Right-Sizing Transit: What is a Reasonable Level of Transit Investment?

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ABSTRACT

In recent years, the Canadian Urban Transit Association (CUTA) has successfully brought public transit to the forefront of elected officials at all levels, the planning industry and the Transportation Association of Canada (TAC). We are beginning to realize there are quantifiable economic and environmental business cases to increase transit investment that, following many years of financial neglect, resulted in transit fleets being modernized and expanded, with billions of dollars in transit infrastructure committed.

The larger urban centres across Canada have mature public transportation systems and the appropriate staffing levels and budgets to make things happen while the hundreds of smaller municipalities across Canada are not blessed with similar resources.

Smaller communities are less fortunate since growth tends to be limited or transit just isn't that well understood; however, this is changing. Many communities are now facing issues that require either increasing transit investments or investing in transit for the first time.

Typical questions asked are:

- Why should we invest more or even introduce transit if everyone drives?
- How many people will use transit?
- How do we start a service? Who will run it?
- How do we get Council buy-in?

The purpose of this paper is to provide a high level understanding for non-transit professionals so that, at the end of the day, those with little or no understanding of the transit business will have a framework to follow when questions are being asked about transit, or you are looking at taking the next steps.

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1. UNDERSTAND YOUR TRANSIT MARKET

1.1 Transit in Canada

Across Canada, cities and towns are identifying public transit as a vital component to not only their transportation but economic and environmental strategic plans. Over the last decade, collectively, Canada's transit systems have been increasing their per capita investment in transit service (Exhibit 1**)** and as a result, the investments have been rewarded with an increase in transit ridership, which is reaching historical highs (**Exhibit 3**) while service effectiveness has improved (**Exhibit 4Error! Reference source not found.)**.

Exhibit 1: Canada - Wide Net Cost per Capita (1999 – 2008)[1]

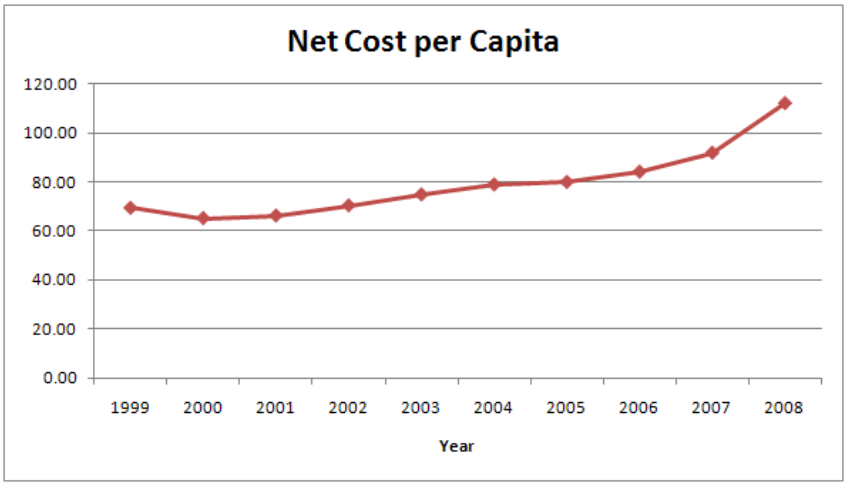
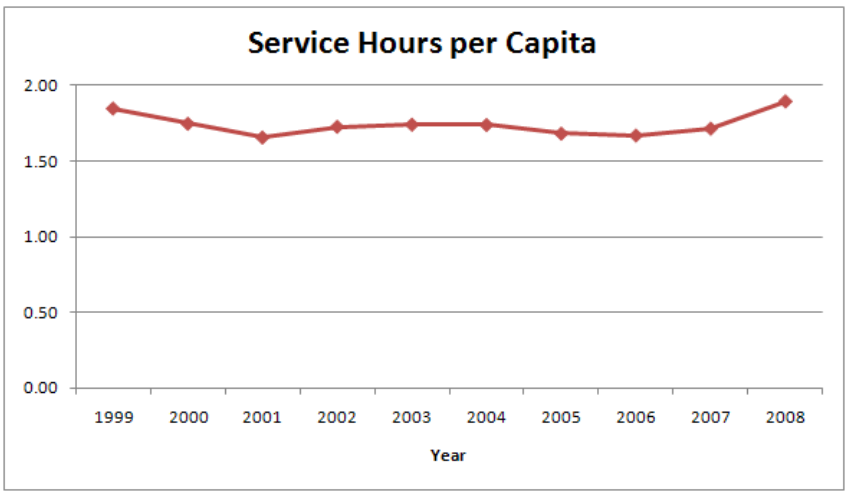


