Supporting Transit-Oriented Development along the *Southwest Rapid Transit Corridor* in Winnipeg:

Recommendations for Station Area Planning

By

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This practicum examines the opportunities and challenges for transit-oriented development (TOD) at strategic station areas along the Southwest Rapid Transit Corridor (SWRTC) in Winnipeg. Research included three case studies that investigated policy support, station area planning and implementation tools in the City and County of Denver, City of Boulder and the City of Ottawa. Three recommendations are outlined in the concluding chapter. The first is to develop Smart Growth land use policies that direct growth to station areas along the SWRTC. The second is to develop station area plans that indicate the permitted land uses, urban form and densities at station areas. The third is to create a zoning overlay for TOD to that embraces compact, pedestrian oriented development, mixed land uses and reduced off-street parking requirements. These recommendations are of particularly benefit to the City of Winnipeg and to other municipalities that are investing in rapid transit systems and TOD.

**Keywords:** transit-oriented development, station area planning, Winnipeg, Southwest Rapid Transit Corridor, bus rapid transit.
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CHAPTER 1

INTRODUCTION

This practicum investigates municipal planning support for transit-oriented development. Three case studies illustrate the planning policies, station area planning and other implementation tools utilized in the City and County of Denver, City of Boulder and the City of Ottawa. The purpose of this research is to produce recommendations for the City of Winnipeg to support TOD at strategic stations along the Southwest Rapid Transit Corridor in Winnipeg.

This chapter begins with a statement of the research problem, followed by a statement of the purpose and scope of research, and the specific research questions that are addressed. It further includes a discussion of research methods, the limitations and assumptions of the research, and a description of the intended audience.

1.1 Problem Statement

For the past three decades, there have been unrealized plans for a rapid transit system in Winnipeg due to various political, administrative, and financial barriers (Winnipeg Rapid Transit Taskforce 2005). In 2008, Winnipeg city council made a financial commitment to build the first phase of the Southwest Rapid Transit Corridor (SWRTC), a bus rapid transit (BRT) corridor, and a policy commitment to encourage transit-oriented development (TOD) around strategic stations along the SWRTC and future rapid transit corridors throughout Winnipeg (Winnipeg Transit 2010). To date, planning
reports in Winnipeg do not appear to have taken a systematic approach to identifying
development opportunities and constrains for TOD at proposed station areas along the
SWRTC. In addition, the City of Winnipeg does not appear to have commenced station
area planning at future rapid transit stations, a key component to supporting TOD at the
municipal level of government. The City of Winnipeg would also benefit from
recommendations and ‘lessons learned’ from other jurisdictions that are further along in the
process of planning for TOD at station areas.

While existing literature documents provides case studies of TOD in cities such as
Toronto, Portland, San Francisco, Stockholm and Tokyo, there is a gap in knowledge of
planning for TOD in mid-size, Canadian cities with slower-growth rates, cold-weather, and
capital financial constraints such as Winnipeg. While the City of Winnipeg has made recent
advances in policy evaluation and planning support for TOD, the City would benefit from
further research into municipalities that are further along in the process of planning for
TOD around rapid transit stations.

1.2 Purpose and Scope of the Research

This practicum identifies ‘lessons learned’ and generates recommendations to
support TOD at station areas along the SWRTC in Winnipeg. Case study methodology is
used to investigate TOD-supportive policies, station area plans, and implementation tools
that have been employed to encourage TOD and infill development at rapid transit stations
in the cities of Ottawa, Denver and Boulder. ‘Lessons learned’ are defined in the Regional
Transportation District (RTD) of Denver’s FasTracks TOD Lessons Learned Report as:
Lessons learned are general statements that describe good practices or innovative approaches that are shared to promote repeat application. They may also be descriptions of challenges or areas for improvement that are shared to provide continuous improvement. Effective organizations use past experience as a guide to improve future performance (RTD 2010b, 5).

In this practicum, ‘lessons learned’ from the three selected case studies will be used to produce policy and planning recommendation for Winnipeg.

The three case studies were selected according to the following criteria, in order to ensure relevancy to the Winnipeg context. Each case was bounded by a single municipal planning jurisdiction. While contextual differences when using the experience of one jurisdiction to inform, the following criteria were used to select case studies:

- municipality that is located within the United States or Canada;
- cold-weather, four season location;
- established plans for transit-oriented development around BRT systems;
- initiated station area planning at stations located in slower-growth areas or within neighbourhoods exhibiting signs of decline; and
- established plans for TOD around rapid transit stations.

The selection of these case studies is based on criteria to bridge existing knowledge on station area planning with the unique opportunities and constraints for infill development as intensification at stations along the SWRTC. These criteria were formulated because Winnipeg is a unique context and case studies with these characteristics produce ‘lessons learned’ and recommendations that are expected to be
more helpful than an examination of world-renowned case studies.

Although a slow-growth municipality or region was sought, informative case studies of TOD in slow-growth municipalities are rare. However, the slow-growth characteristic of Winnipeg is considered throughout the analysis. The selection of potential case studies focused on the North American planning context, with the inclusion of Canadian, cold-weather and BRT-based case studies. The selected case studies are municipalities that have explicitly pursued TOD as a policy and planning objective. The focus on North American municipalities is to study TOD in urban areas that are developed around the personal automobile as the dominant transportation mode.

1.3 Research Questions

The following research questions were formulated to address the problem statement and goals for this practicum:

1. What are the opportunities and challenges for transit-oriented development at strategic stations along the *Southwest Rapid Transit Corridor* in Winnipeg?

2. What has been the practical experience of local governments who are planning for transit-oriented development at rapid transit station areas?
   a. What policies, plans, and implementation tools are utilized to encourage and support TOD?
   b. What local contextual factors serve to support or hinder TOD?
3. What lessons do the case studies have to offer the City of Winnipeg and what conclusions can be made for planning for TOD at strategic stations along the Southwest Rapid Transit Corridor?

1.4 Research Methods and Analysis

Literature review, case studies and semi-structured interviews with planners and policy-makers within the construction of case studies are the research methods used to address the research goals and questions for this practicum.

1.4.1 Literature Review

Research for this practicum consisted of a review of relevant literature. Two literature reviews were conducted within the scope of this practicum. The first investigated the history, scope and current practice of transit-oriented development both in North America and internationally. The second investigated the process of planning for TOD in each case study.

Documents were identified through keyword searches on the University of Manitoba databases and through Google Scholar. Research bibliographies were used to access additional print and scholarly sources. Internet searches were particularly useful for researching existing policies and planning documents of municipal and regional governments.
1.4.2 Case Studies

The case study is a complimentary method for addressing the research problem and questions of this practicum. According to Yin (2003) case studies are useful for systematic study for practical and contemporary subjects, processes, and systems-of-action: “the central tendency among all types of case study, is that it tries to illuminate a set of decisions: why they were taken, how they were implemented, and with what result” (Yin 2003, 12). Therefore, the advantage of using the case study as a research method emerges when: “A how or why question is being asked about a contemporary set of events, over which the investigator has little or no control” (Yin 2003, 9).

The case study method also enables the power of narrative story telling. In Transit Metropolis: A Global Inquiry (1998), Cervero uses the case study method to study the diversity of approaches to integrate transit systems with land use planning and urban development. According to Cervero (1998), narrative reporting and story-like representations of case studies promote wide accessibility for general, political and scholarly audiences (Cervero 1998). Associative relationships between variables are also analyzed in each case, such as the relationship between elements of the built environment (the density, diversity and design of neighbourhoods) and levels of transit ridership (Cervero 1998). Within each case study, Cervero (1998) also investigates broader political, economic trends contributing to patterns of planning and urban development.

For this practicum, three case studies were conducted to investigate the practical processes for TOD policy-making and station area planning, with a single municipal planning jurisdiction serving as the boundary. Each case study started with a review of relevant planning documents. Key-informant interviews with planners and policy-makers
served to further inform the policy and planning context in each case. Site visits with photo documentation were conducted at strategic station areas, to characterize the present urban environment surrounding the strategic stations. Follow up document review and email correspondence was conducted for further information needs. Each case was instrumental in producing recommendations for supporting TOD at strategic stations along the SWRTC in Winnipeg. One station area plan for investigation within each of the three case studies was done according to criteria presented in section 1.2, to ensure relevancy to the planning and urban development context in Winnipeg.

The case studies were written in a uniform format that allows comparison between them. Each case study is divided into three sections:

1. **Context** introduces the location of the case and provides information on population, economy, local governance and an overview of the rapid transit system. Cervero (1998)’s transit metropolis typology was used to classify each case in terms of transit service and land use patterns.

2. **Policy and Planning Support for TOD** examines development plans, transportation plans, and land use policies for TOD-supportive elements.

3. **Station Area Planning.** One station area plan was selected for further investigation, in order to discern the practical experience of municipalities attempting to plan for TOD around rapid transit stations. The opportunities and challenges in plan implementation were investigated in order to generate recommendations and ‘lessons learned’ for station area planning along the SWRTC in Winnipeg.
1.4.3 **Semi-structured Interviews**

Semi-structured interviews with planners and policy-makers (key-informants) involved with TOD were conducted in case study location to gather information about the case studies that is not readily available in print sources. These qualitative interviews were conducted in order to:

- Investigate the issues of planning and implementing TOD planning within each of the case studies;
- Articulate challenges and ‘lessons learned’; and
- Produce recommendations for Winnipeg.

Zeisel (2006) and Mabry (2008) provided methodological guidance for conducting semi-structured interviews within case study research. Mabry (2008, 218) states the value of using semi-structured interviews within the construction of case studies as:

*Direct observation and semi-structured interviews, which allow probative follow-up questions and exploration of topics unanticipated by the interviewer, facilitate development of subtle understanding of what happens in the case and why.*

Semi-structured, qualitative interviews are a type of interview in which the interviewer has “some freedom to ask different questions or the same questions in different orders for different respondents as long as certain predetermined topics are covered. The predetermined questions constitute an interview guide” (Zeisel 2006, 227). Zeisel (2006, 227) states that one of benefits of the semi-structured versus a closed interview is:

[Semi-structured interviews allow the respondents to] express their own understanding of a concept or event in their own terms. This interview type
allows the researcher to address situations where good policies or models have been put forth, but where implementation has been poor.

A total of 12 interviews were conducted as part of this practicum. The interviews were each one-hour long and were conducted over three months (March, April or May of 2010). Prior to each interview, the interviewee and author signed a letter of informed consent, in which the interviewee consented to having their name used for the purposes of this practicum. The same interview guide was used for all sessions, with slight variations in the order of questions asked and the probes used.

An interview guide was developed prior to conducting interviews for this practicum, to ensure that the same general topics are covered through the interview process for each case. Probes and follow up questions were used to direct focus of interviewees to the topics-of-interest for this practicum. Prior to conducting each interview, an interview guide was adapted cover the information needs of each case. The interview guide template is provided in Appendix A.

1.5 Assumptions and Limitations

The following assumptions address utilizing the case study as a research methodology to answer in part the research questions for this practicum. The limitations also address the scope and amount of research undertaken within this practicum.
1.5.1 Assumptions

The following assumptions have guided the scope and purpose of this research:

- The dominance of the automobile and automobile-oriented urban environments in North America is the justification for limiting the focus to North American case studies;

- The practice of TOD is more established in the United States than Canada;

- Examining examples of transit-oriented development in other municipalities can provide valuable lessons for the process in Winnipeg;

- The selected case studies are more advanced in planning and implementing TOD and can therefore provide recommendations for Winnipeg, even considering that contextual differences exist, such as the availability of federal transit funds to municipalities in Canada versus the United States.

- Winnipeg offers a unique planning context that warrants further study. While some of the opportunities and constraints for TOD are typical of Canadian cities, Winnipeg has special funding, population, and political characteristics.

1.5.2 Limitations of this research

Given that this is a graduate-level practicum, undertaken with limited financial resources and under the time constraints of a Master’s program, the selection and research of case studies is limited in scope. This study was limited to three case studies of station
area planning to support TOD at rapid transit stations in North American municipalities. There are certainly more case studies that can provide valuable insights and recommendations to Winnipeg in addition to the three undertaken within this practicum.

Consequently, the findings from this practicum provide only a subset of helpful recommendations for planning and implementing TOD in Winnipeg. The findings from case study research may not be fully triangulated due to the limited amount of empirical research undertaken. Finally, a number of topics related to the implementation of TOD are not explored in this practicum, including: real-estate market analysis for TOD in Winnipeg; financial tools such as Tax Increment Financing (TIF) and planning regulations such as inclusionary zoning and land banking. Further research on these topics should be undertaken when considering the overall integration of rapid transit investments with land use planning and urban development in Winnipeg.

### 1.6 Importance of this Study

This MDP practicum presents the opportunity to investigate and contribute to current TOD planning efforts within the City of Winnipeg. Recommendations generated from this practicum inform the formation of TOD supportive policy and station area planning along the SWRTC in Winnipeg.

The recommendations contained in this practicum have particular importance for Winnipeg, considering its status as a slow-growth city with limited financial resources, and currently under-going a comprehensive planning and development review process. Given the focus on municipal planning processes and the Winnipeg context, the generated recommendations are of particularly benefit to the City of Winnipeg, Departments of
Planning, Property and Development, Winnipeg Transit and Winnipeg’s municipal council. This practicum can supplement the current efforts of these departments to implement TOD and contribute to building reciprocal relationships between transit and urban development in Winnipeg. With the current review of Plan Winnipeg, City Council’s long-range policy planning document, this practicum can make a timely contribution to the development of TOD-supportive policy, station area plans and implementation tools that strengthen the quality of the public realm in and build reciprocal relationships between transportation, land use and urban development in Winnipeg. Non-profit advocacy groups, such as the Winnipeg Rapid Transit Coalition and Bike to the Future may find the recommendations arising from this practicum helpful in setting directions for advocacy work.

The recommendations generated in this practicum may also be applicable to other Canadian municipalities that are establishing rapid transit systems and pursuing strategies to increase transit ridership, renew existing neighbourhoods and promoting more compact, pedestrian-friendly development. The following national organizations and publications may also be interested in the results of this practicum:

- Canadian Urban Transit Association;
- Federation of Canadian Municipalities;
- Professional Planning Associations such as the Canadian Institute of Planners;
- Professional Planners and the Canadian Association of Planning Students; and
- Planning publications such as Plan Canada.
1.7 Outline of this Document

Chapter 2 contains a discussion on the historical roots and current practice of transit-oriented development with a focus on the North American context, along with an identification of the most relevant sources of literature for this practicum. Research on policy and planning tools to support transit-oriented development at the station, corridor and regional-scales is presented.

Chapter 3 contains background research on Winnipeg gathered from document survey, site analysis and three key-informant interviews with municipal planners. This chapter contains a discussion on the opportunities and challenges for TOD at station areas along the SWRTC. The existing built environments at strategic stations along the SWRTC are described, along with existing policy context and planning efforts for TOD in Winnipeg. Directions for case study research are based from the findings presented in this chapter.

Chapters 4 through 6 present the three case studies of TOD and station area planning in the City of Denver, the City of Boulder, and the City of Ottawa. Each case study contains discussion addresses:

- The local planning context;
- Policy and planning support for TOD at the municipal and regional scales;
- Station-area planning at select rapid transit stations, including an analysis of process, goals, implementation and outcomes; and
- ‘Lessons learned’ and overall opportunities and barriers in planning for TOD.

Each case study incorporates data derived from the document survey, site visits and semi-structured interviews with local planners and policy-makers.
Chapter 7 Findings and Recommendations is a synthesis of the ‘lessons learned’ from case study research and recommendations for Winnipeg to support and encourage transit-oriented development at station areas along the SWRTC. The ‘lessons learned’ and recommendations presented in this chapter are based on:

- A literature review presented in Chapter 2;
- Background research on Winnipeg presented in Chapter 3; and
- Case study research on supporting TOD through land use policy, station area planning and utilizing implementation tools at the municipal and regional levels of government.

The chapter concludes with a discussion on the implications of the findings of this practicum research for planning practice and identifies directions for further research.

Appendix A contains the Interview Guide Template used for conducting key-informant interviews.

Appendix B contains the Letter of Informed Consent that was signed off by each key-informant prior to commencing the interview.

Appendix C contains research on the Hiawatha Line/Minneapolis Case Study. Due to information shortages, this case study is not included in the body of the document. The preliminary research gathered in this case was not used in final analysis and recommendations presented in Chapter 7.
CHAPTER 2

PLANNING FOR TRANSIT-ORIENTED DEVELOPMENT IN NORTH AMERICA

As a ‘big picture’ vision for transit-oriented development, this chapter begins with an introduction to the concept of integrating transit service with land use planning and urban development at the neighbourhood, transit corridor, and regional scales. The next four sections contain a detailed discussion of the history, scope, and contemporary practice of planning for transit-oriented development. A Performance-based Definition of TOD, from Hank Dittmar and Gloria Ohland’s *The New Transit Town: Best Practices in Transit-Oriented Development* (2008), is used as a framework for defining the goals and performance standards for TOD. Common opportunities and pitfalls experienced in planning for TOD in North America are summarized from the extensive body of literature available on the topic.

Given that the purpose of this practicum is to generate recommendations for the City of Winnipeg to support TOD along the SWRTC through planning and policy, the focus of this chapter is on the role of municipal government in planning for TOD. Although transit-oriented development necessitates coordination amongst many stakeholder groups and often multiple levels of government, municipal governments play a key role in planning and implementation of TOD. Municipal policy and planning tools that support TOD are presented, with a focus on station-area planning. The implications of municipal investment in TOD is discussed, based on the effectiveness of the first generation of contemporary North American TOD projects to facilitate changes in travel behaviour at the
site-, neighbourhood-, and regional-scale, and to deliver on the promises such as improved quality-of-life for residents.

In section 2.6 Robert Cervero’s *The Transit Metropolis: A Global Inquiry* (1998), is investigated as a regional-scale framework for integrating transit service with land use planning and urban development. Cervero’s work remains influential on urban strategies to promote transit ridership and influence travel behaviour at a regional scale. This chapter concludes a discussion of the effect of the *type* of transit investment on surrounding land values and development patterns. Research on the transformative potential of LRT, BRT and tramways is presented and compared, with a focus on the North American experience.

### 2.1 Integrating Transit, Land Use Planning, and Urban Development

The concept of integrating transit service with land use planning and urban development is contained within the contemporary urban planning movements of New Urbanism and Neo-traditional Development, Smart Growth, Transit Villages, location efficient housing, and transit-oriented development (Dunphy et al. 2004; Randolph 2004; Handy 2005; Federal Transit Administration 2008). These movements all contain elements that aim to build reciprocal relationships between transit investments, urban development at the neighbourhood, corridor or regional scale. The integration of these urban systems can be defined as: “Adopting a transit orientation as a means of organizing development in urban areas” (Dunphy et al. 2004, 3); and “Linking development nodes with transit” (Dunphy et al. 2004, 5).
According to Dunphy et al. (2004), advocates of integrating transit with land use planning and urban development within the various contemporary urban planning movements are all seeking to accomplish similar goals, including:

1. Decreasing the number of automobile trips across a city or regional scale;
2. Increasing opportunities for walking and riding transit for daily trips at a the neighbourhood scale;
3. Increasing the variety of daily amenities within walking distance;
4. Ensuring good pedestrian connection between the transit station and surrounding buildings; and
5. Orienting buildings to the street rather than to parking facilities

Neo-traditional Development is a generic term that encompasses more specific movements such as compact cities, urban villages and New Urbanism (Handy 1992). According to Bernick and Cervero (1997, 5) neo-traditional town and neighbourhood planning is a design-based movement that uses the physical environment to produce a sense of community through features such as:

A commercial core within walking distance of a majority of residents, well-connected gridiron street network, narrow roads with curbside parking (to buffer pedestrians), back-lot alleys, mixed land uses, and varying styles and densities of housing.

Advocates argue that Neo-traditional Development reduces the need for travel through greater internalization of trips within a neighbourhood due to the mix of land uses. They can also produce shifts in mode choice due to pedestrian-friendly features such as narrower streets, a rectangular street grid, generous street trees, and a pedestrian-accessible mixed-used core (Handy 1992). Empirical studies on the effect of Neo-traditional
Development on travel behaviour still yields mixed results, as studies do indicate that Neo-traditional Development offer increased transportation mode choice at the neighbourhood scale without excluding the automobile (Handy 1992; Crane 2000; Cervero 2002).

The Congress for New Urbanism was founded in 1993 by a group of American architects including Andrés Duany, Elizabeth Plater-Zyberk and Peter Calthorpe (Hodge and Gordon 2008). The founders are credited with propelling urban design back in to the discourse on what makes neighbourhoods and cities functional and livable (Hodge and Gordon 2008). Since then, the movement consists mostly of architects that advocate for pre-war community design that focuses on providing public spaces where people come into face-to-face contact on a daily basis and do not spend the majority of their time in private spaces such as the car or the home (Cervero 1998). While New Urbanism and Neo-traditional Development are not overtly motivated by transportation goals, these movements seek to transform suburban residential neighbourhoods into pedestrian-friendly, transit-supportive places (Calthorpe and Fulton 2001).

Smart Growth is a regional strategy that: “aims to channel new development into existing urban areas and away from undeveloped areas and to improve the viability of alternatives to the car” (Handy 2005, 147). Starting in the mid-nineties smart growth emerged as a strategy for “combating sprawl and building better communities” (Handy 2005, 147). Smart growth policies have been adopted in numerous US municipalities and endorsed by the American Planning Association, which defines the strategy as “compact, transit accessible, pedestrian-oriented mixed-use development patterns and land reuse” (in Handy 2005, 147).
Handy (2005, 163) evaluates four smart-growth propositions about the relationship between land use and transportation based on a select set of widely cited studies:

1. Building more highways will contribute to more sprawl;
2. Building more highways will lead to more driving;
3. Investing in light rail transit systems will increase densities; and
4. Adopting New Urbanism design strategies will reduce automobile use

From this study, Handy (2005) concludes that our ability to predict the results from smart-growth policies remains limited: the four propositions have not been resolved in existing literature and the state-of-knowledge on some propositions is further along than others. Handy (2005, 163) summarizes the current state of knowledge as:

1. New highway capacity will influence where growth occurs;
2. New highway capacity might increase travel a little;
3. LRT systems can encourage higher densities under certain conditions; and
4. New Urbanism strategies make it easier for those who want to drive less to do so.

Transit village is a term coined by authors Michael Bernick and Robert Cervero in their book *Transit Villages in the 21st Century* (1997), and has been adopted within New York, New Jersey and California state legislation. The term is used to describe revivalist efforts to recreate American “rail-stop towns” that developed around commuter rail, interurban electric and streetcar lines from the late 19th to early 20th century.

Location efficient housing is a term used by the US federal Department of Transportation and Housing and Urban Development (Federal Transit Administration 2008). This term is also used in research produced by organizations such as the Reconnecting America’s *Center for Transit Oriented Development*. Location efficiency is defined as: “the geography of housing within urban areas that provide residents with access
to amenities, services, employment and a variety of transportation mode choices (Belzer et al. 2006, 5).

Transit-oriented development (TOD) is a North American real-estate movement that emerged out of the principles contained in regional-scale Smart Growth movement and neighbourhood-scale principles of New Urbanism (Dunphy et al. 2004). TOD shares similar design features with New Urbanism; the main difference is that for TOD, the transit station and immediate surroundings function as the focal point of the community. Although all these movements are functionally similar in goals, they vary in scale and scope. New Urbanism, transit villages and transit-oriented development share many similar design features. Like New Urbanism, TOD is defined by pedestrian friendly design, enhancing mobility through increasing options for walking and transit, and providing alternatives to low-density suburban development. The main point of difference is that in TOD, the transit station and immediate surroundings function as the focal point of the community (Bernick and Cervero 1997). Like the transit village concept, TOD is a nodal concept of development with street patterns and layout that radiates from the transit station.

The creators of Transit Oriented Development (TOD) sought to make transit investments in automobile-reliant North American suburbs more cost- and operationally efficient by altering land use compositions, street layout and design features of neighbourhoods to make them more conducive to travel by walking and taking transit (Calthorpe and Fulton 2001, 218). Since its inception, TOD has become an international “brand name” form of development and a real-estate movement unto its own in the United States (Wheeler 2004).
2.2 Origins and History of Transit-Oriented Development


*A Transit Oriented Development is a mixed-use community within an average 2,000-foot walking distance of a transit stop and core commercial area. TODs mix residential, retail office, open space, and public uses in a walkable environment, making it convenient for residents and employees to travel by transit, bicycle, foot, or car.*

The defining elements of TOD identified by Calthorpe have not changed significantly in the contemporary practice of TOD: TOD is still defined as mixed-use, higher density and nodal form of development.

TOD is both an old and new concept with roots in the streetcar suburbs and satellite rail towns that were developed throughout North America during the late 19th and early 20th century, which themselves where influenced by Ebenezer Howard’s *Garden Cities* (Bernick and Cervero 1997; Dunphy et al. 2004). According to Bernick and Cervero (1997), the original purpose of TOD and transit villages was to elevate transit to a “respectable means of travel outside the village” (7); the nodal design of TOD and transit villages can be traced back to the earliest of rail suburbs of New York, where they formed “beads on a string” on a regional scale, and communities that circulate around a transit station on the neighbourhood scale (Bernick and Cervero 1997). Each suburban community along the commuter rail-line contained enough daily amenities to be self-sufficient, and to
keep people in their own communities; the spread of homes was limited to a walk-able distance from the railroad station, as only the very wealthy could afford a horse-and-driver to be able to live further into the countryside (Bernick and Cervero 1997, 16).

Transit-oriented development is both an ideological way to think about communities and a real-estate movement. Although nodal and linear transit-oriented development exist the world over, TOD as a specific approach to development can be credited to the work of Calthorpe. In this context, TOD is limited to North America where it has gained remarkable popularity amongst municipalities in the United States (Bernick and Cervero 1997; Transit Cooperative Research Program 2002). Between 1992 and 2004, over 30 countries and municipalities in the United States have adopted TOD ordinances (TCRP 2004). While exemplary forms of nodal development around transit exist in South America, Western Europe, and Australia (Bernick and Cervero 1997; Transit Cooperative Research Program 2002), examples are only beginning to coalesce in North American cities, especially in Canada. As stated by Dittmar and Ohland: “While TOD may not be a new thing, the challenge of adapting it to the auto-oriented metropolis is” (2008, 5).

The effectiveness of the first generation of TOD projects in North America are only starting to be evaluated against the large aspirations attached to them (Transit Research Cooperative Program 2004; Dittmar and Ohland 2008). Proponents such as Calthorpe and Fulton (2001, 218) indicate that the performance standards for TOD should:

- Decrease traffic congestion at local- and regional- scales;
- Make suburban transit investments more cost- and operationally-efficient;
- Increase the pedestrian friendliness of neighbourhoods through urban design; and
- Increase mobility by increasing options for walking and transit, and offering viable housing alternatives to traditional suburban development.
Dittmar and Ohland (2008, 8) list as the criteria of successful TODs:

Successful TOD needs to be mixed-use, walkable, location-efficient development that balances the need for sufficient density to support convenient transit service with the scale of the adjacent community. We [also need] to develop techniques to also help assure that TOD also remain mixed-income in character.

In contrast, transit adjacent development is a term for characterizing development at station areas that does not have a “functional or meaningful relationship to the station” (TCRP 2004, 5).

Most often, [development at station areas has] conventional single-use development patterns, with conventional parking requirements, so that the development is actually transit adjacent rather than transit oriented.

Implementation of TOD remains the challenge under the conventional scope of planning in North America. Implementation tools and the challenges are investigated in the next two sections.

2.3 Performance-based Definition of TOD

In The New Transit Town: Best Practices in Transit-Oriented Development (2008), authors Dittmar and Ohland¹ have expanded upon the work of Calthorpe et al. to develop a Performance-based Definition of TOD, based on five goals. According to Dittmar and Ohland (2008), TOD projects need to achieve five main goals:

1. Location efficiency;

2. Rich mix of choices;

¹ Both authors are affiliated with Reconnecting America, an American advocacy and non-profit research organization seeking “to build connection between and among transportation networks and the regions and communities they serve in order to generate lasting public and private returns, improve economic efficiency, and give consumers greater transportation and housing choice” (Dittmar and Ohland, iii).
3. Value capture;

4. Place making; and

5. Resolving the tension between node and place.

According to Dittmar and Ohland (2008, 8), the purpose of developing the Performance-based Definition of TOD was to create benchmarks for new TOD projects and evaluate the quality of past TOD projects:

*Not all projects in all places will or even can meet the standard by which true transit-oriented development should be defined, but without a benchmark there will be no way to judge the quality of projects or even to think clearly about the trade-offs that must be made when pursuing a project.*

Dittmar and Ohland also use this Performance-based Definition of TOD to evaluate case studies of TOD projects. With their Performance-based Definition of TOD and associated case studies, the Dittmar and Ohland (2008) evaluate the first generation of US-based TOD projects in order to create a new definition of TOD for a second generation of theory and practice.

