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EXECUTIVE SUMMARY

1. BACKGROUND AND PURPOSE

This 30 Year Transit Service Plan follows the completion of a skeletal plan as part of the Capital Region Inter-Municipal Transit Plan and is supported by the CRB’s “Transit Service Standards for Inter-Municipal Transit” (August 18, 2010). The Plan’s purpose is to refine and clarify the integrated vision for intermunicipal transit in a regional context, to inform regional stakeholders and advocate to other potential funders; and to encourage coordination of intermunicipal services among regional partners, without specific obligations for funding.

It is anticipated that the CRB will be entering into a phase of discussing the future of the transportation in the region and this document provides a synopsis of the issues and opportunities for transit in the Capital Region. The Plan also serves to guide the planning and implementation of an inter-municipal transit system that serves the Capital Region area.

The need for this guidance is becoming increasingly more important as more municipalities in the Region begin to implement transit services. The Plan’s service area focuses primarily on the Priority Growth Areas (PGA) as identified in the Capital Region Land Use Plan Addendum (October, 2009). These areas are where most of the population and employment growth is expected in the Region and therefore where transit service is expected to be more effective than other areas.

This is a living document that will be revised and updated periodically as conditions and opportunities evolve over time. The Plan is generally based on the design of services that meets the service standards and guidelines for inter-municipal services and provides an order of magnitude estimate of capital and operating costs over the entire period for inter-municipal transit. This estimate will be useful as the Capital Region seeks to establish a dependable source of funding to cover the costs of inter-municipal transit in the Region. The projections in this plan are based on the CRB Growth Plan. However the projections are not tied to specific elements known to have significant influence on transit usage such as the price of gasoline, roadway congestion, and the cost of parking. The plan also builds on the CRB’s recently approved “Transit Service Standards for Inter-Municipal Transit” (August 18, 2010) which defines span of service and route frequency for inter-municipal transit.
Currently there are eight municipalities providing transit service in the Region:

1. City of Edmonton
2. Strathcona County
3. St. Albert
4. Fort Saskatchewan
5. Spruce Grove
6. City of Leduc
7. Leduc County
8. Sturgeon County

Transit service for the last five municipalities is provided through contract with Edmonton Transit. The first three municipalities operate their own systems. Edmonton’s service does not serve beyond its boundaries (except as contract service) whereas both Strathcona County and St. Albert operate routes within Edmonton.

Each of these eight current municipal transit providers has their own independent view of the future of transit service in the Capital Region, although few have 30 year forecasts of ridership, revenues and services. This document is not designed to direct the development of these independent systems, but rather to highlight the funding and structural changes required to coordinate transit service in the future. The plan should not be construed as a definite guide to how the independent systems may develop in the future. This plan is for the use of the Capital Region Board to develop funding strategies and responses to the organizational challenges of a multi-operator, multi-jurisdictional region.
2. THREE SCENARIOS

This document discusses three scenarios are presented for a 30 year service plan. The purpose of these scenarios is to provide a means of comparing the possible consequences of different funding levels and resulting transit infrastructure, along with estimated benefits for each. The intent is to show what level of service can be provided at alternative funding levels and to have a sense of the potential benefit that might accrue from additional funding.

The scenarios are based on the build out of Edmonton’s LRT network as described in its Transportation Master Plan – “The Way We Move”. If the full build out is achieved in 30 years then the LRT network will have six legs radiating from Downtown Edmonton as follows:

1. A new southeast leg to Mill Woods that penetrates Anthony Henday Drive
2. A new west leg to Lewis Estates
3. An extension to St. Albert from the NAIT line currently under construction
4. A new east leg to Strathcona County (Sherwood Park)
5. Central area circulator through Old Strathcona
6. An extension of the existing northeast leg penetrating Anthony Henday Drive
7. An extension of the existing south leg penetrating reaching the Heritage Valley Town Centre

In the context of current rates of LRT expansion the above network is reasonably attainable. This network forms the basis of the “High Funding Scenario”. This scenario also includes commuter bus services linking larger communities surrounding Edmonton to key destinations in Edmonton as well as “Lifeline” bus services to smaller communities that do not warrant commuter transit services. The lifeline services are intended to capture off-peak medical, shopping, and recreation trips by linking these smaller communities to nearby large centres.

The “Moderate Funding Scenario” assumes less LRT. Compared to the High Funding Scenario the Moderate Funding Scenario adds the first two legs listed above to the existing LRT. Commuter and lifeline bus services are also provided in this scenario.

The “Low Funding Scenario” assumes the least amount of LRT. Compared to the High Funding Scenario the Low Funding Scenario adds the first leg listed above to the existing LRT. Commuter bus services are provided in this scenario but lifeline bus services are not provided in this scenario.

The scenarios consider changes to the number boardings that could occur with varying levels of transit service. The analysis was done without the assistance of the regional transportation model where many more variables and changes could be tested. Consequently the impact of the road and highway network was not part of the analysis. Further work with the regional transportation model is required in order to test specific corridors or alignments, and then project the impact on modal shares and total trips or congestion.
3. PLAN CONTEXT

While this report recommends a specific service plan illustrating approximate routing of LRT and specific routing of buses, the specific routing will require further study. Therefore the more relevant purpose of the recommended plan is to identify key areas to be connected by inter-municipal transit, the nature of the connection in terms of bus or LRT, and the level of service for the connection (high for LRT, moderate for commuter bus, and low for lifeline services).

4. INTER-MUNICIPAL TRANSIT

For the purposes of this Plan, Inter-municipal transit is defined as including the following services and facilities:

- All light rail transit capital and operating costs including operations and facilities entirely within a single jurisdiction.
- All bus services operating from the last Transit Center or stop in one jurisdiction across municipal boundaries to stops located in another jurisdiction.
- A proportionate cost of all facilities required to support operation of transit vehicles needed to operate inter-municipal bus and rail services including garages.
- Park and Ride lots and transit centers primarily required to support the inter-municipal flow of passengers by transit, car pool or van pool.
- Transit priority corridors that facilitate the movement of buses or rail vehicles on corridors that are used by inter-municipal transit vehicles.
- Regional initiatives that facilitate regional transit including but not limited to information services, smart buses, smartcards, or a regional control center.
5. COSTS, REVENUES AND SCENARIOS

At the present time there is no dedicated and consistent revenue stream for transit in the Capital Region except direct operating revenue from fares, advertising and other minor local sources related to operations (e.g. leasing of space at LRT stations or bus terminals). It is estimated that the Provincial Government grants the Capital Region an average of about $200 to $300 million annually that has been used to support public transit, including LRT construction, the purchase of buses and construction of other facilities. The Province of Alberta has committed $0.05 of the $0.09 per litre fuel tax collected in Edmonton for funding transportation projects within Edmonton. This money is for all transportation uses, including transit, roads, and bicycles and may be for capital only. Decisions on the allocation of the funding are made by each municipal council. The federal government has also committed to provide cities with infrastructure funding from the federal gas tax. Edmonton has received about $108 million up to 2010 and expects to receive a further $215 million over the next five years.

The capital costs used in this plan have been derived from a variety of sources including the recent Green Trip application process, other feasibility studies, unit cost data from other similar systems and estimates based on professional judgment.

Summary maps of each scenario are provided in Figures 4.1, 4.2 and 4.3. These plans illustrate the approximate alignment of future LRT lines, as well as commuter bus and lifeline bus services.
6. PERFORMANCE BY SCENARIO

Table 1 provides a summary of the 30 financial estimates based on the assumptions developed for each scenario in constant 2011 dollars. The table shows that capital and operating costs rise from $5.2 billion in the Lower Funding Scenario to about $10 billion in the Higher Funding Scenario.