Exhibit 2: Canada - Wide Service Hours per Capita (1999 – 2008)[2]



[1] Canadian Urban Transit Association, Canadian Transit Fact Book (Toronto: Canadian Urban Transit Association, 1999 – 2008).
[2] Ibid.

Exhibit 3: Canada - Wide Ridership (1999 – 2008)[3]

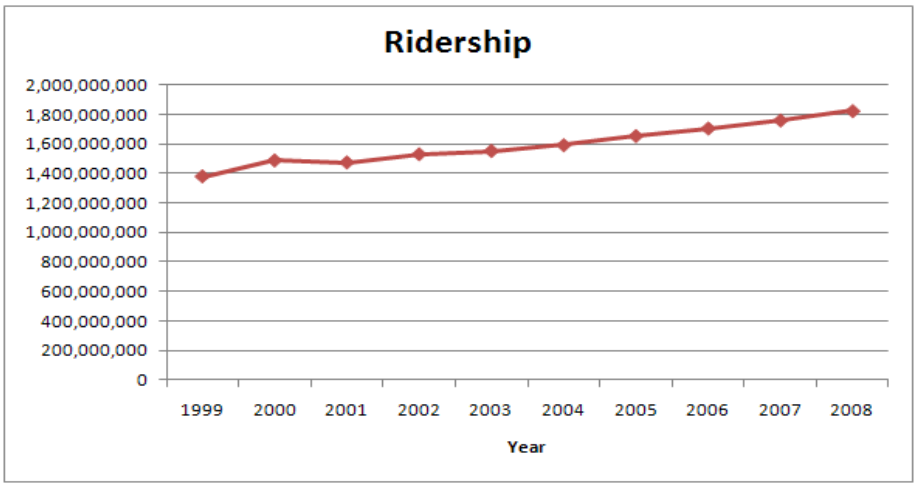
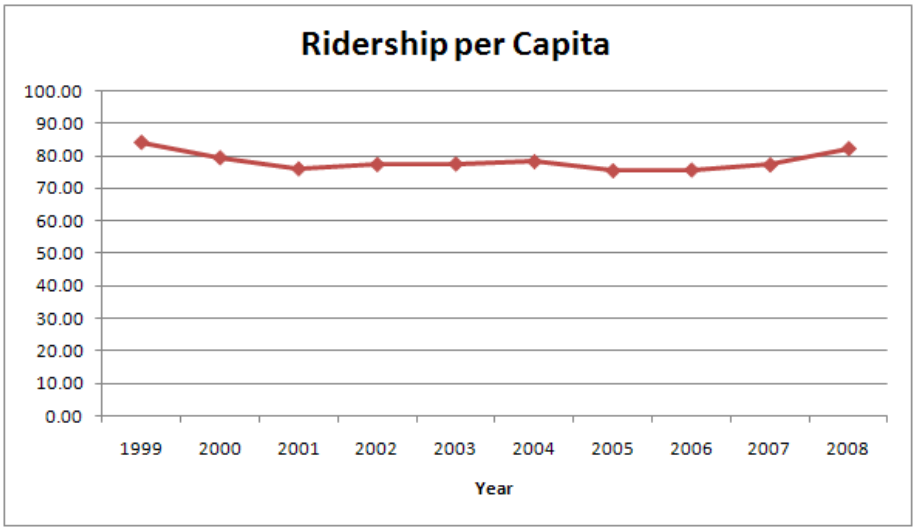


Exhibit 4: Canada - Wide Ridership per Capita (1999 – 2008)[4]



It is widely understood that these trends in ridership, service and investment are driven by the larger urban centres; however, there is a significant and large number of transit systems in Canada in municipalities with populations up to 100,000. This group represents 43% of transit systems that report statistics to the Canadian Urban Transit Association[5].