### 2.3.1. Location Efficiency

As stated in section 2.1, location efficiency is defined as: “the geography of housing within urban areas that provide residents with access to amenities, services, employment and a variety of transportation mode choices” (Belzer et al. 2006, 5). Key elements of location efficient neighbourhoods include:

- **Housing density** measured in number of households per residential acre;
- **Efficient transit service**, measured by a combination of transit service frequency and proximity to the stop or station; and
Pedestrian and bicycle friendliness, measured in terms of an interconnected street grid and presence of traffic calming measures (Dittmar and Ohland 2008, 25).

2.3.2. ‘Rich Mix of Choices’

According to Dittmar and Ohland (2008) building neighbourhoods on the principle of choice will diversify transportation choices, integrate work and life and provide for aging in place. Therefore, their second goal is divided into two component parts:

- **Mixed-used neighbourhoods**: offering many activities within walking distance for those who do not drive (the young, the elderly, those who cannot afford cars or do not want to rely on them to get around); and
- **Range of housing options**: single family, townhouses, live-work spaces, and apartments (Dittmar and Ohland 2008, 26).

2.3.3. Value Capture

For local governments, value capture from TOD means “higher tax revenue from increased sales and property values” (Dittmar and Ohland 2008, 27). TOD also has benefits for households and transit agencies. Households benefit from location efficient housing in terms of reduced household transportation expenses and shorter commute times (Ibid). Transit agencies benefit from revenues from increased ridership and, in some case studies, from development on adjacent land (Ibid). According to Dittmar and Ohland (2008, 27) economic value-capture of TOD has many challenges because it requires:

- Frequent transit service;
- Good connectivity between transit and community amenities;
- Dedication to place making; and
- Attention to financial returns on investments made in transit service, capital improvements at station areas and incentive programs for development at station areas.
2.3.4. Place Making

Urban design is one of the most neglected and least well-understood aspects of TOD (Cervero 2002; Jacobson and Forsyth 2008). Dittmar and Ohland’s (2008) focus is primarily on creating pedestrian-friendly projects: “one of the greatest limitations of the current crops of TODs is that not enough attention has been paid to making them attractive and pedestrian-friendly places” (30). Jacobson and Forsyth (2008) contend that the urban design of TODs, in terms of visual quality and livability, are also a crucial means of “coordinating relatively intensive land uses and multiple transportation modes” (51).

Dittmar and Ohland (2008, 31) cite the British publication The Urban Design Compendium for the elements of “good” urban design decisions that should “apply to all places seeking to create pedestrian-friendly environments”, including:

- Creating places for people (variety, choice, fun);
- Enrich the existing (new development should complement the existing urban place);
- Make connections (paying attention to how people get around by foot, bicycle public transportation, and the car- in that order);
- Work with the landscape (balance between the natural and [human]-made environment- to maximize energy conservation and amenity;
- Mix uses and forms (weaving together different building forms, uses, tenure, and densities);
- Manage the investment as an integral part of the design process (understanding market considerations of developers, ensuring long-term commitment from the community and local authorities, defining appropriate delivery mechanisms); and
- Design for Change...in lifestyles, uses, and demography. (Ensuring development is energy and resource efficient, has flexible uses, public spaces, and service infrastructure. Introducing new approaches to transportation, traffic management, and parking

2.3.5. ‘Resolving the tension between the node and place’

A key challenge to planning for TOD is identified as the last component of Dittmar and Ohland’s Performance-based Definition of TOD. According to Dittmar and Ohland
(2008, 32), this performance indicator highlights the need to balance the multiple demands and expectations placed upon TOD projects, namely the need to resolve the often conflicting goals that arise in station area planning:

*A key node-place tension exists between the station’s role as an access point for people arriving by trains, bus, car, bike, or foot, and its role as a vibrant, pleasant and livable place.*

Station area planning involves a nuanced consideration of the many types of sites served by transit and the many types transit service that service urban areas. Dittmar and Ohland (2008) provide the following tools and approaches for addressing the node-place tension in station area planning:

- Using **urban design** to address issues such as: managing the ‘footprint’ of the station on the surrounding community; integrating customer services and the station; location and treatment of parking and transit connections, and ensuring that pedestrian needs are placed at the forefront of station design.

- Using **station typology** as a planning tool. Dittmar and Ohland (2008) develop a station typology that expands upon the urban/suburban station typology developed by Peter Calthorpe. Dittmar and Ohland (2008)’s station typology includes planning considerations for the urban, suburban, downtown and ex-urban stations. Their station typology considers that role of the station with the neighbourhood (station location within a residential area, employment centre, or commercial centre) and the station’s role within the overall transit network (collector station for transit feeder lines, downtown station, or station at major commercial nodes or institutions).
Dittmar and Ohland (2008)’s Performance-based Definition of TOD is geared toward planners and developers who are working to implement TOD projects in their communities. A useful framework for evaluating station area plans in case study locations, in order to gauge how well the project measures to its urban livability agenda. Dittmar and Ohland (2008)’s Performance-based Definition of TOD will be used within the case studies, presented in chapters 4 through 6, in assessing examples of station area planning and producing recommendations for Winnipeg.

2.4 Planning Processes and Implementation Tools

The process of formulating supportive plans and policy for TOD is well documented in existing literature. The TCRP report on TOD (2004) provides a chapter on TOD implementation tools commonly used at the municipal level in the North America context. Implementation tools such as station area planning and overlay zoning are presented. The effectiveness of these implementation tools is discussed mostly from a practitioner’s perspective, using case studies to illustrate lessons learned and best practices. Dittmar and Ohland (2008) outline station/neighbourhood typologies that should be used when conducting station area planning, with accompanying land use ratios, minimum densities and design considerations that form the basis for high-level TOD policy and master planning done at the municipal or metropolitan level.

However, TOD remains prohibitively complex under conventional systems of land use planning and urban development in North America. Literature states that while investment in rapid transit infrastructure adds accessibility and value to station areas, investment in rapid transit alone is insufficient to drive real estate markets in most urban
areas, or to achieve the ‘desirable’ forms of development (Cervero et al. 2002; TCRP 2004; Dittmar and Ohland 2008). Public sector intervention is needed to ensure that projects compliment regional land use, transportation or housing goals, through achieving the five goals of the Performance-based Definition of TOD (Cervero 2002; Cervero et al. 2002; TCRP 2004; Dittmar and Ohland 2008). Most TOD projects require the participation of many actors and occur in a fragmented regulatory environment, adding complexity, time, uncertainty, risk and cost to projects (Dunphy et al. 2004; TCRP 2004; Dittmar and Ohland 2008). In the past, there were little or no standards to assist actors bring successful TOD projects into existence (Dittmar and Ohland 2008).

Concurrent with investment in rapid transit infrastructure and capital improvements at station areas, municipalities deciding to pursue TOD need to draft plans to guide development and attract developer interest (TCRP 2004). As noted by the TCRP report (2004), without regulation and incentives in place to ensure desired outcomes, TOD remains a result of “clever exceptionalism”, and beyond the reach of most communities or developers (47). This line of argument forms the rationale for public intervention and investment into the transit-land use-development system and in TOD.

Although all levels of government support TOD, local governments have the most direct control over the form of development at the site- and neighbourhood- scale. As defined in the TCRP report (2004), public investment in TOD falls into the following categories:

- Developing local standards and definitions for TOD;
- Creating products and delivery systems;
- Providing research support;
• Providing technical assistance; and

• Providing access to publicly funded capital programs.

According to the TCRP (2004, 53), actions by local governments to encourage in-fill development in existing neighbourhoods and on brownfield sites include:

• Conducting station-area planning to define standards for development;
• Providing expedited municipal entitlement processes for ‘desirable’ forms of development;
• Investing in ancillary capital improvements such as streetscaping or providing funding programs to assist with this;
• Establishing density bonus programs for affordable housing units;
• Relaxing parking standards using strategies such as unbundling price of parking and housing; and
• Land banking and assistance with land assemblage

The common method of planning for TOD at the municipal level is outlined in the Transit Cooperative Research Program’s 2004 report as three basic steps:

1. Formulating a vision for TOD and policy support

2. Station area planning

3. Applying TOD overlay zoning

2.4.1 TOD Vision and Policy

According to the TCRP (2004): “Transit can be a catalyst to achieving a desired community- the kind of place where people want to live, work, play, and raise a family.” (61). The first step into achieving this kind of vision is to develop supportive policies with lots of public input, in order to “…forge a shared vision and prepare a strategic plan” (61).
2.4.2 Station Area Planning

True to architect Peter Calthorpe’s original vision for TOD, station area plans contain a vision for development or re-development of areas within a half-mile radius around a transit station (TCRP 2004). Station area plans and overlay zoning are the most effective tools for determining appropriate land use mixes, urban form, densities and site designs within strategic station areas. Effective station area plans will “outline “how, when and where a TOD will evolve” (TCRP 2004, S-10).

Within the Denver’s Transit Oriented Development Strategic Plan (City and County of Denver 2006, 29), a station area plan should contain the following:

*The overall vision, specific land use mix, circulation patterns, urban form, open space and other public amenities for the area within walking distance of a transit stop. Typically, a station area plan should cover no less than 1/2 mile from a fixed rail stop. A station area plan should include recommendations and an implementation program that identifies the steps necessary to realize the plan’s recommendations, inter-departmental and inter-agency roles and responsibilities, financing tools for constructing and operating public facilities, and leveraging private investment.*

According to the Transit Cooperative Research Program (2002, 78), the benefit of station area plans include the opportunity to:

*Revitalize decaying neighborhoods through the transit station’s role in stimulating economic activity, improving safety and security (partly from 24-hour per day presence of full-time and community-active residents), and coalescing residents around the common goal of neighborhood betterment.*

According to Dittmar and Ohland (2008), station area plans can address some of the challenges associated with TOD, such as ensuring good access for pedestrians and cyclists, connectivity between the transit station and surrounding neighbourhoods, and the addressing the tension between the station as a transit node and a place (see section 2.3.5).
Effective station area plans are tied strongly to implementation strategies or timelines, including recommendations for integrating capital improvements into yearly budgets (Dittmar and Ohland 2008).

2.4.3 Applying TOD Overlay Zones

Zoning is the standard tool used by local governments to regulate land and enforce specific plans (TCRP 2004). Overlay zoning is applied over an existing base zoning designation to supplement the provisions made in the base zone (Ibid). The purpose of overlay zoning is to attach extra regulations or incentives to guide development within a special area, such as a rapid transit station. Overlay zoning be use to implement the vision and policies contained in station area plans by prescribing parking regulations, minimum setbacks, entry frontage and ground floor uses (Dittmar and Ohland 2008). Most zoning overlays will specify TOD-compatible land uses as-of-right, such as multi-family housing and convenience shops, while restricting auto-oriented forms that may compromise TOD, such as drive-through restaurants (TCRP 2004). Some zoning overlays will lower off-street parking requirements and, in some of the case studies, mandate bicycle parking at station areas (Ibid).

In order to be complimentary to TOD visioning, zoning regulations need to “embrace compact growth, a pedestrian orientation, and mixed-uses, [so that] TOD visions can be implemented on a case-by-case basis, in a consistent fashion while the city goes about its usual business” (TCRP 2004, 61). Furthermore, TOD requires progress past traditional or Euclidean zoning which is concerned with separating land uses, setting density thresholds, minimum lot sizes, bulk/height controls, minimum parking
requirements. Zoning for TOD requires embracing mixed-uses, parking caps, and minimum densities as tools for enforcement.

### 2.4.4 Opportunities and Barriers to Implementation of TOD

Similarly, Bernick and Cervero (1997) argue that the hallmarks of successful implementation of TOD include: local government participation in financing; a proactive redevelopment authority; a market-realistic site plan; neighbourhood support; and a political champion, often a local elected official that shepherds the plan along every step of the way (Bernick and Cervero 1997). Implementation also depends on the financing of transit at the local, regional, and federal levels, evolving land use regulations, and institutions to support collaboration between private developers, land use planners and transportation engineers (Dunphy et al. 2004; Dittmar and Ohland 2008).

As identified by the TCRP (2004, 65) the most common pitfalls to implementation of TOD include:

- *Existing auto-oriented development patterns around transit stations, i.e. park and ride preferences of suburbanites;*
- *The tendency to “downzone” around stations to prevent spot-congestion that is anticipated from increased multi-modal activity around stations*
- *Code-standard parking requirements*
- *Fiscal and exclusionary zoning policies that restrict higher density housing production;*
- *Poor alignment of rapid transit corridors and placement of stations that results in minimal development or re-development potential;*
- *Organizational and compliance barriers, including the difficulty of coordinating TOD activities amongst actors and stakeholders who often have diverging interests*

Intervening into the transit-land use system is complicated, the consequences of which are not fully understood within scholarly and practical literature on transit-oriented
development. Barriers to implementation of TOD are generic to all forms of dense, infill development, including: higher costs and risks; government inertia; neighbourhood NIMBY opposition to any densification; difficulties in assembling land; and conservative lending practices that block implementation of plans (Bernick and Cervero 1997; TCRP 2004). Pucher (2004) notes that metropolitan areas without a strong transit orientation outside the downtown, and where more growth is occurring in the suburbs, often lack the ability to implement high-functioning transit systems around which higher-density, transit supportive uses can occur. The conundrum is that while transit systems work best serving high-density, low-income communities near the downtown core, low-density, auto-oriented places are where majority of the growth is occurring in North American cities and metropolitan areas (Dunphy et al. 2004; Pucher 2004; Dittmar and Ohland 2008).

Dittmar and Ohland (2008)’s Performance-based Definition of TOD provides a framework for evaluating the content of station area plans in terms of ability to achieve the benefits of TOD. The goal or performance standard of the TOD concept is transform neighbourhoods to be more conducive to transit and simultaneous making them more walkable, attractive places. The five goals of the Performance-based Definition of TOD are investigated in each case study presented in Chapter 4 through 6, however, as most case studies are fairly new, the focus of each case study also evaluates the planning processes and implementation tools undertaken in order to facilitate TOD. Therefore in the case studies presented in Chapters 4 through 6, the process of planning for TOD will be discussed, in terms of planning policies, station area plans, and implementation tools. While a range of incentives and regulations support the implementation of TOD, the case studies focus on station area planning and zoning overlays as presented in this section.
2.5 Impacts of TOD on the Built Environment and Travel Behaviour

There is a lack of consensus in existing literature about the effectiveness of TOD and other forms of nodal development around transit stations. An unresolved issue is whether TOD can be transformative of the urban landscape and travel behaviour, or if TOD is simply filling a niche market for “boutique development” that is an alternative to traditional suburban neighbourhoods. Dunphy et. al (2004) and Transit Cooperative Research Program (2004) argue that TOD does not solve sprawl but provides a niche market of development appealing to young urban people, empty nesters and seniors. Bernick and Cervero (1997) articulate a significant limitation to the ability of TOD to affect regional patterns of transportation and development: “a single transit village in a sea of sprawling, auto-oriented development will yield few transportation, environmental, or social benefits over the long run” (11).

Based on achievements-to-date, TOD should not been viewed as a pinnacle achievement for local or regional governments but must be tied into strategies aimed at altering development and travel behaviour over larger spatial scale. Filion and McSpurren (2007) argue that many TOD and New Urbanism projects have been ineffective in the past due to their marginal presence on the regional or metropolitan scale. They present commuting numbers from Metropolitan Toronto to support the argument that neighbourhood-based interventions have produce limited impacts on transit and walking mode shares across the region. Instead, they advocate for advancement of metropolitan-wide policies to complement neighbourhood-based strategies. Unfortunately, according to Filion and McSpurren (2007), metropolitan land use strategies to complement transit ridership have received significantly less attention than the neighbourhood-based strategies,

As stated in the TCRP report (2004), the majority of surveyed transit agencies in the United States view increase in ridership and transit revenues to be the primary objective of investing in transit-oriented development. Community-economic development and supporting a smart growth agenda are considered secondary objectives (Ibid). This creates conflicting goals with planners, who view value capture and community building as primary objectives of public investment in TOD (Ibid).

In the Winnipeg and the case studies, citywide and regional land use strategies for TOD are considered along with station area planning and implementation tools. Land use and transportation policies are investigated for TOD supportive elements, as well as strategies to integrate transit with land use planning and urban development over a municipal or regional scale. Key-informants provide a characterization of the working relationship between transit and land use planners that working to implement TOD in the case studies and in Winnipeg.

### 2.6 Cervero’s *Transit Metropolis: A regional strategy*

In *Transit Metropolis: A Global Inquiry*, Robert Cervero (1998) studies the relationship between transit service and land use in cities across the world, in order to discern strategies for reducing automobile use and increasing transit’s modal share. Cervero’s research also outlines the opportunities and limitations of TOD and neighbourhood-scale interventions to produce support higher levels of transit use on a *regional-scale*. Although his work has been influential in the fields of urban transportation
and land use planning, Filion and McSpurren (2007) note that little progress has been made in integrating transit and land use planning at a regional scale. Therefore, Cervero’s work remains relevant in examining the impact of integrating transit, land use planning and urban development over a regional scale (Filion and McSpurren 2007).

Cervero (1998) investigates the decline of transit’s market share of commutes throughout cities in North America, much of Europe, and international megacities such as Bangkok, Buenos Aires, and Manila. A similar trend exists in Canada, where public transit ridership decreased from an average of 13- to five-percent in large cities (Hodge and Gordon 2008). Cervero (1998) identifies factors that have decreased transit’s market share, including “rising personal incomes and car ownership, declining real dollar costs for motoring and parking, and the decentralization of cities and regions” (Cervero 1998 in Wheeler and Beatley 2009, 116).

Cervero’s research also highlights cities and regions that have “bucked the trend” of declining transit ridership and have found a “more harmonious fit between transit services and their cityscapes” (Wheeler and Beatley 2009, 116). Overall, the cities and regions presented in Cervero (1998) have developed a reciprocal relationship between transit systems and land use patterns, a concept that Cervero coins the transit metropolis:

The transit metropolis represents a built form and a mobility environment where transit is a far more respectable alternative to traveling than currently is the case in much of the industrialized world. It is an environment where transit and the built environment harmoniously co-exist, reinforcing and enhancing each other in the process. Thus, while the automobile may still predominate, transit metropolis is one where enough travelers opt for transit riding, by virtue of the workable transit nexus, to place a region on a sustainable course

Cervero (1998) provides twelve case studies of the *transit metropolis*, cities or city-regions that have integrated transit service, land use planning and urban development on citywide or regional scales. The case studies are divided into four categories based on the relationship between land use and transit service: *adaptive cities*, *adaptive transit cities*, *strong-core cities*, and *hybrid cities*.

- **Adaptive cities** have adapted land use patterns to be more conducive to transit riding, particularly by commuter rail. Cervero cites Copenhagen, Stockholm, Tokyo and Singapore as examples of adaptive cities (Cervero 1998, 7).

- **Adaptive transit cities** have sought to “adapt transit service to serve spread-out, low-density land use patterns”; examples of adaptive cities include Karlsruhe, Germany and Adelaide, Australia (Cervero 1998, 9).

- **Strong-core cities**, such as Zurich and Melbourne, “have been successful in integrating transit and urban development within a more confined, central-city context. In these places, trams and light-rail systems have been designed to coexist with pedestrians and cyclists” (Cervero 1998, 14).

- **Hybrid cities**, such as Ottawa, Curitiba, and Munich, “have struck a workable balance between concentrating development along mainline transit corridors and adapting transit to efficiently serve their spread-out suburbs and exurbs” (Cervero 1998, 13). “Both Curitiba and Ottawa have introduced flexible transit centered on [BRT], and at the same time, have targeted considerable shared of regional commercial growth around [BRT] stations. The combination of flexible bus-based services and mixed-use development along [BRT] corridors have
given rise to unusually high transit ridership rates in both cities.” (Cervero 1998, 13).

Cervero (1998) highlights the need for regional approaches to integrate transit, land use planning and urban development. Therefore, his *Transit Metropolis* compliments the recent work of TOD and New Urbanism practitioners to expand their ideas into regional-scale efforts, such as Calthorpe and Fulton’s *The Regional City* (2001). As Cervero (1998) concisely states: “Islands of TOD in a sea of freeway-oriented suburbs will do little to change fundamental travel behavior or the sum quality of regional living” (4).

Cervero’s typology is used to discuss the relationship between transit and land use within the boundaries of each case and Winnipeg. This typology complements recent work of TOD advocates to create reciprocal benefits between rapid transit and development over broader spatial scales. *Adaptive* and *hybrid* cities have evolved regional land use and development patterns to orient themselves to transit. Due to the focus on urban planning processes in this practicum, case study research will focus on *adaptive cities* and *hybrid cities*.

### 2.7 Effect of the Type of Transit Investment on the Transit-Land Use Relationship

As discussed in the previous section, Cervero (1998) includes a variety of rapid transit systems in his study. As noted in the Transit Cooperative Research Program report on Bus Rapid Transit (2003), the global resurgence of urban “rapid transit” systems began in the 1960s. In North America, investment into LRT, modern streetcars, and BRT systems is a response to the “auto-oriented transit” that dominated urban transit provision during the post-war period (Dittmar and Ohland 2008, 5). According to Dittmar and Ohland (2004),
transit planning in this period was done with declining ridership numbers and dismantling and abandoning or many rail systems. Transit systems were designed to work around the automobiles and on-street buses become the dominant mode (Dittmar and Ohland 2008). Transit, in many cities, became a “travel mode of last resort” because the buses that use the same streets as automobiles do not remain time-competitive in traffic congestion, among other reasons (Dittmar and Ohland 2008, 6).

Older works on ‘transit villages’, ‘transit-supportive development’, or ‘transit-oriented development’, focus on segregated LRT or commuter (heavy) rail as the sole modes capable of transforming land uses surrounding the transit-station or -corridor (Bernick and Cervero 1997; Cervero 1998). Dunphy at al. (2004) offer a succinct summary of the effects of different transit modes on opportunities for TOD in the United States. Bus Rapid Transit is now considered a more transformative transit investment, after case studies of successful examples from Australia and Latin America emerged in scholarly research published in the late 1990s and early 2000s.

The Transit Cooperative Research Program report (TCRP, 2003) provides an international study of BRT systems, although focused on transit service rather than urban development. Each case study in the TCRP report provides a transit system description, institutional arrangements, and operating practices; the performance of each case study is evaluated in terms of levels-of-ridership and cost-benefit analysis. According to Wheeler (2004), bus rapid transit is becoming increasingly popular amongst municipalities as a cost-effective way to provide higher functioning transit. Examples of high-functioning BRT systems exist in cities in South America, the United States, and Australia (Transit Cooperative Research Program 2003). As of 2008, BRT systems or plans to construct
rights-of-way exist in the Canadian municipalities of: Waterloo, Ontario, Vancouver, Richmond, British Columbia, Winnipeg, and Ottawa.

According to the TCRP (2004), on-street LRT systems have many benefits for North American cities including:

- avoiding the significant costs of securing separate rights-of-way (i.e. along rail-yards);
- lower cost of cars compared to grade-separated LRT;
- integrated into existing street rights-of-way can encourage redevelopment and land use intensification along existing corridors; and
- leveraging the relative novelty of this transit mode to attract large-scale redevelopment, such as in the formerly industrial Pearl District in Portland.

Downsides to streetcars include lower average operating speeds, traffic delays and risk of collisions. Historic streetcar systems are still in operation in primary transit markets such as Boston, San Francisco, and Toronto (Dunphy et al. 2004). However, Portland was the first city in North America to construct a modern streetcar line in 2001 under its LRT-based transit system MAX, while Seattle followed suit with its South Lake Union Trolley in 2007 (Ibid). As of 2004, streetcar lines are in planning or construction stages in Atlanta, Vancouver, Washington DC, and Tucson, Arizona (TCRP 2004).
Rodriguez and Mojica (2008) evaluate corridor-level development around BRT systems in Latin America. Development around BRT systems in Curitiba, Brazil and Bogotá, Columbia has been the subject of numerous recent empirical studies (TCRP 2003; Dunphy et al. 2004; Dittmar and Ohland 2008; Rodriguez and Mojica 2008). However, the number of published studies on development around BRT in a North American context is scant when compared to the quantity of case studies on development around LRT systems.

2.8 Chapter Summary

This chapter presents the current state-of-knowledge on TOD theory and practice, to inform the research questions and case study research for this practicum.

Transit-oriented development (TOD) is a North American real-estate movement that emerged out of the principles contained in regional-scale Smart Growth movement and neighbourhood-scale principles of New Urbanism (Dunphy et al. 2004). TOD was
popularized in the United States during the 1990s, as a strategy to make transit investments in automobile-reliant suburbs more cost- and operationally-efficient.

Within this movement, the contemporary practice of TOD is primarily concerned with the design the built environment around transit stations to achieve:

- **Diversity**: mixed land use compositions;
- **Density**: higher housing densities than the community average;
- **Design**: grid street patterns;
- **Design**: amenities for pedestrians and cyclists to foster attractive places; and
- **Design**: addressing traffic circulation, parking and connectivity issues (Calthorpe and Fulton 2001; Cervero 2002; Dittmar and Ohland 2008).

TOD is a *nodal* concept of development with street patterns and layout that radiate from the transit station.

While the majority of earlier case studies of TOD focus on LRT as the transit mode capable of transforming surrounding urban landscapes, case studies of successful TOD around BRT emerged in the early 2000s. While most achievements of TOD in North America have been on the local or neighbourhood scale, expansion of TOD or New Urbanism into regional scale efforts is only just emerging in literature, such as the work of Cervero on a *transit metropolis* typology.

The role of municipal governments in supporting TOD is investigated in this chapter, along with common opportunities and challenges to implementing TOD within a conventional municipal policy and planning framework. According to the literature, formulating TOD supportive land use policies, undertaking station area planning and applying overlay zoning at station areas is the general process for supporting TOD at the
municipal level. Current literature lists station-area planning as among the most effective planning tools for attracting developers to TOD, along with: expediting municipal entitlement processes to support desired forms of development; investing in capital improvements at stations; and reducing parking requirements at station areas.

Without proactive planning, TOD remains the result of ‘clever exceptionalism’, even in presence of significant transit investments that raise surrounding land values (TCRP 2004). Within the conventional land use planning in North America municipalities, the literature defines common pitfalls or challenges to implementation of TOD as:

- alignment of rapid transit corridors along low-cost land with minimal development potential;
- placing station areas on sites with poor development potential;
- existing automobile-oriented land uses and development patterns, such as large surface parking lots;
- standard zoning practices that restrict higher-density housing and mixed-uses, as well as enforcing standard parking code requirements for new development; and
- limited local organizational capacity, such as coordinating TOD projects amongst many actors and stakeholder groups who often have diverging interests.

The discussion of the common barriers for TOD and station area planning provides a basis for the case study investigation conducted, to see how barriers were or were not overcome in the selected case studies.

Although there is a well-defined body of literature on TOD, the contemporary practice of planning and implementing TOD should still be viewed as being in its early
stages (TCRP 2004; Dittmar and Ohland, 2008). An issue that has not resolved in the literature search is the competing goals of:

- TOD as a value-capture strategy for transit investments; and
- TOD as a community building strategy that enhances livability at the neighbourhood level and enhances travel by alternative modes to the personal automobile.

Scholars also state that the success of TOD depends to great degree on context, such as the local or regional real-estate markets and the demographic and economic conditions. A definitive guide on whether TOD is a good fit for a given municipality has not been written. Existing literature largely documents the first generation of TOD projects; definitive ‘lessons learned’ and recommendations from station area planning and planning for TOD are still emerging.
CHAPTER 3
THE POTENTIAL FOR TRANSIT-ORIENTED DEVELOPMENT IN WINNIPEG

As stated in the introduction chapter, Winnipeg is slow-growth, mid-size Canadian municipality that has just started to build rapid transit and TOD in the past five years. To characterize the opportunities and challenges for transit-oriented development at strategic station areas along the proposed SWRTC, this chapter presents data gathered from key-informant interviews, academic sources, government documents and contemporary press to in Winnipeg. An overview of the current policy and planning support for TOD in Winnipeg and specifically relating to the SWRTC is presented. The unique opportunities and challenges were used to define areas-of-study for the case studies presented in the following three chapters.

3.1 Introduction to Winnipeg

Winnipeg is a mid-size and slow-growth city that has steadily increased in developed land area, despite moderate levels of population growth. Between 1971 and 2000, Winnipeg’s population grew by 34 percent but its land area increase by three-fold (Arrington 2008). Currently, the City of Winnipeg has a population of 633,000 and a total land area of 475 km² within the city limits, although the urbanized area is smaller (Census data, City of Winnipeg, 2006a). During the past three decades, Winnipeg’s emerging
neighbourhoods experienced the most population growth while the downtown and core
neighbourhoods have steadily decreased in population (Leo and Anderson 2006).

