

MADE IN WINNIPEG
RAPID TRANSIT SOLUTION

FINAL REPORT

SEPTEMBER 2005

Made in Winnipeg Rapid Transit Solution Final Report

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The City of Winnipeg Executive Policy Committee And Council

September 2005

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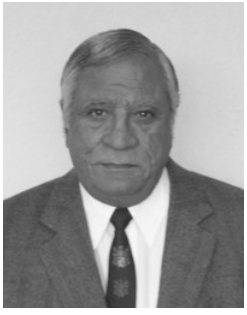

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Executive Summary

1.0 Introduction

The Rapid Transit Task Force was established by Council to recommend a 'Made in Winnipeg' Rapid Transit solution that satisfies the needs of Winnipeggers, has substantial support from Winnipeggers, can be built at a reasonable cost to taxpayers using existing infrastructure where possible and is guided by a customer service ethic.

The Task Force accomplished this task by facilitating extensive public consultation to ensure public input, conducting research and examining existing available information. The recommendations of the Rapid Transit Task Force Report will be submitted to Executive Policy Committee and Council for approval.

2.0 Assessment of Winnipeg's Transit Needs and Opportunities

2.1 Winnipeg's Transit Needs

Winnipeg is growing at a slow but stable rate that is already stretching the limits of the existing Transit system. The Conference Board of Canada projects this slow but stable population growth will continue, resulting in a population increase of more than 100,000 people over the next twenty years, bringing Winnipeg's population to an estimated 750,000 people.

A high proportion of Winnipeg's population makes use of transit services. About 55% of Winnipeggers report that they use transit. However, only about 15% of the population are completely dependent on transit for all of their travel needs. This suggests that most transit users have access to alternative modes of transportation and can choose to use the transit system or not. To remain competitive with the automobile and become the preferred mode of transportation, the transit service must meet the needs of Winnipeggers in terms of speed, reliability, convenience and comfort. Numerous studies undertaken by the City of Winnipeg have determined that implementation of a Rapid Transit System is required to meet the travel needs of Winnipeggers.

Results of Public Interest Group Presentations and Public Workshops undertaken by the Task Force reinforced the need for a Rapid Transit System in Winnipeg with speed, service reliability and frequent service ranked as the most important attributes by Public Workshop participants.

The implementation of a bus rapid transit system (BST) is included in Plan Winnipeg, the City of Winnipeg's Official Plan. A BST system is part of the City's comprehensive plan to reduce emissions of air pollutants (specifically green house gas emissions), complement downtown revitalization, encourage compact urban development and strengthen Winnipeg's economy.

2.2 Infrastructure Opportunities and Constraints

Existing railway tracks in Winnipeg cannot be efficiently used for rail rapid transit. The majority of the secondary rail lines are not in a condition suitable for passenger rail service, while main lines are intensively used by freight traffic.

Significant reconstruction and/or alteration to existing freight service would be required to accommodate passenger rail service.

Inactive and light density railway corridors have the potential to be used for rapid transit. The City of Winnipeg has purchased property for a transit corridor in the Fort Rouge Yards and is currently in negotiations with CPR regarding the Marconi line. The City has the right to lease the Letellier Corridor for 99 years (option expires 2009) and the right to use the right-of-way for the two most westerly tracks in Union Station.

Some of Winnipeg's main streets, with generous rights-of-way and wide centre medians, have the potential to be used for rapid transit corridors with some reconstruction and modifications to the existing infrastructure. Where new pavement and/or right-of-way acquisition may be required this work may be co-ordinated with current initiatives of the Public Works Department.

3.0 Bus Rapid Transit is the Best Solution for Winnipeg

The Rapid Transit Task Force's evaluation of light rail (LRT) and BRT systems concluded the following:

1. Both BRT and LRT can fulfill the functional requirements of a rapid transit system providing high capacity, high performance, urban transit routes and services.
2. BRT and LRT share the same key features including runningways, transit priority measures, real-time passenger information systems, centralized stations with passenger amenities, brand identity, presence and sense of permanence.
3. The key features of a rapid transit system (as mentioned above) have a greater effect on system performance (speed, frequency, reliability) than the choice of a vehicle (bus or train).
4. Rapid transit systems with more exclusive runningways (separated from other vehicles have the most reliability and schedule adherence.
5. BRT systems with exclusive roadways operate at travel times comparable to LRT.
6. The differences between LRT and BRT are primarily public perception and cost.
7. BRT has lower capital costs, lower operating costs for passenger demands predicted for Winnipeg and lower equivalent annualized costs (annualized capital costs combined with annual operations and maintenance costs) than LRT.

4.0 Benefits of a BRT System

The Task Force's comprehensive evaluation of BRT systems in other jurisdictions identified notable transit system and community wide benefits that should be realized with the implementation of a BRT system in Winnipeg.

Transit System Benefits:
1. Reductions in travel time.
2. Significant improvements in service reliability.
3. Increases in frequency of service.
4. Increase in ridership.

5. Modal shift from private automobile to transit.
6. Reduction in green house gas emissions.
7. Improved productivity of transit service.
8. Improved general traffic flow.

Community Wide Benefits:
1. Maximize use and facilitate improvement of existing road infrastructure.
2. Expand opportunities for development in key areas along dedicated busways and at major stations.
3. Active transportation commuter paths (for cycling, roller blading, walking) integrated into dedicated busways and, where possible, into on-street improvements.
4. Strengthen the local economy through local bus purchases, generation of employment opportunities through construction and other potential spin off benefits.
5. Build on the strengths and complement the existing transit service.
6. Flexibility to expand development of the Rapid Transit System into major dedicated corridors in all quadrants of the City using a variety of technologies.

5.0 Rapid Transit System Objectives

The Task Force developed Rapid Transit System objectives consistent with the City's overall vision as expressed in Plan Winnipeg, the fundamentals and initiatives outlined by Winnipeg Transit in Direction to the Future and the issues identified by the Public during the Preliminary Public Consultation Process. Overall system objectives included increase ridership, strengthen the local economy, support downtown revitalization, improve environmental outcomes, be fiscally and socially responsible and encourage transit-supported land development. System performance objectives included a distinct, progressive identity and quality image, the use of existing infrastructure, funding from other governments and/or private partners, operating cost efficiencies, travel time reductions and a strong customer service ethic.

Winnipeg Transit's current mandate is to provide the best public transportation possible within a 400 metre walking distance of as many households as possible, while significantly improving the speed of transit travel and supporting the revitalization of downtown. Given the current level of funding support, it is difficult for Transit to meet these ambitious objectives and public expectations. However, the implementation of the Rapid Transit System Recommendations outlined below will help provide Winnipeg Transit with the strong foundation required to achieve their goals.

6.0 Rapid Transit System Recommendations

The Rapid Transit Task Force recommends the implementation of **City-Wide Quality Corridors** over **Two Phases**.

Phase One focuses on the implementation of six City-Wide Quality Corridors:

Dedicated Busways
- Southwestern
- Eastern – Stage 1

On-Street Improvements
St. Mary's Road
Portage Avenue
Henderson Highway
Main Street

Phase Two focuses on the completion of the Eastern Corridor and the development of five additional City-Wide Quality Corridors:

Dedicated Busways
Eastern – Stage 2

On-Street Improvements
St. Anne's
McPhillips
Notre Dame/Cumberland/Balmoral
Marion/Goulet/Archibald
Kenaston

The **City-Wide Quality Corridors** will be high capacity, high performance urban transit routes and services with the following characteristics:

1. Efficient, high performance runningways, which are a combination of, dedicated busways, diamond lanes, mixed traffic with queue jump lanes.
2. Centralized, universally accessible stations, featuring translucent heated shelters, full complement of passenger amenities and a colour scheme, signage and architectural elements consistent with the brand identity.
3. Off-vehicle fare collection (provides opportunity for multiple-door boarding).
4. Real-time schedule information (at stations and on board vehicles).
5. Traffic signal priority (allows Transit vehicles to clear an intersection and other points of congestion ahead of other traffic).
6. High quality, universally accessible buses
7. Incorporates sustainable transportation principles through the use of clean fuel hybrid powered buses with reduced green house gas emissions.
8. Active transportation commuter paths (for cycling, roller blading, walking) integrated into dedicated busways and, where possible, into on-street improvements.
9. Park and Ride Facilities.
10. Positive and attractive brand identity and image.
11. Improved service performance by reduced travel times, improved service reliability and increased frequency of service.

6.1 Order of Magnitude Capital Costs

The estimated construction cost of Phase One is approximately $165 million. Phase Two is estimated at $105 million, for a total cost of $270 million for the 11 City-Wide Quality Corridors.

6.2 Order of Magnitude Operating Costs

Operating costs cannot be estimated until functional design studies, including detailed ridership studies, are completed for each route. However, other jurisdictions report that with the implementation of a Rapid Transit System, the productivity of their system improved.

6.3 Public Support for City-Wide Quality Corridors

There were 279 members of the public present at two public open houses held at the Winnipeg Convention Centre. The purpose of the open houses was to gauge the support of the participants for the proposed Rapid Transit System Concepts. The Phase One City-Wide Quality Corridors received 69.2% support, with only 20.9% indicating that they either disagreed or strongly disagreed. The Phase Two City-Wide Quality Corridors received 65.7% support, with only 17.4% indicating that they either disagreed or strongly disagreed.

7.0 Rapid Transit Policy Recommendations

With regards to policy issues, the Rapid Transit Task Force makes the following recommendations:

Access:
- The proposed Rapid Transit System follow principles of Universal Design.
- The proposed Rapid Transit System be designed and marketed to encourage use by existing Handi-Transit users.

Customer Service:
- A public education campaign be developed on the redesigned Diamond Lanes.
- Origin/Destination studies to be completed every three to five years to ensure Transit is meeting customer needs.
- Transit build on the existing DART service and pilot a shuttle bus project to provide enhanced feeder service to the Rapid Transit System.

Economic Development:
- Partnerships with business in station construction, operation and retail services should be explored.
- The establishment of Memorandums of Understanding with the bus manufacturing industry on research and development should be considered.

Governance:

City Issues:
- The Alternative Service Delivery Committee investigate the creation of a Winnipeg Transportation Authority to oversee both the road and transit systems.
- As part of The Winnipeg Transportation Authority, a Transit Land Development component should be considered.

Provincial Issues:
- The City champion "Yield to Bus" legislation.
- The benefit for large EcoPass employers be increased.

- City Council negotiate with the Province to restore the historical 50% share subsidy of Transit, a higher proportion of Handi-Transit funding and dedicate a portion of the Provincial gas tax to Transit Improvements.

Federal Issues:

- City Council lobby the Federal government for legislation to provide municipalities with first right of refusal on railway lands that are to be offered for sale.
- City Council lobby for transit incentive programs such as the EcoPass program, to be eligible for a tax deduction.

Guiding Future Development:

- City Council be open to shared transit service agreements with outside municipalities if it is shown to be cost neutral to the City of Winnipeg.
- Options for improving transit service to important destinations, such as the Airport, should be considered.
- City Council consider land-use charges for new developments that would be dedicated to transit system improvements.
- City Council should adopt a formal policy to acquire rail rights-of-way for future rapid transit and active transportation purposes as outlined in this report and Plan Winnipeg Policy Plate B.
- Design and construction of the BRT system should consider conversion to LRT in the future.
- City Council should maintain Transit Works outlined in Plan Winnipeg Policy Plate B for future long term development. The recommendations made in this report are complementary to the existing Plan Winnipeg. Council should be urged to adopt this report's recommendations into the next review of Plan Winnipeg.

8.0 Capital Financing

The City and the Task Force have committed to develop financing alternatives based on two thirds of the capital costs being funded by grants from the Provincial and Federal governments. Six grant programs could be considered:

1. Canada – Manitoba Infrastructure Program
2. Canada Strategic Infrastructure Fund
3. Municipal Rural Infrastructure Fund
4. Infrastructure Grant Gas Tax
5. Additional Support for Public Transit
6. Federation of Canadian Municipalities Green Municipal Funds

The remaining one third of the capital costs could be financed by the City via the City of Winnipeg's Annual Capital Budget on a 'pay-as-you-go' basis over ten years for each phase. The City of Winnipeg's annual payments would be $5.5 million for Phase One and $3.5 million for Phase Two.

8.1 Financing Alternatives for Operating Costs

Winnipeg's Transit System fares usually cover 53% of its operating costs (well above the North American average of less than 40%). The remainder of the operating funds comes from the City (30%) and the Province of Manitoba (17%).

There are two alternatives for financing the City's share of the annual operating costs. One is redistribution of the existing City of Winnipeg Annual Operating Budget to the benefit of Transit. The second is sharing of taxes with the Province including potential options such as fuel tax sharing (approximately $10 million annually for every one cent fuel tax), motor vehicle license fee sharing (approximately $3.3 million annually for every $10 fee per license) and sales tax sharing (approximately $85 million for every 1% in sales tax).

9.0 Next Steps

The following steps are intended as a guideline to further advance the implementation of Phases One and Two of Winnipeg's Rapid Transit System over twelve years.

1. City Administration to report to Council on study costs and time frames for Phase One.
2. Council to allocate dollars to Administration for completion of required studies for Phase One.
3. Completion of the Feasibility Study for Phase One City-Wide On-Street Improvements, the Functional Designs for Phase One Dedicated Busways and the Operational Design for Phase One.
4. Completion of preliminary design studies for Phase One City-Wide On-Street Improvements And Dedicated Busways, including Preliminary Environmental Assessment For Busways.
5. Funding Negotiations with the Provincial and Federal Governments.
6. Final Detailed Design of Phase One City-Wide On-Street Improvements And Dedicated Busways.
7. Phase One construction.
8. Begin Phase Two Study, funding and construction process using steps outlined for Phase One.
9. Every six months, Administration to provide Council with a Rapid Transit Implementation Progress Report (RTIP report) outlining the progress of the above steps with specific estimates of costs and time frame to completion.

1.0 Introduction

1.1 Report Scope and Limitations

The establishment of a Rapid Transit Task Force was endorsed by Council, on September 29, 2004, to report to the Executive Policy Committee (EPC), by no later than June 2005, on various rapid transit options for Winnipeg. In July 2005 Council granted a 90 day extension to this deadline. The Task Force officially began its work with approval of its proposed work plan by EPC Secretariat and Council approval of the project budget on December 15, 2004.

The purpose of the Rapid Transit Task Force Report is to recommend a 'Made in Winnipeg' Rapid Transit solution that has substantial support from Winnipeggers, satisfies the future needs of Winnipeggers and can be built at a reasonable cost to taxpayers using existing infrastructure where possible.

The study will:

1. Report on Winnipeg's Transit Needs and Opportunities based upon a public consultation process and review of existing infrastructure.
2. Identify and evaluate various rapid transit options for Winnipeg (including rail and bus options).
3. Report on the public's views and attitudes towards the options explored.
4. Recommend a 'Made in Winnipeg' Rapid Transit solution including identification of order of magnitude costs and plan for implementation.
5. Develop policies to enhance and support the recommended rapid transit system and associated initiatives.
6. Identify potential benefits of the proposed Rapid Transit solution based upon experiences in other jurisdictions.
7. Identify order of magnitude financial implications including a funding and financing strategy and potential funding partnerships.
8. Outline a critical path and timeline.

The recommendations of this study will be submitted to the EPC and Council for approval.

Due to limitations imposed by budgets and time constraints the recommendations made by the Task Force will require further study as outlined in this report (see Next Steps Section 9.0). Potential rapid transit corridors have been identified based upon available information and the limited technical resources of the Task Force. Rapid Transit Alternative Studies in other jurisdictions have taken, on average, one year to complete with technical support fees in excess of $400,000.00. Each corridor must still be evaluated through a functional design process (engineering studies and community consultation) prior to determination of final locations and extent. Benefits and order of magnitude costs outlined in this study were extrapolated from existing studies and experiences in other jurisdictions and will require further investigation as part of a detailed design process once functional design has been completed.

1.2 Task Force Mission Statement and Objectives

The primary tasks of the task force were outlined by EPC and Council (refer to Council Minutes and EPC reports in Appendix A) and were summarized by the Task Force in the following Mission Statement and Objectives.

Mission Statement

The Rapid Transit Task Force and Advisory Council will work together to recommend to the City of Winnipeg's EPC and Council, by June of 2005, a 'Made in Winnipeg' Rapid Transit solution that creates a vision for the future of public transportation.

The proposed Rapid Transit Concept(s) must satisfy the future needs of Winnipeggers, have substantial support from Winnipeggers, be built at a reasonable cost to taxpayers using existing infrastructure where possible, and be guided by a customer service ethic.

The Rapid Transit Task Force and Advisory Council will accomplish this task by facilitating extensive public consultations to ensure public input and by conducting extensive research, relying on existing available information wherever possible.

Objectives

1. To recommend a 'Made in Winnipeg' Rapid Transit solution that creates a **VISION** for the future of public transportation with a strong **CUSTOMER SERVICE ETHIC**.

2. To **EXAMINE** the rationale, opportunities and constraints for a Rapid Transit **CONCEPT(S)** in Winnipeg.

3. To **DETERMINE** the **PUBLIC'S VIEWS AND ATTITUDES** toward Rapid Transit in Winnipeg and proposed Rapid Transit Concepts recommended by the Task Force and Advisory Council, through a consultative public process.

4. To **EXAMINE** all of the **AVAILABLE OPTIONS FOR RAPID TRANSIT** that respond to the unique pressures, needs, opportunities and constraints (in terms of existing infrastructure) identified and the public's views and attitudes towards Rapid Transit in Winnipeg. Existing available information on rapid transit technologies will be used.

