. Streets, sidewalks, parks, squares and the areas in front of houses will be public space, and backyards will be private space. Public space will be well planned and integrated into communities, and will not be made out of whatever scraps of land are left over after all of the “important” uses have been allocated space. Rather, it will be carefully allotted to maximize casual encounters, and ensure safety within the community. There will be a strong sense of community, participation, and identity (Calthorpe 1993). Public space provides the fundamental order for communities, and sets the limits for the private domain. Common open space located and designed for public intensive use can be modelled after a historic village square or town green.

Public space will likely be increased from current levels. As garages are moved from the fronts of houses into the backyards, houses will be pushed forward on the lots, thus creating short set-backs. The overall result will be that public space will be very public, as there will be a lot of street life and activity on the streets and on the front porches of houses, and the private space will be very private, as in their backyards, neighbours will be able to be separated from one another. The provision of comfortable public places will allow residents to come to know each other and watch over their collective security (Audirac and Shermeyen 1994).

3.11 REGION

NTD claims reach beyond the community. Regional development will preserve land and open space, support transit, reduce auto traffic, and create affordable neighbourhoods. Cities are based on permanency, and their plans must be laid down by a governing body which will establish tough, comprehensive regional growth strategies to ensure that problems are not transferred from one area to another (Moule and Polysoides in Katz 1994). Regional solutions may include infill, redevelopment, compact development, and a combination of all three. A greenbelt strategy will preserve open space at the edges of regions, and also perpetuate sensitive habitat, riparian zones and high quality open spaces.

3.12 ENVIRONMENTAL SUSTAINABILITY

Both regionally and locally, there will be environmental sustainability, and communities will have the opportunity to be environmentally responsible. There will be potential for low traffic levels and fuel emissions through the increased use of pedestrian and bicycle friendly environments with useful destinations and accessibility to transit. Pollution from the small number and short distances of automobile trips should lead to limited intensity of environmental impacts. The neighbourhoods will offer sensitivity to the landscape (Southworth 1997).

3.13 ECONOMICS

Finally, there will be several economic benefits to residents in NTD communities. First, the cost of living can be lower than living in other communities, as people

will ride transit, walk, and ride bicycles more than they will drive their cars. One of the greatest contributions to affordable housing is the ability of NTD communities to reduce multiple automobile ownership, and associated costs. The money saved from cars can be diverted to mortgages, thus making home ownership affordable. Money which would otherwise be spent on car payments and auto insurance, can be diverted to paying mortgages faster, thus decreasing the total amount paid in interest and making homes owned outright, quickly.

Second, housing will be affordable for many families. Home ownership will be made affordable, because there will be a variety of housing styles and options available within each community. Prevalent home ownership will reduce the number of people who pay rent and those people will gain the economic benefits of having equity in their houses.

Third, accessory apartments above garages, as in Figure 6, or in the yards of single-family dwellings may have economic benefits to homeowners, as they will generate rental revenues. This money may be used to pay mortgages faster, thus reducing mortgage terms, and thereby decreasing the amount paid, overall.

3.14 SUMMARY

There are many goals which advocates hope may be achieved in NTD communities. Some are achievable; others are not. The goal of having a population comprised of an eclectic and vibrant mix of urban dwellers, diverse in

age and socio-economic status is reasonable, and desirable to make neighbourhoods interesting. Streets could and should be built on a grid and make pedestrians feel comfortable, and entire communities should be of such a size that they are walkable. They should be dense and compact, and people who reside within them should have ample opportunities for casual contact, through which the bonds of community may be established, and safety reinforced. It is reasonable to propose that pedestrians should be favoured over the automobile, and both public and private space should be accommodated into neighbourhood designs from their inception, and a regional plan should help make provisions for environmental sustainability. However, it is unlikely that large numbers of residents within the communities would be able to work in the neighbourhoods, and not have to leave the area for employment. There will be some residents who would have such a luxury, such as some store clerks and a few professionals with offices near the town square; however, most people would have to leave the community for employment purposes. The means by which the goals may be realized is detailed in Chapter 4, which explores the physical features of NTD communities.

CHAPTER 4 PHYSICAL FEATURES OF NEOTRADITIONAL DEVELOPMENT

4.1 OVERVIEW

Chapter 4 is an explanation of the tangible features which would be included in a community in order for it to achieve the intangible goals outlined in the previous chapter. It includes guidelines for streets, size and density of neighbourhoods, housing and building types which should be included, a discussion of what should be considered within a mixture of land uses, the relationship between public and private spaces, and regional and environmental considerations. When thoughtfully designed and carefully constructed, these elements can work together to form a NTD community.

4.2 STREETS

In order to make streets comfortable for pedestrians, two patterns for streets are used which adhere to the philosophy of NTD communities: grids and fragmented parallels. Diagrams of their street patterns and intersections as well as details of the lineal feet, number of blocks, number of intersections, and number of access points are illustrated in Figure 7. The quintessential open grid consists of two series of parallel streets crossing at right angles to form a pattern of equal-sized square or rectangular blocks (Southworth and Owens 1993). Streets of this design are strongly interconnected, readily expandable, and offer a variety of possible

routes through, and access points in and out of communities. This type of pattern has a high percentage of land devoted to streets. Although this will mean high infrastructure costs, it offers short trip lengths and a large number of route choices. When blocks are small, they create walkable neighbourhoods. Therefore, this pattern can be found to dominate neighbourhoods which were constructed prior to World War II when pedestrian travel was high, auto ownership was low, and street construction standards were not strongly oriented to the automobile. These are the same reasons that the grid pattern is popular in NTD communities. A grid pattern will cause pedestrian routes to be short and direct. Grids may be altered to a warped grid patterns, to add to interest, while maintaining frequent intersections (Southworth 1997).

The second type of street pattern which may be used is made up of fragmented parallels (Southworth and Owens 1993). In this type of structure, blocks are configured into long, narrow rectangles and L shapes. The streets are truncated at T intersections and sometimes make L corners. Therefore, the degree of interconnection is decreased from the grid system, and the choice of routes through a neighbourhood are limited, as are the access points in and out. Narrow blocks provide optimal frontage for residential building lots. This pattern has almost as much street length as the grid pattern; however, it has significantly reduced numbers of blocks and access points. It was among the first designs for neighbourhoods of automobile owners, and is indicative of a diminished value of pedestrian access and a growing interest in increased frontage for house lots. The

reduced number of access points suggests a self-contained subdivision, with a lower level of connectedness to the surrounding city than a simple grid system.

Whether streets are built on a grid or fragmented parallel pattern, blocks should be small, and have average perimeters which do not exceed 610 metres. At that size, travelling distances for pedestrians will be reasonable, and there will be plenty of intersections (Lennertz in Duany *et al.* 1991). There should be connector streets, not collector streets (Calthorpe 1993). All streets should be through streets, and traffic speeds along them should be kept low with frequent intersections and stops. In Winnipeg, in neighbourhoods built according these principles such as Wolseley, street networks are built to offer a variety of paths, and slow traffic with frequent intersections and stops. Cars have to slow down for the safety of pedestrians and cyclists. Multiple routes help to diffuse traffic congestion.

4.2.1 WIDTH

Some of the high costs of street provision may be recovered with narrow streets. Streets are sized and detailed to serve equitably the needs of the automobile and the pedestrian. They should have 15 metre rights-of-way and 11 metre of pavement consisting of two 3 metre driving lanes and two 2.5 metre parking lanes (Wagner 1997). Sidewalks should be 1.2 to 1.5 metres and have a planting strip

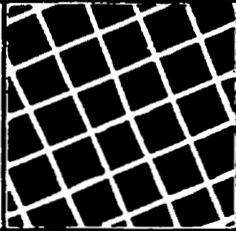
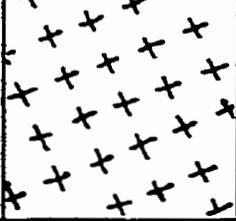
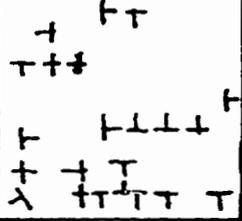
	Gridiron (c. 1900)	Fragmented Parallel (c. 1950)
Street Patterns		
Intersections		
Lineal Feet of Streets	20,800	19,000
# of Blocks	28	19
# of Intersections	26	22
# of Access Points	19	10
# of Loops & Cul-de- Sacs	0	1

Figure 7 Comparison of street patterns for 100 acres units of analysis. Source: Southworth and Owens 1993.

along them. Back lanes should be 8 metres wide, with a 3.6 metre paved lane and 2 metre grass strips on each side (Southworth 1997). Streets and the trees that line them are maintained by the municipality.

4.2.2 TREES

Streets should have adjacent planting strips and sidewalks on both sides (Southworth and Owens 1993). Trees should be on the public property on both

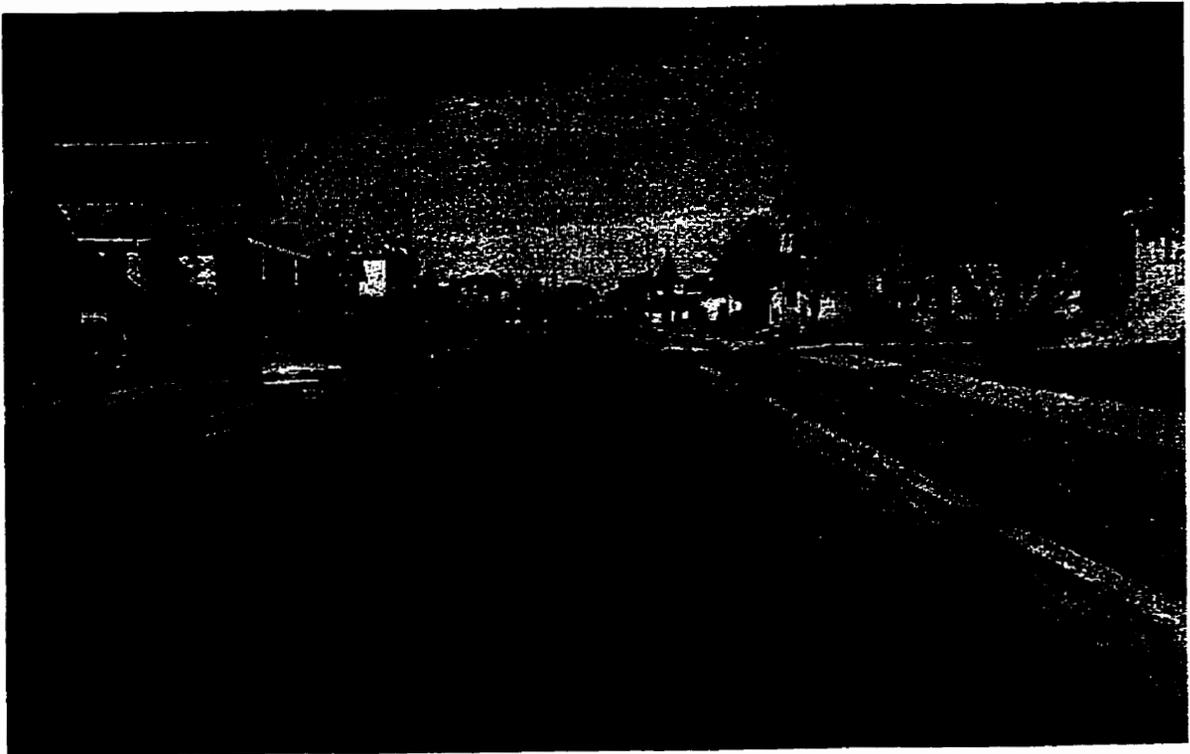


Figure 8 Adjacent streets. Only one has trees lining the sidewalks. Photo by author.

sides, as they benefit the entire community. As the trees mature, they create the illusion of a narrow street.

