TOWARDS A SUSTAINABLE TRANSPORTATION SYSTEM IN DOWNTOWN WINNIPEG

BY

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A Practicum
Submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements
for the Degree of

MASTER OF CITY PLANNING

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FACULTY OF GRADUATE STUDIES

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Acknowledgments

I would like to thank a number of people for their dedication to this study, the members of my Practicum Committee and the informants in Winnipeg and from the five cities reviewed. In particular, I would like to thank my mom and husband--without your encouragement and support, the completion of this study would have been impossible.

Abstract

This practicum develops a potential strategy for incorporating sustainable transportation and public participatory planning principles into downtown Winnipeg's transportation planning processes. It represents a response to the lack of downtown transportation bylaws for guiding downtown Winnipeg's transportation decision-making. Based in part on a review of existing documentation regarding Winnipeg's transportation plan and downtown Winnipeg's development plan, and the transportation section in particular, this practicum proposes a systematic development of the capital city's transportation planning processes.

The practicum is based on a literature review of emerging transportation planning theories, namely sustainable transportation and public participatory planning theories, to establish the theoretical framework for this study. Winnipeg's existing transportation planning context is explored through an analysis of current local practices in order to seek the potential for employing sustainable transportation and public participatory planning principles in downtown Winnipeg's transportation planning processes. An exploration of downtown transportation planning practices in five other Canadian and American cities (Hamilton, Edmonton and Vancouver, Canada; and Minneapolis and Portland, U.S.A.) develops an understanding of how these theories have been employed in other cities' settings. Interviews with key informants from these five cities are conducted. Finally, comparisons are drawn among these practices to suggest elements deemed useful for downtown transportation planning processes.

Recommendations are offered within downtown Winnipeg's context. They include: developing a comprehensive transportation system which follows the principles of transportation sustainability; incorporating sustainable transportation planning with land use planning; adopting a transportation management strategy; and promoting a participation culture and encouraging broad public participation through network building.

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Chapter One: Introduction

1.1 Overview

The City of Winnipeg is the eighth largest city in Canada with an ethnically diverse population of 628,100 (1999). It covers an area of 178.4 square miles. As Manitoba's capital city, Winnipeg dominates the Province's economy. Commercial services, non-commercial services, wholesale and retail trade and manufacturing are its top four employment sectors.

The city downtown, with a resident population of 14,000, has long been the financial, governmental, retail, cultural and entertainment center of Winnipeg. It is the major source of employment and income. Over 60,000 people work in Downtown, accounting for one-quarter of the city's total employment. It contributes approximately 23% of the city's net business tax (City of Winnipeg 1998:3). The downtown also serves as a hub of transportation for the city. Its street system accommodates not only destination trips, but also a significant percentage of through trips.

This MDP is inspired by the author's Summer 2001 internship work regarding street system conversion in Downtown Winnipeg. This conversion project explored traffic impacts, both positive and negative, on Winnipeg's Downtown. Its purpose was to aid decision-makers in making informed decisions.

With the fast-growing rate of private automobile use after World War II, conversion of two-way street patterns to one-way has become a very popular method of increasing street capacity and moving vehicular traffic rapidly and efficiently through downtowns. However, things have changed since the conversions were implemented in many North American cities. Often downtowns are no longer the lively, vibrant places to

shop and entertain they once were. Some people say that Canada's downtowns are dying a "natural death." Others attribute part of this decline to downtown traffic conditions that are not conducive to downtown businesses (IMC Consulting Group 1996:1). As cities explore the processes of revitalizing their downtowns, a common issue is the critical investigation of the existing, yet often confusing one-way street systems.

In order to determine the level of support for conversion from one-way to two-way downtown streets, a survey of Winnipeggers was conducted. Among those interviewed were representatives from city departments, public/private representatives, downtown employees and residents, the business community, infrequent downtown street system users, and tourists. Findings from the survey showed that response to such a transportation issue was multifaceted. They related to broad concerns for downtown revitalization, mobility, accessibility, safety, tourism, environmental pollution, as well as traffic speed and congestion.

Drawing on the findings of the street system conversion project, it is not difficult to come to the conclusion that physical mobility is no longer the only crucial factor being considered in current transportation studies. As indicated by Wachs (2000:129), transportation encompasses more than ever, social and economic systems as well as physical systems that are linked to land use; energy policy and environmental concerns; and housing and economic development. The notion of sustainable transportation (see its definitions in section 2.3.1), a term originally derived from sustainable development in the late 1980s, offers a succinct summary of this trend in transportation. Achieving sustainable transportation requires integrating economic, social

and environmental considerations into decisions affecting transportation activity (Environment Canada 2001:1).

1.2 Problem Statement

Transportation has always been critical to the development and growth of a nation, a region and even a city's downtown. A well-developed and sustainable transportation system not only accommodates the movement of people and goods, directly contributing to economic development, but also gives equal consideration to environmental and social issues.

There is increasing evidence that current patterns of transportation are not sustainable over the long-term. The complex environmental issues arising from existing methods of transportation are increasingly risking mankind's well-being. Moreover, governments are confronted with increasing difficulties in funding the expansion of transportation infrastructure and systems. Converting street systems from two-way to one-way operation has been designated as a strategy to accommodate the growing traffic demands in downtowns without the huge costs associated with widening roadways.

Achieving sustainable transportation is by no means easy. It relies largely on sustainable transportation policies and urban planning, as well as transportation management. The principles of sustainable transportation have been widely employed by many cities around the world, though definitions and interpretations vary. They are reflected in these cities' regional plans, city plans, land-use and transportation plans, downtown plans and downtown transportation plans that promote sustainable transportation systems on multiple levels. Portland, Oregon, a city frequently mentioned

by sustainable development advocates, provides a precedent for successfully promoting a sustainable regional transportation system. But few cities can expect to reach this level.

Contradictions are revealed in a number of transportation plans. As an example, Winnipeg's TransPlan 2010 proposes competitive public transit systems as a preferable transportation form while also developing parking strategies to make downtown parking more affordable and accessible for automobile users.

In the process of achieve sustainable transportation, one of its biggest challenges that has been defined is to build awareness among the general public about sustainable transportation (Environment Canada 2001:16). Only when individuals understand the impact of their transportation choices and behaviors, can they in turn make choices that reduce the need for resources and minimize the adverse impacts of transportation practices (Environment Canada 2001:16).

In order to achieve sustainable transportation, governments, non-governmental organizations, special interest groups and citizens must work together to promote sustainable transportation options. Yet, conflicts inevitably arise given the different interests each constituency represents. In this context, public participation in transportation planning process has an important role to play in responding to the demands of building consensus and forging decisions.

Over the past decade, transportation planning has gone through a radical transformation from conventional expert-driven scientific processes to public participatory processes. A number of cities have involved the public in making their transportation plans: Winnipeg's TransPlan 2010, Hamilton's Downtown Transportation Master Plan and New Land Use Plan, and Portland Central City Transportation

Management Plan and Transportation System Plan (See detailed discussion in Chapter 3). Furthermore, some non-profit organizations, such as Vancouver's Better Environmentally Sound Transportation (BEST) and Ottawa's Go For Green, are initiating broad partnerships and community involvement to solve their cities' transportation problems.

Although public participation methods have been increasingly employed in transportation planning processes, problems still exist. Among the main difficulties are the planners' attitudes to participation, and their ability to deal with real planning processes. Another closely related issue is the actual scope and depth of participation. Scope refers to who is involved in the process, while depth refers to the stage of the planning process the participation should reach. In current practices, a majority of participation still remains in the early phases--informing the public and soliciting feedback in the form of public hearings, written public comments on proposed projects, or the citizen-based advisory committees, usually composed of citizen elites. The public either becomes the object of the study or the receiver of decisions. As well, marginal populations are often excluded in the process. It is apparent that low level or token participation would not enable a major advance in achieving sustainable transportation.

1.3 Statement of Purpose

This study proposes a set of recommendations for incorporating sustainable transportation and participatory planning principles into transportation planning processes within the downtown Winnipeg context. Firstly, this study analyzes trends in transportation planning, leading to a new paradigm--sustainable transportation. How transportation can be economically, socially, and environmentally sustainable is explored.

Furthermore, decision-making principles for sustainable transportation documented in the literature are critically interpreted and synthesized.

This study also determines the significance of public participation in sustainable transportation planning processes. By examining historical and contemporary participatory planning theories, this paper explores innovative methods of public participation that have been developed in transportation planning. These methods are assessed for their potential to "replace the ritualistic or counterproductive methods that are so often used " (Innes & Booher, 2000:5).

Current transportation decision-making practices in Winnipeg are explored through an analysis of Winnipeg's transportation and downtown planning mechanisms and processes. A comparison of downtown transportation planning practices in five North American cities (Hamilton, Edmonton, Vancouver, Minneapolis and Portland) explores if and how more sustainable transportation and participatory theories have been incorporated into these cities' transportation planning processes. Experiences and lessons are drawn from these practices in order to establish sustainable downtown transportation and public participatory planning principles. Finally, recommendations related directly to the downtown Winnipeg context are offered.

1.4 Research Strategy

A case study strategy of research is employed in this study. It involves an empirical investigation of a particular contemporary phenomenon within its real life context, using multiple sources of evidence (Yin 1994: 1). The main case study focuses on the downtown Winnipeg transportation planning context, with the other cases

providing comparable precedents. Research methods include: literature review and interview.

1.4.1 Literature Review

A scholarly literature review of trends in transportation planning, sustainable transportation theory and participatory planning theory provides a larger context for the study with the following key question in mind:

- *How should public participation be incorporated into sustainable transportation decision-making processes? And to what effect?*

The literature research also reviews five other cities' downtown transportation plans, namely, three Canadian cities (Hamilton, Edmonton and Vancouver) and two America cities (Minneapolis and Portland). The rationale for selecting these five cities is: 1) Vancouver is the largest city on the west coast in Canada. Vancouver's Downtown Transportation Plan, approved by the City Council in July 2002, is the most recent Canadian precedent. Sustainable transportation and public participation principles have been employed in the process of developing this document; 2) Two case study selections of cities of similar size to Winnipeg are Edmonton and Halifax. Geographically, the former is also located in the Prairie region while the latter is situated on the east coast; 3) Portland is renowned for its success in promoting a sustainable transportation system coupled with land-use planning strategies as a means of protecting the environment; 4) Minneapolis is the closest major American city to Winnipeg. Sustainable transportation and citizen involvement in transportation planning processes are prominent in Minnesota's sustainable transportation initiatives. In addition, all five cities have involved the public in transportation planning processes at some level. This section

provides a valuable North American context for downtown transportation planning processes. Moreover, it provides the framework for developing recommendations for downtown Winnipeg's transportation planning.

In order to understand current patterns and practices of downtown transportation decision-making in Winnipeg, local documents have been reviewed, e.g. Winnipeg's Transplan 2010, Plan Winnipeg and CentrePlan. Key questions for this phase of the research include:

- *How have current transportation planning processes been conducted?*
- *How have sustainable transportation and public participation principles been employed in these practices?*
- *What experiences and lessons can be taken from previous practices in Winnipeg and other cities, and how can these lessons be usefully addressed in future downtown Winnipeg transportation planning?*

1.4.2 Interviews

Semi-structured interviews with transportation planners in the five selected cities were conducted to provide insight into the attitudes and approaches of the respondents. Prior to conducting an interview, a consent form outlining the intent of the study was sent to the participant for his/her authorizing signature. A semi-structured questionnaire (see Appendix A) combined preset questions and open-ended questions to allow respondents the opportunity to comment on issues in their own ways and offer their own thoughts. These interviews were carried out by telephone.

Unstructured interviews with individuals involved in Plan Winnipeg and/or Winnipeg's TransPlan 2010 and/or CentrePlan were also carried out. The interviews were intended to solicit insight about his/her involvement and reflections on existing transportation planning processes--in particular, the lessons that could be learned for

future practices. The result of these interviews were threefold: interviewees' experiences related to their participation in the process of developing Plan Winnipeg and/or Winnipeg's TransPlan 2010, and/or CentrePlan; interviewees' evaluations of existing transportation planning processes in Winnipeg in terms of incorporating sustainable transportation and public participatory planning principles into practices; and potential lessons for practices within the downtown Winnipeg context.

1.4.3 Data Analysis

The raw data collected in the interviews is analyzed for recurring themes. The findings are linked to the literature review and to case study precedents of successful experiences and lessons learned from transportation practices.

1.5 Significance of Research

"The paradigm of sustainability is highly attractive, yet it represents a conundrum: how can a planning process be organized to create a sustainable transportation system" (Schoor 1999:146)? Answers to this question are what this present study attempts to provide. This practicum focuses on the intersection between sustainability theories commonly regarded as ideal and transportation planning practices. It also aims to provide a set of recommendations for incorporating sustainable transportation and public participatory planning principles into downtown Winnipeg's transportation planning processes.

The application of public participation theory in transportation planning processes is not new. Since the early 1990s, the United States Federal Law has

legitimated citizen involvement in transportation planning processes to make transportation decisions more democratic. In Canada, transportation planning processes involving the public have also been popular. However, some participatory practices still remain at the primary stages, taking the form of collecting information and/or informing decisions. This study introduces an emerging participatory planning theory - consensus and social network building into transportation planning processes to ensure that a more broad, meaningful and effective participation takes place.

1.6 Limitations

The limitations of this study are threefold. Firstly, downtown transportation planning cannot be approached without looking at broader contexts, including regional and local transportation plans. Economic activities, land use planning, urban design and citizens' understanding of environment-people behavioral issues also directly impact modes of transportation in downtowns, cities and regions. This study primarily focuses on downtown transportation planning. It only involves in wider issues where necessary.

Secondly, transportation planning involves studies of the movement of people as well as the movement of urban goods. Since many downtowns are the cultural, entertainment, commercial and employment centers of North American cities, movement of people is the major focus of this study.

Finally, the analysis of five other cities' transportation planning processes is based on available documentation, and the information and opinions provided by the key informants. Therefore, it is limited to the insight and understanding of the informants and to the views in the referenced literature.

1.7 Content of Chapters

The practicum is divided into five chapters:

Chapter One Provides an overall introduction to the practicum. In the Overview section, the author outlines her internship experience and research interests arising from it. In addition, it states underlying problems, objectives and limitations for the study, and the research methods being applied.

Chapter Two focuses on a literature review of trends in transportation planning, leading to recent theories around *sustainable transportation* and *public participation in transportation planning.* The review links these theories to Winnipeg's downtown transportation planning.

Chapter Three scrutinizes mechanisms and processes that have been followed in Winnipeg's transportation planning practices through reviewing available documentation. It also identifies themes arising from interviews with participants who have been involved in current transportation planning processes.

Chapter Four reports on current planning practices in five North American cities related to the application of sustainable transportation and public participation principles. Lessons from this survey are summarized.

Chapter Five synthesizes the common elements from successful practices by drawing out comparisons among the five selected North American cities. It establishes recommendations for the development of sustainable transportation and public participation planning practices within the context of Winnipeg's downtown transportation planning. Finally, a summary of the practicum's direction, findings, recommendations and future research questions is provided.

Chapter Two: Literature Review--Trends in Transportation Planning

In 1987, the World Commission on Environment and Development defined sustainable development as "development that meets the needs of present without compromising the ability of future generations to meet their own needs." This definition made explicit reference to the need for the global economy to adopt the aim of sustainable development (Whitelegg 1997:99). In the transportation sector, this means that the transportation system and transportation activity in general, must be sustainable on three counts--economic, environmental, and social (Environment Canada 2001: 4).

Past transportation planning practices have been demonstrated as unsustainable. There are many propelling factors--population growth, suburbanization, affordable private automobiles, declined public transportation services coupled with higher fares, and so on. But underlying these factors are deep roots in people's social values and lifestyles, as well as a country's economic system and transportation policies (NRTEE 1996:ix).

Greenhouse gas emissions have been identified as a major issue for Canada. Among the major resources of greenhouse gas emissions in Canada, transportation is the single largest, accounting for 25 percent of total emissions (Environment Canada 2001:5). In December 1997, Canada and other developed countries met in Kyoto, Japan and agreed to targets to reduce greenhouse emissions. The agreement that set out those targets, and the options available to countries to achieve them, is known as the Kyoto Protocol. Canada's target is to reduce its greenhouse gas emissions to 6 percent below 1990 levels during the five-year period from 2008 to 2012 (Environment Canada 2001:5).

Achieving sustainable transportation will not take place overnight. It is a long-term goal that requires a joint effort. The National Round Table on the Environment and the Economy (NRTEE) of Canada notes that:

> Achieving sustainable transportation will require integrated policy instruments that rely on a variety of approaches, including 'command and control' regulations, economic incentives, education and information, transportation and land-use planning, and technology development. Also essential is a coordinated approach involving all levels of government and other stakeholders to ensure that policy packages are consistent with jurisdictional responsibilities, avoid unnecessary duplication, and exploit synergies among policy instruments (NRTEE 1996:x).

In increasingly realizing the close relationship between transportation and their quality of life, the public is demanding more meaningful input to transportation decisions that directly affect them and the community in which they live. In this context, public participation in transportation planning processes has an important role to play in response to the demand of enhancing understanding, building consensus towards better transportation decisions and turning into action.

This chapter explores the potential for incorporating sustainable transportation and public participatory planning theory into transportation planning practices.

2.1 Traditional Transportation Planning and Its Impact

According to the mission of traditional transportation planning, "to move as much traffic as possible, and to move it as quickly as possible", transportation planning has focused on technical solutions to transportation issues. The classic engineering considerations of cost, safety and speed were taken into account in transportation decision-making (Wellman 1977:639). However, It has been proven that this approach

presents considerable economic, social and environmental consequences, which will be further discussed in sections 2.1.2, 2.1.3 and 2.1.4.

Transportation history has shown significant changes since the 1950s due to the formation of relationships between transportation and planning. When writing "Traffic in Towns" in the 1960s, Colin Buchanan, a Scottish engineer indicated that transportation should be aimed to "study the long-term development of roads and traffic in urban areas and their influence on the urban environment" (1963:17). Before the 1990s, those relationships tended to be limited and transient (Gakenheimer, 2000:140). Not until recent years, have these relationships increased dramatically by a number of ties--land use planning, social equity, natural resource conservation, air quality, telecommunication impact on space, and the greenhouse effect, to name but a few.

2.1.1 Derived Demand--Land Use/Transportation Planning

The goal of traditional transportation planning was to meet transportation demands while facilitating other infrastructure systems such as power, water and waste treatment (Wachs 2000:131). For example, freeway expansion in 1950s stemmed directly from the increasing use of private automobiles and rapid suburbanization. Richmond (1998:221) therefore summarizes this transportation activity as a derived demand--something demanded in order to accomplish something else.

"Transport planning, with its goal system, its professional standards and its methodology, was strongly orientated towards serving this demand" (Nijkamp & Reichman 1987: 2). The actual work evolves into a technical activity dominated by a cadre of system engineers who have been trained in programs where the teaching of

techniques for forecasting demand plays a central role in their curricula (Gakenheimer 2000:140). The transportation planning process therefore consisted of a series of technocratic steps with a series of demand forecasts, modeling and evaluation (Richmond 1995:305):

> A series of forecasts follow: 'of land uses that occur in the forecast period, and then of the demand that may be anticipated and the way this will occur throughout the region' (Stopher and Meyburg 1975:60). Four models are used: to gauge total demand; allocate in between origins and destinations; between competing modes of transportation; and among the set of available network paths. Finally, alternative strategies for providing transportation are evaluated in light of the above, and policy choices of planning are made.

The assumptions upon which the forecast was based and which influenced its outcome were necessarily subjective (Richmond 1995:305). More motor vehicle infrastructure construction was the inevitable recommendation resulting from such a technocratic study to meet the extensive land use development and increasing use of private automobiles.

Technologies associated with transportation have largely focused on delivering demand-led transportation policy objectives--increasing individual mobility, alleviating congestion and increasing speed, at the expense of improving other environmental friendly modes of transportation, like walking, cycling, roller-skating and public transportation. Zuckermann (1991: 271) points out that advances in technology brought about even faster transport and made time and space shrink even further. Such technical advances only exacerbate the conflict between human and mechanical perceptions.

Weaknesses of conventional approaches in transportation planning were apparent. In the absence of a system view, technical solutions are looked for to solve the problems existing in transportation facilities without looking at "overlap with the many

other elements of the city" (Richmond 1998:221). The weakness in approach nourishes more traffic problems, the consequent economic pressure and more severe environmental and social issues. Nijkamp and Reeichman (1987:2) conclude the disadvantages that traditional transportation planning carried:

> Deeply rooted in an engineering tradition, transport planning is incapable of encompassing the subtle interactions between transport and other aspects of society such as energy and ecology, location and land-use, or human lifestyles and activity patterns. Such questions as the relationship of mobility to broader issues of urban and regional planning and policy were not treated systematically, nor was much attention paid to the negative effects of car use on social interaction.

2.1.2 Economic Pressure

The model of traditional transportation planning, it has been argued, is the result of particular socioeconomic forces. "These forces act to encourage the transport of more and more people and goods over increasing distances, by modes of transport that promise--although may not actually deliver--significant time savings" (Whitelegg 1997:97). Indeed, while building more roads may alleviate congestion in the short term, it is likely to cause an increase in traffic over time. As described by Richmond (1998:223), the products of road-building would feed back to increase the demand to travel to the places those roads lead, generating more traffic and more congestion.

Congestion can have a profound impact on economy. In Canada, three out of four commuters drive their own vehicles to work (Environmental Canada 2001:2). According to a 1999 report on funding transportation, more than 70 percent of the highway network is congested during peak hours in the Greater Toronto Area, creating an unacceptably low level of service to business and residents (Environment Canada 2001:3). Economic loss resulting from delays and time spent on the road is shocking.

Time really is "money." The costs of traffic congestion have been studied by the Road Research Laboratory. For example, the figure for 1958 for urban areas of Britain was at £140 million. The comparable figure for 1961 would be more than £250 million (Buchanan 1963:22). Recent research conducted by Smart Growth America, an advocacy group promoting smart growth in the United States, indicates that the number of miles that have been driven has increased 25% in the last 10 years; time spent in traffic accounts for a 236% increase since 1982; and money lost in time and fuel was $28 billion in 2000 in the United Stated. The cost of congestion is evident and it tends to increase year after year. In addition, governments are facing declining financial resources for expanding transportation infrastructure to meet this growing demand. It was apparent that building more roads were not the fundamental solutions for alleviating congestion.

2.1.3 Environmental Concerns

Along with high level of car ownership and use coupled with road construction in the 1960s, came a shift to issues of the environment associated with transportation planning. "Needless to say, there has been a growing concern, not only about the local environmental and health impacts of transport, but also about the global impacts, particularly those that are the result of the massive global increase in car and air travel" (Whitelegg 1997:98). These concerns include land, raw materials and non-renewable energy consumption for transportation use, and environmental deterioration, especially those related to greenhouse gas emissions, air, water, and noise pollution.

"Land is a finite resource and has a large number of roles to play in terms of providing green space, habitat, ecological niches, recreational opportunity, food potential,

and as well as the maintenance and enhancement of biodiversity" (Whitelegg 1997:124). "Transportation is clearly and visibly a significant land use in its own right" (Marshall 2001:132). A high percentage of land is used to construct roads and parking facilities in order to accommodate motor vehicles both moving and at rest. Parking is a thorny issue in transportation/land use planning because parking is usually located in urban centers where land values are the highest. Whitelegg notes that loss of land for transport purposes has been identified as a key issue in the development of a sustainable transport policy (see further discussion in section 2.3.2).

In addition to consuming a considerable proportion of land, transportation also plays a significant and increasing role in energy consumption. Transportation is mainly fossil-fuel-based, and the motor vehicle is the biggest consumer, compared with all other transportation modes...On a global scale, motor vehicles powered solely by fossil fuel account for one-third of world oil consumption (Whitelegg 1997:114). In Canada, road vehicles are responsible for more than 80% of oil use for transportation (NRTEE 1996:ix).

Energy consumed by transport is closely related to air pollution. The production of pollutants have significant effects on the atmosphere, leading to tropospheric ozone and acid rain, as well as contributing directly or indirectly to global warming (Whitelegg 1997:114). Green gas emissions and the resultant environmental effects are a major issue for Canada. Among the major sources of greenhouse gases in Canada, transportation is the single largest, accounting for about 25% of total emissions (Environment Canada 2001:5). Furthermore, people in developed countries have already been experiencing the negative health impacts of motorized transportation. Medical research shows that ground-

level air pollution in Canada is contributing to increased incidence of respiratory illness, higher physician/emergency room visits among people with heart or lung disease, and possibly increased mortality (NRTEE 1996:ix).

Urban stormwater pollution is another severe impact that the high level of car use places on the physical surroundings. Paved roads, parking lots, driveways, garages and other facilities covered by impervious surfaces generate huge amounts of stormwater containing a host of automobile contaminants--oil, paint, lead, organic compounds, and many other residues (Marsh 1997:205). In addition, the motor vehicle is also responsible for a great deal of noise. Colin Buchanan (1963:25) identifies five main kinds of noise from vehicles: propulsion noise (from engines, gears, transmission and exhaust), horns, alarm brake squeal, door slamming and loose loads or bodies.

The negative impacts of motorized transportation have been greater than anticipated. These disparate impacts affect the global, regional and local environment and pose a threat to human quality of life. As well, it has been demonstrated that traffic patterns have direct or indirect social impacts (see further discussion in section 2.1.4).

2.1.4 Social Impacts

As discussed in the earlier section, traditional transportation planning aims to accommodate the derived demand for increasing private motorized transport, focusing on the street as a movement artery. The space requirements of pedestrians are almost negligible compared to those by motorized modes (Marshall 2001:135). Taking Los Angeles as an example, nearly two thirds of all developed urban land is devoted to roads, parking and other motor vehicle infrastructure (Southworth and Ben Joseph quoted in Marshall 2001:132).