5. To **IDENTIFY** (where possible) the **COSTS** and **BENEFITS** (environmental, economic, social, transportation) of a new Rapid Transit System, using existing available information, where possible.

6. To **EXPLORE** and report on options for **FINANCING** rapid transit, including strategy for obtaining substantial federal and provincial government funding and public/private partnership.

7. To recommend an **IMPLEMENTATION STRATEGY** outlining the **NEXT STEPS** for the Mayor, EPC and Council towards the proposed Rapid Transit solution.

1.3 The Task Force and Advisory Council Members

The Task Force consists of three Council members appointed by the Mayor:

Chair:	Councillor Russ Wyatt
Member:	Councillor Jenny Gerbasi
Member:	Councillor Mike Pagtakhan

It is supported by a six-person Advisory Council:

Dr. Jino Distasio	Russ Malkoske
Deborah Goodfellow	John Mann
Sandy Hopkins	Dr. Barry Prentice

Each Advisory Council member brings unique skills and expertise to the Rapid Transit Task Force.

Dr. Jino Distasio – Acting Director of the Institute of Urban Studies, University of Winnipeg. Over the last four years he successfully guided research initiatives that focused on housing market assessments, neighborhood changes, urban transportation planning and inner city revitalization.

Deborah Goodfellow – A Broker for Goodfellow & Goodfellow Real Estate Ltd. In 1995 Goodfellow served on The Winnipeg Real Estate's Board of Directors. Currently she serves as the President of The Manitoba Real Estate Association.

Sandy Hopkins – Mr. Hopkins brings 30 years business experience, including 15 years as an independent consultant and 12 years as Board Chair of the Winnipeg Airports Authority. He has completed strategic planning and board governance projects for many industry associations, arts organizations and other non-profit and not-for-profit groups.

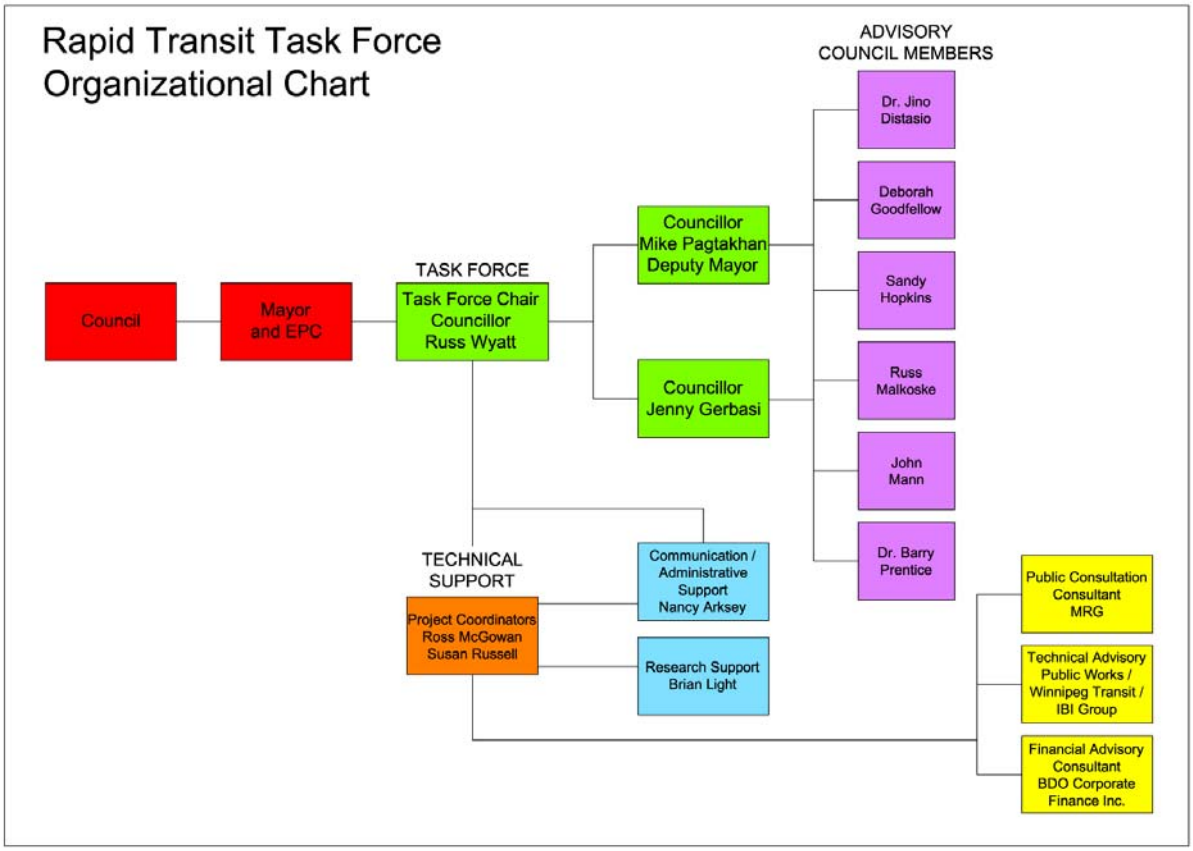
Russell Malkoske – Mr. Malkoske is an active community leader and youth sports coach. He has worked as an insurance adjuster since 1972 and is currently the senior adjuster and managing proprietor for QA Adjusting Company. As well, Malkoske is the current president of the Insurance Institute of Manitoba and the Canadian Independent Adjusters Association National Executive.

John Mann – Mr. Mann immigrated to Canada in 1971 from England where he worked as a bus driver. Prior to that, he obtained his B.A. and B. Ed in India where he was employed as a teacher. He has served on numerous boards, including the Thompson General Hospital Board, the Government of Manitoba Venture Capital Board, and the Manitoba Highways Traffic board.

Dr. Barry Prentice – Dr. Prentice is the former Director of the Transport Institute and a Professor in the I.H. Asper School of Business. His major research and teaching interests are logistics, transportation economics, urban transportation, economic development and trade policy.

The Task Force retained McGowan Russell Group to provide project co-ordination services, IBI Group to provide transit technical support and BDO Corporate Finance Inc. to provide financial analysis.

Technical Assistance was provided by City of Winnipeg Departments including Planning, Property and Development, Public Works and Transit. The EPC Secretariat, the City of Winnipeg Clerk's Department, the Mayor's Office and the Office of the Councilors' provided operational and logistical support and the CAO Secretariat served as the liaison with the administration.



1.4 Study Process

The Study process encompassed six integrated steps designed to move the project forward rapidly and cost-effectively within the parameters of a tight time frame and limited budget.

1.4.1 Review and Analysis of Existing Information

Given the diverse background of the various Task Force and Advisory Council members, a rigorous schedule of Technical Workshops and Presentations was undertaken to provide information necessary to enable Members to make informed recommendations on Rapid Transit for Winnipeg.

Technical Workshops, presentations and panel discussions with relevant City Departments (Transit, Planning, Property and Development, Public Works), the University of Manitoba Transport Institute, the University of Winnipeg Institute of Urban Studies, Canadian National, Canadian Pacific, Bombardier, New Flyer, West Start/Calstart and BDO Dunwoody were undertaken. Transit experts from other Canadian cities (Pat Jacobsen and Glen Leicester – Vancouver, Gord Menzies – Edmonton, Gordon Diamond – Ottawa, Dave Colquhoun - Calgary, Charles Stolte – Saskatoon Transit and Dan Miles – York Region) were consulted to review their experiences in developing and operating their Rapid Transit Systems. In addition, the technical support staff gave presentations on governance issues, land availability issues, safety and security issues, rapid transit system elements (runningway options, vehicle options, stations and terminals, advanced technology features, service plans), effects of rapid transit system elements on system performance, rapid transit system element costs, transit oriented development, rapid transit initiatives in other jurisdictions, processes of implementing a modern Rapid Transit System and demographics and trends in transit ridership.

These information sessions were designed to discuss and explore:

1. Views and attitudes towards Transit in general, and rapid transit for Winnipeg.
2. Pressures and needs creating a demand for a Rapid Transit System in Winnipeg.
3. Opportunities and constraints, in terms of existing infrastructure, to build a rapid transit system at a reasonable cost.
4. Rapid transit system options that respond to the unique pressure, needs, opportunities and constraints identified for Winnipeg including bus, electrical light rail and diesel passenger rail options.
5. Options for financing a rapid transit system.

An important component of this step of the study process was the review and analysis of existing material and reports including, but not limited to:

1. BRT Infrastructure Canada Submission – 'Winnipeg's Bus Rapid Transit Project, Benefit Cost Analysis of Winnipeg's Proposed BRT Phase I Project, Southwestern Transit Corridor – BRT's System: Environmental Assessment
2. Winnipeg Transit Demand Forecasting, 27 August 2004
3. Plan Winnipeg 2020 Vision
4. Directions to the Future: The Guide to Better Transit for Winnipeg
5. Transplan 2010
6. Urban Transportation Systems: Choices for Communities
7. Future Transport in Cities
8. The Transit Metropolis
9. The New Transit: Best Practices in Transit-Oriented Development
10. Fort Rouge Yards Concept Plans
11. Transit Oriented Development Best Practices Handbook
12. Case Studies in Sustainable Transportation by Transport Canada
13. Transportation Research Circular E-CO58-9th National Light Rail Transit Conference
14. Conference Board of Canada, Long Term Demographic Trends in Winnipeg, CMA Report, September 2004
15. Rapid Transit Studies completed by other jurisdictions including Vancouver, Calgary, Saskatoon, Brampton, York Region, Ottawa, Los Angeles, New Jersey, Minneapolis.
16. Feasibility Study of Alternative Transportation Systems for Downtown Winnipeg
17. Introduction of LRT Systems: Winnipeg's Southwest Corridor Analysis of Scope and Cost, October 2004
18. CUTA (Canadian Urban Transit Association) reports
19. Light Rail Now sponsored reports
20. Metro Magazine articles
21. Characteristics of BRT for Decision Making
22. TCRP (Transit Cooperative Research Program) reports

1.4.2 Preliminary Public Consultation Process

The Preliminary Public Consultation Process was undertaken to determine the public's views and attitudes towards Transit generally and Rapid Transit for Winnipeg. This process included four critical components.

1. Individual interviews and discussions with City Councillors.
2. Public Interest Group Presentations.
3. Written submissions from public interest groups and the general public in response to a questionnaire posted on the Rapid Transit Task Force website.
4. Ten City-Wide Public Meeting Workshops including a questionnaire.

1.4.3 Preparation of Technical Reports

Information considered critical to the decision making process that could not be obtained from existing sources was obtained through the preparation of technical reports by industry experts.

IBI Group Transportation Engineers and BDO Corporate Finance Inc. were hired by the Task Force to prepare technical reports on the Feasibility of Diesel Passenger Rail and Potential Funding and Financing Strategies and Partnerships, respectively.

1.4.4 Rapid Transit System Task Force: Visioning Exercise

Based upon the results of the preliminary public consultation process and their review and analysis of existing information, the Task Force members discussed their vision for Winnipeg's Rapid Transit System. Through much deliberation consensus was reached on a concept for presentation to the public through an open house process.

1.4.5 Final Public Consultation Process

The Final Public Consultation Process was undertaken to determine the public's views and attitudes towards the Rapid Transit options explored by the Task Force. This process included two steps.

1. Two Public Open Houses including an exit survey.
2. Information session for City Councillors.

1.4.6 Final Report

The study findings, technical analysis, public consultation results, recommendations and implementation strategies are documented in this final report. The Task Forces' recommendations were arrived at through a process of extensive group discussions and consensus decision making.

2.0 Assessment of Winnipeg's Transit Needs and Opportunities

2.1 Demand for Rapid Transit in Winnipeg

The demand for rapid transit in Winnipeg must first be understood within the context of some basic demographic data about Winnipeg and the surrounding region. In 2004 Winnipeg's estimated population was approximately 647,600. The estimated Winnipeg Census Metropolitan Area population (CMA, which includes Winnipeg and ten surrounding municipalities) for 2004 was 702,400. To add further context of Winnipeg's position within the province the estimated population of the Province of Manitoba in 2004 was 1,170,300. The previous data is based on The Conference Board of Canada, Metropolitan Outlook data forecast of 2004. The City of Winnipeg has a commanding 92.2% of the entire CMA population.

It is further estimated that by 2009 Winnipeg's population will be 670,400 and the Winnipeg CMA will be 727,100.

With these population numbers in mind, one can view that Winnipeg's transit infrastructure has performance needs and demands. Winnipeg is the largest urban centre in Canada without a rapid transit service.

Winnipeg Transit as part of its mandate has repeatedly gathered data about the users of Transit and their travel patterns. This data, within the modern context of 1970 onward, continually points in the direction of the need for a rapid transit service and rapid transit support. Over the many decades that Winnipeg has had a public transit service – whether it is public or privately run – understanding the travel patterns and attitudes of transit users is vital to service success and cost efficiency.

Rapid transit has had strong public support. This support has not been transient and the demand from a planning and public support context has been consistent. Briefly, one can see it in the ongoing transit planning based on the history of transit planning in Winnipeg.

In the 1970's, *The Southwest Corridor Study*, which was produced for all three levels of government, found that Winnipeg has met the threshold for the need of a rapid transit service. One of the recommendations from this study was that a rapid transit system should be studied further to alleviate the projected congestion of Pembina Highway. Winnipeg's infrastructure and the patterns of use energized the need for innovative and efficient movement of people. The feasibility study that followed examined four different types of rapid transit: busway using diesel buses, busway using electric trolley buses, light rail transit (LRT) and fixed guideway. The study compared the systems according to capital costs, annual operations costs, level of service and environmental impacts. The study concluded that the busway option using diesel buses would be the best system.

This conclusion would be repeated in subsequent studies and reports in the following decades. The system benefits and aptness to Winnipeg's own needs would ultimately be made part of the City's Official Plan – Plan Winnipeg since 1986.

In the Winnipeg Rapid Transit Project of 2003-2004 the travel behaviors of Winnipeggers were studied. About two thirds of the population use the system occasionally, 45% make at least one trip on transit per week and about 37% make regular use of the system (3 or more one way trips each week). Origin and destination studies conducted in 1999 indicated 75% public support for a bus rapid transit (BRT) system in Winnipeg.

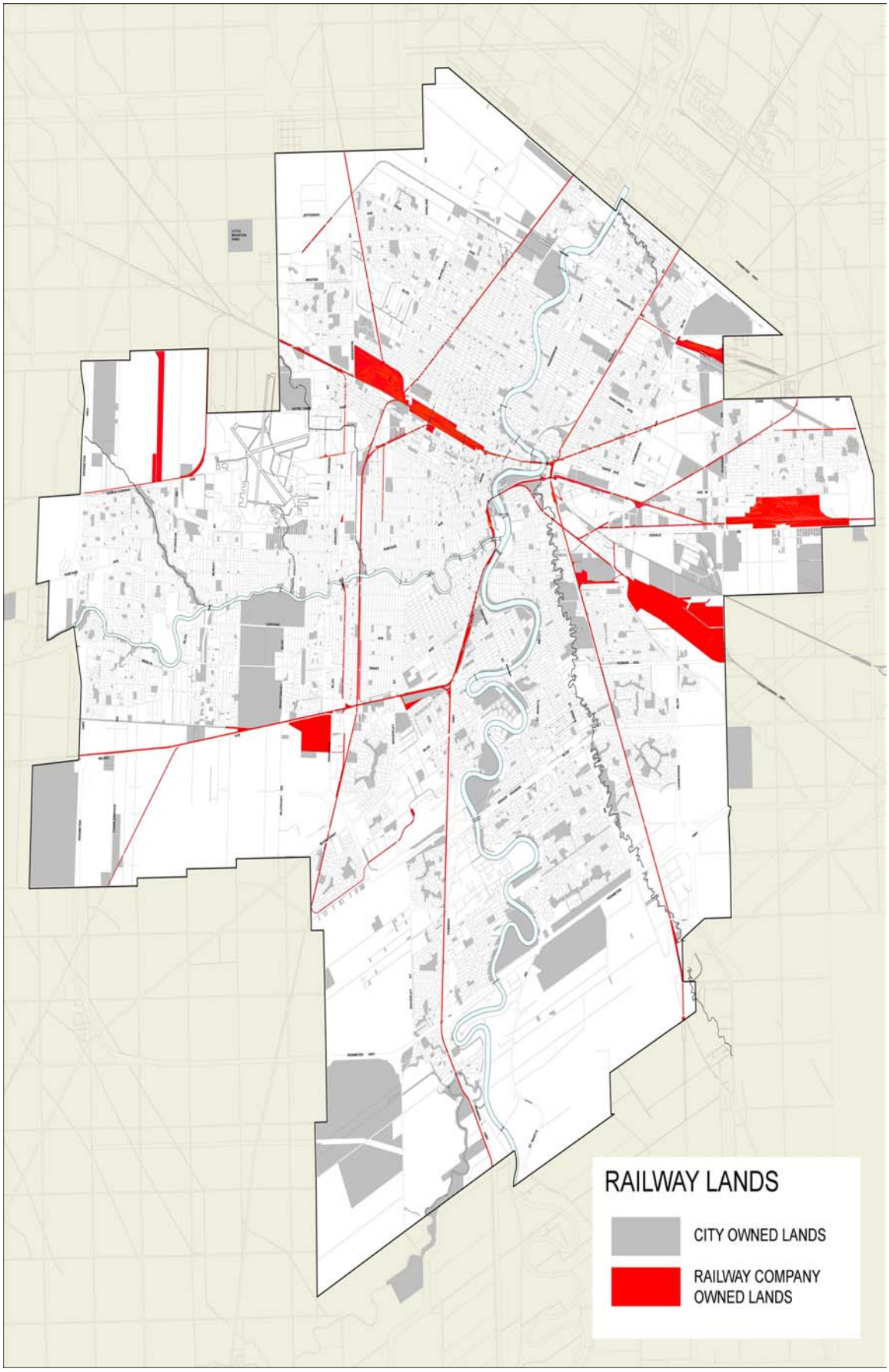
Open houses were conducted as part of the 2003-2004 BRT Project. Exit surveys indicated that support for BRT had risen to 79%. However, the results of a Winnipeg Free Press and Probe Research Inc. poll conducted in September 2004 were roughly evenly split 48% for BRT, 50% against and 2% no opinion.