According to the Winnipeg Rapid Transit Taskforce, Winnipeg has “met the
threshold for the need for a rapid transit service” in the 1970s (Winnipeg Rapid Transit
Taskforce, 2005, 8). Studies dating back to the 1970s demonstrated that Winnipeg has
reached ridership thresholds for rapid transit service, particularly along the Downtown-
southwest corridor (Winnipeg Rapid Transit Taskforce 2005). All three levels of
government commissioned the *Southwest Corridor Study*, which produced
recommendations for alleviating traffic congestion along Pembina Highway (Winnipeg
Rapid Transit Taskforce 2005). One of the key recommendations of the study was the
construction of a bus-way with diesel-powered buses running between downtown
Winnipeg and the University of Manitoba’s Fort Garry campus in southwest Winnipeg
(Ibid). Similar recommendations were made in reports and studies produced in subsequent
decades (Ibid).

There have been significant political, administrative and financial barriers to
implementation of rapid transit in Winnipeg (Winnipeg Rapid Transit Taskforce 2005).
Most notably, plans for a BRT corridor running from Downtown Winnipeg to the
University of Manitoba was placed on the 2003-2004 capital budget for the City of
Winnipeg (Ibid). The project had received strong public support and was ready to go to
tender (Ibid). A change in administration at the City of Winnipeg cancelled the project
(Ibid). Therefore, Winnipeg is the largest urban region in Canada without any form rapid
transit service (Winnipeg Rapid Transit Taskforce 2005, 8). Currently, transit in Winnipeg
is an on-road, bus-only system. In their final report, the Rapid Transit Task Force report
recommends a bus rapid transit network that includes a mix of BRT, LRT and on-road streetcars in the downtown. In total eleven corridors are recommended for implementation, starting with rapid transit corridor connecting downtown Winnipeg and the University of Manitoba’s Fort Garry campus in southwest Winnipeg (Winnipeg Rapid Transit Taskforce 2005).

3.2 Key-informant Interviews

One transit planner and two land use planners involved in TOD at the City of Winnipeg were interviewed in order to provide insight into the research questions. The findings from the interviews are presented throughout this chapter. The interview guide consisted of four sections, according to the interview guide template in Appendix A. Section one contained questions about the interview subject’s professional position and involvement in planning for TOD at the City of Winnipeg. Section two consisted of questions relating to motivations for investing in the TOD concept at the municipal level, presented in sections 3.3 and 3.4. Section three related to implementation policy and tools to support TOD that currently exist; the findings are reported in section 3.3. Section four of the interview consisted of broader perspective questions, including general opportunities and challenges in planning for TOD in Winnipeg; the findings are presented in section 3.2.

Overall, all interviewees pointed to the need to better integrate transportation and land use planning in Winnipeg. TOD is viewed as one strategy that can integrate land use and transportation planning in Winnipeg, through station area planning, and produce transportation benefits such as creating ridership to support rapid transit, and easing traffic congestion. According to a land use planner interviewed, benefits of TOD for communities
include more opportunities for infill development and creating compact, walk-able
neighbourhoods (Winnipeg Interview 2, 2010). According to the transit planner (Winnipeg
Interview 3, 2010) interviewed:

*TOD helps to alleviate infrastructure challenges... Separating out land uses
into single uses hasn’t worked out very well because it has created more
infrastructure challenges...TOD can also do a lot to alleviate commuter
congestion [at] peak hours as it is not required that you have a car for every
trip.*

3.3 Planning and Policy Support for TOD

This section presents an overview of the current policy and planning support for
TOD in Winnipeg and specifically relating to the SWRTC. *Plan Winnipeg 2020 Vision* is
the city’s long-range development plan, containing general policies to guide growth and
development in Winnipeg. *Plan Winnipeg 2020 Vision* contains policy support for
integrating transit with land use planning and urban development throughout Winnipeg,
and establishing a rapid transit network throughout the city. The *OurWinnipeg* initiative is
the current development plan review process that has the potential to integrate planning and
policy support for TOD into Winnipeg’s planning and regulatory framework. Secondary
Plans guide development in discrete areas of the city, including Downtown Winnipeg,
established neighbourhoods, and emerging areas (City of Winnipeg 2005). Secondary
plans can establish the vision and standards for TOD at rapid transit stations. Winnipeg’s
zoning By-laws are examined for TOD supportive designations and features.
3.2.1 The OurWinnipeg Initiative

Winnipeg’s current municipal development plan review, a process that occurred from 2009 to 2011, presents the opportunity to reshape policy and urban planning tools at the municipal-level, including the integration of TOD principles into the municipal planning framework. Named OurWinnipeg, the development plan review process involves a series of citywide community engagements, consultation papers produced by departments within the City’s operations, and resulting policy and development plan (SpeakUpWinnipeg 2009).

As part of the Our Winnipeg initiative, PB’s Placemakers, a Portland-based consulting firm specializing in TOD, was contracted by the City of Winnipeg to produce a TOD Handbook for Winnipeg and TOD Policy Evaluation document. The TOD Handbook (City of Winnipeg 2009a) contains:

- Customized definition of TOD in Winnipeg, developed in conjunction with representatives from each department within the City of Winnipeg;
- Well-known precedents of TOD including the Rosslyn-Ballston Corridor in Virginia, the Transitway in Ottawa, Eastside Village in Plano Texas, Bloomington Central Station in Minnesota, Arlington Heights in Illinois, and two precedents from California;
- General station-area typologies that could achieved in Winnipeg such as “urban centre”, “urban neighbourhood” of varying densities and uses, “high capacity transit corridor”, and “regional greenway”;
- Checklists for site and building design for TOD that are approximately catered to the opportunities and constraints presented by the Winnipeg context.
At the time of undertaking background research in Winnipeg, the analysis of policy support for TOD was started in the *Winnipeg Transit-Oriented Development Policy Evaluation* (City of Winnipeg 2009b). The Policy Evaluation document contains a review of eighteen planning documents by the City of Winnipeg in order to evaluate the levels of support for TOD principles within established policies and planning processes (City of Winnipeg 2009b). The analysis includes most relevant planning documents produced by the City of Winnipeg, including *Plan Winnipeg 2020 Vision*, *Winnipeg Zoning By-law 200/2006*, the *Osborne Village Neighbourhood Plan*, and *Urban Design Guidelines - Downtown Winnipeg*, and identification of TOD-supportive elements within each document. At the time of inquiry, the draft Policy Evaluation states that existing planning policies and processes at the City of Winnipeg can support TOD (City of Winnipeg 2009b). The Policy Evaluation document recommends secondary planning processes to support station area plans, and the Planned Development Overlay zoning district as an implementation tool.

While the *TOD Handbook for Winnipeg* and *TOD Policy Evaluation* certainly supplement the research undertaken in this practicum, what is lacking in existing plans and policy documents is a critical discourse on whether TOD is a good fit for Winnipeg, and appropriate station area typologies to Winnipeg’s current urban form and growth patterns. Both of these documents are intended to guide high-level policy as part of the City of Winnipeg’s development-plan review process. Therefore, both documents state only very generic recommendations for corridor- or station-area planning in Winnipeg.
3.2.2 Plan Winnipeg

Plan Winnipeg 2020 Vision (City of Winnipeg 2000) is the current comprehensive plan, containing policies to guide growth and development in Winnipeg. Plan Winnipeg contains policy support for integrating transit with land use planning and urban development throughout Winnipeg, and establishing a rapid transit network throughout the city. Plan Winnipeg is divided into 5 sections; each section contains policies that govern the different departments of the city’s operations. Section 3, titled Planned Development, Transportation and Infrastructure provides the following high-level policy support for transit-oriented development:

**Policy 3A-03: Integrate Land Use, Urban Design and Transportation**

*The City shall integrate land use, urban design and transportation planning in a manner consistent with its commitment to compact urban form by:*

I. Encouraging mixed-use development to minimize travel distances for basic needs; and

II. Ensuring that all residential development supports the provision of efficient, attractive, and cost-effective transit service through appropriate design considerations

(City of Winnipeg 2000, 31).

**Policy 3A-04: Protect Traffic Flows from Significant Increases**

*The City shall protect traffic flows from significant increases in volume as a result of new development by:*

I. Directing new development with high intensity uses to locations that are supported by transit operations

(City of Winnipeg 2000, 31).

Policy 3A-03 makes provisions for two important elements of TOD as outlined in Dittmar and Ohland’s Performance-based Definition of TOD: location efficiency and promoting mixed-use development. Policy 3A-04 promotes value-capture and location efficiency
principles by mandating the placement of high-intensity development near transit operations.

*Plan Winnipeg* (City of Winnipeg 2000) establishes plans for a BRT network throughout Winnipeg. In the short term, two BRT corridors are identified for implementation before the year 2020:

- “Eastern Transit Corridor”, running between Downtown and Transcona in Northeast Winnipeg;
- “Southwest Transit Corridor”, running between Downtown and the University of Manitoba in Southwest Winnipeg.

Long-range plans include three additional BRT corridors throughout the city: “Southeast Transit Corridor”; “Northeast Transit Corridor”; and the “Northwest Transit Corridor” (City of Winnipeg 2000). Once completed, the SWRTC will be the first dedicated bus corridor in Winnipeg, part of the rapid transit network mandated by Plan Winnipeg.

### 3.2.3 Secondary Plans

Under *Winnipeg’s Planning and Development Framework* (City of Winnipeg 2005) secondary plans can be statutory or non-statutory. Non-statutory secondary plans are approved by City Council but not adopted as city by-law. Examples of non-statutory secondary plans include: *Centre Plan- Vision and Strategies*; neighbourhood background studies; housing plans; City of Winnipeg’s *Trans Plan 2010*; and development servicing concept plans for new subdivisions.
In contrast, statutory secondary plans are adopted and enforceable as by-laws. In *Plan Winnipeg*, statutory secondary plans are defined as: “A more detailed plan having the status of a by-law which includes a statement of the City’s policies and proposals for the development, redevelopment or improvement of a specific area of the city” (City of Winnipeg 2000, 67). Types of statutory secondary plans include:

- **Neighbourhood plans** and **area redevelopment plans** for downtown and existing neighbourhoods;
- **Planned Development Overlay** (PDOs), for redevelopment along traditional main streets; and
- **Area structure plans** for new neighbourhoods

(City of Winnipeg 2005).

Secondary plans are undertaken in order to meet the following objectives (City of Winnipeg 2009):

- Support neighbourhood revitalization;
- Promote orderly development;
- Guide the Development of New and Existing Residential Areas; and
- Regulate Land Uses in Rural Areas

According to land use planner interviewed, either statutory or non-statutory secondary plans could be used in station area planning (Winnipeg Interview 1, 2010). Both types of secondary plans include provisions for the road network, infrastructure, servicing agreements urban design and transportation demand management (TDM) for the plan area (Ibid). The main difference between the two is that non-statutory plans take only three to
four months to be approved through city council, whereas statutory plans can take up to one year to complete (Ibid).

When compared to the case studies investigated in this practicum, the secondary planning in Winnipeg is noticeably less developed. For instance, along the entire length of the SWRTC only Osborne Station is covered by a secondary plan. Therefore, obtaining information for station analysis along the SWRTC was a challenge. In the case studies, the majority of the information on demographics and the existing built environment at station areas was found in secondary planning documents. In addition, master planning documents, such as transportation master plans, served as key sources of data on station areas and general planning support for TOD. At the time of writing this practicum, master plans for the City of Winnipeg are being developed under the OurWinnipeg initiative but not adopted by City Council.

3.2.4 Winnipeg Zoning By-laws

Two zoning by-laws support the implementation of the policies contained in Plan Winnipeg. Downtown Zoning By-law 100/2004 governs zoning specifically in the Downtown. Winnipeg Zoning By-law 200/06 applies to all areas of the city outside of the Downtown Winnipeg.

Both zoning by-laws contain designations that have the potential to support TOD and station area planning. The purpose of the Downtown Zoning By-law 100/2004 is: “... to support and enhance the unique and distinctive neighbourhoods, functional districts, character areas, and focal points that combine to form a diverse, vibrant downtown”.

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The three stations on the Phase I of the SWRTC with potential for TOD and all stations in Phase II will fall under Winnipeg Zoning By-law 200/06. Under Zoning By-law 200/06, there are three zoning designations that have the potential to support TOD around stations areas of the SWRTC:

1. **Commercial Mixed Use (CMU) district** is:

   ...intended for use along selected corridors and at important nodes in the city. The district is intended to include attractive commercial, institutional, recreational, and service facilities....Although the area, site, or building should have a predominantly commercial character, multi-family housing may be incorporated within the district, and development should facilitate pedestrian connections between residential and nonresidential uses

   (City of Winnipeg 2006b, 48).

2. **Residential Mixed Use (RMU) district** is:

   ...intended to facilitate the development of primarily medium- to higher-density residential development, though it also may contain limited small-scale commercial, institutional, recreational, and service facilities needed to support residential development. The area, site, or building should retain a predominantly residential character. Development in the RMU district should facilitate and encourage pedestrian travel between residential and nonresidential uses. This district is often adjacent and incidental to a town centre, neighbourhood commercial centre, or other type of mixed use or major employment centre

   (City of Winnipeg 2006b, 47).

3. **Planned Development Overlay (District) (PDO-1)** is intended to:

   ...provide a means to alter or specify allowed uses and/or development standards in otherwise appropriate zones...in order to achieve local planning objectives in specially designated areas.... PDO-1 districts are generally appropriate for areas with unique or special circumstances containing 10 or more parcels or containing 25 acres or more in area

   (City of Winnipeg 2006b, 50).

The PDO-1 allows changes in current the zoning for a district, including regulations such as:
total residential density; building height; size and floor area ratio for each use category and use type; yard requirements; parking requirements for each use category or use type; architectural and site design requirements; and environmental regulations, which may include such things as flood proofing, noise attenuation, and servicing requirements

(City of Winnipeg 2006b, 52).

Although these three zoning districts support mixed-uses and higher densities, the existing zoning in Winnipeg still lacks many properties of TOD supportive zoning, including use of parking maximums, form-based codes, and minimum density requirements (Winnipeg Interview 1a, 2010). The CMU and RMU zoning probably does not go far enough in supporting TOD. PDO and Parking Management Plans, used in conjunction with station area planning, are likely the best tools currently available for supporting TOD (Winnipeg Interview 1, 2010). Parking Management Plans allow planners to customize parking requirements, reducing the requirements stipulated by the current zoning by-laws, and allowing TDM measures (Ibid).

The next steps for supporting TOD in Winnipeg include corridor-level analysis for redevelopment opportunities, establishing station-area plans, and appropriate implementation tools (Winnipeg Interview 2, 2010). The City of Winnipeg plans to utilize the existing planning tools in order to support TOD at strategic rapid transit stations (City of Winnipeg 2009b). These tools include:

- Station area plans;
- Financing tools such as TIF;
- Rezoning station areas using Planned Development Overlays (PDOs) to allow for vertical mixed-used development and TOD-supportive urban form
3.4 The Southwest Rapid Transit Corridor and Station Areas

This section provides context for the planning and financing of the SWRTC. Key-informants provided much of the contextualization of opportunities and challenges for TOD at select station areas. Current conditions at station areas were investigated through site visits, with respect to the five goals of the Performance-based Definition of TOD, including: location efficiency; mixed land uses; value capture; place making; and resolving any conflict between node and place at station areas.

3.4.1 Funding and Implementation

The SWRTC is a bus rapid transit (BRT) corridor that is being planned and constructed in two phases. Once completed, the SWRTC will be a 12-kilometre BRT corridor running between downtown Winnipeg and the University of Manitoba. In 2008, City Council made a financial commitment to the Phase I of the Southwest Rapid Transit Corridor and a policy commitment to facilitate transit-oriented development (TOD) around future rapid transit stations (City of Winnipeg 2008b). As of October 2010, funding for implementation of Phase II has not been secured.

Within the City of Winnipeg, the departments of Planning Property, and Development, Public Works, and Winnipeg Transit are involved in the planning and implementation of both rapid transit and TOD. There are also remarkably active citizens’ lobby groups in Winnipeg, such as Bike to the Future and the Winnipeg Rapid Transit Coalition that have advocacy and advisory roles for active transportation and rapid transit, respectively, within Winnipeg.
All three levels of government are involved in the funding Phase I of the Southwest Rapid Transit Corridor. Phase I of the SWRTC is budgeted to cost a total of $138 million. The City of Winnipeg used debt financing and funds from the Federal Transit Fund to contribute $55 million to the project (Winnipeg Transit 2010). As legislated by the Government of Manitoba’s Climate Change Act, The City of Winnipeg and Province of Manitoba have a 50-50 transit funding agreement that covers both the operating and capital costs of rapid transit within Winnipeg; therefore, the Province of Manitoba matched the City’s contribution, and will also fund 50 percent of the net operating costs for rapid transit (City of Winnipeg 2008b). The Federal government contributed $27 million to the project (Winnipeg Transit 2010).

While the Phase I of the SWRTC, from the University of Winnipeg to Jubilee Avenue (see: Figure 2), is currently being constructed, funding for the second phase of the SWRTC has not been secured in the 2010 Capital Budget (Winnipeg Interview 2, 2010). Plans for future rapid transit projects will also depend upon tripartite funding arrangements that are approved on a project-by-project basis with strict timelines typical of this type of municipal capital funding. The second phase is estimated to cost $189 million and is pending a similar tripartite funding arrangement in order to proceed (Kives 2008). Running from Jubilee Avenue to the University of Manitoba, the second phase of the SWRTC (see: Figure 8) is crucial to the success of rapid transit in Winnipeg. With a projected total cost of 189-million for phase II, completing the SWRTC requires substantial further capital investment from the City of Winnipeg (Winnipeg Interview 2, 2010).

The City of Winnipeg hopes to establish Tax Increment Financing (TIF) for the Southwest Rapid Transit Corridor, which is perceived as an opportunity to promote TOD.
The City of Winnipeg defines TIF as “an investment and development tool that reinvests property and school taxes into certain areas to encourage infrastructure development that would otherwise not take place” (City of Winnipeg 2008b). In the case of rapid transit, TIF will be used to “capture any incremental growth from residential and commercial infill development along the rapid transit corridor” (City of Winnipeg 2008b). The City of Winnipeg would use the revenue generated from the TIF towards capital improvements at station areas such as sidewalk improvements and streetscaping (Winnipeg Interview 2, 2010).

3.4.2 Opportunities and Challenges for TOD in Phase I

Phase I of the SWRTC will be approximately four kilometres, starting at the University of Winnipeg and terminating at Fort Rouge. According to key-informants, Phase I contains several redevelopment opportunities to support TOD. Stations in Phase I include:

- University of Winnipeg Station, a university campus that will provide a transit market;
- Osborne and Fort Rouge Stations, located at the fringe of established urban neighbourhoods (see: Figure 3); and
- Harkness Station, located along Donald Street, an arterial road (see: Figure 4).
- Graham Mall Stations, located along a dedicated transit and pedestrian mall (see: Figure 6);
- Union Station, a potential multi-modal transit hub for regional rail and rapid transit service (see: Figure 7);
Three station areas in Phase I of the SWRTC have been identified by City of Winnipeg planners interviewed and document review (Winnipeg Transit 2010) as having the most potential for TOD:

1. **Fort Rouge Station** (see: Figure 3) is located on a 16-acre greyfield site along an active rail yard. This station area has the largest area of land available for redevelopment in Phase I (Winnipeg Interview 2, 2010). Two stations are proposed for the *Fort Rouge Yards*: Jubilee Station and Fort Rouge Station (Winnipeg Interview 2, 2010). The Fort Rouge Yards are located on the fringe of the Lord Roberts neighbourhood, a former streetcar suburb that has a grid street network, relatively good transit service and pedestrian amenities (Winnipeg Interview 3, 2010). While Lord Roberts went through a period of decline in the 1980s and 1990s, the neighbourhood is currently showing evidence of renewal, with significant housing upgrades and reinvestment in its commercial main street (Winnipeg Interview 2, 2010). A private developer has already submitted plans to develop 900 units of multiple-family housing, with a mixture of high-rise and mid-rise buildings in this area (Winnipeg Interview 2, 2010). This proposal would have housing developed at densities at significantly above the community average, which is one of the performance standards for TOD. However, the appropriateness of the design of the site, in terms of place making, parking and connectivity issues, was not elaborated on in the key-informant interviews.

2. **Harkness Station** (see: Figure 4) will be located on Donald Street, on a high-traffic arterial road with an existing mix of commercial and multiple-family
residential buildings. Harkness Station is adjacent to surface parking lots that will have redevelopment potential as land values increase around the established station area (Winnipeg Interview 1, 2010). Currently, the City is working with a private developer to rezone one parcel of land to allow for a high-rise multiple family residential building (Ibid).

3. **Osborne Station** (see: Figure 5) will be located at the edge of Osborne Village, an established urban village with good pedestrian and transit connections (Winnipeg Interview 2, 2010). Osborne Station will be located on a bridge, so the station will be offset up to 200-metres from established commercial establishments and foot traffic (Winnipeg Interview 3, 2010). However, Osborne Station will be adjacent to several underutilized commercial parcels that have redevelopment potential to become higher density commercial uses (Winnipeg Interview 1, 2010).

In addition, the *TOD Handbook for Winnipeg* identifies downtown stations along Phase I of the SWRTC as potential sites for TOD. In the downtown, the SWRTC will utilize existing diamond lanes and other transit priority measures until Harkness Station, when it will become a dedicated BRT corridor. In the downtown, stations will be located at the University of Winnipeg, the Graham Avenue Transit Mall and at Union Station. Overall, City of Winnipeg planners interviewed indicate that they are optimistic about developer interest in higher density housing for stations in Phase I. Development applications for housing development, particularly at Harkness and Fort Rouge Station areas, have been received by the City of Winnipeg (Winnipeg Interview 1, 2010). Opportunities for commercial development at Osborne Station are predicted to arise once
rapid transit is in place (Winnipeg Interview 3, 2010). According to a land-use planner interviewed (Winnipeg Interview 2, 2010) the City of Winnipeg is supporting TOD around these station areas through the following actions:

- Provision of rezoning to allow for higher density development and mixed-land uses where there is developer interest;
- Upgrade to sewer and water infrastructure to allow for higher density development in the Fort Rouge Yards; and
- Undertake capital improvements around station areas for pedestrians, including sidewalks, landscaping and signage.
Image 1: Phase I of the Southwest Rapid Transit Corridor. Phase I will start at the University of Winnipeg in downtown Winnipeg and terminate in the Fort Rouge Yards, located in the Lord Roberts/South Osborne neighbourhood. Station areas outside the downtown identified by the City Of Winnipeg as having the most potential for TOD include Harkness, Osborne and Fort Rouge Stations. © Winnipeg Transit, 2009. Copyright permission granted, August 2011.
Figure 2: Existing Land Uses at the Fort Rouge Yards. The Fort Rouge Yards is the largest re-developable site on Phase I of the Southwest Rapid Transit Corridor. The surrounding neighbourhood has undergone significant transition and redevelopment in the past five years, with subsequent changes in demographics and rise in property values (Winnipeg Interview 2, 2010). A challenge for station area planning will be ensuring that future development is compatible with the existing neighbourhood character while promoting land use intensification and improved urban form. Existing surrounding land uses include industrial rail yards (top) and infill development of single-family housing (bottom). Photo source: Author, 2010.
Figure 3: Existing land uses at Harkness Station. Top: Mid- and high-rise apartment buildings located adjacent to Phase I of the SWRTC and along Donald Street, high-traffic arterial road. Bottom: Surface parking lots adjacent to Harkness Station which will have redevelopment potential as land values are raised around the established station area. Photo source: Author, 2010.
Figure 4: Existing land uses at Osborne Station. Osborne Station is located approximately 200-metres from a busy intersection and transit hub. Surface parking lots and other under-utilized parcels of land have redevelopment potential as higher density commercial uses. Photo source: Author, 2010.
Figure 5: Amenities for pedestrians and cyclists along the Graham Avenue Transit Mall, an existing transit hub in Downtown Winnipeg. Photo source: Author, 2010.
However, there is a significant lack of plans, regulations and incentives in place to support TOD at station on the SWRTC (City of Winnipeg 2009b). Most notably, there are no station area plans in place (Winnipeg Interview 2, 2010). Since development proposals with the station areas are already being received the City’s planning department, the station area planning process for Phase I is being undertaken simultaneously with individual development approval processes (Winnipeg Interview 2, 2010). Also, the City of Winnipeg has missed the opportunity to do corridor-level planning concurrently with the alignment decisions for Phase I, to determine ideal locations for station areas based on re-development potential and ridership catchment areas (Winnipeg Interview 2, 2010).

There are many physical barriers for TOD around proposed stations. In the Fort Rouge Yards, a significant challenge is designing TOD along an active rail yard and on formerly industrial lands (grey-field redevelopment) (Winnipeg Interview 3, 2010). Stations in the Fort Rouge Yards will be located along rail yards that are a physical barrier...
to provision of functional pedestrian linkages with the surrounding neighbourhoods. Other challenges TOD in the Fort Rouge Yards include: the limited capacity of the existing street network, which is made up entirely of local roads with limited traffic capacity; addressing traffic circulation concerns; and determining appropriate densities and urban character of the TOD (Winnipeg Interview 2, 2010; Winnipeg Interview 3, 2010).

3.4.3 Opportunities and Challenges TOD in Phase II

Overall key-informants were optimistic that strategic station areas in Phase II have redevelopment potential to become University campus, commercial and employment nodes. Phase II will extend the SWRTC from Jubilee Avenue to Bison Drive, located approximately 8 kilometers to the southwest (see: Figure 8; Winnipeg Transit 2010). At the time of completing this document, alternative routing for Phase II was still being discussed. Phase II will also extend past the University of Manitoba, a large suburban campus with a large commuter market for transit (Winnipeg Interview 3, 2010). Plaza station will be located in proximity to a significant undeveloped land area with potential to serve as an employment and commercial area (Winnipeg Interview 2, 2010).

The majority of stations in Phase II will be located amongst suburban residential neighbourhoods and set back from Pembina Highway, a designated arterial road. As the alignment and locations of stations in Phase II has not yet been determined, exact station area typologies are uncertain. However, there will be potential for corridor level analysis to determine optimal station locations, based on ridership catchment areas and redevelopment potential of surrounding land (Winnipeg Interview 2, 2010).
The transit planner interviewed identifies Windermere, McGillivray and Chevrier Stations as opportunities for TOD, since the existing road networks form a grid pattern off of Pembina Highway (Winnipeg Interview 2, Winnipeg Interview 3, 2010). Winnipeg Interview 3, (2010) states:

The Phase II alignment is ideal as well. The proximity to Pembina Highway is an asset [in Phase II] as there is a lot of low-value that will be easily redeveloped as land values increase after rapid transit is implemented.

In Phase II, there are several surface parking lots available for redevelopment if land values rise (Winnipeg Interview 2, 2010).

Like many contemporary suburban transit corridors, as the Transit Cooperative Research Program (2002) notes, the existing urban environment around Phase II of the SWRTC is characterized by haphazard development, uninspiring streetscapes, and poor connections between the neighborhood and transit corridor: “What such settings universally lack are a human-scale environment to provide a sense of comfort, pleasantness, and attachment to place” (Transit Cooperative Research Program 2002, 76). Therefore, a challenge for station area planning will be to integrate rapid transit into existing neighbourhoods, while promoting land use intensification and improved urban form.
Image 2: Proposed Phase II of the *Southwest Rapid Transit Corridor*. As the alignment and locations of stations in Phase II has not yet been determined, exact station area typologies are uncertain. Station areas in Phase II have more redevelopment potential as housing and employment centres, including Plaza, Windermere, McGillivray and Chevrier Stations. © Winnipeg Transit, 2009. Copyright permission granted, August 2011.
3.5 Directions for Case Study Research

The purpose of this chapter was to characterize the opportunities and challenges for transit-oriented development at the proposed station areas along the Southwest Rapid Transit Corridor. Key-informant interviews, site visits and review of key planning documents produced by the City of Winnipeg informed the characterization. The findings from this chapter are used to guide the topics of case study research, as well as to address the first research question for this practicum:

*What are the opportunities and challenges for transit-oriented development at strategic stations along the Southwest Rapid Transit Corridor in Winnipeg?* (See 1.3 Research Questions)

The opportunities identified for station area planning along the *Southwest Rapid Transit Corridor* include:

1. Downtown revitalization, through intensification of land uses and mandating pedestrian-friendly urban form along the Graham Avenue Transit Mall and at Union Station and the University of Winnipeg;
2. Facilitating higher-density housing development in Phase I at Harkness, and Fort Rouge Stations;
3. Higher-density retail development at Osborne Station in Phase I;
4. Facilitating compact office, commercial and housing development along the Pembina Highway in Phase II; and
5. Re-integration of transit, land use planning and urban development objectives for planning and policy in Winnipeg.

The *Our Winnipeg* initiative presents the opportunity to integrate TOD policy into Winnipeg’s planning and development framework. In existing literature and amongst
planners interviewed, TOD is viewed as a strategy to integrate transit and land use planning. For instance, TOD can provide the framework to improve the layout and design of residential suburban neighbourhoods that would enable the provision of more efficient transit service and facilitate more walking and cycling trips (Winnipeg Interview 3, 2010).

