Station Area Planning in Winnipeg: Bus rapid transit as a catalyst for changing policies to accommodate Transit-Oriented Development along the Eastern Rapid Transit Corridor

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Abstract

Transit-oriented development (TOD) is new to Winnipeg, Manitoba, and has not yet been implemented. The next phase of bus rapid transit service in Winnipeg will be the Eastern Rapid Transit Corridor (ERTC), which will provide an opportunity for TOD at station areas. This research examines plans and policies that support transit-oriented development, the impact of collaborative participation on outcomes of TOD planning and implementation efforts, and the opportunities for TOD at three Major Redevelopment sites (MRS). Two precedent cities were reviewed: Edmonton, AB being a city having similar TOD efforts to Winnipeg, and Arlington, VA, having had exemplar consultation processes that support rapid transit and TOD planning and implementation, that Winnipeg can learn from. Three high-level government employees were interviewed to provide insight into the successes, challenges, and lessons in municipal processes, which determine outcomes of TOD project planning and implementation. Additionally, a documentary analysis was conducted to examine policies and development plans for three Major Redevelopment Sites, which incorporate TOD principles, to inform an understanding of the potential for TOD in Winnipeg. The research findings indicate that the proposed developments at the three MRS cannot be defined as a true TOD as they are currently presented. Therefore, detailed secondary plans need to be developed to increase chances of TOD implementation. The findings further suggest that funding support from high level government is essential to BRT implementation. An alternative public engagement strategy was developed, to solicit meaningful feedback and garner support for TOD.

Keywords: Smart Growth, TOD, BRT, North America, Public Consultation

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ARP – Area Redevelopment Plan
BART - Bay Area Rapid Transit
BGC-AMP – *Bishop Grandin Crossing Area Master Plan*
BRT – Bus Rapid Transit
CBRT – Characteristics of Bus Rapid Transit for Decision Making
CPTED – Crime Prevention through Environmental Design
CRTMP – *Capital Region Transportation Master Plan*
EPA – Environmental Protection Agency
ERTC – Eastern Rapid Transit Corridor
FTA – Federal Transit Administration
GHG- Green House Gas
GLUP – *General Land Use Plan*
GREENTRIP – Green Transit Incentives Program
ITS - Intelligent Transportation System
KPM – Kildonan Place Mall
LAP- Local Area Plan
LRT – Light Rail Transit
MAX – Kansas City Metro Area Express
MGA – *Municipal Government Act*
MRS – Major Redevelopment Site
NDP – New Democratic Party
NIMBY – Not In My Backyard
PLACE – Participation, leadership, and civic engagement
PMCR – Partnership of the Manitoba Capital Region
PTIF – Public Transit Infrastructure Fund
RFP – Request for Proposals
SHED – Sport, Hospitality, and Entertainment District
SPF – Gas Tax Strategic Priorities Fund
SWRTC – Southwest Rapid Transit Corridor
TAD – Transit Adjacent Development
TIF – Tax Increment Financing
TOD – Transit-oriented Development
TMP – *Winnipeg Transportation Master Plan*
TPS – Town Planning Schemes
VR-GAMP – *Visionary (re)Generation Area Master Plan*
YFR-AMP - *Yards at Fort Rouge Area Master Plan*

Chapter 1: Introduction and Research Methods

1.1 Background

Prior to the Second World War, neighbourhoods were built close to public transit corridors, with grid-patterned streets that provided transportation choice. However, post-WWII, low-density neighbourhoods were developed, which are still prevalent today, that primarily accommodate and encourage personal automobile-use. There are several issues associated with single-use, low density development patterns, which include vehicle dependency, few alternative transportation options, and singular housing options (Geller, 2003; Vos & Witlox, 2013; Levine 1999). The outward spread of cities, coupled with segregation of land uses, has left cities like Winnipeg, Manitoba with sprawling development that increases traffic and congestion. The *Winnipeg Transportation Master Plan* (TMP) outlines the need to implement transit corridor planning and outlines priority levels and phasing for each of the potential six rapid transit corridors (City of Winnipeg, 2011d). One of the first priorities was introducing Bus Rapid Transit (BRT), which occurred in 2012. Stage 1 of the Southwest Rapid Transit Corridor (SWRTC), between Queen Elizabeth Way at Stradbrook and Jubilee at Pembina Highway, was launched on April 5, 2012. Funding for Stage 2 of the SWRTC was approved in February 2015 and will extend the Transitway south, from Pembina Highway at Jubilee Avenue South, to the University of Manitoba. Once permanent BRT infrastructure is developed, transit-oriented development (TOD) at station areas can be a way to slow down suburban sprawl and encourage compact development centered around active and rapid transit.

The City plans to implement several subsequent corridors, aiming to strengthen

connectivity in Winnipeg and provide public and active transit to a wider population. The recommendations resulting from the research study will be applied to the potential next corridor identified in the TMP, the Eastern Rapid Transit Corridor (ERTC). The ERTC will extend BRT service to eastern Winnipeg, connecting downtown to Transcona. A functional study is being conducted to determine the best routing as there are two options. One possible route is via South Point Douglas and the second possible route is via North St. Boniface. The potential terminus at Kildonan Place Mall has potential to be developed as a station area incorporating transit-oriented development (TOD) principles.

To combat some of the challenges of suburban development patterns, rapid transit which encourages TOD emerged as an alternative. TODs are being implemented globally to encourage compact development, increase transit ridership, promote mixed-use buildings, and increase residential density, shifting away from auto-oriented lifestyles (Renne and Wells, 2005; Tumlin and Millard-Ball, 2003). Rapid transit can create a shift in development patterns and provide opportunities for transit-oriented development (TOD) to take place at strategic station areas along rapid transit corridors. TOD is defined in the *City of Winnipeg Transit-Oriented Development Handbook* (2011e), as:

> Moderate to higher density compact mixed-use development, located within an easy five to ten-minute (approximately 400m to 800m) walk of a major transit stop. TOD involves high quality urban development with a mix of residential, employment and shopping opportunities, designed in a pedestrian oriented manner without excluding the automobile. TOD can be new construction or redevelopment of one or more buildings whose design and orientation facilitate the use of convenient and sustainable modes of transportation, including public transit and Active Transportation (p. 6).

The *City of Winnipeg Transit-Oriented Development Handbook* was drafted and prepared by GB Arrington of PB PlaceMaking, a consulting firm that specializes in TOD. GB Arrington

has 40 years of experience in drafting policies, land use plans, and transit projects at the regional, corridor, and local site (GB Place Making, 2014). Hiring an outside consultant to head the development and drafting of the Winnipeg TOD Handbook goes to show that the staff in Winnipeg lacked the required institutional knowledge. Despite the multidisciplinary team of experts on the technical advisory committee, including members of the Planning, Property, and Development department, Water and Waste, Public Works, and Winnipeg Transit, there was not sufficient experience with TOD to build off of (City of Winnipeg, 2011d).

The *Complete Communities Direction Strategy* (City of Winnipeg, 2011a), which accompanies Winnipeg's Official Plan, *OurWinnipeg*, identified eleven Major Redevelopment Sites (MRS) along the SWRTC, which have the potential to be developed with TOD principles. Three of the Major Redevelopment sites, Sugar Beet Lands, Fort Rouge Yards, and the Old Southwood Golf Course, are assessed in this research to consider the potential for TOD development in Winnipeg. To date, there is no complete TOD project in Winnipeg, as rapid transit service is relatively new in the city. The research study provides an opportunity to learn from cities with longer standing BRT and TOD efforts.

Policies that support compact, mixed-use development with access to transportation options are essential to TOD implementation. Unfortunately, municipal policies across North America separate land uses, limit building densities, and mandate wide roads and minimum parking requirements (Levine, 1999). There is also a lack of tangible implementation tools in many cases to provide substantial guidance (Vox & Witlox, 2013). A shift is required when drafting policies to encourage land-use patterns that support mixed-uses and higher-density around station areas and in transit corridors. Additionally, it is easier and more profitable to proceed with greenfield development than infill development in existing neighbourhoods. In

many cases, there are few, if any, neighbours to consult, a process which can be lengthy and costly.

Public participation can be conducted in several ways, ranging from dissemination of information, to the development of a partnership (Arnstein, 1969). In North America, however, the predominant participation method mandated by law is public notice and public hearings. Public hearings are generally not successful due to the minimal effort put forth by administrators to satisfy laws, the inaccessibility of the hearing location, and inability to solicit meaningful feedback due key decisions being made prior to the hearing (Baker, Addams & Davis, 2005; Innes & Booher 2004; Richards & Dalbey, 2006). For example, when the City of Winnipeg received the Parker Lands routing recommendation for Stage 2 of the SWRTC, they were set to vote on the routing option right away. However, upon the recommendation of Mayor Sam Katz and Councilor John Orlikow, the committee agreed to provide one month for public consultation (Winnipeg Sun, 2013). It can be argued that this was done simply to appease the public and there was no intention to make changes to the routing at that point. Further improvements can be made to the staff available and information presented to the public during consultations. Feedback from the public for the routing of Stage 2 SWRTC identified issues such as biased information being presented, inappropriate representatives such as real estate agents, limited details of financial impacts, and surveys that did not specifically identify transit users (Dillon Consulting Limited, 2013).

Alternatively, collaborative consultation methods have more positive outcomes. Developments that incorporate input from the citizens that are going to live in them have an increased chance of succeeding. By including citizen input from a variety of stakeholders early in the process and throughout the different stages of development, there are less chances of

development being stalled at the implementation stage (Innes & Booher, 2004; Richards & Dalbey, 2006).This research study provides an opportunity to learn from Arlington, which has maintained exemplary collaborative consultation processes that continually update to include a wide population in their decision-making process, that can be applied to Winnipeg.

1.2 Purpose Statement

The negative impacts of climate change such as global warming, rising sea levels, altered rainfall patterns and extreme weather events, can be seen globally. Climate change is occurring due to increased greenhouse gas (GHG) emissions, such as carbon dioxide, methane, and nitrous oxide, which have raised the average global temperature. Direct sources of GHG emissions include fossil fuel combustion, oil and natural gas extraction, industrial production, agriculture, and waste management. However, there are also indirect sources of GHG emissions that result from land-use, land-use change, and forestry (The Conference Board of Canada, 2017b).

Increasing population and urbanization leads to converting forest, farm, and other lands to housing, commercial, and transportation infrastructure. The amount of CO2 absorbed by plants and trees is reduced when making way for development, so the amount of CO2 in the atmosphere increases. The result is the creation of "heat islands" above land development which affects local, regional, and global climate (United States Environmental Protection Agency, 2017). Suburban land development in communities in North America outpaces the population growth, which is a cause for environmental and health concerns. More particularly, the per capita air pollutant emissions from driving are higher, due to few transportation alternatives to personal vehicle use. The increased air pollution in the form of smog, carbon monoxide, and

other toxins is emitted at the street level where people directly breathe it in, can lead to many health problems such as asthma (The Conference Board of Canada, 2017a).

When compared to the Canadian provinces, Manitoba ranks 6th, emitting 16.9 tonnes per capita, compared to Quebec, which emits approximate 10 tonnes per capita; only Nova Scotia, New Brunswick, Saskatchewan, and Alberta rank lower. Energy production and consumption accounted for 81 per cent of the total CO2 emissions in Canada in 2013, of which 35 percent was attributed to transport. Light-duty vehicles accounted for 62 percent of the road vehicle emissions (The Conference Board of Canada, 2017b). Land development patterns directly impact how many cars a household owns and how many kilometers are driven. Living in a central neighbourhood with good access to public and active transportation choices reduces the amount of personal vehicle use, thereby reducing GHG emissions. In a study done by Haas, Miknaitis, Cooper, Young, & Benedict, 2010, households living in a city center near transit in Chicago contributed 43 percent less to GHG emissions when compared to an average household living in a suburban neighbourhoods. Overall the findings concluded that a 36 percent reduction could be achieved if future development proceeded in a more compact and efficient manner. The findings support the notion that transit-oriented development can reduce GHG emissions related to vehicle use and reduce impact on climate change.

This research study examines existing plans and policies, which outline TOD possibilities, directions, and implementation in Winnipeg. The study provides an overview of three Major Redevelopment Sites which will be developed using TOD principles. The plans and policies for the Sugar Beet Lands MRS, Fort Rouge Yards MRS, and the Old Southwood Golf Course MRS are reviewed to assess which TOD principles are incorporated and the level of public consultation conducted. Additionally, the research study examines two precedent case

studies. The first precedent, in Edmonton, AB, has continued suburban growth at the edges of the city despite long standing light rail transit (LRT) efforts. The Edmonton precedent provides insight into municipal plans and policies that support TOD, and lessons for Winnipeg. The second precedent, Arlington, VA, showcases a long-standing collaborative consultation process, which has resulted in strong policy and implementation of TOD. The Arlington inquiry assesses consultation processes, which have been and continue to be beneficial to producing positive TOD outcomes. An overview is presented of challenges Winnipeg could face if the consultation processes are not thoughtfully prepared and conducted.

1.3 Importance of Study

This research project is important in the current Winnipeg context because as the population grows, greenfield suburban development continues to spread the city outward. Bus rapid transit (BRT) is gaining ground with changing public and political views about suburban development and personal automobile use. The BRT system will expand from southwestern to eastern Winnipeg. As rapid transit expands throughout Winnipeg, it stands to serve as a catalyst to decrease personal vehicle use, and increase transit ridership, which will affect how the city develops. Improvements to the city's transit system and building permanent rapid transit infrastructure has the ability to shift sprawling development to become more compact. Transit-oriented principles can be implemented around station areas to increase residential density and mixed-uses such as commercial and retail. Further, the research provides a review of current plans for development on three Major Redevelopment Sites, including the Sugar Beet Lands, Fort Rouge Yards, and the Old Southwood Golf Course. The plans present an overview of TOD potential in Winnipeg.

Additionally, public consultation processes in Winnipeg need to be thoughtfully crafted and improved to be more inclusive of a wider population. The research study analyzes collaborative planning processes through precedent research of Arlington, VA, and provides examples of the challenges and opportunities of consultation processes which can be applied to the Winnipeg context.

1.4 Research Questions

1. How do provincial and municipal policies and plans influence strategic station area planning (transit oriented development) along the Eastern Rapid Transit Corridor?
2. To what extent has TOD been implemented in Winnipeg, what successes and challenges have been faced, and what future plans are there for TOD?
3. How can collaborative participation methods be changed to improve outcomes of TOD project planning and implementation?

1.5 Literature Review

When beginning a research project, a literature review "helps to determine whether the topic is worth studying, and it provides insight into ways in which the research can limit the scope to a needed area of enquiry" (Creswell, 2014, p. 25). A literature review helps educate the reader on the importance and relevance of a topic and increases "the ability of the researchers to build upon the scholarship of those who have come before [which] helps to develop both integrity and sophistication in research" (Gray, 2009, p. 98). The literature review provides a framework for the research topic by building an understanding of the definitions, terms, studies, and precedents.

A literature review was conducted to inform this research project and addresses four main themes: 1) bus rapid transit origins and history, 2) transit-oriented development origins and history, 3) Smart Growth movements and associated policy development, and 4) public hearings and collaborative participation methods. Section 2.1 and 2.3 introduce BRT and TOD and outline some of the successes and challenges faced by both. Section 2.3 reviews literature on Smart Growth movements and policy development and outlines the successes and challenges that the theory presents in the North American context. In addition to literature that supports Smart Growth and New Urbanism theory, literature that focuses on the challenges presented by the theory were also reviewed. Finally, Section 2.4 introduces the history of citizen participation and the most prevalent form of participation in the United States, public hearings. Literature that focuses on an alternative participation type, collaborative participation, is also reviewed.

1.6 Research Methods

The research project is divided into two parts, precedent research, and the history and context of Winnipeg. The research questions are "descriptive or 'what' questions where the purpose of the research is to provide a descriptive answer" which supports change or improvement (Farthing, 2016, p. 76). The research question, "how do provincial and municipal policies and plans influence strategic station area planning (transit oriented development) along the Eastern Rapid Transit Corridor?" is answered by conducting precedent research on the LRT and TOD efforts in Edmonton. Research includes semi-structured interviews with high-level government employees and a review of the plans and policies in place that support TOD in Edmonton. Lessons for Winnipeg about limiting suburban growth and improving TOD implementation tools and strategies can directly be applied to station area planning along the

ERTC. The research question, "how can collaborative planning processes be changed to improve outcomes of TOD project planning and implementation?" is answered by conducting precedent research on the positive outcomes as well as the challenges of Arlington's collaborative consultation processes. Research includes a semi-structured interview with a high-level government employee and a review of the literature. Lessons for Winnipeg include the positive results of collaborative consultation processes that include a wide population for drafting policies and plans, and the need for continually updating collaborative consultation methods to include those populations on an on-going basis. Finally, the research question "to what extent has TOD been implemented in Winnipeg, what successes and challenges have been faced, and what future plans are there for TOD?" is answered by conducting research on the history and context for BRT and TOD potential in Winnipeg. A summary of policies in place to support BRT and TOD is presented and a review of current area master plans for three Major Redevelopment sites is conducted to provide an overview of TOD potential in Winnipeg. The chosen data sources for research and analysis methods are discussed next.

1.7 Learning from Precedents

Precedent research accompanied by semi-structured interviews was chosen to inform the following research questions that guide this research project: "how do provincial and municipal policies and plans influence strategic station area planning (transit oriented development) along the Eastern Rapid Transit Corridor?" and "how can collaborative planning processes be changed to improve outcomes of TOD project planning and implementation?". Case study research is used to "understand a real-world case and assume that such an understanding is likely to involve important contextual conditions pertinent to your case (Yin, 2014, p.16). Farthing (2016)

suggests that "what are sometimes referred to as case studies might more appropriately be designated as 'settings'," and that there can be "multiple case studies in this sense within a piece of research" (p. 116).

Two precedents were reviewed and the findings provide lessons for Winnipeg. One on the topic of policies that impact TOD implementation and the other on collaborative consultation processes. Ottawa's bus rapid transit system was considered for precedent research due to the extensive Transitway system and successful implementation of transit-oriented development along the corridor. The Edmonton transit system was ultimately chosen for precedent research due to similarities to Winnipeg's size, population, weather, topography and TOD efforts. However, it should be noted that the Edmonton system differs from Winnipeg in that it only is a Light Rail Transit (LRT) and not a BRT system. Notable differences between the transit systems are that LRT operates on fixed infrastructure, requires higher capital contributions, and construction phasing is more difficult. Additionally, LRT systems are better suited for high-density corridors, whereas BRT systems are better suited for low-density cities such as Winnipeg (Litman, 2017, p.88). Edmonton has continued to experience primarily suburban growth versus growth at transit-oriented sites. This growth is occurring despite the rapid transit system being in operation since 1978 and totaling 24.3 km in length (City of Edmonton, 2009b). The Edmonton precedent offers lessons for TOD implementation in Winnipeg.

Next, Arlington's collaborative planning processes were identified for precedent research through research conducted for Section 2.4. The collaborative planning methods used in Arlington involve stakeholders from the planning stages through to development. The Arlington precedent informs how collaborative planning processes have influenced policy creation, the depth of public consultation, and its outcomes. Arlington has been recognized nationally for

being very successful in pioneering the use of public consultation in planning processes to produce the best possible solution for its communities. The wide reaching and variety of ways in which public consultations are conducted also have presented challenges discussed further in Chapter 3. The Arlington precedent offers lessons for collaborative consultations in Winnipeg.

Primary and secondary data for both precedents was gathered from government websites, policy documents, newspaper articles, and scholarly articles. Once analysis of both precedents was complete, semi-structured interviews, described in detail in Section 1.7.1, were conducted to provide a richer understanding of the context and its complexities. The precedent research resulted in a set of lessons with applicability to the Winnipeg context being produced.

1.7.1 Semi-Structured Interviews

Semi-structured interviews were conducted to gather data for this research project. Key informants with professional and practical experience were interviewed for this research to gain insight into some of the successes, challenges, and lessons in municipal processes, which determine the level of success during TOD project planning and implementation.

Semi-structured interviews are an important "qualitative data collection strategy in which the researcher asks informants a series of predetermined but open-ended questions" (Given, 2008, p. 810). It is important to actively listen and take meticulous notes, to be able to sort through the data for useful information. Semi-structured interviews were conducted to gain insight into the professional and practical experience of key informants, to gain data not readily available through other sources. As such, semi-structured interviews provide an opportunity to gain insight into "lived experience while also addressing theoretically driven variables of interest" (Galletta, 2013, p. 24). This type of interview allows the informant freedom and a conversational comfort to offer new meanings to the information being collected.

Interview requests were sent to five potential key informants of which three were available and willing to be interviewed. Two informants from Edmonton and one informant from Arlington were interviewed. All three key informants hold high-level provincial and state government positions in Alberta and Virginia. The key informants from Alberta are directly responsible for, and in charge of drafting policy, TOD processes, and implementation in Edmonton. The key informant from Virginia holds a state government position, which has the power to impact collaborative consultation processes. The informants did not fall under the vulnerable group category outlined by the University of Manitoba Research Ethics Board and all interviews were conducted in accordance with the core principles of the Tri-Council Policy Statement (Government of Canada, 2014).

Key informants were contacted via email and telephone following the script found in Appendix A. Informants were made aware of the nature of the study, general questions they would be asked, and that interviews would last approximately 45 minutes. A list of the general interview questions can be found in Appendix B. Due to distance, informants were given the option of participating via telephone or Skype. Following response from informants agreeing to be interviewed, a consent form, required by the University of Manitoba Research Ethics Board, was forwarded to them via email. A copy of the consent form can be found in Appendix C. The form outlined the participants' right to confidentiality and anonymity, right to refuse answering any questions that they did not feel comfortable answering, and the right to withdraw from the study at any time without having to provide an explanation. Confidentiality and anonymity was maintained by not including informants' names in the research and storing all interview material, including voice recordings and written notes on a password protected computer. Participants did not receive any compensation, monetary or otherwise, for providing their knowledge and input.

1.8 History and Context

Research was conducted to gain insight into the history of BRT and context for TOD potential in Winnipeg. A summary of Stage 1 and 2 of the Southwest Rapid Transit Corridor, and the potential next phase, the Eastern Rapid Transit Corridor are presented to gain a better understanding of the history of BRT in Winnipeg. An examination of the policies in place to support TOD and the Area Master Plans for three Major Redevelopment Sites which incorporate TOD principles informs an understanding of the potential for TOD in Winnipeg.

1.8.1. Data collection and Documentary Analysis

Primary and secondary data was gathered to conduct a documentary analysis of the history of BRT in Winnipeg and to determine the current and future context for TOD potential. The information for this research was gathered from various sources including the City of Winnipeg and Province of Manitoba websites, Statistics Canada, books, newspaper articles, consultants' reports, government reports, and area master plans. The following search engines were used to gather the data: Google, Google Scholar, the Winnipeg Free Press website, the University of Manitoba library portal, and the City of Winnipeg website homepage. This part of the research study informs the underlying historical, political, and social contexts for BRT and TOD in Winnipeg.

1.9 Assumptions and Limitations

It is necessary to note the assumptions and limitations in this study to understand the research. First, the research question "how do provincial and municipal policies and plans influence strategic station area planning (transit-oriented development) along the Eastern Rapid Transit Corridor?" should have been framed as a two-part question. The first part should have

researched Municipal plans and policy, while the second part should have researched senior level government support for TOD, specifically, funding. The original question grouped provincial and municipal plans and policies together, however the research shows that the plans and policies that effect TOD are primarily municipal. Second, despite sending interview requests to five potential key informants, I was only able to interview three, none of which are from Winnipeg. The three key informants, KI1, KI2, and KI3, are not a representation of the larger stakeholders in development, however, input from their experience has been incorporated into this document, and may be interpreted as the voice for everyone. Third, it is important to note that in any instance when an account of personal experience is given, there is a degree of bias by the key informants in semi-structured interviews. Fourth, I have largely based my research and conclusions on the information provided through secondary sources and key informants. Finally, due to the complexities and unique circumstances, geographically and financially, of all TOD projects, it is difficult to directly compare the outcomes of any TOD. Literature reviewing unsuccessful BRT and TOD systems is not easily found. Therefore, only general principles and guidelines can be learned from precedent research and applied to TOD implementation along the ERTC.

1.10 Outline of the Document

Chapter One introduces the research project. The chapter begins by providing the reader with a brief background of bus rapid transit in Winnipeg and the opportunities of transit-oriented development that may be provided by the potential next phase of BRT, the ERTC. The chapter goes on to introduce potential TOD development opportunities along three Major Redevelopment Sites in Winnipeg. The purpose of the study and key research questions that

guide the project are discussed. Next, the research methods used to conduct the study are explained. Finally, the importance of the study and any assumptions and limitations to be aware of are outlined.

Chapter Two presents a review of literature relevant to the research project. First, the chapter provides an understanding of the history and origins of bus rapid transit and transit-oriented development in the North American context. Second, the reviewed literature outlines the impact of TOD on development patterns that combat suburban sprawl. Third, impacts of land-use policies and Smart Growth movements on traditional suburban development are outlined. Adverse effects of the resulting compact development are also outlined. Lastly, public hearings, the participation method most prevalent in the United States, is reviewed and collaborative participation as an alternative to dominant trends to improve TOD planning and implementation outcomes is examined.

Chapter Three is divided into two parts. The first part presents findings from precedent research on transit systems and transit-oriented development in Edmonton. The chapter begins by outlining history and context for the Edmonton Light Rail Transit, policies that impact the type of development that occurs and some of the barriers to achieving TOD, and the benefits and challenges of collaborative consultation within administration. The chapter then discusses the potential of Century Park to become a viable TOD, with similar spatial constraints as the ERTC at Kildonan Place and concludes with lessons for Winnipeg. The second part presents findings from precedent research on collaborative consultation processes in Arlington. The chapter begins by providing history and context of Arlington's rapid transit system and accompanying collaborative consultation success. The county's consultation processes are described in terms of

successes and challenges. The second part of the chapter concludes with lessons for collaborative consultation processes in Winnipeg.

Chapter Four provides history of BRT and context for TOD in Winnipeg. The history of Stage 1 and 2 of the SWRTC and the ERTC are presented. Next, the plans in place to support BRT and TOD in Winnipeg are summarized. The chapter concludes with a summary of the plans for three Major Redevelopment Sites that incorporate TOD-inspired designs.

Chapter Five begins by answering the three research questions that guide the project. The chapter then outlines a set of recommendations for station area planning at strategic station areas along the ERTC. The recommendations are a culmination of information gathered through the literature review, precedent research, and semi-structured interviews. Further, the research's implications on professional practice and scholarly planning knowledge are outlined. The chapter concludes by outlining directions for further study to address gaps in existing scholarly literature.

Chapter 2: Understanding Bus Rapid Transit and Planning for Transit-Oriented Development Implementation in a Collaborative Environment

This chapter presents a review of literature relevant to this research project. Four main themes are addressed: 1) BRT origins and history, 2) TOD origins and history, 3) Smart Growth movements and associated policy development, and 4) public hearings and collaborative participation methods. The intention of the literature review for the first two themes is to offer an understanding of BRT and TOD origins and history in the North American context. Much of the literature available predominantly discusses BRT precedents, which have achieved some level of success. Literature on failed precedents is not as easily found. As advances in TOD in the Canadian context are relatively recent, literature assessing implications and long-term impacts is lacking. The literature reviewed for the third theme addresses impacts of land-use policies and Smart growth movements on traditional suburban development in North America. Adverse effects of the resulting compact development are also outlined. Literature reviewed for the final theme addresses the history of citizen participation and the public hearings method which is prevalent in the United States. An alternative to public hearings in the form of inclusive collaborative participation methods to improve planning processes and outcomes is reviewed and reported on.

2.1 History and Origins of Bus Rapid Transit: Working definitions, benefits, and outcomes

This section defines bus rapid transit, the different types of systems that can be

implemented based on location and context, and some of the key benefits of implementing a BRT system.

In response to sprawling low-density development, which results in increased travel in personal automobiles and congestion, a need for bus rapid transit (BRT) has presented itself in urbanized regions throughout the world (Ratner and Goetz, 2012; Levinson et al., 2003). Literature on bus rapid transit (BRT) outlines both successes and shortcomings of these systems, presents best practices, and outlines ways in which BRT can be improved. Bus Rapid Transit, as defined by the Levinson, Zimmerman, Clinger, and Gast (2003) is a:

> flexible, rubber tired rapid transit mode that combines stations, vehicles, services, running ways, and intelligent transportation system (ITS) elements into an integrated system with a strong positive image and identity. BRT applications are designed to be appropriate to the market they serve and their physical surroundings and can be incrementally implemented in a variety of environments (p. 4).

Further, BRT is a form of mass transit, which Deng and Nelson (2011) define as:

> a large-scale system of public transport serving a city or metropolitan area, characterized by fast running speed, high passenger carrying capacity and mostly operating on an exclusive right-of-way. Mass transit systems can be distinguished from other forms of public transport by making use of specific infrastructure to be separated from general traffic. BRT systems can operate in regular traffic, using shoulder bus lanes, median busways, or exclusive busways depending on the site and context (p. 70).

Latin American planners who wanted to provide a more affordable solution to deteriorating traffic conditions developed the modern-day concept of BRT. While the term Bus Rapid Transit was originally established in North America, it is increasingly being used all over the world. BRT systems have been implemented throughout Latin and North America, Southeast Asia, China, Australia, and more recently Africa and India (Deng & Nelson, 2011). In the United States, the concept of BRT was first seen in Chicago, IL, with the first exclusive bus lane on a

city street in 1939 (Deng & Nelson, 2011; Levinson, Zimmerman, & Clinger, 2002). There are increasing amounts of BRT services that vary in size, components, design, cost, and benefits, either under construction, or in planning in the United States and Canada. Two systems in North America with notable usage are in Ottawa, ON, and in Pittsburgh, PA (Levinson et al., 2002). However, perhaps the most cited BRT system is in Curitiba, Brazil. Even though there is a great focus on BRT systems in modern day, the concept of BRT and associated plans and studies have been prepared for decades.

There are different levels of BRT that can be implemented to provide the most beneficial solution for unique characteristics of each BRT site and service requirements. The main distinction is between BRT (high-end services) and BRT-Lite (low end services).

The key difference between the BRT and BRT-Lite services "is the presence of exclusive or dedicated rights-of-way for operating buses and more substantial station platforms and boarding areas" (Cervero, 2013, p.2). For example, dedicated rights-of-way decrease conflict with any other vehicles on the road, allow consistent speeds to be reached, and prohibit vehicles from cutting across busways at intersections. Additionally, the stations and boarding areas in BRT systems have a pre-boarding fare system that translates to quicker and multi-door boarding, which decreases stop times and increases predictability for future scheduling. Raised platforms at BRT stops eliminate space between busses and increase boarding times. Stations are also enhanced transit centres with temperature control, seating, lighting, and passenger information (Cervero, 2013). BRT-Lite systems vary from the aforementioned elements. Variations can include "the use of delineators or colorized pavement in lieu of physical separators along the dedicated right-of-way or barrier-free, proof-of-payment schemes instead of turnstile controls with verified ticketing for passenger entry" (Cervero, 2013, p.3). Furthermore, BRT service is

more frequent and reliable than BRT-Lite systems with advanced technologies that provide passenger information and signal priority (Cervero, 2013. p.2).