2.2 Existing Infrastructure

The Task Force was mandated by City Council to investigate the use of existing infrastructure, including Winnipeg's existing rail lines and road rights of way (R.O.W.), in the development of a 'Made in Winnipeg' Rapid Transit solution.

2.2.1 Railway Infrastructure

The Task Force undertook extensive meetings and discussions with CP and CN and engaged the services of IBI Group (Transportation engineers responsible for the design and development of the O-Train service in Ottawa) to identify potential rail lines for rapid transit use. The following map indicates Railway Property ownership.


RAILWAY LANDS
CITY OWNED LANDS
RAILWAY COMPANY
OWNED LANDS

It is interesting to note the following:

1. The City of Winnipeg has purchased property for a Transit Corridor through the Fort Rouge Yards. The corridor is 1500m long and 45m wide, located east of the railway right-of-way and west of the privately owned land that has been earmarked for Transit Oriented Development. The City of Winnipeg is collaborating with the private property owner and his consultant team to formulate a comprehensive plan to guide development over time for the lands.
2. Six railway companies own rights of way in Winnipeg: Canadian Pacific, Canadian National, Burlington Northern (Manitoba), National Transcontinental Railway, Central Manitoba Railway and Via Rail.
3. With the exception of CN's main line, the railway corridors in Transcona have multiple owners.
4. The City of Winnipeg owns a number of active and inactive railway corridors including the Greater Winnipeg Water District line in St. Boniface, old spur lines between the Marconi line and the Louise Bridge, the old CP Springfield line north of Leila and various industrial spur lines.
5. The City of Winnipeg is currently in negotiations with CPR regarding purchase of the Marconi line along the Raleigh/Gateway Corridor, for a transitway. CPR has started to remove the track to repair active lines in other areas of the City. The balance of track remaining is not suitable and beyond repair for passenger rail service.
6. The main rail lines are intensively used (more than 40 trains per day and therefore not available for rapid transit use) and the secondary lines are not adequate for passenger rail service without major reconstruction.
7. The railway line within the Letellier Corridor was identified as having some potential for rapid transit use if the existing freight service can be transferred to the CP Emerson line or restricted to late night use and if the line is upgraded with new ballast, ties and track.
8. The City has the right to lease the Letellier line for 99 years (option expires 2009) and the right to use the right-of-way for the two most westerly tracks in Union Station.

Right of Way	Width (metres)	No. of Lines	Potential Use of Tracks for Passenger Rail Service
Emerson	30.48	2	none
La Riviere	60.92	Varies 1-4	uncertain
Letellier	30.48	1	some
Marconi	30.48	2	none
Pine Falls	27.37	1	uncertain
Winnipeg Beach	30.48	1	uncertain

2.2.2 Roadway Infrastructure

Some of Winnipeg's main streets, with generous rights-of-way and wide centre medians, have the potential to be used for rapid transit corridors with some reconstruction and modifications to the existing infrastructure. Where new pavement and/or right-of-way acquisition may be required this work may be co-ordinated with current initiatives of the Public Works Department. The following list of proposed roadway infrastructure works was provided by Public Works.

1. Louise Bridge/Higgins/Nairn:
There is a long-range plan to add a second bridge west of the current Louise Bridge (or a 4 – lane bridge if it is due for replacement). This would form part of a 4 – lane divided roadway from Higgins Avenue to the Raleigh/Gateway Route. The alignment is shown in Plan Winnipeg for consideration beyond the year 2020. We have also had a brief look with Transit's engineering consultant at extending Higgins straight east to cross the river (south of the CPR Molson line) to tie in with the Eastern Thoroughfare/Eastern Transit Corridor alignment. As a vehicle/transit/pedestrian/cycle facility it would also relieve much of the congestion on Nairn between Watt and the Louise Bridge and may eliminate the need to run a transitway over Waterfront Drive and through the Whittier Park historical sites.
2. Empress/St. James Streets:
Long-range plans for St. James Street include widening the right-of-way to add a median and left turn lanes from St. Matthews to Dublin. Empress Street improvements include widening the 2-lane section at signalized intersections to create separate left turn bays so that through traffic is not blocked by left turning vehicles. The issue of one-way pairs was considered during the Polo Park Area Improvements Study and due to issues associated with the potential impact to commercial establishments was considered not feasible. The idea was not pursued.
3. Disraeli Bridge:
Long-range plans for the Disraeli Bridge include widening the bridge to three lanes in each direction (curb lane transit lane). It is estimated that the two additional lanes will add $50 million to the cost of the bridge.
4. Renewals of Regional Streets (5 – Yr. Program):
Public Works provided a list of Regional Streets that need renewal and are part of our 5 – year program. Proposed upgrades along existing transit routes include Regent Avenue West, St. Mary's Road, McPhillips Street, Notre Dame Avenue, Portage Avenue and Pembina Highway. Note that this list is subject to change due to budget realities and direction from elected officials. The complete list is included in Appendix C.
5. New Strategic Infrastructures:
$800,000 has been allocated in 2009 for Chief Peguis Trail for preliminary design, land acquisition and public consultation.

6. Traffic Improvements:
In 2005, twinning of St. Anne's Road from Novavista Drive to Southglen Boulevard. In 2007 (tentative) twinning of Panet Road/Molson Street from Munroe Avenue to Kimberly Avenue.

2.3 Public Views and Attitudes Towards Bus Rapid Transit

2.3.1 Public Interest Group Presentations

The Rapid Transit Task Force was mandated to garner the general public their opinions and views as part of its 'ground-up' consultation methodology with the citizens of Winnipeg. The Task Force invited and was open to public interest groups delivering their opinion to the Task Force. Submissions and presentations were delivered over a two-day period. On January 27 and 28, 2005 the Task Force met with twenty-one groups.

Below is a list of the names of the groups and the main presenters as they appeared on each day.

January 27, 2005:

Winnipeg BIZ – Trudy Turner
Exchange District BIZ – Lisa Holowchuck
Downtown BIZ – Stefano Grande
Nick Ternette
Coalition of Disabled Transit Riders – Lori Hunter
Canadian Paraplegic Association – Colin Mathieson
Winnipeg Labour Council – written submission
Amalgamated Transit Union – Keith Scott
Jeff Lowe
Citizens for Better Public Transit in Winnipeg – Jim Jaworski
Winnipeggers for Bus Rapid Transit – Kai Hasselriis

January 28, 2005

Civic Youth – Lee Haber, Adam Prokopanko and Kristofer Bergmann
Resource Conservation – Kenton Lobe
Civic Environment Committee – Ken Klassen
University of Manitoba Students Union – Amanda Aziz
University of Winnipeg Students Association – Michelle Hamilton, Kate Sjoberg and Andrew Basham
Manitoba Society of Seniors – Harry Paine
Urban Development Institute – written submission
Manitoba Homebuilders Association – Garth Steek
Vincent Massey High School Student Group – Shelagh Pizey-Allen
Social Planning Council of Winnipeg – Wayne Helgason and Harold Dyck
Winnipeg Chamber of Commerce – Chuck Davidson and David Angus

2.3.2 Interviews with City Councillors

The Rapid Transit Task Force met with City Councillors on a number of occasions as part of its initial step of the Task Forces' Target Workplan: Step One Workshops with Technical Interest. Councillors were given opportunities to meet either one-on-one with the Project Coordinator and research staff or as a group with the Task Force.

On January 18th and 24th some Councillors met with Susan Russell, Project Coordinator, and or with research support staff to be interviewed and gather their opinion on Rapid Transit for Winnipeg. Below is a list of the dates that Councillors met with the Project Coordinator and or research support staff:

January 18, 2005

Councillor Mark Lubosch – North Kildonan Ward
Councillor Harvey Smith – Daniel McIntyre Ward
Councillor Gord Steeves – St. Vital Ward

January 24, 2005

Councillor Donald Benham – River Heights-Fort Garry Ward
Councillor Harry Lazarenko – Mynarski Ward
Councillor Franco Magnifico – St. Boniface Ward

The Task Force met again with City Councillors. On February 11, 2005 the Task Force met with Councillor Benham, River Heights – Fort Garry Ward, Councillor De Smedt, St.Charles Ward, Councillor Lillian Thomas, Elmwood – East Kildonan Ward and Councillor Harvey Smith, Mynarski Ward. On February 17, 2005, Councillor John Angus, St. Norbert Ward met with the Task Force to deliver his presentation: "Rapid Transit for the 21st Century".

2.3.3 Public Workshops

The purpose of the Public Meeting Workshops was to determine the public's views and attitudes towards Winnipeg's existing transit service and a Rapid Transit System in Winnipeg. The workshop format consisted of a brief introduction, outlining the mandate of the Rapid Transit Task Force and purpose of the workshop, followed by group discussions focusing on the strengths and weaknesses of the existing transit service and key service attributes for Rapid Transit in Winnipeg (summarized in Section 2.0) and ended with a questionnaire based upon the working group discussions (summarized in Section 3.0).

There were 334 participants in the 10 workshops held City-Wide from January 20 to February 8, 2005. 'Sign In' sheets were used to track the number of participants and their addresses within Winnipeg. The percentage of participants from each Municipal Ward in attendance was as follows:

Charleswood – Tuxedo – 5%	River Heights – Fort Garry – 15%
Daniel McIntyre – 9%	St. Boniface – 6%
Elmwood – East Kildonan – 7%	St. Charles – 3%
Fort Rouge – East Fort Garry – 20%	St. James – Brooklands – 4%
Mynarski – 3%	St. Norbert – 8%
North Kildonan – 4%	St. Vital – 7%
Old Kildonan – 2%	Transcona – 6%
Point Douglas – 1%	

The workshops were widely advertised through the newspapers (Free Press, Sun and all local newspapers through paid advertisements and news articles), radio (paid advertisements on CJOB and news spots on CBC), television (televised news coverage of the first workshop on A Channel, Shaw Cable Access and CKY), 200 notices posted in community centres, libraries, arenas, universities, colleges, high schools, senior centres, bus shelters and workshop venues, e-mails to public interest groups and information posted on the Rapid Transit web site.

Summary of Public Workshop Discussion Results

Group discussions were facilitated by members of the Task Force support team. They also recorded each group's views on the strengths and weaknesses of the existing transit service and key service attributes for Rapid Transit in Winnipeg. A total of 47 groups participated over the course of the 10 public meeting workshops. The results represent only the views and attitudes of those who attended the workshops and cannot be generalized to the entire population of Winnipeg.

The findings of the group discussions may be summarized as follows:

- The groups identified 56 strengths and 77 weaknesses of the existing transit system.

<u>Strengths of the Existing Transit System</u>

- 89.4% of the groups identified 'Courteous/friendly/skilled Drivers.'
- 78.7% of the groups identified 'Navigo/website.'
- 72.3% of the groups identified 'Regular Fares.'

Weaknesses of the Existing Transit System

- 85.1% of the groups identified 'Frequency of Buses.'
- 78.7% of the groups identified 'Comfort of Stops.'
- 72.3% of the groups identified 'Transfer Points – Timing of Buses.'

Key Attributes of a Future Winnipeg Rapid Transit System

- 85.1% of the groups identified 'Speed (total trip time competitive to car).'
- 80.9% of the groups identified 'Comfortable Stations.'
- 72.3% of the groups identified 'Environmental Impact.'

Charts summarizing the findings of the working group discussions are included in Appendix D.

Summary of Questionnaire Findings

The questionnaire (refer to the sample included in Appendix D) was designed to determine the respondent's views on the strengths and weaknesses of the existing transit system and to provide specific feedback on service attributes critical to the development of a rapid transit system for the City of Winnipeg.

The questionnaire was filled out by 286 workshop participants and 147 website respondents (total 433 completed questionnaires). The results represent only the views and attitudes of those who attended the workshops and visited the website and cannot be generalized to the entire population of Winnipeg.

The highlights of the questionnaire findings are:

- 15% of respondents do not use the Winnipeg Transit System.
- Of the 85% that use Transit, most (35%) use it only once or twice a week. Only 23% use Transit more than 10 times per week.
- Most use Transit to go to work/school (40%), for environmental concerns (26%), cost/affordability (24%) and/or convenience (23%).

What respondents like best about the existing transit service:

- 'Convenience' (50.8%).
- 'Bus Drivers' (17.9%).
- 'Fares' (16.6%).

What one thing respondents would change or improve about the existing transit service:

- 'Development of Dedicated Bus Lanes/BRT System' (28.9%)
- 'Frequency' (22.2%).
- 'Speed' (11.1%).

Strongest service attribute of the existing transit system:

- 'Safety on Board Vehicles' (58.1%).
- 'Reliability' (45.9%).
- 'Accessibility' (40.5%).

Weakest service attribute of the existing transit system:

- 'Comfort of Bus Stops' (60.4%)
- 'Frequency of Service' (59.8%)
- 'Speed' (51.0%).

99% of respondents supported the development of improved Transit facilities.

95% of respondents supported the development of a Rapid Transit System.

When asked to rank service attributes by order of importance:

1) 'Speed' (average ranking 3.17, 25.1% of respondents ranked #1).
2) 'Reliability' (average ranking 3.80, 13.6% of respondents ranked #1).
3) 'Frequent Service' (average ranking 3.87, 17.4% of respondents ranked #1).

- 74.8% of respondents provided comments/ideas regarding Transit as follows:
    - 19.5% felt that speed and reliability are absolutely critical.
    - 19.2% felt that the City must make Transit/Rapid Transit a priority. (studied enough) and that development of a Rapid Transit System must start now.
    - 17.0% felt that a BRT system (similar to original plans, Ottawa, Australia) should be implemented.
    - 11.5% felt that low fares and affordability are critical.
    - 11.5% felt that convenient/direct routing is essential.
    - 11.1% felt the system must be environmentally friendly and that Rapid Transit is a priority for environmental concerns.

City Image

- It is important to note that the issue of the City's image and the idea that Rapid Transit increases citizen's pride and confidence in the future of their City, was raised by participants and respondents even though the question was never posed.

Graphs and charts summarizing the findings of the Questionnaire are included in Appendix D.

2.4 Policy Context

Winnipeg Transit is held by two sources of policy – the City of Winnipeg Charter Act and Plan Winnipeg. The City of Winnipeg Charter Act is a Provincial Statute and the Provincial Legislature would be the setting to change the shape of government for the City of Winnipeg. Therefore, the Province of Manitoba, as a vital partner, has a vested interest in the shape and powers of any vision the City of Winnipeg would want to enact.

Plan Winnipeg has been in existence for approximately 20 years and is the City's long-range policy planning tool. This policy-planning guide addresses many broad physical, social, economic and environmental conditions of the City. It is regularly reviewed and updated through annual surveys and an overall review approximately every six years.

In Section 3C of Plan Winnipeg–Integrating Transportation – both Transportation planning and Winnipeg Transit are guided by10 points towards one policy goal of "The City shall provide an integrated transportation network that supports its commitment to sustainability, compact urban form, and the reduction of greenhouse gas emissions" (City of Winnipeg, December 2001, p. 35). Section 3C-02 is specific to Winnipeg Transit:

> "The City shall commit to transit improvements to increase ridership by:
>
> i. making ongoing improvements to service;
> ii. making transit service easier to use;
> iii. making transit service more affordable;
> iv. making transit service more productive; and
> v. making a commitment to high speed transit."
>
> (City of Winnipeg, December 2001, p. 35)

Plan Winnipeg further states a commitment to the Universal Design Policy (UDP) in section 3C-04. UDP promotes mobility through principles of universal access. UDP pays attention to the disabled, as well as, being more focused on pedestrian planning, to provide transportation equality.

Finally, Plan Winnipeg has to work with the elected council and the collective priorities in order to establish a vision. This vision then directs city administration to develop policy, budgets and implementation strategies in order to effectively carry forward the service goals within departments.

The Kyoto Protocol is another piece of legislation that is starting to have an effect from a policy context. More than 160 countries created the Kyoto Protocol in 1997 in an attempt to reduce greenhouse gas emissions. Canada has accepted this protocol into law and this is an interesting new source of policy. The Government of Canada's acceptance and passage by Parliament has made Kyoto a federal source of transit policy and, ultimately, funding. Canada has not followed the other G8 nations of the world and does not have a national transportation policy in place. Primarily transportation has been a Provincial focus.

The Kyoto Protocol has caused the federal government to be interested in transit/transportation policy as a way for Canada to lower its green house gas emissions. The protocol has three market-based mechanisms in the event that one does not meet the target of reducing green house gas emissions to 6% below 1990 levels by the period 2008 to 2012. If Canada cannot reach its targets by changing and shaping our fossil fuel practices then Canada would be obligated to use one of the Protocol's three Kyoto mechanisms. These mechanisms allow countries to earn or buy credits outside their borders. They are: the Clean Development Mechanism, Joint Implementation, and International Emissions Trading.