A field survey, conducted in 1969 by the City Planning Department of San Francisco, attempted to quantify how traffic levels and speed relates to the social networks of a neighborhood. Three different streets labeled heavy, medium and light traffic but identical in appearance were selected (Appleyard 1981:15). It was found that inhabitants on the light street, had three times as many local friends and twice as many acquaintances as those on the heavy street (Appleyard 1981:22). This result indicates that more traffic carried by the street reduces the sense of community ownership felt by the residents.

According to Cervero (1998:xi), increasing use of automobiles and rapid suburbanization have been two major reasons causing transit's decline. When automobiles improved the mobility of a majority of urban dwellers, changes to the entire transportation system have lessened the access to opportunities and impaired the mobility of a significant portion of the elderly and the poor who rely on public transportation for their daily activities. An Australian study highlighted the vulnerability of the elderly in a car-dependent city by showing that they are less transport-independent due to a much higher proportion who do not drive; are more isolated due to the physical distances and poor public transport in low density suburbs; and more prone to injury from vehicles while walking (Roseland 1998:109). On the other side, improved technology and a rising, expanding economic base have helped to create growth in the size and geographical expansiveness of cities (Steiner 1978:97). Taking the bulk of blue-collar commuter traffic away from the central business district which used to be concentrated with housing, most jobs and transit services has lessened the mobility of low-income groups whose job locations may have moved to suburban areas and away from transit services.

2.2 Trends in Transportation Planning

Disadvantages of conventional transportation planning are apparent. Although the reasons for these vary, part of the explanation lies in the fact that there is lack of comprehensive planning integrating all elements in a city, a region, and even a broader scope. The relationship between transportation and planning has undergone significant change since these relationships took shape up in the 1950s. According to Gakenheimer (2000:140), Leung (1999:157) and Richmond (1998: 223), there are a number of symbolic periods in transportation planning history:

1950s – Formulation of the land use/transportation equilibrium relationship;
1960s – Perception of environmental issues associated with the problems that roads have created.
1970s – Arrival of the perception of a transit or highway alternative coupled with a genuine commitment to public participation.
1980s – Gradual maturation of the environmental movement continued to bind transportation to urban planning; occurrence of the notion of sustainable transportation.
1990s – Strengthening of transport/land use relationship associated with growth management. The land use--transportation link has become more focused on the sprawl--infrastructure link.
Current – Transportation/planning relationship is bound together by numerous ties--mobility, environment, resource, equity, employment and urban economic development, more in keeping with sustainability notions first raised in the late 1980s.

To sum up, the land use/transportation relationship and environmental movement represent two turning points in contemporary transportation planning. The early ideas about transportation sustainability in the late 1980s focused on fuel use and environmental concerns and heralded a new paradigm to transportation planning.

In general, Winnipeg's transportation planning history follows the traditional transportation planning track, with similar causes, planning rationales and solutions.

Reviews of traditional transportation planning, its impact and trends may help understand the strengths and shortcomings embedded in past transportation planning practices, and identify transportation planning issues within the downtown Winnipeg context.

2.3 A New Paradigm in Transportation Planning--Sustainable Transportation

The term 'sustainable transportation' was originally derived from the notion of sustainable development which was advanced by the United Nations' Brundtland Commission in 1987 (Richardson 2000:21). Sustainable development was defined as " development which meets the needs of the present without compromising the ability of future generations to meet their own needs". However, this definition has been criticized for lacking a more precise meaning. It has been argued that it raises more questions than answers. For example,

> How is 'need' defined within our complex consumer society where needs have been socially reconstructed to mean 'wants'? Is global air transportation for tourism to exotic destinations a need? How do we know what future generations will need? ... And at what level of economic activity are these future needs being compromised (Whitelegg 1997:99).

It is therefore challenging to use this definition to construct a practical framework for precise action towards an end point of sustainability (Whitelegg 1997:99). Thus, in practice, the application of the notion of sustainability is based on various contexts.

2.3.1 Definition of Sustainable Transportation

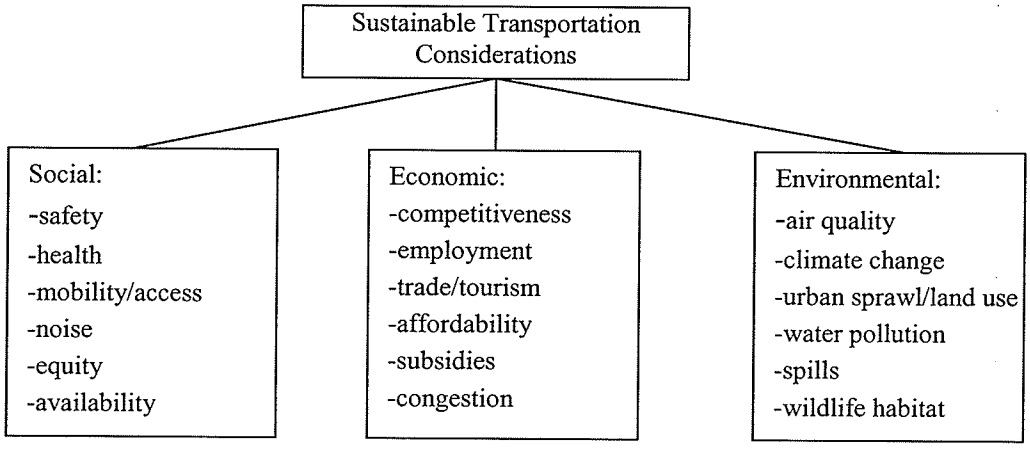
As mentioned at the end of last section, the early view of transportation sustainability focused on fuel use and environmental concerns. More recently, people

have also been concerned with congestion, mobility, and safety as conditions of sustainability (Richardson 2000:21). All these are important transportation-related conditions that contribute to quality of life.

Various groups define "sustainable transportation" differently. In the Canadian context, it means that the transportation system and transportation activity in general, must be sustainable on three counts--economic, environmental and social (Environment Canada 2001:1).

Factors that need to be taken into account within three general categories are identified in Figure 1. Indeed, interrelationships exist between all factors. Each factor influences one or more of the others.

Figure 1: Sustainable Transportation Considerations



(Drawn from Sustainable Transportation: The Canadian Context, Environment Canada 2001:4)

One emerging definition that is particularly applicable for this study is: " A sustainable transportation system is one in which safety, accessibility or mobility, fuel consumption, congestion and vehicles are of such levels that they can be sustained into

the indefinite future without compromising the ability of future generations to meet their own transportation needs" (Richardson 2000:21).

It has been increasingly understood by concerned professionals and decision makers that one of the greatest threats to the sustainability of our communities is automobile-dominated land use and transportation policies. Sustainable transportation calls for more holistic approaches to urban transportation polices, urban planning and transportation management to "achieve a diverse and balanced mix of transportation modes together with a sensible arrangement of land use that enable conservative use of energy and capital to fulfill mobility needs" (Roseland, 1998: 111). Portland, Oregon has created a leading example in terms of its practice in compact and mixed land development and implementation of the "move people, not vehicles" transportation policy. Canadian cities, such as Vancouver, Edmonton and Hamilton, are also focusing efforts on revitalizing their downtowns through promoting the use of alternative transportation modes and land-use planning strategies.

2.3.2 Sustainable Transportation Policy

According to Fowler and Layton (2002:108), urban transportation policy can be defined on several levels:

> First, it consists of a philosophy or approach toward travel within the city. This philosophy might take the form of a general value preference, such as for the car versus other means of transportation. Second, policy can also be thought as the relative amount of money spent by a municipality on transit, roads, bicycle lanes, and pedestrian access, including both capital and operating expenses. Third, policy involves where and how these funds are spent. Cities are places, after all, and funds are often directed more to one part of the city than to others; money spent on roads could be used to widen them or to modify their design to slow down traffic (traffic calming). Fourth,

> many public decisions affect a city's transportation system without being explicitly acknowledged as transportation policy; housing and land use policies, infrastructure investment, and environmental regulations.

Moving towards a sustainable transportation system requires a sustainable transportation policy. "Given the differential effects of different transport modes on the environment, it makes sense for a sustainable transport policy to discriminate by mode. Indeed, there is often assumed to be a working 'hierarchy' of modes prioritized according to their sustainability" (Marshall 2001:137). In principle, pedestrians and cyclists come first, followed by public transport, and private motorized transport comes last (Marshall 2001:137).

Walking or cycling has been defined as non-polluting and less/non-energy consumption modes of transportation while public transit is regarded as the 'greenest mode' of transportation. Moreover, walking in particular is complementary to other, non-transport activities, allowing social interaction and enhancing the vitality of urban areas (Marshall 2001:137). This people-oriented, instead of traffic/car-oriented transportation policy conforms to the general principles of sustainable transportation.

In addition, the European Environment Agency (EEA) developed transportation and environment indicators to enable policy-makers to gauge the process of their integration policies in 2000. Seven questions are addressed, each associated with a key indicator (see Appendix B) to determine whether policy measures and instruments are influencing transportation/environment interactions in a sustainable direction (EEA 2000:6).

The emerging notion of inter-modal transportation planning seeks to integrate and balance all means of mobility, including walking, bicycling, public transit and other

alternative vehicles, with no priority given to automobiles (Orser 2001:46). Inter-modal transportation, such as public transport with walking or cycling, can offer the same benefit as the motor vehicle's ability to provide a door-to-door service. However, it must be pointed out that because of poor ridership productivity, public transport could even worsen air quality and environmental conditions in many settings (Cervero 1998: xi). To encourage people to use the transportation system more efficiently, we need to adopt land-use policies that reduce our needs for transportation and meet those needs in more energy-efficient ways (Roseland 1998:125).

2.3.3 Urban Planning Policy

As pointed out by a number of transportation, planning and environment professionals, such as Roseland (1998) and Leung (1999), and increasingly realized by decision-makers, transportation and land use are inextricably related. The relationship between land use and transportation can be examined in a number of ways:

> First, transportation can be seen as a service which enables people, firms, and institutions to carry out activities in separate locations. The emphasis is on coordination of activity patterns, activity centers, and movement systems. Second, land use can be seen as an important determinant of demand for travel. The type and location of land use and intensity of activity can increase or reduce travel demand, or the use of public transit. Third, transportation can have an important impact on how land is used (Leung 1999:140).

In addition, through zoning and other techniques, land-use patterns and densities dictate travel volume, direction and mode (Roseland 1998:126).

Many transportation issues are rooted in suburbanization and not the invention of motor vehicles. The problem with rapid suburbanization is not just its high-energy use,

but also the impact it has had on public transportation due to low-density housing and use separation (Cervero 1996:xi).

Dispersed land-use patterns are typified by low-density suburbs in the U.S.A. and Canada (Roseland 1998:126). A home on a big lot in suburbs remains a key component of the North American dream. Due to a lack of understanding of the negative impact of suburbanization, fierce opposition to high density or infill development often arises from nearby homeowners (NRTEE 1996:3).

For a long time, transportation and land use planning have been regarded as two separate systems. In the absence of comprehensive planning, transportation has, almost by default, guided land use (Roseland 1998:127). Instead, land-use planning should guide transportation, and transportation should be designed to accommodate and support planned growth, inducing the needed changes in urban form (Cervero & Replogle quoted by Roseland 1998:127). More recently, some professionals from the civic administrative sector argue that land use and transportation plans should be developed concurrently so that the plans are compatible, and any policy made on transportation reflects future changes in land use and vice versa. This theory has already been employed in practice, e.g. Hamilton's integrated downtown transportation and land-use planning (see discussion in the section 4.2).

Trip generation for transportation planning is land-use based (Leung 1999: 156). Sustainable transportation proponents argued for more transit-oriented, higher density and mixed land use. This will help to halt the growth in auto-based development, produce an improved jobs-housing balance, increase accessibility and provide a pedestrian-friendly environment.

Many efforts to relieve traffic congestion in the past did little to reduce pollution emissions or the amount of fuel consumed. Although the advent of new technology, such as telecommunications, has resulted in some reduction of commuting, it also has increased vehicle trips within communities. "People working from home may need to make more trips per day than they would simply going to the workplace and having all their working requirements in one place" (Roseland 1998:110). The reduction of automobile dependency and single-occupancy vehicle trips are the only sound way to improve air quality, reduce energy consumption contributing to the atmospheric change, and relieve traffic congestion (Roseland, 1998:111). To achieve this goal will largely rely on comprehensive land-use and transportation planning and efficient transportation management (see further discussion in section 2.3.4).

2.3.4 Transportation Management

As transportation systems in North America have matured, the spotlight has shifted to transportation management since road provision, parking, and non-motorized mode use are strongly associated with auto-dependence (Wachs 2000: 135, Roseland 1998:111). According to Roseland (1998:112), transportation management generally includes transportation system management (TSM) and transportation demand management (TDM). The main goal is to reduce the number of automobile trips; increase opportunities for non-automobile trips; and reduce the use of gasoline and diesel fuel in conventional buses, autos, and trucks (Roseland 1998:111).

Transportation system management is one planning method in striving toward sustainable transportation. It aims to affect the supply of transportation services by attempting to increase the person-carrying capacity of the road system without building

additional road capacity, or by simply allowing congestion to become worse, thereby discouraging vehicle travel (Roseland 1998: 112). Supply management strategies, such as high occupancy vehicle (HOV) and transit-only lanes, queue jumpers, and toll-free for HOVs are highly recommended by Roseland (1998:112).

"While transportation system management strategies aim to affect the supply of transportation services, the goal of transportation demand management is to influence people to shift to more efficient modes of transportation and to travel during off-peak hours" (Roseland 1998: 112). It was believed it would be impossible to eliminate congestion by building more roads because of the costs involved, effects on air quality and unacceptable impacts on communities. Transportation demand management holds the most promise for reducing congestion and creating communities that are not dominated by the automobile (City of Portland 2002:5-1). It has been defined as actions which are designed to change travel behavior in order to improve performance of transportation facilities and to reduce the need for additional road capacity (City of Portland 2002: 5-2). TDM strategies include but not limited to parking management, ridesharing, and flextime, etc. (See detailed strategies in Appendix C).

TDM has drawn increasing attention during recent years. American cities, such as Portland and Minneapolis, have already developed their transportation demand management plans. Attentions to TDM have been increasingly drawn by more and more Canadian cities.

The prospect of sustainable transportation is attractive. It helps civic administration and transportation professionals identify fundamental solutions for thorny

transportation problems in their communities. Sustainable transportation principles have been included in Winnipeg's past transportation planning practices, but have been demonstrated as unsatisfactory (see further discussion in section 3.2). The stated goal of the recently developed Plan Winnipeg 2020 Vision document is " achieving a sustainable community." By enhancing the understanding of broad context and principles of sustainable transportation, we can better apply them and in turn guide the future of transportation planning in downtown Winnipeg.

2.4 Public Participation in Transportation Planning

> In the last several years there has been an enormous shift toward the 'politics of inclusion'. These new politics are here to stay, not only because they are demanded, but also because they ensure results that better fulfill the broad public interest than decisions that are shaped by the lobbying of powerful and vocal interests. For some categories of decisions that affect a broad spectrum of interests, a fair hearing is no longer sufficient to achieve a lasting and equitable result. Direct participation in the decision-making process is necessary (Roseland 1998:182).

2.4.1 Evolution of Public Participation

To achieve the goal of sustainable transportation requires that government work with industry, individuals, and other stakeholders. From the government's perspective, one of its biggest challenges is to build and enhance the general public's awareness of sustainable transportation so that they make choices that minimize the adverse impact of transportation (Environment Canada 2001:16). On the other hand, citizens no longer see public participation as an "opportunity," but rather as a basic service that will be designed around them (Graham & Phillips 1998:2). In realizing the inseparable relationship

between transportation and their quality of life, the public are demanding more meaningful input into transportation decisions that directly affect them and the community in which they live. As described by Hathaway and Wormser (1993:36):

> Transportation is basic to people. If people cannot travel, their lives are impoverished. People need access and mobility to work, learn, socialize, relax, and challenge themselves. Transportation is so basic that people, "nonexperts," have very strong views on their travel needs and how well they are being met.

Most of planners first became aware of public participation through a landmark article by Sherry Arnstein (1969) in which she described public participation as a categorical term for citizen power (1969:216). She used "Eight Rungs on a Ladder of Citizen Participation" to illustrate the extent of citizens' power in the public decision-making (See Appendix A).

The evolution of the public participation process began in the 1970s when critiques against the modern planning style emerged (Hall quoted in Schoor 1999:76). Public participation as a routine part of land-use planning was the initial approach and it has been increasingly demanded in other policy areas, including transportation planning (Graham and Phillips 1998:2). Barry Wellman, a professor with the University of Toronto, defined public participation as the attempt by new potential clienteles to make transportation planning more responsive to their interests and values (1977: 639).

The significance of public participation in transportation planning processes has been gradually recognized. In the United States, public participation in transportation planning processes has been institutionalized. With the passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), there has been a federally mandated emphasis on early, proactive, and sustained citizen input into transportation decision

making--with special outreach efforts targeted at traditionally underserved populations (O'Connor et al. 2002: 1). In Canada, as early as the1970s, Ministry of Transportation and Communications drew up "Guidelines for Public Participation in the Transportation Planning Process". In this document, the objective of public participation in transportation planning is stated as "to afford every individual who is affected by future transportation projects an equitable opportunity to participate effectively in the planning process" (Ministry of Transportation and Communications 1972:1).

A review of the recent literature regarding public participation in transportation planning processes reveals that the focus of studies in this field has shifted from explaining its significance to exploring measures for more meaningful and efficient public participation. In practice, a culture of public participation has been gradually formed in many North American cities, though the participation method varies. However, methods employed in the process directly affect planning outcomes and influence the public's attitude to future involvement in transportation planning processes.

2.4.2 Traditional Participation

Traditional methods of public participation in conventional expert-driven transportation planning tended to involve one-way communication from transportation professionals to the public. It did not achieve genuine participation in planning or decisions (Innes & Booher 2000:1). Opportunities for public participation by the communities affected by the scheme are minimal (Whitelegg 1997: 105). For example, the public's views are often sought only after a decision to build a particular road has been taken. Their comments are restricted to the choice of route rather than whether a

road needs to be built at all (Whitelegg 1997:105). Roseland (1998:182) describes this traditional participation approach as "decide, educate, announce, defend," otherwise known as DEAD.

Many transportation planners regard public participation as helpful for acquiring information about public preferences so the public can play a part in decisions about transportation projects, policies or plans (Innes & Booher 2000:5). Citizens serve only as objects of research, and are not active participants in decision-making. This model of participation is defined by Innes and Booher (2000:6) as a technical bureaucratic model that is enshrined in law as required "steps" in a public decision process.

This one-way communication causes many participants to be skeptical about whether their participation can truly influence the outcome of a transportation project (U.S Federal Highway Administration & Federal Transit Administration 2002: 1). The hostility demonstrated at public transportation proposal meetings results from the frustration people feel when their travel choices are made or constrained by unknown people or for unexpressed reasons (Hathaway & Wormser 1993:36).

The negative impacts resulting from these traditional participation methods are evident. Khisty has identified several major problems embedded in traditional participatory processes. They can be attributed to engineers' and planners' biased education, their lack of knowledge and skill in building support for public involvement, and their predilection for looking down on the average citizen (Khisty 1996:4).

The traditional public participation approach to deal with complex transportation issues is unlikely to be successful. In order to meet the objectives of sustainable transportation, a new approach is demanded. There is general agreement that

a well-conceived and well-implemented public involvement program can bring major benefits to the transportation policy process and lead to better decision outcomes. Beneficial results include:

- Public ownership of policies/sustainable and supportable decisions;
- Decisions that reflect community values;
- Efficient implementation of transportation decisions; and
- Enhanced agency credibility (O'Connor et al. 2002: 3).

2.4.3 A New Paradigm in Public Participation

Compared with a technical and bureaucratic participation model, the new emerging paradigm establishes transportation decisions as the product of partners' collaborative work (Hathaway & Wormser 1993:36). Partners, as defined by Hathaway and Wormser (1993:37), are recognized as having comparable status, with equal legitimacy. Collaborative work allows multi-way communication around tasks and issues, involves the public directly with one another, planners and decision-makers, and allows real learning and change to take place on all sides (Innes & Booher 2000:4). To sum up,

> The essential difference between conventional and collaborative, or "shared decision-making," is the level of true collaboration and involvement of those not traditionally involved in decision-making (Crowfoot and Wondolleck quoted by Roseland 1998: 183). Specifically, shared decision-making involves planning with stakeholders rather than for stakeholders (Roseland 1998:183).

There is a wide range of methods that encourage more efficient public participation in transportation decision-making. These methods include polls, opinion surveys, focus groups, alternative dispute resolution, and media campaigns to supplement more traditional public hearings, workshops, advisory committees, and task forces

(Hathaway & Wormser 1994:6). Khisty (1993:53) also proposes using "soft systems methodology". This is an inquiring system used to tackle ill-structured problem situations in transportation planning. It brings people together to solve problems through innovation, empowerment, shared vision and collaborative action.

Roseland proposed a consensus decision-making method in planning processes. This is identified as most useful for groups whose members value their association and since conflicts inevitably arise due to various interest groups' involvement. Roseland (1998:183) defines consensus as a process for making group decisions without voting; agreement is reached through a process of gathering information and viewpoints, discussion, persuasion, a combination of synthesis of proposals and/or the development of totally new ones. This method is also applicable to the transportation planning processes.

Khisty indicated that key points of efficient public participation in transportation planning should include: early and continuous participation; reasonable availability of technical and other information to citizen groups; collaborative input on alternatives; evaluation of criteria and mitigation needs; interaction and debate in open public meetings, where matters relating to transportation programs are considered; and open access and power in the decision making processes prior to closure (1996:2). This suggestion indicates that involving the public from the most apathetic to the most active, and from very beginning to the final decision- making ensures the broad public's voice is heard and reflected in the final decision that will directly affect their community and their life.

2.4.4 Public Network Building

More recently, the importance of public participation has been revitalized under the concept of "public network building", a term raised by Innes and Booher (2000). The concept for this new participation mechanism focuses on ongoing activities once specific processes are over (Innes & Booher 2000:20). This model is especially appropriate for transportation planning processes because the decisions being made affect everyone's life. "The benefits of having networks are that they are not only potentially more inclusive and empowering for players than the traditional ones, but they also respond more quickly and help the planning system to adapt creatively to challenges than the old styles" (Innes & Booher 2000:20). Networks allow broad two-way knowledge and information flow from the civic administration to the broad public and vice versa. It is also suggested that large, interest-based organizations such as professional, political and policy-oriented groups, as well as neighbourhood groups, civic groups, school groups (e.g. parent associations), recreational groups, and hobby groups be venues for interacting and building relationships with various interest-based entities and each other (Innes and Booher 2000:20). Hathaway & Wormser (1993:36) conclude that public participation in transportation planning cannot be thought of as a one-time event; rather, it implies an ongoing, interactive, iterative communication.

Public participation in transportation planning processes is not new in Winnipeg. The development of TransPlan 2010 has broadly involved the public. However, this time and money-consuming process did not satisfy the participants (see further discussion in section 3.2). Reviewing the traditional participatory methods may

help identify issues existing in Winnipeg's transportation planning practices. Employing a new participation planning theory would ensure more efficient public participation takes place in Winnipeg's future transportation planning practices.

2.5 Conclusion

The mission of traditional transportation planning has been "to move as much traffic as possible and to move it as quickly as possible". Transportation policies also intended, yet largely failed, to meet the growth in demand for motorized transportation, more roads and parking. "Technologies associated with transport have also largely focused on delivering these policy objectives--increasing individual mobility and increasing the speed and comfort of individual travel at the expense of improving less environmentally damaging modes of transport" (Whitelegg 1997:97). Technological processes have been used to solve transportation problems rather than investigating fundamental interrelations among all elements in the city. It has been demonstrated that demand-led planning and automobile-dominated transportation directly impacted all aspects of our communities--economic development, social equity, public health and safety, efficient use of natural resources and environmental quality.

The emergence of transportation sustainability concept in the late 1980s is a benchmark in the transportation planning history. Though the definition of sustainable transportation is controversial, 'sustainable development' frames the direction of future transportation planning. This paradigm points the way towards economically and socially efficient transportation that will protect and enhance the environment and meet the demanding conditions for sustainable development. The concept of "sustainable

transportation" calls for a holistic approach to transportation policies, urban planning and transportation management.

Achieving sustainable transportation will largely rely on citizens' understanding and corresponding actions. Behavior change is the ultimate goal of improving public awareness about sustainable transportation (Environment Canada 2001). Government must work with industry, individuals, and other stakeholders to promote a transportation system that is sustainable. Public participation has therefore been identified as crucial to better transportation decision-making processes for enhancing awareness and getting meaningful insights from the public.

However, traditional public participation practices did not serve this goal. A new approach is required. The focus of public participation in the new paradigm is not one-way communication between government and citizen or citizen and government, but multi-way communication among multi-sectors (Innes and Booher 2000:24). The ultimate purpose of public participation in transportation planning is to integrate well-developed citizen opinions into collective actions and decisions toward transportation sustainability. It must do so in a way that fully reflects the public's interests and values.

A study conducted by Leo David Norman Schoor (1999) presents sustainability as the paradigm to guide the future transportation planning process. It makes specific recommendations on the implementation of this paradigm in Winnipeg's future transportation planning process. The major focus of these recommendations includes an integrated transportation and land use planning approach to reduce the ecologically harmful impacts of transportation through a public participatory process.

As stated in the previous chapter, the purpose of this study is to propose a series of recommendations for incorporating sustainable transportation and participatory planning principles into transportation decision processes within the downtown Winnipeg context. If Schoor's research is intended to theoretically guide future transportation processes for the City of Winnipeg, the focus of this study is on the application of transportation planning theories discussed in Chapter 2 in a particular setting, downtown Winnipeg.

Chapter Three: Winnipeg Transportation Planning Practices

In order to understand the potential of incorporating sustainable transportation and public participation principles into Winnipeg's downtown transportation planning processes, it is imperative to understand previous transportation planning practices in Winnipeg. With such understanding it would be possible to appreciate opportunities and drawbacks for adopting these principles. Unstructured interviews with individuals involved in Plan Winnipeg, and/or TransPlan 2010, and/or CentrePlan were informally carried out in order to understand how the (transportation) planning process was approached in Winnipeg over the past several decades. The interviewees represented the City of Winnipeg or key downtown organizations. Related documents were also reviewed.