Street trees are to be installed because they give neighbourhoods a cozy feel. The contrasting photos in Figure 8 are of streets in the West End of Winnipeg which are directly adjacent. The trees which line the sidewalks of the top photograph create a close environment which would be comfortable for pedestrians. The absence of trees in the lower photograph give the street a “wide-open” atmosphere. The streets are the same width, both have houses with equidistant set-backs, sidewalks and on-street parking. The only difference between them is the existence of trees. Regularly planted trees establish an overall space and scale of the street. They also temper the weather: mature trees can reduce air-conditioning bills on very hot days. They can also act as snow-fences, and divert snow from yards and driveways.

4.2.3 PARKING

Parking lots should not be dominant visual features in front of buildings: parking may be hidden from view, or on the street. If hidden from view, cars should be parked out of sight in garages, underground or in lots recessed to the backs of buildings or the centres of blocks. Alternately, cars may be parked on the streets. If this option is chosen, on street parking should be used both day and night by a variety of people taking part in activities within the neighbourhood. Parallel parking along the streets protects pedestrians from actual or perceived danger of

moving traffic. Regardless of the option chosen, parking must be integrated into the overall plan of the town to not permit large parking lots in front of buildings, and pedestrians should not have to traverse parking lots to reach their destinations (Duany *et al.* 1991).

4.3 SIZE

The neighbourhood area is limited in size to ensure that streets are walkable for pedestrians. They have clear edges and a focussed centre. They should be built so that they are walkable and human scaled. Entire neighbourhoods should not be larger than 200 acres. Houses should be a three minute walk from neighbourhood parks, and a five minute walk from the centre square or common. They should be built on a 0.4 or 0.8 kilometre radius, which results in a five to ten-minute walk from the neighbourhood edge to its centre (Lennertz in Duany *et al.* 1991). The number of children who can walk to them determines the size of schools in the neighbourhood.

4.4 DENSITY

To fulfill the goal of neighbourhoods being compact, and creating opportunities for interpersonal contact, NTD neighbourhoods are created at a greater density than contemporary subdivisions. They will have more units per acre.

4.4.1 DWELLING UNITS PER ACRE

Residential densities range from 5-8 dwelling units (d.u./net acre for single-family homes, to 17 d.u./net acre for row houses. Carriage homes (zero-lot line single-family homes) are about 15 d.u./net acre, and 17-25 d.u./net acre for apartments and condominiums. In terms of gross densities (all uses which include streets and open spaces) the densities are lower in NTD communities than in actual traditional neighbourhoods, because there are more parks in the NTD neighbourhoods than the traditional ones. However, compared to contemporary developments in which single family dwellings are dominant, a variety of dwelling types in a NTD neighbourhood ensures that the density of the area is relatively dense. Therefore, their density is greater than contemporary neighbourhoods, but less than traditional ones.

Transit needs 4 000 people per square kilometre to pay for itself (Foot 1996). Two thousand residents can live in 120 acres to be within a 0.4 kilometre walk of the centre of the community which is a logical location for a transit stop. As a result, NTD communities should be dense enough to support transit which is one of the benefits of the community.

Another benefit is that both hard and soft services can be provided at lower per capita cost than in contemporary neighbourhoods. Urban service gets cheaper with an increase in density. Schools, transit, fire, police, sanitation, sewers, storm drainage and water supply are all more economical in densely populated

communities than in sparsely populated areas (Fowler 1992). A densely populated NTD community is one in which services may be provided economically.

4.5 HOUSING TYPES/BUILDING FEATURES

To fulfil the criteria for an array of dwelling types, there should be a range of housing prices and a broad range of housing styles so that people with a variety of incomes may live in the community, thus the neighbourhood has the potential for representatives from a full-range of society. There should be numerous affordable housing options, including ancillary units above the garages of single-family dwellings or in back or side yards, apartments above retail shops and professional offices, and apartment buildings adjacent to shopping and workplaces. Row houses, semi-detached houses, secondary units, and mid-rise apartments all have roles to play within the community.

4.5.1 TYPES

Ancillary units, as seen in Figure 6, are affordable for teenagers or elderly family members, or as transitional accommodation for single-family dwellers. Small cottages may be built into the yards of some of the larger houses in the communities. They allow people with varied incomes to share the amenities of a neighbourhood while the homeowners benefit from rental income generated by the cottage.

Townhouses and apartments should be constructed around village squares or greens, to help provide a variety of housing options within the communities. Figure 9 shows a block of townhouses which are articulated and differentiated from each other with a variety of architectural features, making each one distinct yet dignified.

In order for the community to be aesthetically pleasing as it ages, houses should be made of natural materials like wood, brick, stone and stucco as they age with



Figure 9 Townhouses which surround a central, common green are made of brick. Photo by author.

dignity. Ersatz materials (vinyl, aluminium siding) age unnaturally, and dent (Duany in Miller 1994). No more than three of the natural materials should be combined on a single structure so that a clean, co-ordinated appearance is maintained (Duany and Plater-Zyberk 1995).

4.5.2 STREET ORIENTATION

As shown in Figure 9, building facades must be varied to be pedestrian-oriented. Monotonous and unarticulated buildings would not be interesting to look at, or walk past. Streetscapes should not be an unarticulated wall of garage doors. The dominance of a row of vacant garage doors conveys a sense of anonymity rather than of intimate human space (Southworth and Owens 1993). From the street, entries not garage doors and driveways should be visible. Guest entryways should be on the street-side of houses, so that they would encourage visitors. The outfaces of all buildings should be oriented toward the pedestrian. Building heights should be proportionally related to right-of-way widths, and the edges of wide streets should be landscaped to reduce apparent street widths.

Buildings should interface with streetlife: houses should be fronted by porches or balconies as seen in Figure 10. Balconies, porches, doors and windows should be built near the street. They contribute both formally and functionally to a human scale. Setbacks create functional spaces, and strong relationships between buildings and streets. Setback lines should be close to property lines. Residential setbacks should be 3 to 4.5 metres from property lines, and the setbacks should be

landscaped for the interest of the pedestrian, and to create a distinction between public and private space. With reduced setbacks,



Figure 10 Houses should have inviting features on the front for interaction of residents and pedestrians. Photo by author.

residents can watch over streets, helping to make them a public space. Ground floor commercial properties should be occupied by pedestrian related uses. Minimal setbacks such as a metre for commercial properties bring buildings close to the street and pedestrians, and encourage window-shopping.

4.5.3 GARAGES

Garages should be oriented to minimize their visual impacts on the street. If they have to be oriented toward the street, they must be set back from the front facade



Figure 11 Garages are accessed from back lanes. Photo by author.

of the building at least 1.5 metres. Garages should be behind houses, and accessed from a back lane as shown in Figure 11. If there are no lanes, garages should still be located behind the house, and accessed from a side driveway.

4.5.4 FABRIC/MONUMENTAL

In addition to features on buildings, the type of buildings included in the communities must be considered. There are two kinds of buildings: fabric buildings, and monumental buildings. Fabric buildings conform to street and block-related rules, and are consistent in form. Major civic institutions will be assigned special locations, and will stand forward as monuments. They are free of all formal constraints, and can be unique. Both types of buildings are necessary to make communities complete.

4.6 MIX OF LAND USES

In order for activities and personalities to be intermingled, neighbourhoods should have a mix of land uses, so that residences, parks, and schools are within walking distance of shops, civic centres, jobs and transit. Neighbourhoods should be a modern version of a small town, and contain in them the services and amenities which would be found in a small town. Mixed land uses, and the local availability of services are very important to those who do not drive. Young people can bicycle to access services, and the elderly must live close to doctor's offices and grocery stores that they can walk to them.

4.7 CENTRE

In response to the claim that NTD communities should have both public and private space, all neighbourhoods will have an identifiable centre, and many will have a discernible edge. Village squares can act as community centre points, and gathering places. They can be constructed to give identity to the community, and create a logical place for civic and commercial services around them. Commercial spaces can surround village squares, greens or public plazas to give them additional focus.

Andres Duany and Elizabeth Plater-Zyberk think the square is a vital component, and define urbanism as a limited area structured around a defined centre (Duany and Plater-Zyberk 1994). That centre is always a public space, such as a square or

green. The centre is also where the neighbourhood's public buildings are found: the green is surrounded by a post office, day care, meeting hall, and religious institutions. Shops and workplaces are also found near or surrounding the centre. A centre of a community is necessary, and edge is not always necessary.

4.8 COMMERCIAL

Commercial properties add to the mix of land uses within neighbourhoods. Commercial space should occupy at least ten per cent of the area within a neighbourhood (Calthorpe 1993). Appropriate commercial uses include retail shops, professional offices, restaurants, cinemas and health clubs. They should be located near the centre of the community and may surround the village green.

4.9 PUBLIC/PRIVATE

Physical criteria have been set in order to realize the definition of public space. Streets, parks, sidewalks, plazas and squares should be common ground. Civic and private space should be complimentary. Sites reserved for public buildings should be distributed throughout the village and public space should be formative in designs, not created from residual lands. Parks should be located in prominent locations. Priority should be given to public space, for the appropriate locations of monumental public buildings. NTD theory borrows from the City Beautiful movement, with the idea that public buildings should be located prominently to add identity and focus. Public buildings should occupy important sites, overlooking a square, or terminating a street vista (Audirac and Shermeyen 1994).

4.10 REGION

A regional plan must be composed in order for large area planning to occur. NTD is an alternative for building and re-building regions in a sustainable manner. Development should be organized around a regional transit system (Calthorpe 1993). Strategies should be regional so that problems are addressed, not displaced.

Corridors are connectors and separators of neighbourhoods. Like edges, they can be naturally occurring as wildlife trails, or manufactured as rail lines. They must provide visual continuity. They are the most difficult elements to implement because they require regional co-ordination.

Neighbourhoods should have edges, or urban growth boundaries. Edges can be naturally occurring, or manufactured. Edges may also be areas of extremely low residential density such as acreages, ranches, or rural residential areas.

4.11 ENVIRONMENT

In answering the calls for low levels of pollution, and an increase in the quantities of greenspace, environmental features must be built into the communities. Natural waterflows, watersheds and recharge areas should be maintained where possible. Plants indigenous to the local climate should be used. Local climate and local plants should define special places. Roads can be constructed of brick and gravel,

rather than (petroleum-based) asphalt, and drainage may be handled through natural percolation rather than storm sewers so that sediment is precipitated out of run-off on its way to waterways (Duany in Miller 1994).

4.12 SUMMARY

This chapter has discussed the physical features which should be employed to achieve the goals of an NTD community. It stated that streets should be build on a grid or altered grid pattern, size of the communities should be limited so that they are walkable, and that the areas are built to accommodate relatively high densities. A variety of housing and building types should be included to be affordable to a spectrum of residents, and land uses should be mixed to provide diversity within the communities. Centres should be created as public gathering places, and commercial components should be constructed around their edges. Both public and private space should be included in the design of the communities so that neither is left to be constructed out of residual parcels. Regional plans should be drawn, and environmental considerations should include the natural flow of water, and the protection of water recharge areas. The theory of NTD which was examined in the claims made in Chapter 3 and the physical features described in Chapter 4 serve as the foundation for the development of the questionnaire built to determine the positions and opinions of the developers interviewed. The methodology for the development of the questionnaire and the activities employed in a series of interviews are explained in Chapter 5.