For smaller municipalities with some transit or no transit at all, knowing their market is important. There are essentially two captive markets – the physically and cognitively disabled that require specialized transit, also known as para-transit, while the other captive market consists of residents that can drive, but do not have access to a car as either a driver or a passenger. The non-captive market is the choice transit user where conventional transit

[3] Ibid.
[4] Ibid.
[5] BC Municipal Systems counted as one system,

exists and as such, they have the option to drive or take a bus if the bus takes them where they want to go and when they want to go. It is the choice user market that has the greatest growth potential and within this group are students and young adults that a transit mindset is needed.

An overview of the two types of public transportation is described as follows.

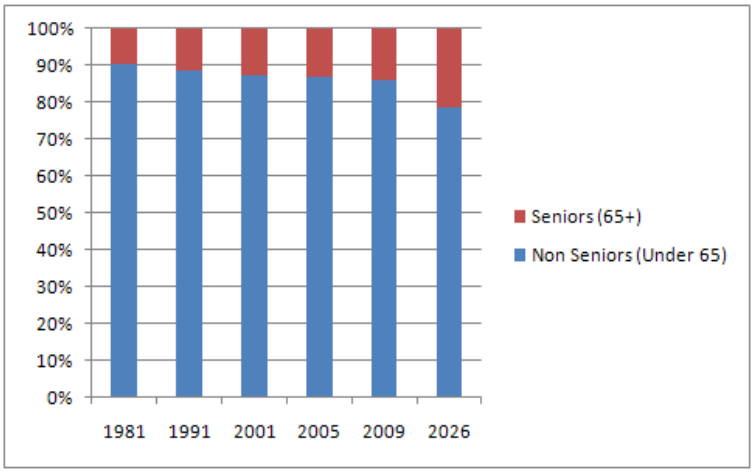
1.2 Specialized Transit Market

The specialized transit market is accommodated in a number of ways that range from volunteer transportation to fully funded not-for-profit or municipally owned and operated accessible transit services. The services are either the only form of public transportation offered in the municipality or they are in place to complement conventional transit service. Since specialized transit has a client base whose very health and existence depends on getting to medical and other appointments, service and funding is provided by communities either through volunteers, grants such as those from service clubs and other funding drives, and in many cases, municipal contributions.

We know from living in our own communities that specialized transit vehicles come in many forms – high floor buses (22'-28') that have seating and wheelchair positions, accessible vans and taxis, and volunteer vehicles, which can vary. More recently, low-floor wheelchair accessible buses that range in sizes up to 30 feet or more are being introduced – these vehicles can serve both specialized and conventional transit markets and were introduced to North America in the early 1990's.

Each year, the demand for specialized transit service is growing and virtually every council is dealing with it. This should not be a surprise; the population is aging and the demographers have been telling us that for many years.

Exhibit 5: Canada's Growing Senior Population[6]



[6] Statistics Canada, Catalogue no. 89-519, A Portrait of Seniors in Canada (Ottawa: Statistics Canada)

The graph in **Error! Reference source not found.Exhibit 5** shows Canada's growing senior population from 1981 to 2026 as per Statistics Canada's publication "*A Portrait of Seniors in Canada*".

To help illustrate the need to address the impact seniors are having on public transportation, two case examples are presented to provide real life examples of the role specialized transit plays or can play if it is not currently offered.

1.2.1 Case #1

An elderly rural couple is separated because the husband must move to the nearby city to live in an assisted care facility. The wife does not drive but wants to visit her husband as often as possible. The $40 or more one-way cab ride into town is not affordable because she is on a fixed income. She can no longer 'age-in-place' and must leave the family home and move to the city.

1.2.2 Case #2

A disabled person who is unable to secure a job requires affordable transportation so she can serve as a needed volunteer. The person is on a fixed disability income but the cost to access the centre by taxi prevents her from assisting the volunteer centre as often as she is needed. Specialized transit is available and more affordable but it, too, is cost prohibitive. The end result is that she volunteers but only when she can afford to.

As the population ages, those that can drive will, at some point in their lives, not be able to drive in the future. All one needs to do is look at your own family and friends as they get older. As a result, municipal politicians are now dealing with funding requests that get bigger and bigger every year and senior staff are wondering when it will subside. The bottom line is that the specialized transit services in the smaller and rural communities have shoe string budgets in most cases. The problem will not go away; it will get worse.