- The Clean Development Mechanism is a way to earn credits by investing in emission reduction projects in developing countries.
- Joint Implementation is a way to earn credits by investing in emission reduction projects in developed countries that have taken on a Kyoto target.
- International Emissions Trading will permit developed countries that have taken on a Kyoto target to buy and sell credits among themselves.

The federal government is now creating new funding initiatives aimed at improving the transit systems in Canada. Two of these new funding changes are: the return of the gas tax that is generated in cities to stay and fund 'green' infrastructure; and, the new transit funding in the 2005 Federal budget under Bill C-48 for cities and towns with transit systems.

2.5 History of Rapid Transit in Winnipeg

As mentioned earlier in section 2.1, Winnipeg has been actively debating rapid transit for over thirty years. In the 1970's report, The Southwest Corridor Study, found that Winnipeg's current infrastructure in the Southwest section of Winnipeg was not adequately serving the current and future demands of Winnipeggers. The Southwest is still the most intensely used travel corridor in Winnipeg.

The study recommended that the busway option using diesel buses be implemented because:

- Capital costs were substantially lower than the other options (fixed guideway, LRT, and busway with electric trolleys).
- The level of service provided was better, particularly in travel time, flexibility, no-transfers, adaptability to expansion, and staged construction.
- Environmental impacts were marginally greater than the other options.
- Improved speed of operation in the corridor would be met with the existing fleet of buses.
- The existing storage and maintenance infrastructure could be used.

This study was followed in the 1980's with updates to the functional design to the Southwest corridor. Also in the '80's Plan Winnipeg adopted the full-scale version of a BRT system into its policy platform. BRT acceptance has been carried through to the current version of Plan Winnipeg 2010.

The City of Winnipeg began two transit initiatives in the 1990's. The first was land banking railway property for the Southwest Corridor. Secondly, City Council established the Working Group on Public Transportation Policy on December 16, 1998. Part of its scope was to study and report on strategies to increase ridership and stabilize transit fares (City of Winnipeg, January 2000). This two year study created the Report: Direction to the Future – The Guide to Better Transit for Winnipeg.

Direction to the Future made many recommendations to create conditions supportive of increased transit use. Again it was found that The City of Winnipeg should make a commitment to affordable high speed transit (City of Winnipeg, January 2000).

In March of 2003 City Council approved the $1.7 million in funding for BRT planning and design. This funding was used to facilitate:

- Vehicle Technology Review
- Operational Review and Design
- Southwestern Corridor (Stage 1):
  - Preliminary Design
  - Environmental Assessment
  - Public Outreach
  - Detailed Design
- Eastern Corridor:
  - Functional design
- Development Guidelines for the Fort Rouge Yards

On July 23, 2003 City Council authorized City staff to negotiate for small portions of 10 properties required for the Southwest busway. On December 16, 2003 city council approved the funding of the initial BRT project in the 2004-2009 Capital Program. Then on March 19, 2004 the Senior Federal Minister for Manitoba, the Premier of Manitoba, and the Mayor of Winnipeg announced the tri-partite funding agreement for the initial BRT project. This was followed in April of 2004 with three BRT open houses with 1,200 persons attending.

In June 2004 a bi-election elected a new Mayor and two new Councillors. The BRT project was debated again in September 2004 and council voted to oppose the current project. The council sought a new approach to rapid transit in Winnipeg and created The Rapid Transit Task Force. The Task Force was directed to report back to the Executive Policy Committee in the Fall of 2005 with a "Made in Winnipeg" Rapid Transit solution.

2.6 Summary of Findings

In short, there is great opportunity for Winnipeg's Transit System to maximize its potential and help unlock some of Winnipeg's potential. Winnipeg's population is growing slowly but upward after a period of stagnation in the late 80's and early 90's. This growth requires prudent planning with a customer focus to deliver transit services in a cost-efficient and environmentally friendly manner.

Winnipeg's current rail infrastructure is not satisfactory for LRT. The poor condition of the stock in some areas would cost considerable amounts of money to upgrade to LRT passenger service standards. Investing in BRT can best maximize Winnipeg's existing infrastructure.

As discovered in the public workshops, transit users want improvement to the existing transit system including passenger shelters, service frequency, speed and reliability.

There has never been a better time to invest in rapid transit given the current interest of the Federal Government in the development of Canada's Transit infrastructure. There is funding coming into place and the time is now to act with smart land-use development policies that foster transit ridership and are cost efficient. Rapid transit and transit, in general, is now finally being recognized as the method of the future to move people. With smart application of up-to date customer data, application of more comfortable buses and shelters, Winnipeg has the opportunity to maximize its potential.

3.0 Evaluation of Options

3.1 Rapid Transit Initiatives in Other Jurisdictions

Typical solutions for providing rapid transit service in other jurisdictions include heavy rail (sky train, subway), light rail (streetcars, LRT) and bus (buses, trolley buses). Given the mandate of Council to utilize existing infrastructure the Task Force concentrated their efforts on exploring LRT and BRT options.

3.1.1 Light Rail Transit

The Task Force reviewed twenty LRT systems in the United States including Baltimore, Boston, Buffalo, Portland and Salt Lake City and three in Canada including the Calgary C-Train, Edmonton LRT and the Ottawa O-Train.

The findings may be summarized as follows:

1. The majority of the LRT systems reviewed operate in a reserved right-of-way, utilizing a combination of exclusive/private rights of way, street medians, reserved lanes and some tunnels/subways. Only 8 of the 20 examples from the United States operated in short sections of mixed traffic on existing roadways. None of the Canadian examples operated in mixed traffic.
2. The Ottawa O-Train is the only example studied that operates on existing single CPR track (8 km with one new passing siding and upgrade of track to continuously welded rail). Initially, CPR freight traffic used the track when the O-Train was not operating. Ottawa has since purchased the Railway right-of-way from CPR for the exclusive use of transit.
3. The Calgary C-Train and Edmonton LRT use 100% double track and have an approximate system average speed of 29 and 30 km/h respectively.
4. The average stop spacing is 1.3 km outside of the downtown and 0.3 km in the downtown (Loetterle, 2004, p. 18).
5. With the exception of the Ottawa O-Train (which uses diesel multiple units), all of the LRT systems reviewed are powered by electricity though an overhead catenary or trolley, or both.
6. The Calgary system is 32.3 km and has a service productivity of 4,246 passengers per line km per weekday, second only to Boston (5,560 passengers per line km). The Edmonton system is 12.3 km and has a service productivity of 2,921 passengers per line km per weekday (4th highest ranking in examples studied) (Loetterle, 2004, p. 18).
7. All but two of the LRT systems reviewed have been upgraded and or extended in the past five years. The existing single-track diesel O-train service in Ottawa is targeted to be replaced by a double track electric light rail service with a targeted completion date of Fall 2009.

8. The average 2001 capital cost of LRT Services ranged from "$12 million (US) to $118 million (US), with an average figure of about $35 million (US) per mile or $33 million (C) per km (2001 dollars). Track construction estimates alone in Calgary ranged from $15 – 35 million (C) per km (2003 dollars)"(Calgary Transit, March 2002, p. 6). By upgrading an existing track, the O-Train infrastructure only cost approximately $2.875 million (C) per km (Case Studies in Sustainable Transportation, July 2004, TP14252E, p. 5).
9. The Ottawa O-Train was initiated as a pilot project to "assess the technical feasibility of using an existing rail corridor for rapid transit, to validate expectations about ridership, performance and cost and to allow proper analysis of possible larger-scale implementation" (Case Studies in Sustainable Transportation, July 2004, TP14252E, p. 1). The project is considered to have been very successful and has won several awards for innovation and sustainable transportation. However, subsequent studies have concluded that the Bombardier trains are better suited for long distance commuter service and that lighter trains with smaller turning radii, low floor, faster acceleration and deceleration would be more suitable. In addition, double tracks are required to provide the frequency and reliability of service required, especially on a longer line.

Detailed tables (from the Transportation Research Circular E-C058: 9th National Light Rail Transit Conference) summarizing the characteristics of the LRT systems reviewed by the Task Force are referenced in Appendix E. The Urban Transportation Showcase Program Case Study on the O-Train Light Rail Project is also referenced.

3.1.2 Bus Rapid Transit

The Task Force reviewed over 35 BRT systems in Canada, the United States, South America, Australia and England. The experience in these systems suggests that BRT has the capabilities of providing a relatively low cost means of providing a faster, more reliable, higher capacity bus based rapid transit service with improved image and identity.

Most of the examples studied included the following key BRT features:

1. Distinctive and frequent, limited stop service operating on regular roads in mixed traffic with queue jump lanes or designated bus lanes.
2. Transit priority at traffic signals and in areas of congestion.
3. Wider station spacing (similar to LRT service) with enhanced passenger waiting areas.
4. Brand Identity and enhanced image through co-ordinated colour scheme, signage and logo.

Many included additional features such as:

1. Exclusive roadways for transit and emergency vehicles often only where necessary to bypass traffic congestion.
2. Higher capacity, low floor, quieter, multiple/wider door vehicles employing green propulsion systems (hybrid-electric).
3. Real-time passenger information systems.
4. Fare collection systems that permit multiple door boarding.

Studies have indicated that, depending on the BRT features included in the design, BRT exceeds the service capabilities of conventional bus service and has the potential to meet LRT capabilities. The following summarizes the system performance capabilities of BRT based on results documented for the systems studied.

1. A BRT system using higher capacity buses (120 passengers) has a capacity of "12,000 peak hour/direction trips. In comparison, during the peak hour/direction, Calgary's C-train carries about 6,600 customers on the South Line" (Calgary Transit, March 2002, p. 1). The BRT system in Curitiba, Brazil uses high capacity articulated buses (up to 270 passengers) and transports more than 1.3 million passengers per day.
2. The greatest travel time saving were experienced on BRT systems with more exclusive runningways. "BRT systems with exclusive roadways operate at a travel time of between 27 and 48 km per hour" (Diaz, August 2004, p. ES-5). In comparison, Calgary's C-train and Edmonton's LRT operate at an average speed of 29 km and 30 km per hour, respectively. BRT systems operating on existing roadways in mixed traffic or designated lanes operate between 20 and 27 km per hour. This translates to a general travel time- savings of 15 to 25 percent. Some specific examples are:
   - Metro Rapid – Los Angeles, CA – 29% savings in travel time (Bus Rapid Transit Policy Centre, January 2005, p. 4)
   - 98B Line – Vancouver, BC – 16% reduction in travel times (Case Studies in Sustainable Transportation, July 2004, TP14267E, p. 3)
3. The most reliability and schedule adherence was demonstrated by systems with more exclusive bus roadways.
4. When operating in mixed traffic, more buses and transit priority measures will displace some of the roadway capacity for private automobiles.
5. In depth passenger surveys, conducted by various transit agencies, indicate that the more successful BRT systems have achieved a distinct brand identity.
6. "Capital and operating cost data indicate that Bus Rapid Transit applications are significantly less expensive to construct than LRT" (Calgary Transit, March 2002, p. 1). BRT demonstrates capital cost effectiveness with relatively low capital costs per kilometer of investment. In addition, BRT systems have a high operating efficiency and service productivity often enabling "transit agencies to operate more vehicle miles of service from each vehicle hour operated" (Diaz, August 2004, p. ES-7).

7. There were significant increases in transit ridership in most of the BRT examples studied. Passenger surveys indicated that many trips were new to transit. "Ridership gains of between 5 and 25% are common" (Diaz, August 2004, p. ES-6). Some specific examples are:
   - Metro Rapid – Los Angeles, CA – 25%-30% increase. 1/3 from new riders (Bus Rapid Transit Policy Centre, January 2005, p. 4)
   - 98-B-line – Vancouver, B.C. – 23% Increase (Case Studies in Sustainable Transportation, July 2004, TP14267E, p. 3)
8. In the BRT system examples where there has been notable investment in transit infrastructure and related streetscape improvements (e.g. Ottawa, Vancouver, Boston, Pittsburgh), there have been significant development benefits in the form of transit-supportive land uses adjacent to the corridors and integrated with the transit stations.
9. Experience has demonstrated that BRT has resulted in improvement to environmental quality due to a number of factors.
   - Ridership gains that may be attributed to former automobile users.
   - Fewer buses required to serve greater number of passengers (because of operating efficiencies) thereby reducing emissions.
   - Use of vehicles with alternative fuels and propulsion systems and pollutant emission controls.
10. BRT systems can be built in stages and therefore provide construction and operating flexibility and potential conversion to LRT in the future. For example, York Region, north of Toronto, is in the process of implementing their Rapid Transit System, which consists of three phases. The first phase 'Quick Start' is a three year $150 million plan (to be completed 2006) that will include the implementation of key BRT features including:
    - New high capacity, low emission vehicles.
    - New terminals and stops at a wider spacing.
    - Intersection improvements including queue jump lanes.
    - Transit signal priority.
    - Off-board fare collection and real-time, passenger information systems.

    Phase 2 includes the construction of a full BRT System (with dedicated transit lanes, larger more elaborate stations and new park and ride facilities) for $1.6 billion scheduled for completion by 2011. In Phase 3, BRT could be expanded and/or LRT and subway extension could be built. The decision to proceed with any one or combination of these options will be based on a major review of system performance in 2009 (Ministry of Transportation, May 2004).

3.2 Feasibility of Electric LRT Service

In an effort to understand the benefits and constraints of BRT versus LRT in the Winnipeg context, The Task Force reviewed numerous reports comparing the two system technologies. Most were biased in favour of the technology proponent preparing the report and were often criticized by supporters of the opposing technology in a counter report. Two exceptions were found: a report presented at the 9th National Light Rail Transit Conference by David McBrayer, a leading expert on LRT, and a Technical Memorandum prepared by McCormick Rankin Corporation, world renowned Transit System consultants. Both reports are referenced in Appendix E and are summarized below.

The report from the National Light Rail Transit Conference entitled 'Blurring the Light Rail Transit – Bus Rapid Transit Boundaries' prescribes that both BRT and LRT can fulfill the functional requirements of a rapid transit system and both should, therefore, be considered under one functional classification 'Rapid Light Transit'. An effective LRT or BRT system will "minimize passenger waiting times, vehicle stopped time, in-vehicle time, maximize passenger capacity; provide a smooth and quiet ride along an understandable route; and achieve a sense of permanence" (McBrayer, 2003, p. 138).

Both an LRT and BRT route can be described as "a major corridor high capacity route operating primarily or entirely in reserved right-of-way (with at-grade crossings as required), providing frequent, limited-stop service significantly faster than local bus service, providing stations rather than simple stops, and employing traffic signal priority (or pre-emption, if appropriate) and other traffic management methods to achieve a high level of predictability" (McBrayer, 2003, p. 141). The differences between LRT and BRT are primarily public perception and cost, and it is these factors that will ultimately determine the choice of rail or bus.

The paper explores factors that may lead toward the choice of bus or rail and presents them as general guidelines.

1. Comparative Costs
   Capital Costs – "A BRT system designed to adhere as closely as possible to light rail design and using vehicles of uniquely high quality, can be expected to cost no more than two-thirds to three fourths the amount required for implementation of the system as light rail" (McBrayer, 2003, p. 143).
   Operating and Maintenance Cost – BRT would have the lowest operating Cost "up to around 1500 passengers per hour in one direction" (McBrayer, 2003, p. 143).
   Equivalent Annual Cost – "Despite the shorter lifespan of buses compared to light rail vehicles, and despite having higher operating costs with capacities greater than 1500 passengers per hour, BRT has the lowest annualized costs" (McBrayer, 2003, p. 143).

Conversion Costs – For a corridor expected to grow quickly (where passenger demand levels will soon exceed the capabilities of BRT), especially if conversion to LRT is anticipated "economic and financial studies might show the conversion cost to tip the scales toward initial implementation of rail" (McBrayer, 2003, p. 143).

2. Funding Sources – Funding sources for capital and operating and maintenance costs may be different for BRT versus LRT, thereby affecting technology choice.
3. Implementation – BRT is more flexible and convertible to LRT if the design addresses potential for future conversion.
4. Public Acceptance – Achieving certain development goals or public acceptance targets may require adoption of LRT.

The Technical Memorandum prepared by McCormick Rankin Corporation in October 2004 for the Winnipeg Transit Department analyzed the feasibility of introducing an LRT system in the Southwest Transit Corridor (approximately 15.25 km). The report investigated:

1. The likely implication associated with the joint use of the existing rail corridor.
2. The Light Rail Vehicle technology applicable to this operation.
3. The order of magnitude of the capital costs of implementation for the LRT including construction, vehicles and property acquisition" (MRC, October 2004, p. 1).

The investigation found:

1. LRT service cannot operate with CN rail freight service on the existing tracks because:
    - The LRT vehicles do not meet standard safety requirements for joint use of tracks.
    - Double track LRT Service is required to ensure reliable schedules and flexible operations.

    Therefore, parallel LRT double track operations are required, involving the acquisition of property and/or negotiation of easements with the Railway.
2. Standard Type LRT train equipment would be used, similar to Calgary and Edmonton, with operational speeds of up to 105 km/h and powered electrically through the use of an overhead catenary system. The use of diesel multiple units was not considered feasible because the acceleration/deceleration rates are approximately 50% of the electrified LRT technology and therefore not appropriate for urban corridors with short station spacing (1-1.5 km) (MRC, October 2004, p. 2).

