



### Knowledge Synthesis

#### RURAL TRANSPORTATION ISSUES AND STRATEGIES

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#### INTRODUCTION

*This knowledge synthesis is part of the Monieson Centre's Knowledge Impact in Society (KIS) Project, a three-year endeavour to connect academic knowledge with economic development needs in Eastern Ontario. The synthesis is an accessible presentation of the latest research on issues affecting rural Eastern Ontario. The knowledge synthesis topics were determined through information gathered at 15 community workshops run in partnership with the Eastern Ontario Community Futures Development Corporation network. The KIS Project is funded by the Social Sciences and Humanities Research Council of Canada. For more information, visit [www.easternontarioknowledge.ca](http://www.easternontarioknowledge.ca).*

Implementing effective rural transportation systems can increase accessibility to essential services, make personal travel easier, and increase the quality of life for citizens in rural communities. Rural transportation systems can lead to lower commuting costs for residents, thereby increasing intercity travel and fostering development of local and regional businesses. Rural community leaders must identify pressing issues of rural transportation systems before strategic plans are developed. Best practices and case studies may be used as a guideline for future transportation systems, while recognizing the need for local, provincial, federal, and stakeholder support. Policy leaders must recognize the need for rural transportation systems to better plan for the future.

#### ISSUES WITH RURAL TRANSPORTATION

In order to create effective rural transportation models for a growing and increasingly aging population, rural community leaders must first recognize and acknowledge challenges, economic impacts of public transit in rural areas, and Ontario's vision for rural transportation.

##### *Challenges*

Senior citizens use public transit more than any other age group in Canada. Researchers estimate that Canadians 65 or older will grow to approximately twenty-five percent of Canada's population by the year 2031.<sup>1</sup> There is also an increasing trend for young Canadians between the ages of 20 and 44 to live in large urban centres, as opposed to rural communities.<sup>2</sup> If young Canadians continue moving to large urban centres, the trend towards a growing proportion of senior citizens will be further pronounced in rural communities. Two of the greatest challenges in rural mobility for Eastern Ontario and Western

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<sup>1</sup> Transport Canada, "Sustainable Transportation in Small and Rural Communities," *Case Studies in Sustainable Transportation*, Issue 61 (June 2009), 1.

<sup>2</sup> Ibid.

Quebec are residents' access to healthcare, and the fact that many elderly citizens are unable to drive.<sup>3</sup> Rural public transportation can also be important for disabled Canadians and low income families.

Healthcare is an essential service, so it is important that citizens in rural communities have access to sustainable transportation. Personal automobiles are used in many rural communities, obviating the need for public transportation; however, an increasing proportion of senior citizens in rural communities in the near future could create the need for sustainable public transportation. Many senior citizens become unable to drive as they get older. This makes tasks such as grocery shopping, regular pharmacy visits, doctor appointments, dentist appointments, and visiting friends and family increasingly difficult. Different forms of public transportation can provide simple solutions to these types of problems; however, rural public transportation can be quite expensive.

Kings Transit Authority in Nova Scotia uses buses to transport rural citizens back and forth in five different rural communities: Wolfville, Kentville, Berwick, Kings County, and Brooklyn. These communities are challenged by the number of elderly people in need of transportation yet unable to drive. Public transportation to these communities makes personal travel much easier and increases the viability of small business in these communities. Challenges to the public transportation system include: a lack of sidewalks in rural Nova Scotia, large amounts of snow in the winter, higher fares than urban transportation, higher speed limits on rural roads, and inconvenience for residents using wheelchairs where long walks to bus stops are necessary. Another drawback to implementing this type of system is the community attitude towards change. Rural residents are not likely to change transportation modes immediately, so typically a three-year investment is needed to effectively implement the program.<sup>4</sup>

Policies and Government relations are yet another challenge faced by rural transportation initiatives. The process itself is very complex and includes a number of steps. The Municipal Government must first request funding for a rural transportation project. The amount of "red tape" will increase with the size of the municipality, so it is often more difficult for larger municipalities with more formal government structures to proceed, since more stakeholders and bureaucracy are required.<sup>5</sup> Next, approval is requested from the regional government, which is once again an extensive process. The US supports rural transportation at a federal level, while in Canada it is mostly a provincial mandate.<sup>6</sup> The Canadian Urban Transit Association (CUTA) is actively pursuing federal funding for public transportation initiatives, and Infrastructure Canada's Public Transportation Fund has supported several rural communities in British Columbia and Nova Scotia. In cases where rural communities have one major employer, municipalities can partner with employers to create special transportation programs. Rabbit Transit in York, Pennsylvania uses this approach with the regional hospital.<sup>7</sup>

Financial barriers exist for rural transportation models, since it can be difficult to justify a transportation system that carries a small number of passengers over a large distance.<sup>8</sup> The Durham Transportation Master Plan 2003 showed that rural communities in the Region of Durham were better off using

<sup>3</sup> Michael Kostiuk, "Rural Transit Symposium for Eastern Ontario and Western Quebec,"

<http://web.ncf.ca/fd978/transgeo/Rural%20Transit%20Symposium%20Nov%2019%202009.pdf> (Accessed January 10, 2011).