1.3 Conventional Transit Market

Conventional transit, which is generally provided by the 30' to 40' heavy duty buses that are typical in any transit system, also has financial challenges similar to specialized transit service in the smaller communities. However, if there is inadequate funding, the impact is less evident than the lack of specialized transit service but nonetheless the challenges are very real. Let's look at a few real life examples to put things in perspective.

1.3.1 Case #3

A student securing a part time job, a young adult starting out, or a second spouse has an opportunity to obtain work but there is either no bus service or the bus service provided cannot meet their work trip travel needs. If they have no other transportation options, they have a choice, 1) they can take a taxi everyday, 2) they can buy a car or 3) they can turn down the job. The latter choice is not uncommon.

A person who's employment, for example, pays $10 net per hour must work approximately 15 to 20 hours per week, depending on the distance to work, to carry the cost of operating and owning a car. This leaves little, if any, money left over as disposable income that could be spent within the community.

The Canadian Automobile Association (CAA) has statistics available that summarizes the true cost of car ownership as illustrated in **Exhibit 6**.

Exhibit 6: CAA 2009 Driving Costs[7]

ANNUAL DRIVING COSTS based on the Cobalt LT					
Kilometres Driven per Year	Annual Operating Costs (*variable*)	Annual Ownership Costs (*fixed*)	Total Cost	Cost per Kilometre	Cost per Diem
12,000 km	$1,284.00	$6,515.25	$7,799.25	65.0¢	$21.91
16,000 km	$1,712.00	$6,515.25	$8,227.25	51.4¢	$22.54
18,000 km	$1,926.00	$6,515.25	$8,441.25	46.9¢	$23.13
24,000 km	$2,568.00	$6,659.25	$9,227.25	38.4¢	$25.28
32,000 km	$3,424.00	$6,851.25	$10,275.25	32.1¢	$28.15

Affordable public transportation alters that scenario significantly, providing many residents with access to job opportunities and many businesses with access to employees. Further, public transit will also mitigate the need for higher car ownership, that is, instead of requiring a second or third car, households could reduce that requirement by one or more vehicles. This improves the environment and adds thousands of dollars of disposable income each year for families, which is important during uncertain economic times. And it can be surmised that the added income would be spent locally – a financial benefit to the local economy and businesses.

1.3.2 Case #4

A student beginning university that lives at home is about a 20 minute drive to school but public transit is not available and they cannot afford a car. The only safe and reliable transportation option they have is to buy a car. If that is not affordable, they are forced to move away from home. This adds to the cost of education and their debt load when they graduate.

[7] Canadian Auto Association, Driving Costs (Toronto: Canadian Auto Association, 2009) pg. 4

1.3.3 Case #5

A call centre wants to add an 11:15 pm to 7:15 am shift to their operation but the lack of bus service prevents the number of employees needed from the community to work the shift. The call centre must then turn away the business.

The case examples identified are only samples of real life stories, and they exist in both cities and rural communities across Canada. The figures illustrated by the CAA and other case examples provide a true indication of the potential financial impact that transit has on the typical family. Further, the total investment in a depreciating asset such as the car is money that can be spent on goods and services in the local economy if transit met their needs. But if the job wasn't there in the first place, who would know? If, however, existing transit service was removed, forcing a company to relocate to access employees, the story would make headlines.

2. WHAT ARE OTHER COMMUNITIES DOING?

The costs and benefits of transit have been researched and discussed in recent papers presented to TAC, CUTA, Federation of Canadian Municipalities (FCM), and elsewhere. There are economic benefits, there are social benefits, and there are environmental benefits. Unfortunately, these benefits are not well understood by the smaller and more rural communities to the extent that larger urban centres have embraced them. After all, there is little congestion, if any, and local air quality is less of a concern.

There are ways; however, to quickly identify the benefits of transit for the smaller community that wants to address only basic levels of transit service. There is also a relatively simplified approach to determining what a reasonable level of transit investment should be. One way is to find out what everyone else is doing through peer reviews.

2.1 Peer Reviews

Peer reviews are helpful whether or not you have a municipal transit system, specialized transit system or both in place today. Since each municipality has its own unique characteristics, the peer review must be used with caution. Topography, service area densities, the climate, local demographics, and economic factors have to be considered when comparing your community to others. The purpose of a peer review is only to help you establish reasonable expectations.