The first full BRT system to be implemented, in Curitiba, Brazil, began in the 1970s. The system was realized, and has had continued success with the support of political leadership, innovation, and continuity (Lindau, Hidalgo & Facchini, 2010). For a BRT system to have lasting success, it is important to continually improve the performance and accommodate increasing demand for it. Curitiba's BRT system and integrated land-use plan are an integral part of their development strategy. It guides growth and exemplifies the benefits of forward thinking, rather than making - what are perceived as - safe decisions about improvements to existing transit systems. In Curitiba, improvements to the bus rapid transit system happened in three key phases over a span of 45 years: planning principles and visions, plan execution, and continued expansion (Lindau et al., 2010). The system started as a feeder bus system on separated busways but has seen significant upgrades over the years bringing it to full BRT status.

Another successful example of a full BRT service can be found in Ottawa, ON. Named the Transitway, it is one of the most extensive and efficient BRT systems in the world (Deng & Nelson, 2011). The Transitway's initial BRT segment opened in 1983 and incremental expansions have been applied since. The Transitway includes "15.5 miles of exclusive busway, 7.5 miles of lanes on roadway, and 2 miles of downtown bus-only lanes" (Levinson et al., 2002). It provides service from outlying residential areas to the Central Business District, and has achieved great success through increased ridership and spurring development along the Transitway since beginning operations. In effective BRT systems, busses operate in traffic as well as on bus only grade separated roadways, which increases efficiency and decreases travel time. Most BRT system services extend further than the Transitway corridor, which is greatly

advantageous to outlying neighbourhoods. The Ottawa BRT system links to park-and-rides, the rail network, and provides feeder bus services. This allows transit service to extend where rail service does not reach, and helps support a variety of transportation options (Deng & Nelson, 2011; Levinson et al., 2002). For a BRT system to be complete, efficient, and effective, there are several principal features that must be present. The main features identified in the literature are running ways, stations, vehicles, services, route structure, fare collection, and intelligent transportation systems (ITS) (Levinson et al., 2003; Deng & Nelson, 2011; Vincent, 2010). Deng and Nelson (2011) conclude that while many BRT systems in the US focus on upgrading features such as vehicles and ITS applications, running ways largely determine cost and performance in terms of speed and reliability. The Cleveland Healthline is an example of a successful full BRT system, which runs on a variety of running ways. The Healthline corridor includes an exclusive, two-lane median busway, with the remainder of the route operating on curbside bus lanes or in mixed traffic, making the system accessible to a larger geographical area (Vincent, 2010).

In contrast to successes of the visionary thinking applied in Curitiba, most places in the United States have taken a more reserved approach to the development of BRT projects. This has resulted in a mix of successful and unsuccessful implementations of the system. Vincent (2010) suggests in his research paper titled *Bus Rapid Transit in the United States* that BRT is not perceived as a high quality rapid transit system in the US, but rather a way to incrementally improve the existing bus service. While most BRT systems are only upgrades to current operational transit systems in most US cities, examples where full BRT systems have been implemented are generally successful. Phased development of BRT systems is a desirable option, as it demonstrates potential benefits and successes to planners, developers, transit riders,

and the public (Levinson et al., 2003). Phased development is also desirable where physical space and funding are limiting factors because smaller capital investment is required to show stakeholders early progress, which builds interest in subsequent phases. (Deng and Nelson, 2011).

The lack of government funding to support implementation of bus rapid transit systems, coupled with instances of low demand for transit, hinders the success of BRT in the US (Vincent, 2010). The Federal Transit Administration (FTA) in the US began a BRT implementation program in 1999 to encourage an alternative transportation method to light and heavy rail. The program sought to start BRT systems in twenty-two cities in the US by 2008 (Levinson et al., 2002; Vincent, 2010). There have been several grant programs subsequently put in place to aid in the implementation of BRT systems such as the 'New Starts' and 'Small Starts' grants. However, the imbalance of 'New Starts' grants being offered to costlier rail projects encourages rapid transit systems to be built that are not considered a full BRT, but in their capital cost can be considered for the 'Small Starts' grant (Levinson et al., 2002). The federal grant funding does not need to be repaid therefore the cost of implementing BRT is reduced at the municipal level. This creates strong incentive to design BRT systems that meet funding criteria. For this reason, smaller rapid transit and partial BRT systems are often implemented in the US. This is not to say that full BRT systems never materialize from the 'New Starts' grant. The successful implementation of projects such as the Kansas City Metro Area Express (MAX) and Cleveland Healthline were made possible through federal funding like the 'New Starts' program. As stated by Vincent (2010), "the purpose of the program was to implement a simplified grant-making procedure for projects that require relatively low amounts of capital funding, thus lowering the transaction costs and reducing the approval requirements for such

projects" (p. 302). There have been mixed outcomes of the Federal Transportation Administration BRT implementation program, with some successful starts and other cities who abandoned the program altogether.

Following the launch of the BRT implementation program, the FTA released *Characteristics of Bus Rapid Transit for Decision-Making (CBRT).* A comprehensive planning guide created to help cities implement and evaluate new BRT systems (Vincent, 2010). The CBRT guide indicates that:

> the high end of the spectrum is the so-called 'full BRT' system, which contains each of these elements [and] the low end of the spectrum is the so-called 'rapid bus' or 'BRT-lite' system, which typically involves an arterial service operating in general traffic with enhanced bus shelters, traffic signal priority, and off-board fare collection (Vincent, 2010, p. 298).

There is an emergence of BRT systems implemented across the world that are achieving success as seen through increased ridership. Public transit is increasingly being viewed as the cost-effective alternative to personal automobile use, and thus has been successfully adopted in many parts of the world. The consensus in the literature is that BRT is increasingly being considered as a cost-effective approach to providing transit services. BRT's growing popularity is a result of passenger and developer interest due to its high performance and quality (Levinson et al., 2002). In Deng and Nelson's (2011) article, *Recent Developments in Bus Rapid Transit: A Review of the Literature,* they conclude that BRT systems can have comparable benefits to light rail systems, but are much less costly, offer flexibility, and require a much shorter time to implement.

LRT and BRT systems have a similar range of applications but varying sets of strengths and weaknesses. The main differences that set the LRT and BRT systems apart are the capital and operational costs, carrying capacity, environmental impacts, and land use impacts. Both can

be used as feeder systems to larger metro and rail lines or as spines for urban transportation within the city (Henke, 2013). BRT systems often cost less to implement, have a shorter implementation time, and can easily be phased. LRT systems on the other hand have more permanent infrastructure than most BRT systems, which can draw in private investments that affect surrounding land uses (Henke, 2013). The effects on development can change the character and livability of a city (Vuchic, Stanger, & Bruun, 2013). BRT and LRT are at the center of transit-oriented development and therefore TOD attributes will vary depending on the transit technologies. Factors that affect service levels, such as carrying capacity, impacts land use and is more likely to positively impact land values. Increased land values in turn effect development intensity and increases residential and employment densities. There is an increased tax base and pool of transit ridership which increases revenue. The generated revenue can then be applied to the operating expansion costs of transit systems (Zhang, 2013).

LRT and BRT differ in capital costs, which include the infrastructure and vehicle costs, and operating costs, which include labour, administration, and fuel. While capital costs for LRT are typically higher than those for BRT, operating costs are less due to the higher carrying capacity of rail systems. Even though capital costs for LRT exceed those of BRT, there are several BRT costs that exceed those of LRT. For example, BRT systems require wider right of ways than LRTs as well as the construction costs of dedicated busways exceed those of LRT (Zhang, 2013). In a study conducted by Zhang, 2013, it was found that land for BRT systems on average cost $3.018 million per mile versus $1.52 million per mile for LRT. Similarly, guideways on average cost $6.495 million per miles versus $4.289 million per mile for LRTs.

Since LRT and BRT systems have different features, such right of way designation, fair collection and vehicle technologies, and type of service, they cannot be directly compared. LRT

systems operate on dedicated right of ways such as street medians or tunnels, which separate them from traffic congestion and allow them to have high operating speeds, be reliable, comfortable, and have a large carrying capacity. Factors that affect carrying capacities are vehicle technologies, operational efficiencies, and station and street conditions (Zhang, 2013). LRT vehicles provide comfort and environmental sustainability because they operate on high-quality rails that are smooth and don't emit exhaust, whereas BRT systems have regular rubber-tired vehicles and internal combustion engines. Additionally, LRT vehicles can have capacities of up to 750 passengers compared to 150 passengers on the highest capacity BRT. In order for a BRT system to be comparable to an LRT system, the most significant factor is the similarity of right of way, which directly affects operating speeds and reliability. Particularly, BRT vehicles need to have grade-separation at intersections in order to be comparable (Vuchic, Stanger, & Bruun, 2013). Successful examples of this are the Transitway in Ottawa and the TransMilenio in Bogota. While BRT systems can be advantageous with respect to phased introduction of lines and branches, it is not capable of achieving the capacity of LRT systems which can have multiple cars on one line.

Full BRT systems function much like rail systems, offering features such as dedicated busways, advanced stations, off-board fare collection, high-quality service, and high speed and frequency. However, in instances where rail transit prevails, BRT systems can still provide feeder services to low-density neighbourhoods where rail is not financially feasible (Levinson et al., 2002).

Since the literature states that capital and operating costs for BRT systems are less than rail systems, they are likely more accessible transit alternatives for cities that do not have the required density to support, or cannot afford rail systems (Deng and Nelson, 2011; Levinson et

al., 2002). Some successful examples of full BRT systems in budget constrained cities that operate like rail systems can be seen in Curitiba, Brazil and Bogota, Columbia. These systems have encouraged BRT in many other countries including Canada, the United States, and China. Beijing, China is an example of a city that implemented a rail transit system and could not afford the capital and subsequent operating costs, resulting in substantial debt. A BRT line was opened in 2014 as a cost-effective solution to providing high-quality transportation and not increasing the deficit previously caused by the more expensive rail option (Deng and Nelson, 2011). Bus rapid transit systems vary in size, design, services, and technology. Each context and site has a unique set of circumstances that will influence BRT planning, design, and operation. While the BRTs have varied outcomes, some of the positive outcomes include social, economic, and environmental benefits (Deng and Nelson, 2011). BRT studies in Canada, the United States, Australia, and South America are summarized in Levinson et al.'s (2003) paper titled *Bus Rapid Transit: Synthesis of Case Studies.* The ranges of examples reviewed reflect geographic diversity and a range of BRT applications. The research concludes that BRT can reduce travel times, attract riders and spur transit-oriented development.

Stokenberga's (2014) article titled *Does Bus Rapid Transit Influence Urban Land Development and Property Values: A Review of the Literature,* found that it is difficult to draw conclusions on the effects of BRT on land use and property development. This in largely due to the varying evaluation methods on the impacts across published studies. Additionally, land-use and value impacts are not uniform across systems, which can be attributed to the unique context and varying levels of systems of BRT implementation (Stokenberga, 2014). Impacts of BRT systems on "land development in their surroundings depends on such factors as the increment of accessibility they offer, availability of vacant land, economic conditions, and land-use and

transportation policy" (Stokenberga, 2014, p.277). BRT systems that have increased chances of TOD implementation are often a part of an integrated land-use and transportation strategy, and where system permanence is created through large investments into BRT infrastructure (Thole & Samus, 2009).

However, the effects of BRT systems on property values are important to review, as they can be used as an indicator of the economic development impacts and become part of a strategy to fund BRT projects. Furthermore, changes to property values can readily be observed in the short term, while development pattern effects are observed over the long term. Prior to the early 2000's, much of the existing literature that reviews BRT's effects on land-use and property value focuses on systems in Latin America and Asia (Stokenberga, 2014). One such example is that of Seoul, Korea. In Cervero and Kang's (2011) study titled *Bus rapid transit impacts on land uses and land values in Seoul, Korea*, the introduction of exclusive median lane bus services was found to prompt the conversion of single family residences to higher density apartments and condominiums around the transit corridors which in turn means increased property values. The exclusive median lanes offer an alternative to personal vehicle use due to decreased traffic delays, increased speed and increased accessibility. In addition, since there is only a limited amount of land available around transit corridors, property values naturally see increase around efficient transit in a dense and land constrained city like Seoul (Cervero & Kang, 2011).

A similar effect can be seen in the study conducted by Duncan (2011) in San Diego, CA in which his research focuses on the influence of TOD on property values in the condominium market. The condo market was chosen as the focus of the study because they represent the density found in TODs. It was found that condominiums near station areas along with a strong

pedestrian oriented environment were found to increase in value, whereas stations areas that had a strong automobile presence decreased in value (Ducan, 2011).

While in the past several decades BRT has been a factor in the increase of property values globally, there are often many other urban development initiatives put in place around the same time to improve mobility, implement sustainable strategies, and improve and quality of living (Cervero & Kang, 2011; Rodriguez & Targa, 2004). Therefore, BRT alone is seldom the factor to intensify development and increase property value.

Municipal and state government policies are major contributors to intensifying land development around BRT systems. Findings in a report prepared by Thole & Samus (2009) for the Federal Transit Administration suggest that land-use policies and practices, reflective of the local government's approach to transit, largely impact land development surround a BRT system. Findings also suggest that cities that integrate BRT with land-use plans are more likely to have the capacity to support development and transit ridership demands (Tholes & Samus, 2009). Additionally, public support and private sector interest contributes to the outcome of development around BRT systems. The support for intensifying existing development, or spurring new development is heavily dependent on plans, policies, and institutions such as:

- Local and land use plans, policies, zoning, and capital improvement programs
- Financial and non-financial incentives (e.g., density bonuses, tax incentives, streamlined development application process, loan support, etc.)
- Structure of tax revenues for local jurisdictions
- Experience of the transit agency and other local institutions (Tholes & Samus, 2009, p.1)

For example, Ottawa's regional plan dictates that "all regional shopping centers with more than 375,000 square feet of space to be located within a five-minute walk to transit stations. The plan also requires that employment centers with more than 5,000 employees be within a five-minute

walk to the Transitway, and centers employing 2,000 or more jobs must be near all-day transit service" (Tholes & Samus, 2009, p.23). Therefore, development is concentrated around the BRT system and at station areas, allowing both the development and the transit system to thrive.

The research reviewed in this section provides an understanding of BRT origins and historical BRT systems. Benefits to implementing BRT versus LRT are presented. The potential effects of BRT on land development and property values is also reviewed. Much of the literature found in this section discusses BRT systems, which have had positive outcomes. Alternatively, literature that discusses challenges leading to failed systems, and the reasons why, is not easily found.

2.2 History and Origins of Transit-oriented Development: Working definitions, impacts, and outcomes

The research presented below is instrumental to building an understanding of transit-oriented development (TOD) and the ways in which to measure its outcomes.

Development has shifted away from transit corridors over the years. Early in the 20th century, public transit was the main mode of transportation therefore development was clustered around transit corridors. However, by the end of the 20th century, the automobile had become the dominant mode of transportation, resulting in a decline in ridership and increased suburban development. As is exemplified today in low-density suburban developments globally, neighbourhoods are designed primarily for automobile accessibility with little or no consideration given to public or active transportation. Urban sprawl consumes greenfield land, increases traffic congestion, and gives way to economic and environmental problems related to infrastructure and greenhouse gas emissions. TODs are being implemented along mass transit

systems in part as an effort to combat the negative effects of sprawling developments and personal automobile use. TODs are being encouraged to increase transit ridership, create denser development, encourage economic development, and address a myriad of economic, environmental, and social issues associated with auto-oriented lifestyles (Renne and Wells, 2005; Tumlin and Millard-Ball, 2003). The definition of TOD ranges widely however the following all-encompassing definition can be found in the *City of Winnipeg Transit-Oriented Development Handbook* (2011e), as:

> Moderate to higher density compact mixed-use development, located within an easy five to ten-minute (approximately 400m to 800m) walk of a major transit stop. TOD involves high quality urban development with a mix of residential, employment and shopping opportunities, designed in a pedestrian oriented manner without excluding the automobile. TOD can be new construction or redevelopment of one or more buildings whose design and orientation facilitate the use of convenient and sustainable modes of transportation, including public transit and Active Transportation (p. 6)

When considering development associated with transit, whether light rail transit (LRT) or bus rapid transit (BRT), it is important to distinguish between transit-oriented development (TOD) and transit-adjacent development (TAD). As described by Renne (2009) in his article, *From transit-adjacent to transit-oriented development:*

> both concepts refer to the area within a 10-min walk, or half-mile radius, around a major transit station. While a TOD describes a station-area precinct that is compact, mixed-use, and facilitates transit connectivity through urban design, a TAD is physically near transit [but] fails to capitalize upon this proximity (p. 1).

Transit-adjacent development occurs alongside rapid transit corridors, whereas transit-oriented development is designed to envelope the transit corridor and creates connections to the station areas (Bernick & Cervero, 1997; Hale, 2014).

The term ‘transit-adjacent’ has been adopted and misused by many, to only describe low-density development that, for example, still has minimum parking requirements (Tumlin &

Millard-Ball, 2003). TOD on the other hand should be accessible within a five-minute walk, should have a mixed-use environment with places to work, live and access amenities, and there should be maximum parking requirements rather than minimum parking requirements (Tumlin & Millard-Ball, 2003; Renne, 2009).

Renne (2009) suggests that there is a spectrum of what is considered to be transit-oriented development. The spectrum is as follows: 1) transit-oriented development, 2) transit-oriented development/transit-adjacent development hybrid, and 3) transit-adjacent development. His study of three major rail station areas in the East San Francisco Bay area analyzes examples along what he has named the TAD-TOD spectrum: Downtown Berkeley, Hayward, and Fremont. These three stations were chosen to show their varying physical characteristics and how they correspond with travel behaviour. Renne (2009) summarizes the three station areas as follows:

1. Downtown Berkeley is a TOD because it has a high residential density, high level of mixed uses, and a high quality of pedestrian and bicycle access.
2. Hayward, a hybrid TOD/TAD, has about a third of Berkeley's density and not as many commercial opportunities. The mix of uses is more horizontal than vertical. Horizontal mixing creates a more suburban-like setting compared with vertical mixing, which is usually found in higher density setting. While the pedestrian access is high quality, the bicycle access is only fair.
3. Fremont has the lowest housing density, a poor-quality pedestrian environment and fair bicycle access. Again, the mix of uses is more horizontal than vertical (p. 11-12)

In contrast to Renne's (2009) findings, Hale (2014) suggests the Fremont station should not be considered within the TAD-TOD spectrum at all because it is too similar to typical suburban developments and does not have any major TOD elements. TAD stations can however transition to TOD stations through site design, which includes more compact development and street patterns that encourage active and public transportation, and designation of land uses that include higher density and mixed use developments. The Fremont station area for example, is

undergoing redevelopment to include a mixed-use village centre with compact housing (Renne, 2009). Formerly, the Fremont station area was predominantly used as a park-and-ride set in the suburbs with no active transportation accessibility, but is now being developed to become a TOD.

Cervero and Kockelman (1997), assert that the built environment can be divided into three dimensions: density, diversity, and design, each of which affect travel behaviour and must be present for TOD to work. Firstly, dense neighbourhoods are characterized by short distances between neighbourhood blocks. This increases active transportation such as walking and cycling, and public transportation, which can be organized efficiently to serve a high number of people in dense neighbourhoods. Secondly, diversity also decreases distances, which increases active transportation. Thirdly, the design of streets encourages and favours a certain transportation mode, for example, winding roads and cul-de-sacs encourage the use of personal vehicles whereas grid street patterns encourage active and public transportation. Density, is a key factor in reducing personal automobile use and promoting a healthy lifestyle (Renne, 2009). Tumlin and Milllard-Ball (2003) suggest that the best performing TODs focus the highest densities around station areas. For example, Arlington County, Virginia successfully focuses higher density and greater building height around station areas, which are mixed use and accommodate a variety of transportation modes. The density and uses decrease as the development approaches surrounding neighbourhoods, which are single-use suburban developments.

A study conducted by Lund (2006) surveyed a total of approximately 600 people who moved into a TOD area that was within walking distance to a rail station in three US cities: San Francisco, Los Angeles, and San Diego. Their study suggests that people choose to live in TODs

for varying reasons which include "lower-cost housing, local shops, or the overall living environment" (Lund, 2006, p.357). While predominately wanting to live close to transit, residents were also likely to live in TODs due to the quality of the neighbourhood and lower costs of housing (Lund, 2006). Residents of TODs were found to be seeking shorter trips, whether by transit or active transportation modes, illustrating the importance of mixed uses to provide opportunities to live, work, and play within a short distance of one another. Tumlin & Millard-Ball (2003) also found that proximity of housing and jobs to station areas increased transit ridership. Furthermore, Tumlin & Millard-Ball (2003) suggest that lower income households are more likely to own fewer cars making them more likely to use transit, and subsequently suggests the addition of affordable housing components to TODs to increase ridership. This view is contradictory to Lund's (2006) findings that higher-income households were more likely to report transit access to be important. Lund (2006) suggests her findings could reflect the types of locations accessible by each transit mode. For example, higher-income office employment areas are likely to be accessible by transit.

Transit-oriented development is fast becoming a desirable strategy for growth. Cities across North America are creating guides to direct growth in a sustainable manner, of which TOD is a focus such as T*ransit-Oriented Development Guidelines* in Ottawa, ON (City of Ottawa, 2007). Ottawa's *Transit-Oriented Development Guidelines* provides guidelines that suggest an integrated approach that blends transit, planning, and land-use. This directed pattern of development combats a myriad of issues ranging from suburban sprawl to traffic congestion.

When assessing the success of a place, more specifically a TOD, authors have suggested a range of factors that need to be present in the development. Factors of success range when discussing TOD in general, however they are notably site specific. As mentioned above, Cervero

and Kockelman (1997) state that density, design, and diversity need to be present for a TOD to work. An article written by Dunphy, Myerson, and Pawlukiewicz (2003) titled *Ten Principles for Successful Development Around Transit,* suggests a set of principles that can be applied when implementing TOD, which should yield a successful outcome. Broadly defined, they are as follows:

- Make it better with a vision
- Apply the power of partnerships
- Think development when thinking about transit
- Get the parking right
- Build a place, not a project
- Make retail development market driven, not transit driven
- Mix uses, but not necessarily in the same place
- Make buses a great idea
- Encourage every price point to live around transit
- Engage corporate attention (Dunphy, Myerson, and Pawlukiewicz 2003, p. 1)

Tumlin & Millard-Ball (2003), also state that a true TOD will include most of the following success measures:

- The transit-oriented development lies within a five-minute walk of the transit stop, or about a quarter-mile from stop to edge
- A balanced mix of uses generates 24-hour ridership
- A place-based zoning code generates buildings that shape and define memorable streets, squares, and plazas while allowing uses to change easily over time
- The average block perimeter is limited to no more that 1350 feet
- Minimum parking requirements are abolished
- Maximum parking requirements are instituted (Tumlin & Millard-Ball 2003, p. 17)

The outcomes of TOD remain mixed in North America and the planning concept phase does not translate seamlessly to the implementation phase (Hale, 2014). The mixed outcomes can be in large part due to professionals such as planners, designers, and developers not having the skills for success due to their knowledge base being developed in a "pre-TOD" era (Hale, 2014; Renne & Wells, 2005). Another reason cited by Renne and Wells (2005) is that planners and policy makers do not often make time to review and evaluate the successes or failures of

similar projects and decisions are made singularly, rather than collectively with all parties involved.

The research reviewed in this section provides an understanding of what TOD is and the use of TODs to impact development patterns and curb suburban sprawl. Characteristics of TOD that make it desirable are: access to live, work, and play, with proximity to good transit systems. The literature reveals that most TODs in North America are much too recently implemented to assess the long-term effects and outcomes. Literature on TODs in the Canadian context is also lacking for the same reasons.

2.3 Smart Growth Movements and Associated Land-use Policy Development

This section stresses the importance of the role of planning for successful implementation of policy. Movements that advocate land use changes to accommodate mixed-use and denser developments are also analyzed.

The success of BRT and TOD reflects the extent and thoroughness of the planning process and project development phases. Early in the planning process there is a need for community and political support, which remains essential, and should remain prominent throughout the process. This helps the general population and key decision makers understand what BRT and TOD are, and clarifies the benefits associated with them (Levinson et al., 2002). Levinson et al., (2002) suggest that the key rapid transit planning issue is not what mode of transit to use, but rather to match market needs with available rights-of-way. For this reason, BRT and TOD should be the result of a planning and project development process that goes through the exercise of problem solving and addressing needs, rather than advocating for one solution. The process of planning, design, implementation, and operation should include all

levels of government agencies to ensure a collaborative process that will increase the likelihood of positive outcomes (Levinson et al., 2002). The coordination of planning BRT and TOD is a comprehensive process that can be quite difficult due to the variety of stakeholders involved. For example, in the case of the BART system in the San Francisco Bay Area there are over 40 transit agencies, 9 county governments, 100 municipal governments, and several regional authorities that are involved in the process (Renne, 2009). Conflicting wants and needs of various stakeholders can make the process difficult.

To curb issues associated with urban sprawl, such as "a lack of transportation choices, dependence on the automobile, relative uniformity of housing options, and the difficulty of walking", there has been an emergence of concepts such as Smart Growth, New Urbanism, the Compact City, and transit villages (Geller, 2003, p. 1410; Vos & Witlox, 2013; Levine 1999). As defined by Ratner and Goetz (2012), the Smart Growth movement relies on concepts such as New Urbanism, infill development, affordable housing, historic preservation, urban growth boundaries and is meant to:

> encourage more high-density development in already built-up areas that contain a mix of land uses close enough together to encourage more walking, biking, and public transit use. Recognizing the significant economic, environmental, and social costs of low-density suburban and exurban sprawl, Smart Growth encourages higher-density development within the already urbanized footprint of a metropolitan area, thus minimizing infrastructure and energy costs (p. 33).

The Smart Growth movement has been effective in many North American cities for a variety of reasons. First, cities are looking for ways to guide their growth, while reducing sprawl and personal automobile use that is currently causing congestion and air pollution. Second, there has been the formation of an alliance between all levels of government, the public, and the development and business community (Goetz, 2013). Additionally, the Smart Growth

movement can be attributed more generally to the shift in the American political economy. Patterns are moving away from the top down approach of government intervention to the bottom up non-confrontational approach of market solutions, deregulation, and public-private partnerships (Goetz, 2013). For example, Denver, CO experienced a population boom in the 1990s, which resulted in reconsideration of how future growth should be directed. TOD in Denver is being encouraged by a variety of entities such as the regional transit agency, the metropolitan planning organization, and the City and County of Denver. All Smart Growth initiatives implemented by the entities above over the past 20 years, with support from the business and citizen groups, have changed the way urban development occurs in the Denver region (Goetz, 2013).

While the Smart Growth movement has resulted in many positive changes, it has not resulted in a complete development pattern shift. Development trends are affected by market demand and existing polices, which are still focused largely on low-density auto-oriented suburban development. A shift in development patterns requires a shift in development policies that are currently in place. Land use regulations that were created out of the early reformist activism aimed to rid unhealthy urban conditions. Tools that resulted from those regulations are misused today to exclude high density mixed-use developments where necessary (Levine, 1999). Land use plans are essential to successfully implement TOD and provide certainty to developers. However, inflexible planning standards that are currently in place have the opposite effect (Curtis, 2012). Land use plans promoting Smart Growth have been created all over the US. For example, the 1956 *Regional Rapid Transit* planning document contained the first regional land use plan ever prepared for the Bay Area. The plan envisioned the Bay Area to become a 'sub-centered metropolis' based around the Bay Area Rapid Transit (BART) system (Cervero &

Landis, 1997). Similarly, the 'FasTracks' program in Denver was created as a regional land use and transit program, encouraging major changes in its land use and urban form in the form of TOD (Ratner & Goetz, 2012). Denver, while previously a sprawling city, through its broader plans and land use policies created a vision of Smart Growth in line with its rapid transit system. The city has seen success in terms of impacting land use and urban form by guiding growth more sustainably through regional policy changes, however, still relies heavily on personal automobile travel and highway transportation. Similarly, the *Regional Rapid Transit* plan in the Bay Area has only played a small role in shaping their growth, with large numbers of people still choosing suburban lifestyles and personal automobile use (Cervero and Landis, 1997).

Municipal policies mandate the current dominant development patterns. As stated by Levine (1999), "Local policies include zoning that limits densities and mandates land use separation, transportation standards that call for wide streets and generous parking requirements, and fiscally motivated practices that restrict development of alternatives to the large lot and single-family house" (p. 18). Sprawl has also been made possible through a variety of other phenomena for the past twenty years. Road infrastructure improvements, cheap public transit, and a lack of spatial planning regulations have encouraged long distance travel, resulting in sprawl and ultimately reducing accessibility (Vox and Witlox, 2013; Ratner and Goetz, 2012). There is a challenge to transition from current development trends, which are encouraged by cheap oil, and the overall assumption that people will travel by personal vehicle (Curtis, 2012). An accessibility-based approach that can be used to solve transportation problems could involve changing land use patterns via TOD (Levine, 1999; Ratner and Goetz, 2012). Urban neighbourhoods, which were generally built before the Second World War, discouraged car use with small block sizes and grid-patterned streets. Alternatively, suburban development post

World War II - which can still be seen today – was built with good car accessibility in mind but excluded public and active transportation (Vox and Witlox, 2013). Sprawling land development comes with great costs, such as higher gas consumption, traffic congestion, increased accidents, unreliable public transportation, and a need for additional infrastructure and public facilities. In addition, there are environmental costs like greenhouse gas emissions and air pollution, which have significant impacts on human health (Goetz, 2013; Curtis, 2012).

Many cities globally created overall vision documents for their city, imagining how growth and development would take shape in the future. However, not all documents put policy into place to support their visions. Tools to allow tangible change in the urban form need to be readily available. In the case of Flanders, Belgium, zoning plans in the 1970s designated uses to be spread over most of their municipalities as opposed to clustering them in an area (Vox & Witlox, 2013). This resulted in the sprawling development of almost all available open spaces. Vos and Witlox (2013) suggest that to combat sprawl three things need to happen: 1.) an active spatial planning policy; 2.) a strong cooperation between mobility policy and spatial planning; and 3.) an increase in travel cost (p.121). A document titled *Spatial Structure Plan of Flanders* was prepared in 1997 in efforts to combat urban sprawl. The document set out principles of how future growth should be directed. The concept was that there would be a mix of uses clustered together in cities and town centres. However, the document did not subsequently speak of the policies that would need to be in place to allow this type of densification (Vox & Witlox, 2013). Planning documents such as these often get shelved unless there are subsequent tools put in place to make the plan a reality.