<sup>4</sup> Ibid.

<sup>5</sup> Transport Canada, 2.

<sup>6</sup> Kostiuk.

<sup>7</sup> Transport Canada, 2.

<sup>8</sup> Region of Durham Planning and Works Departments, "Transportation Master Plan," *Regional Municipality of Durham*, (2004), 35.

demand-responsive transit services. These include public paratransit, van pools, school buses, and taxis. This is not surprising due to Canada's low population density, especially in rural areas, and the high operational costs of a full-service bus line.

### *Economic Impacts of Public Transit in Rural Areas*

There are many economic impacts of public transit in rural areas. These impacts can be narrowed down to five major areas, including employment and business activity, increased mobility, cost impacts for users of the system, expenditure patterns, and growth impacts on local economies. Tools can be used to measure these impacts after a system has been implemented.

- *Employment and Business Activity*  
Most Canadians rely on employment as their primary source of income. Inability to travel to work in rural areas can create obstacles for rural community employees. Public transit systems can lead to increased employment and local business activity.<sup>9</sup> Business activity can easily be monitored through revenues from non-local customers, and increases in employment can be measured in terms of salary or employment per capita.
- *Increased Mobility*  
Ability to access education and training programs can drastically increase citizens' long-term employment prospects.<sup>10</sup> Increased mobility can also help rural residents continue living independently, with access to essential services such as healthcare, post offices, and grocery stores. Mobility can be monitored by the number and frequency of riders in the rural community.
- *Transportation Cost Impacts for Users of the System*  
Rural transportation is typically much less expensive per traveller, when compared with other modes of transportation such as taxi service or friends with vehicles.<sup>11</sup> Cost savings of public transportation can be measured and compared to the baseline, and proven reductions in costs can lead to healthier budgets and improved services.
- *Impacts on Expenditure Patterns*  
Travelling to larger urban centres or rural communities via public transit can decrease the cost of travel. However, the net economic cost (for the local economy) may remain the same if the local resident purchases lower priced products from a non-local merchant.<sup>12</sup>
- *Growth Impacts on Local Economy*  
Property in rural areas is generally less expensive, so operating costs like parking are generally lower than in urban areas. Traffic congestion and accidents are also less likely. Public transit can offer tourists and visitors an affordable way to visit rural communities and, as mentioned, support small and medium-sized businesses. Rural property value also has the potential to increase with sustainable rural public transit systems in place.<sup>13</sup>

These five economic impact areas may be included in an Economic Impact Analysis (EIA) when introducing a new rural public transit system. An EIA may be developed to examine the effects of a potential or existing transit system on a rural community (See Appendix B for detailed steps). This may be useful for general community knowledge, advocacy for funding, or testing the feasibility of a project.

<sup>9</sup> Todd Litman, "Evaluating Public Transit Benefits and Costs," *Victoria Transport Policy Institute*, (January 2011), 65.

<sup>10</sup> Transportation Research Board, National Research Council, "Assessment of the Economic Impacts of Rural Public Transportation," *TCRP Report 34*, (1998), 141.

<sup>11</sup> *Ibid.*, 142.

<sup>12</sup> *Ibid.*

<sup>13</sup> Litman, 65.

### *Ontario's Vision for Rural Transportation*

Canada's population is expected to rise from 33 million to over 40 million by the year 2040.<sup>14</sup> This has sparked major national interest in public transportation initiatives. Specifically, the Vision 2040 initiative by CUTA aims to maximize the contribution of public transportation to quality of life, develop and support an efficient economy, and maintain a healthy natural environment. This will be accomplished by increasing service options, centralizing transit within communities, developing a national transit policy, ensuring financial funding is available, and maintaining a focus on customers.

Currently in the US, all transportation systems are subsidized, including bus, train, air, and road. This is not the case for Canada, because not all are considered *vital community services*.<sup>15</sup> The goal for Eastern Ontario and Western Quebec has been identified as connecting local public transportation to other local transportation centres. This can be done through regional and intercity bus or rail, with a network of rural and urban transit operators.