Table 1: Summarized 30 Year Financial Estimates

<table>
<thead>
<tr>
<th>30 Year Transit Plan – Financial Estimates</th>
<th>Lower Funding</th>
<th>Moderate Funding</th>
<th>Higher Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital</td>
<td>$2.9B</td>
<td>$4.1B</td>
<td>$6.5B</td>
</tr>
<tr>
<td>Operating</td>
<td>$2.3B</td>
<td>$2.8B</td>
<td>$3.6B</td>
</tr>
<tr>
<td>Total</td>
<td>$5.2B</td>
<td>$6.8B</td>
<td>$10.1B</td>
</tr>
<tr>
<td>Revenue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grant</td>
<td>$0.8B</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Funding Gap</td>
<td>–</td>
<td>$5.0B</td>
<td>$8.0B</td>
</tr>
<tr>
<td>Farebox</td>
<td>$1.5B</td>
<td>$1.9B</td>
<td>$2.2B</td>
</tr>
<tr>
<td>Other/Municipal</td>
<td>$2.8B</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Total</td>
<td>$5.1B</td>
<td>$6.8B</td>
<td>$10.0B</td>
</tr>
<tr>
<td>Required Annual Funding</td>
<td>$95M</td>
<td>$165M</td>
<td>$262M</td>
</tr>
</tbody>
</table>
At present, Edmonton Transit does not operate any inter-municipal services itself, but provides service for Fort Saskatchewan, Sturgeon County, Leduc and Spruce Grove under contract. Table 2 shows that in the 2040 Lower Funding Scenario boardings are estimated at about 72 million boardings per year or about twice current levels. This increases to about 83 million in the Moderate Funding Scenario, and 156 million in the Higher Funding Scenario. The Higher Funding Scenario costs about 50 percent more than the Moderate Funding Scenario, but results in about an 80 percent increase in boardings.

Table 2: 2040 Inter-Municipal Transit Boardings by Area

<table>
<thead>
<tr>
<th>Community</th>
<th>Lower Funding</th>
<th>Moderate Funding</th>
<th>Higher Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Albert</td>
<td>2,427,437</td>
<td>2,427,437</td>
<td>112,616</td>
</tr>
<tr>
<td>Strathcona County</td>
<td>5,257,655</td>
<td>7,124,799</td>
<td>102,200</td>
</tr>
<tr>
<td>Spruce Grove</td>
<td>593,873</td>
<td>657,949</td>
<td>657,949</td>
</tr>
<tr>
<td>Sturgeon</td>
<td>51,613</td>
<td>60,791</td>
<td>61,183</td>
</tr>
<tr>
<td>Fort Saskatchewan</td>
<td>223,612</td>
<td>590,976</td>
<td>590,976</td>
</tr>
<tr>
<td>Leduc</td>
<td>131,896</td>
<td>475,000</td>
<td>475,000</td>
</tr>
<tr>
<td>Beaumont</td>
<td>167,475</td>
<td>198,000</td>
<td>205,000</td>
</tr>
<tr>
<td>Rural</td>
<td>–</td>
<td>114,574</td>
<td>114,574</td>
</tr>
<tr>
<td>LRT</td>
<td>63,400,000</td>
<td>71,255,856</td>
<td>154,239,904</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>72,253,560</strong></td>
<td><strong>82,905,382</strong></td>
<td><strong>156,184,241</strong></td>
</tr>
</tbody>
</table>

By 2040 there are very few inter-municipal bus services remaining in the Higher Funding Scenario as virtually all of the longer regional trips are now on the LRT network. In the Lower Funding and Moderate Funding networks there are still significant numbers of riders using buses to travel from Strathcona and Spruce Grove/Stony Plain to Edmonton.
7. CONCLUSIONS, RECOMMENDATIONS AND NEXT STEPS

This Plan identifies the significant capital and operational costs that will be incurred over the next 30 years for the provision of inter-municipal transit service in the Capital Region. In order to achieve complete and high quality set of regional transit services, a sustained cash flow of about 262 million dollars will be needed to fund the rail and inter-municipal bus programs in the region. That is in addition to the cost of local bus services in the region’s growing municipalities. The Plan also highlights the inter-relationship of the agencies and programs as rail expands in the region and inter-municipal bus systems begin to feed the rail network.

The analysis assumes that if funding is not available and the Lower Funding Scenario becomes reality, then transit boardings will only grow at the rate of increase in population and that will require an increasing draw on the property tax resources of the municipalities.

The High Funding Scenario offers the most cost effective mix of bus and rail services. Boardings and productivity are strong and all areas of the region are provided with high quality service. The Moderate Funding Scenario invests in transit in the corridors where the greatest volume of ridership is expected.

The Plan shows that services will need to become more integrated in the future as more inter-municipal and local bus service feed into the light rail system. This points to the need for an integrated fare and revenue sharing strategy and a need to confirm or consider alternatives to the current multi operator strategy.

Based on the above conclusions the following is recommended:

R1. The High Funding Scenario be adopted as the basis for the recommended 30 Year Transit Service Plan for the Region.

R2. As the service plan is implemented, specific routing of buses will require more detailed analysis to determine the optimum routing for the required connections.

R3. As the service plan is implemented, specific alignment of some LRT corridors may require more detailed analysis to determine exact routing. The recommended service plan in this study should be interpreted to allow a range of routing choice to create the required connections.

R4. With respect to span of service and route frequency the plan should follow the CRB’s “Transit Service Standards for Inter-Municipal Transit” (August 18, 2010).

This Plan provides three options for future development of inter-municipal transit based on alternative LRT networks and funding levels. It is now up to the Capital Region Board to determine if a framework can be put into place that moves from the status quo to the High Funding Scenario, and to seek out a dedicated source of predictable funding for this scenario.
1.0 INTRODUCTION

1.1 BACKGROUND AND PURPOSE

This 30 Year Plan builds upon the Capital Region Inter-Municipal Transit Plan and is supported by the CRB’s “Transit Service Standards for Inter-Municipal Transit” (August 18, 2010). The Plan’s purpose is to refine and clarify the integrated vision for intermunicipal transit in a regional context, to inform regional stakeholders and advocate to other potential funders; and to encourage coordination of intermunicipal services among regional partners, without specific obligations for funding. It is anticipated that the CRB will be entering into a phase of discussing the future of transportation in the region and this document provides a synopsis of the issues and opportunities for transit in the Capital Region. The Plan serves to guide the planning and implementation of an inter-municipal transit system that serves the Capital Region area. The need for this guidance is becoming increasingly more important as more municipalities in the Region begin to implement transit services. The Plan’s service area focuses primarily on the Priority Growth Areas (PGA) as identified in the Capital Region Land Use Plan Addendum (October, 2009). These areas are where most of the population and employment growth is expected in the Region and therefore where transit service is expected to be more effective than other areas. Figure 1.1 shows the PGA’s.

Since the original plan was completed in the winter of 2009 the Capital Region Board has approved a series of service standards and guidelines for the development and operation of future inter-municipal services (“Transit Service Standards for Inter-Municipal Transit” August 18, 2010). The original plan identified routes, services and infrastructure that could be required in the Capital Region over the next 30 years, but only provided estimated capital and operating costs for the first five years.