With secondary plans and PDO zoning designation, the existing planning framework in Winnipeg has the potential to support station area planning and implementation. As presented in the previous chapter and within the finding for this chapter, station area planning emerges as an important planning tool for municipalities to support TOD. In Winnipeg, key-informants recommend statutory or non-statutory secondary plans to direct capital improvements in pedestrian and cycling amenities, infrastructure servicing agreements, urban design standards and transportation demand management (TDM) policy at specific station areas (Winnipeg Interview 1, 2010). The PDO zoning designation allows for mixed-use zoning and higher densities required to bring TOD into station areas (Winnipeg Interview 2, 2010). The Our Winnipeg initiative presents the opportunity to adopt citywide policies that support TOD, such as form-based zoning codes and alternative parking standard brought to all multiple family, office and commercial development.

In terms of challenges, the SWRTC is aligned along an active rail corridor that presents physical barriers and design challenges for TOD. By placing stations within active rail yards, such as the Fort Rouge stations, providing functional pedestrian linkages between the station and surrounding neighbourhood is costly. Stations areas such as Osborne Station are set back 200-metres from existing neighbourhood activity centres, which limits the immediate demand for redevelopment at the station area. Overall, one of
the challenges for TOD along the SWRTC is to determine appropriate densities for TOD around the proposed station areas that complement the surrounding neighbourhoods and existing urban character (Winnipeg Interview 2, 2010). As the senior land use planner interviewed stated, “there is no one size fits all solution – each station will be different” (Winnipeg Interview 2, 2010).

The process of planning and financing the SWRTC has also resulted in some challenges for TOD at station areas resulting from the placement of station in neighbourhoods with limited redevelopment potential. All key-informants identified funding for Phase II to be a significant concern, as the City of Winnipeg, as well as the other levels of government, has not committed funds to construct Phase II. As presented in the previous chapter, section 2.7, having secured public investment in rapid transit systems, whether the technology is BRT or LRT, is required for municipalities to promote TOD as a value capture investment. Without political and financial commitment to rapid transit in Winnipeg, residential and commercial development at stations are unlikely to be dense enough to support high levels of transit ridership or support capital improvements under the City’s proposed TIF program due to less certainty about the marketability of the development at proposed station areas.

Winnipeg is a mid-size and slow growth city. While Winnipeg has experienced substantial build-out and expansion in the past three decades, this increase in the geographical size of the city is not matched with significant population growth or an increase in assessment base. Compact neighbourhoods with pedestrian-oriented urban environments and efficient public transit are in short supply. While there is strong policy support for TOD emerging from the Our Winnipeg initiative, most existing planning and
policy support for TOD is voluntary, without a regulatory means for implementation.

Based on the findings from this chapter, the following areas will be investigated within the three selected case studies described in the next three chapters:

- Municipal planning and policy support for TOD
- Municipal and regional policy support for integration of transit service with land use planning and urban development
- Station area planning: including goals, process of formulation, means for regulation and implementation
- Implementation tools to support station area plans, including the use of overlay zoning

The above were identified as the areas to investigate in the case studies presented in the next three chapters, as they represent the challenges facing the City of Winnipeg in planning and implementing transit-oriented development at strategic stations along the SWRTC. The case studies examined here generate ‘lessons learned’ and recommendations for the City of Winnipeg to address the identified opportunities and challenges in supporting TOD along the SWRTC.
CHAPTER 4
DENVER UNION STATION

This first case study examines planning and policy support for TOD in the City and County of Denver generally and, specifically, station area planning at Denver Union Station in Downtown Denver. In the Denver metropolitan region, there is extensive investment in expanding the regional rapid transit system that includes BRT, LRT and commuter rail service. Under the regional transit expansion program *FasTracks*, the City and County of Denver itself will have over thirty rapid transit stations along seven rapid transit corridors. To date, the City and County of Denver has advanced planning policies in support of TOD and has implemented 12 station area plans.

The redevelopment of the Denver Union Station area is part of on-going efforts to revitalize Downtown Denver through a myriad of approaches including public investments in housing, adaptive re-use of heritage buildings, financial incentive programs for retail development and TOD. The *Denver Union Station Master Plan* (2004) and *Denver Union Station Master Plan Supplement* (2008) were adopted by the inter-governmental Denver Union Station Executive Oversight Committee (EOC) to guide the redevelopment of the 19.5-acre site and surrounding area. This case study identifies ‘lessons learned’ and recommendations to Winnipeg in the areas of: station area planning in a downtown setting; use of TIF; and application of overlay zoning for TOD.

This case study was compiled using academic sources, municipal planning documents, contemporary press, and information gathered from three key-informant interviews with planners involved in TOD in Denver. Site visits of Denver Union Station
were completed over three days in March 2010. The first key-informant is the Manager for TOD within the Regional Transportation District (RTD)’s FasTracks transit expansion program. The second key-informant is the Manager of Comprehensive Planning at the City and County of Denver who is responsible for overseeing all secondary planning activities, including station area plans and the implementation of Denver’s Transit-Oriented Development Strategic Plan. The third key-informant is the Executive Director of the Colorado Chapter of the Urban Land Institute, who has worked as an advocate for TOD on behalf of the Denver Regional Council of Governments (DRCOG) and the Regional Transportation District of Denver (RTD).

4.1 Municipal and Regional Context

The City and County of Denver (Denver) is a high growth area, where concerns for traffic congestion, local air quality and managing regional population growth has motivated planning and transit expansion since the 1960s (TCRP 2004). Denver has a population of 582,474 and a total land area of 401 km² within the city boundary, making the city itself slightly smaller than Winnipeg (DRCOG 2007). However, Denver is situated in a much larger metropolitan area that has a population of 2.8 million and a land area of 11,269 km². Following World War II, the population of the metropolitan region of Denver area has increased by an average of 30-percent per decade (TRCP 2004).

A number of demographic trends in Denver contribute to an increasing demand for TOD and location-efficient housing (City and County of Denver 2006). In the Denver region, housing demands are changing to reflect an increasing number of smaller- and

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older-households (Ibid). The number of low-income households, as a percentage of the total regional population, is also on the rise (Ibid). The growing regional population in the Denver metropolitan area is attributed to a growing economy and relatively high quality-of-life in Colorado (DRCOG 2007). As result of these demographic trends, the demand for location efficient housing, located within half-a-mile of rapid transit is projected to rise from 18,600 households in 2000 to a projected 138,000 by 2030 (City and County of Denver 2006).

As in many large metropolitan areas, station and corridor-level planning in Denver is institutionally complex, requiring cooperation amongst many key stakeholders and levels of government (RTD 2006). Key organizations involved in planning for TOD in Denver include: the RTD; City and County of Denver; DRCOG; and redevelopment agencies such as the Denver Urban Renewal Authority (DURA) and the Denver Downtown Development Authority (DDA).

The City and County of Denver administers station area plans, zoning, and Denver’s Transit-Oriented Development Strategic Plan and Blueprint Denver. In 2004, the City and County of Denver received approximately $100 million in federal funding for station area plans, which was used to produce ten station area plans including the Denver Union Station Master Plan (Denver Interview 1, 2010). Most of the existing market for TOD in Denver is located at urban stations located in or within close proximity to Downtown (Ibid). For examples of TOD in Downtown Denver, see Figures 13 and 14.

The RTD is the public transit provider for the metropolitan region of Denver. The RTD operates over fifty kilometers of rapid transit on three separate corridors: the Central Corridor (opened in 1994 as Denver’s first rapid transit corridor); the Southwest Corridor...
(opened in 2000); and the Southeast Corridor (opened in 2006). The RTD receives capital funding from the Federal Transit Administration (FTA) and Colorado Department of Transportation (CDOT) (RTD 2006). The RTD’s operating funds come from user fees, system-generated revenues, federal grants and levy on municipal sales tax (6 cents on every dollar) from each serviced municipality (Denver Interview 1, 2010).

*FasTracks* is the RTD’s 20-year, $6.1 billion program for regional transit expansion (RTD 2006). Under *FasTracks*, the RTD aims to deliver rapid transit service to facilitate inter-suburb travel and efficient commutes to downtown Denver and regional employment centres (City of County of Denver 2006). Adopted in 2004 through a metropolitan by-election, the *FasTracks* program is funded through an additional levy of four-cents per dollar on municipal sales tax from each member municipality (Denver Interview 1, 2010). By 2030, the RTD aims to construct an additional 196-kilometres of LRT and commuter rail, and 29-kilometres of BRT under the *FasTracks* program (RTD 2006). Upon the completion of *FasTracks*, City and County of Denver itself will have over 40 rapid transit stations on eight rapid transit corridors (See: Figure 11) (Denver Interview 1, 2010).

**DRCOG** is a Metropolitan Planning Organization (MPO). DRCOG is a nonprofit agency that consists of elected representatives from each member city or county that forms the Denver metropolitan area (TRCP 2004). DRCOG provides real estate information, demographics, zoning and land use information for 25 existing station areas in the City and County of Denver to encourage TOD in the market. In 1997, DRCOG adopted *Metrovision 2020* a long-range policy document to manage growth in metropolitan area according to Smart Growth principles (see Section 2.1). Member municipalities and counties were asked sign the *Mile High Compact*, an agreement to adopt the planning principles set out in
Metrovision 2020 (TCRP 2004). For more information on Metrovision 2020, see Section 4.2.1.

DRCOG has leverage over regional planning, as federal transportation funds must come through a MPO (TCRP 2004). However, there is political reluctance to withhold funds from any one jurisdiction since the governance of DRCOG is composed of member jurisdictions (Ibid). As such, Metrovision 2020 is not fully embraced by member municipalities, including the fastest growing Jefferson County (Ibid). Without the full cooperation of all member municipalities, Metrovision 2020 lacks a solid means for implementation, due to political reluctance to withhold federal transportation funds from any one member municipality (Ibid).

In 1958 the City and Denver created the Denver Urban Renewal Authority (DURA) as an arm’s-length redevelopment agency. One of DURA’s main roles is financing the adaptive re-use of heritage properties in Downtown Denver, which has made DURA a key player in downtown redevelopment, particularly of properties along the 16th Street Transit Mall (Denver Interview 1, 2010).

In the Denver metropolitan area, TOD is a tool for municipalities to manage population growth, regional traffic congestion and plan for demographic change (TCRP 2004). Denver has what the Transit Cooperative Research Program coins as “transit altered streetscapes”: neighbourhoods and corridors that are shaped by transit service; a prime example of which is the 16th Street Transit Mall in Downtown Denver (TCRP 2004). The 16th Street Transit Mall is considered “the spine” of Downtown Denver that connects the

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Civic Plaza, Central Business District and the Denver Union Station (Ibid). The 16th Street Transit Mall runs the length of downtown and is flanked by mid- to high-rise buildings containing offices, retail, entertainment venues and structured parking (City and County of Denver 2006).

While existing examples of TOD are concentrated in Downtown and adjacent stations, station in the suburbs, such as Englewood Village on the Southwest corridor and Staples Town Centre on the East corridor, are emerging TOD communities (Denver Interview 1, 2010). According to the Executive Director of the Colorado Chapter of the Urban Land Institute, planning for TOD in Denver is motivated by transportation management and place-making objectives Denver’s “evolution to become a more urban space” (Denver Interview 2, 2010).
Figure 7: The 16th Street Transit Mall. Located in Downtown Denver, the 16-block pedestrian and transit mall links Denver Civic Plaza, retail, entertainment venues and the Denver Union Station site with complimentary transit service. Photo source: Author, 2010.

Figure 8: A LRT Station in Downtown Denver. This station area features many elements of TOD including mixed-use buildings with active ground floor uses and good pedestrian accessibility. Photo source: Author, 2010.
Image 3: Rapid Transit System in the Denver Metropolitan Area. In the City and County of Denver, there are currently 25 rapid transit stations located on three LRT corridors: the Central Corridor; the Southwest Corridor; and the Southeast Corridor. With the FasTracks program, 16 additional stations will be constructed on the West, US 36 BRT, Northwest Rail, North Metro and East Corridors. © Regional Transportation District of Denver, 2010. Copyright permission granted, August 2011.
4.2 Planning and Policy Support for TOD

This section provides a brief overview of the current policy support for TOD within local and regional levels of government.

4.2.1 Metro Vision 2020

*Metro Vision 2020* is a smart-growth, regional land use and transportation plan that identifies the need for rapid transit expansion, establishes an urban growth boundary around the existing metropolitan region and directs “transit supportive development” to channel growth into existing urban centres (TCRP 2004). Member municipalities and counties were asked sign the *Mile High Compact*, an agreement to adopt the planning principles set out in *Metrovision 2020* (TCRP 2004). Although three member counties have not signed, *Metrovision 2020* has supported the revitalization efforts in Downtown Denver, by recommending prioritization of residential development in the Lower Downtown (LoDo) neighbourhood (TCRP 2004).

4.2.2 Blueprint Denver

*Blueprint Denver* was adopted by City Council in 2002 to supplement the transportation and land use policies in the *Denver Comprehensive Plan* (City and County of Denver 2002). TOD and corridor-level planning are organizing concepts of this planning document. *Blueprint Denver* contains three main policy areas that support TOD:

1. Categorizes Denver into *areas of stability* and *areas of change*. In *areas of stability*, land use policies are intended to preserve the existing character. *Areas of change* are designated growth centres;
2. Recommends a network of multi-modal corridors throughout Denver to accommodate pedestrians, cyclists, transit users and personal automobiles; and

3. Commits to mixed-use development in designated areas of change including Downtown Denver, along multi-modal corridors, and around rapid transit stations (City and County of Denver 2002).

In *Blueprint Denver* Downtown Denver is designated as an area of change that will accommodate among the highest levels of densification and variety of land uses.

### 4.2.3 Denver Transit-Oriented Development Strategic Plan

After the *FasTracks* program was adopted, the City and County of Denver, in partnership with the non-profit Centre for Transit Oriented Development (CTOD) developed the *Denver Transit-Oriented Development Strategic Plan*, which defines TOD for Denver, develops a station area typology and standards for developing station area plans. In Downtown Denver, Denver Union Station is identified as a high-priority station to develop (City and County of Denver 2006).

As identified in the *Denver Transit-Oriented Development Strategic Plan* (City and County of Denver 2006, 20), the station typology, desired mix of land uses and built form at rapid transit stations located in the Downtown includes:

- employment and commercial based station areas;
- mix of office, retail, entertainment and civic uses;
- multiple family and loft style housing;
- buildings scaled at 5 stories and above; and
stations serve as regional destination point for transit connections.

4.2.4 Denver Downtown Area Plan

The Denver Downtown Area Plan replaces the 1986 plan by the same name, as the 20-year secondary plan for the 1,800-acre downtown Denver area. The plan took two years to develop and was adopted by the Council in 2007 (City and County of Denver 2007).

The Denver Downtown Area Plan divides downtown into seven functional districts and develops a vision and strategy for each, based on present opportunities, challenges, and overall policy objectives established for the downtown. While the Denver Downtown Area Plan incorporates many of the performance goals of TOD, it lacks both solid tools, including financial incentives, land use regulations and timelines for implementation, to be considered a functional station area plan.

Existing land use and development policy in Denver supports TOD by directing growth to the areas around rapid transit stations, creating standards and definitions for developers to follow, and creating supportive zoning.

4.3 Denver Union Station and TOD in Downtown Denver

This section will discuss the opportunities and challenges for TOD in Denver Union Station Transit District in Downtown Denver. Current conditions in the study area and recommendations for changes identified in the Union Station Master Plan, Denver Union Station Master Plan Supplement, and Denver Downtown Area Plan are investigated with respect to the five ‘performance-based’ goals for TOD.
4.3.1 Existing Conditions in the Study Area

Under the FasTracks program, Denver Union Station (DUS) is designated as the centre of the regional rapid transit network that includes local transit service, LRT, commuter rail and BRT. With the exception of the I-225 line, all rapid transit corridors in the Denver Metro area will service DUS (City and County of Denver 2006). Other transportation services such as Greyhound and Amtrak will also relocated to the DUS site. As defined in the Denver Union Station Master Plan, the DUS site encompasses an area of 19.5-acres in Downtown Denver. The DUS site includes the historic DUS train station, Consolidated Main Line for LRT and boarding areas (Denver Union Station Executive Oversight Committee 2004). As defined in the Denver Union Station Master Plan Supplement, the larger Denver Union Station Transit District (DUS Transit District) is the 90-acre station area around the DUS site where TIF is being applied and capital improvements are being made.

Even without the completion of FasTracks, the DUS Transit District would be a premium redevelopment area (Denver Interview 1, 2010). As identified in the Denver Master Plan Supplement, there are six properties that are available for redevelopment in to higher-density, mixed-uses. In addition to these, the DUS Transit District is located in proximity to Denver’s central business district, Denver convention centre, major entertainment venues, and gentrifying residential neighbourhoods of Lower Downtown (LoDo), and Central Platte Valley. These areas in the Downtown can support high levels of transit ridership as well as offer vacant or underutilized land for the development of complementary uses (City and County of Denver 2007). Market driven redevelopment in these areas of Downtown has already been occurring for the past fifteen years, supported
by public subsidies for redevelopment of blighted properties, adaptive re-use of heritage buildings and development of major cultural and entertainment venues (City and County of Denver 2007; Denver Interview 1, 2010).

In particular, the DUS Transit District is located at the western edge of the LoDo, an area that is experiencing significant upgrading, as land values continue to rise (Denver Interview 1, 2010). LoDo is a designated Historic District much like Winnipeg’s Exchange District. Described in the Denver Downtown Area Plan as an “urban renaissance success story…a historic mixed-use hub of housing, retail, office and entertainment” (City and County of Denver 2006, 50). LoDo is a former industrial neighbourhood where the 2- to 6-storey warehouses have been converted into luxury lofts, many with ground floor restaurants and upscale retail (City and County of Denver 2006). While LoDo is emerging residential neighbourhood with close to 2,000 residents, one of its challenges is to attract neighbourhood-serving amenities such grocery stores and schools (City and County of Denver 2006).
Image 4: Denver Union Station Transit District. The approximately 90-acre Transit District includes the 19.5-acre Denver Union Station site, rapid and local transit service, additional public plazas, a promenade on 17th street and private land to accommodate TOD. © Denver Union Station Executive Oversight Committee, 2008. Copyright permission granted, August 2011.
Figure 9: Denver Union Station. The 19.5-acre site contains the Historic train station built in 1881 (top). The parking lot surrounding the train station has been rezoned to allow for commercial and mixed-uses. The properties developed on the Southeast portion of the site have received TIF funds (bottom). Source: Author, 2010.
Figure 10: Existing Land Uses in Downtown Denver. Mid-rise buildings in the Central Platte Valley neighbourhood, just beyond the Consolidated Main Line of the Denver Union Station (top). The adaptive re-use of heritage buildings is seen throughout Downtown Denver, particularly in LoDo and along the 16th Street Transit Mall (middle). The LoDo neighbourhood contains 2- to 6-storey warehouses and other historic buildings that have been converted into upscale lofts, many with active ground floor uses (bottom). Photo source: Author 2010.
Another prime redevelopment area located beyond the DUS Transit District is the Central Platte Valley neighbourhood, a former rail yard that has been redeveloped into a mix of mid- and high-rise residential and green space. The neighbourhood is bordered by the South Platte River to the West and contains the largest amount of green space and recreational trails available in the Downtown. The Central Platte Valley neighbourhood also contains large cultural institutions such as Pepsi Centre and the Denver Campus of the University of Colorado (City and County of Denver 2006). Currently, the Consolidated Main Line bisects the neighbourhood, forming a significant physical barrier for TOD (Denver Union Station EOC 2008). However, provisions have been made in the Denver Union Station Master Plan Supplement to construct the 17th Street Promenade, which will provide the necessary link and access point between the neighbourhood and the DUS Transit District. Due to the availability of vacant land and access green space, the Central Platte Valley has the potential attract more affordable housing development than LoDo, which would provide a larger market for transit at DUS (City and County of Denver 2006).

In terms of existing transportation infrastructure, key-informants identify Downtown Denver as the most transit-rich area in the metropolitan region, which, even prior to the FasTracks program, had a landscape that was shaped by local and rapid transit service (Denver Interview 3, 2010; Denver Interview 1, 2010). A combination of limited parking facilities in Downtown, relatively high cost of parking, and high levels of local transit service have contributed to the competitiveness of transit for commutes into- and within-Downtown Denver (City and County of Denver 2006).

In terms of development and renewal efforts in Downtown Denver, the Denver Downtown Area Plan (City and County of Denver 2006) identifies the successes have as:
• Growth of dining and entertainment facilities that attract residents from throughout the region and visitors;
• Establishing venues for sports, culture and business, including Coors Field and Pepsi Centre, Denver Performing Arts Centre expansion, new Denver Convention Centre Complex; and
• Preservation and adaptive re-use of heritage buildings.

On the other hand, the challenges for Downtown Denver, as identified in the Denver Downtown Area Plan (City and County of Denver 2006), include:
• Escalating prices for housing and a housing stock that is unaffordable to many people; and
• Declining presence of essential retail and services for residents such as grocery stores, schools and other community amenities.

4.3.2 Goals and Process of Station Area Planning at Denver Union Station

In 2001, the historic train station and the 19.5 acre DUS site was purchased collectively by the Colorado Department of Transportation (CDOT), the City and County of Denver, the Denver Regional Council of Governments and the Regional Transportation District in 2001 (City and County of Denver 2006). These partner agencies formed the Denver Union Station Executive Oversight Committee (EOC) to oversee the redevelopment of the site. According to Manager of Transit-Oriented Development at the RTD, the intergovernmental collaboration needed to purchase and develop the DUS site facilitated broad buy-in for a redevelopment vision amongst the agencies involved (Denver Interview 1, 2010).
In 2004, the EOC adopted the *Denver Union Station Master Plan*, outlining the ‘multimodal transportation hub’ concept, plans to refurbish the Denver Union Station building, the placement of transit infrastructure and development opportunities buildings on the DUS site (Denver Union Station Executive Oversight Committee 2008). Following the adoption of the *Denver Union Station Master Plan*, the entire DUS site was rezoned to the City and County of Denver’s Transit Mixed Use (TMU-30) zoning designation (Denver Union Station Executive Oversight Committee 2008).

In 2006, the EOC entered into an agreement with a master developer\(^5\), the Union Station Neighbourhood Company (USNC), to implement both the transportation and development components outlined in the *Denver Union Station Master Plan* within a single phase. The USNC is responsible overseeing the construction of the transit infrastructure, station platforms, the public plazas and connection points between the DUS site and adjacent neighbourhoods (Denver Union Station Executive Oversight Committee 2008). In order to enhance future development opportunities at the DUS site and adjacent neighbourhoods, the USNC was also tasked with creating the DUS Transit District concept, presented in the *Denver Union Station Master Plan Supplement*, to guide the transit engineering decisions and redevelopment on the extended 90-acre station area (Denver Union Station EOC 2008).

As a station area plan, the *Denver Union Station Master Plan* and *Denver Union Station Master Plan Supplement* support many of the goals of Dittmar and Ohland’s Performance-based Definition of TOD, including allowing higher densities, defining an appropriate land use mix, creating public spaces at the station area and creating connections

\(^5\) An entity that is responsible for undertaking the planned development of land and infrastructure including, but not limited to, utilities planning, site preparation, environmental engineering and remediation (RTD 2010b).
between the station and adjacent neighbourhoods for pedestrians and cyclists. Development of the DUS Transit District by the USNC integrates transportation and land use functions through a phasing strategy that supports development opportunities and access to the site. As a station area plan, the Denver Union Station Master Plan Supplement clearly defines the role of DUS on the regional transit network and within downtown Denver.

### 4.3.3 Implementation Tools

The City and County of Denver and its affiliated agencies have several implementation tools to support TOD in Downtown Denver and at Denver Union Station, including zoning overlays, controls on surface parking at station areas and TIF.

The City and County of Denver created the Transit Mixed Use (TMU-30) zoning designation in 2002, in conjunction with expansion of the Southeast Corridor (TCRP 2004). TMU-30 zoning applies to properties located within a half-mile from a rapid transit station and that are at least 12-acres in land area (TCRP 2004). Landowners must apply to re-zone their land to TMU-30, under that rationale the time and resources needed to apply for the rezoning pays off in the higher return-on-investment on development than permitted under the previous zoning (TCRP 2004). TMU-30 has been applied to several stations areas in Denver: Bellevue Station on the Southeast corridor; Broadway Station on the Southwest Corridor; and the DUS site (Denver Interview 3, 2010). TMU-30 zoning is referred to by Manager of Comprehensive Planning at the City and County of Denver (Denver Interview 3, 2010) as a:

*Partial approach that uses FAR as the main tool to regulate density. [The TMU-30 zoning] requires the kind of land uses and forms that you would want in a station area in order to get the benefits of TOD.*
The TMU-30 zoning combines elements of Denver’s new form-based code and the existing use-based code that has been in-place since the 1960s (Ibid). In terms of density, developers may built up to a FAR of 5:1 and are allowed up to 220 feet in height, 80 feet higher than previously allowed anywhere outside of the central business district (TCRP 2004).

On the DUS site, the parking requirements under the TMU-30 designation have been met with one additional structured parking facility containing 200 parking spots. Parking reductions for development on the site includes a 25-percent reduction on the standard of one off-street space per residential bedroom and one space per 500 square feet of commercial or office space (TCRP 2004). A further 50-percent reduction in off-street parking requirements can be granted if developers create plan for TDM, such as eco-pass programs, or shared parking strategies, such as a car shares service (TCRP 2004; Denver Interview 3, 2010). The Manager of Comprehensive Planning notes that obtaining the further reductions in parking requirements requires an elaborate plan to substantiate the results of TDM or shared parking strategies, which developers have found difficult and expensive to produce (Ibid).

Tax Increment Financing (TIF) has been applied to the entire 90-acre DUS Transit District (Denver Interview 1, 2010). The Denver Downtown Development Authority (DDA), an arms length organization created by the City and County of Denver, administers the TIF funds (Ibid). In Denver, incremental revenue from sales and property tax can be used for capital improvements at the station area including utilities, landscaping, street and sidewalk improvements, and street lighting and furniture (TCRP 2004).
To date, TIF subsidies have been allocated to two redevelopment projects (Denver Interview 1, 2010). Both projects are office buildings located on the Southeast portion of the DUS site that were built on former surface parking (Ibid). While these projects have contributed to redevelopment of the station area, financing has been an issue. The Manager of Transit-Oriented Development at the RTD reports that, due the recent economic downturn in the United States, the City and County of Denver has taken Federal loans in order to “bridge” the TIF funding due to a shortage to subsidize the two projects (Denver Interview 1, 2010).

### 4.3.4 Opportunities and Challenges

Denver Union Station is meant to be a transformative project for Denver and the regional FasTracks program. As such, significant investments have been made by multiple levels of government towards developing station area plans, undertaking capital improvements and providing regulations and incentives for development at the DUS Transit District. Development of that station area by a master developer has ensured that land use considerations and placement of public amenities are integrated with transit engineering decisions (Denver Interview 1, 2010). As the DUS site is still under construction, key-informants believe that it is too early to gauge the results of public investments at the station area.

As discussed in RTD’s FasTracks *TOD Lessons Learned* report, station areas plans should address area within a 5- to 10-minute walk from the station, typically an area of 500-acres (RTD 2010b). As such the 90-acre DUS Transit District, as defined in the *Denver Union Station Master Plan Supplement*, is too small a land area to effectively
facilitate TOD. The Denver Union Station Master Plan Supplement also lacks a vision and guidance for addressing two of the planning challenges in Downtown Denver: the increasing cost of housing and loss of essential retail and services for residents. Affordable housing and daily amenities are both essential elements of TOD as identified in section 2.3 of this document. While the Denver Union Station Master Plan clearly articulates opportunities for market driven development in the DUS Transit District and adjacent neighborhoods, regulation and incentives to support a range of housing options and fully function mix of land uses are not identified or recommended.

4.4 Chapter Summary

In Denver, TOD is utilized as a strategy to manage population growth, shifting population demographics and manage regional traffic congestion. As defined in section 2.4 of this document, the Denver metropolitan area exhibits a number of trends that produce a favourable context for TOD to occur in the market, including:

- Strategic expansion of rapid transit throughout the Denver Metropolitan area with FasTracks
- High levels of population growth; and
- Demographic shifts towards smaller and low-income households that strengthen market demand for location efficient housing.