According to discussion in section 2.3.3, a transportation plan or transportation planning component embodied in a city's plan should be the result of a planning process determined by its comprehensive planning policies. In particular, it has an inseparable relationship with a city's land use policies. In addition, it is a reflection of how decision-makers intend to promote their city or region. The key to understanding Winnipeg's transportation planning practices was through an evaluation of its planning objectives, its interrelation with urban development policies, and the development process that forms the reviewing structure for each transportation plan in this section. Since downtown Winnipeg's transportation planning is the focus of this study, downtown transportation planning components were also examined.

3.1 Previous Transportation Planning Practices

Over the past half century, Winnipeg has processed four comprehensive transportation planning studies. They are Report on Traffic, Transit, Parking--Metropolitan Winnipeg (1950s), Winnipeg Area Transportation Study (1960s), Plan Winnipeg--Transportation Component (1980s), and TransPlan 2010 (1990s).

3.1.1 Report on Traffic, Transit, Parking--Metropolitan Winnipeg (Smith Report) – 1950s

A rapid increase in population in suburban development and an accelerated use of private automobiles as the primary means of transportation occurred after World War II. Street capacity and parking space in the Central Business District (CBD) along with public transit could not cope with the demands of the traveling public. It was identified that if the Winnipeg metropolitan area continued to grow, a comprehensive traffic and highway planning must take into account future population, land use, vehicle use and the relationship between them. It must also consider present traffic pattern. As a result, Wilbur Smith & Associates, a transportation consultant company from New Haven, Connecticut was hired to undertake a comprehensive traffic and transportation study in Winnipeg and its Metropolitan Area. The final report was entitled as "Report on Traffic, Transit, Parking--Metropolitan Winnipeg', otherwise known as the Smith Report.

3.1.1.1 Planning Objectives and Interrelationship with Urban Development Policy

The Smith Report projected that by 1981, the population of Winnipeg would grow by more than 85 percent and there would be three times as many vehicles on the road as there were in the 1950s. The planning objectives in the Smith Report were to

accommodate the increase in population and use of motor vehicles rather than limit vehicle use. Much attention was paid to transportation infrastructure construction and improvement to accommodate development in suburban communities such as Charleswood, Old Kildonan, North Kildonan and Assiniboia.

Transportation planning played a passive role in accommodating the suburban development rather than influencing development policy towards a compact, mixed-use land development. To meet the needs of suburb-to-suburb trips using the downtown street network as a thoroughfare, the Smith Report suggests converting St. Mary Avenue and York Avenue in the CBD to the one-way pattern once all north/south streets were converted in 1956 (See Appendix D). The concerns for environmental devastation, downtown decline, and the negative impact of increasing use of private vehicles on public transit ridership have not drawn enough attention. Alternative transportation modes such walking and cycling, were not priorities in the Smith Report's recommendations. It reflects the traditional urban transportation infrastructure planning of the 1950s.

3.1.1.2 Development Process

The development process of the Smith Report features as an expert-driven scientific process, started with fieldwork consisting of three types of origin-destination surveys. Data collection methods that have been utilized in the process included roadside interviews, postcard surveys and traditional traffic engineering data collection methods. The result was basic information on origin and destination of motor vehicle drivers, transit riders, parking demands and traffic counts.

Future population, urban development and vehicle uses were also determined to be crucial factors on traffic patterns. The tremendous increase in the use of motor vehicles for private transportation was also seen as a key component of traffic patterns in the Winnipeg area. Furthermore, the major capital investment projects proposed at that time, including the Disraeli Bridge project, Perimeter Highway plan, and the proposed Trans-Canada Highway, impacted the comprehensive highway planning that was recommended in Smith Report. Based on analysis and evaluation of Winnipeg's existing traffic conditions, population and growth trends, vehicle uses and capital investments already underway, final recommendations were developed.

The public was involved at the very beginning of the process. As the object of the research, the general public was used to acquire the basic information which was then translated into traffic engineering terms such as street net, traffic volumes, travel desires, travel times, accidents and street capacity, which ultimately determined existing conditions. The process did not seek any public opinion on current transportation problems. Theoretically, the Smith Report did not have the public participation component in the process. Based on the transportation engineers' knowledge and evaluation, the recommendations coming out of the study inevitably included limitations, and reflected the transportation professional's own bias.

3.1.1.3 Downtown Transportation

Major strategies regarding downtown transportation have been proposed based on existing conditions analysis including passenger car trips to and through the CBD, truck trips to the CBD, existing traffic signals and one-way streets, and transit trips

through the CBD. The completion of the one-way street system in the CBD was proposed after the north-south streets were converted into one-way pairs in 1956. In addition, traffic signal improvements were considered of major importance in the downtown area, so a flexible, progressive interconnected signal system to control traffic at over 50 downtown intersections was proposed.

Along with the increasing use of private automobile, transit riding rapidly dropped off in Winnipeg, as elsewhere. It was realized that every effort must be directed at maintaining an efficient transit service that would provide immediate accessibility without requiring extensive terminal facilities or major physical alternations in the heart of the City (Smith 1957:9). As a result, transit improvement measures, including routing and schedule modifications were recommended. It was also suggested that traffic-transit integration strategies such as exclusive transit use of curb lanes on Portage Avenue and Main Street during peak hours, integration of transit and pedestrian movement, and park-and-ride services be implemented.

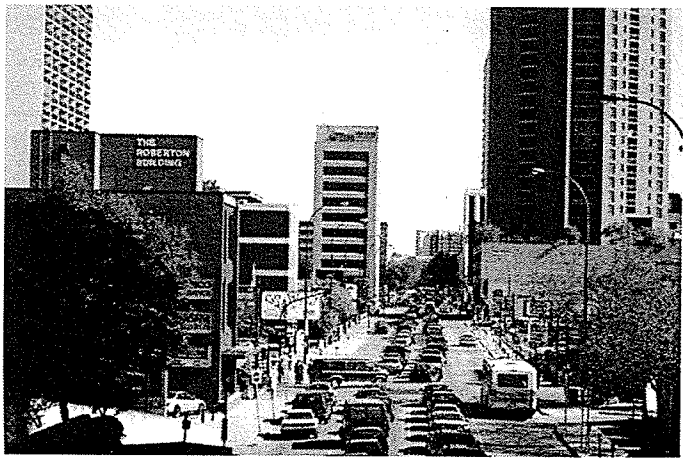
A comprehensive transit plan was also proposed. It recommended that curb use regulations be extended to ensure peak hour limitations along transit routes. In addition to exclusive transit-use expressways that have been proposed for Portage-Main routes, it was also suggested that an expressway loop would circumscribe the CBD to relieve downtown streets of through traffic.

Basic parking policies and approaches to a particular program based on a review of all phases of the parking problem in downtown Winnipeg were discussed and evaluated. Recommendations focused on meeting increasing parking demands in downtown. For example, it suggested that zoning regulations be made applicable to

ensure that any new land uses provide sufficient additional parking spaces in the CBD (Smith 1957:7).

The most important impact of the Smith Report on the downtown transportation system is its recommendation to complete the one-way street system in the CBD. That one-way system is still in use (See Figure 2). The implementation of the one-way street system increased the street capacity and alleviated congestion without the huge cost of widening roadways. Recent research conducted by the Downtown Winnipeg Business Improvement Zone (BIZ) indicates that the majority of downtown businesses believe the one-way street system has negative impact on the overall safety of the street networks and pedestrian environment. Business owners also believe it discourages patronage of their businesses.

Figure 2: A One-Way Street (Donald Street) in Downtown Winnipeg



The proposed one-way street system in downtown Winnipeg in the Smith Report reflected typical weaknesses in traditional 1950's transportation planning--seeing road congestion without looking at the consequences of cities (Richmond 1998:223).

Other aspects of downtown such as economic development and land-use planning, were not even mentioned in the Smith Report. Parking strategies recommended also follows the objective, which was to accommodate the increase use of private cars, either moving or stationary. Although public transit was promoted in the Smith Report, it was just one of the transportation modes recommended without given special priority as sustainable transportation designates.

3.1.2 Winnipeg Area Transportation Study (WATS) - 1960s

In the early 1960s, to cope with projected population growth and problems associated with increasing large-scale housing, commercial and industrial developments in the suburbs, the Streets and Transit Division of The Metropolitan Corporation of Greater Winnipeg undertook a major transportation planning effort. The resulting document "Winnipeg Area Transportation Study", otherwise known as WATS was the first comprehensive transportation plan for urban Winnipeg. The recommended system was adopted in principle by the Metropolitan Corporation of Greater Winnipeg in 1969.

3.1.2.1 Planning Objectives and Interrelationship with Urban Development Policy

The concept behind WATS was that if the growth potential of Winnipeg was realized, it would have to be served by transportation facilities and other public services. The objective was to develop an efficient rational transportation system that would meet development requirements of the metropolitan area. It was hoped that by establishing needs and determining the types of facilities required to meet these needs well in

advance, capital investment in transportation improvements could proceed in a regulated manner (The Metropolitan Corporation of Greater Winnipeg 1966).

The inextricable relationships between land use and transportation were clearly recognized in WATS. It states that "while the basic need and initial composition of a transportation system is related to existing land use patterns, it is also true that developing or planned transportation facilities play extremely important roles in shaping the future development of the urban area...certainly one should not attempt to plan for one without giving full consideration to the other" (The Metropolitan Corporation of Greater Winnipeg 1966:22). Therefore, consultation with the Planning Division of the Metropolitan Corporation about land use patterns in Metropolitan Winnipeg was part of the development process. This step would predict future transportation requirements and patterns associated with anticipated land use development categorized as residential, commercial, industrial, public service, parks and vacant or rural areas.

Land use development objectives stated in the Development Plan emphasize "a compact urban area with a concentrated center and a clearly defined pattern of areas of activity connected by efficient and economical service systems". Urban expansion for living, working and other urban activities are also discussed (The Metropolitan Corporation of Greater Winnipeg 1966:36). An outer boundary for urban expansion was established to limit sprawl.

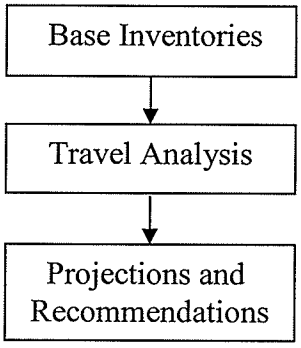
It is evident that the approaches to land development in WATS and the Development Plan were different. The former focused on the technical analysis of the relationship between land use and transportation while the latter more focused on the planning concept. Transportation and planning was still disjointed in WATS. The

impact of the proposed transportation system on other aspects of the City was not considered.

3.1.2.2 Development Process

WATS followed a three-phase technical transportation study format popular in the 1950s (see Figure 3). The first phase involved gathering data to describe existing conditions, including characteristics of land use that influenced travel, travel patterns themselves and an analysis of the available transportation facilities. The second phase based on the information gathered in the first phase, included a traffic prediction model. This model described the relationship between travel habits, land use and related characteristics in Metropolitan Winnipeg.

Figure 3: Transportation Study Format (WATS)



(Drawn from Winnipeg Area Transportation Study, Vol. 1. The Metropolitan Corporation of Greater Winnipeg, 1966)

Anticipated land use development, population, employment and economic growth were projected in phase three. As well, relationships between land use and travel characteristics were established based on the studies in phases one and two. These

relationships were used to develop future travel demands and patterns. Five alternate transportation schemes were accordingly developed, tested and evaluated to determine the type of system that would best accommodate the projected travel demands in this area (The Metropolitan Corporation of Greater Winnipeg 1966). Comparisons were made among these five alternatives in terms of their projected travel characteristics, their operating performances and the total costs of scheme implementation (The Metropolitan Corporation of Greater Winnipeg 1968: 168).

The council of the Metropolitan Corporation of Greater Winnipeg decided to adopt Scheme Five. The proposed combined system was comprised of a network of major streets, bridges and highways that was expected to provide an acceptable level of traffic services to all parts of Metropolitan Winnipeg. It would also provide a good balance between public and private transportation facilities.

The last part of the process was the implementation development program (1968-1991). A four-stage implementation plan recommended that the proposed transportation system be constructed to meet the needs of Metropolitan Winnipeg area by 1991.

The whole process strictly followed the traditional transportation planning model. The difference between the WATS and Smith studies was that the mathematically complex process in phase two of the WATS was possible because of the use of high-speed computers that processed the huge volume of calculations. No matter what technology was applied to the process, the WATS could not cast off the label of traditional technical transportation planning. Similar to the Smith study, the public again became the research object. Nearly 100 percent of the dwelling units in Winnipeg were

involved in a home interview during phase one of the process (City of Winnipeg 1980:9). Theoretically, this was not public participation.

3.1.2.2 Downtown Transportation

In WATS, downtown transportation was not dealt with as an independent system. The downtown section was contained in each of five alternative schemes. The thoroughfare system that was proposed in the adopted scheme would function as channels for suburban traffic flow to and from downtown Winnipeg through a series of connecting roads and bridges. Downtown traffic flow was expected to improve by a system of bypasses, which meant that a significant portion of traffic would be diverted away from downtown (City of Winnipeg 1999: Appendix 2). The transit system was not seriously taken into account in the final recommendations.

Due to the fact that the WATS has never been adopted, downtown transportation decision-making at that time could only refer to the "Downtown" section in the Metropolitan Development Plan. Corresponding policies associated with downtown transportation state:

- To provide a system for the movement of people and goods that will acknowledge the function of downtown as the focus of the metropolitan transportation system.
- To provide means of separation of pedestrian and vehicle movements in areas of high pedestrian concentration and to give priority of pedestrian circulation in these areas (The Metropolitan Corporation of Greater Winnipeg 1968: 63).

Different from the Smith Report and WATS, the Metropolitan Development Plan gives equal priority to downtown pedestrian and vehicle movement. Compared to the characteristics of transportation planning in the 1960s, there was a shift to environmental issues in reaction to the issues created by the development of roads. There

was also a move to revitalize public transit. During this time, transportation planning in Winnipeg appeared to fall behind.

3.1.3 Plan Winnipeg--Transportation Component - 1980s

In 1976, Plan Winnipeg--Transportation Component (Transportation Component) was initiated to update previously outdated planning and provide guidance in the development of the City of Winnipeg during the 1980s and 1990s (City of Winnipeg 1980:1). The development of Plan Winnipeg--Transportation Component was contexturually framed by the 'spirit' of the first version of Plan Winnipeg adopted in the early 1980s.

3.1.3.1 Planning Objectives and Interrelationship with Urban Development Policy

Due to the relatively low growth rate projected for the City of Winnipeg in the 1980s and 1990s, the focus of Plan Winnipeg shifted from major infrastructure investment in freeway and heavy rail construction to maintenance of existing facilities. This investment had been anticipated as necessary in the previous Development Plan, adopted in 1968.

In the 1980s, transportation became more tightly bound to urban planning. "The containment and infill/revitalization strategy", "revitalizing older neighborhoods", and "suburban growth management" proposed in Plan Winnipeg reflect the different approach of urban development policy from the previous Development Plan, mainly because of the projection of slower population increases and attention to environmental degradation. The sequence of priorities for future civic investment in urban transportation has been defined as follows:

- Maintenance of existing facilities;
- Improvement of existing capacity deficiencies; and
- Accommodation of projected growth (City of Winnipeg 1986: I-16).

Promoting the use of public transit, especially for trips between the downtown district and the suburbs is embraced as a special policy in Plan Winnipeg. It recommends the construction of exclusive Southwest and Eastern transit corridors, the provision of exclusive bus lanes, parking restrictions and a park-and-ride program. Limiting traffic congestion and conserving energy through promotional activities (a reflection of the environmental movement) is raised for the first time in Winnipeg's development plan. Proposed measures include encouraging employers to sponsor of car-pooling, van-pooling and flexible work hours.

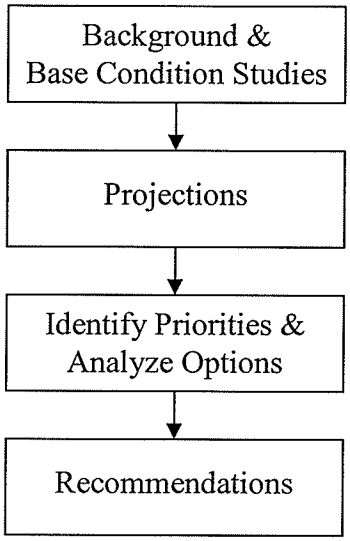
In response to the task of incorporating environmental and energy constraints into the transportation planning process, no intensive capital transportation options were taken into account. In addition, a general reduction in financial resources forced planning officials to consider urban transportation options that would improve and increase the efficiency of the existing transportation infrastructure (City of Winnipeg 1980:17). Emerging concepts that have been identified as important in Transportation Component were generally cauterized as Transportation System Management (TSM). Though the document highlights some TSM strategies, no detailed transportation management plan is produced for guiding the practice.

3.1.3.2 Development Process

The study of Transportation Component was dominated by a team of professionals within the Transportation Planning Section at the City of Winnipeg, including: transportation research planner, streets planning engineer, transit planning

engineer, transportation planner and various other technical and drafting resources. Figure 4 illustrates the planning model utilized in the development of Transportation Component.

Figure 4: Planning Model in Plan Winnipeg--Transportation Component



(Drawn from Plan Winnipeg – Transportation Component, City of Winnipeg 1980: 1)

The first step was six background and base condition studies similar to the step involved in the WATS process. The projection process mainly consisted of demographic and transportation projections. It indicated that the City of Winnipeg would expand at a slower rate over the next two decades, through to 1999. As such, major capital investment in transportation would be shifted to "Maintenance", "Improvement" and "Accommodation" as priorities rather than the "Construction" identified in the 1960s.

Based on projection analysis, a number of different land-use options for accommodating projected growth and several transportation strategies with each land use option were provided. Instead of accommodating the expansion of transportation

facilities based on market-driven land development (mainly in the form of suburban development), alternative land use options, including Business as Usual, Directed Suburban, Containment and City West, were analyzed according to a system characteristics and financial perspectives. Transportation options, including Minimal Investment, Transit-Oriented and Street-Oriented, were considered for accommodating future changes in land use in the City.

This step made the Transportation Component distinct from the WATS, which was conducted strictly on the basis of technical input by applying a computer modeling technique. In the Transportation Component process, computer modeling was used to evaluate complex land use/transportation options, once the initial analysis was completed. Finally, on the basis of the analysis conducted, a favoured transportation/land use option, namely Transit-oriented Transportation, combined with the Containment land use option representing the compromise of user costs, city costs, level of service provided and system impacts, was adopted.

According to a key informant at the City of Winnipeg, the transportation Component process was based on significant technical analysis. It was more sophisticated than the WATS process because Transportation Component is framed by the city's comprehensive Plan Winnipeg. Furthermore, the concept of public consultation was brought into the transportation planning process. However, it still remained at a non-participation-informing level (see further discussion in section 3.3).

3.1.3.3 Downtown Transportation

In the Transportation Component study, all measures having citywide application were applicable to the downtown transportation system. However, downtown

as the core of the city had its specific characteristics. Two additional measures have been considered for the downtown area:

- A grade-separated, environmentally controlled, downtown pedestrian circulation system; and
- Downtown parking limitations (City of Winnipeg 1980:27).

Pedestrian circulation systems were given high priority in the Metropolitan Development Plan (1968) to separate pedestrian movement from vehicle movement, thereby creating a pedestrian-friendly environment in downtown. During the decade following the creation of the Metropolitan Development Plan, portions of a pedestrian circulation system had been periodically implemented. At present the system suffers from discontinuities and closure during certain hours of the day (City of Winnipeg 1980:27). In Transportation Component, it was recommended that the City pursue an aggressive policy of encouraging and contributing to the financing of construction of pedestrian circulation systems. These grade-separated and environmentally controlled systems took into consideration Winnipeg's weather conditions, the number of vehicles in downtown and the size of the downtown area (City of Winnipeg 1980:27).

In addition to proposed downtown pedestrian circulation systems, downtown parking limitations were suggested to discourage private automobile use and maintain the viability of the public transit system. This measure reflects transportation planning trends in the 1980s that were the gradual maturation of the environmental movement continued to bind transportation to urban planning (Gakenheimer 2000:140). The notion of compact development is raised in the Transportation Component study as follows (City of Winnipeg 1980:27):

> The costs to society of accommodating downtown oriented trips via the transit mode are much less than would be the case if these trips had to be

> accommodated via the operation of private automobiles on the street system (i.e. additional streets required, the additional gasoline consumed, the additional resultant air pollution, etc.)...One way of achieving this objective would be to reduce the parking requirement called for under present zoning for new high density, residential developments.

As a result, some residential development took place by variance on a site-specific basis (City of Winnipeg 1980:27).

3.1.4 TransPlan 2010 – 1990s

To meet the constantly changing of transportation needs associated with demographic transformation, technological change, and new economic development in urban areas, the City of Winnipeg and Province of Manitoba initiated a comprehensive new transportation plan to replace the previous Transportation Component in the first version of Plan Winnipeg, adopted in the early 1980's. The need for a revised transportation plan for the City of Winnipeg was identified in section 5C-10 in Plan Winnipeg: Towards 2010 (Plan 2010) directing the City to prepare a comprehensive transportation plan that should be "consistent with the policies in this plan and utilize 'an interdisciplinary approach' to meet the changing transportation needs in the Winnipeg region" (1993:93). A different approach was taken in the TransPlan 2010 study. Instead of taking the area within the city boundary as the study area, TransPlan 2010 covers the City of Winnipeg and Capital Region.

3.1.4.1 Planning Objectives and Interrelationship with Urban Development Policy

Regarding the principles of regional services and facilities, Plan 2010 clearly states that the City seek to provide effective and efficient regional services and facilities, and to reduce the demand of expansion of these services and facilities (City of Winnipeg

1993: 90). For transportation specifically, it demands that the approach integrate the needs of pedestrians, bicycles, cars, transit vehicles, and trucks. To achieve these objectives, Plan 2010 established ten policies, with the main focus on maintaining and improving existing transportation infrastructure including a regional street system and transit system. It calls for an integration of land use, urban design, and transportation planning, as well as encouraging environmentally responsible transportation measures. A comprehensive transportation plan is requested.

While the development of TransPlan 2010 took the order from the higher-level policy document--Plan Winnipeg, the TransPlan 2010 study took a different approach. The mandate of TransPlan 2010 was to encompass both a review of the principles established by Plan Winnipeg and consideration of the broader initiatives requested by Province of Manitoba as follows:

- Renewing emphasis on infrastructures;
- Approaches to financing transportation infrastructure within the context of government restraint;
- Opportunities for inter-modal links; and
- Coordination of transportation planning and development functions among government, regulatory and private institutions within the Winnipeg Region (City of Winnipeg 1998:12).

There is a breakthrough in TransPlan 2010. It widely acknowledged that successful transportation planning requires close attention to land use patterns and urban form. It is generally recommended that continuing incremental development of land use patterns and urban form, wherever feasible, support continuing, long-term minimization of automobile dependence and new infrastructure requirements (City of Winnipeg 1998:110). As a result, land use policy and controls should be adjusted to encourage compact urban form, higher density residential development, and mixed use residential and employment areas (City of Winnipeg 1998:111). However, as a regional-wide

transportation plan, the land use recommendations proposed in TransPlan 2010 seems devoid of content without a concurrent land use plan.

In addition, the notion of TDM was first time discussed in Winnipeg's transportation study. Nevertheless, the approach of TDM in TransPlan 2010 remained at the level of general discussion. No systematic strategies are proposed in TransPlan 2010 to help achieve the goal of trip reduction (see further discussion in section 3.2).

3.1.4.2 Development Process

The process of developing TransPlan 2010 started with the formation of a steering committee appointed by the City of Winnipeg and the Province of Manitoba in 1993. The chair and four-member steering committee, are long-time city residents with a range of backgrounds guided the process. An advisory committee consisting of a cross-section of groups, organizations and the community-at-large, and an inter-governmental committee, the City-Province Management Team were available to assist during the process.

Unlike previous transportation studies that were based strictly on technical input, TransPlan 2010 took the opposite approach. Community involvement was determined as a unique component in TransPlan 2010, and the public was involved from the outset. Over 2,000 individuals and representatives from more than 50 groups and organizations participated in this exhaustive two-year process (City of Winnipeg 1998:24). The three-phase community involvement process began with Phase I: Inventory, Issues and Themes, followed by Phase II A and Phase II B, namely Scenario

Development, and Scenario Evaluation and Refinement, and concluded with Phase III--Development of Recommendations.

To conduct such a transportation study, technical analysis was an inevitable step in the process. According to a key informant with the City of Winnipeg who participated in the entire TransPlan 2010, all traffic engineering and transportation planning components were done after the public consultation was completed. This provided a contextual framework for what the public expected from the Plan. To ensure the community was well represented and the public's voices were heard as many as possible, a number of planning tools were employed in the three study phases. Table 1 illustrates different tools that were called "transactions" in the process.

Table 1: TransPlan 2010 "Transactions"

Element	Phase I	Phase II A	Phase II B	Phase III
Focus Group			*	
Public Opinion Survey	*			
News Conferences	*			*
Newsletters	*	*	*	*
Pilot Workshops	*	*	*	*
Community Workshops	*	*	*	*
Public Presentations	*			*
Public Open House	*			
Telephone Invitations	*	*	*	*
Fax Invitations	*	*	*	*
Neighbourhood Flyers	*	*		
Employment Workshops		*		
Newspaper Articles	*	*	*	*
Newspaper Ads in Dailies	*	*	*	*
Newspaper Ads in Weeklies	*	*	*	*
Public Service Announcements	*	*	*	*
Radio Advertising	*			
Radio Talk Shows/Interviews	*	*	*	*
Community Cable TV Programs		*	*	
Television Coverage	*	*	*	*

(Drawn from Winnipeg TransPlan 2010, City of Winnipeg 1998:16)

The purpose of community involvement was to understand the public's thoughts on the current transportation system and identify future transportation needs and priorities. On the basis of issues and themes resulting from the public consultation process in Phase I, the transportation planning consultant hired by the City of Winnipeg and the Province of Manitoba was able to structure a TransPlanning Model that could define and describe alternate system scenarios. This model provided the public with a base point to evaluate and refine the many images generated from Phase IIA. This step resulted in a comprehensive scenario in Phase II B. Based on the preceding steps, final recommendations were developed.