This is a living document that will be revised and updated periodically as conditions and opportunities evolve over time. This plan is generally based on the design of services that meets the service standards and guidelines for inter-municipal services and provides an order of magnitude estimate of capital and operating costs over the entire period for inter-municipal transit. This estimate will be useful as the Capital Region seeks to establish a dependable source of funding to cover the costs of inter-municipal transit in the region. The projections in this plan are based on the CRB Growth Plan, but are not tied to specific elements such as the price of gasoline, roadway congestion, and the cost of parking which are known to have significant influence on transit usage.
This plan was prepared without the benefit of the Regional Transportation Model. The plan cannot be used to compare alternative alignments or technologies. All inputs, including boardings, are based on the professional judgment of the consultants using best practices, local transit trends and data, comparable communities and relevant research. For example, there is a strong correlation between the provision of transit service hours and ridership. This relationship has been used to estimate ridership by growth service hours at, or above, the rate of population and employment growth. The number of buses required is estimated by maintaining current ratios of buses per ridership per capita in each municipality or service area.

With respect to alternative alignments, future LRT alignments are shown as broad arrows while bus lines, while shown on specific roads, should not be interpreted as a definitive alignment. With respect to alternative technologies, in some cases the choice is limited, such as for LRT extensions of the existing lines, while for others there may be a range of choices, such as different types of buses.

The plan also has the advantage of being prepared after the first round Province’s Green Trip application process was completed. The Green Trip grant applications from the transit operators in the Capital Region provide a committed base case for the early years of the plan period and for estimating capital costs.

Throughout this report the forecasts for boardings are based on unlinked trips or boardings, rather than linked trips. Although it is possible to manually factor the unlinked trips into linked trips such a calculation would add another level of uncertainty to the estimate.
1.2 REGIONAL CONTEXT

There are currently eight municipalities in the Capital Region that offer transit service to their residents (City of Edmonton, Strathcona County, City of St. Albert, City of Spruce Grove, City of Leduc, Leduc County, City of Fort Saskatchewan, and Sturgeon County). There are also at least three additional municipal governments giving consideration to starting service (Town of Beaumont, Town of Morinville and Town of Stony Plain). Each of these eight current municipal providers has their own independent view of the future of transit service in the Capital Region, although none have 30 year forecasts of ridership, revenues and services. This document is not designed to direct the development of these independent systems, but rather to highlight the funding, coordination challenges and opportunities facing inter-municipal transit service in the future.

Wherever possible future plans or forecasts from the independent operators were used in this document, however the plan cannot be construed as a definite guide to how the independent systems may develop in the future. This plan is for the use of the Capital Region Board to develop funding strategies and responses to the organizational challenges of a multi-operator, multijurisdictional region. This plan is not intended to define a governance structure for inter-municipal transit.
1.3 REGIONAL TRANSIT AND THE CAPITAL REGION

The main priorities of the Capital Region Board are to create a Capital Region Growth Plan that includes four component plans:

- Comprehensive, integrated regional land use plan.
- A regional inter-municipal network transit plan.
- A plan to coordinate geographic information services.
- A plan for social and market affordable housing.

The Capital Region Board Regulation created by the Province of Alberta provides the mandate for Transit in the Capital Region Growth Plan. It requires:

- The decision-making process to approve the regional inter-municipal transit network.
- Procedures for implementing the delivery of the regional inter-municipal transit services.
- Provision for special transit services for persons with disabilities.
- Methods for reviewing and monitoring the regional inter-municipal transit network plan.

Other secondary priorities include planning and monitoring water and waste management, policing, emergency services, social services, recreation and economic development.

With respect to transit some of the benefits to the region from the Capital Region structure are:

- Municipalities will have an effective way to identify regional initiatives, make decisions and resolve disputes.
- Future needs can be identified and addressed.
- Combined expertise of a regional board will benefit municipalities.
- Future conflict and costly duplication will be minimized.
- Municipalities will be more effective in bringing issues to the provincial and federal governments.

This document provides some of the information that the Capital Region Board will require to effectively meet its mandate and objectives.
1.4 THREE SCENARIOS

Three possible scenarios are presented for this 30 year plan. The purpose of these scenarios is to provide a means of comparing the possible consequences of different funding levels and resulting transit infrastructure, along with estimated benefits for each. The intent is to show what level of service can be provided at alternative funding levels and to have a sense of the potential benefit that might accrue given different funding levels.

The scenarios are based on the build out of Edmonton’s LRT network as described in its Transportation Master Plan – “The Way We Move”. If the full build out is achieved in 30 years then the LRT network will have six legs radiating from Downtown Edmonton as follows:

1. A new southeast leg to Mill Woods that penetrates Anthony Henday Drive
2. A new west leg to Lewis Estates
3. An extension to St. Albert from the NAIT line currently under construction
4. A new east leg to Strathcona County (Sherwood Park)
5. Central area circulator through Old Strathcona
6. An extension of the existing northeast leg penetrating Anthony Henday Drive
7. An extension of the existing south leg penetrating reaching the Heritage Valley Town Centre

In the context of current rates of LRT expansion the above network is reasonably attainable. This network forms the basis of the “High Funding Scenario”. This scenario also includes commuter bus services linking larger communities surrounding Edmonton to key destinations in Edmonton as well as “Lifeline” bus services to smaller communities that do not warrant commuter transit services. The lifeline services are intended to capture off-peak medical, shopping, and recreation trips by linking these smaller communities to nearby large centres.

The “Moderate Funding Scenario” assumes less LRT. Compared to the High Funding Scenario the Moderate Funding Scenario adds the first two legs listed above to the existing LRT. Commuter and lifeline bus services are also provided in this scenario.

The “Low Funding Scenario” assumes the least amount of LRT. Compared to the High Funding Scenario the Low Funding Scenario adds the first leg listed above to the existing LRT. Commuter bus services are provided in this scenario but lifeline bus services are not provided in this scenario.
1.5 TRANSPORTATION NETWORKS, MODES AND THE REGIONAL TRANSPORTATION MODEL

The scenarios only consider changes to the number of boardings that could occur with varying levels of transit service. The analysis was done without the assistance of the Regional Transportation Model where many more variables and changes could be tested. Consequently the impact of the road and highway network was not part of the analysis. This analysis was unable to consider the impact of new freeway construction, changes in the supply or cost of parking or the cost to operate private automobiles relative to the cost of providing transit. Further work with the regional transportation model is required in order to test specific corridors or alignments, and the project the impact on modal shares and total trips or congestion.

In most cases the routes selected for inter-municipal bus service were based on known existing and expected future roads. However future LRT extensions do not assume any specific alignment, although it would be reasonable to assume the routes follow approvals by the City of Edmonton where they exist (the West and South East lines have specific Council approved alignments as do the extensions to the North East and South lines).

This report assumes the current high floor LRT technology on the northeast, southwest and northwest (NAIT) lines and extensions of these lines. Low floor LRT technology is assumed for all other LRT services.

Diesel Multiple Units (DMUs) were considered for application in this plan. DMU's are self-propelled passenger cars that typically operate on existing freight rail lines between well populated urban nodes; sidings are often constructed to accommodate stations. They are not currently in use in Canada for urban or regional transit; however they are widely used in Japan and Europe and have recently been introduced in the United States. DMU's differ from locomotive hauled trains such as TransLink, GO Transit and AMT in Montreal which have higher capacities and higher operating costs. DMUs offer an economical method of extending a higher quality transit service to areas with limited populations. The smallest DMUs have single car capacity equivalent to a single car LRT train.