In addition, regional, state and federal levels of government support TOD in Denver by providing funds for station area planning, creating standards and guides, providing market research and undertaking capital improvements at station areas.
The City and County of Denver has also proactively supported TOD in Downtown Denver by creating supportive land use policies, undertaking station area planning in response to *FasTracks*, and development of regulation and financial incentives to facilitate TOD in the market. Policies contained in *Blueprint Denver* direct growth and land use intensification to Downtown Denver and rapid transit stations. The use TIF and overlay zoning have supported these policy objectives in the DUS Transit District. Station area planning and capital improvements at DUS Transit District have raised land values and developer interest in TOD (Denver Interview 2, 2010). While the success of investments in TOD and station area planning in the DUS Transit District still remains to be seen, there are visible benefits to Denver’s on-going revitalization efforts in the Downtown.
CHAPTER 5

BOULDER TRANSIT VILLAGE

The Boulder Transit Village (BTV) represents City of Boulder’s first investment in TOD and station area planning. The Transit Village Area Plan (TVAP) is a 25-year master plan for the 160-acre transit village, to be built around a transit station that will accommodate regional BRT service, local transit service and commuter rail. The TVAP is a comprehensive station area plan that outlines “the desired future development of the area – its character and scale, the land uses, and the location of streets, paths, parking, public spaces and public facilities” (City of Boulder 2007, 5).

While the contextual differences exist between Winnipeg and Boulder the may limit the transferability of ‘lessons learned’ from the Boulder case, the TVAP is one of the most innovative examples of a station area plan for a BRT station and incorporates TOD supportive land uses and place-making principles into Brownfield redevelopment (TCRP 2004). This case study identifies lessons concerning: the process of implementing of station area plans; establishing alternative parking arrangements at station areas; and the importance of having local planning expertise in-place to facilitate the station area planning process.

As a whole, the city of Boulder has compact land use patterns, a pedestrian-oriented downtown and efficient local transit service. Local transit service consists of high-frequency service along designated ‘multi-modal corridors’ throughout Boulder. The multi-modal corridors provide links to major commercial and activity centres, which has lowered the need for transfers (TCRP 2004; Boulder Interview 1, 2010). A combination of high
development pressures and low land supply provides leverage for the City of Boulder to practice rigorous development review processes and set policy that constrain the presence of the private automobile while facilitating travel by walking, cycling and taking transit (Boulder Interview 2, 2010). Boulder’s multi-modal corridors are an illustrative example of its integrated land use and transportation planning practices. The BTV is a key strategy for the City of Boulder to address its current housing shortage. Through its inclusionary zoning ordinance and a density bonus program, the City of Boulder is facilitating the development of over 300 units of affordable housing in the transit village.

This case study was compiled using academic sources, municipal planning documents, and three key-informant interviews with planners and policy makers involved in TOD at the City of Boulder. A transportation planner and land use planner from the City of Boulder, and a former Mayor of Boulder were key-informants for this case study. Site visits of the Boulder Transit Village were conducted over one day in March 2010.

5.1 Municipal and Regional Context

Boulder is an affluent ‘university town’ located 25-miles northeast of Denver within the metropolitan region of Denver. The City of Boulder occupies an area of 66 km² and has a population of 102, 567 (DRCOG 2008). The University of Colorado’s main campus is located in Boulder, which brings in a seasonal population of 30,000 university students (DRCOG 2008). Residents in Boulder are more educated and affluent when compared to the Denver metropolitan region as a whole. The median household income is $3000 higher in Boulder and over 52-percent of Boulder residents’ over 25 years old have a bachelor’s degree, compared to 42-percent in the metropolitan region as a whole.
The University of Colorado, IBM Corporation and National Atmospheric Research Laboratory are the largest employers in Boulder (DRCOG 2008).

Boulder implemented one of the first urban growth boundaries in the United States and is noted for having aggressive growth management strategies (TCRP 2004). A protected natural area of 33,000-acres surrounds the City of Boulder, limiting the available land for new development (TCRP 2004). Currently, most of the development occurring is infill or Brownfield redevelopment (Boulder Interview 3, 2010). Despite having modest population growth, the urban growth boundary creates a high demand for land within Boulder and the surrounding county (Boulder Interview 2, 2010). Therefore, public financial incentives have been “less necessary to incentivize favoured forms of development”, including multiple-family housing and mixed-use buildings (TCRP 2004, 338).

Boulder has compact, walkable neighbourhoods, and vibrant downtown core (TCRP 2004). Efficient transit service and high levels of commuting by walking, cycling or transit are attributed to a progressive, well-educated population and from promoting compact development (Boulder Interview 1, 2010). In the downtown, examples of transit- and pedestrian-friendly development include the Pearl Street pedestrian mall, mixed-use parking structures, and the mixed-use condominium development at One Boulder Place, which is noted for incorporating a well-used public plaza into its design (TCRP 2004).
Located on the site of a steel fabrication company that was vacated in the 1980s, the Steel Yards is a 10-acre mixed-use development that is also noted for having transit-supportive elements (TCRP 2004). Located along a major transit route, the project incorporates a mix of 90 units of multiple-family residential in 83,000 square feet; 19,500 square feet of retail; 60,600 square feet of office space and 28,400 square feet of light industrial uses (TCRP 2004).

Concentrating density and expanded local transit service along designated transit corridors has transformed both the land use and the commuting patterns in Boulder (Boulder Interview 1, 2010). For transit service, the Regional Transportation District of Denver (RTD) has expanded service for local residents and commuters. In 1994, the RTD launched the Community Transit Network (CTN) by consolidating existing transit routes into three user-friendly “JUMP”, “HOP, and “SKIP” routes to provide frequent bus service.
along multi-modal corridors throughout the city (Boulder Interview 1, 2010). Ridership is supported by moderate density, mixed-use development and providing pedestrian and cycling amenities (Boulder Interview 1, 2010). Between 1990 and 2000, transit ridership increased from four- to nine-percent of the commuting mode share; more recent statistics were not available at the time of research (Boulder Interview 1, 2010).

As part of FasTracks, the RTD is also building a BRT corridor that will run between Union Station in Downtown Denver and the BTV site. The BRT line will feature two dedicated bus lanes running along Interstate 36, currently a congested freeway that serves commuters between Denver and Longmont County (Boulder Interview 1, 2010). The FasTracks program will also extend a commuter rail line through Boulder; both transit investments are slated for completion in 2016-17 (RTD 2009). Therefore, the City of Boulder has compiled the Transit Village Area Plan in anticipation extension of commuter rail and BRT in to Boulder, in order to generate value capture, encourage compact development and placemaking principles, and address the housing shortage in Boulder (Boulder Interview 3, 2010).
Figure 12: Examples of planning and urban development in Boulder. View of housing in the Steel Yards, a New Urbanism development located within the Transit Village plan area (above). Mixed-use buildings and multi-modal amenities located along Pearl Street, a designated multi-modal corridor (below). Photo source: Author, 2010.
5.2 Planning and Policy Support for TOD

This section presents an overview of the current policy and planning support for TOD in Boulder. Boulder has long had a pro-planning culture at city hall, the University of Colorado and amongst residents (Boulder Interview 3, 2010). In the past, the University of Colorado Planning Department and active citizens’ groups have successfully lobbied for local planning legislation, including an open space tax and 55-foot (four storey) height limit on buildings in Boulder (Ibid). Although the BTV is the City of Boulder’s first venture into TOD and station area planning, TOD supportive features are present in the Boulder Valley Comprehensive Plan, Transportation Master Plan and Inclusionary Zoning Ordinance. These documents contain TOD supportive policies including: accommodating multi-modal travel; promoting infill and compact communities; and incorporating affordable housing units into all new development.

5.2.1 Boulder Valley Comprehensive Plan

The Boulder Valley Comprehensive Plan (BVCP) establishes high-level land use, transportation and urban development policy objectives for Boulder. According to the BVCP (City of Boulder 2008a), the central issues to planning in Boulder are:

- Limited developable land within the City of Boulder’s urban growth boundary;
- Shortage of affordable and rental housing which is projected to increase with regional trends of economic and population growth;
- An estimated 52,000 people commute into Boulder daily for work from surrounding counties within the Denver metropolitan region; and
• More jobs than available housing in Boulder (the jobs to housing ratio in Boulder is 0.96 to 1, which is significantly higher than the regional average of 0.57 to 1).

One of the most progressive elements of the BVCP is a commitment to accommodating growth and managing traffic congestion through a network of multi-modal transportation corridors throughout Boulder (Boulder Interview 1, 2010). These multi-modal corridors support the City’s commitment to no increase in Single Occupancy Vehicle (SOV) mode share above the benchmark of levels from 1994 (City of Boulder 2008a, 43). As legislated in the BVCP, growth is directed along these multi-modal corridors with zoning provisions for higher densities, mixed-uses and established parking maximums.

The BVCP identifies the BTV an important site to accommodate regional transit facilities, affordable housing units, and an urban village character. As stated in the BVCP: “the area will evolve into a lively, mixed-use, pedestrian-oriented place where people will live, work, shop, and access regional transit (City of Boulder 2008a, 72).

The BVCP designates the BTV plan area as “predominantly residential”, providing housing that will accommodate Boulder’s growing population and economy. As stated in the BVCP, housing in the BTV is meant to accommodate lower income families, seniors and empty nesters, and those wishing to live with reduced car-dependency (City of Boulder 2008a, 72). Housing policy in the BVCP support TOD principles, including walkability, lower household transportation costs and proximity to daily amenities:

New housing in the [BTV] will provide the opportunity for people to live close to jobs, services, entertainment, transit, bikeways, a new park and a civic plaza. All housing will be within walking or biking distance of the regional bus or commuter rail service. The combination of affordable
housing and lower cost transportation options may create a more economically diverse population in the area. It also may support a more diverse employment base for the city as more Boulder service workers may be able to reside in the Transit Village area (City of Boulder 2008a, 72).

5.2.1 Transportation Master Plan

The City of Boulder’s Transportation Master Plan (City of Boulder 2008b) contains three features that support TOD principles: a commitment to multimodal corridors, managing regional travel demand and transportation demand management (TDM) such as employer purchased transit passes in new commercial and office buildings (City of Boulder 2008b).

Throughout the Transportation Master Plan, there is a strong commitment to developing a transportation system that supports multiple modes, especially along the multi-modal corridors. The Transportation Master Plan (City of Boulder 2008b) identifies ten multi-modal corridors throughout Boulder and calls for improving all modes of travel along them. Multi-modal corridors serve to carry the majority of trips through the city and act as links between major commercial and activity centers (City of Boulder 2008a). The Transportation Master plan calls for “improving the relationship between the multimodal transportation system, land use and design along these corridors” (City of Boulder 2008b, 9). In contrast to conventional planning along arterial streets, transportation planning along these multi-modal corridors in Boulder focuses on reducing the number of automobile trips through supporting multiple modes, proactive land use planning, and ensuring amenities for pedestrians, cyclists, and transit users (Boulder Interview 1, 2010).
5.2.1 Inclusionary Zoning Ordinance

The City of Boulder’s Inclusionary Zoning Ordinance was adopted in 2000 to “simultaneously capitalize on the demand for development in Boulder while addressing the lack of affordable housing units” (Boulder Interview 3, 2010). The ordinance mandates that any new development provide 20-percent affordable units or an equivalent monetary contribution to the Boulder Housing Agency in lieu of building units on site (Ibid). Affordable housing is in Boulder is restricted by deed to households earning less than 80 percent of the median income (Ibid). The cost of the housing is also deed restricted; owners can only for the buying price plus a cost of living increase that is equal to inflation (Ibid). In order to get affordable housing built in the BTV, the City of Boulder plans to offer additional density bonuses to developers that exceed this standard (Ibid). Between 2000 and 2008, over 300 units of affordable housing were constructed in Boulder that is comparable to other municipalities with mandatory inclusionary zoning ordinances in place (Brunick 2004; Lewandowski 2008).

5.3 The Boulder Transit Village Area Plan

This section discusses the goals, process, and the opportunities and challenges in developing the City of Boulder’s Transit Village Area Plan (TVAP). In the City of Boulder, an area plan serves as a tool to guide anticipated land use change in discrete areas so that the area plan translate the Citywide policies contained in the Boulder Valley Comprehensive Plan to individual development proposals and to prioritize capital improvements (Boulder Interview 3, 2010). The current conditions in the plan area, along
with the proposed policies identified in the TVAP, are investigated with respect to the five goals of the Performance-based Definition of TOD.

5.3.1 Existing Conditions in the Study Area

The BTV site contains a fragmented street network, limited infrastructure and sprawling land uses that present little opportunity for TOD. Outside of the Steel Yards district, major land uses include light industrial and vacant brownfields that are located along cul-de-sacs and local roads. Three arterial roads border the site: 30th Street to the east, Valmont Road to the north and the Foothills Parkway to the west. Pearl Street is a designated multi-modal corridor runs through the southern portion of the BTV site.

To the east of the Boulder Transit Village, Pearl Street has frequent local transit service, cycling infrastructure and pedestrian-oriented, mixed-used buildings. Therefore, Pearl Street serves as an important link to Downtown Boulder, nearby amenities and to the urban character envisioned for the BTV (Boulder Interview 3, 2010). Running through the site is the Goose Creek Greenway, a linear park that provides over 30-kilometres of recreational trails throughout Boulder (City of Boulder 2007a).

The Steel Yards serves as the “housing anchor” in the transit village, establishing a critical mass of resident which has the potential to attract essential retail and other services (Boulder Interview 3, 2010). The Steel Yards project is a collection of 22 buildings containing 90 affordable housing units designated under City of Boulder’s Inclusionary Zoning Ordinance; the development also includes a mix of townhouses, offices, retail, light industrial and a 1,000 square foot daycare facility (TRCP 2004).
Image 5: Proposed Character Districts for the Boulder Transit Village. “Rail Plaza”, “Valmont Corridor” and Pearl Street Center will be developed in Phase I. “Wilderness Place”, “Old Pearl District” and “Pearl Parkway” are character districts in Phase II. Each character district has its own set of design guidelines based predominant features and land uses. © City of Boulder, 2007. Copyright permission granted, August 2011.
Figure 13: The Boulder Transit Village site. Current land uses on the BTV site include multiple-family residential, vacant Brownfields and light industrial uses (top). The Goose Creek Greenway is part of a network of recreational trails throughout Boulder County (middle). A historic train station will be incorporated into the “Rail Plaza District” of the Transit Village (below). Photo source: Author, 2010.
5.3.2  Goals and Process

Initially, the City of Boulder adopted a transit village concept for the site in order to leverage funds from the RTD and private developers to carry out the necessary infrastructure improvements in exchange for value capture opportunities that would occur from adjacent residential and commercial development (Boulder Interview 2, 2010). The TVAP was also developed to provide an alternative vision for development of the transit facility and surrounding area. According to the RTD (2009), the BTV became a recipient for two rapid transit investments from the FasTracks program:

1. Terminus station along a new BRT corridor that will run directly between Boulder and Union Station in Denver; and
2. Major station along a new the commuter rail corridor that will connect downtown Denver with Longmont County in the northwest Denver metropolitan area.

The site for the BTV was confirmed in 2005 and the TVAP was adopted in City Council in 2007 (Boulder Interview 2, 2010). Currently, the City and RTD are working to assemble necessary land from private owners’ prior starting construction of the rapid transit stations (Boulder Interview 3, 2010).

The City of Boulder envisions the BTV as a new mixed-use activity centre in East Boulder that is well served by regional and local transit (Boulder Interview 1, 2010). As stated, the main goal of establishing the TVAP is to “...transform the 160-acre BTV site from primarily industrial land uses to a mixed-use community with housing, improving the jobs to population balance” (City of Boulder 2007a, 13). Presently, Another goal for the BTV is to expand local transit service and Boulder’s network of sidewalks and trails into
the site, in order to provide functional linkages to commercial and employment nodes located nearby.

5.3.3 Plan Implementation

The TVAP was developed to guide housing provision, land use change, zoning, transportation, and investments in public art and infrastructure within the BTV (Boulder Interview 3, 2010). The TVAP outlines a development plan that will be delivered in two phases. The first phase includes three acres of land that is owned by the RTD where the regional transit facilities will be constructed. Also constructed on this site is a structure parking facility for 100 park-and-ride spaces (Boulder Interview 3, 2010). Land uses in Phase I consist of primarily higher density residential with a mix of retail, office and light industrial (City of Boulder 2007a). The TVAP anticipates over 2,000 units of housing in the BTV, as well as 300 of affordable housing units in keeping with the City of Boulder’s inclusionary zoning ordinance (City of Boulder 2007a). “The Boulder Housing agency wants to partner with developers in the BTV to make up to 50-percent of housing in the BTV affordable” (Boulder Interview 3, 2010). In support of this goal, the RTD and the City of Boulder have jointly purchased 11-acres of land in Phase I in order to develop transit supportive land uses (Ibid). The Boulder Housing Agency purchased an additional 8-acres for housing that they aim to develop with 50-percent affordable units (Ibid).

Phase II of the BTV will contain mostly office, mixed industrial and mixed employment land uses. In Phase II, the City of Boulder is initiating ambitious TDM measures in order to achieve the goal of 55-percent alternative mode share at peak times (Boulder Interview 1, 2010). TDM measures include unbundled parking and mandatory
employer-purchased Eco-passes for office development (Boulder Interview 1, 2010). The City of Boulder has purchased the necessary right-of-way to construct cycling paths in the BTV that will connect to existing network of paths in neighbouring areas (Boulder Interview 3, 2010).

The TAVP develops eight ‘character districts’ for the transit village (see: Image 6). Each character district has its own set of urban design guidelines that will be used in the site review process for development applications (City of Boulder 2007a). In the Rail Plaza and Pearl Street Center character districts, additional guidelines exist to ensure pedestrian access to the transit station areas, an important TOD principle.

The TVAP is accompanied by the Transit Village Implementation Plan that identifies zoning changes, proposes new zoning districts, and integrates recommended capital improvements into the City of Boulder’s budgeting process. The Transit Village Implementation Plan also outlines financing arrangements for the TDM measures, public art and storm water management components of the TVAP. Adopted by City Council in September of 2007, the Transit Village Implementation Plan provides a step-by-step plan for the capital improvements and necessary zoning changes to implement the TVAP (Boulder Interview 3, 2010).

In support of the TOD principles, the TVAP outlines ‘land use prototypes’ and ‘character districts’ to promote densification, quality public spaces, multi-modal transportation, and livability (City of Boulder 2007a). The new The High-Density Residential (HDR2) designation allows for 25 to 50 dwelling units per acre, which is recommended for ‘town centre’ TOD station areas (City of Boulder 2007a). An industrial mixed-use (IMU2) zoning district is being created for Phase II that allows a floor area ratio
of 2, which is higher than current permitted densities, in order to stimulate commercial
development on the site (Boulder Interview 3, 2010).

5.3.4 Opportunities and Challenges

With the BTV, the City of Boulder has been successful in addressing connectivity
issues for pedestrian and cycling in accessing the site. The strong focus on housing
supports the broader goals of supporting economic diversity in Boulder through provision
of more affordable housing choices (Boulder Interview 3, 2010).

Since developing the TVAP, the City of Boulder’s planning department has
received several proposals for rental housing and condominium projects for the site
(Boulder Interview 3, 2010). The density bonuses provided the City of Boulder for these
projects are expected to exceed the Boulder’s inclusionary zoning requirements for
affordable housing (Ibid). The City of Boulder’s investment in pedestrian, cycling and
transit connections has been partially credited with attracting housing development (Ibid).
Image 6: Proposed-zoning districts for the Transit Village. HDR2 and IMU2 are mixed-use zoning districts created of the transit village that allow higher densities and floor-area ratios. © City of Boulder, 2007. Copyright permission granted, August 2011.
The transit village is the first entrepreneurial TOD project undertaken by the City of Boulder. As such, there was a lack of planning expertise in Boulder and the planning process had elements of ‘muddling through’ (Boulder Interview 3, 2010). According to Boulder Interview 2, (2010) planning for the BTV was politically contentious and a lengthy process. Implementation has further slowed by the recent economic downturn (Boulder Interview 2, 2010). One of the major issues of debated over by City Council was whether to promote housing or commercial development as the focus in the BTV (Ibid). While there is a demand for more housing, especially affordable units, commercial development ultimately brings in more tax revenue (Ibid). Currently, the BTV needs a political champion to see the plan into the implementation stages, including enforcing the regulatory and zoning changes and seeking funds for the capital improvements (Ibid).

Another perceived barrier is that the TOD concept does not ‘sell well’ in Boulder, this perception continues despite significant public investment and market efforts for the transit village (Boulder Interview 3, 2010). Unlike Denver, where TOD is extensively marketed to developers by municipal and regional levels of government (see section 4.2), Boulder has struggled to attract commercial development to the transit village (Boulder Interview 2, 2010). Even with limited commercial development opportunities and a shortage of available land in Boulder, developers have been hesitant to propose retail and office uses on the Boulder Transit Village site due to its parking restrictions, uncertain timeline for completion of rapid transit and local transit extensions and the limitations posed by the adjacent by low-density land uses (Boulder Interview 3, 2010).
5.4 Chapter Summary

The BTV case study was selected because it is an example of station area planning around BRT is occurring in a slower growth area of the City of Boulder. Boulder itself offers compelling ‘lessons learned’ for integrated planning of local transit service, infrastructure for pedestrians and cyclists and higher-density, mixed-use development. The BTV represents the City of Boulder’s first venture into supporting TOD through proactive station area planning. With the TVAP, the City of Boulder directs regional transit investments to an underdeveloped area of the city while creating policy support for higher-density housing, mixed land uses, lower parking requirements, place-making principles and provision of amenities for pedestrians and cyclists. The accompanying Transit Village Implementation Plan is intended to integrate the vision and policy into implementation through the City’s budgeting and administrative processes.

The City of Boulder has many characteristics that support TOD, including: compact land use patterns; a pedestrian-oriented downtown; and efficient local transit service. A combination of high development pressures and low land supply provides leverage for the City of Boulder to practice rigorous development review processes and set policy that facilitates travel by walking, cycling and taking transit (Boulder Interview 2, 2010). With the transit village, the City of Boulder has been particularly successful at promoting affordable housing development through the use of inclusionary zoning and density bonuses (Brunick 2004). Mandatory inclusionary zoning ordinances appear to be effective at producing more affordable housing in high-growth contexts (Brunick 2004). Other municipalities may opt for incentive-based approaches such as fee waiver programs and funding of non-profit housing development agencies (Brunick 2004).
Although there are also strong markets and supportive financial institutions for mixed-use development in Boulder, these forms of development are mostly occurring in- or adjacent to- the compact and walkable areas of downtown Boulder (Boulder Interview 3, 2010). A challenge for the BTV has been attracting commercial development to the site. As Other challenges to implementation of the TVAP vision, as identified by the key-informants interviewed, include:

- Existing low density and incompatible land uses adjacent to the BTV;
- Limited buy-in for paid parking in the area;
- Uncertain commercial real-estate market;
- Limited local experience in coordinating the complex multiple timelines, competing political interests and assembling land from multiple property owners.
CHAPTER 6
WESTBORO STATION IN OTTAWA

This third case investigates the City of Ottawa’s efforts to support TOD through station area planning and land use intensification along the Transitway. The Transitway is a BRT system in Ottawa that facilitates commutes by transit between Ottawa’s outlying suburbs and the Downtown employment centre. Overall, Ottawa’s transit system has the highest levels of per-capita transit ridership in Canada (TRB 2003). As Ottawa is anticipating significant population growth over the next 20 years, promoting land use intensification and infill development at Transitway stations is a key municipal planning objective.

However, most of the development at Transitway station areas is transit-adjacent development in terms of aesthetics, scale and functional relationship with the transit station. The City of Ottawa has recently boosted its station area planning efforts, as Transitway stations were designated as key areas to accommodate residential intensification, commercial growth and office development within the City’s Official Plan (City of Ottawa 2008). The City of Ottawa is planning for TOD in terms of regulating the density and scale of new development through zoning, investment in pedestrian and cycling connections at Transitway stations, and formulating design guidelines that integrate place making principles into the development review process.

Community Design Plans are the main tool for station area planning within Ottawa’s planning framework. Ottawa currently has five station area plans in place; the Richmond Road/Westboro Community Design Plan will be the focus of this case study. Richmond Road/Westboro Community Design Plan (City of Ottawa 2007) guides land use
intensification and infill development within the gentrifying areas of Westboro Village and Westboro Station. Westboro Stations in a slow growth area that has been undergoing redevelopment and land use intensification during the past 10 to 15 years. The functional relationship between Westboro Village and Westboro Station area is similar to the relationship between the Fort Rouge Yards and South Osborne neighbourhood in Winnipeg. Both station areas contain underutilized and formerly industrial lands that present a barrier between the rapid transit station and adjacent urban village.

Ottawa’s size, operation of transit, and planning framework are comparable to Winnipeg. This case study offers compelling ‘lessons learned’ for Winnipeg, in terms of:

- Developing and implementing station area plans;
- Aligning of future rapid transit corridors and placement of stations; and
- Integrating station area planning with broader land use and transportation planning efforts.

This case study was compiled using academic sources, municipal planning documents, contemporary press, and information gathered from two key-informant interviews with planners at the City of Ottawa. The first key-informant was a land use planner and urban design specialist involved in writing CDPs, and has an advisory role of municipal development review processes and approvals. The second key-informant was a senior transportation planner and land use planner involved in implementation of citywide transportation policies contained in the Official Plan and Transportation Master Plan. Site visits of station areas along the Transitway were conducted over three days in April, 2010.
6.1 Municipal and Regional Context

The City of Ottawa is situated in the Ottawa-Gatineau National Capital Region, with a population of 1.4 million (City of Ottawa 2008). Ottawa itself has a population of 870,800 and a total land area of 2,760 km² (City of Ottawa 2008). As Canada’s fourth-fastest growing municipality, its population is projected to grow by 30-percent, to 1.13 million, over the next 20 years (City of Ottawa 2008).

The current land area of the city of Ottawa consists of 12 former municipalities that amalgamated by order of the Federal Government in 2001. Following the amalgamation, an urban growth boundary was established around incorporated urban, suburban and rural lands (City of Ottawa 2008). The National Commission of Canada, a crown corporation, plays an active role in municipal planning (Ottawa Interview 1, 2010). The National Commission of Canada operates a land trust that forms a greenbelt around Ottawa. The greenbelt functionally divides the downtown and urban areas located inside the greenbelt from the fast growing suburban areas located outside the greenbelt (Ottawa Interview 1, 2010). Outside the greenbelt, the legislated urban growth boundary divides suburban areas from incorporated rural areas that have strict restrictions on growth and development (Ottawa Interview 1, 2010).

The fastest growing areas of Ottawa are suburban neighbourhoods located outside the greenbelt. According to the land use planner interviewed, these sprawling areas contain a concentration of middle-class households and immigrant-newcomer families (Ottawa Interview 1, 2010). Of the 261,000 new residents expected in Ottawa by 2031, 80-percent will live in suburban areas outside the greenbelt (City of Ottawa 2008). In addition, there is
a projected 50-percent split of new jobs located inside and outside the greenbelt, creating more demand for regional commutes across the greenbelt (City of Ottawa 2008).

In Ottawa, there are two key contextual factors that support TOD. First, is a strong residential market for compact housing in the downtown and adjacent neighbourhoods amongst empty nesters, young professionals and young families (TRB 2003; Ottawa Interview 1, 2010). Ottawa’s compact downtown and central neighbourhoods facilitate travel by walking and taking transit. Downtown Ottawa contains about 50-percent of all federal jobs and a quarter of the region’s labour force, which strengthens the demand for residential development in the Downtown and central neighbourhoods, such as Westboro Village (Cervero 1998; Ottawa Interview 1, 2010). Overall, 30-percent of Ottawa’s residents live in Townhouses, which is among the highest rates in North America (CMHC 2007).

Second, Ottawa is noted for its provision of efficient transit service in its fast-growing, outlying suburbs. Cervero (1998), profiles Ottawa as a hybrid city (see: section 2.6) that contains both compact built environments conducive to high levels of transit ridership and adaptive transit service to the outlying suburban areas. High levels of ridership on the Transitway are also attributed to the commercial, residential, and office development captured at suburban Transitway stations (Cervero 1998; TRB 2003).

The Transitway is a 34-kilometre network of BRT with 41 stations. As the Transitway was built at above- or below-grade of other roads, the buses rarely intersect with normal traffic, producing trip times that rival the personal automobile (Cervero 1998). Commonly cited examples of development at Transitway stations include the St. Laurent

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Shopping Centre, one of the region’s largest commercial nodes, where one-third of patrons arrive via the Transitway (TRB 2003). Another is Tunney’s Pasture, a federal office complex built in the 1950s, which has developed into a mixed-use employment node following the arrival of a Transitway station (Cervero 1998).

Ottawa’s transit system has been praised for high levels of ridership (23-percent mode share of peak commuter traffic) and facilitating development at station areas, previously attributed only to LRT or subway systems. However, most of the development at Transitway station areas to date has been transit-adjacent development in form and scale (Ottawa Interview 1, 2010). See section 2.2 for the definition of transit-adjacent development. Although the Transitway has been in operation since 1983, planning efforts for TOD at Transitway stations only started in the past five years. Due to the alignment of the Transitway along rail corridors, the location of stations adjacent to brownfields and its function as a high-volume transportation corridor, the tension between the station’s role as a node and a place (see section 2.3.5) is a significant planning challenge for TOD (Ottawa Interview 1, 2010).