5.1 OVERVIEW

Chapter 5 discusses the methodology used to examine the population studied in the thesis. A questionnaire was developed, approved by the Faculty of Architecture ethics committee, pre-tested, and interviews were conducted while being recorded.

The population sample studied in the thesis was comprised of development companies which were or which had recently been active in the Winnipeg market. The thesis question was examined from the perspective of several developers who were, or who had recently been active in residential development in, and around Winnipeg. In order to ascertain the thoughts and to learn from the experiences of the developers, a questionnaire was developed (Appendix 1) and in all except one case, combined with personal interviews to gather empirical data.

5.2 QUESTIONNAIRE

There were some advantages to the processing of data realized by using a questionnaire. The questions within the questionnaire were designed to minimize interviewer bias (Kidder, 1986). They were posed in a neutral fashion, so either a positive or negative response from an interviewee would be deemed acceptable. Another advantage was that having standardized questions helped to ensure that

all interviewees were asked to discuss the same topics, so their responses could be compared to each other during analysis. It is anticipated that the reliability of the questionnaire would be high, that is, there would be a high level of probability of yielding the same results from the questionnaire being used again, as the intent of the questions were clear, and they were related to topics which were relevant to the respondents so they knew the answers to the questions posed.

Factual and opinion types of questions were both asked. Factual questions were generally asked about past and present practices of the development companies (Kidder, 1986). They included questions such as “Where have you developed?” Opinion questions were generally about some of the elements of NTD neighbourhoods, such “Is there a role for low-income family housing in your developments?” Factual questions were asked about what had been developed, and opinion questions were asked about the future and likelihood of particular features of development.

Open-ended, closed ended and ordinal measure questions were all included in the questionnaire. Open-ended questions were particularly useful in the sections which asked for explanations of responses. Surprisingly, coding the responses to open-ended questions was not as difficult as the researcher anticipated. The open-ended questions were answered in a similar fashion by different interviewees, so they were not difficult to compare and contrast. Closed ended questions were easy to process, and were used for instances in which an exhaustive list could be

generated. For example, the developers were asked, “Is your company currently active in residential development in the Winnipeg area?” The responses offered were “yes” and “no.” There were some topics which could be easily and appropriately answered with closed-ended questions. Ordinal measure questions were used to rank respondents’ perceptions. An example can be found in the question, “Please state how you feel about the following statements...It is important to build compact cities.” Options for responses were, “Strongly agree, agree somewhat, disagree somewhat, strongly disagree, don’t know.”

There were also some contingency questions, for which a respondent’s initial answer determined the next questions to be asked. For example, the two possible contingency questions which followed from the above noted example of a closed-ended question were, “If yes, how long has it been active?” and “If no, when was it active?” They allowed the researcher to gather detailed information or to understand why particular responses had been given.

5.3 PRE-TESTING

After the first draft of the questionnaire was written, it was pre-tested by experts from the same population as the study was to examine. Ray Klassen, who had previously worked for many years with Genstar, and John Sherritt, Principal of Sherritt Development Services, both examined the questionnaire and provided feedback to the researcher in interviews.

5.4 INTERVIEWS

Development companies which were or which had recently been active in the Winnipeg area were contacted by telephone in June, 1998, and were initially asked if someone able to speak for the company would be willing to participate in the study. People were appointed by the companies, and were, in turn, faxed copies of the questionnaire by the author, in preparation for the interviews. Receiving the questionnaires before the interviews allowed the respondents to review the questions, and do any research necessary (Chadwick, 1984). Therefore, in the interviews, the respondents were not required to give the first answer that came to mind. Instead, they had the opportunity to prepare beforehand, so could provide the most accurate answer (Rubin 1995).

Conducting face-to-face interviews to address the questions posed in the questionnaire ensured completeness of responses (Nachmias, 1981). If the respondents had simply filled in the answers to the questionnaires and mailed them to the researcher, the 100% participation rate which was achieved would not have necessarily occurred. Additionally, personal interviews allowed the researcher to probe the interviewee to expand upon short answers, and give explanations to responses which would have otherwise been unclear. All of the interviews were conducted in the respondents' offices, and on several occasions, maps and photographs on the walls of the offices were referred to, as points were illustrated.

Face-to-face interviews primarily occurred during the first week of July, 1998. Both the researcher and the interviewee had copies of the questionnaire during the interview. The order in which the questions appeared in the questionnaire was generally the order in which they were discussed during the interviews. In all cases, the interviewees had read the questions, and had made comments on the forms before the interview started. The researcher was most often given the interviewee's copy of the questionnaire at the end of the interview, and found them to be a valuable addition to the longhand notes taken during the interview.

5.5 RECORDING

In addition to the interviewees' responses to the questionnaires being recorded by hand, permission was granted by all respondents to have the interviews tape recorded. It was sometimes problematic to ask questions of the interviewees, listen to their answers, and write their entire responses in longhand, to capture their responses. It was extremely valuable to record the interviews, listen to the conversations afterward, and fill in missing responses on the questionnaire forms. This method of note-taking provided much more complete answers than would have been gleaned if the conversations had only been recorded by hand. The tapes were erased after the questionnaires were completely filled in: transcripts were not made.

Another advantage of tape recording the interviews was that it dramatically reduced the opportunity for misinterpretation of the responses due to paraphrasing

or summarizing as responses were noted. During the interviews, sometimes abbreviations or paraphrasing was used in the notes made by hand in order to keep pace with the conversation; however, when the tapes were reviewed, it was discovered that on a few occasions the paraphrasing had not exactly reflected the responses given by the interviewees. Listening to the tapes gave the opportunity for the hand-written responses to be corrected so that they more accurately reflected the actual responses given. The tapes indicated the exact words of the respondent.

One of the shortcomings of having tape recorded interviews was that analysis was a lengthy process, as the tapes took a long time to listen to, as they often had to be re-wound and played over several times to capture a particular word or phrase. However, the benefits of using the tapes far outweighed the problems encountered.

5.6 CONCLUSIONS

Overall, the experience of sending a questionnaire to respondents, and tape recording face-to-face interviews, was very positive. A high response rate was achieved. Finally, analysis of the interviewees' responses was simplified as answers were organized in a fashion which permitted them to be easily compared and contrasted.

When the questionnaires were completely filled in, each of the responses was entered into a spreadsheet. Rows were created for each of the standardized questions, and columns were created for each of the respondents. The data was therefore categorized, so that the responses to each set of questions were organized together. With the data well organized, comparisons could easily be drawn. The spreadsheet was analysed for trends and anomalies. Several interesting relationships were identified, such as the similarities of responses within the group of large developers, and within the group of medium to small sized developers, and the differences in responses between the two groups. Some of the questions generated a response which was common to all developers, and others indicated divergent thinking.

Subsequently, those notes were reviewed, and themes were identified as common topics and ideas became apparent. The themes served as the skeleton for Chapter 6, the Report on Interviews.

6.1 OVERVIEW

The report on interviews covers a variety of topics. The developers interviewed were asked to comment on their experiences, and to voice opinions on various elements of the developments with which they have been involved. They discussed the sizes and economics of their developments, as well as some of the trends they had seen with respect to lot and house size and shape and the role of a sense of community. They commented on a series of design features which were common in contemporary subdivisions, and others which were part of NTD theory. The results were fascinating.

6.2 POPULATION STUDIED

Eight local development companies each appointed an executive to participate in the study and provide interviews. The first four questions of the questionnaires related to information about the interviewees and their employers. Four of the interviewees worked for companies which were solely developers, three worked for companies which were both builders and developers, and one worked for a marketing firm, which worked with developers to assemble land for development and sell lots. All except one were active in the Winnipeg market at the time of the interviews, and that company had been active until three years ago. Only one interviewee requested anonymity, so asked that his name not be used in direct

relationship to information which he provided, but for the purposes of this paper, references and comments are not attributed to particular individuals or companies.

The experience of the development companies interviewed ranged from having been active in the market for as long as 47 years, to as short as 3 years. All except two of the people who were interviewed as representatives of their companies had been with their employers since the companies' initiation into the Winnipeg market. The two people who joined their companies after work had begun in and around the city had been with their employers for 14 and 20 years. As executives, all of the respondents were knowledgeable about their firm's development activity.

None of the developers believed that Winnipeg was an exciting market in which to be developing, as it is a "slow growth market." Some said they thought commercial developments were exciting, and others stated that residential development had been interesting to do in the 1980s when there was a housing boom in the city, but none said it was exciting to be in the residential development business in the current marketplace.

6.3 WHERE DEVELOPMENT TAKES PLACE

The development firms interviewed had built in a variety of neighbourhoods, in a variety of locations in and around Winnipeg, including south Winnipeg, north

Winnipeg, St. James, Charleswood, Tuxedo, the town of Selkirk, and the Rural Municipality of East St. Paul.

6.4 WHAT WAS BUILT

Developers from a range of experiences were chosen, as both large and small and medium-sized companies were included in the study. Some had developed subdivisions which contained more than 7000 units; others companies had done as few as 40 units. Four were large scale developers, and four were small and medium-sized developers. Large scale developers were determined to be those which created entirely new neighbourhoods of more than 500 units in a single development. Medium scale builders had constructed between 100 and 499 units in a development, and small scale builders constructed fewer than 99 units in a single development. Analysis of the responses to various questions indicated differences in attitudes and perceptions between these groups.

The small and medium-sized developers built only single-family homes in their residential developments. However, the large scale developers constructed a mix of housing options in their neighbourhoods which included single-family dwellings, duplexes, townhouses, and apartment buildings. Most apartment buildings built by the large scale companies in primarily single-family residential neighbourhoods were three-story walk-up structures.

6.4.1 DENSITY

High density developments were examined in question 15. High density developments, defined for the purposes of this study as having more than ten units per acre, were viewed negatively by all developers interviewed. This was chosen as the benchmark because in the Winnipeg market, the majority of development falls below this density. They were thought to have a negative impact on prices within the rest of the developments, primarily comprised of single-family dwellings. It was thought that existing residents would be “up in arms” if it were proposed that density be increased in their neighbourhoods.

One developer indicated that even medium density development, which he defined as five to ten units per acre, was unacceptable in single family residential neighbourhoods, because medium-density was primarily comprised of rental properties and the neighbourhoods they built were reserved for home ownership. He stated that “rentership is for transients,” and that proximity to rental property meant increased vandalism and break-ins for home owners. Owner-occupied medium density units were not considered as options.

However, the development companies that built on large tracts of land, and had mixed densities indicated that they included medium-density developments in the neighbourhoods they constructed. They said there was a market for medium-density accommodations; however, in order for single-family dwellings to be purchased by

owner-occupiers, houses in the communities had to have adequate separations between them and the medium density structures.

Because housing in and around Winnipeg is affordable, many people own their own homes. Furthermore, most of the housing stock in the area is in the form of single-family dwellings, so most home-owning families are the sole occupants of their houses. Therefore, apartment and high-rise dwellers are often tenants, rather than owners. A large number of exceptions to this rule can be found in some condominium communities. However, the majority of property owners in the Winnipeg area occupy single family dwellings.