DMU operations were discussed with members of the Transit Advisory Group for the High Funding Scenario. Generally the members felt DMUs were not consistent with the aspirations of the Regions’ long term transit vision. In addition the loss of the freight rail line through Edmonton’s downtown core made the DMU operation more challenging, as it could only serve the core’s periphery. Therefore DMUs were discontinued from further consideration.
1.6 PLAN CONTEXT

While this report recommends a specific service plan illustrating approximate routing of LRT and specific routing of buses, the specific routing will require further study. The level of information available simply did not allow for more precise results. Therefore the more relevant purpose of the recommended plan is to identify key areas to be connected by inter-municipal transit, the nature of the connection in terms of bus or LRT, and the level of service for the connection (high for LRT, moderate for commuter bus, and low for lifeline services).
2.0 INTER-MUNICIPAL TRANSIT

2.1 DEFINITION

For the purposes of this Plan, inter-municipal transit is defined as including the following services and facilities:

- All light rail transit capital and operating costs including operations and facilities entirely within a single jurisdiction.
- All bus services operating from the last Transit Center or stop in one jurisdiction across municipal boundaries to stops located in another jurisdiction.
- A proportionate cost of all facilities required to support operation of transit vehicles needed to operate inter-municipal bus and rail services including garages.
- Park and Ride lots and transit centers primarily required to support the inter-municipal flow of passengers by transit, car pool or van pool.
- Transit priority corridors that facilitate the movement of buses or rail vehicles on corridors that are used by inter-municipal transit vehicles.
- Regional initiatives that facilitate regional transit including but not limited to information services, smart buses, smartcards, or a regional control center.

This plan does not include the cost of operation, equipment and facilities to provide transit services entirely within a single jurisdiction (except rail as noted above). The plan does not include operations or capital for para-transit services for the elderly and persons with disabilities; however it assumes that all services provided are fully accessible for persons with disabilities.
3.0 COSTS AND REVENUES

3.1 REVENUE BACKGROUND

At the present time there is no dedicated and consistent revenue stream for transit in the Capital Region except direct operating revenue from fares, advertising and other minor local sources related to operations (e.g. leasing of space at LRT stations or bus terminals). As described below the combined Provincial and Federal government funding of transit projects is in the order of $250 to $350 million. This amount fluctuates from year to year due to the discretion of each municipality to spend the funds on transit or other infrastructure, as well as fluctuations in the grant levels from the higher levels of government. For example, Edmonton's expenditures on transit were substantially higher during periods of LRT construction and heavily influence transit expenditures in the region.

It is estimated that the provincial government grants the Capital Region an average of about $200 to $300 million annually that has been used to support public transit, including LRT construction, the purchase of buses and construction of other facilities. Some of this money has been dedicated to transit and in other cases the respective cities have chosen to use provincial grant monies for non-transit purposes.

The Province of Alberta has committed $0.05 of the $0.09 per litre fuel tax collected in Edmonton for funding transportation projects within Edmonton. This money is for all transportation uses, including transit, roads, bicycles and may be for capital only. Decisions on the allocation of the funding are made by Council.

The federal government has also committed to provide cities with infrastructure funding from the federal gas tax. Edmonton has received about $108 million up to 2010 and expects to receive a further $215 million over the next five years. The City of Edmonton chooses to dedicate this funding source to expansion of the LRT system by servicing debt on the South LRT Project for 20 years; however, municipalities are able to dedicate the money to infrastructure projects other than transit.
Fares cover an appreciable share of the operating costs of transit systems in the Capital Region. The fare collection system currently in place in the region does not permit an accurate calculation of the cost recovery of specific services such as LRT or inter-municipal buses. However, in this plan it is assumed that inter-municipal bus service will cover about 45% of its operating cost from the farebox. LRT cost recovery is estimated to be at least 70% for the Lower Funding and Moderate Funding Scenarios based on average passenger revenue of $0.88 per boarding (based on approximately $100,000,000 in fare revenue and 114,000,000 boardings or unlinked trips in 2010). A lower cost recovery rate of 65% is assumed in the Higher Funding scenario due to the addition of some LRT lines with lower productivity. Operating costs per passenger for the LRT are estimated to be about $1.41 per passenger in 2012, based on about 25 million boardings and total costs of about $36,000,000. This results in an existing farebox recovery rate of 62%.

3.2 COSTING ASSUMPTIONS

The capital costs used in this plan have been derived from a variety of sources including the recent Green Trip application process, other feasibility studies, unit cost data from other similar systems and estimates based on professional judgment.

An operational cost of $574 per hour was used for all LRT services based on data provided by Edmonton Transit. Operating costs for ETS bus service, including contracted inter-municipal services was estimated to be $97.76 per hour. Bus services operated by Strathcona County were costed at $89.62 per hour. St Albert Transit services were costed at $88.40 per hour based on their current contract. The inter-municipal services now operated by ETS were assumed to mature and therefore transition to contract or local operators in the future, as happened for St. Albert and Strathcona County. This results in lower operating costs. The lower costs from St. Albert Transit were applied to Spruce Grove/Stony Plain, Leduc, Beaumont and Fort Saskatchewan beginning in 2020. The service to Edmonton Garrison is assumed to be operated by ETS throughout the period. Rural buses were assigned the contract rate from the start of service.
3.3 FUNDING FOR EACH SCENARIO

The Lower Funding Plan shows what inter-municipal transit can be provided (operations and capital) if about $95 million annually is provided from local tax sources and provincial grants. This amount of funding is lower than currently used in the Region; however, some funding from the Province is discretionary and municipalities may choose to spend it on roads or on transit. Not all of the Green Trip funding applications are included as some projects are only for intra-municipal transit or for para-transit vehicles.

The Moderate Funding Plan is based on the assumption that a dedicated funding source will generate at least $165 million dollars per year to support regional transit service, equipment and facilities. This does not include the funding required to support local transit services (except rail).

In terms of the scale of the funding it is estimated that the provincial tax on the sale of transportation fuels generates between $300 and $400 million dollars per year in the Capital Region. The availability of a dedicated funding source would facilitate the sale of bonds to finance construction of major transit infrastructure.

The Higher Funding Plan would require about $262 million annually in dedicated funding for inter-municipal transit over and above the cost of providing local (non-inter-municipal) bus service throughout the region.
4.0 THREE PLAN SCENARIOS

This section of the report provides a municipality by municipality breakdown of inter-municipal transit projects and services for each of the three funding scenarios considered. Summary maps of each scenario are also provided in Figures 4.1, 4.2 and 4.3.

4.1 THE LOWER FUNDING PLAN

St. Albert

The 30 Year Lower Funding Plan for St. Albert inter-municipal service includes development of a new transit centre near the St. Albert Trail / Anthony Henday Drive interchange. It also includes a new North Transit Centre at the north end of the city to facilitate travel to and from new northern subdivisions. The Plan assumes the two transit centers will be in operation by 2016. Both transit centres will include park and ride facilities. Improved transit priority measures will be needed on the Highway 2 Corridor.

The Plan includes replacement buses to maintain the existing inter-municipal transit until 2038. After 2038 the capital costs are only sufficient to maintain the remaining inter-municipal fleet and related costs. Similarly beyond 2038 the operating costs are based solely on the costs of operating the service to West Edmonton Mall as all other services are assumed to be intra-municipal.

In the early part of the 30 year period boardings are expected to grow at about the same rate as population (1.6%). By 2030 growth opportunities for reverse commute traffic are assumed to increase and the growth rate will increase to about 2.0% annually. The boarding assumptions are based on the selection of an optimum LRT route linking St. Albert to Edmonton providing the shortest travel times.
Strathcona County
The Lower Funding Plan for Strathcona Transit includes the purchase of a new Double Deck fleet for the inter-municipal services and expansion of the Strathcona Station (SPARTA) terminal and park and ride facility. The plan also includes development and construction of a transit priority corridor from Strathcona County to downtown Edmonton via 98 Avenue. All three projects are included in the Green Trip funding application.