While TOD principles are not reflected in the built environment around most Transitway stations, the City of Ottawa is getting more invested in TOD, as new policies contained in the Official Plan identify Transitway stations as strategic locations to accommodate population growth and land use intensification (Ottawa Interview 2, 2010). Station area planning, in the form Community Design Plans (CDPs), are being undertaken to ensure that intensification is compatible with the existing urban environment (Ottawa Interview 1, 2010).
Figure 14: Westboro Station area. The Transitway is aligned along former rail corridor. Therefore, Transitway stations, such as Westboro Station, are located adjacent to former industrial lands that present many physical and financial challenges for TOD. Photo source: Author, 2010.
Image 8: Map of Ottawa's Transitway System. The Transitway runs primarily from East to West, with branches to the Southeast and Southwest. Similar to plans for the SWRTC, express and local transit routes utilize the Transitway for part-or all-of the route. Express routes (94/95, 96/97, 98/99 and 101/102) run exclusively on the Transitway. Westboro Station is located four stations west of Downtown. Going clockwise from the right, the areas of Orléans, South Keys, Barrhaven and Kanata are located outside the greenbelt within the City of Ottawa. © OC Transpo, 2009. Copyright permission granted, August 2011.
6.2 Planning and Policy Support for TOD

This section presents an overview of the policy and planning support for TOD in Ottawa. The City of Ottawa’s *Official Plan* and the *Transportation Master Plan* contain strong policy support for integrating transit with land use planning and urban development. In these documents, TOD is identified as a key component of the city’s overall growth management strategy to support growth and infill development at Transitway stations. A key policy objective identified in these documents is to utilize the Transitway to provide a majority of the additional transportation capacity needed in Ottawa over the next 20 years. *The Transit Oriented Development Guidelines (2007)* and Community Design Plans (CDPs) are tools that promote and enable TOD at the community scale within Ottawa’s planning framework. However, both documents are non-statutory plans that do not provide for a strong means of enforcement.

6.2.1 Ottawa 20/20 Initiative

From 2002 to 2003 the *Ottawa 20/20* initiative was undertaken by the City of Ottawa as a comprehensive plan review process for the newly amalgamated city. Under this initiative, the *Official Plan* was revised to guide development and growth to the year 2021 (City of Ottawa 2008). In addition, four master plans were developed and adopted by City Council: *Transportation Master Plan; Greenspace Master Plan; Environmental Strategy*; and *Infrastructure Master Plan*. The four master plans were developed to elaborate on policy, and to establish programs to support implementation of the *Official Plan* (City of Ottawa 2008). The *Ottawa 20/20* initiative was created growth management
strategies to accommodate the projected 30-percent increase in population by the year 2031 (Ottawa 2008).

6.2.2 Official Plan

There are two aspects of the Official Plan support TOD. First, the Official Plan contains strong “transit first” policies (Cervero 1998, 243). A goal set forth in the Official Plan is to increase transit mode share from 23- to 30-percent by 2030 (City of Ottawa 2008). Improving public transit service and supporting development at rapid transit stations are identified as key strategies to accommodate population growth within present levels of transportation infrastructure (City of Ottawa 2008; Ottawa Interview 2, 2010).

Second, the Official Plan designates Transitway stations as a growth area to accommodate land use intensification. Land use intensification is directed to Transitway stations as a growth management strategy, and so that residents can “satisfy many daily needs locally” (City of Ottawa 2008, 27). Other classifications of designated growth areas identified in the Official Plan include: suburban town centres, traditional mainstreets; and the downtown (City of Ottawa 2008). The Official Plan applies special urban design, parking and zoning standards to development at Transitway station areas (City of Ottawa 2007b). Development at station areas is defined as “all development within a 600-metre walking distance of a rapid transit stop or station” (City of Ottawa 2007b, 3).

6.2.3 Transportation Master Plan

The Transportation Master Plan supports the “transit first” policies of the Official
Plan. The Transportation Master Plan contains a policy commitment to locating 40-percent of new jobs within 400m of Transitway stations through zoning and incentive programs such as *Brownfields Rehabilitation Grants Program* (City of Ottawa 2008; Ottawa Interview 2, 2010). In addition, creating supportive land uses for transit is one of eight key policy objectives contained in the Transportation Master Plan (City of Ottawa 2008).

TOD is identified in the *Transportation Master Plan* as a strategy to capture potential office, commercial and residential development at Transitway station areas. TOD is regarded as framework to “ensure that high-quality design is applied to development to ensure that capital investments at the Transitway are realized” (Ottawa Interview 2, 2010). As outlined in the *Transportation Master Plan* (City of Ottawa 2008, 28) additional requirements for parking and ensuring access for pedestrians and cyclists within Transitway station areas, include:

- Provision of maximum parking rates for main employment, institutional and medium/higher density residential uses;
- Restriction of parking areas between the street and building;
- Provision of shared parking arrangements in City zoning by-law;
- Encourage public private partnerships to build structured parking rather than surface parking lots; and
- Capital investments for establishing above-grade pedestrian crossings over the Transitway.
6.2.4 Transit-Oriented Development Guidelines

While the City of Ottawa’s Transit-Oriented Development Guidelines (City of Ottawa 2007b) contain comprehensive design guidelines to support TOD at the site- and neigbourhood-scale, the guidelines lack a regulatory means for implementation under the current planning and policy framework. As designated in the Official Plan, the guidelines contained in the Transit-Oriented Development Guidelines apply to all new development within 600m of a Transitway station (City of Ottawa 2007b). The guidelines provide direction for TOD-supportive land uses, street layout, built form, amenities for pedestrians and cyclists, parking and TDM, and streetscaping (City of Ottawa 2007b). However, the Transit-Oriented Development Guidelines document is classified as a non-statutory plan within Ottawa’s planning framework meaning that it is adopted by Ottawa’s City Council but not through the same process as City By-laws (Ottawa Interview 1, 2010). According to key-informants, non-statutory plans have weaker means for enforcement than statutory plans, as the Ontario Planning Act stipulates that non-statutory plans and policy documents such as the Transit-Oriented Development Guidelines, are not given the same consideration in decisions for variances, conditional uses, re-zonings and amendments to the Official Plan at the Ontario Municipal board (Ottawa Interview 1, 2010). Therefore, decision-makers do not always implement these policies.

6.2.5 Community Design Plans

Community Design Plans (CDPs) are the main tool for station area planning within the City of Ottawa’s planning framework. As stated in the Official Plan, CDPs are intended to “…translate the principles and policies of the Official Plan to the community scale”
As with most secondary planning documents, CDPs provide a snapshot of current conditions within a study area related to demographics, zoning and land use, built form, existing transportation networks, infrastructure and public works, parks and open space, heritage, and community facilities. In terms of support for TOD, CDPs also contain recommendations for changes to zoning and land use regulations, capital improvements such as extensions of sidewalks or pathways, and development review policies, such as cash-in-lieu for parks and open space. However, as with the *Transit-Oriented Development Guidelines*, CDPs are non-statutory plans, meaning that they are adopted by City Council but not as a municipal by-law (Ottawa Interview 1, 2010). Therefore, as previously stated, CDPs have limited means for enforcement and implementation when compared to statutory secondary plans as previously stated (Ottawa Interview 1, 2010).

Of the 19 council-approved CDPs currently in place, five CDPs function, at least partially, as station area plans for Transitway stations and surrounding communities. As CDPs are undertaken for large geographic areas that incorporate several distinct neighbourhoods, each CDP study area contains 2 to 3 Transitway stations (see: Figure 21 for an indication of study area size). The five CDPs that incorporate Transitway stations include:

- *Carling-Bayview Light Rail Transit Corridor Community Design Plan* (in process) guides the redevelopment of Bayview Station, a multi-modal transit hub that forms a junction between the O-train (a LRT corridor) and the Transitway.
• **South Nepean Town Centre Community Design Plan** (adopted in 2006) was undertaken in conjunction with a Transitway extension to Barrhaven Centre station, a new terminus station for the Southeast leg of the Transitway (City of Ottawa 2006a). The two main goals of this CDP are to:

  i. Guide the development of a mixed-use town centre around the new transit station; and

  ii. Encourage commercial and office development in order to balance the jobs-to-housing ratio in the current ‘bedroom community’.

• **Barrhaven South Community Design Plan** (adopted in 2006) and **Riverside South Community Design Plan** (adopted in 2005 and amended in 2010) encourage mixed-use Greenfield development at Transitway station areas in the Barrhaven and Southkeys areas, respectively. These CDPs were developed for Transitway stations beyond the greenbelt, in anticipation of increased regional trips generated by population growth in outlying suburbs (Ottawa Interview 2, 2010).

• **Richmond Road/Westboro Community Design Plan** (2007) guides land use intensification and infill development within the gentrifying areas of Westboro Village and Richmond Road (see: Figure 21 for the study area). This CDP also includes two Transitway stations – Dominion station and Westboro station. Westboro station is a slow growth area that has been undergoing redevelopment and land use intensification during the past 10 to 15 years. In contrast, the Westboro Village has been gentrifying since the 1980s and has experienced among the highest levels of residential infill and land use intensification in
Ottawa (Cervero 1998; Ottawa Interview 2, 2010; Ottawa Interview 1, 2010). The relationship between the Fort Rouge Yards in South Osborne neighbourhood in Winnipeg is similar to the relationship between Westboro Station and Westboro Village. In both case studies, the rapid transit stations are surrounded by underutilized and formerly industrial lands and are detached from the established commercial main street in the surrounding neighbourhood. The *Richmond Road/Westboro Community Design Plan* (2007) was selected for further investigation in the following section.

6.3 The *Richmond Road/Westboro Community Design Plan*

This section contains an analysis of the TOD supportive policies contained in the *Richmond Road/Westboro Community Design Plan* (Westboro CDP) with respect to the five ‘performance-based’ goals for TOD. The role of a station area plan in regulating development and land use intensification at a slow growth station area is examined.

6.3.1 Existing Conditions in the Study Area

The study area is an inner ring suburb located approximately 4-kilometre from downtown. The census profile for the Westboro Village area indicates that the population is more affluent than the regional average. The average household size in the study area is 2.0 persons which is lower than the regional average of 2.5, indicating a greater presence of no-children households (CMHC 2007). There are also a significantly higher percentage of upper income households, where the annual household income is greater than $100,000 per year, than the regional average (CMHC 2007).
The Westboro CDP includes several distinct neighbourhoods within a total land area of 2.7 square kilometers. The Westboro CDP is divided into nine planning sectors based on differing land use issues and the character of the built environment. Five of the nine sectors are examined within this case study, representing Westboro Village and the Westboro Transitway station area.

**Westboro Village** is located along a 1.4-kilometre stretch of Richmond Road, a pedestrian-oriented commercial main street containing a mix of neighbourhood stores, specialty shops, restaurants and public services (City of Ottawa 2007a). Westboro Village has been experiencing a ‘retail renaissance’, with many outdoor recreation stores, most notably the Mountain Equipment Co-op, choosing to locate there (Ottawa Interview 1, 2010). Along Richmond Road there are predominately one-to-three storey buildings with ground floor retail. As there is limited land available for further development along Richmond Road, most of the land use intensification is now occurring at the sectors of East Village and Maplelawn (Ottawa Interview 1, 2010).

**Maplelawn** lies immediately west of Westboro Village and is bordered at the east by Golden Avenue. The stretch of Richmond Road in Maplelawn contains two-to-four storey buildings and a mix of commercial and multiple-family residential land uses. The Maplelawn sector contains the most available land for redevelopment and the largest amount green space per capita in the study area (City of Ottawa 2007). As a result, this sector contains some of the larger and more controversial in-fill projects, including the 8-storey Bourk Family mixed-use condominium project that faced opposition from some community groups claiming the project was incompatible with the existing height and character of the area (City of Ottawa 2007a; Ottawa Citizen 2008).
The **East Village** sector is located immediately east of Tweedsmuir Avenue and Westboro Village. In this sector, Richmond Road contains a mix of heritage buildings, surface parking and automobile services (City of Ottawa 2007a). East Village continues to experience development pressures, as land values continue to rise (City of Ottawa 2007a; Ottawa Interview 1, 2010). Notably, the Great Canadian Superstore recently located on this stretch of Richmond Road. It has the scale of a traditional big box store and has impacted the impact pedestrian character of the street (Ottawa Interview 1, 2010).

In terms of amenities Westboro Village, East Village and Maplelawn together are fairly complete communities offering grocery stores, community services, employment, and retail within a walking distance to residential areas.

The **Scott Street and Westboro Station Area** sector runs along a 0.8-kilometre stretch of Scott Street. While also designated a Traditional Mainstreet in the Westboro CDP, the built environment on Scott Street is quite different in character and scale to Richmond Road. Westboro Transitway station is located on the north side of Scott Street in this sector. The Transitway is a physical barrier between the light industrial uses on the south side of Scott Street and the residential area north of Westboro Station. In the area north of Westboro Station, mid- to high-rise apartment buildings and townhouses have been constructed in the past ten years (CMHC 2007). A primary rationale for developing the Westboro CDP was to ensure appropriate residential infill in this area (Ottawa Interview 1, 2010). Most notably, this sector contains Metropole, an upscale development of 68 townhouses and 153-apartment units located 200-metres Northwest of Westboro station (CMHC 2007). Developed in 2004 on vacant industrial lands, Metropole being a 32-storey condominium tower is the tallest residential building in Ottawa (Ottawa Interview 1, 2010).
Although the Metropole project was planned prior to the Westboro CDP being in place, the project features several public amenities that are consistent with TOD principles. Planners at the City of Ottawa collaborated with developers to ensure good pedestrian connectivity between station and the Metropole site with public pathways (CMHC 2007). In addition, development charges for this project generated $1.4 million in revenue for the City of Ottawa (CMHC 2007).

The south side of Scott Street is described in the Westboro CDP as a “street in transition” with the potential to support TOD (City of Ottawa 2007a, section 3.2). The existing urban environment consists of one- and two-storey buildings on shallow lots. Existing industrial and automotive uses are starting to be replaced by retail shops and residential mixed-use developments more typical of the traditional main street (City of Ottawa 2007a, section 3.2).

Connecting Richmond Road and Scott Street is a grid of local streets, mostly notably McRae and Churchill Avenue, which contain a mix of housing types including single detached, townhouses and some mid-rise apartment buildings (Ottawa 2007a).
Image 8: Sectoral Map of the Westboro CDP Study Area. In this case study, five of the nine sectors are examined: Maplelawn (sector 4); Westboro Village (sector 5); East Village (sector 6); Scott Street and Westboro Transitway Station Area (sector 7); and McRae and Churchill Avenue (sector 9). Richmond Road, the commercial main street, runs through the sectors of Westboro Village, Maplelawn and East Village. © City of Ottawa 2007. Copyright permission granted, August 2011.
Figure 15: Built environment along Richmond Road. The controversial Bourk Family Developments at the corner of Golden Avenue and Richmond Road (top). Storefronts along Richmond Road in Westboro Village (bottom). Photo source: Author, 2010.
Figure 16: Existing land uses around Westboro Station. Pedestrian pathway links Metropole Tower with Westboro Station (top). Industrial uses abut single-family homes on Scott Street (bottom). Photo source: Author, 2010.
6.3.2 Goals and Processes

As stated in the Westboro CDP (City of Ottawa 2007a),
the four main objectives are of the plan are:

1. Accommodating appropriate land use intensification;
2. Preserving existing green space;
3. Unifying the urban character of Richmond Road; and
4. Accommodating growth within the present road network and supporting multi-modal travel.

While the Official Plan identifies Westboro Village and Westboro Transitway station as strategic areas for land use intensification, the process of undertaking the Westboro CDP was community-driven, as the well-educated, civically minded residents were vocal in the process of development the plan (Ottawa Interview 1, 2010). According to the land use planner interviewed, concern over development trends and dwindling green space in the area motivated community groups such as the Westboro Village Community Association, to lobby City Hall for a community design plan (Ottawa Interview 1, 2010). Section 1.0 of the Westboro CDP (City of Ottawa 2007a) states that the plan was developed, in part, to address:

*Several rezoning applications for substantial increases in maximum building height, [which] were viewed by the neighbouring residential communities as being incompatible with the existing character of Richmond Road and adjacent residential uses.*

Even though the area was experiencing among the highest levels of residential infill in Ottawa, there had been “no analysis on the cumulative impacts of intensification on Richmond Road and the surrounding communities” (City of Ottawa 2007a, section1.0).
Therefore, the Westboro CDP captured community concerns over land use change in the area and established regulation of the continued levels of residential and commercial infill.

The Westboro CDP is not dedicated to station area planning. However, it does contain policies that support a variety of TOD principles, including support for a variety of housing choices, convenient transit service, and pedestrian access to daily amenities, cycling infrastructure, and a mixed land use pattern. Place making and urban design principles ensure that new development is “well-designed, compact and inclusive development” (City of Ottawa 2007a, section 4.1).

6.3.3 Implementation Tools

In the Westboro CDP, there are three incentives and controls in-place for the implementation of the plan:

- zoning
- urban design guidelines; and
- transportation policy and TDM

**Zoning designations** contained in the Westboro CDP guide recommended levels of land use intensification in each sector. In order to meet the objective of supporting appropriate land use intensification, the Westboro CDP defines a predominant “land use character” for each sector in terms of permitted building height, scale and development potential (City of Ottawa 2007a). Land use, rather than the form-based zoning, is still the focus. The sectors of Maplelawn and McRae and Churchill Avenue are strategic areas to accommodate higher residential densities and a mix of housing types. Commercial and
office development is supported along Scott Street and at Westboro Station through the provision of new zoning.

Scott Street was rezoned from *CG General Commercial* to a *TM Traditional Main Street*, thus restricting the development of ground floor housing and encouraging the development of ground floor offices, retail and other employment uses near the Westboro and Dominion Transitway stations. Immediately surrounding Westboro station, a height maximum of 12-storeys is established in order to create a visual transition between Metropole residential tower and surrounding buildings (City of Ottawa 2007a). The height limit along Richmond Road is lowered from eight to four storey maximum, in order to maintain the pedestrian scale of the Traditional Mainstreet (City of Ottawa 2007a). A 6-storey height limit is permitted at gateways and major intersections on Richmond Road (City of Ottawa 2007a).

Overall, the Westboro CDP recommends rezoning sectors to encourage higher-density housing and commercial development in all five sectors. Intensification at Scott Street and Westboro Station permits an additional 152 housing units and a 40-percent increase in maximum build out for commercial, institutional and recreational uses (City of Ottawa 2007a). In Westboro Village and the neighbouring sectors of Maplelawn and East Village intensification means an additional 483 housing units, or a 25-percent increase in maximum build out for residential land uses. The decrease in building height limit along Richmond Road results in a 19-percent decrease in maximum build out for commercial, institutional, and recreational uses (City of Ottawa 2007a).

There are well-developed *place-making strategies* for unifying the character of Richmond Road and surrounding areas. A streetscaping strategy addresses overhead street
lighting and furnishings, storefront design, building quality and façade materials (City of Ottawa 2007a). The revised *TM Traditional Mainstreet* zoning addresses the inadequate transition between the commercial lots on Richmond Road and residential areas to the North and South. The Westboro CDP recommends a 7-metre rear yard to create transition between businesses and abutting residential areas (City of Ottawa 2007a).

![Streetscaping on Richmond Road in Westboro Village. Urban design guidelines within the Westboro CDP were developed to ensure consistent built form, signage and streetscaping along Richmond Road. Photo Source: Author, 2010.](image)

The **ambitious transportation targets** contained in the Westboro CDP are supported through TDM measures and prioritizing pedestrian, transit and cycling capacity over vehicle capacity in the study area. In terms of local transit service, the Westboro CDP recommends increases in present levels of local transit service and transit priority measures along Richmond Road. Capital projects to improve cycling and pedestrian facilities are recommended for all sectors of the plan. Upgrading and widening of sidewalks along
Richmond Road is tied to any future capital improvements for the street (City of Ottawa 2007a). Most importantly, the Westboro CDP directs future transportation impact studies, required as part of site plan and rezoning applications, in order to:

*Focus on physical, policy and financial recommendations that will improve infrastructure for pedestrians, cyclists and transit-users as opposed to recommending changes to roads or intersection to increase vehicle capacity* (City of Ottawa 2007a, section 3.7).

This policy prioritizes transit users, pedestrians and cyclists needs when accommodating growth and land use intensification in the study area.

There are, however, weak incentives and controls to reduce parking requirements at Westboro Station and Westboro Village. Like the City of Ottawa’s TOD Guidelines, which applies to all areas within 600-metres of a Transitway station, the Westboro CDP uses the standard minimum parking requirements as stipulated in Ottawa’s Zoning By-law. In terms of bicycle parking, the Westboro CDP permits cycling infrastructure investments, such as covered bicycle parking reduced in lieu of off-street automobile parking spots. Also, the Westboro CDP recommends that park-and-ride facilitators be located away from the immediate area of Westboro station but does not require it.

For Richmond Road, Ottawa’s Zoning By-law allows for a zero off-street parking requirement on Traditional Main streets for lots 20-metres or less in width (City of Ottawa 2007b). Shared parking arrangements for offices, restaurants and retail are also permitted on Traditional Main Streets.
6.3.4 Opportunities and Challenges

In terms of supporting TOD, the Westboro CDP establishes standards that promote strategic land use intensification at Westboro Station, and establishes place-making guidelines that are consistent with principles of TOD. The Westboro CDP has supported land use intensification at individual sites in Maplelawn, East Village, and Scott Street and Westboro Station sectors (Ottawa Interview 1, 2010).

However, the question of how much intensification is appropriate for the study area is still being determined on a project-by-project basis at the Ontario Municipal Board (OMB) (Ottawa Interview 1, 2010). Since it was adopted by City Council in 2007, the levels of land use intensification outlined in the Westboro CDP has been supported by residents but challenged by the development community (Ottawa Interview 1, 2010). In 2008 alone, there were five hearings at the OMB for proposed development that exceeded the levels of intensification permitted in the Westboro CDP (Ottawa Citizen 2008).

As stated before, the Westboro CDP lacks necessary regulatory power because it is a non-statutory secondary plan. As a station area plan, the Westboro CDP lacks regulation and incentives to reduce surface parking next to Westboro Station, which is an essential component of TOD. The Westboro CDP also lacks policy tools to promote the development of affordable housing. Although the Westboro CDP makes provisions for residential intensification along Scott Street and Westboro Station, the market orientation of the housing developed to date has been upscale, due partially to the cost of developing on Brownfields (Ottawa Interview 1, 2010).

Similar to the BTV, the main challenge for TOD around Westboro Station is transforming the landscape of vacant- and underutilized land and auto-oriented form into a
pedestrian-oriented urban village. To date, Westboro Station, as many other stations along the Transitway, has functioned primarily as a transportation node. While the Westboro CDP outlines a vision for creating an urban village around Westboro station, it does not address the potential competition with established urban villages of Westboro Village, East Village and Maplelawn that already have established a mix of retail, offices and housing.

6.4 Chapter Summary

As a city-building strategy, the “transit-first” policies contained in Ottawa’s Official Plan support its character as a hybrid transit metropolis (Cervero 1998). Planning efforts at the City of Ottawa create a favourable context for TOD by prioritizing infill development and land use intensification in downtown Ottawa and at Transitway stations (Ottawa Interview 1, 2010). Commercial and employment growth that has already been directed to Transitway stations contributes to a 23-percent commuting mode share for transit (Ottawa Interview 2, 2010). On the other hand, local and feeder transit routes effectively serve low-density residential neighbourhoods in the outlying suburbs (Cervero 1998). Furthermore, the Official Plan contains strong policy support for increasing housing densities within 600-metres of all Transitway stations over the next 20 years, to accommodate growth within existing urban areas (City of Ottawa 2008).

On the other hand, the alignment of Transitway and placement of stations is an overall challenge for TOD. Similar to Winnipeg’s proposed SWRTC, Ottawa’s Transitway is aligned along heavy rail corridors and stations are located adjacent to brownfields and industrial land uses (Ottawa Interview 1, 2010). When stations are located in industrial areas, there is less NIMBY resistance to land use intensification than in more established
residential neighbourhoods, but it is more these lands are expensive to redevelop due to contaminated land and the extent of infrastructure upgrades needed (Ibid). Therefore, the alignment of the Transitway along rail corridors and among industrial lands has resulted in less market demand to redevelop at station areas, despite long-standing policies and regulations that encourage land use intensification in these locations.

In addition to the corridor alignment, the land use planner interviewed notes that the ‘tension between node and place’, as discussed in section 2.3.5, is a common issue to address in planning and design of Transitway stations and surrounding areas (Ottawa Interview 1, 2010). The “engineering-driven” design of the Transitway has resulted in station areas that are not particularly attractive or pedestrian friendly (Ibid). Therefore, station areas have not typically served as destination places that encourage a variety of activities (Ibid). Although place making principles are present in station area planning efforts, there is an evidenced relationship in between stations that function as nodes and development in station areas that is transit-adjacent in form, design and scale (Ibid).
CHAPTER 7

FINDINGS AND RECOMMENDATIONS

A number of opportunities are identified for Winnipeg to support TOD at station areas along the SWRTC. Section 7.1 contains a summary of the research undertaken and methods used. Drawing from the findings in the literature review, the background research in Winnipeg and from the case studies presented in Chapters 4, 5, 6, ‘lessons learned’ are presented in Section 7.2. The recommendations for supporting TOD at station areas along the SWRTC in Winnipeg are presented in Section 7.3. A discussion of implications for professional planning practice (Section 7.3) and directions for further study (Section 7.4) conclude this chapter.

7.1 Summary of Research

As stated in section 1.2, the purpose of this practicum was to investigate how the City of Winnipeg should support transit-oriented development at strategic rapid transit stations along the proposed Southwest Rapid Transit Corridor through land use and transportation policies, and planning processes, regulations and tools.

Research consisted of a literature review, three case studies with site visits of selected station areas, and semi-structured interviews with key-informants. The literature review utilized academic and technical documents to investigate the history and contemporary practice of planning for TOD, including existing planning tools and planning processes to support TOD locally. The opportunities and challenges for TOD were examined at station areas along the SWRTC, including downtown stations, stations located
along existing commercial corridors and within established urban neighbourhoods. This background research in Winnipeg consisted of document review and key-informant interviews.

Three case studies of planning for TOD in other cities were conducted, in order to generate recommendations and ‘lessons learned’ for Winnipeg. The three case studies were investigated through key-informant interviews and document survey of relevant plans and studies. For each case, two to three key-informant interviews were conducted with planners, academics and policy-makers involved with TOD within the local jurisdiction examined. Each case was originally selected based on similarity to at least one characteristic identified for Winnipeg, as listed in Section 1.2 (slow growth area, cold weather context, development along BRT corridors). The particular station area examined within each case was selected to match station area types along the SWRTC (downtown station, stations along commercial corridors and nodes, station located in emerging urban neighbourhoods).

The case studies were used to investigate how station area planning was undertaken in each jurisdiction. The case studies showcased the practical experience of three local governments that are further along in the process of building rapid transit networks, undertaking station area planning and administering regulations, incentives and controls for TOD. In particular, the case studies focused on one station area plan and TOD-supportive policy. The purpose of the case study investigation was to capture a holistic picture of how local planning policy, processes and tools can influence the built environment around rapid transit stations and support transit-oriented development. More quantitative methods may
be useful to evaluate the effectiveness of specific regulations and implementation tools, such as TIF and mandatory inclusionary zoning by-laws, in supporting TOD.

In Chapter 1, three research questions were identified:

1. What are the opportunities and challenges for transit-oriented development at strategic stations along the *Southwest Rapid Transit Corridor* in Winnipeg?
2. What has been the practical experience of local governments who are planning for transit-oriented development at station areas?
   a. What policies, plans, and implementation tools are utilized to encourage and support TOD?
   b. What local contextual factors serve to support or hinder TOD?
3. What recommendations and ‘lessons learned’ do the case studies have to offer the City of Winnipeg, in planning for TOD at strategic stations along the *Southwest Rapid Transit Corridor*?

The first research question was addressed through background research on Winnipeg, as presented in Chapter 3. This chapter contains an overview of existing plans and planning processes in Winnipeg, as well as a characterization of the existing built environment at strategic station areas. The station areas selected for study were identified by key-informants as having the most potential to support TOD. The SWRTC is being constructed in two phases (see Section 3.4.1). Most of identified stations with priority for station area planning are located in Phase I of the corridor. At the time of writing this document, the alignment and location of stations in Phase II is still being determined.

The second research question was addressed through a combination of document review and case study research. A literature review, presented in Chapter 2, identified
common planning policies, processes and tools that local governments use to encourage TOD in their jurisdictions. The case study research evaluated how the planning policies, station area plans, and implementation tools worked to support Dittmar and Ohland’s Performance-based Definition of TOD.