This phenomenon contrasts the situation in other North American and many European cities, in which home ownership is found in medium and high density areas. In fact, in some areas it is not unusual for houses which may have been built for single family occupancy to have been divided into suites, and occupied by several families, each of whom may own the space they inhabit. Understanding that home ownership is sometimes used, prejudicially, as a measure of status and likelihood of being a “good neighbour” makes it easier to interpret the reluctance of many developers to build medium and high density areas into their developments.

In other more densely populated urban areas where vacancy rates are much lower, it is not uncommon for single family homes to be divided into suites. The suites are owner occupied, and not rented to tenants. In Winnipeg, single family homes are

primarily occupied by only one family, and so areas of low density, defined as less than five units per acre, are primarily areas of home ownership. Areas of medium and high density are denoted as rental areas.

6.4.2 LOW INCOME

Question 16 gleaned the developer's perceptions about low-income family housing. Similar to developers' perspectives on medium and high density accommodation, low-income housing was negatively viewed, as it was commonly believed that it was rarely found in the form of detached housing. Semi-detached housing was said to decrease the value of surrounding properties, and therefore was not attractive to the developers.

Low income housing also seemed to be the victim of a change in government's attitudes relating to housing subsidy programs. Until the 1980s there were government programs which subsidized low income housing. However, in recent times of frugal government spending, those programs have been eliminated, and developers said that they could no longer afford to provide low income housing profitably. Low income housing is not economically feasible without subsidies, and is not being built.

One developer said that the baseline price for labour and materials for an average house of 1200 square feet, is \$78 000. The price of a lot must be added to that, so in almost all cases it would be impossible to build a new house for less than \$80 000,

and in fact, it would be very difficult to do for less than \$100 000. It is not the opinion of the writer that \$80 000 would be affordable to a low income family, but that was the lowest price that the developers said they could provide for a new house.

When questioned about their lack of participation in the “starter home” market, which would be comprised of houses less than 1200 square feet, the developers indicated that they did not believe people who desired those accommodations were in a growing segment of the market, and that existing housing stock fulfilled their needs adequately. As there was no market demand for new, small homes, they are not being built.

6.4.3 ABSORPTION

Question seven addressed absorption. Large scale developers indicated that absorption of the lots they have developed into the marketplace occurs very quickly, because they pre-sell most of them. They said they maintain policies of pre-selling lots, because they could not afford to pay for infrastructure service costs or taxes for developed, unsold properties for longer than six to eight months. This timeline was said to apply to all developments, and was determined as the duration of time which may pass before loss of profits would make development prohibitive. The large scale development companies most often develop land which they have owned for several years in land banks, so they do not lose money on land by having to assemble and buy it in order to develop. The banked land allows them to take advantage of the benefits of having made long-term investments. In contrast, small and medium scale

developers reported that there was no formula to determine how quickly absorption would occur, and that lot sales depended upon a fluctuating market. They indicated that it took a long time to sell lots after they had been developed. They did not offer solutions to increase the speed of sales.

6.5 WHY SUBURBS ARE BUILT THE WAY THEY ARE

In questions ten and eleven, the developers were asked where their developments were constructed. Six of the developers interviewed only build on greenfield sites, although two of the small companies had worked with small pockets of infill. The large development companies indicated a preference for building on greenfield sites, as opposed to brownfield or infill sites, for three reasons.

First, they have traditionally had large holdings of banked land, which were purchased as early as the 1950s and 1960s. Therefore, they did not have the trouble of assembling and having land appropriately designated for residential use, as they may have had to do if they were to develop infill sites. Second, they stated that in greenfield development, there are no objections raised by neighbours concerned about development near their properties, overpopulating schools, adding traffic to busy streets, creating excess noise and depreciating housing values, whereas in infill situations, there is potential for land use conflicts with existing land-users. Third, developments have to be of a scale to be economical and have a high probability of being profitable. Infill, and other small projects were thought to have the potential to be profitable for builders who work at small scales, but not for developers.

Developers stated that they have to work at a certain scale in order for developments to be profitable. The details of the scale required were not divulged during the interviews. All of the developers have built in established towns or cities. The small developers built in existing suburbs, and the large developers created new ones.

6.6 WHAT DEVELOPERS CONSIDER IN DESIGN AND CONSTRUCTION

6.6.1 PROFIT

The responses to questions eight, twelve and thirteen all indicated that profits were a primary consideration. All of the developers indicated that their objective in developing was to profit financially. One of the large developers said that the ideas for their developments are generated by engineers and accountants, landscape architects and architects. The author noted that the professions of the people who were on the design teams indicated that financial considerations were extremely important and that social considerations were not paramount. Development is an entrepreneurial opportunity. The first consideration of all developers was to make a profit.

They indicated that economics were the most important consideration for their industry. An ordinal scale was used to have developers indicate whether they felt economic considerations were “very important, somewhat important, somewhat unimportant or unimportant.” The responses delivered by the developers exceeded the top end of the scale, and they stated economics were more than “very important.” The words which included “critical,” “vital,” and “paramount.” They said they would only

build the developments if they would be profitable. Until a high rate of return is assured, development would not occur. Only one developer gave a different response: while he acknowledged that economics were very important, he thought that one of the reasons for developing was to feel the sense of pride which comes from building something for the community.

When asked what led to the success of a development, “high demand,” “price,” “promotion,” and “marketing” were more common responses than “greenspace” or “sense of community.” From the developers’ perspective, a successful development was one that was profitable, not necessarily one in which there were several elements which worked well to create a satisfying living environment.

In answering questions 36 and 37, the majority indicated that they thought elements which would not contribute to the success of a development included “economic uncertainty,” a “poor market,” “high taxes” and a “poorly priced product.” However, they expanded their responses from being purely economic to include “conflicting land uses” or “mixed housing prices in proximity,” or to “rail lines or air fields.” They also noted that distance from schools, or services such as fire, police and ambulance coverage would detract from the success of a community, because they would result in properties which would be hard to sell, and therefore had the potential to cut into their profits.

It was interesting to note that they believed economic elements to be the contributing factors to the success of a community, but several other factors could have negative impacts. They did not mention that the provision of soft services such as adequate fire and police protection, proximity to schools, or aesthetics would help make a community viable, yet they noted that their absence could make one unsuccessful.

6.6.2 CHANGES AFFECTING ECONOMICS

Economics have been the most important consideration for developments over time, but other factors affecting the finances of a project have changed. One example was found in the holdings of a development company. Land which was owned by the companies, but had not been developed and was being held as “banked land” had traditionally been considered by financial institutions to be an asset, which could be used as collateral. In recent years, financial institutions have no longer considered it to be an asset, so one of the advantages of holding the land for several decades before developing it, has disappeared. Another advantage of banked land is that it costs the developer little to maintain, and real estate has traditionally been a safe investment for a company’s funds. However, in recent years, there have been better investments for the companies than undeveloped land, and they have begun to invest their money elsewhere. Therefore, they have tried to develop what they have held in land banks, and then acquire land only as they were prepared to develop it. Both the lack of the ability to borrow against banked land and the low rates of return on investment have meant that land is no longer banked. The cost of land and services and the current market were all parts of the equation they calculated to ensure profits. The ease of

land assembly was considered in addition to its price. Large parcels of land were most attractive, followed by smaller, adjacent parcels. Land which was difficult to assemble was least attractive.

6.6.3 COMPETITION

The developers indicated that they must maintain a competitive advantage over others in the industry. In a slow-growth market such as Winnipeg, in which there is a limited number of residential lots to be absorbed each year, developers said they have devised a keen sense of what each other is doing, so that if one takes advantage of increased sales by employing innovative designs such as front lanes or retention ponds, the others follow their patterns shortly after.

6.6.4 MARKETPLACE

Only one developer indicated that his company did studies of the marketplace to determine which demographic segments were not being well serviced by available housing. The rest seemed to use their intuition to determine how many units the markets could absorb. For example one developer with school aged children told the author that people want to live in “street hockey territory,” that is, neighbourhoods were most attractive if there were large numbers of children in them. As he believed children playing outside was a sign of a healthy neighbourhood, which would be economically viable, his company built primarily for single family homes to meet the needs of the market of which he was a cohort. Another developer who had been in the industry for more than 30 years indicated that people in the 55+ market would soon be

interested in selling their large homes, and moving into active retirement areas, so gated communities were something that his company was looking at developing. Rather than describing any market research their companies had done, each seemed to believe that the demographic segment of which they themselves were a part, would be the most attractive for which to build.

6.6.5 CITY STANDARDS/DEVELOPMENT GUIDELINES

In question 12, the developers who built within Winnipeg indicated that the development guidelines and civil engineering standards established by the city were considerations that they kept in the forefront while doing their designs. The development standards which were mentioned specifically were the requirements for all streets to “have 15 centimetres of concrete below asphalt pavement,” “lot size requirements,” setback and side yard distances, density regulations, and zoning, including tables of permitted uses.

There was an interesting contradiction between the large and small developers who worked in the city: the large developers viewed the city’s development standards as major constraints to their designs, which kept them from being able to implement interesting and innovative features such as back lanes into their designs. The small and medium-sized developers stated that the development standards were a tool which worked to their advantage, as they created a “level playing field” between large and small developers so that the large scale ones could not pull far from the others with innovative ideas which could be experimented with because of large budgets.

The development guidelines further created a “level playing field” as all developers were required to provide a minimum standard of amenities. Therefore, a developer could not save money by reducing the acreage dedicated to parks, and use the area to use for additional lots, for example. Small developers thought that the city’s strict development guidelines worked to their advantage, as they held the large developers back from advancing to a point at which they would be difficult to compete. There was agreement between the two sizes of developers that the city’s guidelines were a major consideration in their designs; however, they had different views on whether the guidelines worked advantageously for their businesses.

When asked why they adhered so strictly to development guidelines of the City of Winnipeg, and why they did not exercise their free-market abilities to take their business elsewhere, one developer indicated that “the City of Winnipeg is the only city in town.” He said as long as people wanted to buy new houses in the city that his company would continue to develop neighbourhoods for them. Therefore, the approving authority branch of the municipal government would be able to influence what was being developed as they controlled the content of the development guidelines.

6.6.6 ENVIRONMENTALISM

A change which had been noted in recent years was the prevalence of environmental awareness, and environmentally friendly practices which have been employed. The developers indicated that they have found that “it makes good economic sense to

participate in environmentally conscious behaviour.” However, they did not provide examples of such behaviour.

6.6.7 TOPOGRAPHY

Only one developer mentioned topography as a factor to be considered in his designs. Hills, valleys, creeks and railway tracks were all existing features to be worked with and around, and they provided him with a starting point. The others seemed to employ a strategy of clearing natural features and replacing them with manufactured “natural” amenities which they indicated were very popular. For example, small groves of trees were cleared away, non-native grass was planted, and a bicycle path was paved along the resultant open area in one development, to provide “back to nature” areas for walking, rollerblading and bike riding. In other locations, naturally occurring creeks and streams have been channelled underground in culverts, and artificial waterways have been scooped out of the landscape to form areas for run-off to be collected and sediment precipitated. The “natural areas” which appear in most developments are not naturally occurring topographical features left in their existing form for environmental preservation, rather they are “green space” which has been created to enhance the aesthetics of the neighbourhoods to sell lots. Lots which surround manufactured retention ponds and golf courses are more desirable than those which do not, and are sold at higher prices than lots which abut rail-lines. Home buyers are interested in buying property near aesthetically pleasing amenities. The amenities do not necessarily have to be naturally occurring to be attractive, even though they are often marketed as “natural.”