Presented in the foregoing are two peer reviews using readily available data that is consistent in its interpretation. This review uses data from the same dataset used to produce the CUTA 2008 Canadian Transit Fact Book and 2008 Ontario Transit Fact Book for specialized transit systems. A review of various operating, financial, and performance data among municipalities with a population of up to 100,000 was selected for illustration purposes.

Exhibit 7 through **Exhibit 10** illustrate conventional transit trends in municipalities with populations of up to 100,000. These charts show the individual performance for each transit system (identified by their population) and the average for systems up to 50,000 and between 50,000 and 100,000 population. At a high level, the charts show that as cities grow the average amount of service per capita increases, seen in the averages of 0.8 and 1.1 hours per capita respectively. As such, the average passengers per capita increases from 13.5 to 22.6 passengers per capita and the cost to provide this service from $40 to $65 per capita. This suggests that the importance of public transit generally increases with population.

Exhibit 7: Conventional Transit Service Hours per Capita (2008)

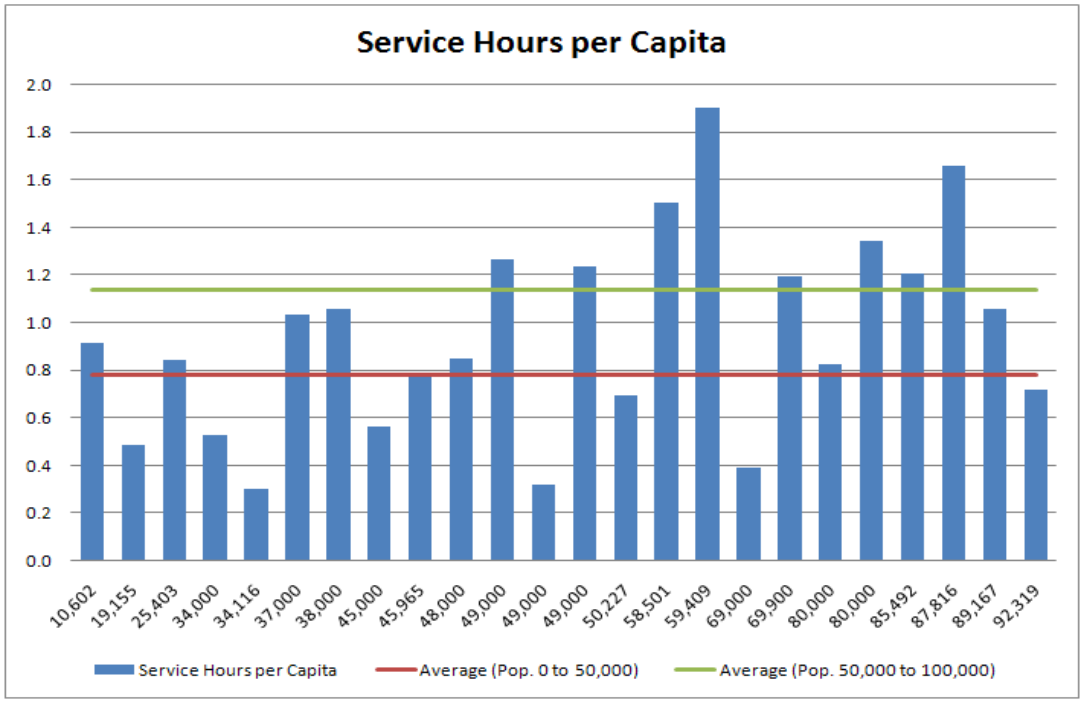


Exhibit 8: Conventional Transit Passengers per Capita (2008)