3. Order of magnitude costs were developed using cost estimates from recent projects in Canada and US that indicated an average figure of about $33 million (CAD) per km (2001 dollars). Implementation of an LRT service in the Southwest Corridor would cost approximately $617 million, with $346 million in infrastructure costs, $144 million for vehicles and $16.5 million for property acquisition and the balance for engineering and contingencies (MRC, October 2004, p. 9).

The report concluded that the implementation of an LRT system in the Southwest Transit Corridor could be feasible if capital and operation budgets were not an issue. The analysis estimated a total capital expenditure of "$617 million for a 15.25 km service or an average cost of about 40.5 million per kilometre" (MRC, October 2004, p. 8). "Operation and maintenance costs were estimated at $10 million annually" (MRC, October 2004, p. 8). This $10 million annual Operating and Maintenance cost would be in addition to the annual expenditure required to pay down the debt on the capital cost of the project.

3.3 Feasibility of Diesel Passenger Rail Service

The O-train experience in Ottawa demonstrated that diesel passenger rail service had the potential to provide a lower cost rail rapid transit option utilizing Winnipeg's existing rail lines.

To this end, the Task Force undertook the following:

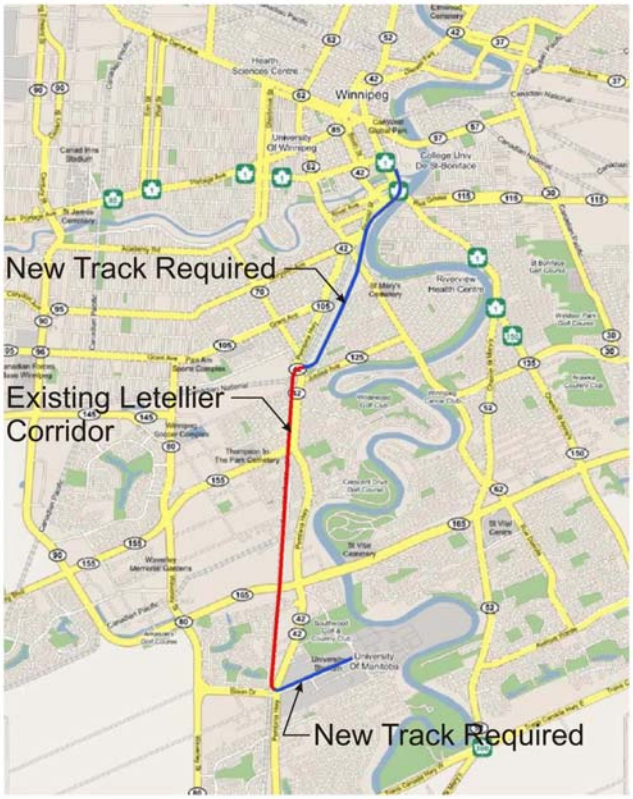
1. Extensive meetings and discussions with CP and CN to identify potential rail lines for Rapid Transit use.
2. Engaged the services of IBI Group (Transportation engineers responsible for the design and development of the O-Trail service in Ottawa) to investigate the potential of developing a diesel passenger rail service in Winnipeg.

Preliminary investigations found:

1. The main rail lines in Winnipeg are intensively used (not available for rapid transit use) and the secondary rail lines are not in good condition (not adequate for passenger rail service without major reconstruction).
2. The rail line within the Letellier Corridor was identified as having some potential for Rapid Transit use.

IBI Group developed a concept for the Southwest Transit Corridor utilizing the existing single-track railway (with new ballast, ties and track) within the Letellier Corridor and adding sections of single track to each end and for passing. Their report, which analyzes the feasibility of an urban passenger rail service in the Southwest Corridor, is included in Appendix E.

Diesel Passenger Rail Service Concept Map



However, the study concluded that development of a diesel passenger rail service in the Southwest Corridor was not practical for the following reasons:

1. A single-track line cannot be used for frequent service. Service can only be operated every 15 minutes versus BRT at every 2 minutes and LRT at every 10 minutes.
2. This single-track line would have a limited capacity of only 800 pphpd (persons per hour per direction) versus BRT at 2000 pphpd and LRT at 3000 pphpd or more.
3. A diesel passenger rail service in the Southwest Corridor would have moderate capital construction costs of approximately $125 million for a 12 km route (IBI, May 2005) versus BRT at $84 million and LRT at $617 million for the same corridor. The costs per kilometre route are significantly higher than the Ottawa system ($41 million for 8km) for two reasons: Winnipeg's Southwest Corridor requires six major structures whereas Ottawa required no new structures, and, almost half the Winnipeg route is on new alignment rather than utilizing primarily existing trackage as in the Ottawa situation.
4. A diesel passenger rail service would have a high operating shortfall. The estimated shortfall would be $2.1 million/year (IBI, May 2005) versus BRT with an estimated $481,000 surplus per year (Winnipeg Transit Department, 2004, p. 43).

3.4 Downtown ATS Study

Given the renewed interest in Downtown Winnipeg with new developments such as, the MTS Centre, Red River College Princess Street Campus, The Forks and the future Manitoba Hydro Office Tower, Canadian Museum for Human Rights and Nygard Village, the Task Force recognized the need to ensure that the Downtown System not only functioned as the hub of the City-Wide Rapid Transit System but also efficiently and attractively connected The Forks with the Exchange District and the Central Business District. Higher densities and greater ridership potential (potential demand today of 10,000 passengers per day, with ability to grow to more than 15,000 riders per day in 10 years) provide Downtown with the unique opportunity to explore options that may not be feasible in the less dense suburbs.

The feasibility of alternative transportation systems for Downtown Winnipeg was studied by McCormick Rankin Corporation in August 2003 for Winnipeg Transit and The Forks North Portage Partnership. The Study considered three new technologies in addition to the existing conventional bus technology.

1. Rubber Tire Tram.
2. Heritage Tram.
3. Modern Tram.

The impacts and benefits of introducing one of the tram technologies to downtown Winnipeg were assessed. The study concluded that, although the Modern tram is the most expensive option to implement ($70 million), its estimated annual operating costs ($1.6 million) are lower than the historic tram, it has superior performance characteristics to the other options and has the greatest potential to attract riders and private financing partnerships.

3.5 Summary of Findings

The Rapid Transit Task Force's evaluation of Rapid Transit System Options may be summarized as follows:

1. Both BRT and LRT can fulfill the functional requirements of a rapid transit system providing high capacity, high performance, urban transit routes and services that have the potential to increase ridership and attract new riders, reduce travel times, increase service reliability and effectiveness, increase capacity, develop and promote a distinct, progressive identity and support new development.
2. BRT and LRT share the same key features or elements:
   - Runningways with combinations of exclusive transit roadways, designated transit lanes and operation in mixed traffic with queue jump lanes.
   - Transit priority measures.
   - Real-time passenger information systems.
   - Fare collection systems that permit multiple door boarding.

- Centralized stations with enhanced passenger waiting areas.
- Brand identity, presence and sense of permanence.

3. The key features or elements of a rapid transit system (as mentioned above) have a greater effect on system performance (speed, frequency, reliability) than choice of a vehicle (bus or train).
4. Rapid Transit Systems with more exclusive runningways (separated from other vehicles) have the most reliability and schedule adherence.
5. BRT Systems with exclusive roadways operate at travel times comparable to LRT.
6. Existing railway tracks in Winnipeg cannot be efficiently used for rail rapid transit. Significant reconstruction and/or alteration to existing freight service would be required.
7. The differences between LRT and BRT are primarily public perception and cost, and it is these factors that will ultimately determine the choice of rail or bus.

   Comparative Costs – BRT has lower annualized costs than LRT. BRT has lower operating costs in cases of hourly demand up to around 1500 passengers per hour in one direction, which corresponds with total weekday ridership of 18,600 passengers. Ridership in Winnipeg's Southwest Corridor (the most intensively used transit corridor in Winnipeg) was estimated to increase by 25% from 18,800 weekday passengers to 23,500 weekday passengers with the implementation of BRT (Winnipeg Transit Department, 2004, p. 43).

   Funding Sources – Funding sources for capital and operating and maintenance costs may be different for BRT versus LRT.

   Implementation – BRT is more flexible and convertible to LRT.

   Public Acceptance – LRT may be required to achieve certain development goals or public acceptance targets.
8. Downtown Winnipeg presents a unique opportunity (higher densities, greater ridership potential) for LRT.

4.0 Benefits of Bus Rapid Transit

Comprehensive evaluations of BRT systems in other jurisdictions identified benefits to users, operators and the community. The development of a BRT system in Winnipeg, that combines City-Wide on-street transit improvements with sections of dedicated busway, should produce the same notable results. Of particular interest are results in the areas of speed, service reliability and frequency of service, which were identified by questionnaire respondents during the public consultation process as the most important rapid transit system attributes.

1. Reductions in travel time. Due to higher travel speeds, resulting from on-street transit priority measures, dedicated busways and fewer stops, BRT systems in Vancouver and Los Angeles realized 16% and 29% reductions in travel times, respectively.
2. Significant improvements in service reliability. Vehicles are able to meet posted schedules due to the measures that give transit vehicles priority (on-street improvements such as traffic signal priority, diamond lanes and dedicated busways). Automatic vehicle location and real-time passenger information at stations have also contributed to passenger satisfaction in service reliability.
3. Increases in frequency of service. Faster travel times and greater service reliability means that scheduled frequencies can be increased where required with no increase in operating costs.
4. Increase in ridership. Reduced transit travel times, greater service reliability and improved image have contributed to customer satisfaction and attractiveness of BRT systems to new riders.
   - Los Angeles - +30% (2 yrs)
   - Miami - +80% (4 yrs)
   - Brisbane - +60% (18 mo)
   - Vancouver - +20% (1 yr)
   - Boston - +70% (10 mo)

   (MRC, August 2004, p. 7)
5. Modal shift. Increased speed and improved service reliability helped to create a shift to transit use from auto use in BRT corridors (23% in Vancouver; 33% in Los Angeles).
6. Reduction in green house gas emissions. The modal shift precipitated by the construction of the 98-B-line in Vancouver, is estimated to have reduced carbon dioxide emissions by 1200 tonnes (Case Studies in Sustainable Transportation, July 2004, TP14267E, p. 3).
7. Improved productivity of transit service. Lower travel times mean that fewer buses are needed to maintain schedules, thereby reducing vehicle costs and cutting annual operating costs. Greater service reliability can reduce the need for layover times, thereby reducing the number of required buses and resulting in annual operating cost savings.

The implementation of the 98-B-line corridor in Vancouver resulted in a reduction in annual operating costs of 20%, which translated into an annual operating cost savings of approximately $2.16 million (Case Studies in Sustainable Transportation, July 2004, TP14267, p. 3).
These operating costs savings can be used to accommodate increased ridership levels.

8. Improved general traffic flow. The implementation of a BRT system in many jurisdictions has resulted in an increased capacity for traffic along the corridor due to the construction of dedicated busways (removal of buses from general traffic lanes) and the modal shift.

These projected benefits of the recommended 'Made in Winnipeg' Rapid Transit System outlined in Section 5.1 are extrapolated from existing studies and experiences in other jurisdictions. The actual benefits will require further investigation as part of a detailed design process once functional design has been completed.

In addition to the direct system benefits outlined above, it is anticipated, that the solution recommended by the Task Force will also have the following community wide benefits:

1. Maximize use and facilitate improvement of existing road infrastructure. Improvements to roadways for rapid transit also benefit all road users.
2. Expand opportunities for development in key areas along dedicated busways and at major stations. In particular, the improved access to the Fort Rouge Yards and Waverley West provided by a BRT corridor adjacent to these areas will create the opportunity for more compact urban development of these vacant lands.
3. Maximize recreational potential and accessibility of rapid transit corridors by integrating active transportation commuter paths adjacent to dedicated busways and where possible, into on-street improvements, creating high quality universally accessible routes to all stations and permitting use of diamond lanes by cyclists.
4. Strengthen the local economy by using locally designed and manufactured vehicles, generating employment opportunities through construction and other potential spinoff benefits.
5. Build on the strengths and compliment the existing transit service.
6. Opportunity to build on the recommended Rapid Transit System in the future, with flexibility to develop major dedicated rapid transit corridors in all quadrants of the City using a variety of technologies.

5.0 Preliminary Rapid Transit Vision for Public Review

5.1 Rapid Transit System Objectives

Based upon the results of the Preliminary Public Consultations and meetings with various technical and industry experts, the evaluation of various Rapid Transit System examples from other cities and the history of Winnipeg and its specific needs, the Task Force developed System Objectives.

The Task Force then weighted and ranked these system objectives. The Rapid Transit System Objectives in rank order, by category, are as follows:

Rapid Transit System Objectives
Overall System Objectives

1. Increase ridership and attract new riders (modal shift).
2. Strengthen the local economy and encourage economic development.
3. Support downtown revitalization.
4. Improve environmental outcomes (environmental mitigation).
5. Fiscal and social responsibility.
6. Provide for more compact urban development (transit-supported land development).

System Performance Objectives

1. Develop and promote a distinct, progressive identity and quality image.
2. Use existing infrastructure where possible.
3. Funding support from other governments and/or private partners.
4. Operating cost efficiency.
5. Increase operating speeds (travel time reductions).
6. Promote a strong customer service ethic.
7. Increase service reliability and effectiveness.
8. Improve safety and security.
9. Fully accessible system.
10. Increase capacity.
11. Capital cost effectiveness.
12. Simple route layouts.

These objectives are consistent with the City's overall vision as expressed in Plan Winnipeg 2020 Vision, the fundamentals and initiatives outlined by Winnipeg Transit in 'Direction to the Future – The Guide to Better Transit for Winnipeg' and the issues identified by the Public during the preliminary public consultation process.

Plan Winnipeg 2020 Vision identifies Winnipeg's fundamental urban transportation objectives as:

i) To provide effective and efficient mobility for the movement of persons and goods.
ii) To reduce traffic congestion through the provision of sufficient capacity in the transportation infrastructure.
iii) To minimize the overall investment in transportation infrastructure.
iv) To reduce emissions of air pollutants (carbon dioxide, volatile organic compounds, nitrous oxides, and chlorofluorocarbons) related to urban transporation).
v) To reduce energy use related to urban transporation.
vi) To complement and support the other urban policy objectives described in Plan Winnipeg.

(Winnipeg Transit Department, 2004, p. 8)

Plan Winnipeg states that 'the City shall commit to transit improvements to increase ridership by:

i) Making ongoing improvements to service;
ii) Making transit service easier to use;
iii) Making transit service more affordable;
iv) Making transit service more productive; and
v) Making a commitment to high speed transit

(City of Winnipeg, December 2001, p. 35)

In addition, Plan Winnipeg outlines 'ways which the City should direct transit system investment by:

i) Focusing on those areas where the potential to attract new ridership is greatest, namely, to, from, and within the downtown; along the major radial travel corridors of the city; and to and from major centres of employment, education, health care and shopping; and
ii) Initiating a program of on-street transit improvements and rapid transit corridor development as illustrated on Policy Plate B, to significantly improve the speed of transit travel and to support the revitalization of downtown.'

(City of Winnipeg, December 2001, p. 37)

Direction to the Future – The Guide to Better Transit for Winnipeg outlines four fundamentals upon which transit improvements need to be focused:

i) Improved service speed and reliability
ii) Improved comfort, convenience, safety, and accessibility
iii) Improved user information
iv) Improved productivity

(City of Winnipeg, January 2000, p.9)

During the Preliminary Public Consultation Process, the following priority Rapid Transit Issues were identified:

1. Most important service attributes for Winnipeg's Rapid Transit System.
   - Speed.
   - Reliability.
   - Frequent Service.
2. Transit/Rapid Transit must be a priority City of Winnipeg issue.
3. Low fares and affordability are critical.
4. Convenient and direct routing is essential.
5. The system must be environmentally friendly.
6. Rapid Transit is essential to progressive City Image.

5.2 Preliminary Vision

Utilizing the priority list of System Objectives, The Task Force formulated 'Made in Winnipeg' Rapid Transit System Concepts for review and comment by the citizens of Winnipeg at the public open houses. The Rapid Transit System Concepts proposed City-Wide Quality Corridors and a Downtown LRT implemented over three phases.

5.2.1 City-Wide Quality Corridors

Quality Corridors are high capacity, high performance urban transit routes and services with the following characteristics:

1. Buses operate in a combination of runningways to provide maximum efficiency in terms of cost, schedule adherence and time-savings (minimal passenger waiting times and in-vehicle times). Dedicated busways, diamond lanes and mixed traffic with queue jump lanes would be used. Dedicated busways are roadways built exclusively for transit and emergency vehicles with emphasis to address chronically congested areas. Diamond lanes are traffic lanes on an existing street, identified with coloured pavement and/or painted pavement markings and signage, for exclusive use of transit and emergency vehicles at peak hours. When buses operate in mixed traffic, queue jump lanes are often used at intersections, in combination with priority traffic signals, to allow buses to clear the intersection or point of congestion ahead of other traffic.

Centralized stations with enhanced passenger waiting areas provide brand identity, presence and a sense of permanence.