6.6.8 LOT SIZE AND SHAPE

In questions 17 through 20, the developers were asked about changes in house and lot sizes and shapes. They were unanimous in saying that over the last 20 years, lot sizes have become smaller. The majority noted that in addition to having less acreage, the shape of the lots had changed, so they had become narrower and longer. For example, they believed that 15 and 17 metre wide lots were standard 20 years ago, and 10 and 12 metre wide lots are now standard. By saving 3 metres of frontage, developers were able to reduce the costs related to infrastructure for each lot. Lots became longer, as attached garages were included as a standard design feature on many homes, and the houses had to be pushed further back into the yards to accommodate municipal setback requirements.

Although there was consensus on the trends from 20 years ago, there was a difference in opinion of what lot sizes had done over the most recent ten years. Developers who worked in Winnipeg thought lots were smaller than they were ten years ago, but they had remained about constant for the most recent five years. Developers who worked outside Winnipeg thought that they had become smaller within the city, but had remained constant outside the city for the last ten years.

6.6.9 HOUSE SIZES

Again, there was general agreement when asked about the trend in house sizes over the last 20 years, as all believed that they had become larger. It was also noted that

the shape of the houses had changed with the addition of double attached garages on the fronts of most houses. Six thought that they were still larger than they had been ten years ago, although one believed that they peaked in size in approximately 1990 and that their size has remained constant since that time. One mentioned that he believed that builders were actually responsible for the change in the size of houses, not developers.

6.6.10 AVAILABLE OPTIONS

When asked in question 21 the developers stated that they believed consumers were provided with an adequate range of housing options in the current market. One noted that house construction materials had not changed substantially since the 1950s. He justified no changes in building technology by saying that the industry was profit driven, developers were very astute to the needs and wants of the buying public, and if the public were not content with the products which were available to them, builders would know and they would have made changes. It was deduced that because changes had not been made, the buying public must be content with the available products, so the available options were deemed to be adequate.

6.6.11 PRODUCT

In question 40, the developers were asked what people could expect from their developments. They gave a variety of answers. First, by buying into their developments, home buyers could expect to make a safe financial investment. Neighbourhoods were designed so that houses kept each other's values high. Values

were kept high by not locating small houses near large houses; mixing sizes of housing was perceived as lowering the value of the larger house. Second, they said that all lots came with full servicing, and a paved driveway. One said their complicated street layouts were balanced with a “three street rule” which provided the community to be designed so that a homeowner would never have to give more than three street names to a visitor. However, the most interesting factor which they said could be expected by home buyers did not relate to infrastructure or servicing. Rather, they promised a lifestyle with a sense of community.

6.6.12 SENSE OF COMMUNITY

The developers said that in their communities, people could expect a “sense of community” in their subdivisions, However, by “sense of community,” they did not mean running into friends and acquaintances at the store or on the street, or having eyes on the street to keep communities safe, they meant living within a homogeneous socio-economic profile. They promised “neighbours of the same income and same background,” that the “people around you would be like you,” and that a home buyer would have “neighbours with the same kinds of wants, desires and goals.” By having a narrow range of housing prices available, and a homogeneity of housing types, the developers were ensured communities would be populated by people who could afford expensive houses, or qualify for mortgages on expensive houses. In doing so, they said they were creating a “sense of community.”

6.7 DESIGN FEATURES

The developers were asked to comment on a number of design features which are contained within NTD theory. Overall, they did not favour the features for their developments.

6.7.1 COMPACT CITIES

Question 22 asked about constructing compact cities. All except one of the developers believed that it was not important to build “compact cities.” That is, they did not think that intensification of land use in the urban areas was something that they should consider in the design of their developments. In fact, they said ample available land on the periphery of the city was necessary in order to keep prices low, because although Winnipeg was growing at a slow pace, it was still growing, and there was still development to be done. One admired the dense nature of many European cities, but said that kind of environment could not be created in Winnipeg because there was not, and should not be, a shortage of land. Another noted that in a free society, people must have the ability to choose where they want to live, and that would be precluded if land availability was restricted.

The one developer who expressed an alternate view felt strongly that compact cities should be encouraged by the municipal government, and that sprawling development should not occur in each new neighbourhood created. He said that his view was unpopular among his peers, but stated that he was “not anti-growth [he just thought] that the next subdivision should be at the end of the existing pipe” so that there was

not undue financial burden on either the developer for construction or the public purse for maintenance.

6.7.2 HOME OWNERSHIP

All of the developers agreed in answering question 23 that home ownership was important. They stated reasons for its importance by describing it as the “American Dream” of owning your own property and living in a nice neighbourhood. They also said that there was a certain pride gained in ownership. Aesthetics were thought to be important and when owned, a home could be decorated in a manner pleasing to the eye, and the personality of the homeowner injected into the dwelling. They also said there were financial advantages to ownership, as it allowed for equity to be built over time, and investment made in the house. Finally, there was said to be a social element to ownership, as roots were put down in a community when a home was purchased, and a sense of responsibility was gained.

One developer argued his case stating morality as the reason for home ownership: “In Winnipeg housing is so cheap you can use \$2000 for a downpayment. If you can’t come up with \$2000 to own a home you are probably a criminal anyway. What’s wrong with you that you can’t work for a couple of months? You are probably hooked on drugs and alcohol [and are] spending your money in all the wrong places.” He thought that unless one was a criminal spending frivolously, home ownership would be a priority.

Although all of the developers said that they thought home ownership to be very important, the average price of the homes they build was \$150 000. For that price, new home ownership is out of the grasp of many would-be buyers. In fact, what the developers are advocating, is not actual “ownership” of homes, but rather “mortgage-ship” of homes. The author had an interesting experience in the summer of 1998. A new home was toured, which was priced at approximately \$325 000. A representative from the development company was on hand, and was asked if the builder had other homes in a lower price bracket. The representative responded by saying that particular house was in the low end of the price range for the builder, and that two people with professional salaries could easily afford the home. When contradicted, he replied by saying, “Well, there would be a problem if you didn’t want to take out a 25 year mortgage. Nobody out here actually owns their houses outright; everyone has a 25 year mortgage on them. That is your problem, you want to own the house outright.” It was deduced that “home ownership” actually meant being able to qualify for a large mortgage, not actually holding unencumbered title to the property.

6.7.3 COMMERCIAL COMPONENTS

Questions 34 and 35 related to commercial components within the developments. The large developers indicated that the developments with which they have been involved included commercial components, such as corner stores. They gave reasons which revolved around people’s need to be “able to go for milk without going far.” In their developments convenience stores were located on major streets on the periphery of the developments, so that foreign traffic would not be brought into the communities

to shop. The businesses which were established on the edges of the communities had been economically viable. Chain retailers who had located in the developments were said to have strict guidelines to determine where the stores can be located. For example, Shell only opens convenience store franchises where there are at least 1000 homes to support the business. As they are economically viable, and they provide a valuable service to the communities in which they are built, it was believed that convenience stores can and should be included on the periphery of large developments. None of the developers suggested locating commercial properties away from the periphery of their developments.

Small scale developers said that they had not included commercial components in their developments, because the scale at which they work was too small to provide a market to support stores. They said even if they thought that they would have enough people to support a commercial enterprise, municipal zoning regulations would not permit a business to be established in a residential neighbourhood. Because the small scale developers were not working at such a scale to create entirely new communities, it was not possible to locate commercial enterprises on neighbourhood peripheries, and they did not locate them within the communities they developed.

In traditional neighbourhoods, convenience stores were not owned by franchises. Rather, many of them were family owned businesses. The small stores were often not located on major streets on the periphery of the neighbourhoods, but rather in the

centre of the community, so that they were centrally located and could be walked to by people from all over the area.

An example can be found in a traditionally designed neighbourhood in Winnipeg, called Wolseley. Along Westminster Avenue, in approximately the centre of the community, there are several small stores, which offer a variety of services. The shops include a shoe repair shop, a book store, a bakery, an insurance agency, a cafe which is also a music store, a restaurant, and some small food stores which allow local residents to run tabs to be paid off at regular intervals. The shops are operated as independent businesses, not as franchises. They service the community in which they are located, and many of their customers walk to them. Bicycle racks have been provided. Customers from outside the community park on the streets and beside the businesses, and traffic is rarely an issue. The transit route through the community passes through the small commercial area.

The commercial area in Wolseley is an example of one of the features that makes the community distinct from more recently developed areas of the city. The shops and services which operate within it give people a place to walk from their homes; the commercial area is a destination point. People in the community meet each other in the small stores, and on the street going to and from them. It is one of the elements in the neighbourhood which helps to create a sense of community. It also embodies many of the elements which are no longer designed into communities by contemporary developers. By not including commercial components into their

designs, or placing them on the periphery of neighbourhoods, developers have not included the potential for them to be used as they are, in a traditional neighbourhood such as Wolseley.

6.7.4 THE ROLE OF THE CAR

Developers were asked two questions about automobiles. In question 38 they were asked what they perceived to be the role of the automobile in their developments, and in question 39, what the role should be. Only one developer gave different answers to the two questions. They all stated that automobiles in their developments were absolutely essential, and that everyone who lived in their communities would need a car. They said their developments were very far from downtown, and when it was initially constructed, there were no convenience stores, or transit service through it, so a car was a necessity. Three said that a double attached garage was an architectural guideline for their communities, as each house had to have the ability to house two automobiles. They said that cars contributed to the quality of life in their subdivisions, and that they were the most important factor in determining the street layout and design of the communities.

The developers were of the opinion that large garage doors as the dominant aesthetic feature of houses within their communities were desirable. Figure 12 illustrates that when the garage doors are closed on houses with double attached garages on their fronts, the houses seem uninhabited, and there are no signs of human activity. When the doors are open, the garages appear to be messy closets exposed to the

neighbourhood. Neither open or closed garage doors are attractive features on the fronts of houses.

When asked what they thought the role of the automobile should be, all except one gave very similar answers to the first question. They reasoned that developments of 1000 units were certainly not walkable, and it would be foolish to expect anyone to walk such great distances. Several justified their answers with reference to shopping: they said that people need cars to shop in supermarkets, and that the local situation was different from that in Europe or other large North American cities where people can walk to pick up groceries several times in a week. One said that he would not shop in a neighbourhood grocery store, because he preferred “to shop where the produce is best.” In the local market, they said people complained about neighbouring houses being of lower values than their own, and did “not complain about not being able to walk for a quart of milk.” The developers who built outside Winnipeg mentioned that cars were necessary in their communities, as municipal transit service is not provided outside of Winnipeg. The car was said to be “king” in contemporary subdivisions, and people’s reliance on them was so great that motivation to walk would have to be economic, so that it was stronger than the promises of “fresh air and exercise.”

The only developer who thought that the role of the car should be different, said that “cars are the scourge of the earth as far as subdivisions go. [People] should be able to park a car on Friday night after work and not use it again until Monday morning.”

However, it should be noted that he said the automobile was necessary in the developments with which he had been involved. Even though he thought that one should be able to park a car on Friday night and not use it again until Monday morning to go to work, he believed that it should be taken out of the garage to go to work. He was of the opinion that all services required for the weekend should be accessible within the communities, such as shopping and church; however, he believed transit impractical to travel from the community into the city to go to work. Therefore, even he thought the car to be a necessity for people living in suburbs.