Community involvement in the TransPlan 2010 process was described as a unique component. While significant effort went into this process, the outcome and comments from people involved people are unsatisfactory. One reflection is that TransPlan 2010 has never been adopted (See further discussion about public participation in section 3.3).

3.1.4.3 Downtown Transportation

Downtown street system has long been used as thoroughfare to accommodate " a significant percentage of suburb-to-suburb trips because of the discontinuous nature of suburb-to-suburb connections" (City of Winnipeg 1998:114). Past studies of one-way/two-way conversion in many North American cities have demonstrated that downtowns' thoroughfare image has partly attributed to its decline (BIZ 2001:2).

Downtown transportation is dealt with in TransPlan 2010 under the section of "Two Major Downtown Areas", subtitled "Downtown Winnipeg" and "Centre-ville de

Saint-Boniface". Two major concerns outlined in TransPlan 2010 are " Portage Avenue and Portage- and-Main Intersection" and "Travel within Downtown", which is particularly associated with through traffic and intra-downtown traffic. Encouraging pedestrian activities in downtown, especially Portage Avenue, by widening sidewalks and reinstalling on-street parking were recommended. Other proposed measures include compact and mixed land use concept which encourages government to locate offices downtown. It also suggested that establishing new business and creating new residential areas from old renovated commercial buildings by changing instituting zoning would result in through-traffic reduction and turn downtown into a destination. The document emphasizes that all above proposals would be facilitated by the implementation of the Ring and Loop Route improvements and downtown street system improvements.

In order to encourage environmentally appropriate means of travel other than current private automobile trips, the Steering Committee recommended that a shuttle-bus service be established, and the downtown weather-protected (overpass and underpass) walkway system be completed to encourage more pedestrian activity (City of Winnipeg 1998:119).

As pointed out by the key City of Winnipeg informant, downtown transportation is not the major focus of TransPlan 2010. The concurrently developed CentrePlan, a secondary plan specifically regarding Downtown, deals with each component including downtown transportation planning (see further discussion in section 3.3.2).

3.2 Influence of Sustainable Transportation Principles on Existing (Transportation) Winnipeg's Planning Practices

3.2.1 Previous Transportation Planning Practices

As discussed in section 2.2, along with the formulation of land use/transportation equilibrium relationships in the 1950s, transportation planning particularly functions as a service to meet increasing housing needs in suburbs. The transportation study conducted by Wilbur Smith & Associations in the 1950s and WATS in the 1960s followed traditional demand-driven transportation planning model which were popular at that period of time. Through a series of technocratic analysis, these two reports recommend that either highways, expressways, roads and bridges be constructed, or transit ridership be improved in order to move more people and goods.

Comparing the Smith Report with WATS, it was found that the application of computer technology in WATS enabled transportation planners to conduct cumbersome transportation studies more efficiently. By using this technology, comparisons among several transportation/land use options were possible and recommendations based on the technical analysis were more reliable than those based on transportation professionals' personal bias. At this point, the WATS is a step beyond the Smith Report. However, in both studies, considerations of the impact of proposed transportation systems on environment as well as other factors taking place in the City had not been placed in the agenda, even though improvement of transit services and pedestrian circulation in downtown were proposed in both studies.

Transportation Component developed for the first version of Plan Winnipeg in the 1980s was a benchmark in Winnipeg's transportation planning history. With the indications of poor performance of the market-driven land use/transportation equilibrium

in planning, there was a tendency in major studies in the 1970s to abandon the land use dimension. At the same time, the perception of a transit or highway alternative arrived (Gakenheimer 2000:140). In the 1980s, the spotlight shifted to environmental issues caused by related transportation and urban planning. The development of Transportation Component centrally reflects the evolution in transportation planning during the 1970s and 1980s.

After several decades of rapid suburban development, awareness of the negative side of suburban growth is visible in the suburban industrial parks, shopping malls and housing that have stolen the life of central Winnipeg. Downtown decline and inner city neighbourhood deterioration are in part rooted in urban sprawl, as experienced in many North American cities. Furthermore, the Government was facing a deficiency of financial resources to service the constantly extending transportation infrastructure required by suburban development (City of Winnipeg 1980:17). More critical issues are environmental degradation and excessive consumption of natural resources.

The first version of Plan Winnipeg established planning principles in response to issues facing Winnipeg. These principles were associated with transportation and urban planning including the revitalization of older neighborhoods, management of suburban growth, environmental protection, renewal of downtown and the encouragement of public transit use (City of Winnipeg 1989). However, the understanding of suburban growth management and environmental protection in the early and middle of 1980s were limited. For example, as stated in the Plan Winnipeg document (1989: 1-12), it was recommended that the use of renewable energy resources in future suburban development be encouraged. This strategy statement did not give consideration

to the regenerative capacity of renewable energy resources. As well, the suburban growth management stated in Plan Winnipeg (1989:1-10) focused on service provision in existing suburban communities rather than the overall control of new community development. No doubt, the progress that the first version of Plan Winnipeg made had sound influence on transportation planning in Winnipeg.

The development of Transportation Component was guided by the principles of Plan Winnipeg. The final recommendation, incorporating the Transit-Oriented approach with the Containment land use option, was made based on the compromise of user costs, city costs, level of service provided and system impacts. It also reflected planning objectives that Plan Winnipeg attempted to achieve. Rather than encouraging new development in suburbs, the focus of this option is the infill/revitalization strategy, namely improving established neighborhoods and housing stock. Included in this option was the concentration of development adjacent to the proposed Southwest Corridor, the redevelopment of the C.N.R. East Yards, Fort Rouge Yards and Taylor Yards (City of Winnipeg 1980:4). The hope for this was to increase the land use density, and therefore increase the potential transit ridership through regional street and transit improvements. Although the combination of Transit-Oriented approach with the Containment land use option was because of a general reduction in available financial resources to service extensive suburban development, the task of incorporating environmental and energy constraints into the overall transportation planning process was the fundamental force that led to this final recommendation. This also heralded a new paradigm in the transportation planning in the late 1980s--sustainable transportation.

In the early 1990s, the Manitoba Round Table on the Environment and Economy, "Toward a Sustainable Development Strategy for Manitobans" characterized Sustainable Development as "...paths of social, economic, and political progress that meet the needs of the present without compromising the ability of future generations to meet their own needs" (Province of Manitoba 1990:1). It is obvious that the initial concept of sustainable development relating to protection of natural recourses is not explicitly clarified. Nevertheless, there was a growing awareness among Winnipeggers that the transportation status quo in Winnipeg had placed a threat on their environment. When the City attempted to develop the second version of Plan Winnipeg, Plan Winnipeg: Towards 2010 (Plan 2010), it was learned that the environment was an immediate concern (City of Winnipeg 1993:14). It was identified that principles of "sustainable development" must guide the development of Plan 2010 (City of Winnipeg 1993:14). The principle statement of "Transportation" under the "Regional Services and Facilities" section responds to this guideline of the Plan as discussed earlier in the section 3.1.4. An environmentally-responsible transportation plan which integrates the needs of pedestrians, bicycles, cars, transit vehicles, and trucks was regarded as essential.

As suggested by Plan 2010, the Province of Manitoba and the City of Winnipeg initiated the development of TransPlan 2010, a comprehensive transportation plan for Winnipeg. The development of TransPlan 2010 did not completely take principles stated in Plan 2010 as a given. Instead, a new approach was taken in this study. "Sustainable development", instead of "sustainable transportation", is the theory discussed in TransPlan 2010. Two basic categories of concern regarding protection of the environment, conservation of resources and adherence to the principles of sustainable

development were addressed after public consultation. These two categories of concern are:

- The environmental impacts associated with development and operation of transportation facilities; and
- The effect of City and regional land use and development patterns in determining the demand for transportation facilities (City of Winnipeg 1998:102).

The weaknesses associated with the above two concerns within the Winnipeg context can be examined from two aspects. One is that environmental licensing requirements for proposed road and highway construction are regulated under the Provincial Environment Act and effectively applied. The major concern addressed by the Steering Committee, in addition to the environmental impacts derived from development and operation of transportation facilities, is the development that "often lead to these proposed transportation projects is not as comprehensive". The type and scale of developments determine the demand for transportation facilities. However, land developments in Winnipeg are governed by the City's development plan, but not regulated by the Provincial Environmental Act. Related land use and subdivision controls are all subjective to legislative requirements contained in the City of Winnipeg Act (City of Winnipeg 1998:104). Land use and transportation are not dealt with in the same system.

Secondly, the development of TransPlan 2010 was not completely guided by Plan Winnipeg: Toward 2010. Unlike the development of Transportation Component from the first version of Plan Winnipeg in 1986, which was guided by the contextual framework of the first version of Plan Winnipeg, TransPlan 2010 was based on Plan

2010. The process has been started with a blank sheet of paper, as confirmed by a key informant in the City.

Although the principles of sustainable development are identified as the highest priority in Plan 2010, TransPlan 2010 neither follows the transportation policies shaped by Plan 2010, nor adheres to the leading principles of sustainable transportation that are discussed in section 3.2. As commented by Schoor (1999:113), the recommendations in TransPlan 2010, discussed in an earlier section, indicate an acknowledgement of the sustainability paradigm, yet it does not penetrate many of its criteria.

The concept of transportation demand management (TDM) derived from the notion of sustainable transportation is introduced in TransPlan 2010. However, the TDM recommendations provided by the Steering Committee still remain at a superficial level. There is no practical TDM strategy recommended within the Winnipeg context to help achieve the goal of reducing automobile dependence, improving facilities and services of other transportation alternatives and establishing "incentive rather than regulatory measures". In the case of Downtown, it is recommended that downtown parking management be considered, but it fails to provide a clear-stated parking policy to encourage use of public transit to Downtown that ensures the following downtown parking study to be explicitly guided. By the mid 1990s, the notion of sustainable transportation had been discussed for several years. The approach of sustainable transportation in TransPlan 2010 is unsuccessful. As concluded by one key informant at the City of Winnipeg:

> In TransPlan 2010, sustainability is mentioned, but it is not practiced. TransPlan 2010 speaks little of alternative modes of transportation, but spoke at great length of infrastructure that is needed to build from the

road perspective. It is inconsistent with the principles of sustainability. This is one of the reasons why it has never been adopted.

3.2.2 CentrePlan

Throughout the consultations carried out as a part of this research, CentrePlan was often suggested as a reference for downtown transportation. According to Policy 5B-18 stated in Plan 2010 (1993:89), the City shall prepare, implement, and periodically review a Downtown plan in consultation with the business community and other downtown interests. The CentrePlan process was initiated in 1995.

CentrePlan was developed with a goal of "building a healthy, safe and sustainable downtown". Two documents comprise CentrePlan: "Vision and Strategies" and "Action Plan". The former one "articulates the long-term vision for the downtown together with strategies intended to see the vision over the long term" (City of Winnipeg 1998: 5). The latter is an implementation plan that is regulated and updated annually.

In a vision of prosperity and innovation, new ideas are continuously explored and developed in a manner that is interlocked with the environment, the economic, and the social fabric--sustainability (City of Winnipeg 1998:9). Participants have committed to the principles of sustainability in order to sustain downtown over the long term.

The notion of sustainable transportation is reflected in the section "Ensuring Accessibility". It is clearly noted that integration of transportation is essential with land use, the environment, and the economy (City of Winnipeg 1998:37). The structure of this section is confusing, because "Transportation Planning" is equally discussed as "Pedestrians", "Public Transit", "Parking" and so on. All should have been components of transportation planning.

Compared to the concurrently developed TransPlan 2010, progress has been made in CentrePlan in terms of its application of sustainable transportation principles. Improvements for pedestrian environment have been given the top priority. Developing the public transit system as the primary mover of people in and out of downtown is identified as a strategy to reduce reliance on automobiles. The strategy developed for "Transportation Planning" states that it is necessary to "review the street system to define the function of streets in the downtown and to establish a hierarchy of their use" (City of Winnipeg 1998:37). This statement indicates that right-of-way for all alternative modes of transportation for general access to downtown must be taken into account.

Drawbacks of the transportation section in CentrePlan are also noticeable. Firstly, downtown transportation in CentrePlan is not dealt with systematically. It is not tied with downtown land use planning, nor does it integrate a number of transportation components as a system including pedestrian linkages, transit, parking, street systems and so on. For the next-step studies, such as one-way/two-way street system conversion, CentrePlan does not provide clear guidelines that are consistent to the sustainable transportation principles. Secondly, the strategy of "reversing road priorities to transit instead of the previous approach to car users" in order to promote public transit is with a good intention but weak in detailed measures. TDM strategies that would efficiently encourage transit use are not applied, and not even discussed in the CentrePlan. Thirdly, improving the provision of short-term parking in the downtown is one of the strategies proposed to ensure accessibility. Yet the strategy for reducing long-term employee parking is not provided. There are more than 60,000 people working downtown. This accounts for one-quarter of the city's total employment. Managing long-term parking

efficiently will be directly related to changing transportation behaviors. To sum up, although Action Plan provides the implementation strategies, statement of the vision and strategies is insufficient to guide the future transportation study and lead to a sustainable transportation system in downtown Winnipeg.

3.2.3 Plan Winnipeg 2020 Vision

Plan Winnipeg 2020 Vision (2020 Vision) is a review of Plan Winnipeg: Towards 2010 and is much stronger in terms of the efforts that have been put to ingrain the concept of sustainability in all the policy statements. Understanding of sustainable principles is noticeably enhanced in this document. From the transportation perspective, the principles and strategies of sustainable transportation have been well applied in the 2020 Vision. Transportation study in the 2020 Vision has been integrated into the section of "Planned Development, Transportation, and Infrastructure".

During the past few decades, the number of trips made by automobile in Winnipeg has grown much faster than the rate at which the population has grown (City of Winnipeg 2001:29). It has been increasingly realized by government and Winnipeggers that continued growth in the proportion of urban trips made by the automobile is not sustainable, financially or environmentally. The 2020 Vision indicates that the provision of positive incentives to reduce the reliance on automobiles and encourage alternative modes of travel is necessary in future (City of Winnipeg 2001:29).

Land use policies are imperative to promote a more compact urban form with increased densities and mixed land uses in order to minimize travel distances. It is also recommended that residential development support the provision of efficient, attractive

and cost-efficient transit service through appropriate design consideration. As well, right-of-way for alternative transportation modes is emphasized over the regular system, by building pedestrians, bicycles and water taxis into an integrated transportation system. Transit improvements to increase ridership are committed through ongoing improvements to service: ease of use, more affordable, more productive and high speed. Promoting mobility through principles of universal access is also being taken into account by ensuring social equity for mobility and accessibility.

The approach to sustainable transportation in the 2020 Vision is more comprehensive than the previous (transportation) plans developed in Winnipeg. Transportation was integrated into planning development and infrastructure as one system. Future transportation directions outlined in the 2020 Vision contain compact and mixed land use concepts and their importance in promoting public transit, TDM incentives, right-of-way for alternatives transportation modes, promoting inter-modal integration and social equity in transportation.

One unique component in the development of the 2020 Vision is the Measurement and Indicators Program of the International Institute for Sustainable Development (IISD). It provided support and expertise throughout the process with specific responsibilities linked to indicator development. The indicators associated with transportation in support of sustainability include:

- Transit ridership and bicycle usage is increasing;
- The amount of infill development is rising;
- Capital expenditures on alternative transportation is rising relative to expenditure on new road construction;
- The maintenance of resident streets is improving; and
- The amount of greenhouse gas emissions is decreasing (City of Winnipeg 200: 29,47).

The development of indicators helps City Council quantitatively report on progress as one way of evaluating the effectiveness of its sustainable transportation policy (City of Winnipeg 2001: 29). It is more scientific and convincible. As well, it provides explicit guidelines for future transportation planning in Winnipeg, and is also applicable to downtown.

The 2020 Vision makes strong commitment to downtown, which is called the "Putting Downtown First" policy. The development of this section follows the content of CentrePlan. Compared to the "Ensuring Accessibility" section in CentrePlan, "Putting Downtown First" is a more comprehensive approach that ensures the broad areas relating to downtown transportation in support of sustainability shall be covered. For example, managing the provision of long-term parking in downtown is promoted as a way to encourage the use of alternative modes of transportation and the reduction of automobile congestion. In the case of neighbourhood traffic, it is proposed that the minimization of through-traffic to reduce the impact of non-local traffic in downtown neighbourhoods be encouraged so that a liveable environment in downtown Winnipeg can be created.

To sum up, the 2020 Vision serves as a policy document that clearly sets a direction for Winnipeg's future development, including transportation planning policies based on sustainable transportation principles. Compared with the first and second versions of Plan Winnipeg, 2020 Vision is a more systematic and comprehensive document giving the highest priority to economic, environmental and social sustainability. However, a key Winnipeg informant commented that Plan Winnipeg is a high-level policy document. The city also need a secondary plan that is at a much more detailed level both in terms of land use and transportation planning.

3.3 Commitment to Public Participation

3.3.1 Previous Transportation Planning Practices

In response to critiques against modern planning style, the development of Transportation Component was the first time in Winnipeg the general public was involved in the planning process. It is described in Transportation Component that "experts played a significant role in developing Plan Winnipeg, but Winnipeggers from all walks of life also made valued contributions (City of Winnipeg 1981: 4). Attitude surveys were conducted and a number of public meetings were held to collect public thoughts on the future development of the City. However, public participation in the development of "Transportation Component" process still remained at a lower and superficial level. One of the key informants participating in the process commented that,

> There was some public consultation, but very minimal and formalized. Most you could say about it was that it allowed people to come to see what had been developed. It was informational rather than participatory.

Compared to Transportation Component, TransPlan 2010 attempted to take a new approach. As discussed in the proceeding section, TransPlan 2010 was directed by a Steering Committee consisting of non-professional and long-time residents of Winnipeg. This made grass-roots community involvement a major focus of the process. It is emphasized in the Steering Committee's Ground Rules that recommendations should be made on completion of the community involvement portion of the process. The recommendations should reflect the general direction enunciated by the participants in the process. As well, the Steering Committee's Ground Rules also announced that the public would be continually involved in the development of the urban transportation plan.

The time consuming and costly process took three years and involved over 2000 people. However, the outcome of the process was unsatisfactory. The following comments on TransPlan 2010 reflect some of the issues that existed in the process:

- Community involvement in the TransPlan 2010 process was with good intention, but insufficient.

- The effort to have workshops is to involve the general public in the process. In fact, it did the opposite. What happened was only the people who had the special interests came to workshops, such as the people representing the trucking association or real estate. You didn't get the average individual. The randomness was what this process lost. The effort to try to be very public and very open in fact was destroyed by the absence of the average person.

- Planners did not play a vital role in the process.

- In the process of developing TransPlan 2010, a lot of open houses were held, but the attendances of these open houses were very poor. In each of the open houses, the Steering Committee showed solutions that engineers put forward. However, they have never built support from communities. TransPlan 2010 reflected what the transportation engineers wanted, not what the communities wanted. It has never been adopted because it never gets strong community support.

- I attended at least three round table discussions, but I was never invited back to review the document finally prepared. I have never seen the whole package... I suspected that I was driven by the Steering Committee. Public input was taken less into consideration than technical aspects. That is why it becomes a mere technical document.

The voice of the participants loudly and clearly spells out their dissatisfactions. The TransPlan 2010 document was intended to be a report describing a technical/professional analysis that would develop transportation solutions. It would also reflect the public voice for planning and implementing urban transportation plan. Although the document provided information about the public involvement, it is still a technical document. It does not reflect the direction given by the people of the Winnipeg Region. Communities were not involved in the final decision. Their information and

opinions were evaluated by the Steering Committee who decided if they would be included or not. The reasons for this outcome are: ineffective process development and management, poor community representation and attendance, and poor reflection of public value on final decisions.

3.3.2 CentrePlan

CentrePlan is generally deemed successful in terms of its community involvement process. City Council gave sufficient attention to public participation due to the belief that "a vibrant and healthy downtown requires a long-term commitment to a vision and a plan, and a plan can be successful if it reflects the consensus of all downtown and community interest" (Fielding & Couture 1998:34).

Similar to TransPlan 2010, CentrePlan was also directed by a steering committee. What made it different from TransPlan 2010 is the steering committee broadly consisted of thirty-five downtown stakeholders: political representation from all three levels of government; prominent downtown leaders; and members of various downtown boards. The committee was co-chaired by the mayor and a private-sector leader. In the meantime, a forty-seven-member advisory committee with large representation from civic administration of downtown organizations and representatives of various interests groups guided the steering committee in its decision-making. Similarly, the chair and co-chair of the advisory committee also sat on the steering committee. The organizational structure of the two committees and its co-chairs ensured mutual supervision, continuity and communication between two committees.

A number of workshops and forums were held requesting meaningful public input. Participants were asked three questions to help identify issues and develop visions and strategies. The questions included, what you liked about the downtown; what you disliked about downtown; and what you thought the downtown needs in order to be improved (Fielding & Couture 1998: 35,36). The public responses were well recorded. A workbook listing the answers to these questions was distributed to participants.

Marginal populations, including the transient, aboriginal and poor downtown residents were not excluded from the process. In order to get input from this population who usually did not express their opinions in the public process, the city administration, particularly public health nurses contacted individuals (Fielding & Couture 1998: 36). After an orientation session, the nurses were able to serve as a bridge to fill the gap between the government and marginal population. Their input has also been documented in the workbook. After these processes, a public attitude survey was conducted to validate the findings of the numerous consultative activities (City of Winnipeg 1998:6).

Based on visions that have been developed and refined by hundreds of participants, five components of the vision resulted. Five Strategy Teams were formed for each component. Each strategy-team was chaired and co-chaired by steering-committee members. More than one hundred people participated in the Strategy Teams. The results of this collaborative effort was the main CentrePlan document: Vision and Strategies. Two committees then developed a two-year action plan that committed time and financial resources from six downtown stakeholders. A key Winnipeg informant pointed out that the development of CentrePlan was a more robust system of planning. It did not just pull the public to the table to get people to talk about their views. Rather, it brought

stakeholders together that committed their organization to the implementation of CentrePlan, and made them to take action and responsibility.

CentrePlan is successful in terms of the general public and key stakeholders' involvement and stakeholders' commitment to the Plan's implementation. This success is affirmed by most of the informants that have been consulted during the research of this study. As concluded by a key Winnipeg informant, the planning process was well designed and delivered. For example, at a public forum that involved more than three hundred people, the group was divided into a number of smaller groups. A facilitator sat with each small group to answer questions that might be raised. To ensure good attendance, personalized invitations were sent from the mayor's office and followed up with phone calls.

In a successful process, participants are confident that their ideas have been properly recorded and have influenced the result (Fielding & Couture 1998:46). Unlike the TransPlan 2010 process that elicited much dissatisfaction from participants, the steering committee of CentrePlan prepared a document entitled "Participation Results", recording each participant's name and suggestion. The summary of written submissions included his/her thoughts in order to convince participants that their voice has been heard and reflected.

As noted by a key informant at the City of Winnipeg, the most important outcome of the participatory process of CentrePlan was that it fostered relationship building within the community. Through personal contact with community leaders and other participants involved in the process, broad public opinion was brought to the table. The dialogue initiated by the process was expected to continue. The intention of

relationship building in the CentrePlan process is a reflection of the concept of network building with the goal of involving more people in public participatory processes.

The CentrePlan process followed its initial principles developed to guide actions and build the vision of downtown. These principles were Inclusion and consensus, Participation and communication, Equity and fairness, and Community self-reliance (City Winnipeg 1998:9).

Some minor drawbacks still existed in the process. For example, the downtown residential community was not well represented on the steering committee. Generally speaking, the CentrePlan process is successful in terms of the criteria discussed in section 2.4.2. There are many positive experiences that can be used in future Winnipeg planning practices.

3.3.3 Plan Winnipeg 2020 Vision

The Plan Winnipeg 2020 Vision (2020 Vision) is a review of Plan 2010. The review process was launched in April 1997 and was adopted in December 2001. A commitment to public participation was made by City Council at the beginning of the review process. A consultation process yielded some policies that are slightly different from Plan 2010. Those policies deemed important were captured while those that were missing or inappropriate were added or amended. For example, concepts such as transportation alternatives, healthy environment and green community living could be frequently heard during the process and were reflected in the final Plan.

The review process was led by the political committee with five councilors involved. A multi-stakeholder participation process through a focus group meeting was conducted in November 1997 for issue identification. Participant selection maintained

gender equity and included participants from a relatively broad group of citizens. A draft issue framework survey contained 160 issues that were identified by workshop attendees. They were sent to participants and others who indicated an interest in participating but were unable to attend on the day of workshop. The categories, sub-categories and top two issues identified by participants, provided the quality of life issue framework for the City and formed the basis for the next step of significant broad public input.

In November 1998, more than 400 citywide and community-based organizations were invited to participate in eight daytime workshops and 5 nighttime workshops to discuss the basis of the Plan: what quality of life we try to create in Winnipeg. As stated by the planner participating in the process, this was to ensure the review process of the Plan was on the right track. All participants' comments received during the workshops were recorded under 17 different categories deemed to be components of "quality of life". In December, the "Vision" component of the November workshops were further evaluated through a public forum to a larger public audience.

A set of draft vision indicators for quality of life in Winnipeg resulted from the work in the workshops and public forum. It was circulated to a large mailing list of approximately 500 individuals and groups, for the final public review. That input led to the creation of 10 vision descriptions that shaped the chapters of the 2020 Vision.

Given a broad overview, the 2020 Vision represents a collaborative effort made between the general public and the civic administration. As emphasized by the planner who participated in the process of Plan 2010, CentrePlan and 2020 Vision, "We were sophisticated enough to understand what it meant to help us shape the policies in the 2020 Vision."