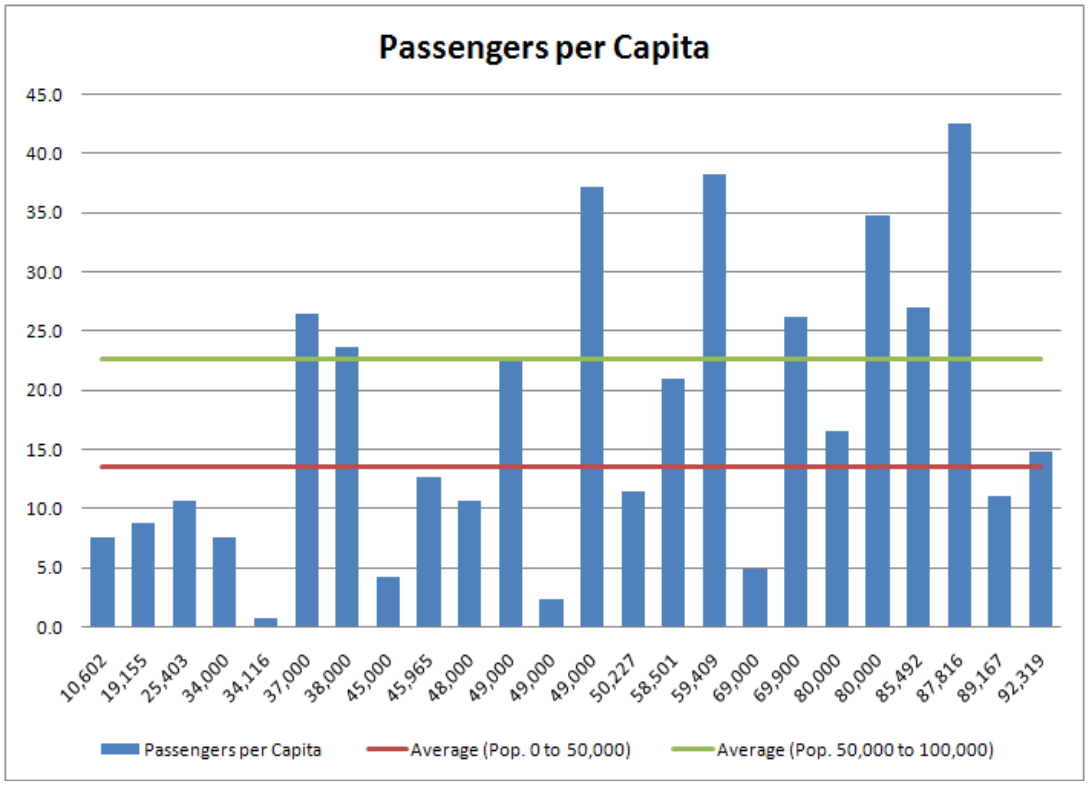


Exhibit 9: Conventional Transit Cost per Service Hour (2008)