The third research question was addressed through a combination of literature review, Winnipeg background research and case study investigation. The case studies investigated areas that are relevant to the Winnipeg context, as presented in Chapter 3. The literature review defined general opportunities and constraints to supporting TOD within a North American municipal planning context. The recommendations and ‘lessons learned’ from the case studies are presented in the following sections.

7.2 ‘Lessons Learned’ from Research

As established in the literature review presented in Chapter 2, transit-oriented development is prohibitively complex under the conventional scope of land use planning in North America. Land use policy, regulations and incentives are needed to ensure that investments in rapid transit spurs development that is complimentary to local transportation, land use and housing goals. This section presents ‘lessons learned’ from Chapters 2 through 6 for the City of Winnipeg to support TOD along the SWRTC.

For the purposes of this research, ‘lessons learned’ are defined as:

*General statements that describe good practices or innovative approaches that are shared to promote repeat application. They may also be descriptions of challenges or areas for improvement that are shared to provide continuous improvement. Effective organizations use past experience as a guide to improve future performance*  

(RTD 2010b, 5).
7.2.1 ‘Lessons Learned’ from Literature

Transit-oriented development (TOD) is a North American real-estate movement that emerged out of the principles contained in the regional-scale Smart Growth movement and neighbourhood-scale principles of New Urbanism (Dunphy et al. 2004). TOD was popularized in the United States during the 1990s, as a strategy to make transit investments in automobile-reliant suburbs more cost- and operationally-efficient, designing neighbourhoods with pedestrian friendly design features, a mix of land uses and provide greater housing choices than available in other neighbourhoods. TOD is a nodal concept of development that addresses an area within a ten-minute walk (500-metres) from a rapid transit station.

In The New Transit Town: Best Practices in Transit-Oriented Development (2008), authors Dittmar and Ohland developed a Performance-based Definition of TOD, which suggests that projects need to achieve the following five main goals:

1. Location efficiency;
2. Rich mix of choices;
3. Value capture;
4. Place making; and
5. Resolving the tension between node and place.

In contrast, transit adjacent development is a term for characterizing development at station areas that does not have a “functional or meaningful relationship to the station”:

Most often, [development at station areas has] conventional single-use development patterns, with conventional parking requirements, so that the development is actually transit adjacent rather than transit oriented

(Hank Dittmar in TCRP 2004, 5).
According to the TCRP (2004) local governments play a significant role in supporting TOD through three main avenues:

1. Formulating a vision statement and land use policies in support for TOD;
2. Undertaking station area planning at station areas; and
3. Enacting zoning regulations that embraces compact, pedestrian oriented development, mixed land uses and reduced off-street parking requirements within station areas.

Station area planning and zoning overlays for station areas are the most important tools available to municipal governments to plan and regulate TOD as they can provide clear guidance and communication expectations to the development community on “how, when and where a TOD will evolve” (TCRP 2004, S-10).

Station area planning is one of the most important tools to encourage TOD in the market (TCRP 2004; Dittmar and Ohland 2008; RTD 2010b). Station area plans are necessary because of contextual differences in neighbourhoods in terms of land uses and community desires, even if the areas have similar density goals (RTD 2010b). According to the Denver’s *Transit-Oriented Development Strategic Plan* (City and County of Denver 2006, 47):

*Station area plans work best for encouraging TOD when significant development opportunities exist...they are less useful for single building or projects of a more limited scope.*

Performance standards for station area plans are well developed in the existing literature. Station area plans are secondary, or neighbourhood plans that ideally address the urban environment within a 5- to 10-minute walk around a rapid transit station (RTD 2010b). As outlined in the City and County of Denver’s *Transit-Oriented Development Plan*...
Strategic Plan, station area plans should outline the placement of rapid transit infrastructure and development, and define the phasing and funding arrangements for the capital improvements (City and County of Denver 2006). In order to regulate development, station area plans should present a clear vision for development that will be permitted at the station area and identify an appropriate mix of land uses and densities (City and County of Denver 2006; TCRP 2004). As such, station area plans should provide direction on the following six elements:

1. Land use mix and placement;
2. Design guidelines – rules to guide the quality and character of the built environment to ensure a commitment to place making principles and fostering of pedestrian friendly environments (see Section 2.3.4);
3. Circulation and connectivity with existing neighbourhood uses;
4. Station access by pedestrians, cyclists and motorists;
5. Public realm – provisions of parks, plazas and sidewalks; and
6. Parking – establishing parking ratios for all uses within a station area (City and County of Denver 2006).

Ideally, the station area plan will balance the regulatory and encouragement elements so that “development is truly transit-oriented but developers are not discouraged from building at all” (City and County of Denver 2006, 79).

As stated in Section 2.4, zoning is the standard tool used by local governments to regulate land and enforce specific plans (TCRP 2004). According to the TCRP (2004, 61) zoning regulation need to:
Embrace compact growth, a pedestrian orientation, and mixed uses, [so that] TOD visions can be implemented on a case-by-case basis, in a consistent fashion while the city goes about its usual business.

Furthermore, TOD requires progress past traditional or Euclidean zoning which is concerned with separating land uses, setting density thresholds, minimum lot sizes, bulk/height controls, minimum parking requirements. Zoning for TOD requires embracing mixed-uses, parking caps, and minimum densities as tools for enforcement. Most zoning overlays will specify TOD-compatible land uses as-of-right, such as multi-family housing and convenience shops, while restricting auto-oriented forms that may compromise TOD, such as drive-through restaurants (TCRP 2004). Some zoning overlays will lower off-street parking requirements and, in some case studies, mandates bicycle parking at station areas (Ibid).

Conversely, existing literature on TOD identifies the common pitfalls or challenges to implementation as:

- Alignment of rapid transit corridors along low-cost land with minimal development potential;
- Placement of station areas on sites with poor development potential;
- Automobile-oriented land uses and development patterns, such as large surface parking lots;
- Standard zoning that restrict higher-density housing and mixed-uses, as well as enforcing standard parking code requirements for new development; and
• Limited local organizational capacity, such as coordinating TOD projects amongst many actors and stakeholder groups who often have diverging interests.

A number of these challenges or ‘negative lessons learned’ were identified within the three case studies and are presented within the next three sections of this Chapter.

<table>
<thead>
<tr>
<th>Summary of Contextual Data for Case Studies and Winnipeg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Area</td>
</tr>
<tr>
<td><strong>Rapid Transit System</strong></td>
</tr>
<tr>
<td><strong>Number of SAPs Completed</strong></td>
</tr>
<tr>
<td><strong>Station Area Studied</strong></td>
</tr>
</tbody>
</table>

Table 1: Summary of Contextual Data for Case Studies and Background Research
7.2.2 ‘Lessons Learned from Winnipeg Background Research

Winnipeg is a slow growth, mid-size prairie city that has experienced substantial sprawl the past three decades without substantial increases in population growth or revenues from municipal taxes. Compact neighbourhoods with pedestrian-oriented urban environments and efficient public transit are in short supply. Studies dating back to the 1970’s demonstrate that Winnipeg had reached ridership thresholds for rapid transit service, particularly along the Downtown-southwest corridor (Winnipeg Rapid Transit Taskforce 2005). However, there have been significant political and financial barriers to implementation of a rapid transit system for Winnipeg, as outlined in Section 3.1. With the construction of the Phase I of the SWRTC, Winnipeg’s first BRT corridor, City Council has also made a policy commitment to support TOD at stations along the proposed corridor.

While there is strong policy support for TOD emerging from the current Our Winnipeg initiative, most existing planning and policy support for TOD is voluntary and therefore without a regulatory means for implementation. In terms of TOD supportive policy, Plan Winnipeg 2020 Vision, Winnipeg’s comprehensive development plan, provides broad policy support for integrating land use, urban design and transportation functions. Policy 3A-03 mandates mixed-use, higher density development in order to “to minimize travel distances for basic needs” (City of Winnipeg 2000, 31). Plan Winnipeg 2020 Vision also recommends a network of rapid transit corridors throughout the City consisting of five BRT corridors (see section 3.3). However, the policies contained in Plan Winnipeg 2020 do not specifically direct growth or compact development to transit corridors or stations. Winnipeg’s TOD Handbook contains a vision and performance
standards for TOD in Winnipeg. However, the TOD Handbook offers only preliminary guidance for implementing TOD in Winnipeg, based on a study of existing planning policies and precedent studies of best practices in planning for TOD.

According to the key-informants interviewed, station area planning can be accommodated within the existing secondary planning framework in Winnipeg. The key-informants recommend statutory or non-statutory secondary plans for station area planning along the SWRTC. Both types of plans can provide policy guidance for land use, road network, infrastructure servicing, urban design, and provision of public spaces and amenities for pedestrians and cyclists for existing or new neighbourhoods.

As with the case studies, station area planning along the SWRTC should prioritize stations with the most development potential. However, as background information on station areas has not been compiled, this practicum relied on key-informants to identify priority areas (see Section 3.4 for station areas identified). In the absence of background information on station areas, such as data on existing land uses, land available for redevelopment and current demographics, the priority stations identified are based on anecdotal knowledge from the key-informants and would benefit from further study (see Section 7.5).

As identified in Chapter 3, priority stations that were identified by key-informants as having potential, as well as significant challenges, for TOD, include:

- Stations located in Downtown Winnipeg such as the Graham Avenue Transit Mall, Union Station and the University of Winnipeg;
- Stations located at existing commercial nodes and along commercial corridors, such as Osborne and Plaza Stations; and
• Stations located within existing urban neighbourhoods, such as Harkness and Fort Rouge Stations

Key-informants identified the Planned Development Overlay (PDO) zoning designation as having the most potential to support TOD in Winnipeg. The PDO designations allow for mixed-use zoning and higher densities required to bring TOD into station areas (Winnipeg Interview 2, 2010). However, Winnipeg still lacks many properties of TOD supportive zoning, including reduced off-street parking requirements and minimum density requirements.

Challenges for TOD include the alignment of the SWRTC along an active rail yard and areas with limited redevelopment potential. By placing stations adjacent to active rail yards, such as the Fort Rouge stations, providing functional pedestrian linkages between the station and surrounding neighbourhood is costly. Stations areas such as Osborne Station are set back 200-metres from existing neighbourhood activity centres, which may limit the immediate demand for redevelopment at the station area. However, over time Osborne Station may become an opportunity for TOD, as a natural extension of the existing activity centre.

Existing automobile-oriented land uses and development patterns pose another barrier to implementation of TOD, particularly at proposed stations along Phase II. A significant challenge for TOD along the SWRTC, as identified by key-informants is to determine appropriate densities for TOD around the proposed station areas to complement the surrounding neighbourhoods and existing urban character.

Based on the findings from Chapter 3, the following areas were investigated within the three case studies:
• municipal policy support for TOD
• municipal and regional policy support for integration of transit service with land
use planning and urban development
• station area planning; including goals, process of formulation, means for
regulation and implementation
• implementation tools to support station area plans, including the use of overlay
zoning

The above were identified as the areas to investigate in the case studies presented in
chapters 4, 5 and 6, as they represent the challenges facing the City of Winnipeg in
planning and implementing transit-oriented development at strategic stations along the
SWRTC.

7.2.3 ‘Lessons Learned’ from Case Studies

The Denver case study focused on planning for TOD in the Downtown Denver and
at the Denver Union Station (DUS) site. The City and County of Denver was selected as a
case because of the extensive investments in rapid transit under the FasTracks program. To
date, the City and County of Denver has completed 12 station area plans. With Blueprint
Denver, the City and County of Denver has advanced land use policies in support TOD by
directing growth to rapid transit stations. In Blueprint Denver, Downtown Denver is a
designated ‘area of change’ that will accommodate the highest levels of land use
intensification and a multi-modal transportation network that will prioritize pedestrians and
transit users.
The redevelopment of the DUS site is part of ongoing efforts by the City and County of Denver and its arms-length redevelopment agency, DURA, to revitalize the Downtown through a myriad of approaches, including public investments in housing development, financing the adaptive re-use of heritage buildings and providing financial incentive programs for retail development and TOD. DUS will accommodate multiple types of transit, including local service, LRT, BRT and commuter rail.

In 2008 the inter-governmental Executive Oversight Committee (EOC) which oversees the redevelopment of the DUS site adopted the Denver Union Station Master Plan Supplement. As a station area plan, the Denver Union Station Master Plan Supplement provides clear guidance for the provision of public spaces, phasing of transportation infrastructure and access to the station area by pedestrians and cyclists. The role of DUS on the regional transit network is clearly defined. Expectations for land uses, densities and form of development on the 90-acre site are provided in the Denver Union Station Master Plan Supplement. However, since station area plans should address the area within a ten-minute walk from the transit station (typically at least 500-acres), the land area governed by the Denver Union Station Master Plan Supplement is too small to effectively support land use intensification at Denver Union Station and TOD.

Implementation tools for TOD include TIF and rezoning of the DUS site to the TMU-30 zoning designation. The TMU-30 zoning includes a 25-percent reduction off standard off-street parking requirements. As-of-right uses include commercial and multiple family housing. A FAR of up to 5:1 is permitted within TMU-30 zones. The maximum building height is 220 feet, which is 80 feet higher than permitted anywhere else outside of the central business district. TIF has been applied to the entire site. To date, TIF funds have
been flowed to private developers for two projects, to fund ancillary improvements such as upgrades to sidewalks, landscaping, street furnishings and lighting. To date, station area planning at Denver Union Station has raised land values and developer interest in TOD.

The BTV case study was selected because it is an example of station area planning around BRT is occurring in a slower growth area of the City of Boulder. The City of Boulder has favourable contextual conditions to support TOD, including compact land use and development patterns, a legislated urban growth boundary, pedestrian-oriented downtown and efficient local transit service.

Policy support for TOD in Boulder is contained in the *Boulder Valley Comprehensive Plan* and *Transportation Master Plan*. The Boulder Valley Comprehensive Plan identifies the BTV as a primarily residential area to help address Boulder’s current to address its current housing shortage through the provision of over 300 units of affordable housing, proximity to daily amenities and pedestrian-oriented urban design. As stated in the Boulder Valley Comprehensive Plan (City of Boulder 2008a, 72), the vision for the BTV is:

*New housing in the [BTV] will provide the opportunity for people to live close to jobs, services, entertainment, transit, bikeways, a new park and a civic plaza. All housing will be within walking or biking distance of the regional bus or commuter rail service. The combination of affordable housing and lower cost transportation options may create a more economically diverse population in the area. It also may support a more diverse employment base for the city, as more Boulder service workers may be able to reside in the Transit Village area.*

As identified in the *Transportation Master Plan*, designated multi-modal corridors throughout Boulder have frequent local transit service, sidewalks, bike paths, and mixed-use, higher density development that support the integration of transit, land use and
development.

The BTV site currently contains a fragmented street network, limited infrastructure and sprawling, industrial land uses. The *Transit Village Area Plan* (TVAP) (2007) was the first station area plan completed in the City of Boulder. The TVAP is a 25-year station area plan for the 160-acre BTV site that will accommodate regional commuter rail, local transit service and BRT. The TVAP outlines “the desired future development of the area – its character and scale, the land uses, and the location of streets, paths, parking, public spaces and public facilities” (City of Boulder 2007, 5). As a station area plan, the TVAP provides clear expectations for the density, design and diversity of land uses permitted on the BTV site. The City of Boulder has invested in constructing public plazas adjacent to the transit station and at an established commercial node in the Steel Yards District (see: Figure 17). In the Rail Plaza and Pearl Street Centre character districts, additional design guidelines are in-place to ensure good pedestrian access to the transit stations.

In terms of implementation, the policies in the TVAP have been successful at facilitating affordable housing development in the BTV. Although the construction of the rapid transit infrastructure has been delayed under funding shortfalls for the *FasTracks* program, the City of Boulder has still received development proposals for housing totaling more than 300 units (Boulder Interview 3, 2010). The land use planner interviewed believes that the housing development proposals can be attributed to the density bonus program in place (Boulder Interview 3, 2010).

As the Boulder Transit Village was the first TOD project for the City of Boulder, key-informants state that there was a lack of local expertise in the planning process and elements of ‘muddling through’ (Boulder Interview 3, 2010). The decision to pursue both
commercial and residential development in the BTV was political: although there was a large demand for affordable housing in Boulder, commercial development brings in more tax revenue for the municipality (Boulder Interview 2, 2010). The City of Boulder has been less successful in attracting commercial development to the BTV site (Boulder Interview 2, 2010; Boulder Interview 3, 2010). In terms of negative ‘lessons learned’ the unbundled parking and adjacent commercial nodes with ample free parking, has deterred commercial development at the BTV site (Boulder Transit Village 3). Although TOD requires mixed-use development (i.e. housing within walking distance to daily amenities coffee shops and grocery stores), the Boulder case study demonstrates that zoning for large-scale commercial/industrial development may not always be appropriate, especially if established areas already existed in proximity to the planned site.

The third case study examined planning for TOD in Ottawa, generally, and at Westboro Station on the Transitway, specifically. Community Design Plans (CDPs) are the main tool for station area planning within Ottawa’s planning framework. Ottawa currently has 5 station area plans in place; the Richmond Road/Westboro CDP is the focus of this case study. Richmond Road/Westboro Community Design Plan (City of Ottawa 2007) guides land use intensification and infill development within the gentrifying areas of Westboro Village and Westboro Station. Westboro Station is a slow growth area that has been undergoing redevelopment and land use intensification during the past 10 to 15 years. Westboro Village has experience among the highest levels of land use intensification in Ottawa.

The “transit-first” policies contained in Ottawa’s Official Plan support its character, according to Cervero (1998), as a hybrid transit metropolis. Planning efforts at the City of
Ottawa create a favourable context for TOD by prioritizing infill development and land use intensification in downtown Ottawa and at Transitway stations (Ottawa Interview 1, 2010). On the other hand, local and feeder transit routes effectively serve low-density residential neighbourhoods in the outlying suburbs (Cervero 1998). Furthermore, the Official Plan contains strong policy support for increasing housing densities within 600-metres of all Transitway stations over the next twenty years as a strategy to accommodate population growth within the existing land area and transportation network of Ottawa.

As a station area plan the Richmond Road/Westboro CDP is effective at prescribing levels of land use intensification for each sector and expectations on urban design. The provision of public plazas, sidewalks and cycling paths are outlined. The Richmond Road/Westboro CDP commits to accommodating land use intensification and projected levels of population growth in the study area through improvements to local transit and TDM measures rather than increasing vehicle capacity. However, as a station area plan, the plan is weak in reducing standard parking requirements or outlining provisions for affordable housing in a rapidly gentrifying area.

The Ottawa case study demonstrates a cautionary ‘lesson learned’ on the importance of integrating the process corridor and station area planning. As the Transitway was constructed 28 years ago and station area planning has only been occurring for the past ten years, much of the development at station areas is transit-adjacent in nature. Also, the alignment of the Transitway along old rail lines has resulted in station areas with brownfields and industrial uses that present significant cost barriers for TOD. Therefore, another ‘lesson learned’ from the Ottawa cast study is that proactive planning for TOD needs to be integrated in the corridor/alignment stages of rapid transit.
<table>
<thead>
<tr>
<th>TOD Supportive Land Use Policy</th>
<th>Denver</th>
<th>Boulder</th>
<th>Ottawa</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In Blueprint Denver</strong>&lt;br&gt;land use intensification, and investment in a multi-modal transportation network are directed to rapid transit station areas and Downtown Denver</td>
<td></td>
<td>The Boulder Valley Comprehensive Plan designates the Boulder Transit Village as a strategic location to accommodate more affordable housing within walking regional transit service, employment and daily amenities</td>
<td>The Official Plan directs land use intensification to areas within 400-metres of a Transitway station, to accommodate projected levels of population growth and increases in travel demand</td>
</tr>
</tbody>
</table>

| Station Area Planning | | | |
|-----------------------|---------|----------|
| **Station Area Studied** | Denver Union Station | Boulder Transit Village | Westboro Station |

<p>| Design Guidelines/Place Making | | |
|--------------------------------|--------------|
| <strong>Capital improvements to establish five public spaces/plazas:</strong> Wynkoop Plaza; the 17th Street Promenade; 18th and Wewatta Plaza; a pedestrian deck over passenger rail platforms; and an outdoor train room. Streetscaping and landscaping standards for private development are also established. | Seven ‘Character Districts’ are prescribed, each with their own design guidelines and predominant land use features (see: Figure 17). | Stations located adjacent to industrial land or brownfields present a challenge for fostering attractive/pedestrian-oriented places. Streetscaping strategy addresses overhead lighting, street furniture, storefront design guidelines, building materials and façade details. Public plaza planned for Westboro station. |</p>
<table>
<thead>
<tr>
<th>Station Area Studied</th>
<th>Denver Union Station</th>
<th>Boulder Transit Village</th>
<th>Westboro Station</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land Use Mix and Placement</strong></td>
<td>There are six parcels of land available for development. Parcel One: 150,000 square feet of offices with ground floor retail. Parcel Two: 200,000 square feet available for office/hotel with ground floor retail; Parcels Three and Four: 1,000,000 total square feet are available for a mix of residential, retail and office. Parcels Five and Six: One structured parking facility and private parking will accommodate up to 700 spots. With the TMU-30 zoning overlay a FAR of 5:1 permitted.</td>
<td>The TVAP makes provisions for up to 2000 units of housing, 350 of which are affordable; 100 park and ride spaces; 40,000 square feet of retail; 35-acres of ‘mixed-use industrial’ to accommodate existing and new service shops, small manufacturers and contractors.</td>
<td>Prescribes levels of land use intensification. Residential: 635 additional housing units permitted in the sectors of Westboro Village, East Village, Maplelawn and Scott Street and Westboro Station, or a 23-percent increase in maximum allowable build out. Commercial, institutional and recreational uses: 40-percent increase in maximum allowable build out at Scott Street and Westboro Station (51,200 m² total); 19-percent decrease in Westboro Village and East Village due to decreased height limit along Richmond Road (total of 42,400 m²).</td>
</tr>
<tr>
<td>Station Area Studied</td>
<td>Denver Union Station</td>
<td>Boulder Transit Village</td>
<td>Westboro Station</td>
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<td>----------------------</td>
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<td>------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td><strong>Access by pedestrians and cyclists</strong></td>
<td>Pedestrian access to transit via planned 17th street promenade (see: Figure 12). Bicycle parking and connections to existing Downtown system of trails are established in the plan.</td>
<td>The Goose Creek Greenway is a recreational and commuting path running through the BTV site (see: Figure 18). Along the southern portion of the BTV site, Pearl Street is a designated ‘multi-modal’ corridor. Extension of cycling paths and local transit service through the BTV site along Pearl Street is recommended (see: Figure 17).</td>
<td>Capital projects and timelines for implementation are outlined. Improved pedestrian bridge connecting Westboro Station and areas North of the Transitway (Metropole Tower) is recommended.</td>
</tr>
<tr>
<td><strong>Parking Requirements</strong></td>
<td>25-percent reduction off standard off-street parking requirements as stipulated with TMU-30 zoning designation</td>
<td>Unbundled parking for office and commercial development in Phase II TDM measures such as employer eco-pass programs are permitted in-lieu of off-street parking.</td>
<td>Generally weak incentives and controls to reduce parking. Uses standard requirements stipulated in Ottawa’s zoning By-law. Sheltered bicycle parking is permitted in-lieu of off-street parking requirements for retail and restaurant uses.</td>
</tr>
<tr>
<td><strong>Circulation/Connectivity</strong></td>
<td>In addition to access for pedestrians and cyclists (outlined above), drop off zones for taxis and private vehicles are established.</td>
<td>Provision of additional sidewalks in the station area is outlined in the Transit Village Implementation Plan.</td>
<td>Provision of overhead pedestrian crossings to link Westboro Station to adjacent neighbourhoods (See: Figures 20 and 24).</td>
</tr>
<tr>
<td>Station Area Studied</td>
<td>Denver Union Station</td>
<td>Boulder Transit Village</td>
<td>Westboro Station</td>
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<tr>
<td>Implementation Tools</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zoning</td>
<td>Transit Mixed-use (TMU 30) zoning overlay</td>
<td>Rezoned using a combination of existing and new zoning designations (See: Figure 19). High-Density Residential (HDR2) and Industrial Mixed-use (IMU2) are new zoning designations created for the BTV.</td>
<td>Traditional Main Street zoning</td>
</tr>
<tr>
<td>Inclusionary Zoning/Affordable Housing Provision</td>
<td>N/A</td>
<td>Boulder’s Inclusionary Zoning Ordinance requires 20-percent affordable units or an equivalent cash contribution. Density bonus program offered for developers who provide 50-percent affordable, on-site, deed-restricted affordable housing at the BTV site. The Boulder Housing Agency purchased 8-acres in the BTV to develop up to 50 units of affordable housing.</td>
<td>N/A</td>
</tr>
<tr>
<td>Tax Increment Financing</td>
<td>Administered by Denver Downtown Development Authority (DDA). Applies to entire 90-acre DUS site. Eligible expenses include: utilities, sidewalk installation/improvements, street lighting and furniture, landscaping.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Table 2: Summary of Findings from Case Studies
7.3 Recommendations

The three recommendations presented in this section are intended to provide direction to planners and policy-makers involved with planning for TOD in Winnipeg.

7.3.1 Develop land use policies to direct growth to station areas along the Southwest Rapid Transit Corridor

In order to support TOD in Winnipeg, land use policies contained in Winnipeg’s comprehensive development plan need to direct growth to the rapid transit stations on the SWRTC and future rapid transit stations. Regulations and incentives are needed to ensure that land use intensification supports travel by a variety of modes, is higher-than-average densities and supports a diversity of uses. Although the policies contained in Plan Winnipeg commit to directing “new development with high intensity uses to locations that are supported by transit operations” (City of Winnipeg 2000, 31), the policy does not identify these locations.

Supporting TOD within cities and regions involves taking a proactive approach to integrating rapid transit, land use planning and urban development. Land use policy supports TOD within cities by providing a vision for growth, demonstrating commitment to building efficient transit and supporting for location efficient development (Dunphy et al. 2004; RTD 2010b).

In each of the case studies, land use and transportation policy is utilized to encourage and regulation development at rapid transit station areas. In the City and County of Denver, Blueprint Denver categorizes neighbourhoods into “areas of stability” and “areas of change”. The designated “areas of change” are meant to accommodate highest
densities and diversity of uses; these areas include Downtown Denver, stations on the *FasTracks* rapid transit system and along multi-modal corridors. Boulder’s *Transportation Master Plan* identifies ten ‘multi-modal corridors’ throughout the City that will support the highest levels of local transit service, infrastructure improvements for pedestrians and cyclists and density of land uses. The *Boulder Valley Comprehensive Plan* designates the Boulder Transit Village as a strategic location to accommodate more affordable housing in Boulder that is within walking regional transit service, employment and daily amenities.

Ottawa’s *Official Plan* contains “transit first” policies that designate the Transitway, and land use intensification within 400m of Transitway stations, to accommodate projected levels of population growth and travel demand. Ottawa’s *Transportation Master Plan* outlines parking regulations and capital improvements at Transitway stations in support of the “transit first policies”.

### 7.3.2 Undertake station area planning for strategic stations along the SWRTC

In comparison to the cases studied, secondary planning in Winnipeg is noticeably less developed. Only one station area, Osborne Station, is partially regulated by a secondary plan. The *Osborne Village Neighbourhood Plan* (City of Winnipeg 2006) is a secondary plan for the entire neighbourhood of Osborne Village, an established urban village located north of Osborne Station. The *Osborne Village Neighbourhood Plan* lacks many of the components of a station area plan including a clear vision of development and management of traffic and parking around the future Station. However the *Osborne Village Neighbourhood Plan* could be revised to contain a vision and implementation tools to support TOD within a 5- to 10-minute walk of Osborne Station.
As demonstrated in the Ottawa case study, station area plans should be undertaken in conjunction with corridor level planning to ensure that stations are optimally located to attract ridership and development opportunities. Placement of stations will balance the need to attract development with the need to attract ridership. Undertaking station area plans early in the process makes implementation easier, as decision made during corridor and station design stages will significantly impact development opportunities in the established station area (TCRP 2004; RTD 2010b).

As demonstrated with the Denver case study, TOD is highly dependent on local market forces and many station areas develop incrementally, especially in slower growth areas. According the Manager of TOD at the RTD, although the City and County of Denver has adopted twelve station area plans, many will not be implemented for another 10 years, following completion of the FasTracks program (Denver Interview 1, 2010). In this case, the value of the station area plans is to ensure that the standards and implementation tools are in place even though through the often-longer “gestation” periods required for TOD (TCRP 2004; Denver Interview 1, 2010). Therefore, even though funding for Phase II of the SWRTC has not been secured, starting the station area planning process now can ensure that optimal placement of stations to optimize development opportunities.

Finally, stations should be placed among established urban villages or established commercial nodes whenever possible. This issue is especially applicable to the Fort Rouge and Osborne stations along the SWRTC. As seen in the Boulder and Ottawa case studies, station areas can compete for development with adjacent areas. In Ottawa, placement of the Transitway was completed long before any community design plans were in place. As a result, Westboro station has limited development potential due to surrounding industrial
land uses and market competition for housing and retail development with the adjacent Westboro Village, East Village and Maplelawn sectors. While the City of Boulder has been successful at facilitating housing development in the BTV, attracting commercial development and essential retail has been a challenge, due partially to the proximity to existing commercial and employment nodes.