## STRATEGIES FOR RURAL TRANSPORTATION

Developing strategies for local rural transportation systems should start with a thorough understanding of the following areas: types of sustainable rural public transportation, and evaluation processes and decision-making tools.

### *Types of Sustainable Rural Public Transportation*

Public transit using buses is present in 46 of Canada's 49 urban centres with populations of more than 30,000.<sup>16</sup> Rural communities can also use this transportation model; however, operating costs are generally too high for sparsely populated communities. One successful case is Ottawa's rural routes initiative, which offers service to 13 small communities during peak hours. The additional routes were contracted through Ottawa's OC Transpo to serve a combined rural population of approximately 84,500. Rural passes cost 64% more than regular adult passes.<sup>17</sup> Another successful example is Deseronto Transit, which uses small buses to connect rural communities with small urban centres including Belleville and Napanee (see Appendix A).

Charter programs are effective for rural communities with smaller populations. Chartering buses and vans for daily routes can provide residents an alternate mode of transportation at a reduced cost. This type of service can also be contracted with large employers in rural areas. Ride sharing and car sharing are two other popular alternatives. Ride sharing consists of carpooling with compatible matches found through websites such as Carpool.ca and eRideshare.com. Car sharing involves joining a co-op where many users have the opportunity to pay for shared vehicle use.

Other approaches to public transportation include:

<sup>14</sup> Canadian Urban Transit Association, "Transit Vision 2040," [http://www.cutaactu.ca/en/publicationsandresearch/resources/CUTABook\\_Companded\\_complete.pdf](http://www.cutaactu.ca/en/publicationsandresearch/resources/CUTABook_Companded_complete.pdf) (Accessed January 14, 2011).

<sup>15</sup> Kostiuk.

<sup>16</sup> Transport Canada, 3.

<sup>17</sup> Ibid.

- Active transportation: This method of transportation promotes a healthy lifestyle by promoting cycling, walking and inline skating, and is useful for small communities.
- Vanpooling, Ride-On programs, and guaranteed ride services: Transportation Management Associations in the US provide such services through partial Federal Government funding.<sup>18</sup>
- Telework programs: Some companies establish remote offices to accommodate rural citizens, reducing the need for public transportation by allowing residents to work from home.
- Transit-Oriented Development (TOD): Community planning organizes new housing and essential services around a public transportation hub, in order to increase ridership and commutability.

#### *Evaluation Processes and Decision Making Tools*

Transportation evaluation models are available to generate analyses for potential projects. They typically include government costs, vehicle operating costs, average travel speed, crash risk per kilometre, project construction, and environmental impacts.<sup>19</sup> Those unfamiliar with these types of models may overlook many areas, including, but not limited to, parking, vehicle depreciation, project delays due to construction, land use impacts, and public health.

Developing an *economic evaluation* is a best practice for evaluating a potential project. This includes quantifying the project and comparing different options for various sections of the project. Some of the major foci of the economic evaluation include defining the type of evaluation, evaluation criteria, modeling techniques, base case, and uncertainty.<sup>20</sup> The second important evaluation is that of transit service quality. This separate evaluation defines themes such as availability, price structure, security, frequency, and reliability.<sup>21</sup> Finally, all stakeholders should be involved with developing plans and making decisions.<sup>22</sup> The range of stakeholders in rural communities is usually broad, since there is no transportation authority in place. Other than the local municipal government, stakeholders may include schools, hospitals, transportation companies, employers, and churches, among others.<sup>23</sup>

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<sup>18</sup> Transport Canada, 5.

<sup>19</sup> Litman, 6.

<sup>20</sup> Ibid., 7.

<sup>21</sup> Litman, 9.

<sup>22</sup> Ben Kidder, "The Challenges of Rural Transportation," *Western Rural Development Center*, (2006), 7.

<sup>23</sup> Transport Canada, 7.

## APPENDIX A – SAMPLE RURAL COMMUNITIES WITH TRANSIT SYSTEMS

### **Deseronto Transit – Deseronto, Ontario**

<http://deseronto.ca/departments/deseronto-transit>

Deseronto's transit system provides service to Deseronto, Belleville, Napanee, and Prince Edward County. The service operates from Monday to Saturday and uses small buses to serve rural communities.

### **Green Rider – Hantsport, Nova Scotia**

<http://www.greenrider.ca>

This vanpool service has been running since 1981 and offers rural residents along a commonly travelled route the opportunity to schedule rides to work and school. The service also transports people to Halifax and Dartmouth.