In contrast, Denver drafted a regional growth plan in the 1990s called *Metro Vision 2020*, which focused on growth and development, environment, and transport. This plan used Smart

Growth to approach regional planning. To implement strategies in the *Metro Vision 2020* document, the City and County of Denver focused on creating a new land use and transport plan called *Blueprint Denver* in 2002. This was the document that created zoning codes that allowed for TOD along transit corridors and around station areas (Goetz, 2013). Further still, in 2006, a more focused plan was created called the *TOD Strategic Plan*, which is being supplemented by station area plans for all the stations within Denver city limits (Ratner & Goetz, 2012). Similarly, the TOD strategy in Perth, Australia, is supported by national and state governments (Curtis, 2012). Decision-making is left to the local level therefore Curtis (2012) suggests it is important to examine how public agencies perform. Local governments are required to conform to state policy within their Town Planning Schemes (TPS), which are the equivalent of station area plans in North America. All levels of government within the state are involved in ensuring the TPS conforms to state policy. Unfortunately, despite efforts made, including decades of planning policy that requires TOD, mechanisms to facilitate the policy, and sizable investment in public transport, Perth had seen no significant land use change, in 2007, due to poor implementation tools (Curtis, 2012). State TOD policies are written as a one size fits all solution to station areas without taking into consideration site and context specific challenges which further impedes implementation (Curtis, 2012).

Encouraging a change in land development patterns will undoubtedly require a change in existing policies and regulations, which inhibit the development of compact growth. Transportation and spatial planning are not often seen in a single policy document, however in recent years there has been some change seen in this regard (Vos & Witlox, 2013). There are documents pertaining to transportation interventions, such as rapid transit, that might result in transportation mode shift. However, most documents pay little attention to effects of land use on

travel behaviour and vice versa. This is a missed opportunity to be at the forefront of managing land use as transportation improvements have been affecting land use patterns globally since the end of the nineteenth century (Vox & Witlox, 2013). Transportation policies can be used as a tool to combat sprawl through adjusting land use patterns, similar to spatial planning adjusting travel behaviour (Vos & Witlox, 2013). Increased ridership due to direct and efficient service provided by rapid transit systems present the opportunity for land use to change and accommodate transit-oriented development. However, large-scale land use change does not occur over night, nor does it happen all at once. Transportation investments might make an immediate impact on travel patterns but changes to the urban form take significantly longer (Cervero & Landis, 1997). Therefore, it is important not to assess land use changes around transit systems in the early years to avoid presenting false results. In a study conducted by Cervero and Landis (1997) titled *Twenty Years of the Bay Area Rapid Transit System: Land Use and Development Impacts,* they assessed BART's impact on urban development patterns, and found that increased transit ridership allowed for the development of land use policies which encourage denser mixed-use development along the rapid transit corridor. Policies for compact development such as incentive zoning, and redevelopment financing, allowed for compact and dense development around station areas along the BART system. Additionally, initiatives such as beautification programs, public efforts to assemble land, and siting new public buildings around BART, equally contributed to the increase in development that occurred.

The critics of land use policy changes claim that the policies limit peoples' choices about where to live and what mode of travel to use. In Levine's (1999) article, *Access to Choice,* he disagrees with critics and claims they are ignoring the constraints that current policies places on choice by segregating land uses and prohibiting dense and mixed-use development. The current

segregation of land uses causes low-density development, for example single-family dwellings are in suburban developments and office towers downtown with industrial uses often on the fringes of the city. Levine (1999) argues that where there is no demand for dense mixed-use development, there is no need to have a policy in place to prohibit it. The goal should not be to convince people who have no desire to live in less auto-dependent environments otherwise. The goal rather should be to accommodate people who have the desire to move away from the auto-dependent lifestyle but have not been able to due to zoning and exclusionary regulations.

Critics of Smart Growth argue that there are a range of issues that need to be addressed for successful implementation of Smart Growth principles. They also argue that existing problems faced by Canadian cities are not adequately addressed by Smart Growth principles. There is a lack of strategies that deal with issues such as "fiscal crisis, homelessness, affordability, over-use of resources, insufficient meaningful work, or inadequately developed human resources" (Grant, 2001, p. 5). As described earlier, Smart Growth principles aim to increase high-density development within urban areas and encourage the use of public and active transit. However, stakeholders have differing views of what Smart Growth is, and the stakeholder with the most support and power has their views implemented (Downs, 2005). Developers, city officials, and planners also often emphasize different principles. For example, the "real estate development community plays down limitations on outward development, big-city officials strongly favor redeveloping existing older areas plus repairing existing infrastructures, and urban planners and environmentalists accept all the above principles and stress using more public transit to cut down on vehicle trips and miles of travel" (Downs, 2005, p. 368). The varying priorities of stakeholders prevent Smart Growth policies from being fully implemented.

Smart Growth principles are supported in theory and policy, however, there are many challenges faced in the implementation phase. Various reasons why theory and practice are not working in tandem exist, and they are presented below. In a study conducted by Grant (2009) titled *Theory and Practice in Planning the Suburbs: Challenges to Implementing New Urbanism, Smart Growth, and Sustainability Principles*, three Canadian cities are examined – Markham, Calgary, and Surrey. Grant (2009) suggests one reason is the "separation of policy and implementation functions, and resistance from engineering staff" as seen in development efforts in Calgary (p. 23). Despite progress in policy creation which favours Smart Growth principles, Calgary is facing difficulties implementing policies due to resistance from departments within administration. Another reason why theory does not easily translate to practice is the existing development rules that encourage singular-use development, cookie cutter housing styles, and auto-dependency (Downs, 2005). Building and zoning codes that set out how development should occur need to be updated, which also requires the support of development communities (Geller, 2003). In most instances, Smart Growth is not likely to be adopted in its entirety, but those principles easiest to implement might be. Another example is Surrey, BC, where higher density development has been achieved due to rising land costs, however, many other Smart Growth principles have not been applied (Grant, 2009). Smart Growth principles that are agreeable to most stakeholders and the public are the easiest to implement. Principles that are more difficult to implement include those that are not "as widely praised nor as readily accepted by the American public" (Downs, 2005, p. 369). Even in the case of Portland, Ore, which is known to be successful in Smart Growth policy creation and implementation, negative effects of Smart Growth can be seen. In some instances, the "policies' real effects appear to be increases in traffic congestion, air pollution, consumer costs, taxes, and just about every other impediment to

urban livability" (O'Toole, 2001, p. 20).

Value differences and market demand are additional reasons why Smart Growth principles are not readily implemented. To change sprawling development patterns "political commitment and cultural adaptation" is necessary but not readily achieved (Grant, 2001, p. 8). It is important for all stakeholders involved in a development to be willing to accept change. For example, in an article titled *The Folly of "Smart Growth"*, O'Toole (2001) cites a mixed-use project proposed near a light rail station in the city of Beaverton, Ore. The project had developer and Council support, and received approvals for tax and infrastructure subsidies from the government, however, bankers denied the developer financing on the basis that there was inadequate parking for the number of units being proposed. This illustrates that it is important, not only to gain support from developers, politicians, and the public, but also all stakeholders that are invested in the development.

Another reason why Smart Growth policies are not readily implemented is that shifting development patterns from suburban to urban impacts those who benefit from the development. For instance, people who own land in outlying areas have the potential of selling it to developers for suburban development but if urban development is encouraged it will be people who own parcels of land within developed areas who benefit (Downs, 2005). Since there are more people that stand to benefit from suburban development versus urban development there is a greater resistance to Smart Growth (Downs, 2005). Those voting against Smart Growth implementation often outnumber the number of supporters. As Downs (2005) explains in his article titled *Smart Growth: Why We Discuss It More than We do It,* there are three main groups that advocate for implementation of Smart Growth principles which are "nongovernment environmentalist, urban planners and other local officials, [and] innovative private real estate developers" (Downs, 2005,

p. 368). These groups largely do not include the general population which make up the majority of suburbs. This results in a challenging task for the three aforementioned groups; to convince a large group of people to want change (Downs, 2005).

Grant (2009) argues that market demand is not addressed by Smart Growth principles and what people want and value are "lower land costs, private yards with gardens and play areas, less congested roads, proximity to recreation areas, and access to a wide variety of low-cost consumer goods and services" (O'Toole, 2001, p. 20). These values translate into and result in sprawl. Additionally, typical suburban housing types are advocated for by many. Due to cold winters and large amounts of precipitation, an attached garage is desirable for "easy grocery handling, workshop activities, safe play space for kids and a barbecuing venue" (Grant, 2001, p. 4). Further, engineers and fire and police officials argue that reduced road widths, back lanes, and narrowed lot dimensions create snow clearing issues in cities that experience heavy snowfall. Market demand encourages developers to continue developing traditional suburban houses with attached garages and wide streets (Grant, 2001). There is also a large portion of the population that is still opting to own personal vehicles for convenience despite improvements to transit systems (Grant, 2001). Planners advocate for transit options to decrease congestion however, Downs (2005) states that "experience in the United States in particular shows that building additional public transit facilities almost never reduces traffic congestion in a region once that congestion has reached the point of serious slowdowns during major rush hours (p. 372). The reason for this is that congestion continues to grow as development and population increases at a rate quicker than transit improvements occur and citizens continue to choose personal vehicles as a convenient way to get around (O'Toole, 2001; Geller, 2003).

Furthermore, Smart Growth policy does not easily translate into practice due to citizens'

resistance to density. While planners advocate for high density communities, developers, councilors, and citizens are not always agreeable (O'Toole, 2001). Some reasons for resistance to infill development include "fear [of] crowding, crime, and traffic" (Grant, 2001, p.4). Additionally, there is a fear of declining housing prices, and increased congestion on roads and in facilities such as schools. While people advocate for changing low-density development patterns they do not want the change in their own backyard. This makes it difficult for Smart Growth promoters who receive support from the public to get policies passed but are then halted at the implementation stage (Downs, 2005).

The higher cost of living in an urban community is another reason for resistance to Smart Growth. Since the amount of land available for infill development is often less than the land available for suburban development there is a higher cost of development associated with high density communities (Downs, 2005). Smart Growth policies encourage compact development and large open spaces for public use, therefore, the amount of land available for development comes at a premium, raising house prices and making it difficult for first time homebuyers and renters (Downs, 2005; Geller, 2003). In the case of Portland, the implications of an "urban-growth boundary and restrictions on new single-family housing" changed Portland from one of the most affordable housing markets to one of the most expensive in the period from 1989-1996 (O'Toole, 2001, P. 23). To encourage high-density development, local governments in Portland also provided financial support in the form of subsidies. While this is one way of encouraging development, not every government can afford to provide these subsidies without assurance that the project will be successful (O'Toole, 2001).

Smart Growth is the result of efforts from all levels of government, however, theories of "new urbanism and smart growth have focused discussion on design and incentives; for success,

they need to pay greater attention to organizational issues and political will" (Grant, 2009, p. 30). Political will plays a large role in implementation. For example, municipal governments do not want to upset their voters by enforcing Smart Growth policies and without their support it is hard to convince other stakeholders (O'Toole, 2001). Insufficient support from council undermines planners who push for implementation of Smart Growth and make it hard for them convince developers to change development patterns (Grant 2009). Additionally, there are Smart Growth principles that "require government action at the regional or state level, not at the local government level where most powers over land use planning now reside" (Downs, 2005, p. 369). To successfully implement Smart Growth there needs to be a shift in some governmental powers to the regional level. However, local governments are not willing to do this despite regional officials being "the strongest promoters of Smart Growth ideas" (Downs, 2005, p.370). Without regional planning, it is "difficult to carry out Smart Growth policies that depend on such planning, such as limiting outward expansion of new development, preserving outlying open space, and creating new high-density development clusters around fixed-rail transit stations" (Downs, 2005, p. 373). One notable issue arising from communities imposing urban growth boundaries is that unless all communities agree with imposing boundaries, nothing can stop a suburban development from occurring outside the boundaries (Downs, 2005). In such an instance, regional governments could impose boundaries regionally, stopping the spread of cities.

The literature reviewed in this section provides insight into the role of planning in favourable outcomes of land-use policy implementation. Smart Growth movements are also reviewed to provide a background and history of reasons for the rise of these movements and how they impact traditional suburban development.

2.4 Participation Methods: Public Hearings and Collaborative Participation

This section stresses the importance of collaborative participation methods to improve the planning and development phases of projects and their outcomes. Collaborative participation is an alternative method to the dominant use of public hearings, which are also analyzed.

Prior to the 20th century, only elected officials could provide input into legislative decision-making processes. Citizen input first began to be solicited in the early 20th century. In the early years, governments supported planning commissions which were made of government advocates, technical experts, and elected officials. The citizen representatives chosen to make up the commissions were primarily influential members of the business community and not representative of a broader range of stakeholders (Innes & Booher, 2004; Richards & Dalbey, 2006). In the 1970s, governments and planners included large numbers of people in the hearing processes, but there was no emphasis put on the public to be representative of various groups of people. Further, the hearing processes in the 1970s were primarily focused on educating the public on planning and development processes rather than having them actively participate by contributing their thoughts and opinions. (Richards & Dalbey, 2006).

In an article titled *A Ladder Of Citizen Participation*, Arnstein (1969) suggests a ladder typology to examine different levels of public participation and the power citizens have to influence decisions. The ladder typology does not analyse the major challenges faced by both those who hold power, and those who do not. For example, the power holders face challenges such as racism and resistance to power distribution, and those who do not have power face challenges such as inadequate knowledge of the issues, problems organizing a representative group, and distrust in the government (Arnstein, 1969). The ladder is organized into the following eight rungs: nonparticipation (manipulation and therapy), degrees of tokenism

(informing, consultation, placation), and degrees of citizen power (partnership, delegated power, citizen control) (Arnstein, 1969). Arnstein (1969) argues that the concept of participation is accepted by everyone unless the "principle is advocated by the have-not blacks, Mexican-Americans, Puerto Ricans, Indians, Eskimos, and whites" (Arnstein, 1969, p. 216). Different levels of public participation enable the 'have-nots' to have a voice through redistribution of power between governments, planning agencies, and citizens. The third rung, informing, and the fourth rung, consultation is the minimum level of participation required for the excluded groups of people to be heard and informed about the proposed plans. However, Arnstein (1969) argues that these levels of participation do not provide those groups and individuals with the power to ensure their ideas and opinions are considered or incorporated to change plans that have been proposed. The third and fourth rungs, which fall under 'degrees of tokenism', need to be combined with other methods of participation to be effective.

The Government of Canada is mandated by law to conduct public consultations in Legislative processes. Canada's regulatory framework "requires federal departments and agencies to demonstrate that Canadians have been consulted and that they have had an opportunity to participate in developing or modifying regulations and regulatory programs, before regulations are approved by Cabinet or another body in whom legislation has vested authority to do so (MacKinnon, Pitre, & Watling, 2007, p. 4). Additionally, Canada's official newspaper, the *Canada Gazette,* includes a section for public notice and comment, which "gives various interested groups and individuals, as well as Canadians in general, a final opportunity to review and comment on a proposed regulation at the last stages of the regulation-making process" (Government of Canada, 2017a, n.p.). Additionally, the Government of Canada is

required by law to consult Aboriginal peoples when the Crown is making decisions that may affect Aboriginal or Treaty rights (Morellato, 2008).

The Government of Canada uses an online portal called 'Consulting with Canadians' to inform Canadians about public consultations. The portal lists information about all the current and active public consultations, as well as reports on outcomes of previous consultation efforts. There are a variety of consultation methods used, including submission of written feedback, participation in online forums, and public hearings (Government of Canada, 2017b).

In the United States, most states are mandated by law to conduct a degree of public participation, usually in the form of public hearings and review and comment procedures, in the decision-making process (Innes and Booher, 2004). The requirement to consult varies by states, ranging from non-existent to collaborative consultation (Burgess and Malek, 2005). Public administrators have expressed interest in trying different methods of participation but public hearings are still the most prevalent form. Even though public hearings are the dominant participation method used, they are usually not successful in achieving their objectives (Baker, Addams & Davis, 2005). There are three reasons for the lack of success. First, administrators do the bare minimum required to satisfy laws but do not put the time, effort, or resources required to conduct additional, complimentary methods (Baker, Addams & Davis, 2005). Second, the location of the public hearing is not always accessible. Additionally, key decisions are made without input from stakeholders prior to the public hearing, so people cannot provide meaningful feedback, but rather can only react to the drafted plans by supporting or opposing the project. This issue is further emphasized by the way public hearings are set-up to limit comments and feedback from each participant to 2 or 3 minutes (Baker, Addams & Davis, 2005; Innes & Booher 2004; Richards & Dalbey, 2006). Third, there is no interest in certain public issues by

groups such as minorities, or people from different socio-economic backgrounds, education levels, and age groups.

Innes & Booher (2004) argue that public hearings and review and comment procedures are not successful because there is no genuine participation, the public is not satisfied, participant feedback and comments make little impact on key decisions, and they lack representation of a broad group of stakeholders. Citizens believe that the government does not solicit genuine participation and distrusts their actions because there is a belief that they act on behalf of special interest groups that support them by funding their campaigns (Innes & Booher, 2004). Similarly, environmental impact assessment reports are drafted and public hearings are held on the report to give citizens a chance to comment on the contents. However, there is no two-way communication so participants cannot solicit clarification on any of the issues. This results in participants making comments that are not relevant and subsequently not considered, whereas special interest groups that possess the technical knowledge can make relevant comments that are more likely to be accepted. Both public hearings and review and comment procedures are generally attended by only select groups which are not representative of a broad range of stakeholders. The participants cannot have a two-way dialogue regarding any of their concerns and must comment for or against a project based on prepared plans. Another issue with public hearings is that board or commission members do not seem interested in hearing the public's comments. This is a result of the time constraints for comment period which only give participants 2 or 3 minutes to make their case without any previous dialogue. Another issue is the way public hearings are set-up which often makes power differences apparent so there is no connection between the facilitators and participants (Innes & Booher, 2004).

Baker, Addams & Davis (2005) conducted research to seek ways to improve the participation method of public hearings. The research was conducted by surveying public hearing managers in 500 cities in the U.S. Half of the managers were asked to discuss their most successful recent public hearing and the other half were asked to discuss their least successful recent public hearing. Of the 500 cities, approximately 51% of the managers responded, representing 46 out of 50 states. The questions focused on factors in three stages of public hearings: prehearing, hearing, and post hearing. The prehearing factors included notification methods and media, education methods, and location of hearings. The hearing factors included topic of hearing, meeting format, communication media, audience management, meeting structure, length of hearing, and participation by elected and appointed officials. The post hearing factors included follow-up actions, and communication of final decisions to the public (Baker, Addams & Davis, 2005). The research findings presented the following 5 items that were present in most public hearings which successfully achieved their objectives:

1. A greater number of prehearing educational methods: the goal of the public hearing should be clearly identified so the public knows what to expect and how their feedback will be used, educating the public prior to the hearing with the use of non-technical language, the administrators should work to gain and maintain trust of the participants as that is a major factor of why citizens do not attend, the use of multiple mediums to reach a broader stakeholder group to increase attendance, and hearing locations should also be varied to ensure a larger group of people can attend
2. More media types and greater media frequency in formal presentation: a good initial presentation with the use of visuals to accompany the oral presentation
3. More control over speakers' presentation time: experienced facilitators who can communicate well and keep the conversation on topic while maintaining participants' emotions
4. Greater use of open follow-up meetings: used to show participants how their feedback was incorporated into the draft plans; and
5. More use of newspaper and direct mail to communicate post-hearing decisions to the public (Baker, Addams & Davis, 2005)

There are various purposes for including public participation in decision-making processes. Five purposes identified by Innes & Booher (2004) are:

1. For decision makers to find out what the public's preferences are so they can play a part in their decisions
2. To improve decisions by incorporating citizens' local knowledge into the calculus
3. Advancing fairness and justice
4. Getting legitimacy for public decisions; and
5. Something planners and public officials do because the law requires it (Innes & Booher, 2004, p. 422 - 423)

Innes & Booher (2004) argue that the above stated five purposes are rarely ever all met by the legally required methods of participation in the U.S and suggest that collaborative methods can work to achieve the five purpose along with the following two:

1. To build civil society
2. To create an adaptive, self-organizing polity capable of addressing wicked problems in an informed and effective way (Innes & Booher, 2004, p. 423)

Contrary to public hearings or review and comment procedures mandated by law in many states in the U.S., collaborative participation seeks to be an inclusive process centered around dialogue and involvement in shaping decisions, problem solving, and collective learning. Collaborative participation should engage a broad range of stakeholders and provide an opportunity for them to educate and influence one another, while bringing their independent interests, views, and opinions to the table (Innes & Booher, 2004). Collaborative participation methods face the challenge to "use information, persuasion, and other means to bring about mutual understanding, minimize or resolve potential disputes, and achieve consensus on a course of action" (Burby, 2003, p. 34). The first step to conducting collaborative participation is the need to create public interest in the issue begin discussed. If there is no public interest and involvement, the plans are drafted by technical personnel and when time for implementation comes, citizens can oppose the development which adds to the project timelines and cost (Burby,

2003). Additionally, involving stakeholders from the beginning can prompt government action and implementation. By getting citizens and interest groups involved, planners can help generate interest and understanding of planning issues. The stakeholders thus become invested in seeing a project be approved and implemented, calling on elected officials to act (Burby, 2003).

In an article titled *Making Plans that Matter: Citizen Involvement and Government Action*, Burby (2003) researches the relationship of stakeholder involvement to government action and subsequent implementation success. The data for the research was collected from 60 local governments in Florida and Washington. State law in both Florida and Washington mandates citizen participation in comprehensive plan-making processes, however the law does not set out exact participation methods to be used (Burby, 2003). While collaborative participation calls for a broad range of stakeholders to be involved, the research findings indicate that the participants usually belong to the same three groups, business elite, elected officials, and neighbourhood groups. There is a noticeable set of participant groups missing including youth, minorities, and less advantaged households. These groups of people are not represented despite the mandates for inclusiveness from codes of ethics for planners to be attentive to the needs of the powerless and voiceless (Burby, 2003). Planners make decisions about participation processes that directly impact who participates. There are four key decisions that planners make that effect representation and turnout:

1. The number of stakeholders actually-targeted for participation
2. The number of different types of information provided to stakeholders
3. The use of a citizen advisory committee; and
4. Consciously setting as an objective of participation finding out citizen preferences (Burby, 2003, p. 42)

All four decisions effect turnout and representation to varying degrees. Additionally, the research found that when a broader range of stakeholders are involved in the decision-making,

there is a higher success rate for implementation of plans (Burby, 2003). To include groups of people that do not or cannot participate for a variety of reasons, new methods to solicit participation are needed (Richards & Dalbey, 2006). Innes & Booher (2004) conclude that "when an inclusive set of citizens can engage in authentic dialogue where all are equally empowered and informed and where they listen and are heard respectfully and when they are working on a task of interest to all, following their own agendas, everyone is changed" (p. 428).

Collaborative participation methods have numerous positive outcomes. Actively involving a broad range of stakeholders early in the process and throughout the different phases of development allows participants to provide knowledge of the local conditions and strengthen understanding and agreeance of planning issues. This also allows any opposition to be voiced at the outset of the development process, rather than once development is set to commence (Baker, Addams & Davis, 2005; Burby, 2003). Early stakeholder involvement streamlines development processes and makes them more efficient (Richards & Dalbey, 2006). Early stakeholder involvement also contributes to drafting stronger plans which are more likely to prompt government action due to ongoing citizen support and commitment to seeing plans being implemented (Burby, 2003). For example, the U.S. Environmental Protection Agency (EPA) rule and regulation approval process used to be lengthy and often held up by industries and environmental groups. Using collaborative participation methods and through dialogue with special interest groups and citizens, the EPA solicited recommendations on regulations that they were agreeable to and therefore they wouldn't oppose later in the approval process. The EPA has been successful in using collaborative participation to garner support and minimized approval time (Innes & Booher, 2004).

There are three factors attributed to collaborative participation which are: two-way communication and dialogue, building networks, and building institutional capacity. The factors create the chance for stakeholders to learn about one another's views and reasoning, build personal and professional relationships, and grow civic capacity for ongoing collaboration efforts (Innes & Booher, 2004). A major challenge in any type of participation is knowing whether the information presented is trustworthy. The use of two-way dialogue produces an environment of trust because participants can question the information, and present alternative facts. Another challenge is to bring planning and development issues such as affordable housing, hazardous waste, and resource management, to the attention of governments. Collaborative participation works to build civic capacity so that stakeholders understand each other's concerns and needs and can self-organize and intelligently approach governments with facts and solutions (Innes & Booher, 2004; Richard & Dalbey, 2006).

Involving stakeholders early in the planning stages and throughout the development process has three outcomes: better community outcomes, a process that is more predictable, democratic, and fair, and more tools and strategies for civic engagement (Richards & Dalbey, 2006). The first factor, better community outcomes, such as ongoing support for a project, are improved when stakeholders are involved in the process from the beginning. Collaborative participation also ensures that developments work for residents by supporting the local economy, environment, and enhancing citizens' quality of life (Richards & Dalbey, 2006). The second factor, process that is more predictable, democratic, and fair, is strengthened by including stakeholders early in the planning stages of a development to avoid feelings of distrust since in other participation methods, key decisions already appear to be made. To be effective, it is necessary for a "citizen participation process [to be] predictable, comprehensive, seeking input

from a wide range of stakeholders, and, in the end, fair—that is, offering "the greatest good to the greatest number"" (Richards & Dalbey, 2006, p. 25). Collaboration among a broad range of stakeholders such as citizens, planners, developers, businesses, and elected officials, produce stronger developments and quality places that last. Processes that are fair, allow stakeholders to discuss the issues and their impacts resulting in the shared goals of the community being met (Richards & Dalbey, 2006). The third factor, more tools and strategies for civic engagement, is facilitated by developing new tools for participation to stay current and appeal to a wider group of stakeholders. For example, the use of spatial modelling technology in participation sessions to demonstrate how different decisions impact development (Richards & Dalbey, 2006).

Richards & Dalbey (2006) present three precedent cities which successfully have incorporated collaborative participation methods and ultimately improved development processes and outcomes. One of the earliest examples of community effort to link land-use and transportation decisions is in Arlington, Virginia. Through collaborative consultations the decision was made to concentrate density (residential, retail, commercial) around 5 metro stations in the Rosslyn/Ballston Corridor, in exchange for lower density development in surrounding neighbourhoods. The development model has been highly successful with 92% of Arlington's total development occurring in the corridor which only makes up 7% of the total land area (Richards & Dalbey, 2006). Arlington has far reaching commissions and associations which carry out comprehensive consultation for nearly all the public and private development that occurs in the county (Richards & Dalbey, 2006). In Davidson, North Carolina, a *Planning Ordinance* was adopted in 2001which requires varying degrees of participation in all development. The participation methods range from workshops for minor developments to extensive design charrettes for larger developments. The mandated participation methods

provide predictability for developers in terms of how much time and resources they need to invest into participation methods and subsequently incorporating citizens' concerns into the final plans. Mandated participation methods and processes also provide predictability and fairness to all the stakeholders. Sacramento, California, was successful in facilitating participation, through a variety of tools and strategies, from a broad range of stakeholders through the Sacramento *Blueprint Project* (Richards & Dalbey, 2006). The *Blueprint Project* successfully engaged community members by educating and engaging them to help impact development decisions. The project was able to reach "5,000 residents, elected officials, and business leaders [who] participated in a series of workshops, regional conferences, Web-based dialogues, and surveys (Richards & Dalbey, 2006, p. 29). Additionally, there were workshops held in Spanish and written information distributed in different languages to ensure minorities were also involved.

Despite all the methods and tools that are available to engage stakeholders in meaningful and collaborative participation, they are not always fully utilized. Public consultation costs both time and resources, which leads developers and governments to limit the participation methods they use. Additionally, there is no consistency in participation methods being used so better plans and implementation outcomes are not realized (Richards & Dalbey, 2006).

Literature reviewed in this section provides insight into the challenges associated with public hearings as a participation method and possible ways to improve outcomes. Collaborative planning methods are also analyzed as an alternative and information on the successes and challenges of the method are outlined.

The next chapter presents precedent research on the transit system in Edmonton and collaborative consultation processes in Arlington. Outcomes of the next chapter are lessons learned for application to Winnipeg.

Chapter 3: The Transit System in Edmonton and Collaborative Consultation Processes in Arlington, as Precedents

This chapter is divided into two sections. The first examines research conducted on the LRT system and transit-oriented development in Edmonton, and the second examines collaborative consultation processes in Arlington. The first part of the chapter outlines history and context for the Edmonton Light Rail Transit, followed by policies in place for TOD implementation. The TOD potential at the Century Park station area is discussed, as it has similar spatial constraints as the ERTC at Kildonan Place in Winnipeg. Section 3.1.5, the conclusion of the first part of the chapter provides lessons for Winnipeg. The second part of the chapter presents findings from precedent research on collaborative consultation processes in Arlington. The chapter begins by providing history and context of Arlington's rapid transit system and accompanying consultation success. The county's consultation processes are described in terms of successes and challenges. The second part of the chapter concludes with lessons for collaborative consultation processes in Winnipeg.

3.1 Edmonton, Alberta

Edmonton, AB was chosen for precedent research due to its extensive LRT network and associated transit-oriented development in a city with similar suburban growth patterns as Winnipeg. The Century Park station area, the south terminus of the Capital Line, is also reviewed. The Century Park station area is in a suburban location, and was previously a regional shopping centre site. Like Kildonan Place Mall, a possible station area for the ERTC, it has

development restricted to the west. While LRT has been operational in Edmonton, TOD has not been achieved to the degree it was intended to be, for the reasons discussed in the section below.

Information for this precedent research was gathered from semi-structured interviews with two key informants, the City of Edmonton website, news articles, and government documents. The two semi-structured interviews were conducted with a high-level employee with the City of Edmonton (KI1) and a mid-level employee with the City of Edmonton (KI2). The information is set out in the following five sections: history and context, plans and policies that impact development, suburban development continues, Century Park, and lessons for Winnipeg. Outcomes of the research include four lessons for Winnipeg about limiting suburban growth and improving implementation strategies required for desired TOD outcomes.

3.1.1 History and context of BRT and TOD

Light Rail Transit was first introduced to Edmonton in 1974. Over the following four years, 7.2 kilometres of track were constructed with a budget of $65 million (City of Edmonton, 2017c). The LRT opened on April 22, 1978 with Edmonton becoming "the first city with a population under one million in North America to have a Light Rail Transit (LRT) system" (City of Edmonton, 2017c, n.p.). From 1981 to present day, extensions of the LRT track, added stations, and updated technology has extended service to more areas and increased ridership. Existing and future LRT lines were given official names in 2003 – Capital Line, Metro Line, Energy Line, Valley Line, and Festival Line (City of Edmonton, 2017c). Currently there are 18 stations in total, underground and surface, along two lines. The Capital line (northeast Edmonton to south Edmonton) is 21 km in length, and Metro Line (northwest Edmonton connects to downtown) is an additional 3.3 km in length (City of Edmonton, 2009b). A future Valley Line will extend service from southeast to west Edmonton. Expansion of the LRT service and

addition of new stations is planned meet the TMP's vision to expand LRT to each area of the City by 2040 (City of Edmonton, 2009b).

Edmonton has a land area of 684.37 km2 with a population density of 1282.82 people per km2 (City of Edmonton, 2016). Edmonton has a population of approximately 877,926 people as reported in the 2014 Municipal Census (City of Edmonton, 2016). This is approximately a 16.8% increase from the 2006 population of 730,372 (Statistics Canada, 2016). Edmonton's rapid growth can be attributed both to national migrants and in large part to the resource economy which accelerated international immigration. The 2014 Municipal Census indicated that 26% of the newcomers were international immigrants (City of Edmonton, 2014). The City of Edmonton expected their population to grow to 1,150,000 people by 2040 in 2010. This prompted the City to evaluate how future growth should be maintained and directed (City of Edmonton, 2010).