Transit boardings begin the period by growing at the population growth rate (1.7%), but gradually increases to 2.0% as the priority corridor is established, park and ride capacity is increased and the double deck buses are put into service. Service hours and costs increase in parallel and the plan provides for the replacement and growth of the inter-municipal bus fleet to 2040. The plan includes the purchase of 30 expansion buses over the period in addition to the 15 Double Deck buses which are assumed to replace the existing inter-municipal fleet.

Spruce Grove and Stony Plain
The Lower Funding Plan for Spruce Grove and Stony Plain includes the purchase of buses and construction or acquisition of a garage. This would enable Spruce Grove and Stony Plain to operate local and non-commuter service. Ultimately it would also allow greater flexibility in deciding whether to operate with municipal employees or with a contract operator. The purchase of buses and the planning for a Park and Ride facility is covered by Green Trip funding. The Lower Funding plan also includes the construction of a park and ride facility by 2016 at a cost of $6 million. Over the plan period a total of 11 expansion buses and all replacement vehicles are included in the capital requirements. The growth in boardings is assumed to start at the rate of population growth (1.7%) but eventually increase to about 1.9% per year.

The Lower Funding Plan assumes that a non-commuter route between Spruce Grove and Stony Plain would be initiated in 2016. This would be followed in 2025 by a Commuter service from Stony Plain to Edmonton. The Commuter service would require a total of five buses to be acquired in the first year and over the plan period 4 buses would be added for expansion and capital reserved for replacements. Actual replacement buses might not be purchased during the plan period which only has 16 years of operation. Service would also expand to Parkland Village later in the period as a feeder to commuter services.

The Plan includes a minor transit terminal in 2027 and a park and ride facility in 2035. Neither of these projects was requested in the Green Trip funding program.
Fort Saskatchewan
The Lower Funding Plan for Fort Saskatchewan includes the Park and Ride facility and transfer point for the Industrial Heartland at Highways 15 and 37 in 2013 and preparation of a development plan by 2012. The Park and Ride facility and transfer point is consistent with needs identified by the Alberta Industrial Heartland, although the location differs and will be subject to further planning. The Plan includes the purchase of eight buses for expansion of the fleet.

Fort Saskatchewan has one of the highest population and employment growth rates in the region. Average boardings are forecast to grow at 2.4% based on the CRB population growth rates and the potential for reverse commute to jobs in the Industrial Heartland. The connections between the new facility at Highways 15 and 37 or other transit stations and the Heartland would be the responsibility of the major employers and not publicly operated transit systems (the Heartland Private Service on Figure 4.1).

Leduc/Leduc County
The Lower Funding Plan for City of Leduc and Leduc County includes the purchase of buses and the construction of a garage in 2013. Boardings growth is assumed to increase from 1.3% of the rate of population growth in 2012 to 1.8% by 2037 on the strength of LRT extensions and strong reverse commute boardings to the major employment areas in Nisku and the Edmonton International Airport.

Edmonton Light Rail Transit
The entire Edmonton LRT system is considered by this plan to be a regional service and all service increases or additional capital expenditures are included. The entire LRT line is included as it is the spine of the regional transit system even though it carries a high proportion of local trips that do not cross municipal boundaries.

This scenario includes operation of the NAIT extension by 2014. Construction of a new low floor line to the Whitemud and 75 Street by 2022 to 107 Street in downtown by 2028. Operating costs also increase as the lines are extended and service increased. The capital program includes the cost to replace existing vehicles in 2025 and 2035. The cost of new cars for expansion is assumed in the capital cost of the extensions. About $5 million in capital is assumed in non-construction years for facility or equipment upgrades or station/park and ride expansion.
Beaumont

The Lower Funding Plan assumes that inter-municipal service will be started in Beaumont in 2018. The service will initially link Beaumont to Edmonton; however it will also expand during the plan period to link with Nisku and Leduc. The Plan includes funding of a study (2013), purchase of buses (2022) and the construction of a Park and Ride lot by 2039.

Rural/Other

Under the Lower Funding Plan no rural services are initiated except for a minor route to Parkland Village from Spruce Grove, and continuation of the existing service to Sturgeon County and the Canadian Forces Edmonton Garrison at Namao.

Regional Infrastructure

The Lower Funding Plan assumes that no regional initiatives such as Integrated Information Services, Fare Smart Card or Smart Bus are funded during the plan period.
4.2 THE MODERATE FUNDING PLAN

St. Albert Transit
The Moderate Funding Scenario is unchanged from the Lower Funding Scenario. New rural services from Morinville would terminate at the St. Albert Transit Centre by 2025. The service would begin as a lifeline service but by the end of the period commuter service would be added.

Strathcona County
In the Moderate Funding Scenario Strathcona Transit strengthens the priority corridor to Edmonton and includes a new garage and maintenance facility. The boardings growth rate is similar to the Lower Funding Scenario as there are no major capital investments in rail or park and ride to stimulate new boardings. The number of buses added and replaced to the fleet is unchanged from the Lower Funding scenario.

Spruce Grove and Stony Plain
In the Moderate Funding Scenario a bus garage is built and two park and ride lots are added to the system. Fleet growth has increased by one bus over the Lower Funding scenario and boardings grows at a slightly faster rate, particularly in the later years as the park and ride facilities are completed. There are no changes to service to surrounding communities such as Stony Plain and Parkland Village. A new service is provided to link Acheson Industrial to both Edmonton and Spruce Grove/Stony Plain.

Fort Saskatchewan
No changes from Lower Funding Scenario.

Leduc/Leduc County
In the Moderate Funding Scenario a new Transit Centre and Park and Ride Lot is built in 2017. The boardings growth rate improves slightly with expanded Park and Ride capacity. Service to Nisku and the International Airport is improved.

Leduc/Leduc County bus service continues to operate to Century Park rather than Heritage Village as the travel times are expected to be faster by bus on Highway 2. Highway 2 has speed limit of 110 kilometres per hour, while the top speed on the LRT is limited to 80 kilometres per hour. Also, the LRT extension swings further west and passengers from Leduc City/County would have more backtracking if transferring at a more southerly LRT station.
Beaumont
Transit service is started in 2015 in the Moderate Funding Scenario seven years earlier than in the Lower Funding Scenario. The earlier start means slightly faster boardings growth. The initial service is operated by the Edmonton Transit System however when it transitions to a private contractor it becomes necessary to purchase buses. The bus service from Beaumont would provide access to Century Park as this LRT line is expected to have faster travel times to downtown Edmonton, and also provides access to the University of Alberta.

Rural
The Moderate Funding Scenario provides for the start-up of rural bus service in 2015 with five buses providing life line service on up to six routes in the West, North and South. Lifeline service is defined as a minimum service designed to provide access to important life sustaining activities such as shopping, medical trips, and leisure facilities, but not necessarily daily commuter service to provide access to jobs or post-secondary education. The number of boardings for this service is not expected to be large and therefore service may be once to three times per week, and may run during non-peak hours in order to avoid bus purchases to meet peak hour needs. The growth in boardings is limited to the population growth rate of the rural areas. Funding is also provided for improving bus stops as most rural roads are not designed for pedestrians. In addition to the Parkland Village service identified in the Lower Funding Plan operation would be provided on the following routes:

- Devon to Edmonton
- Gibbons/Redwater/Bon Accord to Edmonton
- Morinville to St. Albert (transfer to Edmonton)
- St Albert to Sturgeon/Namao
- Lamont and Bruderheim to Fort Saskatchewan (transfer to Edmonton)
- Calmar to Leduc (transfer to Edmonton)
Edmonton LRT

In the Moderate Funding Scenario, the LRT is extended to Lewis Estates in the west end from 107 Street downtown, adding to the extensions listed for the Low Funding Scenario. Boardings on the LRT are expected to grow significantly faster than population, although many of the riders will be displaced from local bus services in Edmonton or the result of forced transfers. The new line will utilize low floor technology and provide through trips between Lewis Estates and the SE Line to Whitemud Drive.