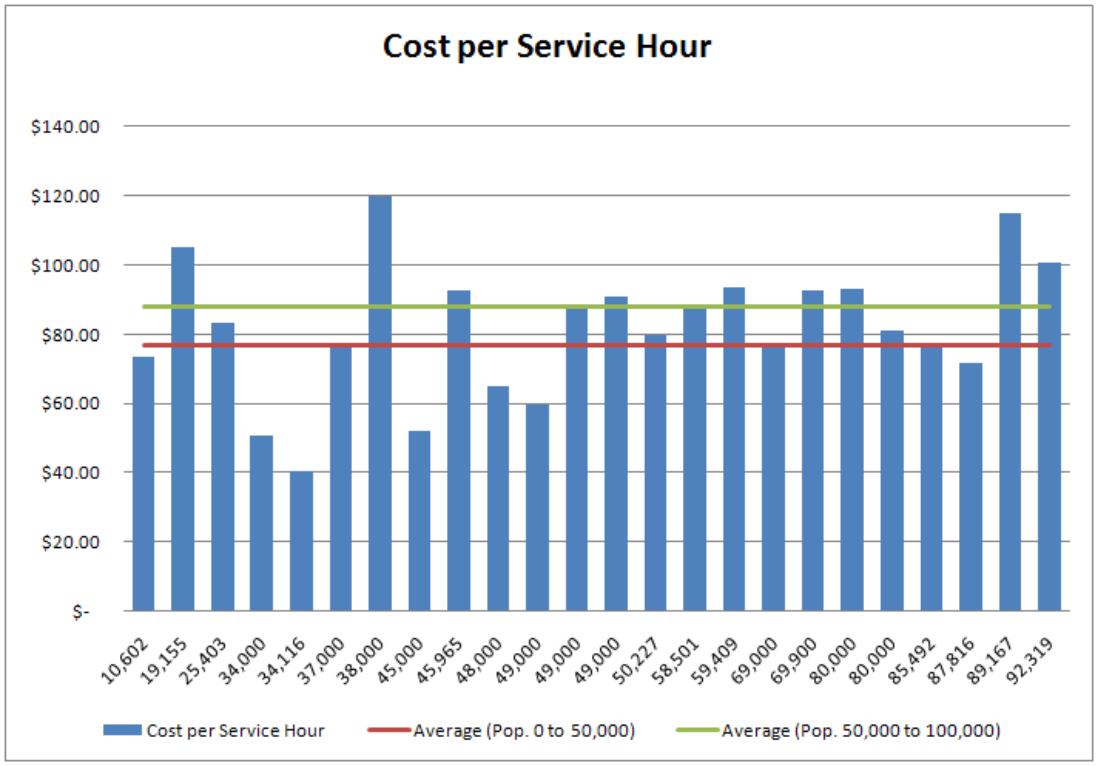


Exhibit 10: Conventional Transit Net Cost per Capita

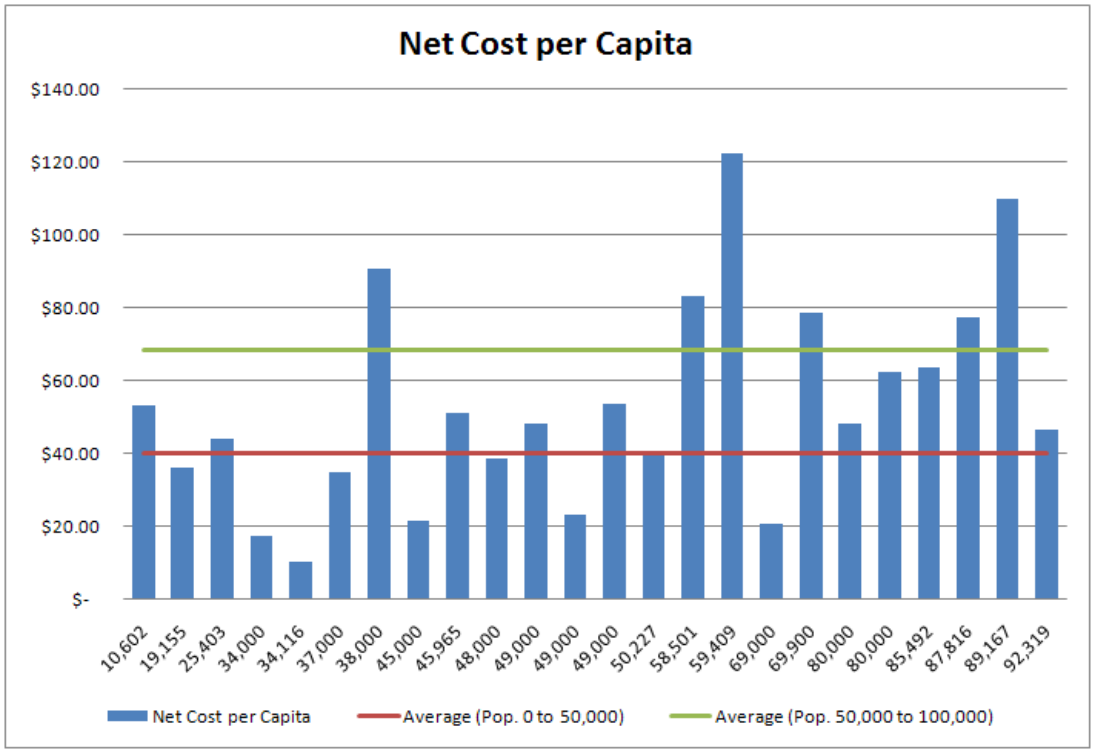


Exhibit 11 through show specialized transit trends. As seen, the registrants per capita are approximately the same for both population averages at 0.014 and 0.017, which essentially results in very similar trips per registrant (44.9 and 44.2 respectively). The investment per capita in the 50,000 population group at $10 is 25% higher than the 50,000 to 100,000 population group. Trips tend to be longer and as such, the cost and net cost per trip is expected to be higher.