In 2014, 16.4% of Edmontonians were taking some sort of public transit, while 76.1% of the population was either driving or riding in cars, trucks, and vans (City of Edmonton, 2014). Neighbourhoods located adjacent to the LRT line had more than 30% of people identify as taking the LRT (City of Edmonton, 2014). In 2006, weekday LRT ridership was 46,530 and grew to 108,690 by 2015 - a total of 133.6% growth (Transit Data Management, 2015). The increased ridership can be due to potential factors such as higher population, and the opening of new stations and the Metro line.

3.1.2 Policies that impact development in Edmonton

Like other North American cities, post-World War II, Edmonton experienced outward expansion with most of the growth occurring at the edge of the city, instead of infill and higher-density development. Edmonton's prediction of rapid growth to 1,150,000 people by 2040 led to

the process of drafting visions, plans, and guiding documents for the city through citizen input that would "recognize the relationships between Edmonton's quality of life, cultural identity, the natural environment and the many facets of sustainability" (City of Edmonton, 2010, p. 11). A set of plans were drafted and accepted by Council to guide future growth in a more sustainable manner and encourage developments with TOD principles and characteristics. Edmonton's strategic plan, *The Way Ahead*, accepted by Council in 2008, set strategic goals to make Edmonton a compact, TOD-friendly city where people increasingly use active and rapid transportation (City of Edmonton, 2009a). *The Way Ahead* sets out six directional plans. The two plans most pertinent to this research are *The Way We Grow* and *The Way We Move*. *The Way We Grow* is Edmonton's Municipal Development plan. This plan provides guidelines for land-use and development that accommodates the necessary density around station areas (City of Edmonton, 2017e). *The Way We Move* is Edmonton's Transportation Master Plan that outlines the current and future LRT network, expanding the system throughout the City with 40 new stations in the next 30 years (City of Edmonton, 2017e).

Local government politicians and the Department of Sustainable Development, which includes City Planning, Development Services, Economic and Environmental Sustainability, and Real Estate and Housing, play a large role in drafting and implementing municipal plans and policies. Alberta had a conservative government for more than 40 years, which did not make for the most progressive province. TOD was not a priority for the provincial government, and development continued to be suburban (Manning, 2014; KI1, 2016); KI2, 2016).

Alberta's *Municipal Government Act* replaced the requirement for regional growth planning in 1995. The passing of the MGA eliminated the regional growth plan and gave way to suburban development in what was then rural Alberta. This resulted in limited growth

management when rapid population growth occurred in Alberta in the late 1990s. Moving forward, a strong growth management plan needs to be in place to support future development (Climenhaga, 1997; KI1, 2016). The New Democratic Party (NDP) government, elected in 2015, is working on amendments to the *Municipal Government Act* (MGA). The revised MGA addresses planning and development provisions such as off-site levies, inclusionary housing, and, regional growth management (Medeiros et al., 2017). The provincial government is also drafting new *City Charters* for Edmonton and Calgary, which aim to allow the two cities to have more authority and flexibility in municipal processes and decision making (Province of Alberta, 2017a). The new *City Charters* "recognize the importance of sound land-use planning and orderly development, and will enable an enhanced planning and development system that allows Calgary and Edmonton to address growth matters in a manner that best meets the needs of their communities" (Province of Alberta, 2017b, p.14). In contrast to the MGA, the new *City Charters* will give the municipal governments decision-making power regarding processes for preparing statutory plans and land-use bylaws (Province of Alberta, 2017b).

Edmonton's Area Redevelopment Plans (ARP), being the equivalent of Secondary Plans in Winnipeg, are under review by the city planners in the Department of Sustainable Development and can be placed on a spectrum of strong to non-existent, depending on the area of the city being studied. For example, there are development plans that have been approved for the Century Park LRT station area but there is no ARP. Development plans were prepared independently by Procura, the development firm, and approved by Council. An ARP for Century Park could provide direction on residential, retail, and commercial densities, infrastructure, consultation and implementation. The Department of Sustainable Development works to draft stronger plans as the opportunity for development arises. In KI1 and KI2's (2016) experience, a

couple of ways to increase the possibility of plans being implemented are to include a public relations component that shows the physical design plan, a market study to show potential profit to decision makers and stakeholders, and a detailed implementation plan.

Funding policies play a substantial role in successful TOD planning and implementation. Funding is required from private investors; however, it is equally important to receive public funding because the public sector also needs to support the development (Brinklow, 2010; KI2, 2016). Edmonton's Council decided to invest in the expansion of their planning team to carry out station area planning and corridor studies in 2010-2011. Public sector support is also dependent on the municipality's financial capability to be able to invest in their staff. The financial contribution by the City allowed planners in the Department of Sustainable Development to hire additional staff and consultants needed to help projects progress and be completed in a timely manner (KI1, 2016). Significant financial support from the municipal government is relatively recent, therefore impacts on physical TOD development cannot be assessed yet.

The provincial and municipal governments need to prioritize rapid transit funding in order to take advantage of the federal policy support and provincial funding programs available to the City of Edmonton. Three policies or programs that can be used to support rapid transit planning and implementation are the Public Transit Infrastructure Fund (PTIF) (Section 4.2.4), Green Transit Incentives Program (GreenTRIP), and the Climate Leadership Plan. Alberta received approximately $347 million from PTIF in 2016-17. Of the 49 projects that were approved for funding in Alberta, 46 of those projects included projects across Edmonton to support LRT planning, design, and infrastructure for the city's next expansion, and improvements to existing LRT stations and vehicles (Cison, 2017a). PTIF funds are made

available in an agreement between the federal and provincial governments, in which the federal government contributes up to 50 percent of the project costs if the provincial and municipal governments cover the remaining 50 percent.

Additionally, municipalities across Alberta had access to $2 billion in provincial grant funding, from 2008-16, for projects that reduced greenhouse gas (GHG) emissions by reducing reliance on personal vehicle use (Province of Alberta, 2017c). These funds were allocated in part to the 46 projects that received PTIF funding. Further, as part of the Alberta Climate Leadership Plan, a carbon tax is applied to all transportation and heating fuels that produce GHG emissions. The revenue generated from the carbon tax is then invested back into Alberta's economy to support projects that reduce emissions and positively affect climate change. Over a three-year period from 2017-2020, $1.3 billion will be reinvested into Alberta's green infrastructure, which include public transit (Province of Alberta, 2017d).

There are federal and provincial policies available to assist capital transit project costs, however, provincial and municipal governments need to allocate sufficient funds to transit in their respective annual budgets. The financial support from all levels of government show a commitment to implementing and improving the LRT system in Edmonton, which will provide private sector investors the confidence they need to invest in station area development and TOD.

3.1.3 Reasons why the expected level of TOD has not been achieved

Edmonton's vision to grow in a compact and sustainable manner with increased use of public and active transportation and concentrated development around station areas has not been realized (City of Edmonton, 2017d). Edmonton is a prairie city with access to an abundance of land for development. This fact, coupled with systems in place to make suburban development easier and more profitable than urban development, continues the outspread of the city (KI2,

2016). Historically, growth in Edmonton has resulted in development being "scattered across many developing neighbourhoods, present[ing] challenges in the full provision of public services, and was recognized as running counter to the City's stated goal of financial, social, environmental and cultural sustainability" (City of Edmonton, 2010, p. 11). Infrastructure, maintenance, and operational costs to continue sprawling development is not financially sustainable so Edmonton needs to "maximize the use of [their] investment in all new and existing infrastructure" (City of Edmonton, 2010, p. 11).

While the LRT system in Edmonton has been operational since 1978, only a single corridor, 12.3 km in length, existed until the 2000s. The Capital Line ran from northeast Edmonton at the Belvedere station to the University of Alberta, southwest of downtown, at the University station (City of Edmonton, 2017c). Further development of the LRT was halted in 1992 and only resumed development in the early 2000s. A new generation and shift away from auto-culture is increasing the demand for TODs. This is evidenced by the LRT's steady ridership increase over the past ten years by approximately 127 percent (ETS, 2016; KI1, 2016; KI2, 2016). TOD had stalled in part due to the MGA which needed to be updated to reflect current issues such as lack of physical limits to suburban growth, government systems supportive of suburban development, and the need for municipalities to have more control over development (Iveson, 2016; KI1, 2016). Instances in which some parts of TOD have been successful, for example downtown stations such as Corona, Bay/Enterprise Square, Central, and Churchill, can be attributed to factors such as existing density, demand, and zoning allowing for mixed-use and concentrated development to occur, in some cases prior to the LRT implementation (Jones, 2013; KI1, 2016).

Infill in existing developed areas is more difficult than greenfield suburban development.

For example, neighbouring property owners need to be agreeable to the development or rezoning plans proposed. The process of gaining support from neighbours and public council is often expensive and time intensive. Neighbouring property owners need to be contacted to discuss intended plans to gather feedback and hear their concerns. If there is strong opposition from neighbouring property owners the plans need to be modified so they do not get rejected at the public hearing stage. In some instances, modified plans are not acceptable either and can still be rejected due to ongoing public concern. This process can take months and slows down urban development; a situation that occurs not only in Edmonton, but more broadly, in North America as well. Additionally, the definition of TOD has changed and been refined over time; therefore, the approach to TOD needs to evolve to work. For example, in the 1980s-1990s it was acceptable for a TOD to have a large surface park-and-ride located next to the station, which is no longer desirable, rather density is to be focused around station areas (Steuteville, 2017; KI1, 2016).

3.1.4 Century Park Station – existing development and TOD initiatives

The Century Park station area was intended to be the first transit-oriented development in Edmonton encompassing all the guidelines in the *Transit-Oriented Guidelines*. The following guidelines and principles were to be followed:

1. Land-use and intensity: allowable zoning is set out as well as the minimum and maximum density allowed on each site.
2. Building and site design: interaction between building design, such as setbacks, and street level are described. Additionally, as development approaches existing neighbourhoods, building heights should complement existing buildings.
3. Public realm: includes guidelines for block sizes, roadways, and active transportation infrastructure. Additionally, guidelines for all public open spaces and boulevards is provided.
4. Urban design and CPTED principles: encourage station area design that minimizes potential crime (City of Edmonton, 2012).

Today the station area remains largely underdeveloped. LRT has been operational in Edmonton since the mid-1970s however, the addition of the Capital Line extension to Century Park in 2010, illustrated in Figure 1, is relatively recent (City of Edmonton, 2017c). LRT accessibility has the potential to increase ridership for suburban residents near Century Park and will potentially increase the demand for TOD at the station area.

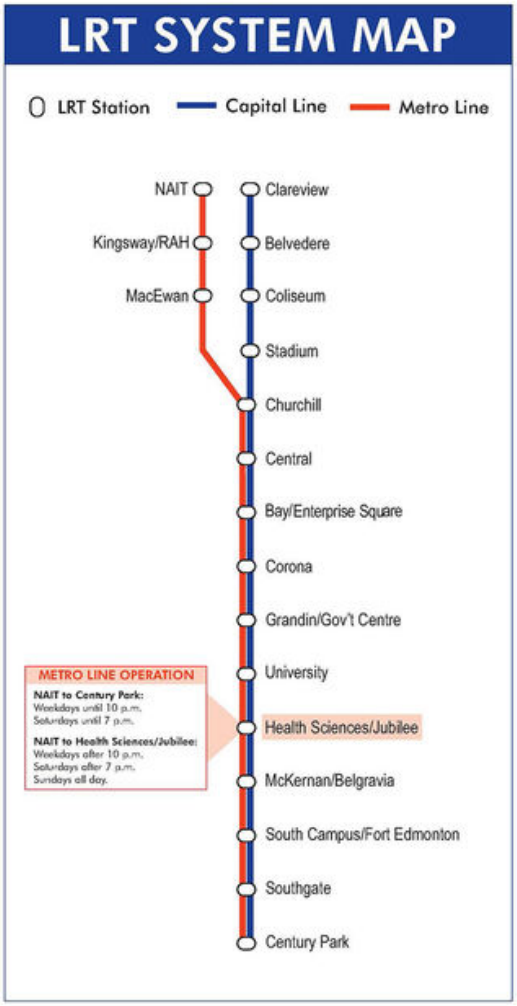

Figure 1: Edmonton LRT System Map. Reprinted from Edmonton Transit Service, 2017. Retrieved August 8, 2017, from https://www.edmonton.ca/ets/metro-line.aspx. Copyright 2017 by City of Edmonton. Reprinted with permission.

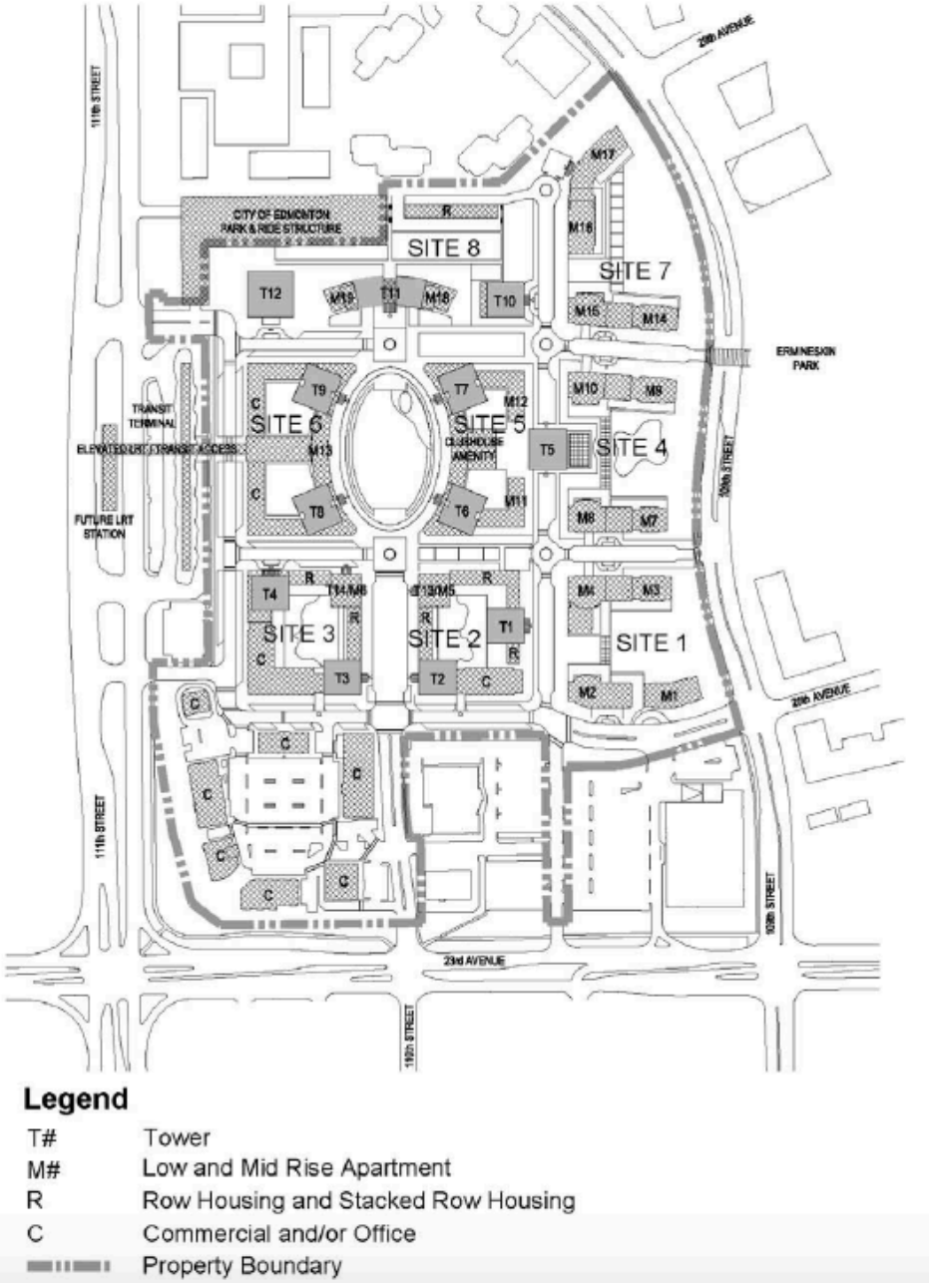

Figure 2: Century Park Land-use Map. Reprinted from The Edmonton Zoning Bylaw 16555, 2013. Retrieved August 8, 2017, from http://sirepub.edmonton.ca/sirepub/cache/2/etnged1ztpivv4cy2nhjhswk/2584280808201707 1036126.PDF. Copyright 2017 by City of Edmonton. Reprinted with permission.

The Century Park LRT station site was formerly the location of Heritage Mall, a regional shopping centre, that closed in 2001, because of big box development in the area. The mall was

subsequently demolished and gave way to the development of Century Park (Edmonton Local, 2016). The LRT extension became a catalyst for changing land-use policies at the Century Park LRT station and in 2005 the site was rezoned from (CSC) Shopping Centre Zone, to a (DC2) Site Specific Development Control Provision as illustrated in Figure 2. The (DC2) zoning designation provides "special regulation of a specific site where any other Zone would be inappropriate or inadequate" (City of Edmonton, 2017a). The current zoning accommodates mixed-use development with increased residential, commercial, and retail density at station areas. The zoning also allows for active and public transportation connections where necessary, as illustrated in Figure 3 (City of Edmonton, 2017b).

The rezoning for this site happened in anticipation of the Capital Line extension to Century Park. Two development firms, Procura and Westbank, partnered to purchase the land to implement TOD. Four buildings were built between 2005-2008. At that point, Procura bought out Westbank's ownership of the land and is now the sole owner of the land parcel. To proceed with TOD on the land, Procura engaged James KM Cheng Architects Inc. for architecture, and Tkalcic Benger as design support, production, and construction administration, to do a master plan for the Century Park site (Stolte, 2012; KI1, 2016). The master plan consists of several phases with the ultimate goal of developing 2200 residential units around the station, office space, retail space, and integrate active and rapid transit (Stolte, 2012; Architecture Tkalic Bengert, 2016).

The Century Park station is the south terminus of the Capital line. The station is located approximately 2.5 km from the southern edge of Edmonton. The station area is primarily surrounded by suburban neighbourhoods, with retail to the south of the site, and some higher-density residential development to the north. The suburban location of the site adds to its draw as

a park-and-ride. A portion of the land surrounding Century Park station was leased to the City of Edmonton in 2010 for a 10-year period to serve as a park-and-ride with 1230 stalls.

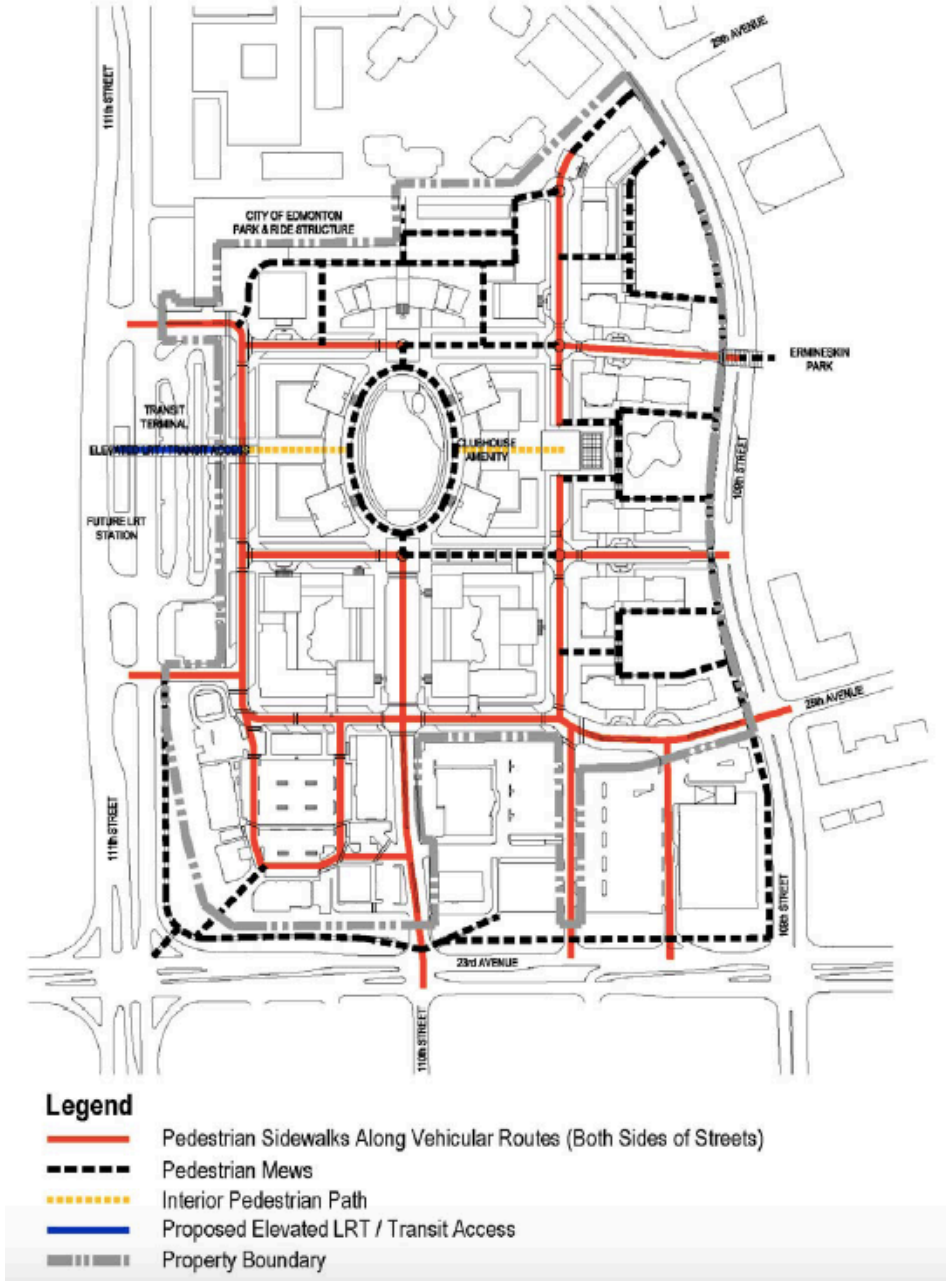

Figure 3: Century Park Pedestrian Linkages Map. Reprinted from The Edmonton Zoning Bylaw 16555, 2013. Retrieved August 8, 2017, from http://sirepub.edmonton.ca/sirepub/cache/2/etnged1ztpivv4cy2nhjhswk/25842808082017071036126.PDF. Copyright 2017 by City of Edmonton. Reprinted with permission.

The lease is set to expire in 2020 at which point Procura will proceed with development as per the master plan (Walters, 2015).

There are several reasons why Century Park has not yet achieved the level of TOD that the City had hoped for. First, per an interview with the *Edmonton Journal*, Procura's CEO, George Schluessel, was prepared to move forward with development of more buildings in 2014, however could not progress without first moving the Century Park park-and-ride surface lot (Stolte, 2014). Difficulty in obtaining the required permits for parking was cited as the main reason for the delay. Second, the Century Park station site is in a suburban area so the developer built large luxury condos that were geared towards well-established, wealthy purchasers. The revised development plan includes a large number of rentals, which are more affordable and geared toward a market of young professionals and first-time homebuyers. The site is currently approximately 20% developed and mixed-use residential and retail have been approved by the City, which gives Century Park the potential to become a successful TOD with (Heidenreich, 2017; KI1, 2016).

3.1.5 Lessons for Winnipeg Transit-Oriented Development in Winnipeg

The TOD efforts in Edmonton require further development for future implementation. Edmonton's missed opportunities provide four lessons that potentially can be applied to the Winnipeg context. First, detailed secondary plans need to be drafted to implement TOD. Secondary plans need to include a strong component on implementation guides and tools. The guides and tools should be organized into three time frames; short term, medium term, and long term. Short-term projects should be easily implemented and become a precedent for potential stakeholders to build momentum for future projects. This involves gaining financial support from the provincial and municipal governments to create planning teams that can focus on

preparing the plans. Planning teams include planners and support staff, such as technicians and specialists, that can provide the technological information to get plans prepared in a timely fashion.

Second, patience is key. TOD planning and implementation is a long-term project, which takes time to materialize. Therefore, the plans should include short, medium, and long-term goals to maintain momentum. Once the secondary and station area plans are prepared, they will not be implemented instantaneously. For example, developers, councillors, neighbouring property owners, and all other stakeholders involved in the process will need to be agreeable to the development plans before the implementation phase. The process involves the preparation of concept development plans (short-term), consulting area residents and councillors to gain their support and holding public information and consultation sessions (ongoing), refining the plans (medium-term), and finally gaining approval and relevant permitting from the City (long-term). There is also a chance of projects being halted indefinitely due to shifting political and economic climates. One way to sidestep political and economic realities is to prepare plans that have implementation tools that are beneficial to a range of investors and stakeholders. Plans that are relevant to a large group of stakeholders and over a large span of time will enable them to be implemented, even if it is several years after the intended implementation date.

Third, find ways to limit suburban growth to encourage compact development and the use of active and public transportation. Winnipeg is a prairie city with an abundance of land and no physical barriers to greenfield suburban development. Infill development in downtown and existing neighbourhoods is often more difficult than suburban development due to neighbouring property owners, small or odd shaped sites, level of demand, and profit margins for investors and developers. There is also a steady demand for suburban development, which is often easier and

more profitable. Restrictions that make suburban development more difficult and less profitable are one way to slow the City's outward spread.

Fourth, create market demand. A large portion of the population chooses to own a personal vehicle and live in the suburbs. There is a need to present alternative living options to these individuals and provide education on the benefits of living an urban lifestyle with easy access to active and public transportation, retail, and amenities within walking distance. For example, TOD plans that have a component focusing on "accommodating families, can both attract new populations to live near transit and help retain existing residents in these locations" (Zimbabwe et al., 2012, p.2). Developments that include a variety of housing types, parks and open spaces, educational facilities, and amenities that serve families such as community centres and libraries, are more likely to attract residents (Zimbabwe et al., 2012). There is an opportunity for developments to cater to families with young children by including facilities like in-unit storage for strollers, bikes, and essentials. Further, developments can include infrastructure such as play structures, splash pads, and daycare facilities to make TOD living more desirable to a larger population. Designing developments that support people in all stages of life can create a cultural shift and promote urban living.

3.2 Arlington, Virginia - Arlington's Smart Growth Efforts

Arlington County, Virginia is an urban County, approximately 42 square kilometers of land located across the Potomac River from Washington, DC. Arlington County was identified for precedent research for its extensive collaborative planning processes that rely on high-level public participation (Arlington County Government, 2016a). Plans and policies guiding growth in Arlington County have been and continue to be developed and implemented with

comprehensive input from citizens. Major projects in high-density zoning districts surrounding the Metro Station Corridors go through a site plan review process as described in Section 15 of the *Arlington County Zoning Ordinance* (Arlington County Government, 2017b). The site plan review process "allows for site-specific flexibility in development form, use, and density, beyond what is otherwise permitted" (Arlington County Government, 2017b, n.p.). The site plan approval process also requires several levels of public engagement. Prior to applying, the applicant is encouraged to contact anyone that is impacted by the development, including Civic Associations and neighbours. Once the application is submitted for review, it is reviewed by the Planning Commission committee which is made up of "members of the Planning Commission, County Advisory Groups and Commission representatives, and Civic Association and neighbourhood representatives" (Arlington County Government, 2017b, n.p.). Next, the submission is presented at a public hearing before the Planning Commission and the County Board, after which a decision is made either to accept or reject the submission.

While public participation can produce an outcome that is favourable for the most people, it is important to note that participation methods are not always inclusive. Information for this case study was gathered by interview with a single key informant, the Arlington County website, published research articles, and government websites. The semi-structured interview was conducted with a high-level employee of Arlington County. The account here is organized into the following three sections: history and context, consultation benefits and challenges, and lessons with potential applicability for Winnipeg. The lessons will inform collaborative planning processes to improve TOD implementation.

3.2.1 History and Context

The population of Arlington County was an estimated 229,164 in 2015 with high

population density of approximately 5500 people per square kilometer (United States Census Bureau, 2010). In their study titled *Urban Densities and Transit: A Multi-dimensional Perspective*, Cervero and Guerra (2011) conclude that population densities of approximately 30 people per gross acre are required to achieve the most cost effectiveness for light rail systems. Arlington comes close to the suggested population density with approximately 23 people per gross acre.

Arlington County is considered an exemplary success story of Smart Growth development. The Rosslyn-Ballston Metro Corridor received the United States Environmental Protection Agency (EPA) Smart Growth Award in 2002. The award was based on "Arlington's planning approach [which] places dense, mixed-use, infill development at five Metro stations and tapers it down to residential neighbourhoods, creating vibrant 'urban villages' where people live, shop, work, and play using transit, pedestrian walkways, bicycles, or cars" (United States Environmental Protection Agency, 2015). Planning efforts to manage growth beginning in the 1960s, focused on high-density residential and mixed-use development that preserved the existing low-density neighbourhoods while concentrating density within a quarter mile of Metro Rail stations. This concentration resulted from development of office space, housing, and hotel rooms within the Rosslyn-Ballston corridor. The creation of the general plan and specific station area plans has been attributed to the success of the 'bull's-eye' approach which has been incorporated in the County's *General Land Use Plan* (GLUP) (Cervero et al., 2004). Approximately 30% of the County's total population lives in the rail corridors, which, make up 8% of Arlington's land mass. This new way of planning was intended to manage growth with minimum impact on existing development, reducing personal automobile use and revitalizing retail and businesses. Planning for the Rossyln-Ballston Metrorail corridor and associated

transit-oriented development in the 1960s transformed the existing low-density deteriorating corridor into a vibrant mixed-use corridor focused around transit (Renne, 2016; KI3, 2016). The Rosslyn-Ballston Metrorail corridor served as a catalyst for drafting a *General Land Use Plan* (GLUP) in 1977 that outlined the various land-uses and densities for the entire County. To maintain the distinct characteristics of the five Metro Station areas in the Rosslyn-Ballston Corridor, Sector Plans were developed (Arlington County Government, 2016c).

The Arlington County Board, made up of five members, has the duty to appoint the various citizen boards, commissions and advisory groups that help implement policies. The board established a vision for Arlington County to "be a diverse and inclusive world-class urban community with secure, attractive residential and commercial neighbourhoods where people unite to form a caring, learning, participating, sustainable community in which each person is important (Arlington County Government, 2016b).

This vision statement set the stage for the way in which development has occurred in Arlington County. Implementation of Smart Growth principles in Arlington County began with the planning of the Rossyln-Ballston corridor in the 1960s. County officials saw the long-term benefits of building a rail system along a route that did not have rapid public transportation. The corridor included the established commercial areas instead of running along the median of a future highway, which promoted development along the Rosslyn-Ballston corridor (Leach, 2004).