The strengths regarding the 2020 Vision are threefold. Firstly, the process management is efficient and flexible. For example, after the first focus group meeting, attendees felt that there was insufficient time left for regrouping the issues, eliminating overlaps and providing justification for section. The City modified the process and used a series of focus groups and surveys to ensure a broader representation of the community. Secondly, the notion of consensus decision-making was applied in the process. Consensus does not mean unanimity (Roseland 1998:183). A key informant stated that, "we never expected that every participant was happy with final decisions, our hope was that they agreed with them and could live with them". This agreement is reached through a process of gathering information and viewpoints, identifying priorities, discussion and negotiation. Lastly, new technology was used in the process. Newsletters were available on the City of Winnipeg website, making more people aware of what was happening. People were also allowed to send their comments to the email address specially set for this purpose.

Plan Winnipeg 2020 Vision received significant public support because it voices their concerns and reflects their views. Dozens of people came to the public hearing in favor of the Plan and encouraged City Council to adopt it. It was an easy council decision to support these recommendations because there was public support.

3.4 Conclusion

To sum up, transportation planning practices in Winnipeg since the 1950s were generally consistent with transportation planning's track (See Appendix E). It began with the scientific and expert-driven transportation planning stage in the 1950s and 1960s, and

became more democratic featured as the community involved in the postmodern planning era of the 1980s and 1990s.

The latest transportation planning study in Winnipeg, TransPlan 2010, was an experiment guided by a long-range resident Steering Committee and involved the community in the process. The concept of sustainable development was mentioned in the Plan. However, the outcome of the process, as discussed earlier in this section, was unsatisfactory, and has never been adopted. Theoretically, the City of Winnipeg does not currently have a comprehensive transportation plan guiding transportation decision-making, and downtown.

In the recent years, the application of sustainable transportation and public participation principles in planning processes tended to be mature in Winnipeg. The current city development plan, Plan Winnipeg 2020 Vision and CentrePlan have provided experiences, both positive and negative, to future (transportation) planning practices in Winnipeg. However, Plan Winnipeg 2020 Vision is recognized as a very high level document providing the philosophy for the future development in Winnipeg. It does not have the level of details for each city component. Although CentrePlan is a secondary downtown plan coupled with an implementation plan intended to guide downtown development, it is insufficient to help to solve the systematic downtown transportation planning issues. In response to "Putting Downtown First" policy in Plan Winnipeg 2020 Vision, and to achieve the goal of revitalizing downtown Winnipeg, a well-planned downtown transportation plan reflecting the direction of both Plan Winnipeg 2020 Vision and CentrePlan is necessary.

Chapter Four: Precedents for Downtown Transportation Planning Processes: Hamilton, Edmonton, Vancouver, Minneapolis and Portland

This chapter examines other North American cities with downtowns facing the similar issue: downtown decline. In recent years, cities have realized the value of pursuing an integrated land use/transportation/revitalization approach rather than isolated remedies in their revitalization efforts. This section focuses specifically on how the transportation-related elements in a comprehensive transportation plan were treated in revitalization efforts that were intended to achieve a more sustainable transportation system. Downtown transportation planning practices in five other North American cities, namely, Hamilton, Edmonton and Vancouver in Canada and Portland and Minneapolis in the United States, are reviewed. Downtown size, development history and political atmosphere varied in these cities. However, principles of sustainable transportation and public participatory planning were employed in the cities' (transportation) planning practices to a certain extent, with the same goal in mind.

The basis for these case studies was a recent review of the respective web site, relevant journal articles and planning documents. Interviews with a "key person" who was either in charge of the planning team for the downtown (transportation) planning project in each of these five cities or very knowledgeable of their city/downtown's existing transportation planning and decision-making processes. Although only one person was interviewed from each city, and stated opinions are representative only of the interviewee, it allowed better understanding of each city's general transportation planning conditions, contexts and results. The review of these cities' transportation planning practices helps identify strengths and weaknesses existing in these practices, and

therefore enlightens potential changes in Winnipeg's future downtown transportation planning.

4.1 Hamilton, Ontario

The city of Hamilton is situated on the shores of Lake Ontario. In January 2001, six local municipalities amalgamated and became the New City of Hamilton with a population of 468,000. Downtown Hamilton sits in one of these six municipalities, lower Hamilton. The downtown has a population of 31,000, and employment is more than 32,000, accounting for nearly eighteen percent of the city's total employment. It is the commercial, business, residential and entertainment center of Hamilton.

4.1.1 Background

Downtown Hamilton, like other North American downtowns, has been distracted by new development in suburban areas. It was realized that if no measures were taken, downtown would continue its decline. The Downtown Transportation Master Plan (Master Plan) was undertaken as part of a set of downtown revitalization initiatives under the title of "Putting People First", an integrated land use and transportation planning exercise. The New Land Use Plan for Downtown Hamilton was a parallel initiative launched simultaneously. As approved by City Council in 1998, the purpose of the Master Plan is to create a new Secondary Plan (to the City's Official Plan) for the downtown. It was identified that the development of the Master Plan will guide transportation growth and planning in downtown Hamilton over the next twenty years.

The current transportation system in downtown Hamilton can be summarized as an extensive, well connected street system with a number of wide one-way streets, coupled with an abundance of inexpensive long-term parking ((City of Hamilton 2001:ES1). There are a number of issues associated with this system that have been identified:

- A street system that favors automobile traffic, coupled with inexpensive parking can have adverse effects on travel by other modes;
- One-way traffic flow and excess lane capacity encourages high vehicle speeds, creating unpleasant and potentially unsafe environment for pedestrians, cyclists, and transit riders at bus stops; and
- A large amount of surface parking creates a break in the street façade making unattractive options for travel in downtown (City of Hamilton 2001:ES2).

During recent years, a number of studies done in the Hamilton area focused on downtown revitalization through the improvement of its pedestrian, transit and cycling environment and the creation of a "sense of place" in the downtown (City of Hamilton 2001:2). Within these key policy studies, the Hamilton-Wentworth Regional Transportation Review adopted in 1996, set the Study Guiding Principles (see Appendix F) for downtown Hamilton and served as the objectives for the Master Plan. It has been noted that these principles were developed with two overriding goals in mind:

- Transportation and land use planning in downtown Hamilton should be an integrated process; and
- The development in downtown Hamilton should be sustainable.

4.1.2 Transportation and Land Use Planning

The concept of "sustainable transportation" calls for a more holistic approach to community planning, policy and investment to achieve a diversity and balanced mix of transportation modes and a sensible arrangement of land use that enables conservative

use of energy and capital to fulfill mobility needs (Roseland 1998:111). Downtown Hamilton's transportation planning reflects such an approach. According to the key planner involved in the process of the Master Plan, the economic, social and environmental sustainability associated with transportation is a major issue related to business accessibility for people and goods, a livable and safe community and air quality respectively. It has been identified by civic administration that the downtown Hamilton has an extensive, well-connected street system, but it doesn't cater to all modes of transportation well. The essence of the Master Plan is investigating a better balance of transportation associated with facilities for pedestrians, cyclists, transit riders and car users while it is recognized that walking, cycling and transit are more sustainable transportation modes. This concept clearly reflects in the Master Plan's Study Guiding Principles. As a result, street network, pedestrians, cycling, public transit and parking were identified as the key downtown transportation components that must be dealt with in order to achieve the study guiding principles (objectives). Recommendations thereby developed include:

- Conversion of some primary and secondary streets from one-way operation to two-way operation;
- Identification of street sections with excess lane capacity that can be used for improvements to the pedestrian environment;
- Modifications to streets that will encourage commuter and recreational cycling;
- Opportunities for improvements to transit system by consolidating bus terminal operations; and
- Parking policies designed to influence mode choice (auto vs. bicycle, transit and walking) and encourage short-term high turnover parking for business/retail trips and discourage all-day commuter parking (City of Hamilton 2001:ES.5).

It is apparent that the theme of sustainable transportation is greatly emphasized in the recommended Master Plan by giving high priority to walking, cycling, transit, and

discouraging private car use in the form of limiting all-day commuter parking. One-way to two-way street conversion also reflects the idea of sustainable transportation in terms of the benefits that two-way streets can offer, e.g. slower traffic flows but more direct access to all business, fewer collisions, wider sidewalks for pedestrians and cyclists and less air pollution due to reductions in the number of vehicle-trips through the downtown. Encouraging short-term turnover parking for business/retail trips is a strategy to revitalize downtown businesses. However, it can be argued that if measures, such as the downtown shuttle bus and free transit zone, are applicable to commuter trips and no-commuter trips, eventually the non-motorized mode objective will be achieved.

In addition, Shift Gears: A New Cycling Plan for Hamilton-Wentworth, developed in 1999, focused on the provision of safe cycling facilities within the region and outlined an infrastructure capital improvement program for the 1999-2008 time period. This study was approached within the regional scale, but also included the improvement of the downtown bicycle network to promote the use of this transportation option.

A sustainable transportation system in downtown Hamilton by integrating land use planning with transportation planning is also pursued in the development of the Master Plan. As affirmed by the key informant involved in the process, New Land Use Plan for Downtown Hamilton and Downtown Transportation Master Plan were developed simultaneously as the downtown Hamilton secondary plans and were completed integrated. Any decision on transportation reflects future changes on land use and vice versa. This approach ensures the two Plans are compatible. "This is the essence

of integrated land use--transportation planning, one of the overriding principle of Hamilton's current land use and transportation efforts" (City of Hamilton 2001:38).

The Study Guiding Principles for the Master Plan regulates the land use planning principles in response to land use objectives for sustainable transportation, namely, more transit-oriented, higher density and mixed land use which help to halt growth in auto-based development (Roseland 1998:111). The key objectives of the land use for Downtown are to attract more residents and office development to the downtown with the goal of increasing trip self-containment and reducing the growth of auto trips in the City as well as the downtown area. Infill development by using vacant land which is currently occupied by parking is also encouraged.

Coupled with the Downtown Transportation Master Plan and the New Land Use Plan for Downtown Hamilton, an Economic and Development Financing Review and the New Land Use Plan for Downtown Hamilton Design Strategy were undertaken prior to the secondary planning process to provide background information and guidance, and regulate the design and physical development of the Core.

4.1.3 Transportation Management

The application of transportation management strategies as discussed in section 2.3.4 can help the implementation of a sustainable transportation plan. The key planner in the City of Hamilton confirmed that transportation management was not specifically discussed in the Master Plan, and it was not the primary focus of the Master Plan, but it can be observed that ideas of transportation management were included in the final

recommendations. They can be categorized as street conversion, parking rate and subsidized transit strategies, carpooling program and traffic calming measures. In detail,

- Two-way street strategy--introducing certain level of congestion so that people choose not to drive;
- Parking rate--increasing long-term parking rate while reducing short-term parking rate;
- Subsidized transit--implementing commuter bus pass program. If employees give up their parking pass, they can instead get subsidized bus pass;
- Carpooling program--this program was initiated in 2001 to reduce SOV trips; and
- Traffic calming measure--applying where applicable to slow and calm traffic.

4.1.4 Commitment to Public Participation

Public consultation is formally required at the provincial level by the Environmental Assessment Act outlined in the Municipal Class Environmental Assessment document (Municipal Engineers Association 2000) which lays out the planning process that a master plan should follow in terms of decision-making: "consultation with affected parties early in the planning process so that decision making is cooperative" (City of Hamilton 2001:ES.3). Since the 1990s, a number of planning studies in the Hamilton-Wentworth Region and the City, such as the Vision 2020, Regional Transportation Review and Smart Moves Studies, all began with the consultation process. This legacy has continued through the integrated planning processes for land use and transportation in Downtown.

All the stakeholders have been encouraged to get involved in the process to ensure that transportation planners are not working in isolation. It has also been emphasized that the final Master Plan must include transportation technical perspectives as well as input from land use planning, parking, transit, emergency authorities and

citizens who understand their communities better than any others. To ensure this takes place, the process included extensive consultation consisting of three open houses, several meetings with key stakeholders such as the Downtown Planning Advisory Committee comprised of the citizens and stakeholders, and Council presentations and extensive interaction with staff of other city departments such as Parking Services and Emergency Services (City of Hamilton 2001:8). The key planner with the City of Hamilton pointed out that every participant should be well informed.

Although it has been emphasized by the key Hamilton informant that public participation in the development of the Master Plan process was intended to build partnerships between civic administration and the public, the essence of the process still remained at public consultation level. According to Arnstein (1969:217), consultation is when participants are proffered by powerholders as the total extent of participation, citizens may indeed hear and be heard while partnership enables participants to negotiate and engage in trade-offs with traditional powerholders. The Master Plan was drafted by the Steering Advisory Committee based on public input and technical analysis. It is the Steering Advisory Committee that decided if and which public opinions should be included in the document. However, the Environmental Assessment Act regulates that a public review process of the proposals is mandatory. Thus the public's concerns and opinions have to be reflected in the final Downtown Transportation Master Plan, otherwise the Plan cannot be approved by the provincial government. Obviously, this legal enforcement made up the shortcomings of a consultation process to some degrees. During the forty-five day public review process of the Master Plan, some revisions were

made based on public opinions, from which the Downtown Transportation Master Plan is finalized.

According to a key informant with the City of Hamilton, conflict resolution measures have been used when conflicts arise within the Master Plan process. An educational step rather than a negotiation step was involved to make sure that an understanding could be made so that all sides could live with the final recommendations.

4.2 Edmonton, Alberta

Edmonton, Alberta's capital city has a metropolitan population of 650,000 residents while the city's Downtown is home to nearly 7,000 residents, 2,200 businesses and 55,000 workers. It is the Edmonton's major generator of taxes. The economic contribution by Edmonton Downtown has been in sharp decline since the mid 1990s. The municipal tax levy had dropped 6.0% within two years. It was anticipated that, without reinvestment, this downward spiral might continue. The Capital City Downtown Plan was initiated in 1994 to reverse this decline trend and ensure that downtown Edmonton is vibrant and alive.

4.2.1 Background

The development of the Capital City Downtown Plan (Downtown Plan) was based on the momentum of two non-statutory initiatives of the past decade: the 1986 Mayor's Force on the heart of the City, and the Program to Improve Downtown Edmonton (City of Edmonton 1997: ii). The Downtown Plan was intended to replace the 1981 Capital City Downtown Plan. However, it was not developed as the secondary plan

to the municipal plan, Plan Edmonton, because the latter was developed after the Capital City Downtown Plan had been adopted.

The Downtown Plan is a blending of a comprehensive physical development plan and a strategic action-orient plan that directs the City of Edmonton downtown future development from all aspects. From the transportation planning perspective, the lack of a comprehensive municipal transportation plan at the time the new Downtown Plan was being developed, the Downtown Plan also guides downtown transportation decision-making. As stated in the Capital City Downtown Plan, the transportation system objective, is as follows:

> To provide a safe, balanced, integrated transportation in the downtown that serves the needs of existing and future development and is based on the role of each other of transportation – pedestrian, public transit, private vehicle, bicycle, and other alternative modes (City of Edmonton 1997: 48).

4.2.2 Transportation and Land Use Planning

A number of key transportation components comprising the downtown transportation system are discussed in the Downtown Plan, namely roadway network, public transit, bike route system, pedestrian circulation and pedway network. The term "Sustainable Development" or "Sustainable Transportation" is not identified as an objective, and not specifically mentioned in the document. However, the concept of sustainable transportation is included in the Downtown Plan, and reflected in the proposed transportation planning strategies in support of an economically healthy business environment. These strategies:

- Aim to provide safe, efficient and pleasant environment for pedestrians, transit users, drivers and cyclists;
- Emphasize quality pedestrian environments along with efficient vehicular circulation;

- Propose a variety of means to strengthen the transit system, from improved bus shelter areas to a new Community Transit Network to long-term expansion of the LRT system;
- Recommend directing through-traffic to the major arterials on the edge of Downtown and converting one-way streets to two-way traffic to support business and reduce confusion for visitors;
- Promote efficient truck movements; and
- Offer cyclists safe, convenient bike routes in the Downtown (City of Edmonton 1997:48).

Emphasis is given to the alternate transportation modes of pedestrians, cyclists and transits. These strategies conform to the concept of sustainable transportation in light of "Public Transport Objectives" which indicate higher quality transit systems, especially rail, and "Non-motorized Mode Objectives" which mean greater safety and amenities for walking and cycling (Roseland 1998:112).

The downtown land use policies reinforce the high density and rich diversity land use in the downtown core to support economic development in downtown. Though the relationship between transportation and land use are mentioned in the document, it is not clearly identified how transportation and land use strategies will achieve the goal of "Transit First" (one of the key recommendations that came up in the Downtown Plan).

An integrated transportation system with emphasis on right-of-way for all transportation modes is the objective for the existing and future development in the Edmonton downtown. It is notable that the private automobile has been given equal consideration in the all transportation forms. To reduce automobile dependence and encourage the "greenest" mode of transportation, public transit and stabilized or lower car use is one of the objectives that should be pursued. In the common sense, the private automobile is transit's chief competitor. The policy of giving equal consideration to all transportation modes is inconsistent with the identified transportation objective to reduce

automobile dependency and "Transit First" recommendations. This inconsistency is also reflected in its downtown parking policies. For example, some parking policies state that promoting a parking friendly environment in Downtown and maintaining special parking promotions such as the Downtown Dollar, while working toward a reduced but adequate supply of employee parking. Such policies are indeed a covert form of encouraging car use.

In 1998, as part of Capital City Downtown Plan initiatives, some of the roadways were concerted back from one-way to two-way. According to a key informant with the City of Edmonton, four objectives, namely improving pedestrian environment, traffic circulation, access to businesses, and encouraging residential or commercial development, are all achieved to varying degrees by improving the downtown economic environment. However, it is apparent that environmental concern was not given sufficient attention. It was not included in the major objectives and is not considered as criteria to evaluate the outcome of the conversion.

To sum up, sustainable transportation principles have been employed in the downtown Edmonton transportation planning practice to some extent. The land use policy that advocates higher density and mixed land uses is not associated with "Transit First" policy. As well, "Promoting downtown parking" policy is inconsistent with the general concept of sustainable transportation, which has given no priority to private automobiles.

4.2.3 Transportation Management

Transportation management measures are considered in order to implement the general transportation goals in Policy 6.9 (City of Edmonton 1997: 50) that states,

"improve traffic and pedestrian movements in the Downtown through implementing transportation management measures that address the specific needs of each particular neighborhood, as required". This approach deviated slightly from the concept that has been discussed in the early section of transportation supply and demand management that is associated with the measures of promoting a sustainable transportation system. Though encouraging transit use by means of issuing employee transit passes is included in transportation policies in the Master Plan, no special action plan is linked with this proposed policy. The reason for this, according to a key informant in the City of Edmonton, was that the time when the plan was in the process, the idea and measures of TSM or TDM were still not well developed. Thus the understanding of both management strategies was restricted. Not until the late 1990s has Edmonton initiated an essential trip reduction activity by participating in a nationwide competition as part of Canadian Clean Air Day events. This competition, named "Commuter Challenge" shows which city can cut its air pollution the most by using active and/or sustainable modes of transportation. However, this small-scale one-day event cannot replace policy incentives associated with transportation management.

4.2.4 Commitment to Public Participation

The process of developing the Capital City Downtown Plan involves four basic stages, including Project Initiation, Issues and Ideas, Concept Plans and Policies, and Plan Adoption and Implementation. The public was involved in each stage which included a roving display, hotline, idea forum, workshop and open house in the first three stages and a statutory public hearing in the final stage. Citizen representatives were

invited to join the Downtown Plan Review Steering Committee together with ward councilors, provincial government representatives, and individuals from downtown organizations.

Gathering information at the beginning of each stage and seeking feedback after reports were prepared, was the general purpose for the public participation in this process. According to Arnstein (1969:217), it was another typical "consultation". "Under these conditions, the public lacks the power to insure that their views will be heeded by the power" (Arnstein 1969:217). However, according to the key informant in the City of Edmonton, the public voice was intended to reflect as much as possible in final recommendations. The purpose was to ensure the Downtown Plan could go through the public hearings as a bylaw and be approved by City Council. Therefore, public consultation seemed imperative so that the public voice can be reflected, and the final recommendation will not go against the public opinion. Although citizen representatives sat on the steering committee, the lack of lower level of community network communication caused these citizen representatives to not fully represent the general public.

Worth mentioning, the Downtown Plan review process provided an opportunity for the residents to meet their neighbors and discuss downtown issues including transportation, infrastructure, housing and community development. This process eventually led to them to consider the necessity to form a community association. The response for this was positive. Thus, residents have met further to work towards such an association that would allow the voice of general public to be heard and well represented, and set up a good foundation of public participation for the future (transportation)

planning practice in the Downtown Edmonton. More importantly, a potential social network has been built up.

4.3 Vancouver, British Columbia

Downtown Vancouver has been undergoing substantial growth since 1991, and this trend continues. More than 76,000 residents live in downtown. This accounts for a 62% increase since 1991. Employment also projected a growth of 132,000 jobs in 1996 to almost 175,000 people within the next twenty-five years. This growth will add significant transportation demand to the transportation system in downtown Vancouver.

4.3.1 Background

The municipal government indicated that to cope with this growth without adding traffic lanes to the existing bridges and roads was the major challenge facing transportation planning in downtown. The City of Vancouver developed a downtown transportation plan in response to this growth. The process began in June 2000.

The development of the downtown transportation plan is directed by a number of regional and local documents, namely City of Vancouver Transportation (1997), City Plan: Directions for Vancouver (1995), Central Area Plan (1991), Livable Regional Strategic Plan (1996) and Transport 2021 Report (1993). This set of documents provides a comprehensive and profound background for the development of the downtown transportation plan which should move the city forward by taking the city and regional goals and applying them. In brief, it is hoped that future trips to and within downtown rely more on walking, biking and transit while keeping the number of cars entering the downtown at or below the present level. It is also expected that transit can handle the new

generated trips. In addition to the general concept of promoting the use of other transportation patterns to and within the downtown, some unique policies, such as new downtown residential development, and " an overall commuter parking ceiling of 34,000 (out of 50,000) will be applied to limit driving by commuters". The City of Vancouver Transportation Plan has significant influence to form the frame of the Downtown Transportation Plan (DTP).

4.3.2 Transportation and Land Use Planning

The City of Vancouver wishes to advance sustainability as a core element of City policies. The application of sustainable transportation is clearly stated in the section 2.3 "Sustainability and Transportation" in the DTP. It has been identified at the beginning of the DTP process that the fundamental principle of the DTP is to create a sustainable transportation system that that will meet the present needs without compromising the future. The "Pedestrians First Policy" is intended to promote a walkable, rather than a car-oriented downtown.

The sub-plans for seven transportation components in the downtown transportation system are developed concurrently through the whole process due to the interrelationships among them. They include road network plan, transit plan, pedestrian plan, bicycle plan, goods movement plan, parking plan, and intelligent transportation systems. The development of these seven transportation plans caters the right-of-way for all transportation alternatives.

However, the definition of sustainable transportation is not specifically clarified in the Plan though it can be found that the sustainability theme pervades the DTP.

Elements of the DTP reflect the concept of sustainable transportation discussed in section 2.3. They include the problems of pollution, noise, congestion, safety, energy consumption associated with the efficiency and cost of moving people and goods, and the relationship between transportation and land use planning. They are dealt with in section "Environmental and Social Impact Assessment", and section " Land Use Planning' respectively.

The DTP points out that the impacts of the transportation network on the physical and social environment need to be minimized to achieve the livability goal in Downtown. Assessment standards related to each component: noise, air pollution, safety, streetscape impact and guidelines for social impacts and assessment, are addressed to evaluate the recommendations related to seven transportation plans. For example, standards used to evaluate the acceptability of noise levels are those recommended by the World Health Organization.

Transportation and land-use are recognized as fundamental components to achieving a sustainable city since land use planning in the transportation context is rearranging the land use development in such a way that the need for transportation facilities and correspondent trips is minimized. Central Area Plan (1991) encourages more housing; more jobs; increasing the use of transit; and reducing overall Central Area office-zoned capacity. The widely recognized success of these land-use plans has created an excellent platform for the DTP Plan to build on.

In the past ten years, the number of residents living downtown has increased by about 54%. This is projected to increase another 31% by 2021. "Shopping in Neighborhoods" is promoted. Newer residential areas including Downtown South,

Triangle West, Coal Harbour and False Creek North are mixed residential and commercial developments with a combination of apartments above stores. Roads in these areas are designed as residential streets. In addition, Historic Yaletown and areas to the east and north are emerging as important mixed living/working areas. New downtown employment is projected to increase 30% by 2010. Allowing residents to live closer to work and within distance of walking distance of most destinations helps reduce the burden within the downtown transportation system. It is emphasized by the key informant that through a well-developed transportation and land use plan, it is expected that the percentage of people who live where they work can continue to increase to a considerable percentage. It is expected that improved and low-fare transit services can cater to trips out of downtown.

In the meantime, the DTP strives to include factors directly relating to livability and to streetscapes. An assessment model is established to evaluate the potential transportation impact on a street's pedestrian environments and land uses. The assessment included elements such as land use along the street, characteristics of the pedestrian realm, level of privacy afforded properties along a street, and the overall vibrancy of the street. Each street has certain measures to improve the streetscape to an accepted level. For example, some of streets are designed as greenways while other are proposed to convert from one-way to two-way operation depending if it is a commercial street, if there are bike lanes in both direction, or street trees need to be added. Each downtown transportation component is well considered and incorporated in one plan.

4.3.3 Transportation Management

Transportation Demand Management (TDM) is discussed in section 6.0 "Evaluation of Plan". TDM measures recommended in the Transport 2021 Long-range Plan will be employed in the DTP. A computer program is applied to evaluate the outcome resulting with and without these TDM measures including tolls on major bridges, increased parking fees, increased gas taxes, telecommuting and employer programs that are proposed to reduce auto trips. It is found that without these measures, there would be 15 percent more vehicle trips to downtown; 8 percent fewer transit tips; and average vehicle speeds would be 11% slower. This study indicates that TDM can play a significant role increasing the use of public transit and discouraging the more vehicle trips, thereby supplementing the achievement of a sustainable downtown transportation system.