Regional Infrastructure

The Moderate Funding Scenario includes funding for regional initiatives such as Smart Bus, Smart Cards and a new unified regional control centre for all transit operators.
4.3 THE HIGHER FUNDING PLAN

St. Albert
In the Higher Funding Scenario the LRT is extended first to Anthony Henday Drive and St. Albert Trail and then to St. Anne Street in downtown St. Albert and finally to the north City limits. New rural services from Morinville would terminate at the St. Anne Station of the LRT. The service would begin a rural lifeline service but by the end of the period commuter service would be added. After the LRT extension, the route to West Edmonton Mall, plus services to Morinville and Sturgeon are the only inter-municipal bus services operating to St. Albert.

Strathcona County
In the Higher Funding scenario LRT is extended to Sherwood Park giving direct access to both downtown Edmonton and the University of Alberta via downtown. Almost all inter-municipal bus services are discontinued between Edmonton and Sherwood Park in 2039 when the LRT is opened. The remaining service provides a link between Strathcona Station and the South East and Whyte Ave LRT lines, and another route operates to Edmonton via the Refinery Row industrial area. Bus service links the new Urban Growth Node with Fort Saskatchewan.

Spruce Grove and Stony Plain
The Moderate Scenario is unchanged from the Lower Funding Scenario.

Fort Saskatchewan
The Moderate Scenario is unchanged from the Lower Funding Scenario.

Leduc/Leduc County
The Moderate Scenario is unchanged from the Lower Funding Scenario.

Beaumont
In the Higher Funding Scenario the service between Beaumont and the S.E. LRT is not changed. Linkages are also provided to the south to Nisku, Leduc and the Edmonton International Airport.

Rural
In the Higher Funding Scenario the lifeline rural bus system is expanded to improve frequencies and to serve some additional areas. New service is added in the refinery row area between Edmonton and Strathcona, and between Devon and West Edmonton. Boardings are assumed to grow at the rate of population growth.

Edmonton LRT
The Higher Funding Scenario includes LRT extensions to Millwoods, the University of Alberta along Whyte Avenue, Lewis Estates, Gorman, Heritage Valley, St. Albert and Strathcona County.

Regional Infrastructure
The Higher Funding Scenario includes all of the facilities and services provided in the Moderate Funding Scenario.
5.0 SYSTEM PERFORMANCE

5.1 FINANCIAL

Table 5.1 provides a summary of the 30 year financial estimates based on the assumptions developed for each scenario in constant 2011 dollars. The table shows that capital and operating costs rise from $5.2 billion in the Lower Funding Scenario to more than $10 billion in the Higher Funding Scenario.

Table 5.1: Summarized 30 Year Financial Estimates

<table>
<thead>
<tr>
<th></th>
<th>30 Year Transit Plan – Financial Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower Funding</td>
</tr>
<tr>
<td>Expenses</td>
<td></td>
</tr>
<tr>
<td>Capital</td>
<td>$2.9B</td>
</tr>
<tr>
<td>Operating</td>
<td>$2.3B</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$5.2B</strong></td>
</tr>
<tr>
<td>Revenue</td>
<td></td>
</tr>
<tr>
<td>Grant</td>
<td>$0.8B</td>
</tr>
<tr>
<td>Funding Gap</td>
<td>–</td>
</tr>
<tr>
<td>Farebox</td>
<td>$1.5B</td>
</tr>
<tr>
<td>Other/Municipal</td>
<td>$2.8B</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$5.1B</strong></td>
</tr>
<tr>
<td>Required Annual Funding</td>
<td>$955M</td>
</tr>
</tbody>
</table>

The farebox revenue estimates are based on the assumption that all of the inter-municipal services can maintain an average of about 45% cost recovery. This appears to be attainable based on the performance of the existing inter-municipal services and the experience from other jurisdictions. Currently there is no dedicated source of funding for transit however there are dedicated grant programs and programs that provide discretionary funding to cities which can be used for transit. The revenue in the Lower Funding Scenario shows about $798 million dollars in Green Trip funding as well as funding from property taxes and the other discretionary grants that currently make up transit funding. In the Moderate Funding and Higher Funding Scenarios a dedicated source of funding is assumed to be available. There is also a substantial amount of money required to pay for the capital and operating costs of the local transit systems across the region.
A major issue that will develop as the implementation of the plan proceeds is the funding of the local systems in communities such as St. Albert and Strathcona County when they lose their inter-municipal bus service as a result of rail extensions in the High Funding Scenario. The local service in the smaller communities is cross subsidized by the more lucrative inter-municipal services. With the loss of the inter-municipal services a higher proportion (but lower total) of tax support will likely be required for the remaining local services.

5.2 BOARDINGS

There are three existing transit operators including Edmonton, St. Albert and Strathcona County. Edmonton Transit System does not operate any inter-municipal services itself, but under contract currently provides service for Fort Saskatchewan, Sturgeon County, Leduc and Spruce Grove. The 2012 inter-municipal boardings estimate is shown in Table 5.2. The current boardings on the Edmonton LRT line are estimated to be about 25 million rides annually.

Table 5.2: 2012 Baseline Inter-Municipal Transit Boardings by Area

<table>
<thead>
<tr>
<th>Community</th>
<th>Lower Funding</th>
<th>Moderate Funding</th>
<th>Higher Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Albert</td>
<td>1,444,755</td>
<td>1,444,755</td>
<td>1,444,755</td>
</tr>
<tr>
<td>Strathcona County</td>
<td>2,529,464</td>
<td>2,529,464</td>
<td>2,529,464</td>
</tr>
<tr>
<td>Spruce Grove</td>
<td>85,000</td>
<td>85,000</td>
<td>85,000</td>
</tr>
<tr>
<td>Sturgeon County</td>
<td>35,000</td>
<td>35,000</td>
<td>35,000</td>
</tr>
<tr>
<td>Fort Saskatchewan</td>
<td>35,000</td>
<td>35,000</td>
<td>35,000</td>
</tr>
<tr>
<td>Leduc</td>
<td>40,000</td>
<td>40,000</td>
<td>40,000</td>
</tr>
<tr>
<td>LRT</td>
<td>25,750,000</td>
<td>25,750,000</td>
<td>25,750,000</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>29,919,220</strong></td>
<td><strong>29,919,220</strong></td>
<td><strong>29,919,220</strong></td>
</tr>
</tbody>
</table>
Table 5.3 shows the projected boardings in 2025 by scenario. From 2012 to 2015 boardings in the Lower Funding Scenario generally is assumed to grow at the same rate as population across the region.