Concentrated development in the Rosslyn-Ballston corridor was a result of a 12-year planning effort by the County staff, officials and citizens. The corridor spans nearly three miles and consists of five metro station areas: Rosslyn, Court House, Clarendon, Virginia Square, and Ballston. High-density development is concentrated around each of the five station areas,

preserving the existing low-density neighbourhoods beyond the corridor. Each of the five station areas have the following unique characteristics: 1) Rosslyn: office/business, 2) Courthouse: government buildings, 3) Clarendon: urban, 4) Virginia Square: residential/cultural/educational facilities, and 5) Ballston: downtown (Arlington County Government, 2016e). In addition to the overall Rossyln-Ballston Corridor plan, sector plans were developed to guide how future development is to occur at each of the Metro Station Areas. The sector plans include visions and goals for divisions such as urban design, infrastructure, and open spaces. These sector plan goals and guidelines were put in place to retain and enhance the characteristics of each neighbourhood which is known as Arlington County's urban village concept (Arlington County Government, 2016e).

To connect the urban villages, and within each urban village, reliable and efficient transit is a key priority. The Crystal City station area, as a good example, has had significant population increase over the past fifteen years and a decrease in personal automobiles on the road. The reduction in personal automobiles is a direct effect of good transit planning that provides residents with mode choice (Merchant, 2014; KI3, 2016).

3.2.2 Consultation process

This section discusses challenges and opportunities provided by the open dialogue and collaboration between the government and citizens, which has become known as the 'Arlington Way'. Information has been gathered from academic and journal articles, the Arlington County website, and three main documents: *Mapping the Arlington Way*, *Creating the Arlington E-Way: Enhancing & Improving Community Engagement*, and *Participation Leadership and Civic Engagement.*

Arlington County has been at the forefront of supporting citizen input in their planning processes since before the Second World War. This tradition has set the stage for meaningful community consultation that results in policy development often reflecting citizens' opinions on the best course of action for communities. The community has largely shaped the policies in place, which have in the past, and continue to guide development around the 5 metro station areas in the Rossyln-Ballston corridor.

The 'Arlington Way' "is a model that maximizes the use of citizens in the decision-making processes as a means for developing the best policy with the most community support" (Bailey, 2000, p. 7). Citizens are provided a platform to offer meaningful insight into public issues that concern them. Transit and TOD topics are discussed through dialogue between County staff, advisory groups, and citizens "to develop recommendations based on extensive research and input" (Bailey, 2000, p. 7). A variety of channels exist for citizens to participate. Citizens can speak at board hearings, provide input through participation during plan or policy development, attend design charrettes, provide feedback through online platforms such as survey monkeys, or serve on a County advisory group, commission, or committee (KI3, 2016). One example of a County Board appointed advisory group is the Planning Commission. The Commission provides citizens opportunities to discuss planning issues and aid in planning policy development through public participation activities such as meetings and hearings (Arlington County Government, 2017a). Through intensive public consultation, the Planning Commission prepares and presents a recommendation to the County Board, who makes the final decisions on issues that affect transit-oriented development, such as land use.

Input from citizens provides an opportunity to produce a product that works for them. For example, the public was and continues to be involved in the decision-making processes for

drafting and updating the General Land Use Plan, sector plans, and project approval processes affecting TOD in the Rosslyn-Ballston corridor (Weaver, 2011). A transit-oriented development policy framework was subsequently drafted with input from citizens and stakeholders and provides a consistency to the development processes, which allowed "stakeholders to feel confident in the direction the project would take and that following the enacted framework would always keep development on track and in line with the stakeholders' wishes" (Barklage, 2013, p.50). Due to the early and ongoing involvement in the "adoption process and concrete evidence of the effectiveness of the plans, Arlington County residents demand that developments conform to both the vision and the details set out in these documents" (Weaver, 2011 p.5; K13, 2016). In instances when there have been minor revisions to the TOD policy framework, all stakeholders have been consulted again. Public consultation has remained an integral part of the success of the Rosslyn-Ballston corridor. Additionally, the continued support from the public and various stakeholders has increased the likelihood of TOD implementation as set out in plans (Barklage, 2013, p.50). A notable challenge of comprehensive public consultation process that informs TOD decision-making is the number of stakeholders with a vested interest in the Rosslyn-Ballston corridor project. Stakeholders with differing agendas are expected to work together and towards a common goal (Barklage, 2013).

The 'Arlington Way' of the past is no longer the most effective and inclusive way. Processes and methods need to be changed and adapted to changing times. Arlington currently has over 50 advisory commissions which elongates the consultation process and the time it takes to gather and process feedback. While the process often has favourable outcomes and citizen input enhances initial plans, it can become a long, difficult to navigate process. Additionally, the 'Arlington Way' can exclude a certain demographic of people. Arlington County is diverse with

over a quarter of the population being foreign born, which is approximately a 50% increase in the last 10 years (Donnellan, 2014). The diversity exists but needs to be represented in the public participation process. Currently there are a select few people who have the time and means to participate and to sit on boards and commissions, while others who have young children, a language barrier, or cannot financially afford to take time off work to travel to the meetings are being excluded (Nisenson, 2014; KI3, 2016).

One way to reach a wider demographic, as it is more convenient, is electronic participation. The Internet is used to gather and disseminate information on a wide scale and "all levels of government are attempting to harness new ways to engage with members of the public" (Donnellan, 2014, p. 2). While the Internet can distribute information to a wide range of individuals, it can also distribute incorrect information. Checks and balances are needed to ensure correct information is being distributed. However, if incorrect information is sent out, it can just as easily be edited and redistributed (Donnellan, 2014).

While the 'Arlington Way' presents positive opportunities for citizen participation, there are also notable challenges and opportunities for improvement to the system. Abbot Bailey (2000), author of *Mapping the Arlington Way – Understanding the system of citizen participation in Arlington County*, in conducting interviews with approximately 20 residents of Arlington County, discovered some limitations to the process. Bailey (2000) categorizes the limitations into three themes:

- Government by a few: there is unequal representation of races, ethnicities, age, gender, marital status and socio-economic status due to a variety of reasons, primarily lack of interest and "existing networks of relationship in the community that unintentionally restrict entry into the system
- The Elephantine System: is the cumbersome nature of the Arlington Way and prolonged and inefficient process of decision making that requires a copious amount of time and input from citizens

- System Chaos: there is no clear definition of leadership, roles, and authority during the consultation process (p. 8).

The feedback received from interviews conducted by Bailey present "opportunities to create a more productive and representative Arlington Way through systematic and deliberate attempts to improve the system" (Bailey, 2000, p. 9). This can mean identifying different ways of promoting education and engaging the community to create a more inclusive process. A diverse and growing population, new technology, and changing social and economic realities requires new ways in for the 'Arlington Way' to engage a wider population (Hynes & Kresh, 2012; Donnellan, 2014).

In an effort to update and make the *'*Arlington Way*'* stronger, an Arlington County initiative called 'Participation, Leadership, and Civic Engagement' (PLACE) was launched in 2012. PLACE set out goals for the 'Arlington Way' to become a more inclusive process through a wider range of participation methods, increased training for staff to gather meaningful feedback, and a system with more defined roles for everyone involved, to ensure fair and transparent processes (Hynes & Kresh, 2012). The PLACE initiative is on-going in its efforts to make the 'Arlington Way' stronger through the initial goals that were set out.

3.2.3 Lessons for Collaborative Consultation Processes in Winnipeg

The 'Arlington Way' provides three lessons that potentially can be applied to the Winnipeg context. First, quantity is not equal to quality. Conducting consultation sessions that are poorly planned and administered results in a large amount of data being collected that is not always useful. It is essential to find ways to shorten collaborative consultation processes while still garnering meaningful feedback that will impact development decisions. This can be achieved by having less open-ended meetings or hearings, where people simply come to talk.

While open-ended consultations can result in good feedback, they often result in a lot of useless information as well, which ultimately has be to be reviewed to determine what is useful. Opportunities and methods should be developed for targeted feedback collection. Individuals conducting the consultation process and sorting through the resulting information should be properly trained to ensure the processes are simple and concise.

Second, consultation processes should include an educational component. Prior to conducting collaborative consultation, individuals should be educated on the extent of issues and any constraints to the development so that they can provide meaningful feedback that is largely relevant. Information can include background and history of the project, intent, and zoning or site constraints. The information can be disseminated through a neighbourhood newsletter, pamphlet, or pre-consultation information sessions that can be held to ensure that all feedback is coming from a similar understanding of the project or issues.

Third, consultation methods need to continually be updated and adapted to changing times. People who are affected by the topic being discussed might want to contribute their knowledge, however due to physical or time constraints and limitations, are not able to attend consultation sessions. For example, consultation processes should be held in more than one location to be accessible to people who cannot physically attend meetings. One way to include a larger population can be to set up a website where individuals can participate in interactive feedback sessions. This method allows people take their time responding to information presented to them by maximizing comfort and in some cases by minimizing language barriers. Interactive participation can also be conducted from virtually anywhere and at any time. This feature allows wider participation for those individuals who do not have the time or means to travel to a predetermined location. Winnipeg is very diverse city due to a large immigrant

population and so methods of participation should include a larger representation of the population that transcends economic and language barriers.

The next chapter reviews current bus rapid transit systems in Winnipeg and context for transit-oriented development implementation. An examination of three Major Redevelopment Sites, Sugar Beet Lands, Fort Rouge Yards, and the Old Southwood Golf Course outlines the TOD-inspired designs ready to be implemented in Winnipeg.

Chapter 4: Bus Rapid Transit History in Winnipeg and Context for Transit-oriented Development

This chapter outlines the history of BRT development in Winnipeg as a potential catalyst for TOD and examines opportunities that exist for TOD implementation. The chapter begins by describing Stage 1 and 2 of the SWRTC and the potential next phase, the ERTC. Following this, policies in place to support BRT and TOD are summarized. Finally, masterplans for three development sites that will be serviced by rapid transit and have TOD potential are reviewed.

4.1 Winnipeg, History and Statistics

The popularity of owning an automobile along with the perceived convenience has supported the outward spread of North American cities, allowing segregated land-uses. Personal vehicle use meant that people could live further from where they worked, creating a shift from compact urban development to low-density suburban development. In 2016, Winnipeg had a land area of 464.33 square kilometers with a population density of 1518.8 persons per square kilometer (Statistics Canada, 2016, n.p.). The City of Winnipeg was historically considered a slow growth city. However, population has increased steadily since the turn of the century, resulting in an increase of more than 44,000 new residents in the period 2000-2011 (Statistics Canada, 2011a). The steady growth is largely due to increased immigration and migration from across the country (Statistics Canada, 2011b). While slow growth allowed Winnipeg to continue growing outwards with low-density development and continued reliance on personal vehicles, the projected population increase, to almost 1,000,000 people by 2031, provides an opportunity

to plan higher density developments that have all the elements of live, work, and play with transportation mode choices minimizing the use of personal vehicles (City of Winnipeg, 2011b). BRT in Winnipeg will provide an alternative to personal vehicle use and encourage the development of TODs that provide easy access to both transit and retail, commercial, and employment opportunities.

Opportunities for TOD support	**Challenges for TOD support**
Methods to reduce GHG emissions are gaining global support; opportunity to promote alternative travel and living options	Carbon and Fuel Tax are controversial; vehicle owners who pay the tax do not always support the revenue being used for transit and related development
Federal and provincial policies that provide financial support for BRT and TOD station area infrastructure	Large portion of the funding is allocated for street renewal projects
Development of plans/policies that support transit-oriented development: *OurWinnipeg Plan, Complete Communities Direction Strategy, Winnipeg TOD Handbook, Transportation Master Plan*	Existing zoning is often inadequate. Rezoning process is long and heavily based on community support. The not in my back yard (NIMBY) complex especially affects progress.
TOD station area planning can be designed to align with capital cost of infrastructure projects	Station area plans (secondary plans) require funding for increased planning and technical staff
Steady increase of population in the last decade with population projected to reach one million by 2031	Winnipeg's topography is prone to flooding and as such provides a unique challenge; drainage needs to be carefully considered
Baby Boomer generation is aging and there is an increasing need for communities that allow people to age in place	Four distinct seasons, including hot summers and cold harsh winters require creative solutions for pedestrian comfort

Table 1. Opportunities and challenges for TOD support in Winnipeg, MB.

Winnipeg is a prairie city located in the Red River Valley, historically prone to flooding till substantial flood protection measures were put in place. Winnipeg experiences four distinct seasons, with hot summers and very cold winters. Winnipeg's weather and topography create "unique planning and development opportunities and challenges" (City of Winnipeg, 2011b, p.6). Opportunities and challenges for TOD support are listed in Table 1.

4.2 BRT in Winnipeg

Politicians have discussed the need for rapid transit in Winnipeg since the late 1960s. The following plans have assessed the need and determined feasibility of rapid transit over the past forty years: "*Winnipeg Area Transportation Study* (1968), *Plan Winnipeg* (1986), *Plan Winnipeg...Toward 2010* (1993), *TransPlan 2010* (1998), *Plan Winnipeg 2020* (2001), and *OurWinnipeg Plan* (2010)" (City of Winnipeg, 2011c, p. 51). Plans for rapid transit in Winnipeg have often been abandoned by officials due to the costs associated with the projects (Winnipeg Free Press, 2012). BRT is advantageous over Light Rail Transit systems in Winnipeg for the following reasons:

- BRT route networks are very flexible and eliminate transfers
- Busways are much more affordable to build – costing significantly less than the equivalent LRT line
- BRT operating costs are lower than those for a comparable LRT system in low density corridors
- BRT systems are much easier to stage. As funding becomes available, a stage can be built and immediately put into service
- BRT systems provide the flexibility to transition to higher capacity systems if demand increases significantly (City of Winnipeg, 2004, p. 2).

However, there are examples of mid-sized Canadian cities, such as Hamilton and Kitchener/Waterloo, that are choosing to build LRT systems, for several reasons. First, implementation is largely made possible by funding support from the federal and provincial governments. In the case of Hamilton, the provincial government has committed up to $1 billion dollars to cover all of the capital costs (Province of Ontario, 2016). Similarly, in Kitchener/Waterloo, the federal and provincial governments are paying two-thirds of the capital costs to build the LRT system. More generally, in the 2017 budget, the Ontario government budget has stated the intent to invest $56 billion dollars into public transit over the next ten years (Province of Ontario, 2017). Second, it is important to note that the LRT system in both these cities are designed to serve as a spine for the medium to high density corridors in an effort to

encourage upward growth, while a BRT system is planned to complement and enhance the service. The Hamilton LRT is planned to be a 14-kilometer line running east to west from Eastgate Square to the McMaster University, while a 16-kilometer BRT route is simultaneously proposed to run between the airport and the harbour (Dongen, 2017). Similarly, the first stage of rapid transit in Kitchener/Waterloo, named ION, is planned to include a 19-kilometer LRT line that will operate from the Conestoga Mall transit terminal in Waterloo to the Fairview Park Mall transit terminal in Kitchener. Stage one is also planned to include a 17-kilometer BRT route from the Ainslie Street transit terminal in Cambridge to the Fairview Park Mall transit terminal in Kitchener (Region of Waterloo, 2012).

BRT and LRT are often assessed, and advocated for, as two modes of which only one can exist in a city. However, in some cases both modes need to exist to serve the public transportation needs of a city. By implementing both BRT and LRT, Hamilton and Kitchener/Waterloo rapid transit has the potential to provide fast and reliable service to outlying low-density neighbourhoods while directing growth to existing urban areas, corridors and station areas, to curb suburban sprawl as set out by Ontario's *Places to Grow* initiative (Province of Ontario, 2017). The growth plan was introduced in 2006 and has guided growth in a compact and sustainable manner, and plans to continue to "build on the progress that has been made towards the achievement of complete communities that are compact, transit-supportive, and make effective use of investments in infrastructure and public service facilities" (Province of Ontario, 2017, p.5). On the basis of this progress, the Ontario government has and continues to make substantial financial investments in the transit projects of each municipality covered by the growth plan, to support the regional transit network. Therefore, if the BRT system in Winnipeg gains high level government support, it can be implemented as a full BRT and have the potential to provide service similar to that of LRT, which is fast, reliable, comfortable, and positively affects land-use.

4.2.1 Southwest Rapid Transit Corridor Stage 1

Bus rapid transit opened in Winnipeg on April 5, 2012. Stage 1 of the Southwest Rapid Transit Corridor (SWRTC), depicted in green in Figure 1, is 3.6 kilometers in length and extends between Queen Elizabeth Way at Stradbrook and Jubilee at Pembina Highway. Construction of Stage 1 of the Transitway includes four rapid transit stations: Jubilee Station, Fort Rouge Station, Osborne Station, and Harkness Station, along with new active transportation pathways. The Transitway is a "high-speed roadway for buses, physically separated from the regular street system. Buses operate at speeds up to 80 km/h, free of any other traffic, providing very fast, reliable service" (City of Winnipeg, 2016e, n.p.).

4.2.2 Southwest Rapid Transit Corridor Stage 2

An alignment study was done for Stage 2 of the SWRTC in 2012, which recommended the Transitway extend through the Parker Lands and along the Manitoba Hydro transmission corridor (Dillon Consulting Limited, 2013). While the recommended route is longer than routes parallel to, or on Pembina Highway, the routing eliminates several at-grade intersection crossings, which improve safety and increases service speed (Dillon Consulting Limited, 2013). City Council adopted the recommendation in late 2012. Stage 2, depicted in purple in Figure 4, will be 7-kilometers in length, extending service from Pembina at Jubilee, to the University of Manitoba. Stage 2 of the SWRTC was approved for provincial and municipal funding in February, 2015.

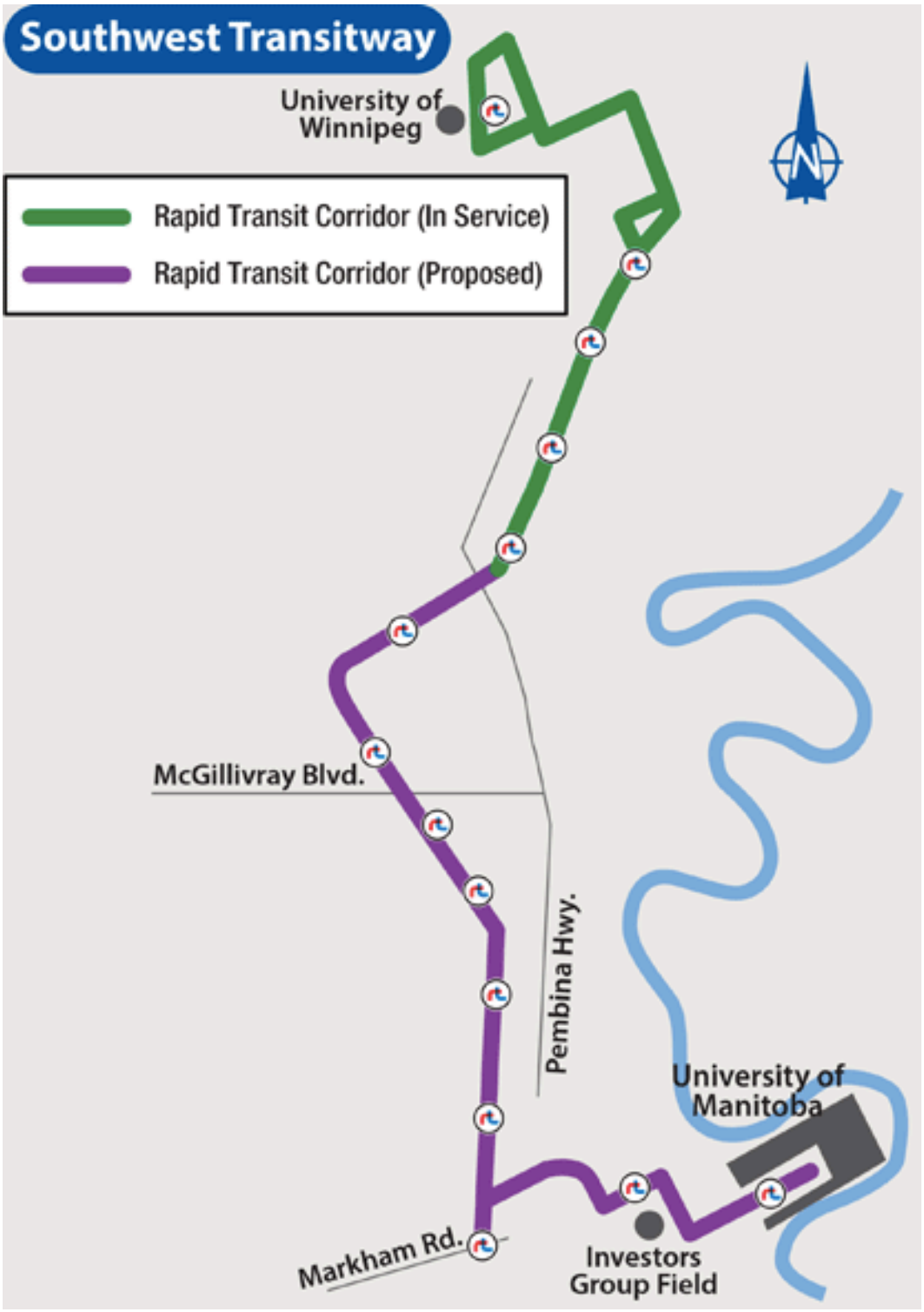

Figure 4. Stage 1 and 2 of the Southwest Rapid Transit Corridor. Reprinted from Southwest Transitway in *Winnipeg Transit*, 2017. Retrieved January 15, 2017, from http://winnipegtransit.com/en/major-projects/rapid-transit. Copyright 2017 by City of Winnipeg. Reprinted with permission.

A Request for Proposals (RFP) was put out by the City of Winnipeg on July 17, 2015 to complete Stage 2 of the SWRTC and the Pembina Highway Underpass project. The Plenary Roads Winnipeg - part of the Plenary Group, which is an international infrastructure corporation with Canadian offices in Vancouver and Toronto - was announced as the successful bidder on May 13, 2016 with construction anticipated to begin summer 2016 (City of Winnipeg, 2016d). Following a three-year construction schedule and a period of testing and training, the Transitway is expected to be operational in April 2020 (City of Winnipeg, 2016d).

4.2.3 Eastern Rapid Transit Corridor

The *Winnipeg Transportation Master Plan* identifies the eastern corridor as the next stage of rapid transit development. The City of Winnipeg issued an RFP to complete a functional study in May 2016, for the routing of the next rapid transit corridor from downtown to eastern Winnipeg, named the Eastern Rapid Transit Corridor (ERTC). MMM Group Limited has been selected to conduct the functional study which "sets out the conceptual design, identifies associated transportation improvements as well as the broad implementation strategy for the next rapid transit route" (City of Winnipeg, 2016c, n.p.). The ERTC study will be conducted and prepared with extensive public engagement in hopes to set a "new standard for thoroughness and making use of best practices, all under the purview of the City's Office of Public Engagement" (City of Winnipeg, 2016c, n.p.).

The ERTC is set to connect downtown to Regent Avenue in Transcona, through one of two possible routes shown in Figure 5. The first possible route will be through South Point Douglas and the second possible route will be via North St. Boniface. Both routes require infrastructure improvements, which will be reviewed in the functional study. Routing through South Point Douglas will require both upgrades and modifications to the Louise Bridge and

routing through North St. Boniface will require an extension to Stradacona Street. Recognizing that rapid transit can serve as a catalyst for development, the study will also identify strategic investments for development in accordance with principles from the *Complete Communities Direction Strategy* (City of Winnipeg, 2016a).

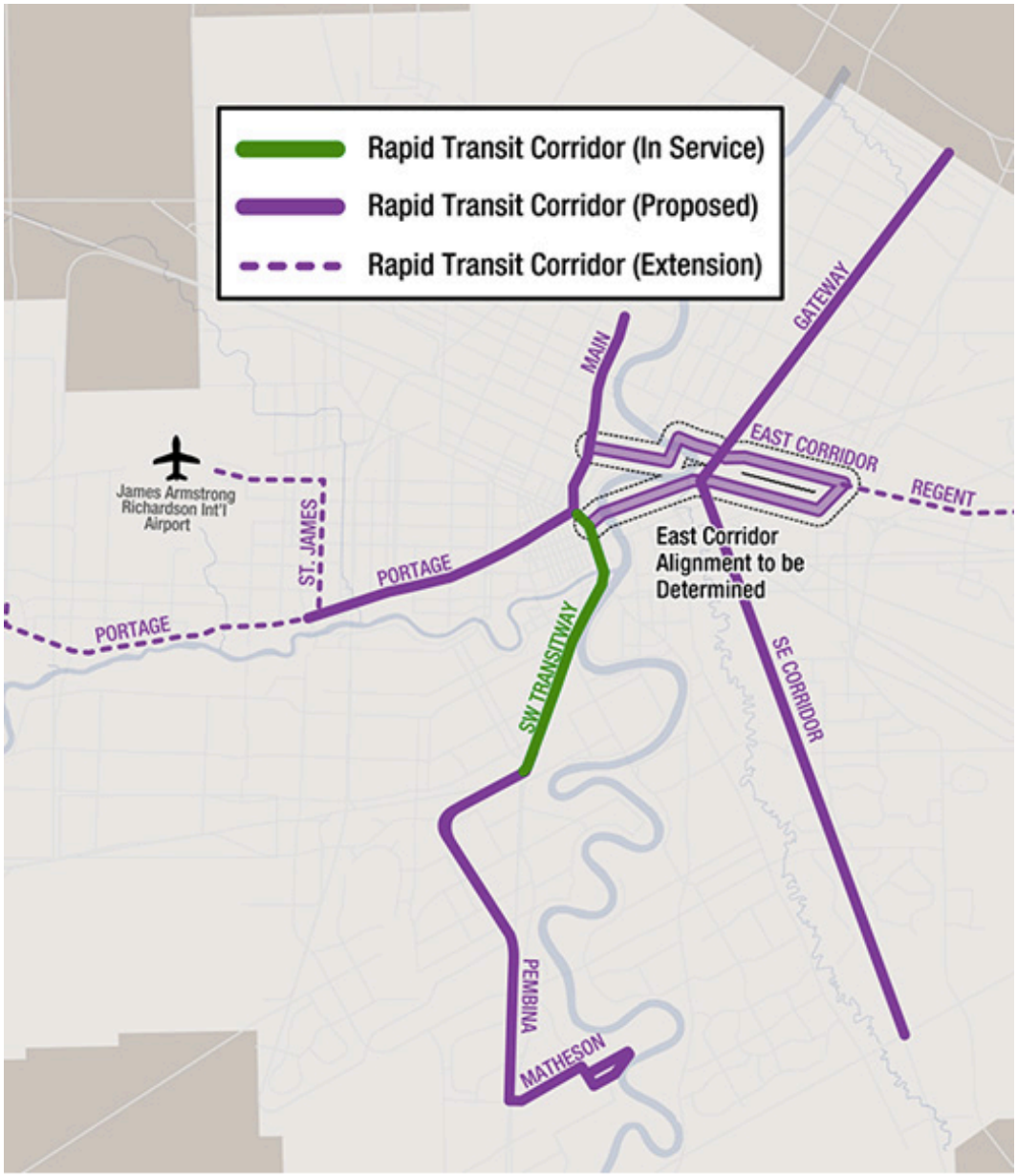

Figure 5: Eastern Rapid Transit Corridor. Reprinted from Rapid Transit in *Winnipeg Transit,* 2017. Retrieved January 15, 2017, from http://winnipegtransit.com/en/major-projects/rapid-transit. Copyright 2017 by City of Winnipeg. Reprinted with permission.

Kildonan Place serves both as a destination for shoppers, and transfer point for those travelling by transit. The ERTC has the potential to serve as a catalyst to modify existing policies to allow TOD at this location and will increase density, amenities, and provide opportunity for create a vibrant neighbourhood. Kildonan Place Mall (KPM) is a potential terminus of the ERTC and has potential to be developed as a station area incorporating TOD principles. KPM is bound to the north by rural residential, to the north west by suburban residential, to the south by big box retail and industry, and to the southeast by a suburban residential neighbourhood. There is an abundance of surface parking lots servicing large scale retail along Regent Avenue and surrounding KPM. 140 stalls in the surface parking directly to the east of KPM are currently being used by the Kildonan Place Park-and-Ride (City of Winnipeg, 2016b). The current development pattern does not encourage active and public transportation use, rather it encourages vehicular activity.

Kildonan Place serves both as a destination for shoppers, and transfer point for those travelling by transit. TOD at this location can increase residential densities, amenities, and provide opportunities for increased pedestrian and public transit use. For TOD implementation at the KPM station area, there are two main issues that will need to be addressed. First, the area surrounding KPM is largely zoned for single use retail and commercial development and will need to be amended to accommodate a mix of residential, retail and commercial. Second, connections will need to be made across six lanes of traffic on Regent Avenue and across Lagimodiere Boulevard, between KPM and the surrounding neighbourhoods.

4.2.4 Funding as the driving factor

In addition to political support for BRT systems, financing plays the next largest role in implementation of BRT in Winnipeg. The capital and operational costs of BRT require funding

from the federal, provincial, and municipal governments. The goals and objectives set out in *OurWinnipeg Plan* and the accompanying direction strategies need to be backed by political support, primarily in the form of funding. The financial support from senior levels of government will be used to fund rapid transit infrastructure capital costs. However, if transit projects are backed by federal and provincial government funding, developers will get a sense of permanency and gain the confidence required to support development in TODs. Large scale infrastructure projects that require long-term planning and large capital contributions cannot be funded solely by Canadian municipalities who are dependent primarily on property taxes. Winnipeg's preliminary 2018 Budget projects 54.2% of the revenue for the operating budget will be collected from property taxes. The total property tax revenue projection is $585.6 million, up 2.33% from the 2017 budget. However, of the 2.33% increase, only .33% is dedicated for rapid transit funding (Stage 2 of the SWRTC). The remaining 2%, which amounts to $11 million, is dedicated to capital costs for regional and local street renewal. Overall the City has a 6-year capital investment plan to dedicate $881 million to regional and local street renewal, and only $214.1 million for the transit system. (City of Winnipeg, 2017a).

The language in the preliminary 2018 budget is highly supportive of street renewal capital cost spending, but the language in support of transit capital costs is not as enthusiastic. In fact, the introduction to transit spending begins with "Transit ridership is down". The budget then goes on to justify the 25 cent fare increase and route cuts to provide savings over the year. A disparity in support for transit and street renewal is also clearly visible through the funding allocation. As such, current and future rapid transit infrastructure and subsequent TOD infrastructure will be dependent on other means of funding and not solely on property tax

revenue. Senior government funding and other means of urban financing will need to be considered.

Gas tax revenue can be one provincial funding source used to offset capital costs of rapid and active transit infrastructure. The federal government signed the Canada-Manitoba Gas Tax Agreement in 2005, which allocates a portion of the funds back to provinces and territories, which then is provided to municipalities to help pay for infrastructure projects. The federal government has committed a total of $340.5 million in gas tax revenue to Manitoba from 2014-2018. The amount will more than double to $713 million in the subsequent 10-year period. The gas tax funds can be used by municipalities for a wide variety of projects including public transit, wastewater infrastructure, drinking water, solid waste management, community energy systems, local roads and bridges, capacity building, highways, local and regional airport, short-line rail, short-sea shipping, disaster mitigation, broadband and connectivity, brownfield redevelopment, culture, tourism, sports, and recreation (Canadian Fuels Association, 2015). In Winnipeg, between April 1, 2013 and March 31, 2014, the funds were primarily used for local road and bridge projects; 67.5%, which amounts to $33,761907, of funds were used for local roads and bridges while only 32.5%, which amounts to $16,236,504, of funds used for public transit (Province of Manitoba, 2017a).