6.8 INNOVATION

6.8.1 WHO IS INNOVATIVE

Questions 25 through 32 related to innovation. None of the developers saw themselves as being innovative. They stated that they thought they would like to be innovative, but they would only be if profits could be guaranteed. One stated that his company would “be willing to take a risk if it weren’t too risky.” It was noted that any new or innovative ideas would have to fit within the parameters of the city’s development guidelines, or they would not be approved. Therefore, the combination of unwillingness to take risks and the strict guidelines of the city led to the suppression of innovative energies.

When asked who the innovators in the current market were, they all indicated each other, but not themselves. One noted that the innovative designs for homes were

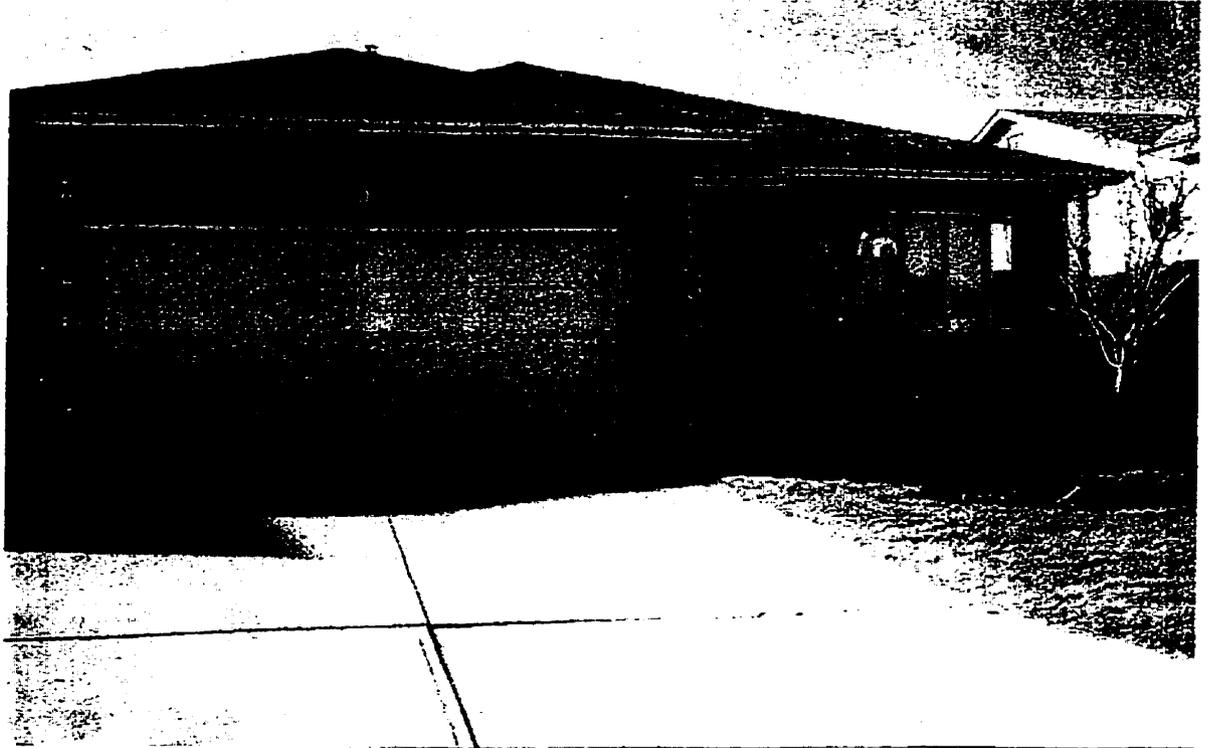


Figure 12 Double attached garages on the front of houses are a dominant feature. When the doors are closed, the houses show no signs of life. When they are open, they look like messy closets. Photo by author.

created by builders, to affect individual properties, not by developers to affect entire neighbourhoods. Necessity was said to be the “mother of invention” so that in stable markets when sales were adequate, there was no need to seek innovative ways of doing business. One developer remarked that most developments in the city were very similar in appearance, and a person “could be blindfolded and taken into any subdivision in the city, and when the blindfold was taken off, could not tell which community you were in.” Therefore, he believed that differentiation through innovation was a potential way to attract new buyers, but it was not being effectively employed.

6.8.2 WHAT IS INNOVATIVE

Developers who worked inside the city indicated that the City’s development guidelines were very rigid and that they limited their ability to be innovative. Developers working outside the city stated that their only restriction to the number of innovations they implemented was cost. The municipalities they worked in were very flexible, accepting of creative ideas, and were eager to help with the implementation of suggestions, but there was a limit to what new home buyers were willing to pay.

Therefore, developers who worked within the city believed that the city bureaucrats controlled the development process, as they controlled the development guidelines. Developers who worked outside the city believed that control of the development process was with their accountants. They believed that their accountants would not

allow them to spend more on innovations than people would be willing to pay, and still have the companies turn a profit. It was important to understand where they believed control in the development process was, because the body with control was the body that would decide upon which innovations would be built.

One developer illustrated the point with a story. He said that his company wanted to create an atmosphere in a new community which would make it feel like an established community. To create such an illusion, at their own expense, they planted more mature trees than were required in their development agreement with the City. They believed that the trees would produce foliage more quickly than very young trees, and therefore the aged atmosphere would be created quickly. If they had planted young trees in accordance with their development agreement, they would only have been responsible for their maintenance and replacement for two years. However, as they planted more mature trees, the City required the developer to be responsible for them for five years. As a result, the developer felt punished for providing amenities beyond the minimum requirements, and in future developments, only included the minimum amenities required by the city.

Another developer believed that the control in the development process was with the snow plow drivers. He stated that street widths, curbs, lane widths, garbage collection, on street parking and turning radii were all determined so that snow clearing equipment could work in the winter. In reality, he was not entirely inaccurate. As with all things built by developers, the City inherits them for perpetual

maintenance. Approving authorities; therefore, have a vested interest in ensuring that innovations are structurally sound, and will be economical for long-term maintenance. If innovations were to require specialized equipment for upkeep, maintenance costs would become prohibitive. Therefore, municipalities are generally interested in standardization of features so areas may be maintained with existing equipment.

6.8.3 REALISTIC INNOVATIONS

The developers stated that realistic innovations to developments included: gated senior's retirement communities, retention ponds, service roads on arterial roads to allow each home in the development to have a double attached garage on the front, no back lanes, and small lots for big houses, so that land prices could be reduced and the savings spent on larger dwellings. None of the developers suggested environmental improvements, social aspects of neighbourhoods, creation of a sense of community, or safety.

Some of the innovations that they have made included cul-de-sacs, so that through traffic did not pass on residential streets. Cul-de-sacs were said to be efficient for land use, because pie-shaped lots maximized the number of houses that could be put in a confined space with limited frontage and limited infrastructure. They are popular with home buyers, because people like to be able to see everyone who comes onto their street. They permit residents to see cars coming into their space, and identify

strangers. This was thought to be an important safety feature provided by building cul-de-sacs.

Another innovative design concept was said to be the gated community. Gated communities were said to embody the elements which were thought to be attractive to the 55+ market. First, their gated nature implies that they are a safe, secure neighbourhood, and are not open to the public. Traffic through them is restricted to those who are granted access. In them, security was thought to be improved over “open neighbourhoods.” If homes within the communities are owned as condominiums, they bring all the advantages of home ownership, without the responsibilities of tending yards. The communities are often marketed as “walkable,” that is, vehicles move within them at a slow pace, and they create an environment in which people are told they would feel comfortable and safe if they were to walk. Additionally, features such as billiard rooms and clubhouses are attractive features in 55+ communities as gathering spots and public meeting places.

Other design features were also said to have been valuable innovations. Bridges and hills in public green spaces were reported as important innovations which helped to sell lots as people wanted to live where such amenities were provided. Nature walks and retention ponds were also artificial features which gave neighbourhoods an atmosphere that developers strove to create.

Service roads were noted as the final important innovation that developers had built into their designs. City development guidelines forbade driveways onto arterials and collectors. Therefore, in some neighbourhoods, back lanes were employed in order for each home to have a driveway to their garage. This generally led to garages being detached from houses, because homes were not designed to have attached garages at the rear. However, developers indicated that an innovation they made was to build service roads between the arterial or collectors and the houses, so that attached garages could be put on the fronts of the houses, and driveways would front onto the service roads. This innovation made houses along collectors and arterials easier to sell than they had been before the inclusion of service roads. As those lots were traditionally the most difficult to sell, the innovation of service roads to accommodate the inclusion of a double attached garage on the front of the houses made good economic sense, and was thought by the developers to be a useful innovation.

In the opinion of the author, the responses that developers gave to questions about what they believed to be innovative were extremely weak. The “innovations” that they had made could hardly be considered to be on the cutting edge of design and creativity.

6.9 INNOVATION ENCOURAGED

When asked in question 32 whether they believed municipalities, public officials, the general public or business people, and the development industry encouraged innovation of subdivision design, the developers gave a variety of answers. First, they

thought that municipalities, who were most often the approving authorities, did not encourage innovation, as they were responsible for maintenance and perpetual upkeep of the neighbourhoods, so they were interested in features which would be structurally sound and last a long time. They did not promote features which would help to sell lots, in the short term, but rather were interested long-term maintenance of the areas. Second, city planners were thought to be among the most open-minded with respect to innovations, and civil engineers were thought to be among the most closed-minded. The engineers were generally seen as agents of the approving authorities and were concerned with the soundness and longevity of innovations. They were thought to be cautious and conservative in their reviews. Third, there was no agreement as to whether the public was in favour of innovation; however, it was thought that new home buyers favoured innovations which brought prices down, or those which made their properties appear different from others. Like new home buyers, builders and the Chambers of Commerce were both thought to favour innovations which set developments apart from others. Builders approved of innovations because homes which were in popular locations were easier to sell, and areas that sold quickly stimulated economies, to the pleasure of the Chambers of Commerce. Canada Mortgage and Housing Corporation was also said to favour innovations which helped to sell new homes. Finally, the development industry was thought to oppose innovation, as developers were primarily concerned with building at the lowest risk possible to obtain the highest profits, and new features would lend uncertainty to projects, and not guarantee profits.

6.10 FEATURES BUILT OR CONSIDERED

In question 33, the developers were asked about a series of design features to discern if they had ever built or considered the inclusion of the some of the feature elements of NTD communities. Some of the features they were asked about were common in contemporary subdivisions, and others would primarily be found in traditional or in NTD communities. The questions relating to the two types of features were intermingled, so as the developers answered questions in a long list, it would not appear obvious that the researcher was trying to discern whether they had followed the theory of NTD. For ease of analysis, the sections have here been separated. For some of the elements, the developers simply indicated whether they had considered or built them, and for others they expressed comments and explained why they had or had not considered them.

6.10.1 CONTEMPORARY FEATURES

The questions relating to contemporary features, could be classified into four categories, relating to the entire community, the streets within the community, housing types, or individual lots.

Relating to the community, they were asked about separated land use, gated communities, noise barriers, and fences. They responded by saying that they had all built neighbourhoods with separated land uses, and strongly emphasized that it was one of the important and attractive components of their neighbourhoods. They insisted that people who bought large, expensive homes did not want to have smaller

homes located near them. Therefore, the separation of sections within neighbourhoods was important to maintain the values of the large houses. They believed in the separation of single family dwellings from duplexes, and the separation of both those types of housing from medium density apartments. Similarly, they believed that commercial properties should not be in proximity to residential properties, so that corner stores would not be located in the middle of communities. They stated that if commercial properties were built into communities, that they must be located on the periphery, so that foreign traffic was not brought into the areas to shop.