Furthermore, an advocacy group named Better Environmentally Sound Transportation (BEST) has been promoting environmentally sound transportation alternatives since 1991. A number of grass-roots events, such as Commuter Challenge, Off Ramp, Street Reclaiming and Go Green Choices programs, have been organized by BEST to encourage the general public to use more sustainable transportation modes. BEST has also been actively involved in the process of developing the DTP. Some additional measures are recommended by BEST and are sent to the City Council and the DTP team in the form of a letter. It recommends that some investments need to be created at a variety of scales--from pedestrian crossings and curb-side treatments, to dedicated bicycle lanes, to better transit facilities and expanded bus-priority measures. It can be observed that grass-root groups such as BEST play an important role linking between the public and the civic administration. More importantly, they help implement the plan.

4.3.4 Commitment to Public Participation

Public participation in transportation planning processes is not formally required through any existing policies or other formal structures in the City of Vancouver or the Province of British Columbia. However, there were many opportunities for residents, commuters, business owners, and the general public to participate in each step, and the process is documented in section "Public Consultation Process and Results".

The DTP team comprised of interdisciplinary city staff directed the whole process. As it claimed, rather than offering the equal position to make transportation decisions for the downtown, the public including downtown residents, businesses, and stakeholders across Vancouver were widely consulted in the five-step processes, including gathering ideas and issues, creating plan components, developing options and choices, completing final downtown transportation plan, and creating a draft plan. Methods, such as workshops, open houses, local television, radio, newspapers, newsletters, posters, roving displays, brochures, website and email were widely used to convey information, build awareness and seek input.

Though the DTP indicates that the public has had opportunities to be involved in the planning process from beginning, the real procedures for each step was that staff of the planning team brought the issues and ideas that they have identified, or options and choices they have developed to the stakeholder consultation meetings, workshops and open houses in the form of presentation. During the following discussions, the staff from the planning team listened to comments and answered the questions from participants. As the public did not well understand the goal of the DTP and the significance of sustainable transportation from the very beginning, they did not understand rationales

why some of the ideas were proposed. For example, the public was unaware that the reduction of single occupancy vehicle trips would fundamentally alleviate congestion. This situation was reflected in a high percentage of survey respondents who were car users and against creating bikeways and converting one-way to two- way on some of major downtown streets. Their reason was that downtown roads would be more congested if bikeways were built, and one-way streets were converted to two-way. However, City councilors still made decisions to construct bikeways and implement conversion. According to 900 telephone interviews conducted by the City of Vancouver after the first draft report was produced, interviewees generally support the Plan because they believed it would improve the traffic flow and reduce congestion, but a quite number of interviews were opposed to the DTP because they still felt it did not focus on car commuters and focused too much on pedestrians and cyclists (City of Vancouver 2002:37).

According to a senior planner from the DTP team, 15% of downtown employees and residents were aware of the development process of the DTP after surveys and a series of public events, and 3% of them were familiar with it. It is apparent that the majority of employers, employees and resident were still unaware of the project. The reason for this was that the Plan team felt that " it is impossible to talk to everyone", and did not encourage the network building among stakeholders that would allow the broader public to be directly or indirectly involved in the process. As positioned by the DTP team, the public was consulted instead of partnered or empowered in the process. Similar to the Hamilton's Downtown Transportation Master Planning process, if there were no consultation process and, the public's voice were somewhat reflected in the final

document, the DTP would not get support during the public hearing process. According to Arnstein, public participation in the DTP process falls into the level of "Tokenism" (1969:217). It should be pointed out that without the general public's understanding and action to turn to more sustainable transportation patterns, no matter how successful a transportation plan is developed, the goal to achieve sustainable transportation is difficult to attain.

4.4 Minneapolis, Minnesota

Minneapolis is Minnesota's largest city with a population of nearly 390,000 (1995). Approximately 19,000 reside in Downtown. Downtown Minneapolis is also the Upper Midwest's largest employment center, and the retail, entertainment and cultural center in the region as well. The trend of employment growth started in 1980. Between 1980 and 1995, Downtown gained about 30,000 employees, for a total of 135,000. That amount is expected to grow to a total of 170,000 jobs by 2010 and to 184,000 jobs by 2020. According to Downtown Minneapolis 2010, Downtown is also expected to add 2,500 to 3,000 housing units by 2010.

4.4.1 Background

In the 1950's, along with planning for renewal of the Downtown area, the City of Minneapolis initiated the transit mall. Nicollet Mall in Downtown was subject to pedestrian priorities, and became the most successful example of a pedestrian street in North America (Brambilla & Longo 1976:37). As well, as the region's most accessible location, Downtown Minneapolis connects with the rest of the city and metro area through a superior transportation system which balances the needs of cars, transit,

pedestrians and bicyclists, and functions well at the present time. As the City continues to grow, the "existing downtown street network has reached the point where it can no longer accommodate additional peak period trip without incurring negative consequences (congestion and delay) at certain intersections" (SRF 2000:3).

Four programs have been initiated since 1994 and address these issues respectively. Transportation policies and recommendations have been developed to guide the future transportation planning practices. These three documents include Downtown Minneapolis Plan 2010 (1996), 2000 Downtown Minneapolis Transportation Study (2000), and Minneapolis Plan (2000).

4.4.2 Transportation and Land Use Planning

The process of Downtown Minneapolis 2010 was initiated in 1994 with a fundamental goal of revitalizing Minneapolis' downtown. Downtown transportation is documented in the Section "Downtown Movement" which directs Downtown's future transportation planning.

Transportation was identified as having an important role to play in order to achieve 2010 downtown growth projections. Policies, such as improving transit service to and in the Downtown and creating a reduced fare zone, reflect the City's efforts to promote transit as an essential element in accommodating future growth in the City's downtown. The policy of "Providing bicycle parking facilities in parking garages and major transit stations" also indicates the City's commitment to promoting more choices in sustainable transportation modes.

Based on the prediction that people will still rely on the private car as a primary transportation to the Downtown, the transportation policy in Downtown Minneapolis 2010 continues to focus on a level of vehicular services that will make downtown comparable to the rest of the region. The parking policy resulting from this policy states, "downtown will need to provide parking in order to remain competitive" (City of Minneapolis 2002). To preserve the land for office and retail uses within the compact Downtown core, a strategy has been proposed to construct employee-parking garages on downtown's periphery. A balanced transportation system proposed for Downtown that caters to the needs of cars, pedestrians, cyclists and transit users, appears to be inconsistent with the notion of inter-modal transportation, which gives no priority to cars. Furthermore, downtown land use and housing policies are isolated from transportation policies in Downtown Minneapolis 2010.

The 2000 Downtown Minneapolis Transportation Study is a technical study conducted by SRF Consulting Group, Inc. It is not a subsequent study following the Downtown Minneapolis Plan, nor is it a comprehensive downtown transportation plan. A computer model analysis of current and future transportation systems and needs in downtown Minneapolis was conducted.

The Study reflects the concept of sustainable transportation at some level. For example, the Metropolitan Council adopted a goal of doubling transit ridership by 2020. In the parking model analysis, two scenarios, namely a baseline transit scenario and an enhanced transit scenario, were run. The outcome indicates that through the realization of "Enhanced Transit", parking utilization rate can be reduced between 12% and 14% by 2010. This outcome is in part a result of Recommendation Three "Actively support the

Metropolitan Council and Metro Transit in their Goal to Double Regional Transit Ridership by 2020" which is in response to the projected growth in downtown and shortage of parking if no measures are taken. As a technical report, the Downtown Transportation Study helps policy makers and City staff make informed decisions based on the conclusions and recommendations that the study provides.

The City's development plan, the Minneapolis Plan was developed concurrently with the Downtown Transportation Study. However, recommendations provided in this Study are not reflected in the downtown transportation policy section in Minneapolis Plan. Although principles of sustainable transportation have gained a better understanding in the Plan, the discussion of land use impact on transportation, does not effectively affect downtown transportation policies. Indeed, the Minneapolis Plan merely restates the directions established by the Downtown Minneapolis 2010 in recommending future transportation planning for the Downtown area. Therefore, the weakness associated with the downtown transportation policies still inevitably exists in the Minneapolis Plan.

4.4.3 Transportation Management

The City of Minneapolis required development of Travel Demand Management Plans for Downtown and other developments of significant size since the early 1980s. More recently, the requirement to complete a TDM plan was drafted into the proposed 1999 Zoning Code and, if approved, would be applicable to all development proposals throughout the city that meet the specified criteria (City of Minneapolis 2000). All these

requirements demonstrate the significance of transportation management and it is increasingly realized as a measure to accomplish a city's transportation system goal.

With start of the Downtown building boom in 1997, the City's Planning Department collaborated with the Public Works Department and required major developments to complete comprehensive TDM Plans. As affirmed by a key informant with the City of Minneapolis, there were nineteen projects developed in Downtown between 1997 and 2001, all of which required an extensive environmental review that was focused on their transportation impacts. The transportation consulting group contracted by the City of Minneapolis conducted the technical analysis, and provided this base information to developers. The informant described that,

> In some cases, we told the developers that, 'your project is going to create environmental problems. The only way around this is your employees have to leave cars at home and take a bus.' In order to make that happen, we needed to invest in some measures. The most important project we began with is MetroPass program, which enables employers to offer a tax-deductible, free or low-cost pass to employees.

In addition to the MetroPass program, four other measures were initiated, including New Hire Incentive, Commuter Checks, Commuter Connection, and Guarantee Ride Home. A non-profit organization, called Downtown Transportation Management Organization (TMO) and Metro Transit have play an important role in delivering these programs.

All these measures indicate the City's efforts to develop policy incentives to encourage use of public transit, carpooling and vanpooling, focused on transportation impacts on new development projects. The 2000 Downtown Minneapolis Transportation Study further recommends that the Metropolitan Council and Downtown Minneapolis TMO work together to increase the effectiveness of TDM through voluntary or

mandatory policy instruments within the existing and future downtown business community (SRF 2000:2). Though the construction of long-term employee-garages on downtown's periphery seems against the goal of sustainable transportation, the application of TDM measures in the downtown Minneapolis can help achieve a certain level of reducing reliance on automobile and SOV trips.

4.4.4 Commitment to Public Participation

The new federal surface transportation law, through both the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Clean Air Act amendment of 1990 directs federal and state departments of transportation and metropolitan planning organizations to provide all affected and interested parties with a reasonable opportunity to comment on transportation plans and programs (Hathaway & Wormser 1993:36). Following ISTEA's emphasis on greater public involvement in the transportation planning process, a number of precedents were set. For example, the St. Louis region of Missouri embarked on an innovative and multi-player approach to regional planning, which has been successful.

According to an interview with a key informant with the City of Minneapolis, the Downtown Minneapolis 2010 process was directed by the Downtown Steering Committee, and involved the City of Minneapolis and City Council. Some traditional participation methods were applied to involve the public, namely public hearings and resident advisory committees. Some new technologies have been used. Each decision made by the City Council and the Mayor goes through an email and fax system to notify and request feedback from eighty-four neighborhoods. Eventually, each decision will go through public hearing processes. However, the key Minneapolis contact emphasized

that, "no citizen, business group or dedicated authority can slow or stop projects. We do what we put out and what we don't put out."

This is the general case for the processes of Minneapolis Plan and Downtown Minneapolis 2010. Taking the latter one as an example, the first section of the Plan is " to the Citizens of Minneapolis and Downtown Community", from which the general public have the opportunities to learn about the Downtown 2010 Plan. In terms of Arnstein's Ladder of Citizen Participation (1969:217), the key Minneapolis contact believed that the Minneapolis Plan and Downtown Plan 2010 processes have involved all 6 steps from "Manipulation" to "Partnership, indeed, these two processes were "Manipulation", "Therapy" and "Informing" rather than " Partnership."

The process of the 2000 Downtown Minneapolis Transportation Study has also involved in three citizen advisory groups. These three advisory groups include Bicycle Advisory Committee, downtown business community, and Skyway Advisory Committee. Some of recommendations from these three groups were included in final recommendations. Since it is a technical study rather than an official plan, it did not actually follow the mandatory transportation planning procedure that has been adopted. According to the participation culture in Minneapolis, whether recommendations in the Downtown Transportation Study can be applied in the Minneapolis' future downtown transportation planning will ultimately rely on City Council and the Mayor's decision.

4.5 Portland, Oregon

Portland, located in the State of Oregon, has a population of about 529,000 (2000 census) within its city boundary, and encompasses a metropolitan population of

about 1.8 million people. It is the 6th fastest growing major city in the United States over the past decade, with a population increase of almost 16%. The City's downtown is the office, retail and entertainment center of the Portland area (comprising 24 cities and 3 counties), employing about 110,000 workers. It is also the home to nearly 7,700 residents.

4.5.1 Background

In the late 60s and early 70s, downtown Portland, like many other downtowns in the United States at the time, was declining because it could not compete with suburban development. Moreover, the environmental quality was deteriorating because of the extensive use of automobile. The key Portland contact revealed that according to the criteria of the Federal Clean Air Act, there were more than 100 carbon monoxide violations in the City of Portland at the time; the downtown violated federal carbon monoxide air quality standards one of every three days. People in Portland felt that action was needed to change the development direction.

A series of plans was thereby developed. Among them, the Plans or Policies particularly associated the downtown transportation planning including Downtown Plan (adopted in 1972), Downtown Parking and Circulation Policy (adopted in 1975), DPCP for short, Central City Plan (adopted in 1988) and Central City Transportation Management Plan (adopted in 1995), or CCTMP, which was absorbed as a chapter in the recently developed Transportation System Plan (TSP). At a higher level, Metro' s 2000 Regional Transportation Plan (RTP) is a blueprint to guide new transportation investments in the Portland metropolitan region during the next 20 years.

Worth mentioning, in 1979, the City of Portland and nearby municipalities drew an Urban Growth Boundary (UGB) around their developed areas in order to slow the spread of sprawl while allowing a healthy and affordable rate of growth for the Portland region (Van Riper 2002:1). Inside the boundary, a functional plan called the 2040 Growth Concept was produced, providing a vehicle for discussing how the Portland Region should grow, and addressing the trade-offs associated with various approaches. Its transportation concept, "move people, not vehicles" greatly influences the transportation planning in the city's downtown, which is well reflected in the development of CCTMP, TSP and RTP.

4.5.2 Transportation and Land Use Planning

The term "sustainable transportation" stemmed from sustainable development which emerged in the late 1980s. However, the concept appeared in Portland's Downtown Plan in the early 1970s, as one of the major overall strategies to revitalize its downtown.

Transportation is a key piece of the Downtown Plan. Two of three key elements forming the basis for the Downtown Plan are directly associated with transportation. The other one relates to land use planning. They are: (1) pedestrian amenities; (2) a mix of densities, activities, and land uses (especially retail and housing); and (3) good access through the management of parking resources and greater reliance on public transportation.

The general transportation goal of the Downtown Plan is to "design a balanced transportation system… this means reducing reliance on the automobile, increasing the number of persons per car and increasing the number of persons moving through

concentrated areas on transit facilities". A balanced transportation system approached here is notably different from the one proposed in the Minneapolis Downtown 2010, which intends to give the equal priority to all transportation modes, including private automobiles. The Portland Downtown Plan's emphasis on transit, including expanded bus service and Fareless Square within the Central City; called for an investment in a transit mall as well as the light retail that was being considered, but not formally formulated at the time. Through implementation of a mass transit system, it was expected that 75% of the passenger trips would use the transit to and through the downtown core. "Give maximum accommodation to walking in the core", "Promote use of bicycles as an alternative mode of transportation", "Maintain a circulation pattern which responds to the Downtown Plan", "Maintain a public parking policy", and "Flex-time" were established as specific goals of the Plan to implement. Compared to some other downtown plans or transportation plans developed at the same time frame or later, the transportation system proposed in Portland's Downtown Plan is a step further than them in terms of its consideration of transportation impacts on environment.

The Downtown Plan's land use policies focus on encouraging economic growth and housing development in the concentrated downtown area which promotes the non-auto pattern and transit use in the area. These policies are reflected in a vision of a compact urban form that limits urban sprawl and the loss of agricultural and forest land at the fringe of the metropolitan area.

In order to meet Federal Clean Air Act and implement the Downtown Plan's transportation goals and guidelines, the subsequent Downtown Parking and Circulation Policy (DPCP) was developed and first adopted in 1975. There were major updates in

1980 and 1986, and amendments in 1988, 1991, and 1992. Major policies of the DPCP include downtown parking lids, maximum-parking ratios for new development, restricting on surface parking lots, and ensuring compliance with the carbon monoxide standards of the Federal Clean Air Act. As a result, the number of violations dropped to zero and remains at zero.

The Central City Plan, developed in the mid 1980s and finally adopted in 1988, focuses on a larger geographic scale comprising eight districts in the Portland's Central City area including the Downtown. The Downtown Plan, adopted in 1972, was incorporated into the Central City Plan, and remains in effect. The Central Plan is also a part of the City's comprehensive plan.

Transportation components again play a major role in shaping the Central City. A continued increase in transit service to handle growth is given the highest priority. From a broader perspective, vintage trolleys and water taxis have increased recreational use of Central City. Streetscape improvements, managing parking as a resource to support continued economic growth, and improved air quality and traffic flow improve the downtown's general environment through transportation planning strategies.

In the process of developing the Central City Plan, the relationship of land use development to transportation choices and auto travel demand gained better understanding. It is believed that transportation infrastructure will drive development patterns and densities. The policy related to this idea is to maintain the Central City's status as Oregon's principal high density housing area by keeping housing production on pace with new job creations. It was anticipated that growth in Central City would include 50,000 jobs and 5,000 new housing units by 2010. The Central City Plan suggests that

development be concentrated along major transit corridors-both rail and bus; and housing, employment and retail land uses be integrated to reduce the demand for auto travel and to provide a better market for public transit and alternative modes of transportation. According to the key interviewee with the City of Portland, this idea has been finally implemented. Reinvesting in neighborhoods has reinvigorated Central City. Many major streets along transit and rail lines are featured as 3-4 story multifamily apartments above street-level stores, allowing residents to shop easily within the neighborhood and take transit to work. Forty percent of commuters to the downtown area now use public transportation (World Resources Institute 2002:4).

Along with new developments taking place in Central City, downtown parking spaces were limited to an allowable number, and road constructions projects have not been increased. Instead, they were replaced with public transportation lines. In addition, to beautify streets and increase the area's attraction, a segment of the downtown roadway was converted into an urban park.

In 2000, the regional government adopted the 2040 Growth Concept for the whole region, which is an overall land use plan for the Metro area. Transportation strategies including regional parking ratio and Main Street designations are further refined as part of RTP, and it also calls for the development of Transportation System Plan (TSP) for the whole City to help implement RTP. In addition, the citywide Bicycle Master Plan and Pedestrian Master Plan adopted in 1996 and 1998 respectively, provide a guide to bicycle and pedestrian policies, projects and priorities for the City. Portions of them are incorporated into the TSP which was adopted in 2002. Up to now, Portland has completed a series of transportation plans that can systematically direct transportation decision-making in the Metro Portland, the City and its Downtown.

4.5.3 Transportation Management

In the 1970s and 1980s, the idea of transportation management emerged in Portland's Downtown Plan, Downtown Parking and Circulation Policy and Central City Plan as a supplementary measure to achieve its transportation planning goal. The Downtown Plan suggests the institution of Flextime to more efficiently use transportation resources, one of the goals of the Downtown Plan.

The development of the Central City Transportation Management Plan (CCTMP) systematizes the transportation management policies and strategies in Central City. It also seeks to achieve citywide and region-wide benefits for a sustainable community. The CCTMP was initiated in the early 1990s and was the latest step in a process that began with the Downtown Plan, and continued with the 1988 Central City Plan. It replaces the Downtown Parking and Circulation Policy previously in effect and adds new policies and regulations for the other Central City districts.

An overall policy framework was established in the CCTMP to support growth in the Central City while managing the parking and transportation system. The action items described in the CCTMP emphasize minimizing congestion, increasing transit use, walking and bicycling and improving air quality. The unique section of the CCTMP is "District Strategies" which focuses on different characteristics of the proposed districts. The Lloyd District, Central Eastside District, and the Downtown District are three of the eight districts in Central City that receive special planning effort as part of the CCTMP. The interviewee proudly provided the example of Lloyd District as follows:

> At that time, the Lloyd District did not have parking meters and parking regulations. The CCTMP creates the ratio for offices, put limitations on surface parking lots, and added parking meters. We worked with the Transit Department to implement the Fareless Square system in the Central City area, and encourage property owners to be part of the

> Transportation Management Association (TMA)[1], which was very successful. Now, the mode split for driving alone is in the low 20 % range, and this happened in a relatively short time period. That was the partnership we were able to establish between the city, the business community and the neighborhoods to create major changes in terms of travel situations in the Lloyd District. The CCTMP included a major change to the zoning code as a result of this.

Furthermore, RTP and TSP include the "Transportation Management" components for the whole region and the City of Portland. The early-developed CCTMP is absorbed in TSP. All three levels of transportation remain consistent.

4.5.4 Commitment to Public Participation

During the study of Portland's case, there is a strong sense of public participation in (transportation) planning processes. This was affirmed by informants with the City of Portland and Metro Regional Services.

> Everyone in the metropolitan area is given the chance to have a say in shaping their future. It took the better part of 25 years to get people to participate regularly in the process...Planners meet regularly with community advocacy groups and other citizens to identify local values and needs, while balancing the needs of small and large businesses. Easily understandable information about the planning process must be constantly provided so that the general public can participate effectively (Van Riper 2002:2).

All the transportation plans mentioned earlier have involved the public in processes. The organizational structure of the CCTMP includes a Policy Steering Committee, a Management Team, a Technical Advisory Committee, and a Citizen

[1] A transportation management association (TMA) is an organization of interested people—employers, institutions, and others—working together to address local transportation problems, dedicated to providing a variety of transportation services and programs (City of Portland 2002:5-12)

Advisory Committee (CAC). Three citizen subcommittees were formed to develop district strategies for the Lloyd District, Central Eastside District, and the Downtown District.

Three-phase process was involved. In Phase I, a public participation process was designed. Adding to the efforts of the CAC and the three working groups, citizen input was obtained through two sets of public workshops. The first workshops were held with more than 60 members of the public attending. The second sets of workshops were held to provide information on the Discussion Draft of the CCTMP and to receive feedback on it. These written and verbal comments were used in making changes to the discussion draft.

The CAC reviewed technical and policy aspects of the CCTMP, various iterations of the draft documents, as well as the consensus resolution. It recommended specific actions and strategies to be included as part of the CCTMP, some of which were based on negotiation. The City informant indicated that the CCTMP was a decision-making process based on consensus. Often City staff facilitated between the different interest groups, with the intention of reaching a compromise. If there were a serious disagreement, the policy group would make the final decision. The City's key informant concluded that,

> What we tried to do is to work out the disagreement between the members of the CAC. Our approach was to achieve a consensus document. We worked hard. This is the history in Portland that people are willing to work together to reach a consensus. That is what we target in for.

Partnership, as defined by Arnstein (1969:217), enables citizens to negotiate and engage in trade-offs with traditional powerholders. The end result was what Portland's government intended to build and has achieved.

4.6 Conclusion

The purpose of this investigation into the (downtown) transportation planning processes in five selected North America cities was to better understand the essence of current transportation planning. It was hoped that the application of sustainable transportation and public participation planning principles could be identified, and lessons taken to downtown Winnipeg's context as references.

Approaches to downtown transportation planning in these five cities are different (See Appendix G). Hamilton and Vancouver have developed comprehensive downtown transportation plans while Edmonton's downtown transportation plan is part of the citywide "Capital City Downtown Plan". As for the two American cities, Minneapolis developed its downtown's transportation policy and technical transportation study separately, and the two parts are disjointed. Portland is renowned for its pioneering urban planning concept for stopping sprawl. Its major benefits include improving downtown areas and making public transportation an attractive alternative. Its downtown transportation planning policies and strategies are outlined in a series of consistent documents. These five approaches reflect different efforts that have put in place to achieve a sustainable community through transportation planning.

All five cities applied the sustainable transportation principles to a certain level though the term "sustainable transportation" or "transportation sustainability" may not be explicitly mentioned, such as Vancouver's "Pedestrians First Policy" and Edmonton's "Transit First" Policy. The policies also reflect how a city's government intends to promote its downtowns. Increasing the use of public transportation is promoted in all five cities either by proposing transit-related infrastructure investment or in the form of transit service improvement. The pedestrian and bicycle movement are given the priority in all

the cities' downtown (transportation) plans. Portland has developed the Bicycle Master Plan and Pedestrian Master Plan to promote use of these two transportation alternatives.

Transportation management is one route toward more sustainable transportation (Roseland 1998:112). Minneapolis and Portland have well employed transportation management strategies. By developing transportation management plan/program as a supplementary measures, they reduced automobile dependency and SOV trips. These strategies include a bus pass subsidy in Minneapolis and Fareless Square in Portland, carpooling, vanpooling, flextime and parking policies (see detail below). The establishment of organizations, such as TMA in Portland or TMO in Minneapolis, helped these cities achieve their transportation planning goals.

Compared to Portland and Minneapolis, the three Canadian cities lag behind. None of the three cities have developed a transportation management plan for their city or downtown. There are no high-level documents, indicating the importance of transportation management. Most cities still remain at a level of one-week event, such as the Commuter Challenge program. No survey has been conducted to demonstrate the influence of such event on changing people's travel behavior.