Considering the large amount of funding available for road renewal infrastructure as evident by the figures above, there is an opportunity for future gas tax revenue to be used for active and rapid transportation, and TOD station area development. More particularly, the gas tax can be used to fund BRT infrastructure and on street bicycle lanes that help support multi-modal transportation options. Since the gas tax is not applicable to cyclists, it is important to recognize that there will be pushback from vehicles owners, however the intent should be to

encourage using other modes of transportation so there is less need for road repair and they too will not have to pay the tax.

Federal legislation mandating carbon pricing in all provinces and territories by 2018 will provide another possible funding source for BRT infrastructure and TOD station area development. The goal of mandating a carbon tax is to reduce GHG emissions and support innovative and clean future growth (Government of Canada, 2016a). The carbon tax is not new, there are provinces who have already implemented such a tax; those provinces include British Columbia (2008), Alberta (2015), and Quebec (2013). The proposed federal policy provides two options for implementing the carbon tax. The first is to directly price carbon pollution starting at $10 per tonne in 2018 and then rising incrementally each year to reach $50 per tonne in 2022. The second option is to implement a cap-and-trade system, where industries who do not meet their GHG reduction targets can purchase credits from other industries that have exceeded their targets. All revenue collected through the carbon tax will remain in the province or territory where it is generated (Government of Canada, 2016b).

The Manitoba government supports the proposed federal policy but does not think it provides enough flexibility for provinces and territories who have implemented strategies that work within their jurisdictions. One example is electricity generation, for example: Ontario uses nuclear power, Saskatchewan uses fossil fuels, and Manitoba generates 98% of its electricity from clean and renewable hydro. As such, Manitoba has already minimized this part of its provincial carbon footprint at a cost to Manitoba residents. The additional $50 per tonne carbon tax would amount to approximately $500 million annually, which is an additional $335 dollars per year for residents. The Manitoba government suggests a carbon tax that is more in line with its clean and renewable electricity that reflects the provincial economic reality. The Manitoba

government is working on preparing a Made-in-Manitoba Climate and Green Plan that will reduce emissions while taking into account the contributions to clean energy already made by the province, and the higher electricity rates paid by residents (Province of Manitoba, 2017b).

The provincial government has announced that under the Made-in-Manitoba Climate and Green Plan, in 2018, Manitoba residents will pay an additional five cents per litre of gasoline and an additional 5 cents per cubic meter on natural gas. The new tax will generate $260 million of revenue for the province. However, there is no commitment made to how those funds will be spent. Premier Pallister released a general statement about where funds could be spent, citing green technology or tax relief to offset the federally imposed carbon tax. Since the goal of the carbon tax is to adapt to climate change and reduce GHG emissions, and transportation accounts for 22 percent of Canada's annual GHG emissions, there is an opportunity for the provincial government to dedicate the funds to promote alternative transportation modes, in particular, promote BRT ridership. If all three levels of government back their dedication to BRT infrastructure with policy and funding, it will provide developers with the confidence to invest in TOD and station area planning.

In addition to the funds generated by the carbon tax, the federal government, in collaboration with the Federation of Canadian Municipalities, has made funds available to municipal projects that reduce GHG emissions through the Green Municipal Fund, since 2000. Funds are distributed in the form of grants or loans. In 2017, $72 million were committed to support capital and pilot projects, feasibility studies, and plans that reduce GHG emissions. The 42 projects that received funding were anticipated to reduce 310,000 tonnes of CO2, which is the equivalent of eliminating 71,000 vehicles on the road annually (Federation of Canadian Municipalities, 2017).

Tax increment financing (TIF) is another provincial policy that could assist in funding station area development in TODs. TIF uses future tax gains to subsidize current improvements, whether to increase housing supply, operate and maintain existing infrastructure, or improve local streetscapes. When new development and improvements to a neighbourhood occur, the tax revenue increases, which is used to provide upfront funding for both public and private projects. Using future tax revenue to fund projects means there is no need to use existing capital and public funding sources. An example of the use of TIF in Winnipeg is for the Sport, Hospitality and Entertainment District (SHED). Funds for the SHED come from both the provincial and municipal property tax pools and are not returned to the developer, but used to invest into the public realm surround the projects (Copping, 2015). TIF also provides developers with an opportunity to produce developments that can be competitive in price with suburban developments, so that price is not the deciding factor when choosing where to live. While TIF is a useful tool for funding large scale and long-term projects, such as TODs, there is a possibility of using TIF for too many projects, which ties up a large amount of tax revenue that cannot be used towards required improvements in other parts of the city. Another challenge of using TIF is the possibility of a funding short fall if tax increases do not meet initial projections Federation of Canadian Municipalities, 2015).

Provincial policies supporting transit and transit-oriented development have been implemented across Canada. Examples of two provinces using provincial funding are British Colombia (Gas Tax Strategic Priorities Fund), and Ontario (Ontario Gas Tax for Transit). Additionally, all Canadian provinces and territories have access to funds for transit projects through the Public Transit Infrastructure Fund (PTIF).

Investments made under the PTIF are meant to reduce commute times, positively affect climate change, promote economic growth. More particularly, funds are to be used to improve current and plan future public transit systems. The Government of Canada committed $3.4 billion in 2016-17 to improve public transit systems across Canada. The funds are allocated based on ridership in the province, which equaled $82,840,000 for Manitoba. The Government of Canada funds up to 50 percent of an eligible projects, with the remaining 50 percent funded by the provincial and municipal governments (Government of Canada, Infrastructure Canada, 2017).

In British Columbia, the Government of Canada committed $2.2 billion in the 2017 federal budget to support the 10-year Metro Vancouver transportation plan. More particularly, the funds will be used to "[replace] the Pattullo Bridge, creat[e] light rail transit in Surrey, [extend] the Millennium Line along the Broadway corridor to Arbutus Street and [add] more rail cars and upgrad[e] stations along the existing SkyTrain system" (Slattery, 2017). To match the federal government's contribution, the Province has also committed $2.2 billion, which accounts for 80 percent of the capital costs required. The remaining funds will come from municipalities and be generated through "property taxes, development cost levies and an increase to the gas tax" (Kieltyka, 2017). Another source of provincial funding support is provided in the form of the Gas Tax Strategic Priorities Fund (SPF). This funding source provides 100 percent of the capital costs for eligible projects, up to $6 million per project. Approximately $28 million in revenue from the $250 million annual federal Gas Tax Fund is allocated to the SPF to fund large-scale and innovative strategic investments that further economic growth and cleaner environments (Union of BC Municipalities, 2012).

The Ontario government also provides significant financial support to transit projects across the province in an effort to reduce congestion, commute times, and GHG emissions. One example of provincial funding is the Ontario Gas Tax for Transit, which allocates the equivalent of 2 cents per litre of gas to municipalities. The revenue equaled $321 million in 2017. The province has further committed to doubling the funds to $642 million per year by 2021. Another source of provincial funding for transit is the federal Gas Tax Fund, which has committed over $3 billion in the last decade. The PTIF is also a significant source of funding. For example, the federal government has committed $750 million to transit projects in 2017-18, with an additional billion dollars annually after that period. The provincial government has additionally dedicated $3.5 billion over 10 years for transportation and priority infrastructure projects (Association of Municipalities Ontario, 2017). One example of the federal and provincial funding is the dedication of $333 million in federal funding under the Building Canada Fund – Major Infrastructure Component to the Finch West LRT project, to which the Government of Ontario has committed $1.2 billion. The Finch West LRT service will "move more people faster through the busy Finch West corridor than the existing bus service, provide new regional travel options for transit users, connect to GO Transit bus services and Mississauga and Brampton local bus services, and support new economic growth and job creation in the region" (Cison, 2017b).

The research shows that there are many funding sources available for rapid and active transportation infrastructure, however it is a matter of what the municipal, provincial, and federal governments prioritize. Revenue from the different provincial and federal programs can either be used to support transit infrastructure planning or build more roads. In the case of Winnipeg, even though the goals and objectives set out in *OurWinnipeg Plan* support rapid transit and TOD, the

financial and political backing is not commensurate. For example, there is a clear opportunity for the provincial government to invest the fuel tax and federal carbon tax revenue back into transit.

The Government of Canada Public Transit Capital Trust budget in 2008 included support for "capital investments in public transit infrastructure both as a means to reduce traffic congestion and to reduce carbon dioxide and other emissions" (City of Winnipeg, 2012). Stage 1 of the SWRTC cost a total of $138 million, of which "The Government of Canada [funded] $17.5 million from the Public Transit Capital Trust, while the Province of Manitoba [shared] the balance of the project costs with the City of Winnipeg" (City of Winnipeg, 2012, n.p.).

The Province of Manitoba and the City of Winnipeg will jointly fund Stage 2 of the SWRTC. With the announcement of provincial and municipal funding on November 19, 2013 the City of Winnipeg could make an application to request the remaining project costs through the P3 Canada Fund from the Government of Canada (Province of Manitoba, 2013). Funding for Stage 2 of the Southwest Rapid Transit Corridor has been approved as part of an integrated project including the redevelopment of the Pembina-Jubilee Underpass and will "include additional vehicle and bike lanes, with each government providing up to $225 million toward the integrated project" (Province of Manitoba, 2013, n.p.). The Government of Canada announced its contribution of $137.3 million dollars on February 9, 2015 (City of Winnipeg, 2016d). The total cost for Stage 2 of the SWRTC is estimated to be $425 million, with the total price of the integrated project to be $587.3 million (City of Winnipeg, 2016c). The integrated project will be developed as a public-private partnership in which the private developer will maintain the project for a "30-year concession period from 2019-2049, at which point it will be turned back over to the City in as-new condition" (City of Winnipeg, 2016c). While many Canadian governments have adopted P3s in public service developments, critics such as the Canadian

Union of Public Employees are skeptical about their implementation and benefits (Loxley and Loxley, 2010). Critics argue that private sector costs are not reviewed in depth against public sector costs, which can at times be cheaper if performed by public sector employees. Additionally, engaging in a P3 moves jobs from the public to private sector while still being funded with public money. Nonetheless, governments continue to use P3s citing a decrease in project costs and increased efficiency (Loxley and Loxley, 2010).

4.2.5 Conclusion

Stage 1 of the SWRTC is expected to save riders 4-8 minutes in travel time between downtown and the University of Manitoba compared to personal vehicle use. The modelling predicts there will be a further decrease of 5-8 minutes once Stage 2 is implemented (Canada, Deloitte LLP, 2014). With the implementation of Stage 2 of the SWRTC, an increase of 12% to 15% in current ridership is estimated to occur in the years following construction. The increase is expected to be attributed to Winnipeg's growing population, expected increased speed, and greater convenience of rapid transit versus personal automobile use (Canada, Deloitte LLP, 2014). Stage 2 of the SWRTC could also experience increased ridership due to the introduction of U-Pass, a reduced fair pass available to all full-time students attending the University of Winnipeg or the University of Manitoba (University of Manitoba Students' Union, 2017).

Increased ridership and a decrease in personal vehicle use presents opportunities for TOD at station areas along rapid transit corridors. TOD provides access to active and rapid transit, housing, retail, and commercial opportunities. The SWRTC present's opportunities for "moderate to higher density compact mixed-use and pedestrian-oriented development located within proximity of major transit stops and in the adjacent designated TOD sites" for example

within MRS designated sites such as the Sugar Beet Lands, Fort Rouge Yards, and the Old Southwood Golf Course (Canada, Deloitte LLP, 2014, p.3).

4.3 Plans/Policies in place to support TOD in Winnipeg

Four plan and policy documents that influence TOD in Winnipeg, are reviewed next: *OurWinnipeg Plan, Complete Communities Direction Strategy, Winnipeg Transportation Master Plan*, and the *Winnipeg Transit-Oriented Development Handbook.* The chapter introduces the plan or policy and accompanying documents and outlines directions, strategies, and implementation tools for each.

4.3.1 OurWinnipeg Plan

OurWinnipeg Plan, the 25-year municipal development plan to guide the city's growth, was adopted in August, 2011 (City of Winnipeg, 2011b, p. 4). The development of a municipal plan is a by-law requirement in the *City of Winnipeg Charter* (Province of Manitoba, 2000). *OurWinnipeg Plan* requires approval from the Province, however the plan is adopted as a municipal by-law. The accompanying direction strategies are created and approved solely by the City of Winnipeg (City of Winnipeg, 2011b).

The development plan's vision statement "OurWinnipeg: living and caring because we plan on staying" (City of Winnipeg, 2011b, p. 20) was developed through an extensive 12-month collaborative consultation process. Thousands of participants were involved using Speak Up Winnipeg as a medium. The public could participate in the following variety of ways: online, in person, and at open houses and meetings (City of Winnipeg, 2011b). The vision statement "considers future generations' social, economic and environmental wellbeing in the decisions we make today" (City of Winnipeg, 2011b, p. 20).

The collaborative consultation process helped produce *OurWinnipeg Plan*. *OurWinnipeg Plan,* illustrated in Figure 6, is implemented mainly through its accompanying four direction strategies as set out below:

- *A Sustainable Winnipeg Direction Strategy*: this document guides economic, environmental and social sustainability
- *Complete Communities Direction Strategy*: this document guides the City's land use and development
- *Sustainable Transportation Direction Strategy*: this is a vision document for a transportation master plan
- *Sustainable Water and Waste Directional Strategy*: this is a vision document for managing water and waste to ensure public health and safety as well as maintain natural environments (City of Winnipeg, 2011b).

The *Our Winnipeg Plan* provides directions and strategies for supporting and achieving the objectives, with three main areas of focus:

1. A City That Works: a city that is not only well run but also supports "various lifestyles, providing a range of options for living, working and playing", diversity of housing types and transportation choices for a variety of demographics is necessary (City of Winnipeg, 2011b, p. 2).
2. A Sustainable City: this can be evaluated by the extent of policies and programs that "respect and value the natural and built environments–protecting our city's natural areas and heritage resources" (City of Winnipeg, 2011b, p. 3).
3. Quality of Life: three key aspects that provide a good quality of life are "access to opportunity, the maintenance of vital, healthy neighbourhoods, and being a creative city with vibrant arts and culture" (City of Winnipeg, 2011b, p. 3). The City of Winnipeg will need to collaborate with other governments that are directly responsible for the aforementioned areas in order to ensure they are available to all citizens (City of Winnipeg, 2011b, p. 3).

Additionally, a variety of *OurWinnipeg* Action Plans include "communications and outreach, which is critical to fostering strong collaborative working relationships, and will draw from measurement and continuous improvement loops, which is critical to effective decision making and action" (City of Winnipeg, 2011b, p. 89). The communications and outreach portion provides opportunities for a variety of stakeholder groups, including community members, to actively participate in City initiatives and projects. For example, Speak Up Winnipeg is an

ongoing medium for public consultations. Implementation plans provide a "strategic focus that pays mind to progress towards the vision and directions of *OurWinnipeg Plan*, and a practical, operational emphasis that connects strategic thinking to ongoing operational planning" (City of Winnipeg, 2011b, p. 90).

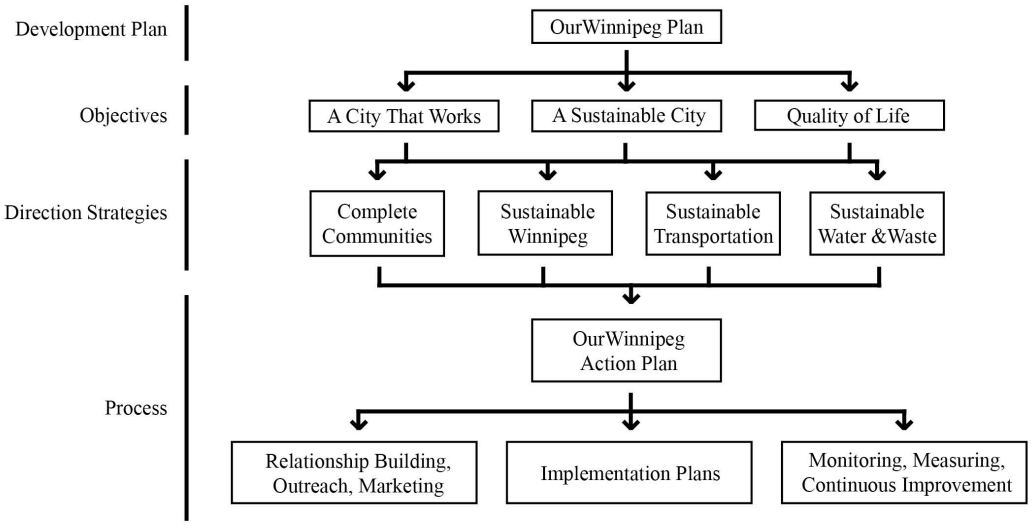

Figure 6: *OurWinnipeg Plan* Implementation Steps. Adapted from *OurWinnipeg Plan, 2011, pg. 89.* Retrieved January 17, 2017, from http://www.winnipeg.ca/interhom/CityHall/OurWinnipeg/pdf/OurWinnipeg.pdf. Copyright 2011 by City of Winnipeg. Reprinted with permission.

The extent of implementation success is to be measured with tools that "identify trends, document change over time and report on results" (City of Winnipeg, 2011b, p. 90). The information gathered by these tools is necessary for transparency to the public and future deliverability of goals and visions set out in *OurWinnipeg Plan*.

OurWinnipeg Plan is not a static document and can evolve overtime in response to changing circumstances. Changes come in the form of amendments to the plan, which are reviewed and approved by the City of Winnipeg. The *City of Winnipeg Charter* states that "City

Council must begin a review of the Plan at least once within five years after adopting it, and if required to do so by an order of the provincial minister who administers the Charter" (City of Winnipeg, 2011b, p. 92). This keeps *OurWinnipeg Plan* relevant and will aid the success of its implementation.

4.3.2 Complete Communities Direction Strategy

The *Complete Communities Direction Strategy* provides a framework for Winnipeg's physical growth and development. It does not define development as it currently exists, but rather how it is envisioned for the future (City of Winnipeg, 2011a, p. 2). The guiding vision for the document states:

> The City of Winnipeg is planned and designed based on a logical urban structure that focuses growth and change to enhance existing assets, to create complete communities and complete existing communities, and to ensure a socially, environmentally and economically sustainable future through the integration of transportation planning, land uses, built forms and urban design (City of Winnipeg, 2011a, p. 3).

Complete Communities are defined as "places that both offer and support a variety of lifestyle choices, providing opportunities for people of all ages and abilities to live, work, shop, learn and play in close proximity to one another" (City of Winnipeg, 2011a, p. 4).

Complete Communities Direction Strategy provides directions and implementation tools for development of the following areas: Transformative Areas (Downtown, Centres and Corridors, Major Redevelopment Sites, New Communities); Areas of Stability; Employment Lands; Commercial areas; Parks, places, and open spaces; Rural and agricultural areas; Airport Area; Aboriginal Economic Development Zones; Capital Region; Urban Design; and Heritage Conservation (City of Winnipeg, 2011a). For the purposes of this research, two Transformative Areas are further researched. Transformative Areas, particularly Centres and Corridors (Regent

and Lagimodiere area, Fort Rouge Yards) and Major Redevelopment Sites (Sugar Beet Lands, Fort Rouge Yards, and the Old Southwood Golf Course) that can accommodate significant changes and development (City of Winnipeg, 2011a).

The two Centres and Corridors, named above, provide an opportunity for compact and pedestrian friendly growth and development. Mixed-use development that accommodates residential, commercial, and retail density promotes walkable neighbourhoods with all elements of live, work, and play. To develop complete communities in Centres and Corridors a variety of housing types and transportation choices are essential.

Major Redevelopment Sites (MRS) can also become compact and pedestrian friendly neighbourhoods. This is due to their large size and location – often adjacent to existing neighbourhoods and/or corridors - within the existing urban fabric. Proximity to existing neighbourhoods means there is existing infrastructure, though it might need to be updated to accommodate new development. MRS can be transformed into complete communities by accommodating high-density residential and commercial infill development that provides opportunities for employment (City of Winnipeg, 2011a). The proximity of MRS to high frequency transit also provides an opportunity for the sites to be developed with transit-oriented principles (City of Winnipeg, 2011a).

The *Complete Communities Direction Strategy* is meant to be implemented through a collaborative and transparent development process as illustrated in Figure 7. To effectively implement the *Complete Communities Direction Strategy*, planning and development efforts are "integrat[ed] with other city processes, such as infrastructure and transportation planning, economic development initiatives and the City's capital budgeting process" (City of Winnipeg, 2011a, p. 136). A variety of new and existing tools are required for proposed developments to be

approved in a timely fashion. There are existing "fiscal, planning and sustainability tools" and will be "new and innovative tools such as strategic infrastructure investment, partnerships and demonstration projects" (City of Winnipeg, 2011a, p. 138).

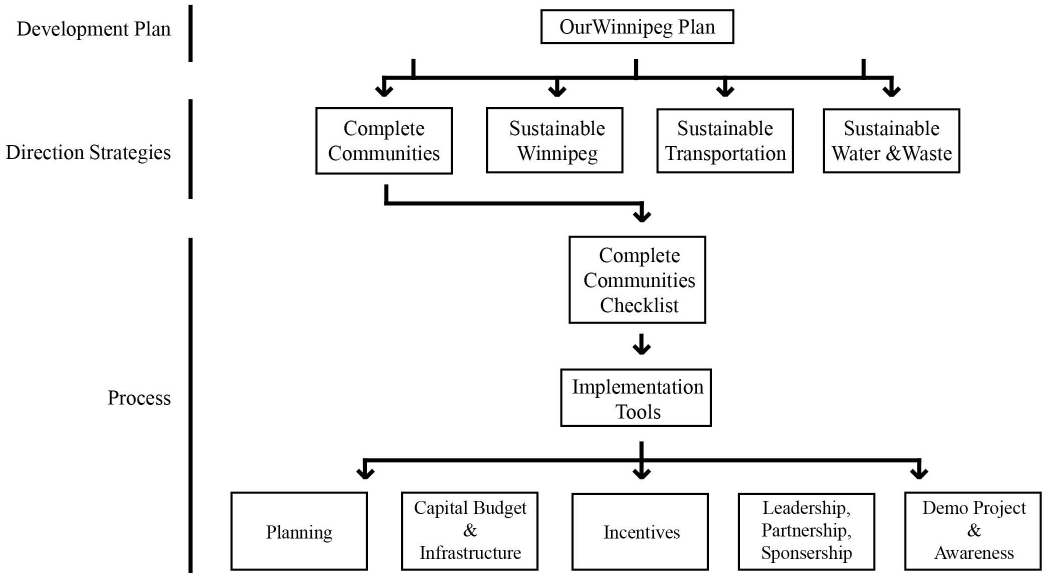

Figure 7: *Complete Communities Direction Strategy* Implementation Tools. Adapted from *Complete Communities Direction Strategy, 2011, pg.14.* Retrieved January 17, 2017, from http://www.winnipeg.ca/interhom/CityHall/OurWinnipeg/pdf/CompleteCommunities.pdf. Copyright 2011 by City of Winnipeg. Reprinted with permission.

Complete Communities Direction Strategy identifies developing an Implementation Toolbox as key priority, intended to provide information about the application of each implementation tool. The following implementation tools are suggested in the *Complete Communities Direction Strategy* to develop a Complete Communities Checklist:

- Planning: statutory plans with accompanying policies to guide growth as well as non-statutory concept plans. A *Planning Handbook* that outlines the content, format, and processes for each plan is also recommended to make implementation effective and efficient.
- Capital Budget/Infrastructure Alignment: budgeting that is aligned with infrastructure requirements will lead to better financial planning and make the governmental process more efficient
- Incentive Tools: such as quicker project approval processes or grants and tax increment financing.
- Leadership, partnership, and sponsorship: collaboration within organizations and with

a variety of stakeholders.
- Demonstration Projects: this allows Winnipeg residents to see how Complete Communities goals and objectives materialize and provide sustainable and high quality developments.
- Marketing: this will generate interest in the goals and objectives of Complete Communities and prompt organizations to innovate their practices (City of Winnipeg, 2011a, p. 138-139).

The checklist is meant to be a "non-regulatory evaluation tool providing a consistent and comprehensive guide to Complete Communities objectives [with a purpose to] facilitate a collaborative conversation with developers at the outset of the development application and approval process" (City of Winnipeg, 2011a, p. 139).

4.3.3 Winnipeg Transportation Master Plan

The *Winnipeg Transportation Master Plan* (TMP) outlines land-use and transportation integration policies to achieve potential development in a manner set out by *OurWinnipeg Plan* and *Complete Communities Direction Strategy* for a 20-year period. Future development should provide citizens increased transportation options that reduce personal automobile reliance and result in "reduced congestion, increased transit ridership, reduced emissions and reduced personal transportation costs" (City of Winnipeg, 2011c, p. i). The TMP is meant to ensure that a variety of transportation mode choices are recognized, planned, and budgeted for as the city grows and *OurWinnipeg Plan* is implemented (City of Winnipeg, 2011c).

The TMP sets out goals and objectives with accompanying directions and strategies for implementation. Six strategic goals/objectives identified are:

- A transportation system that is dynamically integrated with land use.
- A transportation system that supports active, accessible and healthy lifestyle options
- A safe, efficient and equitable transportation system for people, goods and services.
- Transportation infrastructure that is well maintained.
- A transportation system that is financially sustainable
- A transportation system that reduces its greenhouse gas emissions footprint and meets or surpasses climate change and emissions reduction goals set by the City and

the Province (City of Winnipeg, 2011c, p. 9-11).

Section 5.3.2 of the TMP on rapid transit, includes accompanying directions and strategies, which will be further discussed next for their relevance to this research. The TMP considers rapid transit necessary to "ensure that residents are provided with a viable alternative to the automobile, to reduce existing and future road congestion, and to build a transportation system that is capable of serving future generations" (City of Winnipeg, 2011c, p. 51). Preparing the TMP required research to confirm and justify the need for rapid transit in Winnipeg in the following six corridors: Southwest, West, East, North, Southeast, and Northeast. The corridors were assessed using the following 8 indicators: length (km), 2031 peak point ridership, 2031 average residential and employment density within 500m of corridor, number of regional mixed-use centres within 1 km, number of major redevelopment sites within 1 km, estimated capital cost for LRT and BRT, and recommendations on phasing (immediate, short term, and long term) (City of Winnipeg, 2011c).

The TMP can be implemented through a variety of action items. It is essential to implement the various action items early in the process to gain public support and momentum for implementation. The first action item identified by the TMP is a Complete Streets strategy. A Complete Street Strategy allows safe movement on and across streets by "pedestrians, cyclists, transit users, and motorists of all ages and abilities" (City of Winnipeg, 2011c, p. 37). Once the strategy is established, pilot projects should be developed and implemented to inform and educate the public (City of Winnipeg, 2011c). The next action item for TMP implementation is a continued effort to complete the rapid transit network. Completion of the SWRTC will exemplify that transit can be an attractive alternative to personal vehicle use, resulting in increased ridership. In turn, the benefits of additional rapid transit corridors will become

apparent and the system will gain public support.

Lastly, regional transportation issues need to be considered. The TMP predicts there will be increased travel demands between Winnipeg and surrounding areas, which will need to be considered. For regional transportation issues to be addressed, a working group with representatives from Capital Region municipalities and Manitoba Infrastructure and Transportation needs to be organized (City of Winnipeg, 2011c, p. 85). The Partnership of the Manitoba Capital Region (PMCR) is an organization that works with Capital Region Municipalities on issues, such as regional transportation, that require stakeholder input across municipal boundaries (Partnership of the Manitoba Capital Region, 2015). The PMCR, in collaboration with the Province of Manitoba, drafted the *Capital Region Transportation Master Plan* (CRTMP) in 2014 (Partnership of the Manitoba Capital Region, 2014). The CRTMP was developed to guide future growth sustainably and promote connectivity within the region by incorporating infrastructure planning into each municipality's land-use planning (Partnership of the Manitoba Capital Region, 2014).

TMP implementation relies on the above items, most which are only possible through funding assistance from both the federal and provincial governments (City of Winnipeg, 2011c). Much like *OurWinnipeg Plan*, the TMP is not meant to be a static document but to be modified to stay relevant as growth and development in the city evolve. There is a review process in place intended to assess progress of the TMP, through annual updates and progress reports, and provide direction for further implementation:

- Annual updates through Winnipeg's Five-Year Capital Forecast and budgeting process.
- Preparation of an annual report to Council on local transportation conditions, behaviours, needs and trends with joint input from other departments (City of Winnipeg, 2011c, p. 89).

4.3.4 Winnipeg Transit-Oriented Development Handbook

The *Winnipeg Transit-Oriented Development Handbook*, first described in section 3.2, is meant to guide and support successful implementation of TOD by encouraging communication between the public, developers, and the City of Winnipeg. The *Winnipeg Transit-Oriented Development Handbook* outlines core TOD principles, provides summaries of successful TODs as examples of best practices in North America, and provides a set of tools for implementing TOD in Winnipeg. The following is an all-encompassing definition of TOD adopted in the *Winnipeg Transit-Oriented Development Handbook* (2011e):

> Moderate to higher density compact mixed-use development, located within an easy five to ten-minute (approximately 400m to 800m) walk of a major transit stop. TOD involves high quality urban development with a mix of residential, employment and shopping opportunities, designed in a pedestrian-oriented manner without excluding the automobile. TOD can be new construction or redevelopment of one or more buildings whose design and orientation facilitate the use of convenient and sustainable modes of transportation, including public transit and Active Transportation (p. 6).

A successful TOD as defined above, requires the following six core principles to be applied:

1. Medium to high-density development that is greater than the community average
2. A mix of uses
3. Compact, high quality pedestrian-oriented environment
4. An active defined centre
5. Innovative parking strategies
6. Public leadership (City of Winnipeg, 2011d, p.16).

TODs are unique in function and size, which is "dependent on the general scale or intensity of development appropriate for that station based on the function of the station and the accessibility of the TOD from the adjacent neighbourhoods" (City of Winnipeg, 2011d, p. 7). Therefore, the principles must be "applied in a manner unique to the place" (City of Winnipeg, 2011d, p. 16). The *Winnipeg Transit-Oriented Development Handbook* (2011d*)* identifies six types of TOD Zones that can potentially be applicable to any given site:

1. Urban Centre: highest density and greatest mix of uses within a TOD, located nearest the transit station.
2. Urban Neighbourhood: same land uses as urban centre, but at medium density.
3. Town Centre: transition between the higher density urban centres and neighbourhoods and the lower density, primarily residential uses.
4. Neighbourhood Medium Density: primarily residential, with some neighbourhood serving retail and local office uses, medium density suburban development scales down the density in a TOD to begin the transition to the adjacent, non-TOD land uses.
5. Neighbourhood Low Density: provides a transition to the adjacent non-TOD land uses. The residential and neighbourhood retail land uses are likely the same as those located outside the TOD.
6. High Frequency Transit Corridor: supporting land uses that are linear in nature rather than extending out from the core. The highest density is located along the corridor, and density is scaled back in the blocks behind the corridor (p. 37 - 38).

Applying the principles and zones listed above in future development plans provides Winnipeg the opportunity to grow in a more compact and less auto-oriented manner.