Above: Viva station in Richmond Hill, ON
Left: 98B-line stop in Vancouver, BC
Below: Viva stop in York Region, ON





Above: Viva Station, ON. With ticket dispenser, map, and real-time schedule information display inside a distinctive shelter.
Right: 98-B-line Vancouver, BC Real-time Schedule Information Displays at Stations



2. Centralized universally accessible stations, more widely spaced than local bus stops, provide a brand identity and presence with a sense of permanence. The stations would feature translucent heated shelters, full compliment of passenger amenities and would be identified by a colour scheme, signage and architectural elements consistent with the brand identity.
3. Off-vehicle fare collection at ticket machines located at the stations provides the opportunity for multiple-door boarding, thereby reducing vehicle stopped time (station dwell time).
4. Real-time schedule information at stations and on board vehicles. At the station, real-time vehicle arrival signs display a countdown timer that shows ‘arrival’ times for the next vehicle approaching the station, based on real-time GPS information on vehicle positions and speeds. Vehicles are equipped with dynamic message signs and annunciators that announce the station being approached, as determined from real-time GPS information.
5. Traffic signal priority measures help to provide on schedule, predictable arrival times with minimal delay. Traffic signal priority or pre-emption give priority to buses when they are behind schedule and allow buses to operate more efficiently at all times by allowing buses to clear an intersection and other points of congestion ahead of other traffic.
6. Vehicles of high quality with clean-fuel hybrid power sources, effective quieting of engine noise, articulated for higher capacity, multiple doors, universally accessible with low floor design.

Quality corridors provide a City-Wide rapid transit system that is fully integrated into the existing transit system. It maximizes use of existing infrastructure to provide high capacity, high performance transit routes and services that have the potential to meet all system performance objectives. The sense of permanence provided by clearly defined quality corridors would provide the opportunity for transit-supported land development. A distinct, progressive, consistent system identity and quality image combined with improved system performance will increase ridership and attract new riders. Green vehicle technologies will improve environmental outcomes. Active transportation commuter paths integrated into dedicated busways and where possible, into on-street improvements will maximize the recreational potential and accessibility of rapid transit corridors. The use of locally designed and manufactured vehicles strengthens the local economy.

5.2.2 Downtown LRT

The Downtown LRT proposes to connect The Forks with the Exchange District and the Central Business District utilizing modern light rail vehicles operating within the street right-of-way in a reserved curbside lane. The plans indicate a representative 7 km route for illustration purposes only.

Actual route selection would occur as part of a subsequent functional design study and public consultation process. The Downtown LRT would support Downtown revitalization and new Downtown developments such as, the MTS Centre, Manitoba Hydro Office Tower and Canadian Museum for Human Rights. It sets the stage for transit supported land development and develops and promotes a distinct, progressive, attractive identity and quality image. A Downtown LRT has the ability to increase ridership and attract new riders and attract funding support from private partners.

5.2.3 Phasing

Phase One of the Preliminary Rapid Transit System Vision presented to the Public for review and comment, envisioned the development of Quality Corridors in all quadrants of the City. Routes along Pembina/Donald/Stradbrook, St. Mary's, Regent/Nairn, Portage, Henderson and Main were proposed. The order of magnitude cost for this phase was $90 million.

Phase Two proposed the enhancement of the Phase One Quality Corridor along Regent/Nairn, and the development of new corridors along Higgins, St. Anne's, McPhillips, Notre Dame/Sherbrook, Balmoral/Isabel/Vaughan and in the Downtown. The order of magnitude cost for this phase was $70 million.

Phase Three proposed the completion of the Quality Corridor along Pembina/Donald/Stradbrook, adding new Quality Corridors along Marion/Goulet, Archibald, Kenaston, Broadway, Vaughan/Osborne and developing Downtown LRT as the hub of the Rapid Transit System. The order of magnitude cost for this phase was $152 million.

Appendix F includes plans illustrating the concept proposed for each phase.

Routes and locations of on-street (diamond lanes, mixed traffic with queue jump lanes) and dedicated busway segments shown on the plans were representative only. Functional and detailed designs must be completed by technical and industry experts for all proposed Quality Corridors endorsed through the Public Open House Process.

5.3 Public Open Houses

The purpose of the Public Open Houses was to present the 'Made in Winnipeg' Rapid Transit System Concepts being considered by the Task Force and provide an opportunity for the citizens of Winnipeg to provide feedback. The open house format consisted of presentation boards outlining the mandate of the Rapid Transit Task Force, background information used by the Task Force to analyze the various options, the Rapid Transit System Concepts being considered by the Task Force, order of magnitude costs for these concepts and the 'Next Steps' in the process. An exit survey was conducted to gauge support of participants for the concepts presented (summarized in Section 5.3.1).

There were 279 participants in the two open houses held at the Winnipeg Convention Centre on May 14 and May 16, 2005. The percentage of participants from each Municipal Ward in attendance was as follows:

Charleswood – Tuxedo – 4%	River Heights – Fort Garry – 16%
Daniel McIntyre – 12%	St. Boniface – 5%
Elmwood – East Kildonan – 4%	St. Charles – 2%
Fort Rouge – East Fort Garry – 22%	St. James – Brooklands – 5%
Mynarski – 3%	St. Norbert – 6%
North Kildonan – 4%	St. Vital – 4%
Old Kildonan – 1%	Transcona – 6%
Point Douglas – 6%	

The open houses were advertised through the newspapers (Free Press, Sun through paid advertisements and news articles), 200 notices posted in community centres, libraries, universities, colleges, senior centres and transit shelters, e-mails to public interest groups and public workshop participants and information posted on the Rapid Transit web site.

5.3.1 Summary of Exit Survey Findings

The exit survey (refer to attached sample in Appendix G) was designed to gauge support of respondents for the Rapid Transit System Concepts being considered by the Task Force.

The exit survey was filled out by 187 Public Open House participants. The results represent only the views of those who chose to attend the open houses and cannot be generalized to the entire population of Winnipeg. The complete tabulation of the results are included in Appendix G.

The highlights of the exit survey findings are:

Overall Concept

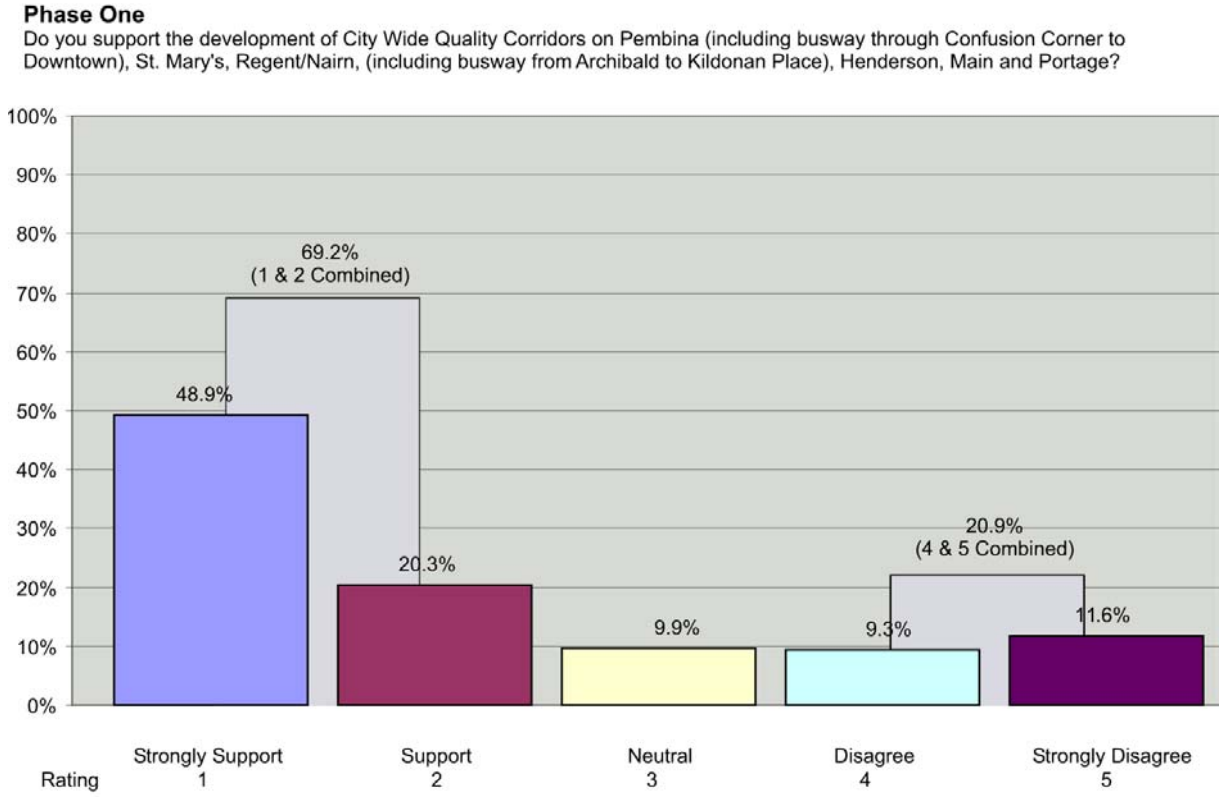
59.9% of respondents indicated they either Strongly Supported or Supported the Overall 'Made in Winnipeg' Rapid Transit System Concepts.

23.1% of respondents indicated they either Disagreed or Strongly Disagreed with the Overall 'Made in Winnipeg' Rapid Transit System Concepts.

17.0% of respondents indicated they were Neutral on the Overall 'Made in Winnipeg' Rapid Transit System Concepts.

Phase 1

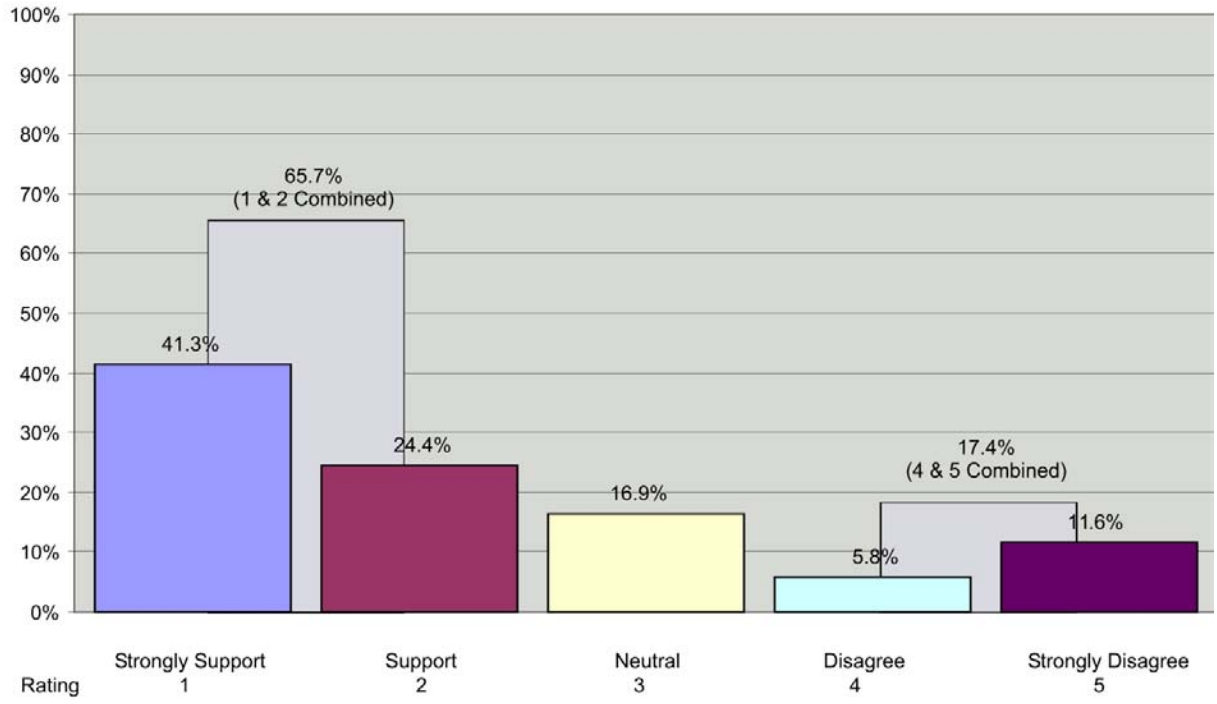
69.2% of respondents indicated they either Strongly Supported or Supported Phase One Quality Corridors.
20.9% of respondents indicated they either Disagreed or Strongly Disagreed with the Phase One Quality Corridors.
9.9% of respondents indicated they were Neutral on the Phase One Quality Corridors.



Phase 2

65.7% of respondents indicated they either Strongly Supported or Supported Phase Two Quality Corridors.
17.4% of respondents indicated they either Disagreed or Strongly Disagreed with the Phase Two Quality Corridors.
16.9% of respondents indicated they were Neutral on the Phase Two Quality Corridors.

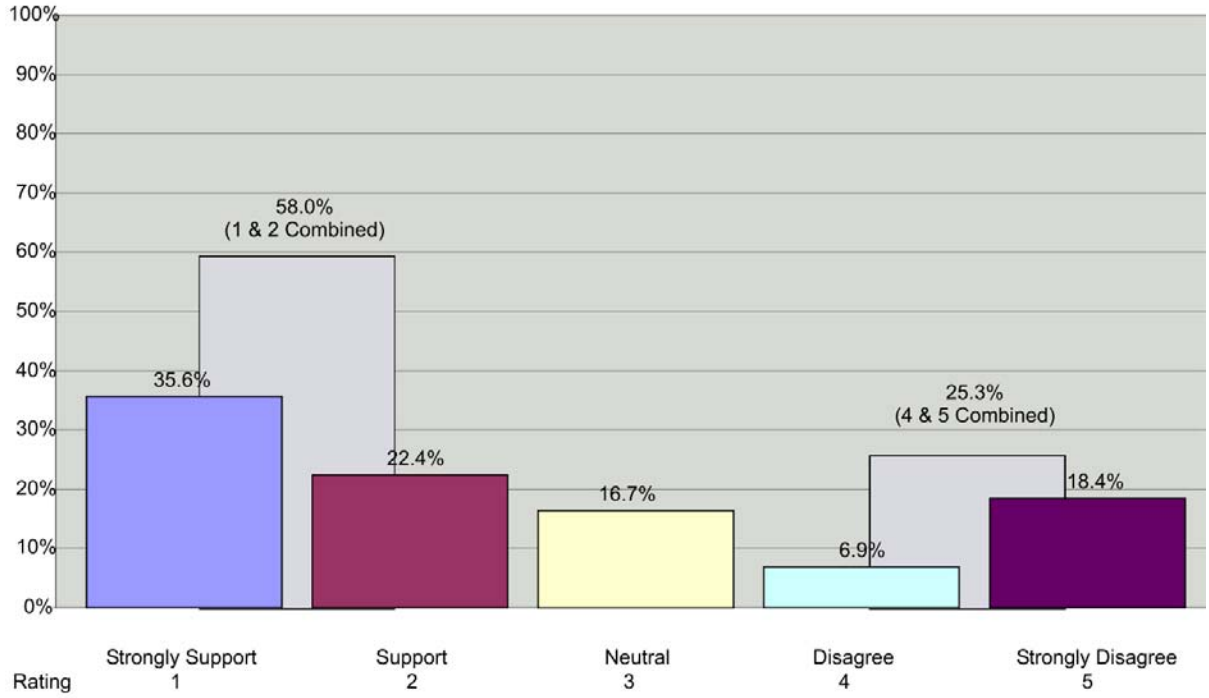
Phase Two
Do you support the development of City Wide Quality Corridors on Regent/Nairn (including busway from Higgins to Archibald), Higgins, St. Anne's, McPhillips, Notre Dame, Balmoral/Isabel and Downtown?



Phase 3

58.0% of respondents indicated they either Strongly Supported or Supported Phase Three Quality Corridors and Downtown LRT.
25.3% of respondents indicated they either Disagreed or Strongly Disagreed with the Phase Three Quality Corridors and Downtown LRT.
16.7% of respondents indicated they were Neutral on the Phase Three Quality Corridors and Downtown LRT.

Phase Three
Do you support the completion of City Wide Quality Corridors (Marion/Goulet, Archibald, Kenaston, Broadway, Vaughan/Osborne and Pembina (including busway from Confusion Corner to Bison Drive) and the development of Downtown Light Rail Transit?



80.2% of respondents provided comments/ideas regarding Rapid Transit as follows:

- 19.3% reinforced their support for all three phases.
- 12.7% were not in support of the Downtown LRT as part of Phase Three.
- 12.0% felt that Winnipeg requires a LRT System.
- 9.3% felt that the City must make Rapid Transit a priority and that development of a Rapid Transit System must start now.
- 8.7% felt that connections to Waverley West and the Airport are critical.
- 7.3% felt that Rapid Transit should be integrated with land use planning, providing a catalyst for future development.
- 6.7% felt that low fares and affordability are essential.

5.3.2 Profile of Survey Respondents

Participants in the Public Open Houses represented a broad cross section of the population with strong representation from users of Transit.

- 11.0% of respondents do not use the Winnipeg Transit System.
- Of the 89.0% that use Transit, the majority (74.1%) use it only once or twice a week. Only 25.2% use Transit more than 10 times per week.
- The majority use Transit to go to work/school (74.1%) with recreation activities (51.8%) and shopping (51.1%) as other important destinations.
- The majority of respondents (70.1%) were male.
- Broad representation from all age groups was noted with the majority in the 25-34 (20.5%) and 45-54 (21.6%) age categories.
- All income levels were represented. The majority of respondents were in the $40,000-$59,999 (24.4%) and $80,000 and over (22.0%) levels.