Noise barriers and fences had been built by most of the developers. Noise barriers were used along the edges of communities which abutted large, intrusive features such as industrial areas or major thoroughfares. They were often large structures, and the developers attempted to make them aesthetically pleasing by adding decorative features into their designs. Fences were said to be extremely common within communities. They were often used between land uses, such as single family dwellings and medium density apartment buildings, as well as to separate gated communities from the rest of the neighbourhoods. Although they were not generally constructed by developers, fences between single family dwellings were said to be extremely common. They were reported to allow people private space in their backyards, which was thought to be an important aspect of the neighbourhoods. Often quite high, and built of wood, fences have been erected at great expense throughout the communities by the individual property owners.

There was a series of questions related to streets. Questions were asked about cul-de-sacs, dead end streets, arterials, collectors, and wide streets. The majority of the developers had built cul-de-sacs, and two had built dead end streets. Their reasons for building them were the same: home buyers liked the sense of security and familiarity that they provided. Residents liked to know everyone on their street. That way, if there were to be someone unfamiliar in the area, residents would know to be cautious. Cul-de-sacs were said to be a good security arrangement, as residents could easily see each others houses to watch for suspicious activity. Similarly, dead end streets were thought to create a secure environment as they kept unfamiliar traffic from passing down the streets.

Arterials and collectors are both incorporated into the developers' plans, as they were required in development guidelines so are mandatory in all developments in Winnipeg. None of the developers voiced objections to them, and the ones who had built service roads between the arterials and the houses on them, thought that they had done superior work.

Finally, wide streets had been built in all of the developments. Street width guidelines are included in development guidelines, and were thought to be determined by the passing requirements for snow plows, other maintenance and emergency vehicles. One developer stood out from the others, as he said that he feared that streets in residential neighbourhoods were wide enough to accommodate high speed traffic. He

said that traffic in residential areas should be slow enough to ensure the safety of children playing in the vicinity of the street. It was his belief that narrower streets would slow traffic, which would benefit the entire community.

When asked about housing types, all of the developers indicated a preference for building single family homes. They believed that single family home buyers constituted the largest market, and therefore, the developers build to meet the demand of that market. Condominiums were viewed positively, and had been built by all of the developers with the exception of a small scale developer who worked outside of Winnipeg. Condominiums were said to be an attractive home ownership option for many people, especially in the 55+ market. Closely related to the concept of condominiums was the concept of gated communities. All except one developer believed gated communities to be an attractive way for many people to live in a safe, secure environment. However, one stood out in his objection to gated communities, by saying that he thought they bred fear and contributed to segregation. From his perspective, safety in communities was created with “eyes on the street” and people out walking through neighbourhoods, not gates. He thought that people should be able to walk down any street in the city, and that an active, lively community was a safe community.

Features of individual lots were also considered, such as private space, short lots, and garage placement. Private space was thought to be a vital part of single family home construction: Winnipeg area home buyers insist on ample private space. Backyards

which could be fenced were said to be the preference of most buyers. Half of the developers had built short lots, to reduce the cost of the land, and allow for more of the cost of the unit to be spent on the house. The other half found that short lots diminished the private space too drastically, so had not considered them in their designs.

Garage placement was a topic which had been explored by all of the developers. At some time in their development history, they had left space for garages or carports on the sides of houses. However, in recent times, all had created lots which would accommodate garages on the fronts of houses. In some communities, garages on the fronts of houses were architectural guidelines, so would be required to be provided by all home builders. It was stated that an attached garage was a necessity in Winnipeg in the winter, and so new homes were rarely constructed without them. As back lanes were not being incorporated into the communities, attached garage placement on the backs of houses was not an option.

6.10.2 NTD FEATURES

Questions relating to NTD features could be classified into the same categories as contemporary features: community, streets, housing types and lots.

As community was discussed, it became apparent that trees had been incorporated in all subdivisions, by all developers. Those who worked in Winnipeg indicated that they were required to provide very small trees. Parks had been built or considered by

most developers. Like trees, they were said to be mandatory within the city of Winnipeg. Other “green” features were not emphasized. None of the developers had constructed village squares. One of the large scale developers had considered them, but none had built them. None of the medium or small scale developers had considered them. Unlike trees, they were not included in development guidelines, so were not included in the communities.

Community centres had been constructed by developers who had built 55+ communities. They said they were very popular with the seniors, and contained accommodation for a variety of services and activities, including billiard rooms and bowling greens. They were the same developers who indicated that they had the safety of the communities in mind when they did their designs. The remainder indicated that they had not considered safety.

None of the developers had considered building pedestrian scaled structures, or had incorporated pedestrian amenities into their designs. All indicated that they had constructed gateways, or monuments to denote the entrances to their communities. The majority had not considered mixed land uses, and those who had considered it said that it was not permitted in the development guidelines, and had not recently been incorporated into new subdivisions. Greenbelt separators had been considered by the large scale developers, but had not been constructed. Regional infrastructure had been built, but it was only constructed when required, as it was expensive to build.

In addition to the community, streets within the developments were considered. The developers represented interests which directly contradicted NTD theory related to streets. They did not adhere to the theories espoused by NTD enthusiasts. The developers who had been active for many years said that they had built networked streets at some point in history, but they were unpopular with home buyers, so were not commonly built. They believed that people wanted a sense of ownership of their streets, and that was lost when traffic flowed through communities. Therefore, if they built curvilinear streets, which curled back on themselves and did not allow for passage through communities, the only traffic in the areas would be local traffic. Local traffic was deemed acceptable, but traffic from outside the communities was not acceptable, so through streets were not built in contemporary subdivisions.

In either grid or curvilinear patterns, back lanes were said to be an unattractive design feature, economically. They are expensive for developers to build, and for municipalities to maintain. First, they are expensive for developers to build, because the City of Winnipeg development standards require 15 centimetres of concrete to be laid below the asphalt for the streets. The concrete is required by the City because it has a much longer structural life than asphalt, and helps to maintain integrity of the streets. When road resurfacing becomes necessary, often only the asphalt has to be replaced, relatively inexpensively. Therefore, it is in the City's best interest to have development standards which require 15 centimetres of concrete on streets. If the

developers build back lanes, they must pay for concrete for the front streets, and the back lanes, thus increasing their costs dramatically.

Second, back lanes are expensive for the city to maintain. Just like front streets, they must be serviced, maintained, and cleared of snow. Areas which have back lanes have utilities running along them and they are a prime location for garbage collection. Therefore, in order for municipal vehicles to be able to access utilities, and services provided such as garbage collection, the lanes must be cleared of snow. In addition to maintaining the front streets, in areas where there are back lanes, the municipality must also maintain the lanes.

While the developers were familiar with the concept of back lanes, only one had considered narrow streets. It was suggested that narrow front streets may be a reasonable alternative to wide front streets, but the only developer who had considered them indicated that they were not permitted in the development guidelines. A developer who had constructed a gated community had built narrow streets within the community, and said that people often walked on them as they gave the neighbourhood a “cozy” feel.

Even without narrow streets, the developers said that people could walk on the streets in their communities. In fact, walking on the streets would actually be necessary in the subdivisions, because they indicated that they only built sidewalks where it was required in the development standards such as along arterials. They only provided

sidewalks where necessary, and did not provide them as an amenity, because sidewalks are made of concrete. As with streets, concrete for sidewalks is expensive, and the developers saw the costs of sidewalks as cutting directly into their profits. They did not think that sidewalks helped to sell lots more quickly, therefore, did not find justification for installing them where they were not required by development guidelines.

Unlike sidewalks, bicycle paths had been constructed in some communities by medium and large scale developers, as amenities. Bicycle paths are commonly made of asphalt, not concrete, and so are more economical to construct than sidewalks. Additionally, bicycle paths were thought to help to sell lots, as people were interested in buying homes near nature walks and bicycle paths, so they were sometimes a feature provided by developers in new communities. They were seen to contribute directly to the success of neighbourhoods as they helped to sell lots, and therefore were constructed.

Two car garages were reported to be common features on new houses and were said to be the preferred location for parking. Alternatives to parking in garages were not well received. On-street parking in residential neighbourhoods was said to be forbidden by City of Winnipeg by-laws which had snow-clearing bans on overnight parking during winter months. Streets had to be cleared after snow-falls, and cars parked on the streets would prevent this from occurring. Therefore, on-street parking as an alternative to parking in garages, was said to be an impractical option in

Winnipeg, because of the high rates of snow fall in winter months. Another alternative, parking lots for residential areas had not been considered by the developers.

Like alternatives to garages, alternatives to driving were not viewed positively. Transit links and transit malls had not been considered by the developers, as they were said to be the responsibility of the municipality, not the developer. The developers said that they did not have jurisdictions over public transportation, and therefore were not required to provide services or amenities for it. The residents of their communities were said to have two car garages attached to their homes, and owned at least two vehicles. As residents drove their cars, they did not require the services of transit. Neither alternatives to parking in garages or use of transit were viewed as realistic innovations in the new subdivisions.

Mixed housing types, and mixed housing prices were not accommodated in new subdivisions. Developers said that small houses, or low priced houses intermingled with larger, more expensive houses, would “never sell” because the small ones would devalue the larger, more expensive homes. If intermixed, the result would be a variety of people with various income levels living in the same community, and that was thought to be detrimental to the success of a neighbourhood. Developers thought that people wanted to live with people “like themselves” so would be unreceptive to being neighbours with people with a different income level. The large scale developers indicated that they built differing accommodation types in very large communities,

but separated the housing types. For example, they built three story walk-up apartments on the periphery of a primarily single-family residential neighbourhood, but did not build the two types of accommodation in proximity.

High density developments (more than ten units per acre) had not been considered for residential subdivisions. Townhouses, and other attached units had been provided for by the large scale developers, but had not been considered by the medium or small scale developers.

One of the large scale developers had considered accessory apartments, or second units on a single title; however, they discovered that they were not permitted in the municipalities in which they were developing. None of the developers had considered the inclusion of residential properties over retail units within their developments.

6.11 SUMMARY

Interviewing the developers was one of the most pleasurable aspects of the entire project. Tremendous insight was gained by talking to the developers in their own offices, surrounded by pictures and maps of their accomplishments, having them explain what they designed and constructed for developments, and why they did them the way they did. The learning which resulted from the conversations with the eight men who donated their time to this project could not have been achieved from books: hearing about the development process from people working in the field was the best way to achieve the information reported .

Interviewing employees from a range of development companies provided comparisons and contrasts to be drawn between large and small scale developers. Although there were some differences, both large and small scale companies were clear in indicating that their primary objective was to turn a profit, and economics were their most important consideration. However, their view of economics was limited to short-term matters, rather than long-term ones. For example, the issue of building compact cities was thought of negatively by the developers in terms of an economic issue, because restricting land availability would drive up prices. They did not look at the long-term economic implications such as the high costs of infrastructure maintenance, or the requirements for both hard and soft services spread out over sparsely populated neighbourhoods.

They mentioned interests in environmentalism and creating a sense of community, but neither were justified, or substantiated in terms of NTD theory. The developers seemed interested in using phrases which were popular in contemporary society related to development issues, but did not seem conversant in the meaning behind the words.