4.4 TOD-Inspired Designs

The BRT system in Winnipeg stands to serve as a catalyst to draft plans for TOD at specific station areas along the rapid transit corridors. Three sites with TOD-inspired plans in Winnipeg, are reviewed next: The Sugar Beet Lands, Fort Rouge Yards, and the Old Southwood Golf Course. All three sites are designated as a Major Redevelopment Site (MRS) in the *Complete Communities Direction Strategy* which promotes the creation of an Area Master Plan. The resulting table draws comparisons between the three Area Master Plans to provide a clearer picture of TOD potential in Winnipeg. Each plan reported here is organized by the history of site, design process, TOD inspiration, consultation opportunities, and policies referenced.

4.4.1 Sugar Beet Lands Major Redevelopment Site

The approximately 131-acre Sugar Beet Lands MRS, located in south Fort Garry, was purchased by Hopewell Development Corporation in October 2009. The parcel of land, depicted

in Figure 8, is located "immediately to the west of the second stage of the Southwest Rapid Transit Corridor (within 2.3 km of the University of Manitoba) and bounded by Industrial lands to the north and west, Bishop Grandin Boulevard to the south and a Manitoba Hydro Corridor and the Letellier CN Rail Line to the east" (Dillon Consulting Limited, 2014, p. 1).

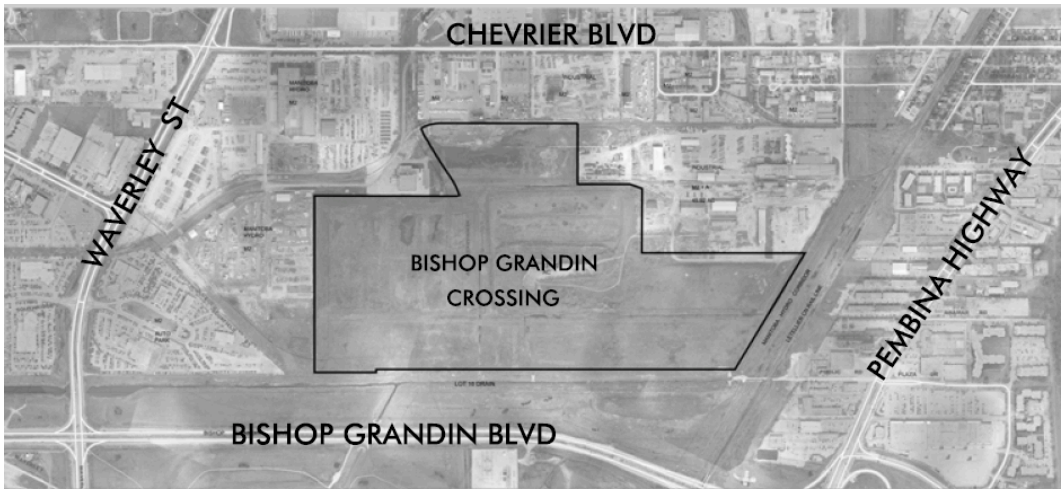

Figure 8. Bishop Grandin Crossing location. Reprinted from *Bike Winnipeg*, 2013. Retrieved January 19, 2017, from http://bikewinnipeg.ca/event/bishop-grandin-crossing-area-master-plan-open-house/#sthash.cjEA8FXJ.dpbs. Copyright 2017 by Bike Winnipeg. Reprinted with permission.

The Sugar Beet Lands MRS was occupied by the Manitoba Sugar Company Ltd. from 1940-1997. Approximately 1,500 tons of sugar beets were supplied to the processing plant daily, and then refined into white sugar. Once the Manitoba Sugar Company Ltd. closed, the land was used to store lime mud residue from the refinery and other businesses occupied the plant (Manitoba Historical Society, 2017). The Sugar Beet Lands MRS identified in the *Complete Communities Direction Strategy* is formally known as Bishop Grandin Crossing. *The Bishop Grandin Crossing Area Master Plan,* prepared by Dillon Consulting Limited on behalf of the developer, Hopewell Development Corporation, (Dillon Consulting Limited, 2014) is:

> a broad framework for the future development of a community. This framework is based on a community vision and includes a land use concept and a series of

policy statements that work together as a guide to implementing the vision over a certain time period (p. 4).

The *Bishop Grandin Crossing Area Master Plan* (BGC-AMP) proposes four precincts, depicted in Figure 9, that will work together to achieve the goals and visions established. The four precincts are Urban Mixed-Use, Mixed-Use Commercial Center, Mixed-Use Employment, and Parks and Open Space. The Urban Mixed-Use Area is closest to the Rapid Transit station and therefore will have high-density housing and mixed-uses. Parking will be reduced or eliminated in this area due to proximity to transit (Dillon Consulting Limited, 2014).

Figure 9. Bishop Grandin Crossing Conceptual Master Plan. Reprinted from *Bishop Grandin Crossing Area Master Plan*, 2014. Retrieved January 19, 2017, from http://winnipeg.ca/ppd/planning/Secondary_Plans/BishopGrandinCrossing/BishopGrandinCrossingAMP-Apr-8-14.pdf. Copyright 2014 by City of Winnipeg. Reprinted with permission.

The Mixed-Use Commercial Center is largely located within walking distance, a 400m – 800m radius, of the Rapid Transit station and will be developed to a pedestrian scale while remaining urban in nature. Parking in this precinct will be screened or positioned behind

buildings, away from the street, allowing for an active streetscape (Dillon Consulting Limited, 2014). The Mixed-Use Employment area is partially within walking distance to the Rapid Transit station, and partially located next to existing heavy industrial areas. Therefore, development within walking distance will be small-scale employment, whereas development next to the existing heavy industry will be large-scale (ex: business park) (Dillon Consulting Limited, 2014). Lastly, the Park and Open Space area will be incorporated throughout the entire site with pathways for pedestrians and cyclists, and plazas and recreational use areas for all (Dillon Consulting Limited, 2014).

The Major Redevelopment Site designation and proximity to the proposed Plaza Drive Rapid Transit Station in Stage 2 of the SWRTC provides the opportunity for the site to be developed using TOD principles "with all of the elements of live, play, and work, including industrial employment lands, within close proximity (10-minute walk) of each other and rapid transit" (Dillon Consulting Limited, 2014, p. 1). For TOD to be realized on the site, "direct pedestrian and bicycle connection between Bishop Grandin Crossing and the Plaza Drive Rapid Transit Station" is crucial. If there is no connection between the site and the rapid transit station, TOD is not viable (Dillon Consulting Limited, 2014, p. 18).

The BGC-AMP was drafted with input from a wide variety of stakeholders. Stakeholder groups included "City departments, elected officials, the land owner and developer, immediately adjacent commercial and industrial land owners and area residents and land owners" (Dillon Consulting Limited, 2014, p. 4). A stakeholder meeting was held on August 20, 2013 to which the seven adjacent landowners were invited. Stakeholders were introduced to the *Complete Communities Direction Strategy*, the concept of TOD, and Hopewell Development

Corporation's vision for the redevelopment of the site. At the end of the meeting, a questionnaire was distributed to gather stakeholder input (Dillon Consulting Limited, 2014). Two open houses were held for the public. Neither open house had a formal presentation; rather members of the consultant team were available to answer questions while attendees browsed project boards and maps. The open houses concluded with a questionnaire that required mostly 'yes' or 'no' responses. There was a poor turnout to both open houses, which can be attributed to several reasons including time, date, and location. However, one attendee noted that he/she thought the limited attendance was due to poor advertisement because some active community members also did not hear about the open houses (Dillon Consulting Limited, 2014). Poor attendance at the first open house did not result in improved advertising methods and even fewer attended the second open house.

The first public open house was held on September 25, 2013 within a ten-minute drive of the site. The open house was advertised in the local paper, via email, and invitational letters (Dillon Consulting Limited, 2014). A total of 30 people attended. Information boards were displayed with background information about the site and Hopewell's vision for how the site might be developed. At the end of the open house, a questionnaire was distributed to gather feedback (Dillon Consulting Limited, 2014). The second public open house was held on January 21, 2014 and advertising methods were the same as the first. A total of 20 people were in attendance. Information boards about the draft Area Master Plan were displayed outlining draft policies, draft land use, and a transportation concept map. At the end of the open house, a questionnaire was distributed to gather feedback (Dillon Consulting Limited, 2014).

The *Complete Communities Direction Strategy*, *Winnipeg Transit-Oriented Development Handbook*, and the *Southwest Rapid Transit Corridor – Stage 2 Alignment Study* were

incorporated into the BGC-AMP for the proposed development of the Sugar Beet Lands MRS (Dillon Consulting Limited, 2014). The following directions were considered from the *Complete Communities Direction Strategy* in drafting the *Bishop Grandin Crossing Area Master Plan*:

- Direction 1: Promote Development of MRS with Proactive and Collaborative Planning Process
- Direction 2: Capitalize on the Proximity of MRS to Rapid Transit and High Frequency Transit
- Direction 3: Facilitate Redevelopment through Incentives, Partnerships and the Removal of Barriers
- Direction 4: MRS will provide for Complete Communities with Significant Levels of Mixed-use, High-density Development, with Strong Urban Design and Attractive Parks, Places and Open Spaces (Dillon Consulting Limited, 2014, p. 6).

As defined in the *Winnipeg Transit-oriented Development Handbook*, the 'Town Centre' typology and 'Urban Neighbourhood' typology are the most relevant to the Sugar Beet Lands MRS. Defining factors of these typologies are "based upon land use mix, net housing density, and regional connectivity and transit frequency" (Dillon Consulting Limited, 2014, p. 8). The 'Town Centre' typology suggests mixed-use, high-density development closest to the Rapid Transit station with high transit frequency, while the 'Urban Neighbourhood' typology suggests mixed-use, medium density with high transit frequency (Dillon Consulting Limited, 2014).

The *Southwest Rapid Transit Corridor – Stage 2 Alignment Study* identifies a rapid transit station at Plaza Drive, which is adjacent to the east side of the Sugar Beet Lands MRS. The location of the rapid transit station allows 2/3 of the site to potentially be developed as a TOD. Development of 2/3 of the site, which is within walking distance to the rapid transit station, should be developed based on TOD principles found in the *Winnipeg Transit-Oriented Development Handbook* (Dillon Consulting Limited, 2014).

The BGC-AMP encouraged TOD on the Sugar Beet Lands (MRS) by incorporating principles from *OurWinnipeg Plan, Complete Communities Direction Strategy,* the *Winnipeg*

Transit-oriented Development Handbook, and the *Southwest Rapid Transit Corridor – Stage 2 Alignment Study.* Next, the Fort Rouge Yards (MRS) and the *Yards at Fort Rouge Area Master Plan* are reviewed.

4.4.2 Fort Rouge Yards Major Redevelopment Site

The Fort Rouge Yards MRS, established in the 1900's, were the largest employer in the area at that time. The yards were home to the main shops of the Canadian Northern Railway including an engine house, machine erecting shops, a blacksmith shop, a freight car repair shop, planning mill, and a powerhouse (Old Time Trains, 2015). By 1975, after rapid decline in the industry due to the invention of the diesel locomotives, the Fort Rouge Yards were closed. The City of Winnipeg took ownership of the 18-acre land parcel after closure of the yards. The parcel was declared surplus in the early 2000's, sold to a private developer, and subsequently sold to Gem Equities Inc. (City of Winnipeg, 2009). The land is close to both downtown and the University of Manitoba. The Fort Rouge Yards MRS, depicted in Figure 10, is located to the east of Stage 1 of the SWRTC and bounded by "Berwick Field and the Jubilee Avenue right-of-way to the south, the new Southwest Rapid Transit Corridor right-of-way to the west, Argue Street on the east, and just past Berwick Place on the north" (+White Architecture and Meg Construction & Consultants, 2010, p. 14).

An area master plan has been drafted for the Fort Rouge Yards, now rebranded as Jubilee Winnipeg, which are designated as a MRS and Centres and Corridors in the *Complete Communities Direction Strategy*. The *Yards at Fort Rouge Area Master Plan* (YFR-AMP) was drafted to "create a physical framework that provides policy to guide future growth of new developments over a certain [period] while enhancing existing attributes of [adjacent] established neighbourhoods" (+White Architecture and Meg Construction & Consultants, 2010,

p. 3). *OurWinnipeg Plan* names The Fort Rouge Yards MRS as the first potential TOD in Winnipeg and as so, it has potential to set precedence for future TODs in the city.

Figure 10. Fort Rouge Yards Site Plan. Reprinted from *Planning, Property and Development*, 2017. Retrieved January 19, 2017, from http://winnipeg.ca/ppd/planning/Secondary_Plans/FortRougeYards/FRY-Site-Plan.pdf. Copyright 2017 by City of Winnipeg. Reprinted with permission.

The Fort Rouge Yards MRS, located near Stage 1 of the SWRTC, have an opportunity to be developed using TOD principles. The YFR-AMP suggests development of mid and high-density housing to accommodate people at various life stages, education levels, and income levels, to reduce sprawl and automobile reliance, and to increase transit ridership (+White Architecture and Meg Construction & Consultants, 2010). The Morley Avenue and Jubilee Avenue Rapid Transit stations are expected to have the highest density buildings as set out in the plan, while in between the station areas, mid-density development would occur. TODs requires residential, retail, and commercial density to be successful. Higher population densities around transit stations encourage more transit ridership. In turn, a more popular and well-travelled rapid

transit corridor helps build strong and safe neighbourhoods" (+White Architecture and Meg Construction & Consultants, 2010, p. 25).

While the entire site can be identified as an 'Urban Neighbourhood' as set out in the *Winnipeg Transit-Oriented Development Handbook*, the following three transit-oriented zones are proposed by +White Architecture and Meg construction & Consultants in the YFR-AMP:

- Intensification: this refers to pedestrian friendly development around the station and within 400m - 800m which will be high-density and mixed-use with public spaces such as plazas. There is a barrier to the site due to existing rail lines to the west and therefore limits the retail potential around the station.
- Transition: this refers to the area between the Jubilee Avenue station and the Morley Avenue station. Much of development in this area will be mid to low-density residential with small scale retail/office spaces. An average of 1.5 parking stalls will be provided, which will be located away from the street, creating an active streetscape and pedestrian zone
- Conservation: this refers to connections with the existing Lord Roberts neighbourhood. The existing character of the community will be maintained so that the new development seems to be a part of the old (+White Architecture and Meg Construction & Consultants, 2010, p. 34).

The three transit-oriented zones proposed encourage high-density residential and mixed-use development around the rapid transit station area. The intensity of development gradually decreases as development moves away from the station area and approaches the existing adjacent neighbourhood.

A variety of stakeholders were consulted when drafting the YFR-AMP. Consultation was conducted with "professionals, owner's representatives, City administration, elected officials, community members, and stakeholders" through two design charrettes, two public open houses, and several meetings and interviews (+White Architecture and Meg Construction & Consultants, 2010, p. 4). Additionally, a website was created and a newsletter was sent out to residents of the adjacent Lord Roberts and Riverview neighbourhoods to keep the public updated on progress (+White Architecture and Meg Construction & Consultants, 2010).

The first design charrette was held on July 8, 2010 at the Fort Rouge Leisure Center in the Lord Roberts neighbourhood. The charrette was meant to introduce stakeholders to TOD and provide a platform for interested participants to express what they thought development should look like in the Fort Rouge Yards area. A variety of stakeholders attended the charrette, including "academics, representatives from NGOs, neighbourhood Business Improvement Zones, provincial ministries, Manitoba Hydro, and community stakeholders such as nearby schools, community centres, residents, and elected officials" (+White Architecture and Meg Construction & Consultants, 2010, p. 4).

The first public open house was held on July 29, 2010 at the Lord Roberts Community Centre and was attended by approximately 300 people. The purpose of the open house was to introduce the public to preliminary plans of redevelopment of the Fort Rouge Yards and get feedback about "topics [such] as site planning, density and traffic flow in the community" (+White Architecture and Meg Construction & Consultants, 2010, p. 4). Upon conclusion of the open house, a questionnaire was distributed to attendees to allow expression of opinions and suggestions about the information presented (+White Architecture and Meg Construction & Consultants, 2010, p. 4).

A second design charrette was held on September 16, 2010 at the Fort Rouge Leisure Centre. The charrette began with a presentation of changes made to the initial plans based on feedback from the first open house. +White Architecture and Meg Construction & Consultants thought that the feedback and discussion on the revised plans was mostly positive.

A second public open house was held September 23, 2010 at the Lord Roberts School, attended by approximately 150 people. The purpose was to present the changes to initial plans based on feedback received at the first public open house. A questionnaire was distributed,

which received mostly positive feedback, with the request of another public open house that would include a public question and answer period with stakeholders. Upon conclusion of the public participation component, it was noted by the developer that the level of detail in feedback received would need to be further developed as each phase of development occurs and will therefore require further community and stakeholder consultation (+White Architecture and Meg Construction & Consultants, 2010).

Three main policies and/or plans were referenced while drafting the YFR-AMP. Key concepts from *OurWinnipeg Plan*, *Complete Communities Direction Strategy*, and the *Winnipeg Transit-Oriented Development Handbook* were used. *OurWinnipeg Plan* (City of Winnipeg, 2011b) identifies the Fort Rouge Yards as both Centres and Corridors (Rapid Transit Corridor), and Major Redevelopment Site within Transformative Areas. The site has potential to be developed based on directions set out in the *Complete Communities Direction Strategy* and TOD principles identified in the *Winnipeg Transit-Oriented Development Handbook*, which include "significant residential and employment densities, a mix of uses, strong urban design and attractive open spaces" (+White Architecture and Meg Construction & Consultants, 2010, p. 9).

The YFR-AMP encourages TOD on the Fort Rouge Yards (MRS) by incorporating principles and directions from *OurWinnipeg Plan, Complete Communities Direction Strategy,* and the *Winnipeg Transit-oriented Development Handbook*. Next, the Old Southwood Golf Course (MRS) and *Visionary (re)Generation Area Master Plan* are reviewed.

4.4.3 Old Southwood Golf Course Major Redevelopment Site

The Old Southwood Golf Course MRS began as a riding club in the 19th century, transformed to the Winnipeg Hunt Club in 1908, and eventually became the Southwood Golf Club in 1919. The University of Manitoba signed a purchase agreement with the Southwood

Golf and Country Club in January 2008 and officially took possession of the land in 2011 (University of Manitoba, 2016a). The Old Southwood Golf Course has been identified as a Major Redevelopment Site by the *Complete Communities Direction Strategy* and is planned to be developed as such.

The University of Manitoba hosted an Open International Design Competition for the Fort Garry Campus and the Old Southwood Golf Course MRS from December 2012 to October 2013. The 45 qualifying teams were asked to develop "an overall vision and urban design strategy that incorporates the guiding principles and design objectives established through an extensive consultation process with University and community stakeholders" (University of Manitoba, 2016b). The five goals and guiding principles established are:

1. Connected: Network the Campus, Connect to the City
2. Destination: Reasons to Come and Reasons to Stay
3. Sustainable: Campus as a Living Lab
4. Community: Build for Density, Design for People
5. Transformative: Research, Learning, Working and Living (University of Manitoba, 2016f).

A submission made by Janet Rosenberg & Studio Inc. and Cibinel Architects Ltd., with Landmark Planning & Design Inc., and ARUP CANADA INC., titled Arpent, was selected as winner in the competition. Janet Rosenberg & Studio Inc.'s submission was "driven by sustainable principles and community based design, utilizing the sites natural features to define and organize meaningful development on the 690-acre site" (Janet Rosenberg & Studio, 2012, n.p.).

Figure 11. Visionary (re)Generation Master Plan Area. Reprinted from *Visionary (re)Generation Master Plan*, 2016. Retrieved January 19, 2017, from http://www.visionaryregeneration.com/media/160520_WEB_Master_Plan.pdf. Copyright 2016 by the University of Manitoba. Reprinted with permission.

The team is now working with the University and a variety of stakeholders to develop new master and local area plans for the lands mentioned above, depicted in Figure 11, divided into four precincts: Core Campus, Southwood, Smart Park, and The Point Lands (Janet Rosenberg & Studio, 2012). The Visionary (re)Generation process has three main components:

1. Fort Garry Campus Master Plan: Plans for the physical development of the Fort Garry campus have been drafted and to some extent implemented since the early 20th century. Preceding the *Visionary (re)Generation Area Master Plan* (VRG-AMP), *A Networked Community* (2001) identified the need for a new and updated plan to align development of the campus to the "broader strategic goals of the university, which prompted the VRG-AMP to be drafted (University of Manitoba, 2016d, p. 3). The VRG-AMP has been drafted to provide vision and planning policies framework for how development of the Fort Garry campus will evolve over the next 30 years. The VRG-AMP addresses issues such as active and rapid transportation, new street networks, mixed-use and medium to high density development, and greenspace.
2. Southwood Lands Area Master Plan: a conceptual plan of development of the former

golf course that will guide and direct development and investments

3. Southwood Local Area Plan (LAP)**:** the LAP will focus on 20 acres of the Southwood Lands and "provide specific direction on design, phasing, and implementation of development in Southwood" (University of Manitoba, 2016d, p. 17). The Southwood Lands will consist of mixed-use residential development, amenities, and public spaces for students as well as the wider community, and will focus on details that will be necessary to re-zone the land and subsequently obtain development permits.

Incorporating rapid transit into the campus design will provide fast and convenient transit service to and from the campus and will also create an opportunity for transit-oriented development – dense, mixed-use development. This will reduce the need for personal automobile use and the amount of traffic in the Southwood precinct (University of Manitoba, 2016d). The Rapid Transit corridor, depicted in Figure 12, will connect pedestrian walkways, facilities, and greenspaces from Pembina Highway to the Red River in addition to connecting the campus to the wider city. While the winning team has proposed conceptual locations for the Rapid Transit Hubs, actual locations amounts are ultimately the City of Winnipeg's decision based on the Southwest Rapid Transit Corridor Stage 2 routing planning (University of Manitoba, 2016d).

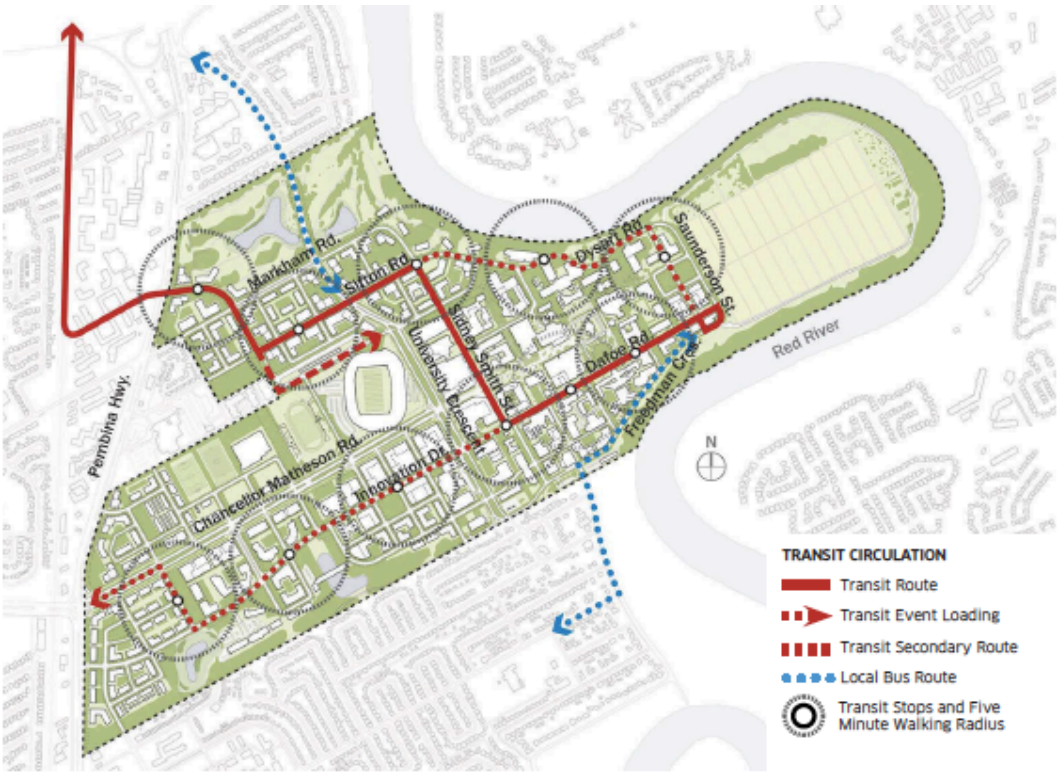

Figure 12. Visionary (re)Generation Master Plan – Transit Circulation. Reprinted from *Visionary (re)Generation Master Plan*, 2016. Retrieved January 19, 2017, from http://www.visionaryregeneration.com/media/160520_WEB_Master_Plan.pdf. Copyright 2016 by the University of Manitoba. Reprinted with permission.

There are a wide variety of ways for students, faculty, staff, and neighbourhood residents to be involved in engagement events and meetings, provide their input and feedback, and stay updated on progress (University of Manitoba, 2016d). Over the course of approximately18 months from February, 2014 while the VRG-AMP was developed, the following were and continue to be ways in which stakeholders can be involved:

1. Open houses: these were held at three key points in the process to provide an opportunity for stakeholders to see how their input was incorporated into the draft plans. In the first phase, a rough preliminary plan was drafted and shared at an open house for stakeholder input and feedback. There were flipcharts available for stakeholders to leave comments on, and consultant team members were available to answer any questions. In the second phase, the plan was refined based on input from stakeholders in the previous open house and presented at another open house for further feedback. This time flipcharts, post-it notes, and dot stickers were available for stakeholders to share their feedback in addition to the consultant team members

being available to answer any questions. In the final phase, the final version of the plan was presented at the final open house so that all stakeholders could see the various ways in which their feedback was incorporated (University of Manitoba, 2016e).

2. Community conversations: these are set up on the request of stakeholders to engage in smaller group discussions and encourage conversations about campus planning.
3. Pop-up engagement: this will occur at campus events and locations to disseminate information and get feedback from stakeholders.
4. Online/Social media: this provides an anonymous feedback page on the Visionary (re)Generation website, Twitter, and Facebook.
5. Neighbourhood network: this is a meeting held regularly with residents of the surrounding areas (University of Manitoba, 2016c).

Key concepts of the *Complete Communities Direction Strategy* were applied in drafting the VRG-AMP. The VRG-AMP aims to develop the Old Southwood Golf Course MRS and the broader Fort Garry University of Manitoba campus in an "environmentally, socially, and economically sustainable community (University of Manitoba, 2016d, p. 30).

The three plans reviewed above are summarized in Table 2. The information examined in this chapter indicates what TOD processes have the potential to look like in Winnipeg. The three plans are assessed based on the design process, community consultation processes, policies and plans incorporated, and TOD principles applied.

All three plans were developed by gathering initial feedback from stakeholders and the public, preparing a draft, and then presenting it back to the stakeholders and public for further input before completing the final draft. The level of input gathered varied across the three plans. The BGC-AMP was developed with minimal input from the public as their consultation processes had the poorest attendance. The YFR-AMP had a larger attendance to open houses and included a design charrette for public participation.

	Bishop Grandin Crossing Area Master Plan	***Yards at Fort Rouge Area Master Plan***	***Visionary (re)Generation Area Master Plan***
Design Process	- Stakeholder meetings to discuss Developer's vision - Draft plan presented to community for feedback - *Bishop Grandin Crossing Area Master Plan* drafted	- Design charrettes used to educate public - Community consultations conducted to gain feedback - *Yards at Fort Rouge Area Master Plan* drafted	- Goals and Vision established through community consultation - International Design Competition - *Fort Garry Campus Master Plan* drafted
Community Consultation	- No ongoing consultation methods - Stakeholder meetings - Two open houses held to disseminate information and gain feedback through questionnaires	- Two design charrettes introduced the concept of TOD - Two public open houses held to gather feedback on initial plans - Meetings and interviews - Newsletter for adjacent neighbourhoods - Ongoing through website	- Prior to competition (goals and vision established) - Ongoing through social media and website - Open houses at three key points to ensure feedback was being incorporated
Policies/Plans Referenced	- *OurWinnipeg Plan* - *Complete Communities Direction Strategy* - *Winnipeg Transit-Oriented Development Handbook* - *Southwest Rapid Transit Corridor – Stage 2 Alignment Study*	- *OurWinnipeg Plan* - *Complete Communities Direction Strategy* - *Winnipeg Transit-Oriented Development Handbook*	- *Complete Communities Direction Strategy*
TOD-Inspiration	- TOD principles applied to 2/3 of site within walking distance to the Plaza Drive RT station	- High-density development at rapid transit stations with med-density in between - Application of TOD principles - Create connections with existing neighbourhood and maintain character	- TOD principles and characteristics - Integration of Stage 2 SWRTC - Creation of complete communities - Integration of Indigenous design and planning

Table 2: Overview of TOD-inspired plans in Winnipeg, MB. Copyright 2017 by Author.

The VRG-AMP was drafted with the highest input from stakeholders and the public. The methods of consultation were extensive and ongoing throughout the drafting of the plan.

All three plans were drafted using *OurWinnipeg Plan* and *Complete Communities Direction Strategy* as guiding documents. The BGC-AMP and YFR-AMP also incorporated principles from the *Winnipeg Transit-oriented Development Handbook*. The resulting area master plans highlighted the opportunity of each MRS to incorporate certain TOD principles. However, the Sugar Beet Lands MRS and the Fort Rouge Yards MRS are not suitable in their entirety to accommodate TOD. For example, there are two major issues that need to be addressed to align the Sugar Beet Lands MRS masterplan with the *Winnipeg Transportation Master Plan, Complete Communities Direction Strategy,* and *Winnipeg Transit Oriented Development Handbook*. First, the *Complete Communities Direction Strategy,* and *Winnipeg Transit Oriented Development Handbook* both provide statements in support of mixed-use, compact development within walking distance (400m-800m) of a transit stop.

However, the BGC-AMP proposes segregated land-uses with the development of four distinct precincts; the Urban Mixed-Use, Mixed-Use Commercial Center, Mixed-Use Employment, and Parks and Open Space. There is also no commitment to the type or amount of commercial and retail development. Additionally, the *Winnipeg Transportation Master Plan* (City of Winnipeg, 2011c) states that "Rapid transit stations will become multi-modal transportation hubs [that] will be supported by land use policies to encourage creation of mixed-use transit villages and transit-oriented developments", (p. 48). The BGC-AMP cannot be aligned given the current physical barrier of the CN Letellier rail line that runs between the Sugar Beet Lands and the Plaza Drive Rapid Transit Station. In order to provide pedestrian and cyclist access, a connection between the site and the transit station will need to be made.

Furthermore, the Fort Rouge Yards MRS is landlocked due to existing rail lines that separate it from Pembina Highway. The YFR-AMP, approved by Council, states that "due to the

nature of the existing rail lines to the west cutting off from surrounding neighbourhoods and potential clientele, it is not likely that the Fort Rouge station could support enough retail business to succeed". This is a direct contradiction of the City's commitment to TOD stated in the *Complete Communities Direction Strategy* and *Winnipeg Transportation Master Plan* to develop certain lands along the rapid transit corridor as TODs. The YFR-AMP approved by Council is also not fully aligned with the *Winnipeg Transit-oriented Development Handbook,* which indicates that a "*TOD involves high quality urban development with a mix of residential, employment and shopping opportunities, designed in a pedestrian oriented manner without excluding the automobile"* (City of Winnipeg, 2011d, p. 6). Without retail and commercial development, a true TOD that serves transit riders and TOD residents cannot be developed, therefore, the approved plans need to be amended and a connection to Pembina Highway needs to be made.