6.0 Rapid Transit System Recommendation

6.1 System Recommendations

The Rapid Transit Task Force recommends the following:

1. Development of City-Wide Quality Corridors (as described in Section 5.2.1) over two phases.
2. The acceleration of the full Southwestern busway component into Phase One.
3. Deletion of the Downtown LRT.
4. Additional Park and Ride Facilities
5. Enhanced stations with amenities.

The rationale to move forward with the above changes to the Rapid Transit Vision presented at the Public Open House is drawn from:

1. The public's views and attitudes towards the Rapid Transit Vision presented at the Public Open Houses.
2. Recently passed federal budget that includes approximately $29 million for Manitoba dedicated to Transit projects.
3. Gas tax opportunity for funding infrastructure improvements including Transit projects.
4. Increased support from all levels of government for 'green' infrastructure including projects to improve, expand and develop rapid transit systems.
5. The importance of the development of active transportation commuter paths (for cycling, roller blading, walking) in conjunction with busways including projects to improve, expand and develop rapid transit systems.
6. Link to development opportunities and future transportation demands in Waverley West and the Fort Rouge Yards.
7. Greater potential for functional, operational and customer service benefits of one full scale busway route development (i.e. from Downtown to University of Manitoba) versus a partial busway development.

6.1.1 Phase One: Quality Corridors

The first phase focuses on the implementation of six City-Wide Quality Corridors including Southwestern (along CN Mainline and Letellier Line), Eastern (Downtown to Rougeau Ave.), St. Mary's Road, Portage Avenue, Henderson Highway and Main Street. The suggested scope of work for each route, subject to future Functional Design Studies, includes:

Dedicated Busways

Southwestern (along Pembina Highway, Letellier Line, CN Mainline)

Killarney Ave. to Bison Dr. – Mixed Traffic with Queue Jump Lanes where required, Signal Priority, Upgraded Centralized Transit Stops, Real-Time Schedule Information.

Bison Dr. to Queen Elizabeth Way – Dedicated Busway, Centralized Stations, Real-Time Schedule Information, Integrated Recreation Paths.

Eastern – Stage 1

Rougeau Ave. to Grey St. – Combination of Mixed Traffic with Queue Jump Lanes and Diamond Lanes where required, Signal Priority, Centralized Stations, Real-time Schedule Information, Integrated Recreation Paths.

Grey St. to Downtown – Dedicated Busway, Combination of Mixed Traffic with Queue Jump Lanes and Diamond Lanes where required, Signal Priority, Centralized Stations, Real-time Schedule Information, Integrated Recreation Paths.

On-Street Improvements

St. Mary's

St. Vital Centre (existing park and ride) to St. Anne's Rd. – Mixed Traffic with Queue Jump Lanes where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

St Anne's Rd. to Tache Ave. – Combination of Mixed Traffic with Queue Jump Lanes and Diamond Lanes (Coloured Pavement and some New Lanes) where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Portage

Unicity Mall (existing park and ride) to Raglan Rd. – Mixed Traffic with Queue Jump Lanes where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Raglan Rd. to St. Mary Ave./Spence St. – Diamond Lanes (Coloured Pavement) where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Henderson

Perimeter Hwy. (park and ride, under construction) to Springfield Rd. – Mixed Traffic with Queue Jump Lanes where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

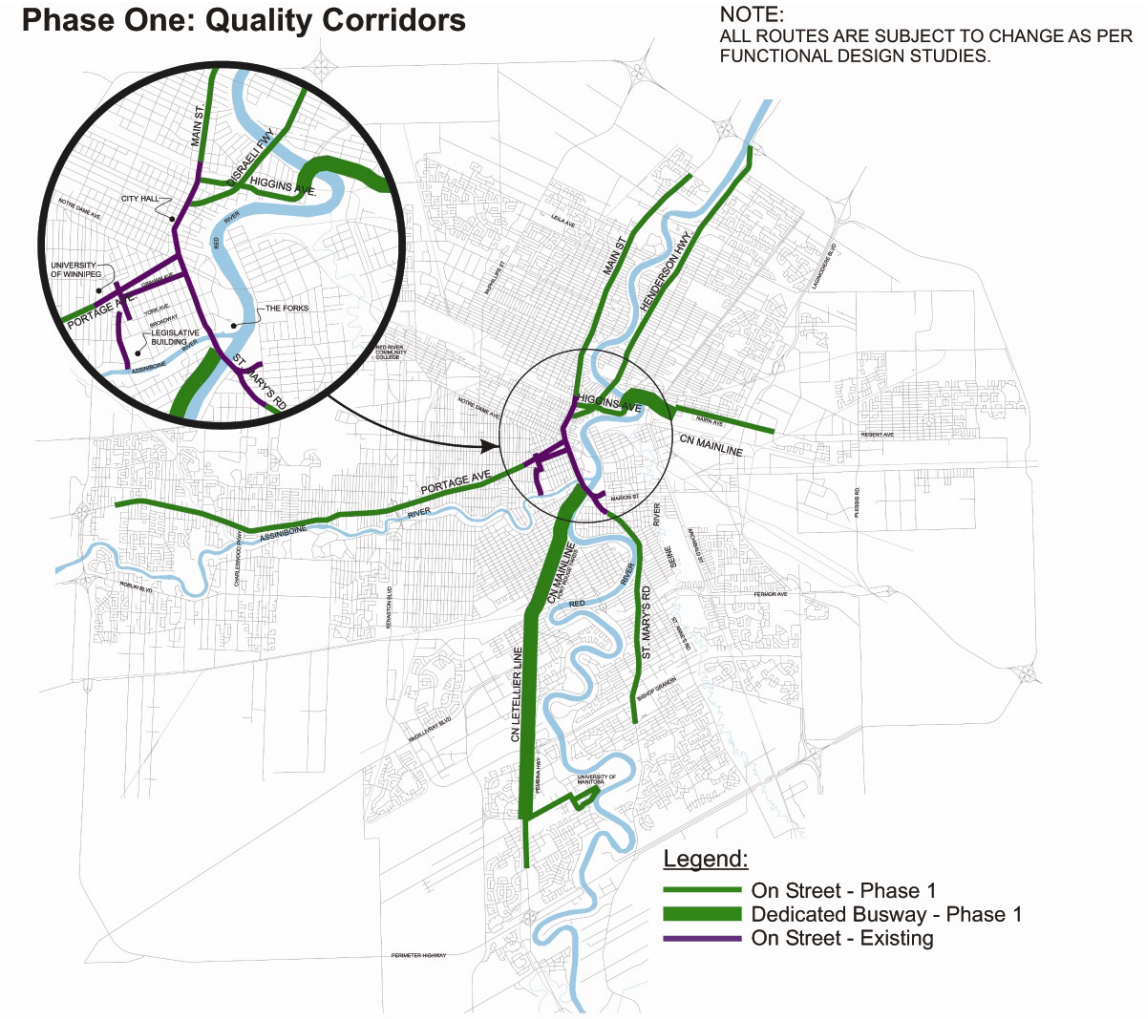
Springfield Rd. to Talbot Ave. – Diamond Lanes (Coloured Pavement) where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Talbot Ave. to Main St. – Mixed Traffic with Queue Jump Lanes where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Main

Red River Blvd. to Jefferson Ave. – Mixed Traffic with Queue Jump Lanes where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Jefferson Ave. to Sutherland Ave. – Diamond Lanes (Coloured Pavement) where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.



6.1.2 Phase Two: Quality Corridors

The second phase focuses on the completion of the Eastern Corridor and the implementation of the balance of the City-Wide Quality Corridors along five routes: St. Anne’s, McPhillips, Notre Dame/Cumberland/Balmoral, Marion/Goulet/ Archibald and Kenaston. In addition, the existing Downtown Corridors would be enhanced. The suggested scope of work for each corridor, subject to future Functional Design Studies, includes:

Dedicated Busways

Eastern – Stage 2

Plessis Rd. to Grey St. (along Pine Falls Line and CN Main Line) – Dedicated Busway, Centralized Stations, Real-time Schedule Information, Integrated Recreation Paths

On-Street Improvements

St. Anne's

Meadowood Dr. to St. Mary's Rd. – Mixed Traffic with Queue Jump Lanes where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

McPhillips

Leila Ave. to Jefferson Ave. – Mixed Traffic with Queue Jump Lanes where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Jefferson Ave. to Jarvis Ave. – Diamond Lanes (Coloured Pavement) where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Jarvis Ave to Notre Dame Ave. – Mixed Traffic with Queue Jump Lanes where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Notre Dame/Cumberland/Balmoral

Red River College to Dublin Ave. – Mixed Traffic with Queue Jump Lanes where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Dublin Ave. to Sherbrook St. – Diamond Lanes (Coloured Pavement) where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Sherbrook St. to Balmoral – Mixed Traffic with Queue Jump Lanes where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information

Notre Dame to Ellice Ave. along Balmoral – Combination of Mixed Traffic with Queue Jump Lanes, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Marion/Goulet/Archibald

Archibald St. to Des Meurons St. – Mixed Traffic with Queue Jump Lanes where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Des Meurons St. to St. Mary's Rd. – Diamond Lanes (Coloured Pavement) where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Elizabeth Rd. to Marion St. along Archibald – Combination of Mixed Traffic with Queue Jump Lanes and Diamond Lanes (New Lanes with Coloured Pavement) where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Kenaston

Academy Rd. to Portage Ave. – Mixed Traffic with Queue Jump Lanes where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Grant Ave. to Academy Rd. – Diamond lanes (New Lanes with Coloured Pavement) where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

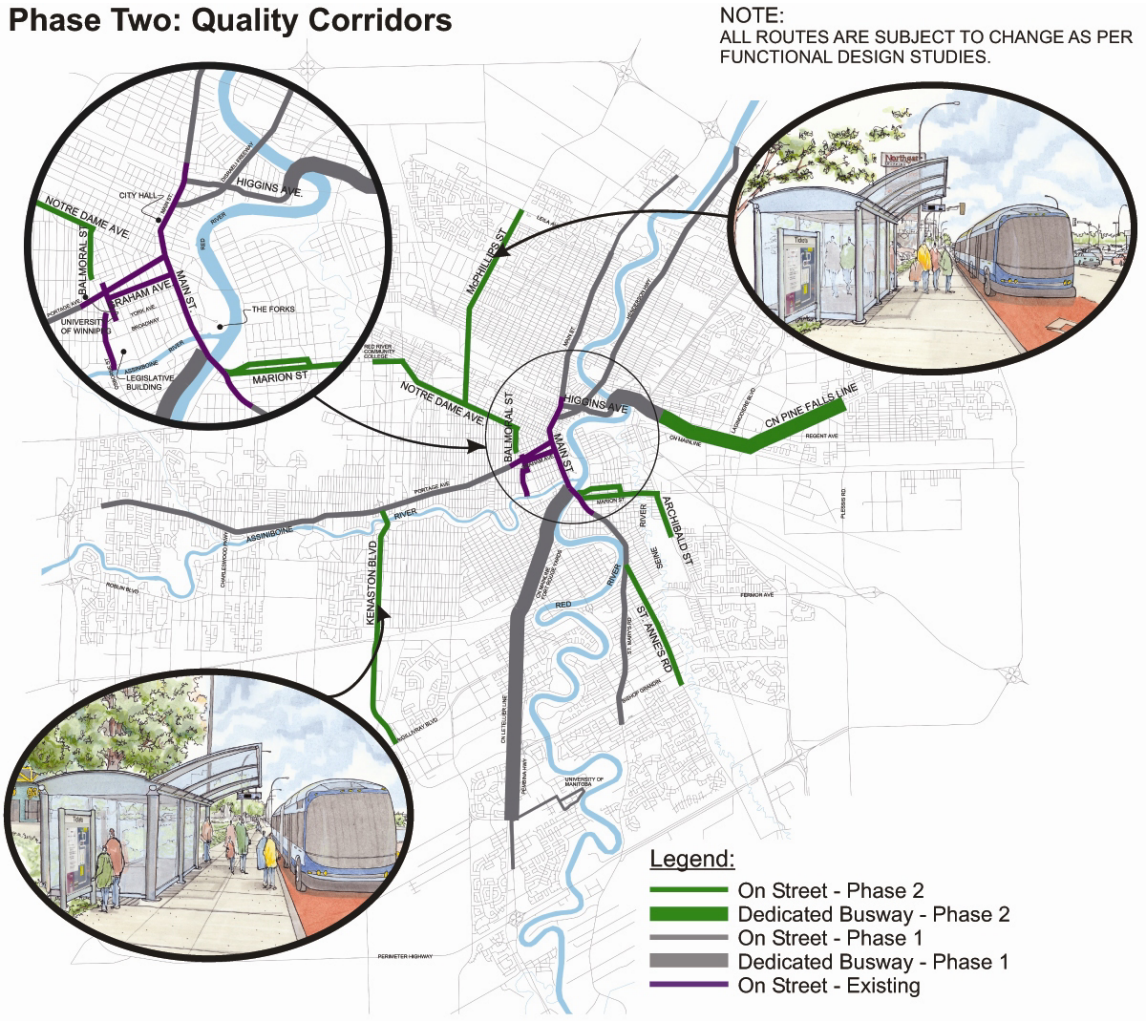
McGillivray Blvd. to Grant Ave. – Mixed Traffic with Queue Jump Lanes where required, Signal Priority, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Downtown Quality Corridors

Main St. (Higgins Ave to Queen Elizabeth Way) – Combination of Mixed Traffic and Existing Diamond Lanes, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Portage Ave. (St. Mary Ave. / Spence St. to Main St.) – Mixed Traffic, Upgraded Centralized Transit Stops, Real-time Schedule Information.

Graham Ave. – Existing Transit Mall, Upgraded Centralized Transit Stops, Real-time Schedule Information.



6.1.3 Park and Ride Facilities

Park and Ride Facilities will be strategically located on corridors adjacent to stations as determined by Functional Design Studies. Encouragement will be given to provide electrical hook ups.

6.1.4 Hybrid Electric Articulated Bus Fleet

Initially, existing clean diesel buses will be used for the BRT service. It is recommended that diesel electric hybrid vehicles be purchased to replace existing clean diesel buses as funding becomes available.

6.2 Infrastructure and Operating Costs

6.2.1 Order of Magnitude Capital Costs

Until functional design studies are completed for each route, construction costs can only be estimated. The total order of magnitude costs for each phase are summarized in the following chart:

Order of Magnitude Capital Costs

Phase	Components	Order of Magnitude Cost
Phase 1	City-Wide On Street Improvements	$41 M
	Full SW Busway	$84 M
	Portion of Eastern Busway	$30 M
	Park and Rides and Enhanced Stations with Amenities	$10 M
Subtotal		**$165 M**
Phase 2	City-Wide On Street Improvements	$67 M
	Full Eastern Busway	$30 M
	Park and Rides and Enhanced Stations with Amenities	$ 8 M
Subtotal		**$105 M**
Total		**$270 M**
Phase 3	Complete Study of Future Rapid Transit Needs	

Assumptions used to calculate the above order of magnitude capital costs are included in Appendix H.

6.2.2 Order of Magnitude Incremental Annual Revenue Streams and Expenses

Operating costs cannot be estimated until functional design studies, including detailed ridership studies are completed for each route. However, based upon experiences in other jurisdictions, it would be logical to assume that:

1. Ridership should increase.
2. Productivity of Transit Service should significantly improve.

Winnipeg's Bus Rapid Transit Project report completed in August 2004 identified significant operational savings for the Phase One Southwestern Corridor. The Phase One Southwestern Corridor under this proposal included on-street improvements from the University of Manitoba to Jubilee and a busway from Jubilee to the Queen Elizabeth Way. The report estimated that "for the existing ridership level of 18,800 weekday passengers, the BRT Phase 1 infrastructure would result in a reduced vehicle requirement and annual operating savings of $700,000.00" (Winnipeg Transit Department, 2004, p. 42).

Vancouver's 98-B-line provides a tangible example of operational efficiencies. The 98-B-line includes a combination of on-street improvements and dedicated busway. The implementation of this corridor resulted in a reduction in annual operating costs of 20% (Case Studies in Sustainable Transportation, July 2004, TP14267E, p. 3).

7.0 Rapid Transit Policy Recommendations

The Rapid Transit Task Force recommendations are guided by the Objectives given by City Council in November of 2004. These guiding principles led the Task Force to look clearly at rapid transit and Winnipeg's unique needs, and not be influenced by any previous work or policy. This Task Force believes it has found a 'Made in Winnipeg' Rapid Transit solution.

The Task Force found areas for improvement to Winnipeg's Transit service. In addition to the technical recommendations these innovative customer-centric recommendations can improve service and performance.

The public gave a clear message to the Task Force that a new vision of Transit needs to be started now. The Task Force has identified a number of opportunities for improving Winnipeg's Transit service. These 'Made In Winnipeg' Rapid Transit recommendations touch on many levels and are divided into the following sections: Access, Customer Service, Economic Development, Governance and Guiding Future Development.

With regard to policy issues, the Rapid Transit Task Force makes the following recommendations:

1. **Access:**
   - The proposed Rapid Transit System follow principles of Universal Design.
   - The proposed Rapid Transit System be designed and marketed to encourage use by existing Handi-Transit users.

2. **Customer Service:**
   - A public education campaign be developed on the redesigned Diamond Lanes.
   - Origin/Destination Studies to be completed every three to five years to ensure Transit is meeting customer needs.
   - Transit build on the existing DART service and pilot a shuttle bus project to provide enhanced feeder service to the Rapid Transit System.