They thought that automobiles were necessary in their communities, and homeownership was an important goal. They believed that the inclusion of commercial components was not as important as the homogeneity of land uses, and dwelling types. They did not see themselves as innovative, although they thought

each other innovative. They said they were unwilling to take risks, and that was shown in the innovations which they suggested which had been made.

Generally, they favoured contemporary design features, and often found flaws or obstacles with NTD features which would be difficult or impossible to overcome in order to design or build according to the alternative theory. It was deduced that none of the companies would develop according to NTD theory in the foreseeable future.

7.1 ECONOMICS

In order for NTD development to be considered in Winnipeg, it would have to be made economically attractive in the short-term. Developers are only responsible for the initial costs associated with developments. After they have been constructed, the municipalities inherit them for perpetual maintenance. In order for the developers to have a long-term vision for the developments they create, they would have to be financially responsible for them for a longer time period than the initial start-up. NTD has infrastructure costs which would be higher than contemporary subdivisions, because it has a larger proportion of the surface area dedicated to streets and back lanes than other areas. As developers are only responsible for the initial costs associated with the construction of new neighbourhoods, the up-front high costs of NTD neighbourhoods are unattractive to them.

The developers indicated that economics are the most important factor in determining what gets built, and how it gets built. Everything from determining where subdivisions will be located by land that had previously been invested in for land banks, to believing that a “sense of community” is created by everyone in the neighbourhood having an equally large mortgage, was dependent upon economics.

Therefore, in order for NTD communities to be constructed in or around Winnipeg, economics would have to be considered.

7.2 CITY STANDARDS

It was not surprising that the city had strict engineering standards which translated into restrictive development guidelines. Developers have a short-term interest in neighbourhoods which they develop, as their main jobs are to design and build hard services into land, and to sell lots to builders. Once their initial construction has been completed, developers are essentially finished with the neighbourhoods, and move on to other new developments. Conversely, municipalities inherit the neighbourhoods, and are responsible for their maintenance and provision of both hard and soft services in perpetuity. For that reason, municipalities have a vested interest in both the quality of hard services installed and the quality of subdivision design and layout. Creative developers would have a wide berth within which to experiment, and limits would be set only by their imaginations, lines of credit and the marketability of the new designs if it were not for city standards.

In contrast, municipalities have many tangible matters to consider, such as the turning radii of transit buses, ease of passage of emergency vehicles, blade widths of snow plows, the rate at which hard services need to be replaced, and vehicular access for trash collection. Therefore, municipalities have set guidelines within which they are prepared to provide perpetual maintenance.

In order for NTD communities to be constructed in the local market, public officials acting as the approving authority of municipalities would have to be willing to adopt a flexible set of development guidelines, or be willing to work with the developers to establish mutually acceptable criteria for matters such as street widths, and responsibility for the maintenance and replacement costs associated with street trees.

7.3 EMPOWERMENT

The developers interviewed did not seem to think that they could have an impact on what would be designed into their communities. For example, they said that people used cars in their communities, because they were necessary. However, they did not seem to believe that they could design features into the neighbourhoods which would make cars unnecessary.

Developers would have to develop a sense of empowerment before NTD communities could be constructed in the local market. That is, they would have to believe that they had the ability to design and construct neighbourhoods which broke from the mold currently used for subdivisions, and that in making that break, they could build a better community, which contained within it the promise of a new lifestyle.

7.4 PERCEPTION OF THE MARKET

The fact that developers said they would not mix housing types indicates that they believe that the marketplace is not ready for NTD. One of the basic premises of NTD

is that communities built according to the theory will be vibrant, exciting urban places and contain within them a variety of people and activities. The developers indicated that the people who live in their communities do not want large and small houses intermingled. Therefore, it can be deduced that the developers believe the people who live in the communities they construct would not be amenable to the concept of eclectic, urban communities, and NTD.

Therein lies a contradiction. Some developers had constructed gated communities, and some who had not constructed them thought that they were a good idea for alternative communities. They said that the things gated communities promised, such as safety, a sense of community and walkable, narrow streets edged by small front-yards and short set-backs were attractive amenities for home buyers. They would consider providing such amenities in gated communities. The contradiction becomes apparent, as those features are also promised in NTD communities; however, they are accommodated differently. Gated communities attempt to create safety, a sense of community and walkable streets by closing residents in, and the rest of the world out. NTD communities attempt to provide the same amenities by having very busy, public streets and spaces, by making everyone welcome, and excluding no one.

One of the main differences between gated communities and NTD communities is economically created exclusivity. Gated communities are expensive to build and maintain, are generally built as up-scale neighbourhoods, to house the wealthy. NTD communities, on the other hand, are intended to have a variety of housing options

available, and to accommodate people of various incomes. As many of the same features are espoused, the real difference between gated communities which were viewed favourably by most developers, and NTD communities which were generally viewed negatively, is the socio-economic status of the residents. Gated communities promise a safe community for a few: NTD communities promise it for many.

7.5 THE QUESTION ANSWERED

This study concludes that the development industry in the Winnipeg market will not produce neotraditional developments in the foreseeable future. They will not be developed until the economics of NTD communities become more attractive to developers, municipal development standards are opened for negotiation, developers feel empowered to affect the communities which they construct, and their perception of the market is altered such that they see benefits in developing land for a wider population than those able to qualify for large mortgages. If such changes were to occur in the local market, NTD neighbourhoods would be a significant addition to the local landscape.

7.6 FURTHER RESEARCH

The economic viability of a NTD community is an area in which further research could be conducted. The developers indicated that economics were the most important factor in their considerations related to developments, and it would be interesting to determine what the economics of a project would have to be in order for

it to be constructed. It would also be interesting to analyse the costs associated with NTD communities, and compare that figure to the above noted figure. It could then be determined if a NTD project could be profitably built.

A second area which could be examined is development guidelines established by municipalities. A study which determined whether municipalities would be willing to adopt flexible engineering standards to permit some of the features espoused in NTD theory would be a compliment to this thesis. The author anticipates that many municipalities would be willing to look at the overall benefits of NTD design as they considered the costs, and that they would be willing to negotiate guidelines with developers.

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This questionnaire of 41 questions is comprised of factual, opinion, open and closed ended, ordinal, and contingency questions. It was pre-tested, approved, then distributed to development companies in June, 1998. Interviews followed-up distribution with all except one respondent, in July 1998.

1. Do you work as (or is your company) a

- builder
- developer
- both

2. Is your company currently active in residential development in the Winnipeg area?

- yes
- no

2.1. If yes:

How long has it been active?

Open ended

2.2. If no:

When was it active?

Open ended

3. Where have you built/developed? (Or, in which developments have you been active?)

Open-ended

4. During which years were you involved with those developments?

Open-ended (years)

5. What was the approximate size of the development?

- less than 10 units
- 11-20 units
- 21-30 units
- 31-40 units
- 41-100 units
- 101-300 units
- 301-500 units
- +500 units

6. What kinds of homes were in the development?

- single family dwellings
- duplexes
- quadraplexes
- townhouses
- apartment buildings
- other

7. After construction, how long does it generally take for absorption to occur?

Open-ended

7.1 Does this time line apply to most developments? Are some faster or slower?

Open-ended

8. What were your objectives in that(those) development(s)?

Open-ended

9. Where did you get the idea for the development(s)?

Open-ended

10. Have you built on

- previously undeveloped sites? (i.e. greenfield land)
- previously developed sites (i.e. infill or gentrification?)

11. Were your developments

- in established towns/cities
- in established suburbs
- creating new towns/cities
- creating new suburbs
- other

12. What are the most important factors you consider when you are developing?
(i.e. economics, environment, social factors, political factors, etc)

Open ended

12.1 Have these changed over time?

Open ended

13. How important are economic considerations in developing a subdivision?

- Very important
- Somewhat important
- Somewhat unimportant
- Unimportant

14. What forces impact the way you design a subdivision?

Open-ended

15. Is there a role for high-density housing in your developments?
Open-ended

16. Is there a role for low-income family housing in your developments?
Open-ended

17. Compared with 20 years ago, are residential lot sizes
 larger
 smaller
 constant

18. Compared with 10 years ago, are residential lot sizes
 larger
 smaller
 constant

19. Compared with 20 years ago, are house sizes
 larger
 smaller
 constant

20. Compared with 10 years ago, are house sizes
 larger
 smaller
 constant

Please state how you feel about the following statements:

21. In the current market, consumers are given an adequate range of housing options

- strongly agree
- agree somewhat
- disagree somewhat
- strongly disagree
- don't know

22. It is important to build compact cities
 strongly agree
 agree somewhat
 disagree somewhat
 strongly disagree
 don't know

23. Home ownership (as opposed to “rentership”) is important

- strongly agree
- agree somewhat
- disagree somewhat
- strongly disagree
- don't know

24. Is the process of development in the Winnipeg area an exciting, evolving market?

- yes
- no
- I don't know

24.1 Why?

Open-ended

25. Are you a leader in the development process?

- yes
- no
- somewhat
- don't know

26. Who are the most innovative developers?

Open ended

27. What are some of the factors which drive the innovation process?

Open-ended

28. What are some realistic innovations?

Open-ended

29. What are some obstacles to innovation?

Open-ended

30. What are some innovations that you have made?

Open-ended

31. Where is the control in the innovation process?

Open-ended

32. Do the following bodies encourage innovation of subdivision design?

	Yes	No	Don't know
municipalities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
approving authorities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
land use planners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
traffic engineers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
public	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
home-buyers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
developers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
builders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
chambers of commerce	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

33. Have you considered or built the following features?

	Considered	Have not considered	Have built
back lanes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
networked streets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sidewalks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
public parks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
private space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
tree lined streets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
bicycle paths	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
cul-de-sacs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
dead-end streets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
arterial roads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
collector streets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
narrow lots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
short lots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
windows facing street	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
porches or verandas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
garage in front of house	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
garage at side of house	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
garage behind house	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
community centres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
on-street parking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
parking lots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
mixed-housing prices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
accessory apartments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
high-density	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
mixed-land use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
separated land use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
village square	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
historic architecture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
greenbelt separator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
single family houses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
townhouses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
condominiums	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
apartments over retail units	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
mixed housing types	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
pedestrian scale structures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
transit links	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
transit malls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
regional infrastructure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

gated communities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
wide streets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
narrow streets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"walkable" communities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
safe communities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
noise barriers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
fences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
gateways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
zero lot lines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

34. Have developments with which you have been involved included commercial components (i.e. corner stores) ?

- yes
- no
- I don't know

34.1 Why?

Open-ended

34.2 Were the businesses economically sustainable? (i.e. were they able to stay in business?)

- yes
- no
- I don't know

35. Did you have any influence to the establishment of businesses in the development?

- yes
- no
- I don't know

36. What elements would contribute to the success of a development?

Open-ended

37. What elements would not contribute to the success of a development?

Open-ended

38. What is the role of the automobile in developments with which you have been involved?

Open ended

39. What should be the role of the automobile in a residential subdivision?

Open ended

40. What can people expect when moving into a development in which you have been involved?

Open ended

41. In order of importance, what should a neighbourhood provide?

- sense of community
- sense of privacy
- sense of security
- financial investment
- other

The questionnaire was a valuable research tool. It allowed interviewees to have thought about their answers and to have prepared necessary material before interviews occurred. It also helped to keep the interviews focussed so that responses were able to be easily compared and contrasted. It was an efficient tool to use in gathering research.