Next, the benefits, challenges, and policy directions for TOD in Winnipeg are reviewed.

4.5 TOD Benefits

Winnipeg residents can expect to reap the many benefits resulting from transit-oriented development. In order to gain support for TOD the following six benefits should be communicated to the public: 1) improved health, 2) increased environmental sustainability, 3) strengthened local economies, 4) decreased costs associated with suburban development, 5) access to transportation choice and decreased traffic congestion, and 6) development of quality places to live, work, and play. The benefits, challenges, and potential policy directions for TOD are summarized in Table 3.

Benefits	Challenges	Policy Direction
Increase walkability; improve overall community health and reduced obesity	Creating a safe, inviting, and comfortable streetscape	- Active Transportation Study - Mural Program (Take Pride Manitoba!)
Increase environmental sustainability	Low-density development has increased reliance on personal vehicles	- Impact fee
Strengthen local economy	Difficult to sustain retailers providing everyday amenities	- Downtown Biz
Less costly than suburban sprawl development patterns	Infrastructure budgets support infrastructure development over transit services development	- City of Winnipeg – budget allocation; emergency services; snow and waste removal
Access to mode choice and decreased traffic congestion	Pedestrian and cyclist safety is the main concern when multiple modes coexist	- Secondary Plan - Complete Streets
Quality places to live, work, and play	Resistance to development by residents of existing neighbourhoods	- CPTED - Office of Public Engagement

Table 3: Benefits, challenges, and policy direction for TOD in Winnipeg, MB. Copyright 2017 by Author.

Transit-oriented development is meant to be built around a strong and reliable public transit system with active transportation infrastructure to discourage personal vehicle use, leading to increased physical activity. The health benefits of increased walkability within TODs can improve overall community health and minimize healthcare costs associated with diseases such as obesity (Institute of Public Administration, 2017; Noland, Weiner, DiPetrillo, & Kay,2017; Transit Oriented Development Institute, 2017). The street-level experience in Winnipeg is currently underwhelming with predominantly concrete sidewalks and minor vegetation in most areas of the city. Streetscapes in TODs should be safe and comfortable to walk through during all seasons to encourage pedestrian activity. The Active Transportation Study approved by City of Winnipeg Council in 2012 should be used to develop policy direction on the development of multi-use pathways and on street bicycle lanes in a TOD. Additionally, there is an opportunity for the City of Winnipeg to facilitate beautification of the pedestrian

realm through community grant programs such as the Mural Program facilitated by Take Pride Winnipeg! that support local artists.

Additionally, the shift in land development patterns from sprawling, low-density, suburban development, to compact and walkable neighbourhoods increases environmental sustainability. The Conference Board of Canada reported that in 2013, 22 percent of all greenhouse gas (GHG) emissions were a result of transportation (The Conference Board of Canada, 2017b; Transit Oriented Development Institute, 2017). TOD has the potential to reduce transportation related GHG emissions as was found in Philadelphia and Chicago in areas where there is a higher reliance on public and active transportation (Institute of Public Administration, 2017; Haas, Miknaitis, Cooper, Young, & Benedict, 2010). Low-density development is continuing on fringes of the city and is outpacing population increases in Winnipeg, which can be seen by the many vacant multi-family units in suburban neighbourhoods. Reliance on personal vehicle use is a direct result of sprawling development. The GHG emissions from driving long distances negatively impact the environment by contributing to climate change. There is an opportunity to decrease sprawling development by increasing costs of developing in new communities. A development Impact Fee came in to effect on May 1, 2017 that has the ability to slow down fringe development. There is an opportunity to use the fee, through incremental increases, to encourage denser development in existing areas.

Furthermore, compact, walkable development reduces transportation time and costs and residents have more time and money to spend on retail, arts, and restaurants in the area. In turn, more jobs local jobs are created and local economies are strengthened. Local shops see increased business due to foot traffic of both residents of the community and those passing through. Development that addresses the potential need of a regional economy is addressed however, a

study conducted by Noland, Weiner, DiPetrillo, & Kay, 2017, found that retail and entertainment development in TODs does not address the lack of shops providing for everyday needs such as groceries. There is an opportunity to develop an organization similar to the Downtown Biz, which can help attract non-residents to the TODs, maintain cleanliness programs, and promote local businesses. Similar to the Downtown Biz, there can be an organization developed to provide education and support for new local businesses.

TODs in existing developed areas also promote the use of existing infrastructure, as opposed to suburban development that requires new and costly road infrastructure and utilities. As personal vehicle use decreases, so does the need for repair on existing infrastructure, which directly impacts the City's annual infrastructure budgets (Institute of Public Administration, 2017). The 2017 City of Winnipeg budget for local roads and infrastructure renewal was approximately $60 million as opposed to the $28 million budget for transit. The City needs to show its support by backing it with substantial funding in order for there to be a shift in how infrastructure is built and used. Additionally, compact development increases efficiency and cost savings for municipal services such as snow and waste removal, and emergency services. There are also personal cost savings associated with owning a vehicle such as fuel and insurance, versus purchasing a bus pass. However, depending on the densities that are planned for a particular TOD, existing infrastructure might need to be updated to accommodate the additional users. There is an opportunity to prepare tailored municipal services plans for each TOD. Emergency, waste, and snow removal service providers need to be prepared to navigate more compact development. The City of Winnipeg snow removal service for example will need to create procedures and policies for quick and efficient snow clearing and hauling as there will be minimal room to store the snow within a TOD.

Another benefit of TOD is the access to multiple transportation modes, including public transit, active transportation, and personal vehicle use. It is important to recognize that public transportation might not serve the needs of an entire population at all times and allow for multiple transportation modes to coexist. Increased transit ridership reduces traffic congestion which positively impacts pedestrian and cyclist safety in TODs (Transit Oriented Development Institute, 2017; Noland, Weiner, DiPetrillo, & Kay, 2017). In order to manage the multiple modes in traffic in TODs will require development of streetscapes that accommodate personal vehicles, public transit, cyclists, while providing pedestrians with safety when crossing the road. Direction on how each mode will be accommodated should be included in a secondary plan that provides implementation strategies that utilize and are supported by Complete Streets policies.

TODs also provide an opportunity to improve existing urban areas that require redevelopment into high quality places to live, work, and play. Walkability in TODs increases the opportunity to interact with other community residents improve social capital and liveliness in the community (Noland, Weiner, DiPetrillo, & Kay, 2017). To improve and encourage the pedestrian realm, intentional streetscape improvements are necessary. Safety is also a major concern and should be addressed using crime prevention through environmental design (CPTED) principles. This is another element that should be included in a secondary plan. It is also important to acknowledge that there will be some adjacent property owners and neighbourhood residents that do not agree with the development in existing areas. In order to minimize fears of development impacts to the existing communities and reduce resistance at the development phase, it is necessary to consult the public at the beginning of and throughout the process. The secondary plan should mandate that the City of Winnipeg Office of Public

Engagement conduct a thorough and transparent consultation program throughout the design and development of the TOD.

Educating the public on the benefits of living in a TOD can help garner support for development and change their views on how development should proceed in Winnipeg.

The next chapter answers the questions set out at the beginning of the research study by incorporating the knowledge gained from the literature review, precedent research, and history and context chapters.

Chapter 5: Conclusions and Recommendations

The purpose of this research study was to examine the policies and plans that support bus rapid transit and transit oriented development, with specific implementation implications for the Eastern Rapid Transit Corridor and potential station area at Kildonan Place Mall. Additionally, the potential for collaborative consultation processes in North America was examined for its applicability to the Winnipeg context. The research questions introduced at the beginning of this document guided the research design which included a literature review, precedent research, and document analysis.

5.1 Answering the Research Questions

Three research questions were introduced at the beginning of this document to guide the research. This section answers the questions by summarizing the information examined throughout the study.

1. **How do provincial and municipal policies and plans influence strategic station area planning (transit-oriented development) along the Eastern Rapid Transit Corridor?**

OurWinnipeg Plan, the City of Winnipeg's current municipal development plan, and accompanying direction strategies, along with the *Winnipeg Transportation Master Plan*, and the *Winnipeg Transit-Oriented Development Handbook* provide general guidelines for transit-oriented development in Winnipeg. The current *Transcona West Area Structure Plan*, which is a type of secondary plan that is typically applied to undeveloped areas of the City, states specific policies to "provide for convenient and efficient access to transit service" to the Eastern Rapid

Transit corridor (City of Winnipeg, 2017c, pg.36). However, the area structure plan does not provide specific direction on TOD implementation at Kildonan Place Mall, that is site and context specific. Additionally, the land-uses along Regent Avenue continue to be defined as single-use commercial and industrial (City of Winnipeg, 2017c). Secondary plans can be used to develop implementation tools that will improve outcomes of TOD along the ERTC and at the Kildonan Place site. Furthermore, Winnipeg is a prairie city that has an abundance of land available for greenfield development. Development trends continue to be suburban because current policies are not structured to discourage it. Depending on demand, every year there are a certain number of residential units that are planned to be developed, and with suburban development being easier and more profitable for developers, many approved units tend to be suburban. Mayor Brian Bowman recently proposed an 'Impact Fee' to pay for any new infrastructure or expansions required to infrastructure for suburban developments, which was accepted by Council in October, 2016. The 'Impact fee', approximately $55.00 per m2 of development, is initially going to be charged on residential development in new and emerging communities as outlined in the *Complete Communities Direction Strategy* (City of Winnipeg, 2017b). During the next two years, fees for commercial, office, industrial, and institutional development will be determined. Finally, in three years, an assessment will be made to determine what if any development fees will be charged for infill development in downtown and existing mature neighbourhoods (City of Winnipeg, 2017b). If infill developments in existing neighbourhoods are exempt, there is an opportunity to slow down the City's outward spread.

2. To what extent has TOD been implemented in Winnipeg, what successes and challenges have been faced, and what future plans are there for TOD?

Bus Rapid Transit was introduced to Winnipeg in 2012, therefore, the concept of transit-

oriented development is relatively new to Winnipeg. To date there are no complete TODs in Winnipeg, however TOD concepts have been included in many recent Area Master Plans. The first site to proceed from planning to implementation is the Fort Rouge Yards Major Redevelopment Site. Development of residential units was approved in 2010 and has begun at the Fort Rouge Yards MRS but has been slow in moving forward. One of the reasons the Fort Rouge Yards MRS has not seen quicker development of TOD, is the lack of demand for development around the station areas. This is largely due to the quality and quantity of marketing done for TOD living in Winnipeg in general. The project previously known as Yards at Fort Rouge was to be developed by Mike Holmes but has been rebranded to Jubilee Winnipeg under a new development company, the Sunstone Group. The rebranding and renewed marketing is an effort to spark interest in the development so it can proceed as planned. Two other Major Redevelopment Sites, the Sugar Beet Lands and the Old Southwood Golf Course are in the visioning and planning stages of development and require more detailed implementation strategies for TOD.

3. How can collaborative participation methods be changed to improve outcomes of TOD project planning and implementation?

Collaborative participation processes can either help strengthen a project, or create challenges to the planning, design, and implementation phases of TOD. Input, feedback, and support from the public and stakeholders of any given project can help produce a strong design and can assist the implementation phase to proceed smoothly. Input from the public who will be living in or using proposed developments and facilities can strengthen initial designs through feedback of what their wants and needs are. Alternatively, if proper systems are not in place, the collaborative consultation process can become unmanageable and detrimental to projects. A

balance must be struck between gathering feedback from a diverse population and being able to sort through the information to bring out relevant information in a timely manner. This step is crucial to maintain development deadlines and avoid the costs associated with delays. A systematic approach is necessary with a clear understanding of who plays what role in the process of gathering information, sorting through it, and disseminating it in a timely fashion, which is essential to have complete and efficient consultation processes that impact TOD planning and implementation. The City of Winnipeg Office of Public Engagement website does not outline a specific public engagement strategy for new, large-scale, and long-term projects. Only general information on participation requirements in Canada (Section 2.4) is available. Based on research findings in the literature review (Section 2.4) and the Arlington precedent research (Section 3.2.2), the following seven points are offered as an alternative public consultation strategy for the Eastern Rapid Transit Corridor:

1. Provide Notice

Provide sufficient notice for participation opportunity and inform participants on the process. For example, determine whether the engagement session is for information or to solicit feedback. In order to reach a broader stakeholder group, the notice of public engagement should be provided through various mediums. Mediums can include newspapers, local newsletters, project website, and social media platforms.

2. Communicate Intent and Intervals of Public Engagement

First, clearly identify the goal of the public engagement so that participants know what to expect and how feedback will be used. For example, if the engagement is an information session, do not call it consultation. Being clear at the outset helps to create realistic expectations. Second, engage participants early in the planning process and continue to solicit feedback through to the

development phase. Ongoing involvement helps participants build trust and not be skeptical about the City or developer's intentions. Soliciting and incorporating feedback through the process also creates trust and eliminates questions such as: 'Are key decisions already made?' and 'Is the engagement just as a formality?'. Additionally, ongoing engagement is likely to garner support for the final project outcomes and stakeholders are less likely to oppose it at the development phase and more likely to advocate for implementation, prompting elected officials to act. Stakeholder commitment increases City and developers' accountability to produce projects that conform with the vision and details set out in plans.

3. Engage a Broad Representation Group

Engagements should be inclusive and representative of broad stakeholder groups. Public engagement should include collaboration between citizens, planners, developers, businesses, elected officials, and advisory groups, to develop strong and quality projects that last. Receiving feedback from various stakeholders provides an opportunity to incorporate knowledge of local conditions and produce projects that work for citizens. To reach a broader population, more than one medium to gather and disseminate feedback can be used. For example, a combination of any of the following: written feedback, online surveys, online forums, public open houses, workshops and design charrettes, and social media (ex: Facebook or a hashtag). Additionally, targeted action should be taken to engage teens, minorities, and the elderly, three groups that are often missing from public engagements. One method to include these groups is to hold public engagements in various locations that are accessible to a broader population. For example, in schools, local community centres, and malls, and not always in a downtown location. Another method is to conduct the engagement in more than one language and written information distributed in various languages.

4. Provide Education Prior to Engagement

Pre-consultation sessions can be held to provide education on the project prior to the participation opportunity in order to create public interest in the issue being discussed and allow for meaningful and relevant feedback. For example, stakeholders such as developers and business owners might have more institutional knowledge about the topic, therefore, their feedback is more relevant and thus incorporated into decisions. Education should be in non-technical language so that the general population can understand the issues being discussed. Education directly results in capacity building, which means that the public can facilitate a community led conversation about the issues.

5. Use Various Engagement Methods – Format and Communication Media

Multiple methods should be used to present information to stakeholders and keep them engaged. For example, the use of PowerPoint presentation, information boards with the opportunity to provide anonymous feedback via sticky notes, 3D renderings, and spatial modelling technologies that demonstrate real time effects of participants' suggestions. The methods should encourage two-way communication rather than a public hearing set up where there is a presenter and people can only make comments for or against a project. This allows participants to learn about others' views and constraints on an issue, which builds personal and professional relationships and allows participants to work toward a common goal. Two-way communication also builds trust because people can question the information presented and present alternative facts. Engagement methods should be reviewed and update annually to incorporate any new mediums and stay relevant.

6. Follow-up with Feedback and Closeout Session

A final report or information session should be held to demonstrate how participants' feedback was or was not incorporated into plans. This presents an opportunity for the facilitators to provide tangible justifications if feedback was not included in final outcomes. In order to ensure that participants have access to how feedback was used, it can be posted on the project website, communicated through a newspaper, newsletters, or direct mail.

7. Provide Staff Training and Maintain Transparency

City or development staff should be trained to lead and facilitate engagement sessions. This requires clear and defined roles for the various staff and volunteer members to ensure an orderly process. Facilitators should also be adequately educated on the subject and trained to gather meaningful feedback. For example, make participants feel included but do not let them go off on tangents that take over the entire session. Once the engagement concludes, staff should be trained to sort, synthesize, and concisely disseminated the information back to the participants. In order to ensure information reaches participants, a single point of information tracking should be specified. For example, a project website can be set up to encourage transparency about the decision-making process. All engagement opportunities, feedback collected, and how it is used, should be accessible in one place. This makes the information available to a broader population.

Outlining a public consultation strategy provides predictability to agencies, whether the developer or the City, in terms of how much time and resources are needed to budget for public consultations and the process to incorporate feedback into the final designs.

5.2 Recommendations

Information gathered from the literature review, precedent research, semi-structured interviews, and history and context research of Winnipeg was reviewed and analyzed to develop recommendations for station area planning at the Kildonan Place Mall, a potential TOD site along the Eastern Rapid Transit Corridor. The three recommendations are intended to aid planners, developers, and elected officials in understanding how to proceed with TOD and produce the most positive outcomes during the planning and implementation phases.

1. Modify Secondary Plans and Implementation Tools:

Once the ERTC is implemented, it has the potential to serve as a catalyst to change existing policies at the Kildonan Place Mall, a potential TOD site. To provide specific details for land use planning along the ERTC and TOD implementation at Kildonan Place Mall, the current *Transcona West Area Structure Plan* needs to be modified once routing for the ERTC is decided. As was seen in the Edmonton precedent, to produce secondary plans, the City of Edmonton had to financially invest in their planning team to provide the resources required to undertake drafting the document. Similarly, the City of Winnipeg will need to provide the Planning, Property, and Development department with the financial resources to assemble a team of planners and support staff that can focus on modifying the *Transcona West Area Structure Plan* and prepare a station area plan. The secondary plan should consider infrastructure improvements, such as repair and expansion of roads and active transit pathways, planned for the rapid transit corridor and surrounding areas. There is an opportunity to incorporate the new roads and pathways required for station area development with the funding provisions for the existing infrastructure improvements. An example of incorporating new infrastructure development with existing plans for improvement can be seen in Stage 2 of the SWRTC, which has been approved

and is being developed as an integrated project with the redevelopment of the Pembina-Jubilee Underpass.

The modified *Transcona West Area Structure Plan* should include implementation and guideline tools for TOD along Regent Avenue and at the potential Kildonan Place. for short, medium, and long-term development. The guidelines and tools should then be incorporated into a station area plan which provides greater detail about land uses, residential density, building types, and connections to surrounding neighbourhoods. The implementation tools can be organized into two categories. The first category is the timeframe for implementation, which is short, medium, and long term. For example, implementation should start with items that can be quickly executed to produce quick results that will help the project gain momentum and then move to implement items that will be developed over a medium to long timeframe. The second category should identify the individual stakeholders responsible for implementation. Stakeholders include different levels of government, planners, developers, and the public. For the implementation tools to appeal to a variety of stakeholders, they need to see how implementation will directly benefit them financially or their quality of life. Successful implementation of TOD plans requires the support of a diverse array of stakeholders and it is important for each of them to see the value and feasibility of the planned project.

2. Draft Policies to Limit Suburban Growth:

Policies that limit suburban growth should be drafted and implemented to encourage infill development in existing neighbourhoods, such as mature neighbourhoods and downtown. One way to limit suburban growth is through the imposition of development fees, making suburban development less profitable. Mayor Brian Bowman introduced the concept of development fees to Winnipeg in 2016. The proposed fee of approximately $55.00 per m2 of

development in new communities will pay for any new infrastructure or expansions required to infrastructure to support the new development. The proposed fees will be phased in over the next three years, beginning with development in new communities. Next, fees for commercial, office, industrial, and institutional development will be determined and finally, a decision will be made to determine what, if any development fees will be charged for infill development in downtown and existing mature neighbourhoods (City of Winnipeg, 2017b). The specific details of the development fee however will need to be further refined and developed (for example: urban and infill developments should be exempt from development fees to encourage more compact development) to prompt a change in dominant development trends.

The initial introduction of the fee has been met with ongoing opposition from developers and many City Councillors. Developer groups such as the Manitoba Home Builders Association and the Urban Development Institute have legally challenged the City of Winnipeg, stating that they do not have the jurisdiction to impose development fees, to which the City of Winnipeg has responded that they do (CBC News, 2017). Additionally, many Councillors believe that the process of developing the development fee was done hastily and without public input, resulting in a less than transparent process which has not addressed stakeholders' concerns (Janice Lukes, 2017).

Development fees exist in British Columbia, Alberta, and Ontario; however, the concept of development fees is new to Manitoba, and particularly to Winnipeg. The resistance from developers, councillors, and citizens can be eased by transparent discussions with the City of Winnipeg. The City of Winnipeg needs to educate stakeholders about the environmental and societal benefits of infill development and the adverse impacts to environmental and financial sustainability that suburban development causes.

3. **Draft a Plan to Increase Market Demand:**

Draft a plan to increase market demand. Residential, retail, and commercial units should be made considering the population set that will be occupying and visiting the development. The potential TOD site is adjacent to Kildonan Place Mall, which is a destination for people from all over Winnipeg. It is therefore imperative that a development is accessible to a variety of stakeholders, and that both residents and investors see value in the project being marketed. One way to produce a development that accommodates various lifestyles and income groups, is for developers to conduct statistical research to ensure affordability and livability. Neighbourhoods surrounding the Kildonan Place Mall site should be analyzed. Another way to gather information about what stakeholders value in the development is to include them from the beginning of the planning stages and through to construction. Collaborative participation provides an opportunity to educate the stakeholders on plans of development, including any issues that prevent certain types of development from occurring, as well as receive input from them to produce stronger developments that suit the needs of a broader range of the population. As learned from precedent research of collaborative participation in Arlington, it is important to develop participation methods that include a broad range of stakeholders, especially minorities and people who are not able to attend consultations depending on location. The consultations can be held at various locations such as the Kildonan Place Mall, schools in neighbouring communities, or at community centres. If stakeholders are involved in the planning stages of a project, and ongoing through to construction, they will be invested and less likely to oppose development in the later stages, delaying construction and resulting in an unoccupied development.

Market demand can also be generated by developing a project that accommodates a variety of lifestyles. Planners and developers need to work with the public, including students,

young professional, families, and the elderly to discern what their needs are. For example, it is not the most convenient for people with very young children or individuals with limited mobility to take public transit. For this reason, other modes of transportation such as active transportation paths, and vehicle sharing programs should also be included in developments. As learned from the precedent research of Century Park TOD in Edmonton, two marketing plans should be prepared; one for potential future residents of the Kildonan Place Mall TOD site, and another for stakeholders and investors who need to see the return they will get from the development. The first marketing plan should be developed to educate potential future residents on the benefits of living in the TOD and provide an opportunity for developers to receive feedback from the public about what they require in the development to meet their needs. The second marketing plan should be developed to educate stakeholders including investors and bankers, on the financial benefits of the development. This marketing plan should appeal to a variety of stakeholders, and over time, so if there are delays to a development, the information stays relevant.

The contributions of this research study to planning practice and scholarly planning knowledge are outlined next.

5.3 Implications of Research for Planning Practice

This research study makes three main contributions to professional practice as well as scholarly planning knowledge. First, the research study identifies the opportunities updating and/or implementing municipal policies and plans that are most beneficial to the implementation of transit-oriented development at the potential Kildonan Place Mall TOD site along the Eastern Rapid Transit Corridor in Section 3.1.5. Second, the research identifies ways in which collaborative planning processes should be used to strengthen overall design plans and

implementation strategies in Section 3.2.3. Finally, the research project highlights the opportunities for TOD implementation at three Major Redevelopment Sites as set out in the *Complete Communities Direction Strategy*, in Section 4.4.

The research conducted for this study identified gaps in the literature, which are outlined next.

5.4 Directions for Further Study

The planning and implementation processes of transit-oriented developments in the Canadian context should be further studied by scholars and planners to learn about best practices, challenges, and outcomes of implementation. The research should include information from a variety of stakeholders. Stakeholders to be consulted can include the Minister of Finance at the federal and provincial level, and the Mayor and responsible staff at the municipal level, regarding information about strategies and innovative funding programs. City planners in the public and private sectors should be consulted regarding the outcomes of different consultation methods. Manitoba Housing can provide insight into local and contextual challenges that developers in the City of Winnipeg face. Information should also be gathered from citizens regarding their experiences in the TODs after the project is implemented. I am aware of an ongoing research study by James Cook (2018), that will include input from developers on the financial and organizational barriers to TOD in Winnipeg. Cook's research study will include input from public officials on political and cost barriers, and methods to overcome them. The input from developers and public officials will further inform the Winnipeg context for TOD implementation planning and outline the successes and challenges that have were faced when

planning for TOD along the SWRTC. The original scope of the current research study was narrowed to not duplicate interviews.

The station area plan developed for the Stadium LRT station in Edmonton provides an opportunity for scholars as well as planners and developers, to conduct further research into the level and outcomes of consultation conducted during the decision-making stages. Additionally, research considering tools for TOD implementation should be tracked by planners and developers to discern best practices. The planning team in Edmonton has financial support from the provincial and municipal governments to move forward with TOD projects and therefore the city of Edmonton can become a precedent for other Canadian local governments to support planning offices in their attempts to change suburban development trends. The Century Park station area will also be redeveloped beginning in 2020, following the park-and-ride lot end of lease. Planners should track the methods and progress of development to learn from the precedent.

Further, study into the roles of the different disciplines and their administrators in the final outcomes of TOD would also be beneficial. For example, there is a disconnect between what planners envision TOD to look like, the physical realities of the site, and financial constraints often faced by developers who rely on banks and investors for funding. Improved dialogue between the different disciplines and their administrative staff can apprise each of the others' constraints and result in collaborative development processes rather than distrust and tension between all parties. Literature on the topic of the roles of the various disciplines is hard to find, but would be beneficial to planners to better understand how different stakeholders are impacted by proposed developments to be able to appreciate the constraints of each and work intelligently together to produce the best results.

BRT and TOD have been discussed and advocated for many years, however, Winnipeg has only recently begun to implement these concepts. Winnipeg is in an advantageous position to learn from the successful and failed TOD implementation experiences in cities with similar populations, weather, and size.

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Appendix A: Email/Phone Script

[redacted]

Email/Phone Script for Initial Contact with Potential Participants

Hello,

I am a city planning graduate student at the University of Manitoba, and my major degree project is exploring the relationships between municipal and provincial policies and development, collaborative consultation processes, and urban design principles that encourage transit-oriented development around strategic station areas. I am contacting you because of your involvement in the City of ____'s TOD (related) efforts and I am wondering if you would be interested in participating in an interview to share your knowledge and experience on this topic. The interview will take approximately 45 minutes and will occur at a place and time of your choosing, by phone, or via Skype. I would greatly appreciate your time.
If you would like further information regarding the study, please contact me at [redacted] or by phone at [redacted]

Thank you very much for your time and consideration.

Regards,

[redacted]

Appendix B: Interview Guide

I will be asking you questions regarding your experience and knowledge of transit-oriented development, bus rapid transit, and municipal practices and policies. These questions are being asked generally in a global context, and of the Eastern Rapid Transit Corridor.

1. Do you think current provincial and municipal plans and policies in place for transit-oriented development are adequate and readily modifiable to changing developmental needs?

2. What, if any, hurdles do current policies present in the implementation of TOD? How can municipal practices and policies be modified to bring visions of TODs to fruition?

3. Do you think transit-oriented development will be successful at the Kildonan Place mall station area? Why or why not?

4. How can planners positively influence processes of implementation of transit-oriented development? How can they avoid negative impacts experienced by other North American cities?

5. In your experience, are collaborative planning processes beneficial to the process of development? If yes, state how. If no, please explain.

6. Would you like to add anything further to our interview content today?

Appendix C: Consent Forms

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you 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.

Research Project Title:
Station Area Planning in Winnipeg: Bus rapid transit as a catalyst for changing policies to accommodate Transit-Oriented Development along the Eastern Rapid Transit Corridor
Contact Information:
Principal Investigator:
Graduate Student - Department of City Planning
Faculty of Architecture - University of Manitoba
Phone:
Email:

Research Advisor:
Associate Professor - Department of City Planning Faculty of Architecture -University of Manitoba Phone:
Email:

1. Project Description
The purpose of this study is to explore relationships between municipal and provincial policies and development, and urban design principles that encourage transit- oriented development around strategic station areas. Additionally, the impact of collaborative planning processes will be assessed. There exists a discrepancy between the visions we are offered of what transit-oriented development (TOD) should look like, the plans developed to support the vision, and

what is actually allowed by existing policies. A comprehensive literature review, case studies of projects in cities similar to Winnipeg in size and weather, and semi-structured interviews will provide insight into best practices and lessons in implementing transit-oriented developments in North America. Municipal policies and plans will also be reviewed. In conducting the aforementioned research, a conceptual design proposal will be developed for a future potential TOD site at Kildonan Place on Regent Avenue that applies the learned principles.

2. Participant Activities, Risks and Benefits

To complete this research, you are invited to participate in a one-time semi- structured interview that will be approximately 45 minutes. Interview topics will involve questions about your knowledge of transit-oriented development, municipal plans and policies meant to support TOD, your thoughts on whether current plans and policies are sufficient, what you think implementation of policies and plans should look like, your opinions about collaborative consultation processes, and any other professional advice on TOD that will further my knowledge on the topic. The research should pose minimal risk, if any, beyond everyday life. The study does not address personal and confidential issues and only asks for your professional insights about TOD and policy. A benefit to you is the opportunity to contribute knowledge and/or experience to research in your professional field. You may withdraw from the interview at any time, without any negative consequences, if you do not feel comfortable proceeding.

3. Confidentiality

With your permission, the interviews will be audio-recorded and transcribed at a later date for research purposes, so that analyzing the material at a later date will be completed with accuracy. The audio-recordings will be kept in a secure place, only accessible by the principal researcher, and destroyed by myself within one year of research completion. If you do not wish to be recorded, only notes will be taken. Your name or any other personal information will not be included in any publicly disseminated materials arising from the study, unless written consent to do so is obtained from you prior to beginning the interview.

4. Credit or Remuneration:

There is no credit or remuneration as part of your involvement in the research.

5. Feedback and Debriefing

At the conclusion of the interview, an overall interview summary will be provided to you in accordance with this informed consent protocol. Individual feedback will be provided within two months of the interview by phone, email, in person, or in writing to ensure the information collected is accurate. You will have two weeks to confirm that the information provided is accurate, which will also mark the last opportunity to withdraw your data from the study. Once the study has concluded, you will be offered a copy of the practicum, in digital format.

6. Dissemination of Results:

The principal researcher will disseminate study results through a Master of City Planning Practicum. The practicum will be available by a hard copy at the University of Manitoba Architecture/Fine Arts Library, a digital copy online, and through the oral defense.

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.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Joint-Faculty Research Ethics Board (JFREB) If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator (HEC) at [redacted] or [redacted] A copy of this consent form has been given to you to keep for your records and reference.

■ I consent to the inclusion of my name in publications resulting from the study

■ I DO NOT consent to the inclusion of my name in publications resulting from the study

■ I consent to being audio-taped during the interview as a part of the study

■ I DO NOT consent to being audio-taped during the interview as a part of the study

I understand that the information I provide will be incorporated in a presentation and report by the student researcher.

_____ _____

Signature of Participant Date

_____ _____

Signature of Principal Researcher Date