3. **Economic Development**:
   - Partnerships with business in station construction, operation, and retail services should be explored.
   - The establishment of Memorandums of Understanding with the bus manufacturing industry on research and development should be considered.

4. **Governance**:

City issues:

- The Alternative Service Delivery Committee investigate the creation of a Winnipeg Transportation Authority to oversee both the road and transit systems.
- As part of The Winnipeg Transportation Authority, a Transit Land Development component should be considered.

Provincial Issues:

- The City Champion "Yield to Bus" legislation.
- The benefit for large EcoPass employers be increased.
- City Council negotiate with the Province to restore the historical 50% share subsidy of Transit, a higher proportion of Handi-Transit funding and dedicate a portion of the Provincial gas tax to Transit Improvements.

Federal Issues:

- City Council lobby the Federal government for legislation to provide municipalities with first right of refusal on railway lands that are to be offered for sale.
- City Council lobby for transit incentive programs such as the EcoPass program, to be eligible for a tax deduction.

5. **Guiding Future Development**:

- City Council be open to shared transit service agreements with outside municipalities if it is shown to be cost neutral to the City of Winnipeg.
- Options for improving transit service to important destinations, such as the Airport, should be considered.
- City Council consider land-use charges for new developments that would be dedicated to transit system improvements.
- City Council should adopt a formal policy to acquire rail rights-of-way for future rapid transit and active transportation purposes as outlined in this report and Plan Winnipeg Policy Plate B.
- Design and construction of the BRT system should consider conversion to LRT in the future.
- City Council should maintain Transit Works outlined in Plan Winnipeg Policy Plate B for future long term development. The recommendations made in this report are complementary to the existing Plan Winnipeg. Council should be urged to adopt this report's recommendations into the next review of Plan Winnipeg.

8.0 Financial Implications

8.1 Capital Financing Framework

The City and the Task Force have committed to develop financing alternatives based on two thirds of the capital costs being funded by grants from the Provincial and Federal governments. A review undertaken by BDO Dunwoody found that capital costs in comparable cities across Canada are funded mostly by the Province with the exception of Ontario where recent transit projects are being funded one-third by each level of government (Refer to Appendix I).

Grant programs that could be considered are listed below. It should be noted that program and program details are subject to change and some are currently being redefined.

8.1.1 Canada – Manitoba Infrastructure Program

The objectives of this program are: enhance the quality of Canada's environment; support long-term economic growth; improve community infrastructure; and build twenty first century infrastructure through best technologies, new approaches and best practices. The program's primary focus is on green municipal infrastructure.

This $180 million fund is funded through matching one-third federal – provincial contributions in partnership with local community applicants such as municipal governments and other community organizations. However, it is believed that there is little left in this fund.

8.1.2 Canada Strategic Infrastructure Fund

There are five investment categories under the Canadian Strategic Infrastructure Fund ("CSIF"). The category most relevant to the Task Force is 'Local Transportation Infrastructure.' Under this category investments may be made in large-scale projects that facilitate the safe and efficient movement of goods and people, ease congestion or reduce the emission of greenhouse gases and airborne pollutants. Major investments in public transportation in Canada's major urban centres are encouraged.

The Funding investment criteria are:

1. Maximum of 50% of eligible costs.
2. Large scale projects only (Manitoba large scale project is defined to be at least $25 million).
3. Emphasis on partnerships with any combination of municipal, provincial and territorial governments and the private sector.
4. Costs are generally shared by three levels of government.
5. Investments are to be geared towards sustaining economic growth and supporting an enhanced quality of life for Canadians.

8.1.3 Municipal Rural Infrastructure Fund

This $1billion dollar fund is structured to provide a balanced response to local infrastructure needs in urban and rural Canada. Each province is to receive $15 million with the remainder to be allocated on a per capita basis. At least 80% of the funds are dedicated to municipalities with a population of less than 250,000 people. The fund is to be used for cost shared projects with the Government of Canada contributing one third of project eligible costs.

Across Canada, a minimum of 60% of funding will target "green infrastructure" (water, wastewater, solid waste, energy and public transit). Winnipeg's share of this fund is approximately $8 million and although all of the funds are not allocated as of yet, there are applications currently in process for these funds.

8.1.4 Infrastructure Grant Gas Tax

The federal government announced on February 1, 2005 a new deal for cities and communities, with $5 billion from the gas tax slated to benefit municipalities over a five-year period starting in 2005. The funds are for capital projects that will enhance sustainability, environment, social and cultural environments of municipalities. This new funding will support Environmental Sustainable Municipal Infrastructure ("ESMI") and will complement, not replace, existing federal infrastructure programs. Each province and territory will work with its cities and communities to identify their priorities and by doing so; will work toward a broader, national objective of sustainability.

Details of the program are not finalized as of yet. Preliminary assessments by the City of Winnipeg indicate that Manitoba's share will be $167.3 million over five years with yearly funding as of year five being $66.9 million. The City of Winnipeg is currently under negotiation with the Province and Government of Canada for its share.

8.1.5 Additional Support for Public Transit

Minister of State (Infrastructure and Communities) the Honourable John Godfrey has started negotiations with the provinces and territories to invest up to $800 million, over two years, in public transit. These funds are separate from, and in addition to, the $5 billion over five years in federal gas tax money announced in February for environmentally sustainable municipal infrastructure. The funding is provided under Bill C-48 for the environment, including public transit, currently being considered by Parliament. The total amount of support available for transit will depend on the available surplus in the current fiscal year and in 2006 – 07.

The investment of up to $800 million will be allocated to the provinces and territories on a per capita basis and it is proposed that within each province and territory the funds be distributed to municipalities and transit agencies based largely on transit ridership. Manitoba's allocation of the (up to) $800 million in transit funding is estimated to be approximately $29 million; of that approximately $27 million is estimated for the City of Winnipeg.

8.1.6 Federation of Canadian Municipalities Green Municipal Funds

The Green Municipal Funds (GMF) supports partnerships, leveraging both public and private sector funding to encourage municipal actions to improve air, water, and soil quality, and to reduce greenhouse gas emissions. In the 2005 Budget, the Government of Canada contributed an additional $300 million to the endowment; $150 million of this enhancement will be targeted towards loans for brownfields remediation and development. Federation of Canadian Municipalities is in the process of re-aligning its business development strategy and operations with new criteria that will be published as soon as they are finalized. New Intents to Apply will be accepted in Autumn of 2005.

A $12 million loan and $3 million grant to replace 30 diesel buses with 20 articulated, 18-metre diesel-electric hybrid buses has been approved by GMF, pending City Council approval.

8.2 Financing Alternatives for the City's Share of Capital Costs

The remaining one-third of the capital costs could be financed by the City via the following alternatives:

1. City of Winnipeg Annual Capital budget ("pay-as-you-go"). Annual payments to be funded by the annual capital budget
2. Bank Debt. Capital Costs to be funded by a long-term note from a chartered bank
3. Operating Lease. Capital Costs to be funded by an operating lease
4. Serial Debt. Capital Costs to be funded by the issuance of serial debt
5. Bullet Debt Issue. Capital Costs to be funded by the issuance of a bullet debt

The Task Force contracted the services of BDO Dunwoody to calculate the City's projected annual payment under each of these alternatives for the City's share of the capital costs for each phase of the recommended Rapid Transit System.

		Phase One - City of Winnipeg $55M			Phase Two - City of Winnipeg $35M		
Financing Alternatives	Payment Amortization Period	Annual Payment	% of City Capital Budget	% of Transit Capital Budget	Annual Payment	% of City Capital Budget	% of Transit Capital Budget
1. City of Winnipeg Annual Capital Budget ("pay-as-you-go")	10 yrs.	$5.5M	2.72%	29.24%	$3.5M	1.73%	18.61%
2. Bank Debt	15 yrs.	$5.21M	2.58%	27.70%	$3.32M	1.64%	17.63%
3. Operating Lease	12 yrs.	$6.56M	3.25%	34.88%	$4.18M	2.07%	22.20%
4. Serial Debt	10 yrs.	$6.95M	3.44%	36.96%	$4.42M	2.19%	23.52%
5. Bullet Debt Issue	20 yrs.	$4.88M	2.42%	25.95%	$3.1M	1.53%	16.48%

Details of each alternative are included in the 'Financing Alternatives' document, prepared by BDO Dunwoody, appended to this report (Appendix I).

8.3 Purchase of Hybrid Electric Articulated Bus Fleet

The order of magnitude component costs do not include any costs related to buses. It is expected that the current Transit fleet and replacement policy will meet the demands created by these phases. However, Transit will perform an in-depth study to determine bus requirements and impacts on the system.

8.4 Financing Alternatives for Operating Costs

Transit systems across North America face a funding challenge stemming from the basic fact that transit fares cover only a limited portion of the operating costs – on the average, less than 40% of its operating costs. Winnipeg's Transit System fares usually trend at 53% of its operating funds. The remainder of the operating funds comes from the City (30%), and the Province of Manitoba (the "Province" (17%) (See Appendix I).

There are two alternatives for financing the annual operating costs:

1. Redistribution of the existing City of Winnipeg Annual Operating Budget to the benefit of Transit.
2. Sharing of taxes with the Province.

There are three potential options for sharing of taxes with the Province. Approximate revenue streams for these options, as estimated by the City of Winnipeg personnel for the City of Winnipeg only, would be as follows:

Fuel Tax Sharing	Approximately $10 M annually for every 1 cent fuel tax
Motor vehicle license fee sharing	Approximately $3.3 M annually for every $10 fee per license
Sales tax sharing	Approximately $85 M for every 1% in sales tax

9.0 Next Steps

As stated in Section 1.1, this report assesses many of the issues associated with the development of a Rapid Transit System in Winnipeg and recommends a sustainable, cost effective and publicly supported 'Made in Winnipeg' Rapid Transit solution. However, a number of other studies and reports must be undertaken before the recommendations made by the Rapid Transit Task Force can be confirmed and implemented.

The following studies will be required:

City-Wide On-Street Improvement Studies

a) A Feasibility Study will be required for the City-Wide On-Street Improvements. Although this report identified reasonable representative routes, these routes were not assessed by industry experts or reviewed in a public consultation process. A detailed study of the proposed corridors including the disadvantages, advantages and impacts of each, priority for development and public consultation is required.
b) A Preliminary Design Study must be completed for the City-Wide On-Street Improvements including construction drawings (70% design completion) of physical transit priority measures, bus stop upgrades, ITS components (real-time displays and signal priority) and refined budget. An Environmental Assessment is not required for On-Street Improvements.
c) A Final Detailed Design must be completed for the City-Wide On-Street Improvements including construction drawings (100% design completion), tender documents and final project budget.

Dedicated Busway Studies

a) The Functional Design for the Southwestern Corridor was completed in 2003. A Functional Design for the Eastern Corridor is scheduled for completion in the Fall of 2005. This will include design developed to 30% completion, stakeholder consultation and potential property requirements, project budget and Cost-Benefit Analysis.
b) The Preliminary Design Study for the Southwestern Corridor from the Queen Elizabeth Way to Jubilee was completed in 2004. A Preliminary Design Study must be undertaken for the Eastern Corridor and Southwestern Corridor (Jubilee Avenue to Bison Drive) including 70% design completion, public consultation and refined budget. An Environmental Assessment would be undertaken at this stage.
c) A Final Detailed Design must be completed for the Eastern Corridor and Southwestern Corridor including construction drawings (100% design completion), tender documents and final project budget.

Operational Design

a) A complete operational review and design is required for the recommended Phase One Rapid Transit System. A Service Design Study, Assessment of Fleet Requirements and Implementation Strategy would be completed as part of this process.
b) Feeder System

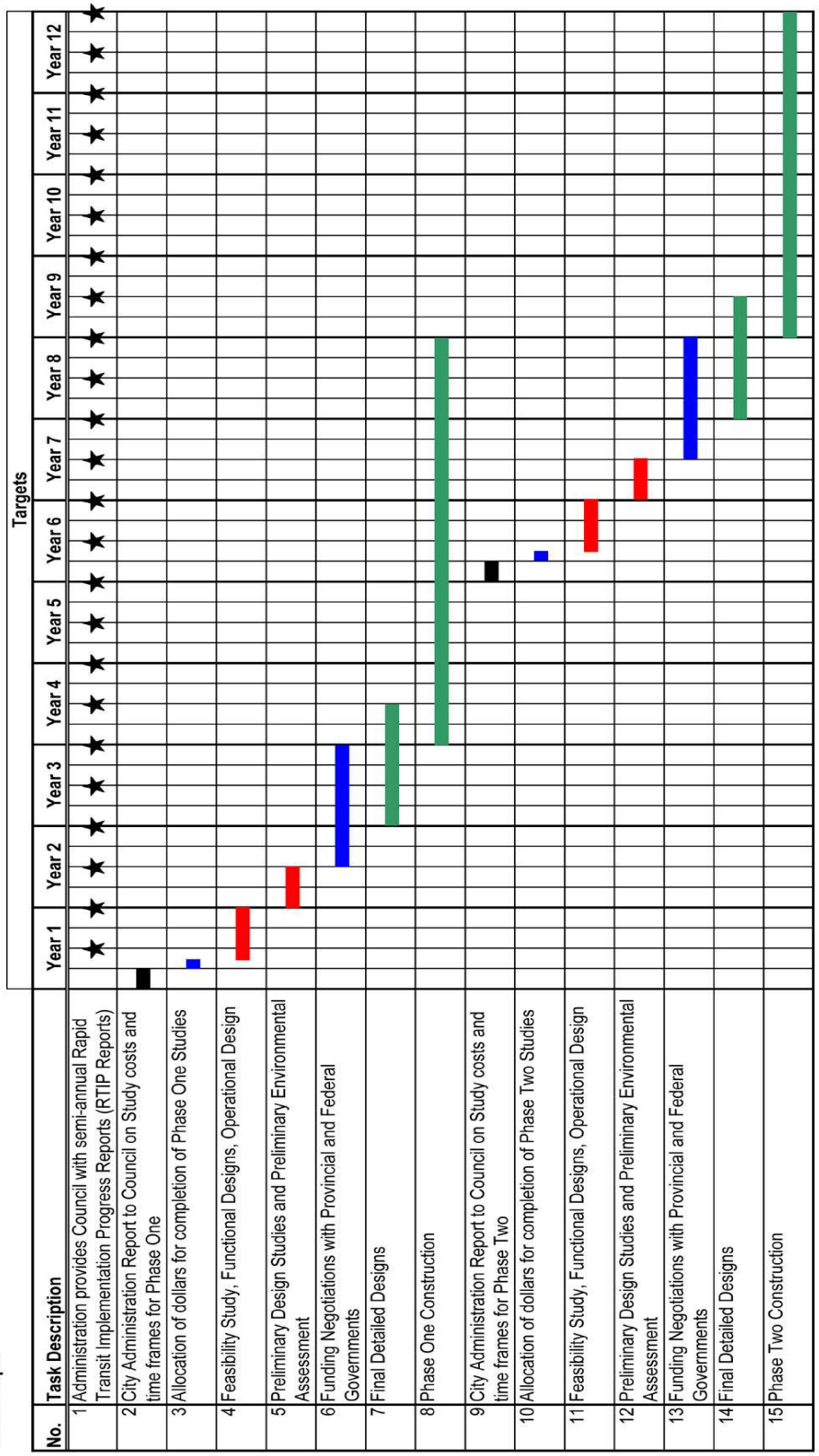
City Administration should provide estimates for the implementation of all studies listed above. Similar studies undertaken in other jurisdictions ranged in cost from $200,000 to $2.5 million, depending upon the scope of work and size of project. Time frame to completion ranged from six months to two years.

The following steps are intended as a guideline to further advance the implementation of Winnipeg's Rapid Transit System.

Next Steps

1. City Administration to report to Council on study costs and time frames for Phase One.
2. Council to allocate dollars to Administration for completion of required studies for Phase One.
3. Completion of the Feasibility Study for Phase One City-Wide On-Street Improvements, the Functional Designs for Phase One Dedicated Busways and the Operational Design for Phase One.
4. Completion of Preliminary Design Studies for Phase One City-Wide On-Street Improvements and Dedicated Busways, including Environmental Assessment for Busways.
5. Funding Negotiations with the Provincial and Federal Governments.
6. Final Detailed Design of Phase One City-Wide On-Street Improvements and Dedicated Busways.
7. Phase One Construction.
8. Begin Phase Two Study, funding and construction process using steps outlined for Phase One.
9. Every six months, Administration to provide Council with a semi-annual Rapid Transit Implementation Progress Report (RTIP report) outlining the progress of the above steps with specific estimates of costs and time frame to completion.

Next Steps



No.	Task Description
1	Administration provides Council with semi-annual Rapid Transit Implementation Progress Reports (RTIP Reports)
2	City Administration Report to Council on Study costs and time frames for Phase One
3	Allocation of dollars for completion of Phase One Studies
4	Feasibility Study, Functional Designs, Operational Design
5	Preliminary Design Studies and Preliminary Environmental Assessment
6	Funding Negotiations with Provincial and Federal Governments
7	Final Detailed Designs
8	Phase One Construction
9	City Administration Report to Council on Study costs and time frames for Phase Two
10	Allocation of dollars for completion of Phase Two Studies
11	Feasibility Study, Functional Designs, Operational Design
12	Preliminary Design Studies and Preliminary Environmental Assessment
13	Funding Negotiations with Provincial and Federal Governments
14	Final Detailed Designs
15	Phase Two Construction