Parking is a critical factor that impacts people's transportation choice. Limiting parking and increasing employees' parking rate have resulted in a shift in behavior. One transportation planner in Portland pointed out, "parking spaces add nothing to the economic life of downtowns. They waste space. Cities are for the people to live, not for cars." Due to the concern of losing the competitive edge to suburban areas where parking is less expensive or free, cities like Edmonton and Minneapolis propose a balanced transportation system in their downtowns for all modes of transportation including

private automobiles. This reflects a self-contradiction in their parking policies. On one side, they encourage the use of public transportation, while the parking friendly environment in the Downtown is proposed or employee-parking garages on the periphery of the Downtown are constructed to transfer the long-term parking from the core. This approach goes against sustainable transportation principles that give no priority to automobiles. Ensuring sufficient short-term business/shopping parking is mentioned by a number of downtown (transportation) plans. However, it can be argued that if a transit system is well developed and a fare system is reasonable, the short-term business/shopping trips should also be encouraged to use transit.

Encouraging compact and mixed-use land development in downtowns has been discussed in all five cities' downtown plans or transportation plans. Edmonton and Minneapolis have not associated the relationship between land use and transportation in their downtown plans. Hamilton, Vancouver and Portland have emphasized the relationship between efficient transit-use and non-auto transportation patterns, and compact and mixed land use development. Vancouver and Portland have implemented land use and transportation planning strategies, successfully increasing use of public transportation, as discussed in the early section. Hamilton downtown is not as desirable as Vancouver's and Portland's downtown. In Vancouver and Portland, downtown transportation planning is guided by the downtown plans and comprehensive city plans in which downtown land use policies are included. Hamilton planned and managed its downtown's land use and transportation as one system and developed its downtown transportation plan and land use plan concurrently, ensuring that any decision on transportation reflect the future changes on land use, and vice versa. This experience can

be learned by cities like Winnipeg which have not developed transportation and land use plans for their downtowns.

Public participation principles have been applied in (transportation) planning processes in all five cites, though the involvement degrees and methods vary. Federal law in the United States imposes a responsibility to make transportation planning more democratic, but it does not regulate the detail of how the public participation process should be conducted. This situation has caused completely different levels of participation in Minneapolis and Portland. The latter goes to a much higher level. Hamilton is the only Canadian city discussed in this study, in which public participation in its downtown transportation planning is formally required by the Provincial Class Environment Assessment and Master Planning Approach. In Edmonton and Vancouver, public hearings are the only mandatory procedure that requires public involvement.

The methods of public involvement are also different in the five studied cities: (1) citizens invited as a part of steering committees, (2) consulting processes in the form of citizen advisory committees, public forums, and workshops, (3) scientific surveys through mail, email and fax systems, which indeed is another form of consultation, and (4) methods of informing the public through open houses, broadcast and newsletters. Though all interviewees claimed that they have attempted to reach the level of partnership with the public, three Canadian cities and Minneapolis still remain at the level of consultation. It was mentioned by all interviewees from these four cities that public participation is important. It will garner public and political support for an easy adoption of final plans. Lack of public support will potentially lead to refusals of the plans. The adoption failure of Winnipeg's TransPlan 2010 is such a case.

Compared to the other four cities studied, Portland is more successful in its commitment to broad public participation because of the government's long-range goal to "build a culture of participation" in Portland. It is believed that building such a culture helps foster the public's active participation in the transportation planning process, building partnership between the civic administration and the public, and ultimately changing their travel behaviors. A good example is the CAC reviewing process of technical and policy aspects of the CCTMP, and adding their recommendations in the final Plan through negotiation for reaching a consensus.

Public network building, an effective measure to recruit new players to the transportation planning process, is generally insufficient in all the five cities. The outcome of the survey conducted for this study reveals that the interviewees lack understanding of the significance of network building. By relying on the new technology such as email and fax systems, an extensive communication network could be built, as mentioned by a key contact with the City of Minneapolis. However, this will certainly exclude the population that does not own a computer or a fax machine or are incapable of handling new technologies. In addition, through email or fax, citizens could lose opportunities to talk with each other about transportation issues that are directly related to their life. Encouraging interaction among citizens allows the information to circulate among them, and provides the ability to convey their comments back to the planning team through public agencies. This public network paradigm allows more inclusive public participation to take place than the traditional one, which should be advocated in future transportation planning processes.

Chapter Five: Recommendations for Incorporating Sustainable Transportation and Public Participation Principles in Winnipeg Downtown Transportation Planning Processes

The previous chapter has broadly reviewed the downtown transportation planning processes as they exist in five North American cities: three in Canada, and two in the United States. The purpose of the review was to understand how other cities have incorporated sustainable transportation and public participation principles, seeking precedents for downtown Winnipeg future transportation planning practices. Though practices should never simply be imitated from one context to another, all five cities' existing practices are informative in the sense of successful experiences and weaknesses for developing a downtown transportation system that is more sustainable.

The review of practices across North American cities was important in revealing the applied strategies, explicitly or implicitly guided by sustainable transportation and public participation principles. Since 1972, Portland has developed the Downtown Plan, the Central City Plan, and local and regional transportation and management plans one after another. After a few decades of implementation, Portland is widely considered as a successful example of applying sustainable urban planning concept (Van Riper 2002).

Hamilton and Vancouver are leaders within the Canadian context for incorporating sustainable transportation and public participation principles in their transportation planning processes. The downtown transportation plans recently developed in these two cities indicate that the transportation systems they intend to advance are to be sustainable, and the strategies that emerged are systematic and consistent with their goals. However, whether their planning goals can be achieved still

remains to be tested on the criteria of sustainable transportation or indicators developed by these cities.

Minneapolis and Edmonton have some apparent weaknesses in their downtown transportation planning activities. These are reflected in the self-contradiction existing between their transportation planning goals and some corresponding policies. The City of Minneapolis' efforts on transportation management have made up for this weakness to some extent through incentives to encourage the use of public transportation.

The public has been involved in transportation planning processes in all the studied cities. Public consultation through a variety of methods is the level that most of these cities have accomplished. According to Arnstein (1969:217), public consultation is at the level of "tokenism" in public participation rather than genuine participation. Weaknesses resulting from it are apparent, as discussed in sections 2.4.2, 3.3.1, 4.1.4, 4.2.4, 4.3.4 and 4.4.4. For public consultation in transportation planning processes, the number of people involved in the process is limited. Without broader public support and corresponding action, achieving transportation sustainability is an empty fantasy. Portland's long-term planning effort on "building a culture of participation" has helped to recruit new players to transportation planning processes, and has gone a step further than the other studied cities.

What Winnipeg may learn from local transportation planning experiences and precedents from elsewhere--becoming more reflective regarding sustainable transportation and public participatory planning theory--can be synthesized into four categories:

- Proposing a downtown transportation plan following principles of transportation sustainability.

- Incorporating sustainable transportation planning with land use planning.
- Adopting a transportation management strategy.
- Promoting a participation culture and encouraging broad public participation in downtown transportation planning though network building.

Each of these will be addressed in the following four sections.

5.1 Proposing A Downtown Transportation Plan Following Principles of Transportation Sustainability

Sustainable transportation is a broad concept. The definition applicable to this study focuses on environmental protection, natural resource conservation, safety and accessibility requiring a transportation system that least relies on automobiles while other transportation modes are enhanced. Among all modes of options for travel, walking and biking rank the highest on the sustainable scale, being nonpolluting, non-fossil-fuel burning and least-land consuming; public transportation ranks the second highest (Ewing 1993:12). Therefore, in developing a downtown transportation plan, transportation policies should lean to developing rights-of-way for walking, cycling, and public transit. Investments in transportation infrastructure should shift from roads, bridges, and parking garage construction to building transit corridors, exclusive bus lanes, bicycle lanes, installing bicycle racks and improvements to the pedestrian environment through urban design strategies, such as widening curbsides, weather-protected walkways, adding trees and public art.

The five cities in this study had diverse approaches to developing transportation systems that address sustainability concerns. Among them, Portland provides the best example on how it has applied sustainable transportation planning theory into its activities. "Creation of a pleasurable human environment" to attract residents and

business investment was the strategy that the Portland government used to revitalize its downtown (City of Portland 2002: 3). Three elements were identified as the key to achieve this goal. Two of them were directly associated with transportation, including pedestrian amenities and good access through the management of parking resources and greater reliance on public transportation. The other one was related to land use planning (See section 4.5.2).

Winnipeg's current downtown transportation system features a one-way street system coupled with an abundance of inexpensive parking. This system favours automobile traffic with less consideration given to other modes of transportation.

CentrePlan, initiated by the City of Winnipeg in 1995, and adopted in 1998 advocates for a pedestrian-friendly environment in downtown. Sustainable transportation principles are clearly stated in the transportation-related section "Ensuring Accessibility". Pedestrian movement and linkage are given highest priority. Public transit is intended to develop as the primary mover of people into and out of Downtown. However, in the following section of "Transportation Planning", no corresponding strategies are proposed in response to these major transportation objectives. Another weakness of CentrePlan is that the transportation system is not dealt with systematically. For example, one of the key downtown transportation components, long-term employee parking, which is deemed as a key to a successful transportation system by many transportation professionals, is not addressed in CentrePlan. Instead, emphasis on short-term parking for business/shopping trips reflects the City of Winnipeg's primary focus on economic revitalization in the Downtown than promotion of a more sustainable transportation system.

The sustainability theme pervades the recently developed Plan Winnipeg 2020 Vision, including its transportation section. However, as a policy-level document, it provides a philosophy of the whole city's development. It doesn't have the level of detail to discuss each downtown transportation component to guide downtown Winnipeg's transportation decision-making.

Given these inconsistencies, it is highly recommended that Winnipeg develop a systematic downtown transportation plan following sustainable transportation principles. Sub-plans for each transportation component (road network, transit, pedestrian, bicycle, goods movement and parking) should be developed and kept consistent. It is also possible that by updating CentrePlan, the transportation section could be enhanced and systematized.

It is further suggested that a steering committee, chaired by the Mayor (or a City councilor) to direct Winnipeg's downtown transportation planning process be created. The steering committee should also include multi-disciplinary city staff from multiple departments as resources, and representatives of downtown stakeholders and residents.

It is important that civic leaders be directly involved in the downtown transportation planning process. The commitment to a more sustainable transportation system in Downtown is one reflection of how civic leaders can promote the city's center. With municipal government leadership and endorsement, and with a plan in place, funding for implementing the downtown transportation plan could be sought.

Involving multi-disciplinary city staff from Planning Property and Development (PP&D), Public Works and the Transit Department on the steering committee is crucial to produce a sustainable downtown transportation plan, but only if such staff believe and

support the sustainable concept. One of the notable differences between the five cities' (downtown) transportation planning processes and Winnipeg's TransPlan 2010 process was the role, structure and composition of the steering committees. Committees which directed the transportation planning processes in the five cities were either comprised of city staff representing various disciplines including land use and transportation planners, traffic engineers (as in Hamilton, Vancouver and Portland), or representatives from both civic administrations and non-civic administrations (as in Edmonton and Minneapolis). The development process of Winnipeg's TransPlan 2010 was directed by a steering committee consisting of five long-time residents of the City of Winnipeg. Though a professional consultation team was available, no leading transportation planning concepts, such as sustainable transportation, land use/ transportation relationship, transportation management or consensus decision-making, were systematically introduced and applied to Winnipeg's long-range transportation plan. As affirmed by a key participant, this has partly resulted in the failure to endorse politically and adopt TransPlan 2010. As such, the Plan sits as a testament to the expenditure of significant funds, time and energy with no immediate contribution to long-range planning for the community.

Inviting downtown stakeholders to sit on the steering committee is also suggested. Their participation helps in building the concept of community ownership and in seeking eventual financial support for implementing the downtown transportation plan. According to key informants, CentrePlan was intended to be a downtown-community plan rather than a secondary plan to Plan Winnipeg. "It would not be sufficient to articulate the city's role and to commit the city's resources towards various initiatives,

because the city was only one of many stakeholders in the downtown" (Fielding & Couture 1998:35). To strengthen this concept of community ownership, participating groups were asked to not only talk about their views of the downtown but commit their organizations to take action and responsibility. In the end, six different groups helped fund the CentrePlan process.

Securing adequate financial resources is a basic requirement to implement a sustainable transportation plan. As emphasized by several key informants, government endorsement of sustainable transportation plans is crucial for financial support. Appendix H provides examples of how other cities fund sustainable transportation. This requires decision-makers' direct involvement, such as the case in the Portland's Central City Transportation Management Plan process, or being well informed throughout a process, like the Transportation Master Plan process in Hamilton. The lack of provincial and local government's endorsement is one of the reasons why Winnipeg TransPlan 2010 is not generally deemed as a successful study. Establishment of a public/private partnership is especially important when government funding is insufficient. One example of such partnership is the downtown free bus service and the low fare program outside the free zone in Seattle which have been jointly funded by the City of Seattle and the local merchants' association (Steiner 1978:60).

In summary, the ideal process for developing and implementing a more sustainable transportation plan in Winnipeg's downtown should include the following elements:

- Analyze the downtown's transportation base condition (street system, mode split, parking, etc.);
- Examine transportation impacts on downtown economic development;
- Propose a more sustainable downtown transportation plan;

- Secure political will;
- Involve multidisciplinary city staff and representatives of downtown stakeholders and residents in the planning process; and
- Execute the plan over time.

5.2 Incorporating Sustainable Transportation Planning with Land Use Planning

Winnipeg should learn that sustainable transportation planning must be complemented by land use planning. "The land use-transportation system is just that--a system--but it is seldom planned or managed as such" (Ewing 1993:10). Along with understanding the land use/transportation equilibrium relationship, the condition of isolation between transportation and land use planning has been mitigated in Portland, Vancouver and Hamilton. They have incorporated transportation planning with their land use planning. Compared to these three cities, links between land use planning and transportation planning in Edmonton and Minneapolis are relatively weak.

Portland and Vancouver have implemented land use planning strategies in their downtowns. These strategies have successfully achieved the objective of trip reduction, attracting residents and business investment. Hamilton's approach (See section 4.1.2) to developing their downtown transportation plan concurrently with its land use plan is generally directed by sustainable development principles to ensure that they are compatible. This approach is different from Roseland's theory (1998:127) which suggested that land use planning should guide transportation planning and transportation should be designed to accommodate and support planned growth. His theory tends to follow the traditional demand-led transportation planning rationale rather than sustainable transportation principles which require denser and mixed land use to halt the growth in auto-based development.

Currently, there is a notable weakness in Winnipeg's planning structure. As commented on by a key informant as follows:

> One of things that we don't do very well in Winnipeg is that the skills from various City departments are not integrated. Transportation engineers, transit planners and land use planners are all from different departments. They don't talk very much to one another. Transportation decisions that are made by transportation engineers are in the transportation department. When you look at one-way street system, it's the transportation engineers looking at the traffic flow, and centrally that is it. What we don't have is a sophisticated land use--transportation plan that would explain why we would want to do this. My preference is to have land use and transportation planned together.

It is apparent that the problem identified by this situation results from the isolation between land use and transportation planning. This problem and the subsequent shortfalls have been increasingly realized by the civic administration. Integrating land use, urban design and transportation planning has been called for in the City's highest-level policy document. The Plan Winnipeg 2020 Vision document clearly states that the city shall encourage mixed-use development to minimize travel distances for basic needs; ensure that all residential development supports the provision of efficient, attractive, and cost-effective transit service through appropriate design considerations, and integrate the needs of pedestrians and cyclists into the planning and design of urban transportation facilities for both work trip and recreational use (City of Winnipeg 2001:31). These concepts are reflected in the "Downtown and Neighborhoods" section by policies of promoting downtown working, living and commercial/retail development. Plan Winnipeg 2020 Vision is a citywide document, so it is also applicable to the downtown area.

More recently, Winnipeg City Council approved the implementation of a new Integrated Planning Model for the City. The report, entitled "Towards an Integrated

Planning Model—Final Draft", indicates that if integrated planning is the goal, then land use planning and transportation planning need to be better coordinated (City of Winnipeg 2002: 20). As a result, it is recommended that capacity for long-range transportation planning be built within Planning Property & Development Department (PP&D) by providing funding for a long-range transportation planner to help coordinate city wide transportation policy, ensuring integration with land use policy (City of Winnipeg 2002:20). Although hiring a transportation planner in PP&D to facilitate coordination with Public Works and Winnipeg Transit where transportation and transit system planning are undertaken is not yet a genuine collaboration between these city departments, the City government appears to have made the first step to reverse the situation of isolation between land use and transportation planning.

The current downtown Winnipeg's transportation system is very similar to that of Hamilton (See section 4.1.1). There are 32,000 parking stalls in downtown Winnipeg. Among them, 13,914 stalls are located in surface parking lots which cover 120 acres, accounting for 15.4% of the total downtown area. The large amount of surface parking contributes to the fragmented downtown scene. In addition, the one-way street system favours automobile traffic with less consideration given to pedestrians, cyclists and transit users. These factors in combination can have adverse effects on the attractiveness of the downtown as a destination.

Encouraging working, living and shopping in the same area will greatly reduce the reliance on vehicles and the pressure on transportation facilities, particularly during rush hours. People can walk and cycle to their destination. Moreover, increasing the population living in downtown will help downtown retail prosper, while changing

downtown's image as a deserted "ghost town" after business hours. Research undertaken recently for retail development policy recommendations for Plan Winnipeg reveals that city downtowns in such places as Vancouver and Edmonton, have experienced significant retail and service development in their downtown by increasing central area residential populations and/or increasing downtown employment, and vice versa (Coriolis Consulting Corp 2000: 7). Portland is another such a case. This strategy has helped these cities cast off their previous image of decline by becoming a desirable downtown. Therefore, to create an attractive and vibrant downtown, the City government needs to develop its downtown's transportation plan incorporating the development of the downtown's land use plan, ensuring zoning by-laws and administrative procedures support the concept of mixed land use and compact urban form, as directed by Plan Winnipeg 2020 Vision. As well, the City should also initiate incentive policies to encourage new investment in housing and commercial development.

It is highly recommended that the development of downtown Winnipeg's land use and transportation plans follow the City of Hamilton's approach (See section 4.1.2). The New Land Use Plan for Downtown Hamilton and Downtown Transportation Master Plan were developed simultaneously and fully integrated. This approach ensures that any decision on transportation reflects future changes on land use and vice versa.

5.3 Adopting A Transportation Management Strategy

Winnipeg should also learn how to adopt a transportation management strategy. Among the five cities considered in the preceding chapter, Portland and Minneapolis are the two that have developed transportation management plans/programs for their cities,

and have been realizing the goals stated in their transportation plans. When a downtown's physical transportation system is improved, the city government may need to develop incentives to encourage people to support more sustainable transportation patterns rather than continuing to only use the private automobile. As stated in the Portland's Transportation Demand Management and Parking Plan section in Transportation System Plan:

> Portland has long believed that it is not possible to eliminate congestion by building more roads, ... Transportation demand management (TDM) holds the most promise for reducing congestion and creating communities that are not dominated by the automobiles (City of Portland 2002:5-1).

TDM benefits and effectiveness are significant. Parking strategies of Portland's Central City Transportation Management Plan that has been applied in their Lloyd District (See section 4.5.3) has resulted in a noticeable reduction in the number of automobile trips and vehicle miles traveled (VMT). Figures for auto trip reduction and VMT for the whole Portland Metropolitan Area are also considerable. According to a key informant with the Metro Regional Services, mode shifts from 1994 to 2000 include over 36,000 weekday auto trip reductions and 268,000 daily VMT reductions.

Transportation system management (TSM) and transportation demand management (TDM) are not new terms in Winnipeg. TSM strategies were discussed in Plan Winnipeg--Transportation Component in 1980 while the concept of TDM was mentioned in Winnipeg's TransPlan 2010 in 1998. However, transportation management strategies have never been well applied in Winnipeg (downtown) transportation plans, and the author could find no evidence of them being put forward. The main reason for this appears to be that transportation management has not gained enough attention by the

civic administration. As affirmed by informants with the City of Winnipeg, only some transportation professionals are aware of these terms and their relevance to transportation planning.

Without a deep understanding and appreciation of the significance of transportation management, its strategies cannot be well applied. As illustrated in Edmonton's case, the understanding of transportation management is relatively weak in Edmonton compared to the other cites that have been reviewed. This is reflected in the general parking policy which is geared to "Promote Downtown Parking." At the same time, the City government is focused on promoting a 'Transit First" policy. Winnipeg has a similar situation. A parking study conducted by the Downtown Winnipeg Business Improvement Zone in 1999 indicated that the goal was to make downtown parking more accessible and affordable, which does not conform to sustainable transportation principles.

Parking in downtown Vancouver is not free! To encourage the use of public transit in Vancouver during the off-rush hours, bus fares are reduced on weekends and off-rush hours on weekdays and holidays. The approach in Winnipeg downtown is different; it offers two-hour free parking on Saturdays and all-day free on Sundays and holidays. In addition, Winnipeg's bus fare system has notable drawbacks: one bus fare fits all areas and all time periods, and a short valid transfer time period (valid for 60 minutes) is applied. If transit is not cheaper, less time-consuming and as convenient a mode of travel as the door-to-door capability of private cars, it can hardly attract more transit users.

Therefore, it is recommended that PP&D, Public Works and the Transit Department collaboratively develop a comprehensive transportation management plan for downtown Winnipeg. This plan should include components of parking restrictions, rates for different users such as vanpooling drivers, detailed strategies to promote transit use, carpooling/vanpooling, and the establishment of a transportation management association. Guidance on this can be found in Appendix C and the City of Portland's Central City Transportation Management Plan (See section 4.5.3).

It is also suggested that Resource Conservation Manitoba, the organizer of the Winnipeg Commuter Challenge project, play an active role in public education on promoting the use of more sustainable modes of transportation through creating innovative projects, such as Go Green Choices, Bike Month, Off Ramp, and Street Reclaiming projects initiated by the Better Environmentally Sound Transportation (BEST) in Vancouver (See section 4.2.5). Recognizing the climatic issue in Winnipeg may require some innovative programming by the organizer.

5.4 Promoting A Participation Culture and Encouraging Broad Public Participation through Network Building

Promoting a participation culture and encouraging broad public participation through network building are important. Public participation in Winnipeg is not new. Fielding and Couture (1998) describe a number of Winnipeg planning processes involving the public and conclude that lessons can be learned for future planning practices not only in Winnipeg but also in other cities. As for public participation in Winnipeg's transportation planning processes, the development of Winnipeg TransPlan 2010 is "unique in its community involvement component" (City of Winnipeg 1998; 15).

However, as affirmed by a key informant, one of the main reasons that the document failed to be adopted was because the ideas documented in the final report did not reflect the public's voice, nor the discussion that had been put forward at various stakeholder meetings. Thus it did not gain the public's support. Other informants also commented that the public lacked the ability to be engaged and actively involved in such a complicated transportation planning process.

Therefore, it is suggested that future downtown transportation planning practices in Winnipeg aim at promoting a culture of participation similar to that undertaken successfully in Portland (See section 4.5.4). Rather than expecting adequate and representative public input on transportation issues from a one-day event, planners should meet regularly with different interest groups and other citizens to identify local values and needs so they have a better understanding of current and potential transportation issues facing the community. At the same time planners can educate and inform the public about various issues. Public participation is vital for this sort of planning to succeed. This will not take place overnight. In Portland, a 25-year effort to promote a culture of participation provides the best example for other cities. "Easily understandable information about the planning process must be constantly provided so that the general public can participate effectively" (Van Riper 2002: 2).

A common tool for promoting a culture of participation is the establishment of a Citizen Advisory Committee (CAC). A CAC will serve the purpose, not only for the public involvement in transportation planning, but also in economic development, environmental, and social concerns. Downtown Winnipeg has a resident population of 14,000 and more than 60,000 employees. Downtown transportation decisions directly

affect their daily life. It is suggested that the downtown Winnipeg's CAC mix resident representatives, business representatives, and advocates for particular transportation modes (walking, cycling and transit). A CAC sitting on the steering committee is important to ensure its voice to be heard and reflected in final downtown transportation decisions.

It is further recommended that the public be involved throughout the planning process. The one-way/two-way conversion example in the development of the Vancouver Downtown Transportation Plan indicates that early public involvement to identify issues will help the public understand the final planning recommendations and turn into action. Portland's experience on the CAC's reviewing process of the draft Central City Transportation Management Plan illustrates that public participation throughout the whole process helps build the sense of ownership for the final product. As such, the plan can be easily adopted and implemented with the public's understanding and support.

Finally, it is recommended that public networks be built in order to recruit new players in future downtown transportation planning processes in Winnipeg. Achieving a more sustainable downtown transportation plan needs everyone's understanding and action. Public network building should also be coupled with the establishment of a long-term participation culture as recommended earlier. As illustrated by Vancouver's experience, just fifteen percent of downtown transportation system users were aware of the Downtown Transportation Plan (DTP) and of them, only three percent were familiar with it. Indeed, people familiar with the DPT were the ones directly involved in the

process. Without public network building, most of the population will not be able to know what is taking place in the city or downtown.

Transportation Management Associations (TMAs, defined in section 4.5.3) are one format of public network building. They are commonly and successfully used in the United States where there are more than 100 TMAs among many metropolitan. For example, in the Portland metropolitan area, 104 employers representing 47,000 employees are now involved with a TMA. Its aim is to involve property owners and employers who represent more tenants and employees, directly involved in transportation management programs. The Cambie Corridor Consortium (CCC) in Vancouver was the first transportation management association established in Canada. Approximately 25,000 employees are now represented through CCC's 21 members. These figures demonstrate the effectiveness of TMAs in terms of public network building. It is recommended that the Downtown Winnipeg Business Improvement Zone sponsor the creation of a Downtown TMA. In addition, the establishment of a downtown CAC and sub-CACs can be regarded as another format of public network building. Through this hierarchical organizational structure, broader public can be directly or indirectly involved in transportation planning processes.

5.5 Conclusion

The purpose of this research was to propose a set of recommendations for incorporating sustainable transportation and participatory planning principles into transportation planning processes within the downtown Winnipeg context. Table 2 illustrates the next step(s) associated with each recommendation (See details in sections 5.1, 5.2, 5.3, and 5.4) and agencies which should take responsibility for the

implementation of these steps. At the end of this document, it is worth reviewing the initial research questions to determine if they were answered and therefore identify where further research is required.