**Table 5.3: 2025 Inter-Municipal Transit Boardings by Area**

<table>
<thead>
<tr>
<th>Community</th>
<th>Lower Funding</th>
<th>Moderate Funding</th>
<th>Higher Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Albert</td>
<td>1,832,193</td>
<td>1,832,193</td>
<td>1,832,193</td>
</tr>
<tr>
<td>Strathcona County</td>
<td>3,906,514</td>
<td>5,140,544</td>
<td>5,140,544</td>
</tr>
<tr>
<td>Spruce Grove</td>
<td>270,000</td>
<td>306,000</td>
<td>306,000</td>
</tr>
<tr>
<td>Sturgeon County</td>
<td>41,426</td>
<td>46,699</td>
<td>46,699</td>
</tr>
<tr>
<td>Fort Saskatchewan</td>
<td>75,382</td>
<td>184,500</td>
<td>184,500</td>
</tr>
<tr>
<td>Leduc</td>
<td>75,141</td>
<td>162,000</td>
<td>162,000</td>
</tr>
<tr>
<td>Beaumont</td>
<td>40,481</td>
<td>52,000</td>
<td>75,000</td>
</tr>
<tr>
<td>Rural</td>
<td>–</td>
<td>72,824</td>
<td>72,824</td>
</tr>
<tr>
<td>LRT</td>
<td>53,174,660</td>
<td>61,402,669</td>
<td>68,990,698</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>59,415,795</strong></td>
<td><strong>69,199,430</strong></td>
<td><strong>76,810,458</strong></td>
</tr>
</tbody>
</table>

The Moderate Funding Scenario shows that boardings are slightly higher across the board as more buses are purchased and operated. Additional LRT extensions produce additional passengers. Boardings from Spruce Grove dramatically increase from 2012 to 2025 as service is extended to Stony Plain and Parkland Village.

In the Higher Funding Scenario the LRT is extended further in all directions. As a result, some boardings are lost from inter-municipal buses operating in St. Albert and Strathcona.
Table 5.4 shows that in 2040 the Lower Funding LRT boardings are estimated at about 72 million rides per year or about three times current levels. This increases to about 83 million in the Moderate Funding, and 156 million in the Higher Funding.

### Table 5.4: 2040 Inter-Municipal Transit Boardings by Area

<table>
<thead>
<tr>
<th>Community</th>
<th>Lower Funding</th>
<th>Moderate Funding</th>
<th>Higher Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Albert</td>
<td>2,427,437</td>
<td>2,427,437</td>
<td>112,616</td>
</tr>
<tr>
<td>Strathcona County</td>
<td>5,257,655</td>
<td>7,124,799</td>
<td>102,200</td>
</tr>
<tr>
<td>Spruce Grove</td>
<td>593,873</td>
<td>657,949</td>
<td>657,949</td>
</tr>
<tr>
<td>Sturgeon</td>
<td>51,613</td>
<td>60,791</td>
<td>61,183</td>
</tr>
<tr>
<td>Fort Saskatchewan</td>
<td>223,612</td>
<td>590,976</td>
<td>590,976</td>
</tr>
<tr>
<td>Leduc</td>
<td>131,896</td>
<td>475,000</td>
<td>104,339</td>
</tr>
<tr>
<td>Beaumont</td>
<td>167,475</td>
<td>198,000</td>
<td>205,000</td>
</tr>
<tr>
<td>Rural</td>
<td>–</td>
<td>$114,574</td>
<td>114,574</td>
</tr>
<tr>
<td>LRT</td>
<td>63,400,000</td>
<td>71,255,856</td>
<td>154,239,904</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>72,253,560</strong></td>
<td><strong>82,905,382</strong></td>
<td><strong>156,184,241</strong></td>
</tr>
</tbody>
</table>
5.3 PERFORMANCE INDICATORS

Lower Funding

Table 5.5 provides a summary of major performance indicators for the Lower Funding Scenario for the horizon years of 2012, 2025 and 2040. Passengers per hour is a measure of system productivity and Cost Recovery is an indicator of financial performance.

**Table 5.5: Lower Funding Scenario Performance Indicators**

<table>
<thead>
<tr>
<th></th>
<th>Passenger Per Hour</th>
<th>Boardings Growth Rate</th>
<th>Cost Recovery</th>
<th>Fare Required</th>
<th>Annual Service Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
<td>2025</td>
<td>2040</td>
<td>2012</td>
<td>2025</td>
</tr>
<tr>
<td>St. Albert</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>1.6%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Strathcona County</td>
<td>30</td>
<td>35</td>
<td>35</td>
<td>1.7%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Spruce Grove</td>
<td>11</td>
<td>15</td>
<td>15</td>
<td>1.7%</td>
<td>1.8%</td>
</tr>
<tr>
<td>Sturgeon</td>
<td>14</td>
<td>10</td>
<td>13</td>
<td>1.1%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Fort Saskatchewan</td>
<td>8</td>
<td>12</td>
<td>25</td>
<td>2.4%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Leduc</td>
<td>12</td>
<td>18</td>
<td>25</td>
<td>1.3%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Beaumont</td>
<td>16</td>
<td>30</td>
<td>0.0%</td>
<td>2.1%</td>
<td>2.1%</td>
</tr>
<tr>
<td>LRT</td>
<td>406</td>
<td>440</td>
<td>440</td>
<td>1.6%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

**30 Year Total**

|                          |        |        |        |        |        |        |        | 214,156| 309,084| 392,728|


In general the number of passengers per hour increases for each area served as boardings increase and larger capacity vehicles are brought into service. However, for St. Albert the number of passenger per hour decreases towards the final years of the plan as passengers shift away from bus service to the LRT. The only remaining inter-municipal bus route is the service to West Edmonton Mall which has lower utilization. The productivity of the LRT is higher than in the Moderate Funding and Higher Funding scenarios as there are the fewest extensions in this option. LRT service is also only operating in the corridors with the greatest potential for boardings. As a result passengers are concentrated in the few services provided and productivity is very high. Since the lines with the highest potential for boardings were built first, it should not be unexpected that the additions in the Moderate Funding or Higher Funding may not have quite as high of riders per hour.

The average productivity of the service to the Garrison decreases over time as midday and evening service is added.

The boardings growth rates shown for each system are similar to the population growth rates found in the Capital Region population forecasts. The Cost Recovery and Required Fare columns indicate the fares that would be required, on average, to meet the identified cost recovery target. In general most inter-municipal bus service would require an average one way fare of about $2.18 or $4.36 return. For example, St. Albert Transit currently charges $95 month for an inter-municipal transit pass although discounts for students (through the U-Pass program) and seniors are in place. The current average undiscounted fare is about $4.30 per return trip.

All areas show that annual service hours increase over the plan period for the Lower Funding Sector except for St. Albert. This is due to the replacement of the inter-municipal bus service from St. Albert with the LRT extension.

**Moderate Funding**

In the Moderate Funding case shown in Table 5.6 the trend is for all services to become better utilized except for the LRT which shows a lower number of passengers per hour than in the Lower Funding Scenario. This occurs due to the expansion of the system which results in the number of passengers being spread over a larger base of service. Since the lines with the highest potential for boardings were built first, it should not be unexpected that the additions in the Moderate Funding may not have quite as high of riders per hour.
Table 5.6 shows the number of boardings per capita for inter-municipal bus service in several suburban communities for the Moderate Funding Scenario. Inter-municipal service in Beaumont is not shown in 2012 as it will not be operating. The table shows that in communities that have just started or are about to start transit service the projected level of ridership over the plan period is still significantly below the levels of St. Albert and Strathcona County which have been operating for more than 40 years. Ridership in places like Leduc/Leduc County, Fort Saskatchewan and Spruce Grove/Stony Plain do grow significantly over the period however due to their distance from Edmonton and the availability of local employment the ridership is far below the level experienced in St. Albert and Strathcona. In Beaumont, where there are few local jobs there is somewhat high inter-municipal transit ridership.

Table 5.6: Per Capita Boardings for Select Suburban Communities.