### **Kings Transit – Berwick, Kentville, Wolfville, and County of Kings, Nova Scotia**

<http://www.kingstransit.ns.ca>

This rural public bus system was established in 1981 and serves the above listed county and towns, who jointly fund the service. In September 2007, the service was expanded to serve Hants County and parts of Annapolis County.

### **Kootenay Rideshare – Nelson, British Columbia**

<http://www.kootenayrideshare.com/index.html>

This free service helps connect rural residents to share cars and save costs. The website includes emissions calculators and the ability to form ridesharing groups.

### **Ottawa's Rural Routes, OC Transpo – Ottawa, Ontario**

[http://www.octranspo1.com/community-events/rural\\_communities](http://www.octranspo1.com/community-events/rural_communities)

OC Transpo introduced service to rural communities in 2002, and now serves 13 communities in the greater Ottawa area. The buses operate during peak hours to serve these small communities.

### **Specialized Transit – Prince Edward County, Ontario**

[http://www.pecounty.on.ca/government/rec\\_parks\\_culture/properties/transit.php](http://www.pecounty.on.ca/government/rec_parks_culture/properties/transit.php)

This specialized transit system was developed in 2007 for elderly and disabled citizens. Riders must be eligible and register through an application process. Trips are scheduled at least one day in advance and serve social and health needs.

### **Trius Transit – Charlottetown, Prince Edward Island**

<http://www.triustransit.ca>

This public bus system started in 2005 and serves Charlottetown, Cornwall, Stratford, and some county lines. Ridership for the transit system is continuing to grow and revenues from transit fares are offsetting the costs for the system.

## APPENDIX B – HOW TO DEVELOP AN ECONOMIC IMPACT ASSESSMENT (EIA)

The following methodology is adapted from the Rural Economic Development Data & Intelligence (REDDI) program, developed by the Ministry of Agriculture, Food, and Rural Affairs. This Government of Ontario guide for creating an EIA uses seven essential steps. The full guide may be found at the following website: [http://www.reddi.gov.on.ca/guide\\_ecimpactassessment.htm](http://www.reddi.gov.on.ca/guide_ecimpactassessment.htm).

### **Step 1: Define the scope.**

The objective of an EIA is to compare changes to the status quo to determine economic effects. Defining the scope involves identifying the work that needs to be performed, outlining the purpose of the EIA, and stating feasibility constraints.

### **Step 2: Define decisions and questions to be answered.**

It is important to identify decisions that municipal council or staff will make based on the EIA. Outlining important questions to be answered will focus the analysis on areas of interest and help make better decisions.

### **Step 3: Determine level of detail.**

The level of detail for the EIA will depend on time, budget, and staffing constraints, the size of the local community, information available, and expertise of the project team.

### **Step 4: List assumptions and limitations.**

Assumptions may include topics such as population growth, employment levels, and income levels. Limitations might include time constraints, lack of expertise, and unavailability of information.

### **Step 5: List economic impacts.**

Five economic impact areas were listed in the knowledge synthesis for rural transit systems: employment and business activity, increased mobility, transportation cost impacts for users of the system, impacts on expenditure patterns, and growth impacts on the local economy. This list may be expanded to include other impacts such as existing user impacts, benefits from reduced traffic, and changes in land use patterns.<sup>24</sup>

### **Step 6: Define required and available data.**

Key data requirements include, but are not limited to: infrastructure and construction costs, projected number of employees, employees' annual wages, estimated number of employees living in the local community, and estimated cost of inputs from local suppliers.

### **Step 7: Analyze direct impacts for each impact area and compute indirect and induced effects.**

Direct impacts include initial project effects such as job levels and salaries, as a direct result of the rural transit system. Indirect impacts are the changes that occur to job levels, production, and salaries in other businesses in the local community, as a result of the new transit system. Induced impacts include household spending in the local economy as a result of direct and indirect impacts. For example, a bus

<sup>24</sup> Litman, 66.



driver may purchase a new television from a local vendor using the salary provided by the transit system.

Direct impacts are responsible for indirect and induced impacts. This is referred to as the *multiplier effect*. Multipliers for each impact area can be used to calculate indirect and induced impacts. For example, an economic multiplier of 2.2 for salaries would mean that for each dollar spent on salaries in the rural transit system, a total of \$2.20 is generated. Subtracting the initial \$1 spent by the rural transit authority means that the indirect and induced impacts, for the local economy, are \$1.20 for every dollar spent. These multipliers may be developed through econometric models, input-output models, or simply by contacting an economic impact consultant in the region.

## REFERENCES

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