Table 2: Recommendations, Next Step(s) & Responsibility

Recommendations	Next Step(s)	Responsibility
Proposing a downtown transportation plan following principles of transportation sustainability	• Developing a downtown transportation plan	• City Council, Planning Property & Development (PP&D), Public Works and Transit Department
Incorporating sustainable transportation planning with land use planning	• Developing a downtown land use plan	• City Council, PP&D, Public Works and Transit Department
Adopting transportation management strategies	• Developing a downtown transportation management plan	• PP&D, Public Works and Transit Department
	• Initiating more public educational projects	• Resource Conservation Manitoba (RCM)
Promoting a participation culture and encouraging broad public participation in downtown transportation planning though network building	• Establishing a downtown Citizen Advisory Committee (CAC) and sub-CACs	• PP&D Department to help in establishing a downtown CAC and sub-CACs.
	• Establishing a downtown Transportation Management Association (TMA)	• Downtown Winnipeg Business Improvement Zone to sponsor the creation of a downtown TMA.

The first question regarding the way for incorporating public participation into sustainable transportation decision-making processes, and the extent that the public should be involved in this, were addressed theoretically in Chapter Two. Drawing on past and present planning theories, it was concluded that the way towards economically

and socially efficient transportation--that will protect and enhance the environment as well as meet demanding conditions for sustainable development--calls for a more holistic approach to transportation polices, urban planning and transportation management. Most importantly, to achieve the goal of sustainable transportation requires changing behavior. Public participation has been identified as crucial to better transportation planning processes for enhancing awareness of sustainable transportation and getting meaningful insights from the public as well. The more knowledgeable we all are about the necessity of sustainable transportation, the more feasible the goal of sustainable transportation. As such, the concept of public network building will greatly help to involve the broader public into a transportation planning process.

The second and third questions were concerned with the way that current transportation planning processes have been conducted, and the application of sustainable transportation and public participatory planning principles in these processes. An investigation into the downtown transportation planning practices in Winnipeg, and five other North American cities helped the author and future readers understand current downtown transportation planning processes, and the application of the two proposed principles in these practices. The findings illustrate that Winnipeg and all five cities reviewed have applied these two principles to some extent. Among them, Portland shows the most advanced practice incorporating these principles, and has become an exemplar for other cities' downtown transportation planning.

The fourth question addressed the lessons inherent in Winnipeg's transportation practices and precedents from five other cities. Chapter Three reviewed previous transportation practices, and in particular, downtown transportation planning in

Winnipeg. Explored were Winnipeg's current strengths and weaknesses, and its potential for advancing a more sustainable transportation system in downtown. Furthermore, downtown transportation planning practices in five other cites were discussed in Chapter Four. Based on the comparisons drawn among these practices, as well as the identified transportation culture in Winnipeg, a general direction for a move to sustainable transportation planning in downtown Winnipeg was provided in Chapter Five.

Chapter Five provides four broad recommendations for implementation in the Winnipeg downtown context. However, by no means does the present study provide a detailed direction for proceeding. There is much room for further research. For example, two case studies of Vancouver and Portland indicate that downtown populations have increased, and retail and employment have experienced significant development through an integrated land use/transportation/revitalization set of approaches. Detailed studies, qualitative as well as quantitative are required to determine the strength of this relationship. In addition, the survey conducted in the present study was directed to levels of civic administration. Investigation of non-civic-administration participants' feelings about their involvement in transportation planning processes would be meaningful to support future improvements in such processes.

Although there are more detailed studies that need to be conducted, broad recommendations for advancing a downtown transportation system moving towards sustainability has been developed in the present study. The author is optimistic that local experiences in incorporating sustainable transportation and public participatory planning principles into transportation planning processes show that Winnipeg has the potential to develop further initiatives moving towards a more sustainable transportation system in

downtown. A major concern still exists. Due to the City of Winnipeg's primary focus on economic development, promoting a more sustainable transportation system in downtown Winnipeg may not be given sufficient attention. Achieving more sustainable transportation is a complex journey. It will largely rely on political will, corresponding transportation and urban planning, and transportation management. Public involvement in transportation planning is of equal importance. This involves raising awareness of transportation issues, providing meaningful input in final decisions as well as encouraging individuals to take action to adopt more sustainable patterns of transportation.

Appendix A: Interview Outline for Key Informants in Five North American Cities

General Existing Practices

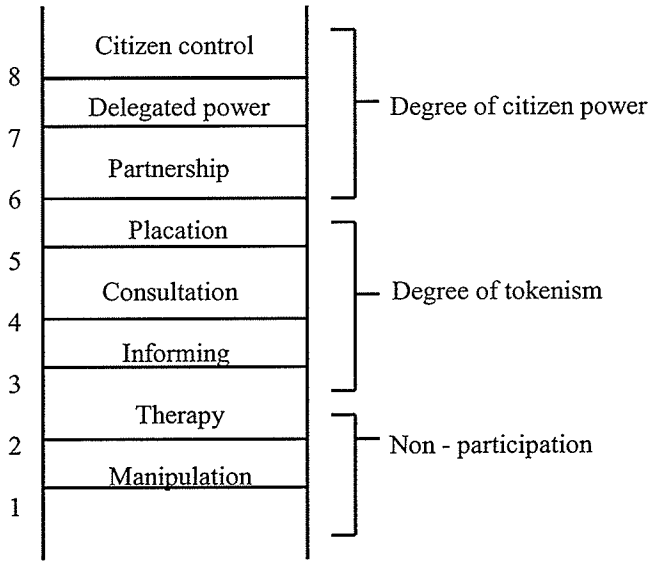
- Does your city have a comprehensive plan guiding your (downtown) transportation planning? If yes, please explain what principles guide your (downtown) transportation planning?
- Does your (downtown) transportation plan involve a separate (policy or guidelines) document, or it is a part of another set of documents?
- How have your (downtown) transportation planning processes been conducted? What steps have been involved?
- Who is involved in your (downtown) transportation planning processes, and how is it determined who is involved? What role(s) do those involved play?
- What is your local government's role in the process? provincial government's role?

Sustainable Transportation

- Is the term "sustainable development" or "sustainable transportation" explicitly applied in your (downtown) transportation plan?
- How would you define sustainable transportation (sustainable in terms of environmental issues? social issues? economic issues?)?
- Are sustainable transportation principles influential in your (downtown) transportation plan? How influential are these principles?
- What comprehensive measures (i.e. transportation and land use planning, and transportation management) have been taken to promote a (downtown) transportation system which is sustainable?
- Do your (downtown) transportation decisions (i.e. street system conversion, and parking policy) conform to sustainable transportation principles? If yes, please provide examples.

Public Participation

- Is public participation formally required through existing policies or other formal structures? If yes, please explain.
- How are people given the opportunity to take part? What methods have been used? Are any steps taken to ensure equal opportunities for participation for all people will be influenced by transportation decisions?
- Has the broader public been involved (either directly or indirectly) in your (downtown) transportation planning processes? If yes, please explain. According to Roger Harts' Ladder of Citizen Participation, to what degree have the public been involved?



Eight Rungs on a Ladder of Citizen Participation (Arnstein 1969:217)

- Have there been any conflicts among different sectors involved? How have these conflicts been resolved? What measures have been undertaken?
- How are your final decisions made? Are members of the public directly involved in the making of final decisions? How influential do you think public participation has been in final decisions that have made?
- What lessons would you offer for others who are interested in setting up a sustainable downtown transportation plan that involves public participation?
- Are there any other issues that you would like to raise?

Appendix B: Integration Questions and Associated Key Indicators

(European Environment Agency 2000)

Integration Question	Key Indicator
1. Is the environmental performance of the transport sector improving?	Emissions from transport
2. Are we getting better at managing transport demand and improving the modal split?	Passenger and freight transport demand
3. Are spatial planning and transport planning becoming better coordinated so as to match transport demand to the needs of access?	Average journey lengths by purpose
4. Are we improving the use of existing transport infrastructure capacity and moving towards a better-balanced intermodal transport system?	Investments in transport infrastructure in billion
5. Are we moving towards a fairer and more efficient pricing system, which ensures that external costs are recovered?	Real changes in the price of transport
6. How rapidly are improved technologies being passenger Implemented and how efficiently are vehicles being used?	Energy intensity of and freight transport
7. How effectively are environmental management solutions and monitoring tools being used to support policy and decision-making?	Public opinion regarding to transport problems

Appendix C: TDM Strategies

These strategies are divided into major categories according to how they impact travel. (Victoria Transport Policy Institute 2002: Internet www page at URL: http://www.vtpi.org/tdm/)

Improved Transport Options

Address Security Concerns	Improving personal safety for walking, cycling, transit and urban infill.
Alternative Work Schedules	Flextime, Compressed Work Week (CWW), and staggered shifts used to reduce peak-period vehicle traffic.
Cycling Improvements	Ways to improve bicycle transport.
Bike/Transit Integration	Ways to integrate bicycle and public transit to improve mobility.
Carsharing	Vehicle rental services intended to substitute for private vehicle ownership.
Flextime	Allowing employees flexibility in their daily work schedules to avoid peak-period traffic.
Guaranteed Ride Home	Programs that provide an occasional subsidized ride home to commuters who use alternative modes.
Individual Actions for Efficient Transport	Actions that individuals can take to travel more efficiently and support TDM in their community.
Nonmotorized Planning	Planning for walking, cycling, and small-wheeled transport.
Nonmotorized Facility Management	This chapter describes best practices for managing and maintaining nonmotorized facilities such as walkways, sidewalks and paths.
Park & Ride	Programs to provide convenient parking at transit and rideshare stations.
Pedestrian Improvements	Ways to improve walking conditions.
Ridesharing	Ways to support and encourage carpooling and vanpooling.
Shuttle Services	Shuttle buses, jitneys and free transit zones.
Small Wheeled Transport	Accommodating roller skates, push scooters, handcarts and utility wagons for transportation.
Taxi Service Improvements	Ways to improve taxi services.
Telework (Telecommuting, Distance-Learning, Tele-shopping, etc.)	Ways to encourage use of telecommunications as a substitute for physical travel.
Traffic Calming	Roadway design features that reduce vehicle traffic speeds and volumes.
Transit Improvements	Ways to improve and promote public transit.
Universal Design (Barrier Free Transport Planning)	Transportation systems that accommodate all users, including people with disabilities and other special needs

Incentives To Use Alternative Modes and Reduce Driving

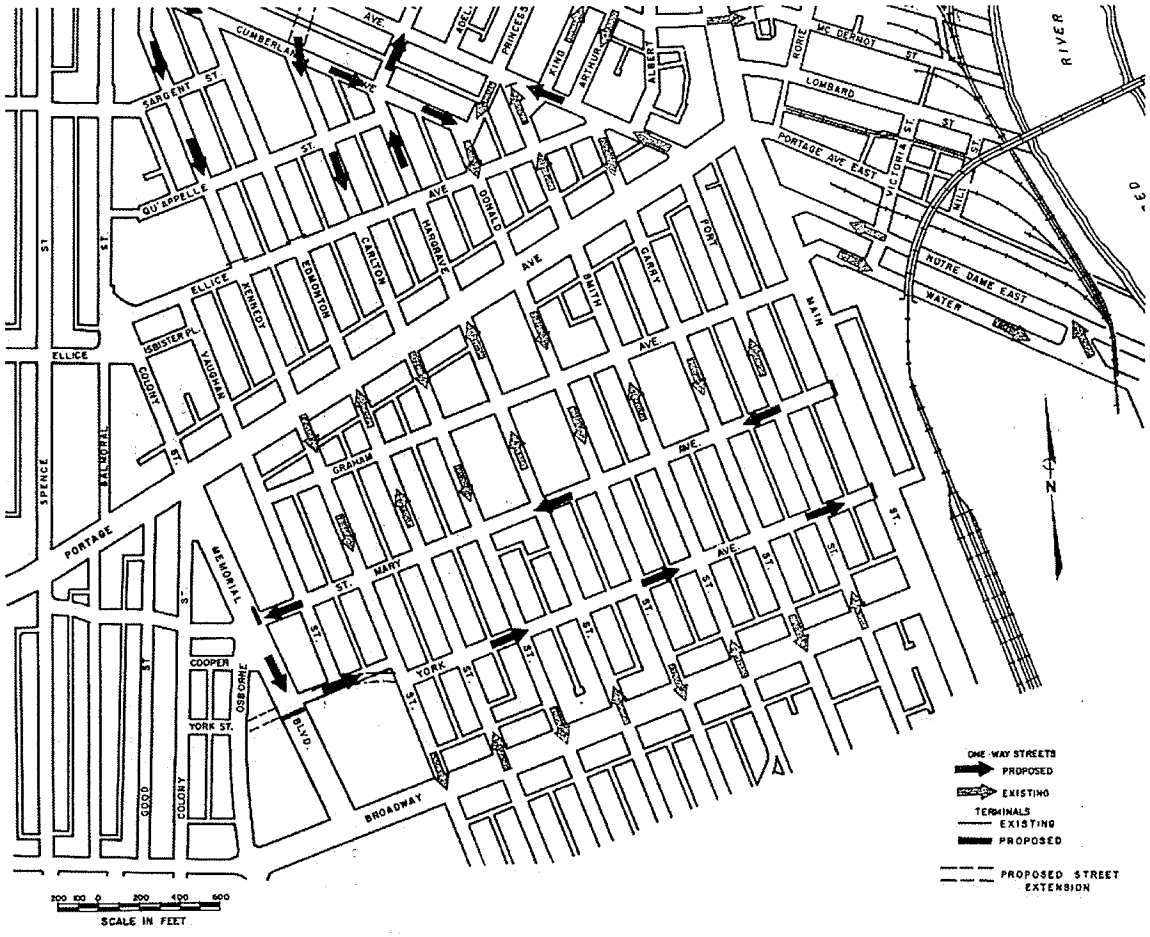
Walking And Cycling Encouragement	Programs and activities that encourage nonmotorized transportation.
Commuter Financial Incentives	Parking cash out, travel allowance, transit and rideshare

	benefits.
Congestion Pricing	Road pricing used to reduce peak-period vehicle trips.
Distance-Based Pricing	Charging insurance, road use fees, emission charges and taxes based on a vehicle's mileage.
Fuel Taxes	Increasing fuel taxes to fund roads, encourage energy conservation, and reduce travel demand.
HOV (High Occupant Vehicle) Priority	Strategies that give transit and rideshare vehicles priority over other traffic.
Parking Pricing	Charging motorists directly for parking.
Pay-As-You-Drive Vehicle Insurance	Converting vehicle insurance premiums into distance-based charges.
Road Pricing	Congestion pricing, value pricing, road tolls and HOT lanes
Speed Reductions	Strategies to reduce traffic speeds.
Street Reclaiming	Encouraging community interaction on neighborhood streets.
Vehicle Use Restrictions	Regulatory strategies to limit automobile travel at a particular time and place.

Parking and Land Use Management

Bicycle Parking	Selection and location of bicycle racks, bicycle lockers and changing facilities.
Car-Free Districts and Pedestrianized Streets	Designing special areas and times for minimal automobile use.
Clustered Land Use	Locating common destinations close together.
Location Efficient Development	Development that maximizes multi-modal accessibility.
New Urbanism	Accessible, livable community design.
Parking Management	Strategies for more efficient use of parking.
Parking Solutions	A comprehensive menu of solutions to parking problems.
Parking Evaluation	Factors to consider when evaluating parking problems and solutions.
Shared Parking	Sharing parking facilities among multiple users.
Smart Growth	Land use practices to create more resource efficient and livable communities
Smart Growth Planning and Policy Reforms	Planning, regulatory and fiscal reforms that encourage Smart Growth.
Transit Oriented Development (TOD)	Multi-modal and livable communities based around transit stations.

Appendix D: Existing & Proposed One – Way Streets Map in The Central Business District, Winnipeg (Smith 1956: 50)



Appendix E: Summary of Winnipeg Transportation Planning Practices (1950's- 1990's)

	Smith Report (1957)	WATS (1968)
Plan Objectives & Downtown Transportation	• Much attention was paid to transportation infrastructure construction and improvement to accommodate development in suburban communities and increasing use of private automobiles; • A comprehensive traffic and highway plan was recommended; • Transit improvement was promoted; • Completion of one-way street system in downtown; • Meet parking demands.	• The first comprehensive transportation plan in Winnipeg • The objective was to develop an efficient rational transportation system that would meet development requirements of the metropolitan area; • Land use/transportation interrelationship was clearly stated in WATS, but not reflected in final recommendations; • The thoroughfare system in downtown was proposed.
Commitment to Public Participation	• No public participation component; • The public was the research object.	• No public participation component; • The public was the research object.

Appendix E: Summary of Winnipeg Transportation Planning Practices (1950's- 1990's) (Cont'd)

	Plan Winnipeg—Transportation Component (1980)	TransPlan 2010 (1998)
Influence of Sustainable Transportation Principles & Downtown Transportation	• Contexturually framed by the first version of Plan Winnipeg; • Incorporating environmental and energy constraints into transportation planning process; • Promoting the use of public transit for trips, especially for the trips between downtown and suburbs; • New initiatives, e.g. transit corridors; • A transit-oriented Transportation, combined with the Containment land use option was adopted; • Emerging concept of TSM; • Downtown pedestrian circulation systems and parking limitations were recommended.	• To meet the constantly changing of transportation needs; • The concept of Sustainable Development was mentioned: • It was realized that an environmentally-responsible transportation plan was essential; • To support long-term minimization of automobile dependence and new infrastructure requirement by encouraging compact and mixed urban form; but not practiced; • Emerging concept of TDM; • Encouraging pedestrian activities in downtown, establishing new business and creating new residential areas, and a shuttle-bus service were recommended.
Commitment to Public Participation	• Public consultation concept was brought into the process.	• Community involvement—a unique component in the TransPlan 2010 process.

Appendix E: Summary of Winnipeg Transportation Planning Practices (1950's- 1990's) (Cont'd)

	CentrePlan (1998)	Plan Winnipeg 2020 Vision (2001)
Influence of Sustainable Transportation Principles & Downtown Transportation	• Developed with a goal of "building a healthy, safe and sustainable downtown"; • The notion of sustainable transportation is reflected in the section "Ensuring Accessibility"; and • Right-of-way for all alternatives for general access to downtown has been taken into account; • Weaknesses of CentrePlan, e.g. downtown transportation were not dealt with systematically.	• Transportation study is integrated into the section "planned development, transportation and infrastructure"; • Measurement and Indicators Program; • Compact and mixed land use policy; • Rights-of-way policy; • Transit improvement; • "Putting downtown first" policy; • The application of TDM strategies in downtown transportation planning.
Commitment to Public Participation	• It is deemed successful in terms of its community involvement process; • It was aimed to develop as a downtown-community plan rather than a secondary plan to Plan Winnipeg; • Broad stakeholders involvement and commitment to the implementation of CentrePlan.	• A commitment to public participation was made by City Council throughout the review process; • A number of participation methods were employed; • The notion of consensus decision-making was applied.

Appendix F: Study Guiding Principles - Hamilton Downtown Transportation Master Plan (City of Hamilton 2001:ES.2)

Study Guiding Principles

i) Support a diverse mix of land uses and built form, and ensure that development can be supported by the transportation system and by appropriate land use and parking controls.

ii) Strengthen links between the core and the harbour.

iii) Provide short-term business-oriented parking spaces and discourage long-term parking , and provide public parking in strategically located structures or lots.

iv) Reduce the number of off-street parking lots and replace them with buildings, parkettes, and/or landscaping features.

v) Maintain and improve local access and circulation for all modes of transportation in the core area by diverting through vehicular and truck traffic around the core area, and by implementing traffic calming measures, where appropriate.

vi) Ensure adequate truck access to local businesses by providing curb loading spaces

vii) Ensure a reasonable level of service for vehicular traffic during the peak hours.

viii) Discourage through traffic on local streets and in residential neighbourhoods.

ix) Give priority to pedestrian safety and mobility over motor vehicle movement, especially at crosswalks, and create a high quality, attractive pedestrian environment that is not only safe, but perceived as safe.

x) Discourage sidewalk riding by cyclists by providing continuous and suitable bicycle facilities, and ensure that existing and future developments provide adequate bicycle parking.

xi) Provide a downtown transit terminal that will provide enhanced passenger amenities, and convenient and timely connections between routes.

xii) Maintain a suitable and convenient level of transit service on all downtown routes and to/from the GO station, and improve the attractiveness of transit services in the downtown through new initiatives."

Appendix G: Downtown Transportation Planning Practices in Hamilton, Edmonton, Vancouver, Minneapolis & Portland

	Hamilton	Vancouver
Downtown Transportation Planning	• Downtown Transportation Master Plan (2001)	• Downtown Transportation Plan (2002)
Application of Sustainable Transportation Principles	• Economic, social and environmental sustainability associated with transportation is a major issue related to business accessibility for people and goods, a livable and safe community and air quality respectively in downtown Hamilton.	• Sustainability is a core element of City policies; • Sustainable transportation is discussed in the section "Sustainability and Transportation" in the DTP.
1.Transportation & Land Use Planning	• "Putting People First Policy; • High priority given to walking, cycling, transit, and discouraging private car use for commuting in the form of limiting all-day commuter parking; • A region-wide cycling plan was developed; • Downtown Transportation Master Plan & New Land Use Plan for Downtown Hamilton were developed.	• "Pedestrians First Policy" • Sub-plans for seven transportation components, were developed; • Social and environmental impact assessment; • Central Area Plan (1991)—encouraging "Living where working" and "Shopping in neighborhoods.
2.Transportation Management	• Not specifically discussed; • Its idea is included in the final recommendations, e.g. parking rate, subsidized transit, carpooling and traffic calming.	• TDM measures recommended in the Transport 2021 Long-range Plan is absorbed in the DTP; • TDM study was conducted.
Commitment to Public Participation	• Public consultation is formally required at the provincial level by the Environment Act; • A consultation process was conducted.	• Public participation in transportation planning processes was not formally required; • 5-step public consultation process was conducted.

Appendix G: Downtown Transportation Planning Practices in Hamilton, Edmonton, Vancouver, Minneapolis & Portland (Cont'd)

	Edmonton	Minneapolis
Downtown Transportation Planning	• Capital City Downtown Plan (1997)	• Downtown Minneapolis 2010 (1996); • Downtown Minneapolis Transportation Study (2000); • Minneapolis Plan (2000)
Application of Sustainable Transportation Principles	• Neither "Sustainable development" nor "Sustainable transportation" is discussed in the document.	• Neither "Sustainable development" nor "Sustainable transportation" is discussed in the document.
1.Transportation & Land Use Planning	• All modes of transportation, including private automobiles, are given the equal consideration; • "Transit First" Policy; • Land use policies reinforce the high density and rich diversity land use to support economic development in downtown.	• A balanced transportation system proposed for downtown caters to the needs of cars, pedestrians, cyclists and transit users; • Land use and housing policies are isolated from transportation policies.
2.Transportation Management	• Transportation management measures are considered in the Plan, but misinterpreted, e.g. "promoting downtown parking" policy.	• The significance of TDM measures is realized; • A number of programs have been initiated to encourage the use of public transit and carpooling especially focused on new development projects.
Commitment to Public Participation	• A consultation process was conducted; • A potential social network was potentially built.	• The federal surface transportation law mandates to provide all affected and interested parties with a reasonable opportunity to comment on transportation plans and programs; • A consultation process was conducted.

Appendix G: Downtown Transportation Planning Practices in Hamilton, Edmonton, Vancouver, Minneapolis & Portland (Cont'd)

	Portland
Downtown Transportation Planning	• Downtown Plan (1972) • Downtown Parking and Circulation Policy (1975) • Central City Plan (1988) • Central City Transportation Management Plan (1995)
Application of Sustainable Transportation Principles	• Sustainability theme pervades all the Plans; • "Moving people, not vehicles."
1.Transportation & Land Use Planning	• Downtown Plan: 1. "Design a balanced transportation system… this means reducing reliance on the automobile, increasing the number of persons per car and increasing the number of persons moving through concentrated areas on transit facilities." 2. Land use policies focus on encouraging economic growth and housing development in the concentrated downtown area which promotes the non-auto pattern and transit use. • Central City Plan: 1. A continued increase in transit service to handle growth is given the highest priority. 2. It is suggested that development be concentrated along major transit corridors-both rail and bus; and housing, employment and retail land uses be integrated to reduce the demand for auto travel and to provide a better market for public transit and alternative modes of transportation. • Citywide Bicycle Master Plan and Pedestrian Master Plan were developed, and also applicable to downtown.
2.Transportation Management	• Downtown Parking and Circulation Policy (DPCP): Major policies include downtown parking lids, maximum-parking ratios for new development, restricting on surface parking lots, and ensuring compliance with the carbon monoxide standards of the Federal Clean Air Act. As a result, the number of violations dropped to zero and remains at zero. • Central City Transportation Management Plan replaces Downtown Parking and Circulation Policy. An overall policy framework is established in the CCTMP to support growth in the Central City while managing the parking and transportation system.
Commitment to Public Participation	• Aiming at "participation culture building"; • The Citizen Advisory Committee played a vital role in the process; • Consensus decision-making.

Appendix H: Canadian Cities: Funding Sustainable Transportation

(Environment Canada 2001:11)

The Metropolitan Transportation Agency, created by the Province of Quebec in 1996, is a provincial agency that coordinates the planning and funding of public transportation in the Montreal region. The agency receives revenue from a dedicated gasoline tax of 1.5 cents per litre collected within the region and a vehicle license surcharge of $30 per vehicle in the region.

In 1999, the Province of Alberta approved an arrangement for funding transportation capital in Calgary and Edmonton that provides funding of 5 cents per litre from provincial fuel taxes collected in those regions. Calgary and Edmonton have integrated governance structures that allow them to plan and implement sustainable transportation policies on a comprehensive basis.

In 1999, the Greater Vancouver Regional District (GVRD) and the Province of British Columbia crated the Greater Vancouver Transportation Authority (TransLink) to provide transit, funding and coordination of major roads, transportation demand management, and the motor vehicle emission testing system known locally as AirCare. TransLink has access to a number of transportation – related revenue sources, including fares and a share of the existing provincial fuel tax (initially 8 cents per litre and rising to 10 cents per litre by 2005).

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