<table>
<thead>
<tr>
<th>Community</th>
<th>Moderate Funding Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
</tr>
<tr>
<td>Beaumont</td>
<td>n/a</td>
</tr>
<tr>
<td>Spruce Grove/Stony Plain</td>
<td>2.2</td>
</tr>
<tr>
<td>St. Albert</td>
<td>22.2</td>
</tr>
<tr>
<td>Leduc/Leduc County</td>
<td>1.1</td>
</tr>
<tr>
<td>Fort Saskatchewan</td>
<td>1.8</td>
</tr>
<tr>
<td>Strathcona</td>
<td>27.0</td>
</tr>
</tbody>
</table>
### Table 5.7: Moderate Funding Scenario Performance Indicators

<table>
<thead>
<tr>
<th></th>
<th>Passenger Per Hour</th>
<th>Growth Rate</th>
<th>Cost Recovery</th>
<th>Required Fare</th>
<th>Annual Service Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
<td>2025</td>
<td>2040</td>
<td>2012</td>
<td>2025</td>
</tr>
<tr>
<td>St. Albert</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>1.6%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Strathcona County</td>
<td>30</td>
<td>45</td>
<td>45</td>
<td>1.7%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Spruce Grove</td>
<td>11</td>
<td>17</td>
<td>17</td>
<td>1.7%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Strurgeon</td>
<td>14</td>
<td>11</td>
<td>11</td>
<td>1.1%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Fort Saskatchewan</td>
<td>8</td>
<td>12</td>
<td>18</td>
<td>2.4%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Leduc</td>
<td>12</td>
<td>18</td>
<td>25</td>
<td>1.3%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Beaumont</td>
<td>23</td>
<td>30</td>
<td>0.0%</td>
<td>2.1%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Rural</td>
<td>8</td>
<td>12</td>
<td>0.0%</td>
<td>1.3%</td>
<td>1.3%</td>
</tr>
<tr>
<td>LRT</td>
<td>406</td>
<td>491</td>
<td>587</td>
<td>1.6%</td>
<td>1.6%</td>
</tr>
<tr>
<td><strong>30 Year Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>1.6%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

The growth rates in Table 5.7 are slightly higher than the population growth rates as it assumed that with additional funding it is possible to grow transit boardings faster than overall growth in the region. The average fare required drops slightly for all services due to the higher productivity and greater use of high capacity vehicles which are more economical to operate on a per passenger basis. The average productivity of the service to the Garrison decreases over time as midday and evening service is added.

Rural service is introduced in this scenario and the results show that a relatively high average fare will be required in order to meet the target of 45% cost recovery. Ultimately it may be necessary to accept a lower cost recovery for these life line trips. If the services operate outside of peak hours it may also be possible to reduce the operating cost by using vehicles used only for peak commuter service.
Higher Funding

The performance indicators for the Higher Funding Scenario are shown in Table 5.8.

### Table 5.8: Higher Funding Scenario Performance Indicators

<table>
<thead>
<tr>
<th>Passenger Per Hour</th>
<th>Growth Rate</th>
<th>Cost Recovery</th>
<th>Required Fare</th>
<th>Annual Service Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
<td>2025</td>
<td>2040</td>
<td>2012</td>
</tr>
<tr>
<td>St. Albert</td>
<td>30</td>
<td>30</td>
<td>14</td>
<td>1.6%</td>
</tr>
<tr>
<td>Strathcona County</td>
<td>30</td>
<td>45</td>
<td>13</td>
<td>1.7%</td>
</tr>
<tr>
<td>Spruce Grove</td>
<td>11</td>
<td>17</td>
<td>17</td>
<td>1.7%</td>
</tr>
<tr>
<td>Sturgeon</td>
<td>14</td>
<td>11</td>
<td>11</td>
<td>1.1%</td>
</tr>
<tr>
<td>Fort Saskatchewan</td>
<td>8</td>
<td>18</td>
<td>18</td>
<td>2.4%</td>
</tr>
<tr>
<td>Leduc</td>
<td>12</td>
<td>18</td>
<td>12</td>
<td>1.3%</td>
</tr>
<tr>
<td>Beaumont</td>
<td>10</td>
<td>20</td>
<td>0.0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Rural</td>
<td>8</td>
<td>8</td>
<td>0.0%</td>
<td>1.3%</td>
</tr>
<tr>
<td>LRT</td>
<td>406</td>
<td>364</td>
<td>487</td>
<td>1.6%</td>
</tr>
<tr>
<td>30 Year Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In this scenario light rail service is extended to Strathcona County by 2040, resulting in a large drop in the service hours being provided by Strathcona Transit and a reduction in the passengers per hour being carried. Some inter-municipal service does remain to industrial areas in Edmonton. The growth rates are the highest assuming that the additional investment in transit services and infrastructure will attract more riders to the system. The average productivity of the service to the Garrison decreases over time as midday and evening service is added.

LRT operations are more extensive than they were in 2012. Virtually every area of the City of Edmonton and the Capital Region has access to LRT. Inter-municipal buses are no longer required for passengers travelling from St. Albert or Strathcona to Edmonton.
6.0 CONCLUSIONS AND RECOMMENDATIONS

This Plan identifies the significant capital and operational costs that will be incurred over the next 30 years for the provision of inter-municipal transit in the Capital Region. In order to achieve the Higher Funding case a sustained cash flow of about 262 million dollars is needed to fund the rail and inter-municipal bus programs in the region. That is in addition to the cost of local bus services in the region’s growing municipalities. The plan also highlights the inter-relationship of the agencies and programs as rail expands in the region and inter-municipal bus systems begin to feed the rail network.

The analysis assumes that if funding is not available and the Lower Funding Scenario becomes reality then transit boardings will only grow at the rate of increase in population and that will require an increasing draw on the property tax resources of the municipalities.

The High Funding Scenario offers the most cost effective mix of bus and rail services. Boardings and productivity are strong and all areas of the region are provided with high quality service. The High Funding Scenario invests in transit in the corridors where the greatest volume of ridership is expected.

The plan shows that services will need to become more integrated in the future as more inter-municipal and local bus service feed into the rail system. This points to the need for an integrated fare and revenue sharing strategy and a need to confirm or consider alternatives to the current multi operator strategy.

Based on the above conclusions the following is recommended:

R1. The High Funding Scenario be adopted as the basis for the recommended 30 Year Transit Service Plan for the Region.

R2. As the service plan is implemented, specific routing of buses will require more detailed analysis to determine the optimum routing for the required connection.

R3. As the service plan is implemented, specific alignment of some LRT corridors may require more detailed analysis to determine exact routing. The recommended service plan in this study should be interpreted to allow a range of routing choice to create the required connections.

R4. With respect to span of service and route frequency the plan should follow the CRB’s “Transit Service Standards for Inter-Municipal Transit” (August 18, 2010).
7.0 NEXT STEPS

This Plan provides three options for future development of inter-municipal transit service based on alternative LRT networks and funding levels. It is now up to the Capital Region Board to determine if a framework can be put into place that moves from the status quo to the High Funding Scenario, and to seek out a dedicated source of predictable funding for this scenario.

The path forward for the CRB to implement this plan includes the following next steps:

» Refine the regional transit governance and organization structure for the future.
» Determine the availability of a secure dedicated source of funding for inter-municipal transit.
» Develop a fare integration and revenue sharing strategy for the Region based on the refined governance and organization model.
» Prepare a combined long range transportation plan for the region that deals with roads and transit alternatives in a single document and utilizes the approved CRB land use plan. The road and transit alternatives could simultaneously be tested in the Regional Travel Model.