7.3.3 Use overlay zoning to support higher density, a diversity of uses and limit surface parking at station areas along the Southwest Rapid Transit Corridor

Zoning is the standard tool used by local governments to regulate land and enforce specific plans (TCRP 2004). Overlay zoning can be applied over an existing base zoning designation to supplement the provisions made in the base zone (Ibid). The purpose of overlay zoning is to attach extra regulations or incentives to guide development within a special area, such as a rapid transit station (Ibid). Overlay zoning can be used to implement the vision and policies contained in station area plans by prescribing parking regulations, minimum setbacks, entry frontage and ground floor uses (Dittmar and Ohland 2008). Most zoning overlays will specify TOD-compatible land uses as-of-right, such as multi-family housing and convenience shops, while restricting auto-oriented forms that may compromise TOD, such as drive-through restaurants (TCRP 2004). Some zoning overlays will lower off-street parking requirements and, in some of the case studies, mandate bicycle parking at station areas (Ibid).

As established from the literature review, standard off-street parking requirements set out in municipal zoning by-laws present one of the greatest challenges for TOD. Large tracts of surface parking create “an automobile oriented environment near the station where
TOD theory would place pedestrian activity and transit-supportive development” (RTD 2010b, 20). Strategies such as permit parking programs in residential neighbourhoods, shared parking structures at downtown stations, and shared parking arrangements in mixed-use areas are presented in literature. However, parking remains one of the most significant challenges in planning for TOD and has not been resolved in existing studies.

The case studies took a variety of approaches to addressing zoning and parking issues at station areas. Denver utilized zoning overlays to regulate TOD while Boulder and Ottawa rezoned station areas using new or existing designations that allowed for higher density and mixed-use development to occur. In the Denver case study, the TMU-30 zoning overlay allowed for higher densities at station areas than the average for downtown Denver. In terms of parking, the TMU-30 zoning allowed for a 25 percent reduction in standard off-street parking requirements. In Boulder, two new zoning designations were developed. The High Density Residential (HDR2) and Industrial Mixed Use (IDMU) designations both allow for higher densities and diversity of uses than the average for Boulder. In terms of parking, the new zoning designations allow for unbundled parking which is the sale of parking spaces independently of residential units. However, key-informants report that parking restrictions may have deterred commercial development in BTV (Boulder Interview 3, 2010).

In Ottawa, land use intensification at Westboro Station is supported by specific targets for each land use as defined in the Westboro CDP. The Traditional Main Street zoning prohibits uses such as automobile services and ground floor residential in station areas. One downside of the Traditional Main Street zoning is that it is weak on reducing off-street parking requirements in station areas. While parking regulations for Transitway
station areas are defined in Ottawa’s *Transportation Master Plan*, as presented in section 6.2.3 of this document, specific parking ratios for Westboro Station are not established in the Westboro CDP.

Key-informants agree that Winnipeg’s Planned Development Overlay District (PDO- 1) zoning designation has the potential to facilitate TOD at station areas along the SWRTC. However, Winnipeg also needs to establish effective controls to limit surface parking at station areas, especially at stations located in the Downtown and core neighbourhoods. In Phase II of the SWRTC, parking standards for suburban stations should be coupled with implementation tools such as land banking to ensure that land use intensification at station areas occurs when the market is ready.

7.4 Implications for Planning Practice

The three case studies undertaken in this practicum highlight the practical experience of local planning organizations that are supporting TOD through land use policy, station area planning and other implementation tools. Such case studies are a valuable tool for planners, as they illustrate both the innovations and the challenges experienced in contemporary planning practice. According to Cervero (1998), the narrative approaches used in the presentation of case studies promotes wide accessibility for general, political and scholarly audiences. Such case studies can also be used to provide a clearer context for the political, social and economic trends contributing to patterns of planning and urban development (Cervero 1998). In this practicum, the three case studies present an integrated picture of opportunities and barriers for TOD within a jurisdiction. The case studies also illustrate the benefits of adopting a more robust secondary planning framework.
for Winnipeg. The practical experience from one jurisdiction can be used then by other jurisdictions to make jumps on the learning and practice ladder.

In this sense, the ‘lessons learned’ and recommendations made in this practicum are intended to be a timely contribution to the development of land use policy, station area plans and other implementation tools in support of TOD in Winnipeg. While the rationale and standards for station area planning are well established in the literature, this practicum examines the effectiveness of developed station area plans in supporting the goals and objectives of TOD. The ‘lessons learned’ and recommendations can potentially also benefit other Canadian municipalities that are establishing rapid transit and pursuing strategies to raise transit ridership and promote the development of more compact and pedestrian friendly neighbourhoods.

7.5 Directions for Further Study

Given the limited scope of this study, triangulation of the arguments presented in the case studies was not always possible. Therefore, several concepts discussed in this practicum would benefit from further inquiry.

Dittmar and Ohland’s Performance-based Definition of TOD was used as a framework for evaluating station area plans within the case studies. In all three case studies, the station area plans examined had been adopted by municipal council in the past five years. Therefore, the impacts of these plans on the built environment at the station areas still remain to be seen. As these station area plans are being implemented, further evaluation is needed on the relationship between the station area plan and the built environment at the station area with respect to the five goals of the Performance-based
Definition of TOD. This would likely prove a useful task for the planning departments of the case studies investigated, as for any jurisdiction pursuing TOD.

Further analysis should be done on various municipal regulatory and finance mechanisms that support TOD, such as TIF, land banks and incentive-based zoning for affordable housing. Planning staff at the City of Winnipeg, possibly in partnership with external consultants would benefit from gaining a better understanding of the usefulness of these possible financing tools to support their efforts in TOD.

In Winnipeg, another direction for further study would be market analysis for TOD. On the demand-side, the analysis could examine the Winnipeg’s housing market, demographics, income levels and other factors affecting residential and commercial demand for TOD. On the supply side, the analysis could examine the supply of land available for redevelopment at stations in Phase I of the SWRTC in order to prioritize station area planning efforts. These studies should inform the station area planning process; prioritizing station area plans for areas with the most potential, based on supply and demand, for TOD. Planning staff at the City of Winnipeg, possibly in partnership with external consultants, should undertake this task.

Along Phase II of the SWRTC the exact location of the stations has not yet been determined in spite of over 30 years of planning. Analysis of available land along the proposed alignment, and their potential for development (capacity analysis), should be undertaken to inform the placement of future stations. For planning future rapid transit corridors, the City of Winnipeg would benefit from developing guidelines for corridor-level planning and placement of stations to optimize opportunities for TOD. The case studies undertaken in this practicum should be expanded to investigate corridor-level
planning in the three jurisdictions examined. Corridor-level planning would ensure that opportunities for TOD and to optimize ridership on transit are not missed.

Lastly, there appears to be a lack of critical analysis as to whether TOD is a good fit for Winnipeg, given that TOD works better within certain urban contexts and conditions than others (Dunphy et al. 2004; Dittmar and Ohland 2008). As demonstrated in the Boulder case study, key-informants indicate that the TOD concept does not “sell well” outside of Downtown areas. Although there are many technical guides, government documents and secondary sources touting the benefits of TOD, an evaluative and comparative framework, that municipalities can use to determine if TOD is a ‘good fit’, could not be found when undertaking this literature review. Dunphy et al. (2004) develop a rudimentary framework that defines contextual conditions for TOD, including:

- Growing levels of transit ridership;
- Increased funding for transit provision;
- New investment in transit modes such as BRT or LRT;
- Strengthened market for in-town living;
- Growing popularity of smart growth and placemaking as development concepts.

However, there has been no guiding framework to compare TOD to the plethora of other strategies, such as in-fill housing, traditional neighbourhood design, and complete communities that can be employed by municipalities under the smart growth agenda.

Further research on developing standards for evaluating whether TOD is a ‘good fit’ for Winnipeg should be undertaken by the planning research community, with a view to understanding the key conditions and resources required to make TOD a ‘good fit’.

In closing, best practices of planning for TOD are still emerging. While there are
significant challenges for TOD along the SWRTC in Winnipeg, research argues that TOD is a key neighbourhood-based strategy that can contribute to the integration of transit and land use planning functions in Winnipeg, in order to lower traffic congestion, raise levels of transit ridership and produce more livable communities.
BIBLIOGRAPHY


Winnipeg Interview 1. 2010. Interview by author. Winnipeg, Manitoba. May 5. Transit planner, City of Winnipeg


APPENDIX A

INTERVIEW GUIDE TEMPLATE

Name:
Position:
Location if interview:
Interview duration:

A) Interviewee’s Involvement
  • What is your role in planning for TOD in your jurisdiction?

B) Context for TOD
  • What was the motivation for adopting TOD policies and plans in the jurisdiction where you work?
  • What was the process of planning for TOD undertaken in your jurisdiction?
    o PROMPT: process of formulating high-level policy to support TOD, station area plans, urban design guidelines and implementation tools?

C) Station Area Planning
  • What TOD station area plans have been particularly successful or well-received?
    o PROMPT: examples of potential station area plans found from document review
    o PROMPT: How did [station area plans] overcome some local contextual/design challenges?
  • What were the goals for undertaking this particular [station area] planning process?
    o PROMPT: What are the urban challenges that planning for TOD aimed to address?

D) Implementation Processes and Tools
  • What actions have been taken to implement [this station area plan]?
    o PROMPT: regulations or incentives found through document review
      (Capital improvements around station area, new standards for zoning, land use and parking, affordable housing programs, municipal approval processes, etc.)
  • What have been the benefits of [this station area plan] and its implementation to date?
    o PROMPTS:
      o Connections between the transit investment, station area and surrounding area
      o What projects have been developed or built?
      o Appropriate housing densities, land use mix, urban forms
      o Amenities for pedestrians and cyclists
What challenges have you experienced in TOD and station area plan implementation?

- **PROMPT**: What is the station area plan unable to do?
- **PROMPT**: Have community members, politicians, developers been supportive of TOD policies/station area plans in your jurisdiction?

**E) Lessons Learned**
- If this process of station area planning were to be repeated here, what might be done differently, and what elements do you think should definitely remain?
- What planning, political, or implementation processes need to change here, in order to better support TOD and station area planning?
- What advice would you have for other municipalities pursuing TOD and station area planning?

**F) Broader Perspective**
- What is the effectiveness of using TOD principles to encourage development or re-development around rapid transit at the station- and corridor-scale?
- Are plans such as [TOD/station area plan] enough, or are there other things governments and communities could be doing to achieve the goals of higher density, mixed-use pedestrian friendly neighbourhoods?
  - **PROMPT**: Transportation system improvements?
  - **PROMPT**: Government grants, tax incentives or penalties?
  - **PROMPT**: Other regulations, plans or community initiatives?
APPENDIX B

LETTER OF INFORMED CONSENT

Letter of Informed Consent for Interview Participants


Principal Researcher: Vicky Reaney, Master’s of City Planning Candidate

This consent form, a copy of which will be left with you for your records and reference, is part of the process of informed consent. It provides the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

1. Purpose of research: This thesis project develops case studies of transit-oriented development (TOD) around rapid transit stations, as well as related urban planning processes involved in implementing TOD at the municipal or regional scale. Sources of information include existing literature and planning documents, site visits and key-informant interviews with professional planners and policy-makers involved in planning and implementation of TOD station area plans. Using this research, I will generate recommendations for station-area planning and TOD-supportive policy for the Southwest Rapid Transit Corridor (SWRTC) in Winnipeg.

2. Procedures: As a participant of this study, you will be asked to describe and reflect upon your professional role in planning and implementing TOD in your jurisdiction. The interviews will take approximately 60 to 90 minutes, depending on your time availability. Additional follow up questions may be conducted via telephone or email.

3. Confidentiality: The academic urban planning community will be able to access the information given in this report, as part of my thesis or within another academic publication. If you do not consent to your name being used as an information source in the case study report, you can decline the interview. Alternatively, you may request that only your general role or professional position will be identified in all published materials resulting from this project. However, you may still be identifiable due to your distinguishable professional role. If you feel that an interview question asks you to reveal confidential or undisclosed information, you may decline to answer the question.

4. Recording devices: For this interview, a voice recorder will be used to tape the interview for the purposes of analyzing the information gained. Having your interview taped is required for participation.
5. Feedback: A final report will be emailed to all participants of this study.
6. Remuneration: Participants will not be offered remuneration for time, travel expenses, communications, or any other expenses incurred for participating in this study.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

If you have any questions about the research, please contact:
Vicky Reaney, B.Sc., Masters of City Planning Candidate
Department of City Planning, University of Manitoba

Or alternatively contact:
Dr. David van Vliet
Associate Professor, Department of City Planning, University of Manitoba
318 J.A. Russell Building
University of Manitoba
Winnipeg, MB R3T 2N2
Canada
Email: vanvliet@cc.umanitoba.ca
Tel.: (204) 474-7176
Fax: (204) 474-7532

This research has been approved by the Joint-Faculty Research Ethics Board. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Secretariat at Tel.: (204) 474-7122, or e-mail margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Participant's Signature  Date

Researcher's Signature  Date
APPENDIX C

THE HIAWATHA LINE/MINNEAPOLIS CASE STUDY

In the proposal phase of this practicum, a number of North American municipalities were selected as potential case studies, including Waterloo Ontario; Los Angeles; and Vancouver. These potential case studies have met some of the criteria listed in section 1.2 such as investment into BRT, policy support for TOD and station areas located in declining or slow growth neighbourhoods.

Appendix C contains background research gathered as part of a case study on the Hiawatha Line in Minneapolis. The contents of this case are not included in the final analysis and recommendations presented in Chapter 7. The City of Minneapolis met many of the criteria for selection of case studies presented in section 1.2, such as similarity of climate, presence of policy support for TOD and station area planning, regional approached to growth management and linking transit to land use planning and urban development. As such, the case study was included in the final proposal. One key-informant interview was conducted and field research was completed in April 2009. However, this case study was not completed due to information shortages that significantly limited the findings. No substantial findings were made from the Minneapolis/Hiawatha case beyond those found during the document review, presented in Chapter 2.

In the proposal for this practicum (approved by the Committee in November 2009), the original rationale for selecting Hiawatha Line/Minneapolis case study was:

As a cold weather, mid-size city, Minneapolis offers an urban context comparable to Winnipeg. Since 2007, the Metropolitan Council and the City of Minneapolis have been planning a TOD corridor along the 19-kilometer Hiawatha Light Rail Transit (LRT) Line. Metropolitan Council’s TOD plans include supportive zoning, pedestrian-oriented building form and placement, a vertical mix of uses, and addresses anticipated parking and automobile access issues. My site documentation and analysis reveals that urban typologies along the Hiawatha LRT Line run the gamut from infill redevelopment within urban heritage areas (the Warehouse District Station) to suburban office park redevelopment opportunities (the Bloomington Central Station). Therefore, examples of TOD station area planning along the Hiawatha LRT Line provide recommendations for many of the neighbourhood typologies located along the planned Southwest Rapid Transit Corridor. Regional integration of land use plans
and transit and corridor-level planning initiatives such as the Corridor Housing Initiative will also be investigated in this case study.

However, the geography and climate criteria were not critical factors in the selection of case studies as originally thought at the time of writing the proposal. Upon further research, Minneapolis has a different urban context from Winnipeg in terms of investment in transit and patterns of land use development that are more significant in terms of criteria for selection of comparable case studies.

From the practicum proposal, the following planners were sought as potential key-informants for the Minneapolis Hiawatha LRT Case Study:

- Planner, City of Minneapolis, who subsequently provided two contacts for planners with the City of Minneapolis and the City of Bloomington
- Principal Planner, City of Minneapolis
- Associate Professor of Planning, Design, and Civil Engineering, University of Colorado

Of the five planners in total contacted for interviews, the only interview secured was a phone interview with the planner at the City of Minneapolis. In each case, efforts will be made to interview at least three planners, city administrators, or urban designers directly involved in planning for TOD or station area planning in the case study location. Where possible, a variety of perspectives were sought on the process of implementing TOD within the case studies. For this reason, the information needs of the Hiawatha Line/Minneapolis case were not met.

Site visits of station areas along the Hiawatha Line were conducted in April 2009, in conjunction with the APA conference in Minneapolis. Stations visited included the Warehouse District, Bloomington Central Station and the Franklin-Cedar stations. The email interview occurred in April 2010. Document review of municipal planning documents was completed in the spring of 2010.

Preliminary research findings on Hiawatha Line/Minneapolis Case Study

1. Municipal Context and Background
The City of Minneapolis is the largest municipality within one of the fastest growing metropolitan areas in the Midwest United States (Calthorpe and Fulton 2001). Minneapolis has a population of 388,020 and a total land area of 51.3 km² (Metropolitan Council 2008). The Twin Cities metropolitan area has a regional population of 2.85 million (Metropolitan Council 2008) and is projected to have one million new residents by 2030 (Metropolitan Council 2010). While most of the population growth in the Twin Cities metropolitan area is concentrated in newer, low-density suburbs, jobs are concentrated in Downtown Minneapolis and St. Paul and in employment nodes located throughout the region (Metropolitan Council 2008).

As the regional planning agency for the Twin Cities metropolitan area, the Metropolitan Council is responsible for providing services such as the operation of transit, collection and treatment of wastewater, census tracking and maintaining regional parks and trails (Calthorpe and Fulton 2001). The Metropolitan Council has focused regional planning efforts in managing growth, investing in a light rail network, enforcing a metropolitan urban growth boundary, and concentrating higher density development next to major employment nodes.

Improving public transit is one strategy for accommodating growth in the Twin Cities, particularly for managing traffic congestion during peak hours to and from Downtown Minneapolis and other employment nodes (Metropolitan Council 2010). Therefore, the Metropolitan council has made a policy commitment to build eight dedicated rapid transit corridors by 2030 (Metropolitan Council 2010). Minneapolis plays a strategic role in regional commuting patterns, as six of the eight rapid transit corridors will originate in Downtown Minneapolis (City of Minneapolis 2009b).

The Hiawatha Line is the first of the eight rapid transit corridor built. The Hiawatha Line is a 19-kilometre LRT corridor that connects large employment and commercial nodes in the Twin Cities metropolitan area, such as:

- Downtown Minneapolis;
- The Minneapolis-St. Paul International Airport;
- V.A. Medical Center, a large medical research and health care complex;
- Fort Snelling, a former army reserve base and current heritage tourist attraction; and
The Mall of America, one of the largest shopping malls in the United States. Since opening in 2004, the Hiawatha line has attracted over 10 million riders per year and over 8,000 units of multiple family housing have been built around station areas, with another 7,700 in process (Metropolitan Council 2009). The Hiawatha Line has seventeen stations that span two municipalities: the City of Minneapolis and the City of Bloomington. The City of Bloomington is a suburban municipality located approximately 16-km southeast of Minneapolis with a population of 85,000 (City of Bloomington 2009). Both municipalities have invested in station area planning along the Hiawatha Line to facilitate TOD.

Station area planning along the Hiawatha line is the first significant investment in TOD for Minneapolis and the region (Minneapolis Interview 1, 2010). Station area planning along the Hiawatha Line has been most successful at facilitating higher-density housing development immediately adjacent to transit stations, increasing access to regional employment centres and increasing use of transit as a commuting mode to Downtown Minneapolis (Minneapolis Interview 1, 2010). In the metropolitan region, both the City of Minneapolis and the City of Bloomington have invested in TOD and station area planning along the Hiawatha Line.

Since 2001, the City of Minneapolis has adopted four station area plans for the Hiawatha Line and has established supportive regulatory tools such as overlay zoning. Urban typologies along the Hiawatha LRT Line run the gamut from infill redevelopment within urban heritage areas (the Warehouse District Station) to suburban office park redevelopment opportunities (the Bloomington Central Station). The City of Bloomington has invested redevelopment of Blooming Central Station, a former office park that is being converted into a mixed-use community with service to the airport and Mall of America (Minneapolis Interview 1, 2010).

2. **Planning and Policy Support for Transit-oriented Development**

Overall, the City of Minneapolis supported TOD by streamlining municipal development approval processes and increasing community participation and support for station area planning. The City of Minneapolis and Metropolitan Council are both involved in creating TOD supportive policy at the station and corridor level, respectively.
In the 2030 Transportation Policy Plan, the Metropolitan Council has a goal of doubling current transit ridership in the Twin Cities Metropolitan area, from a baseline of 73 million annual rides in 2003 – to 150 million rides by 2030 (Metropolitan Council 2010). This goal is supported by transit investments over the entire Twin Cities metropolitan region. The 2030 Transportation Policy Plan calls for increased investment in local transit service, dedicated transit lanes on state freeways, and a regional rapid transit network in the form of eight LRT or BRT corridors throughout the Metropolitan area.

The Minneapolis Plan is the comprehensive development plan for the City of Minneapolis that supports TOD through several key policy statements and land use planning tools. Arising from regional investment in a fixed-route rapid transit network, the land use section of The Minneapolis Plan calls for high-density, pedestrian oriented development at transit station areas. Policy 1.13 in the Minneapolis Plan states: “Support high density development near transit stations in ways that encourage transit use and contribute to interesting and vibrant places” (The City of Minneapolis 2009b, 21)

Transit Station Areas (TSAs) are another TOD supportive policy feature in The Minneapolis Plan. TSAs are designated areas located within a ½ mile of a fixed route transit station, including light rail, commuter rail or BRT routes (City of Minneapolis 2009). In practice, the City of Minneapolis attempts to concentrate higher density development within a ¼ mile of the transit station to create transitions to surrounding neighbourhoods (Minneapolis Interview 1, 2010). Under the Minneapolis Plan, TSAs are given special consideration, calling for tools that “maximize potential community development benefits of transit while also strengthening and protecting the surrounding neighbourhoods” (City of Minneapolis 2009b, 19). Designated TSAs are also subject to a secondary planning process in order “to identify and/or prioritize areas for change and preservation with specific goals and objectives for redevelopment, public infrastructure, density and urban design” (City of Minneapolis 2009b, 19). Development in TSAs is catered for “individuals who are more likely to use transit (e.g., residents of higher density housing and office and retail workers)” (The City of Minneapolis 2009b, 19).
3. Station Area Planning

Since 2001, The City of Minneapolis has assembled four *station area master plans* along the Hiawatha Line:

- *Franklin-Cedar/Riverside TOD Master Plan* (completed in 2001);
- 46th and Hiawatha Station Area Master Plan (completed in 2001);
- Hiawatha/Lake Station Station Area Master Plan (completed in 2001); and
- 38th Street Station Area Master Plan (Completed in 2006).

*Station area master plans* are the main tool for TOD planning in Minneapolis (Minneapolis Interview 1, 2010). These plans focus on land uses, urban design, public infrastructure, and amenities located within a half-mile of the station (City of Minneapolis 2001). The *station area master plans* are meant to guide changes in designated TSAs under the *Minneapolis Plan*, including:

- Future mixes of new businesses, housing, and neighborhood amenities;
- Improvements to the pedestrian environment;
- Enhancement of parks and green space; and
- Improving the accessibility and fit of the station with the neighborhood (City of Minneapolis 2001).

Each station area master plan is meant to embody three important TOD principles: increasing choice, character, and connections in designated neighbourhoods (Minneapolis Interview 1, 2010). Other planning activities related to TSAs include increasing housing choices and strengthening neighbourhood commercial corridors near transit stations (Minneapolis Interview 1, 2010).

The first station area plan completed, the Franklin-Cedar/Riverside TOD Master Plan, triggered amendments to the *Minneapolis Plan* to encourage TOD (Minneapolis Interview 1, 2010). The process for developing other station area plans along the Hiawatha Line has followed a similar process:

1. Station area master plan is assembled outlining changes to zoning, infrastructure, transportation and urban design that attempt to balance existing conditions with future uses;
2. A zoning overlay and other zoning changes are applied to the station plan area to the streamline future development processes; and
3. Planning approval processes for individual site redevelopment projects are guided by the station area master plan and/or zoning overlay (Minneapolis Interview 1, 2010).

The process of station area planning in Minneapolis can offer some valuable ‘lessons learned’ for Winnipeg. Early on in the process, station area master plans were assembled with broad support from neighbourhood representatives, developers and policy makers (Minneapolis Interview 1, 2010). When possible, consensus around vision and regulations for the station area was used to market the plan to the development community, as well as lenders and financial institutions (Minneapolis Interview 1, 2010). With the Franklin-Cedar/Riverside TOD Master Plan, an important planning exercise was to obtain consensus for appropriate densities and land use mix around the station area (Minneapolis Interview 1, 2010). Concentrating the highest densities within a ¼ mile from the station offers the opportunity to maximize redevelopment potential immediately adjacent to the station area while preserving the surrounding neighbourhood.

4. Implementation Tools

In Minneapolis, the main implementation tool used for station area planning is overlay zoning (Minneapolis Interview 1, 2010). The City of Minneapolis applies an existing zoning overlay, the Pedestrian Oriented (PO) overlay district, to all established TSAs along the Hiawatha Line. As stated in the City of Minneapolis zoning ordinance, the purpose of the PO overlay is:

*To preserve and encourage the pedestrian character of commercial areas and to promote street life and activity by regulation building orientation and design and accessory parking facilities, and by prohibiting certain high impact and automobile-oriented uses.*

(City of Minneapolis, 2009a)

The PO overlay district has several features that support TOD principles. The zoning ordinance outlines prohibited uses in the PO overlay district such as drive-through facilities, automobile services and transportation uses (City of Minneapolis 2009a). Buildings must be placed within 8 feet of the street facing lot line, which meant to bring
buildings up to the street and enhance the pedestrian experience (City of Minneapolis 2009a). The zoning PO overlay district establishes minimum floor area ratio requirements 1.0 for commercial and industrial uses (City of Minneapolis 2009a). Off-street parking requirements are lowered to 90-percent of the standard for multiple family dwellings (City of Minneapolis 2009a).

The PO overlay district has been especially effective in prohibiting certain uses, such as drive through facilities, automobile services and transportation uses that are known to be incompatible with TOD (Minneapolis Interview 1, 2010). However, the PO overlay district has been moderately successful at limiting surface parking in TSAs (Minneapolis Interview 1, 2010). In certain situations, the parking requirements for new development are still too high, especially for multiple-family housing (Minneapolis Interview 1, 2010).

5. **Opportunities and Challenges**

In Minneapolis, TOD is a tool used at the municipal level to support the regional goal of improving regional access to jobs and services. Station area planning efforts have been successful at facilitating higher density housing development at transit stations, orienting buildings to the street, and leveraging funding for capital street improvements to improve pedestrian amenities in station areas (Minneapolis Interview 1, 2010). The PO overlay zoning has helped to ‘keep out’ non TOD forms and encourages higher density housing (Minneapolis Interview 1, 2010) PO overlay zoning has been somewhat effective at reducing surface parking around transit stations, although many existing automobile-oriented developments has been grandfathered in.

Minneapolis has many of the contextual factors, as noted in Dunphy et al. (2004), which favour TOD: growing investment in rapid transit, growing support for smart growth principles at the municipal and regional levels of government, and growing levels of transit ridership. Corridor level planning of the Hiawatha line has been particularly successful at using transit to link employment and service centres throughout the Twin Cities region. As a result, ridership levels on the Hiawatha Line have far exceeded initial expectations (Minneapolis Interview 1, 2010).

On the other hand, challenges for TOD include: physical barriers posed by transportation and utilities infrastructure at station areas, and the financial challenges for
redevelopment on brownfields. The alignment of the Hiawatha Line along arterial roads, freeways, and large surface parking lots create stations areas with poor redevelopment potential (Minneapolis Interview 1, 2010). A recently weakened real-estate market in Minneapolis is another barrier for TOD. Although effort where made to link existing commercial and employment nodes with the Hiawatha Line, some station are places near freeways or in developed areas that offer little to no potential for TOD.

6. **Challenges for Producing Significant Recommendations and Lessons Learned**

Due to information shortages, no substantial new findings were made from the Minneapolis/Hiawatha case. Many of the ‘lessons learned’ have emerged from the literature review findings presented in Chapter 2.

Furthermore, the previous three case studies have generated sufficient research on station area planning to fulfill the scope and objectives of this practicum. Following the field investigation, Denver and Boulder required separate contextualization and became two separate case studies. Three separate case studies were still conducted within this practicum, as stated in the original proposal. Together with the Ottawa case study, these three case studies cover the range of station area typologies found along the SWRTC in Winnipeg. The case studies presented in Chapters 4 through 6 provided sufficient ‘lessons learned’ to address the address research questions and produce recommendations for Winnipeg. For these reasons, the analysis for Minneapolis/Hiawatha Line case was not included in the body of this document.
References


Minneapolis Interview 1. 2010. Phone correspondence with Author. April 21, 2010. Land use planner for small area plans, City of Minneapolis.