Exhibit 11: Specialized Transit Registrants per Capita

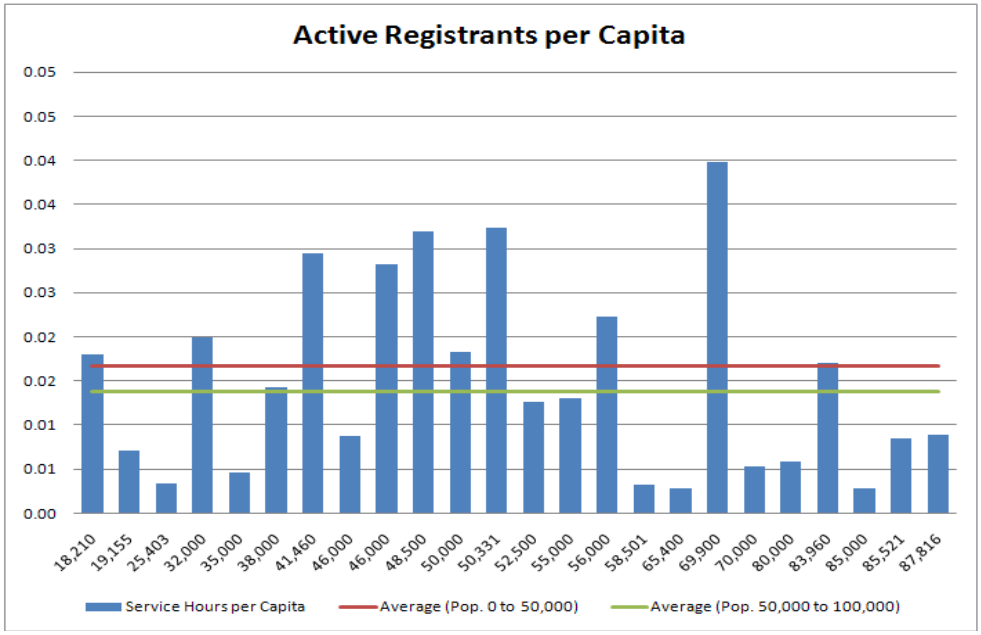


Exhibit 12: Specialized Transit Passengers per Capita

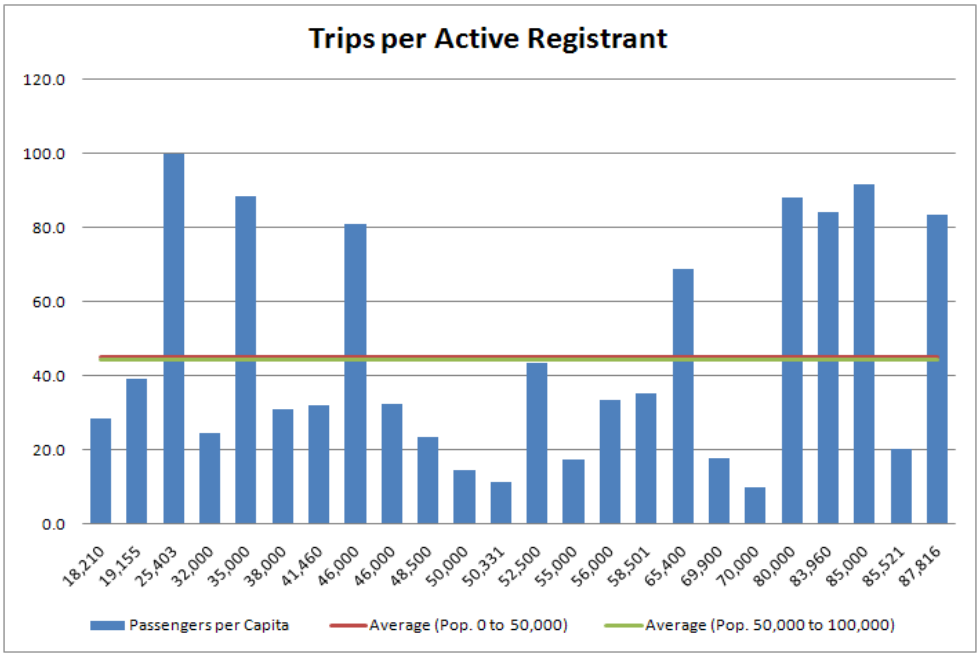
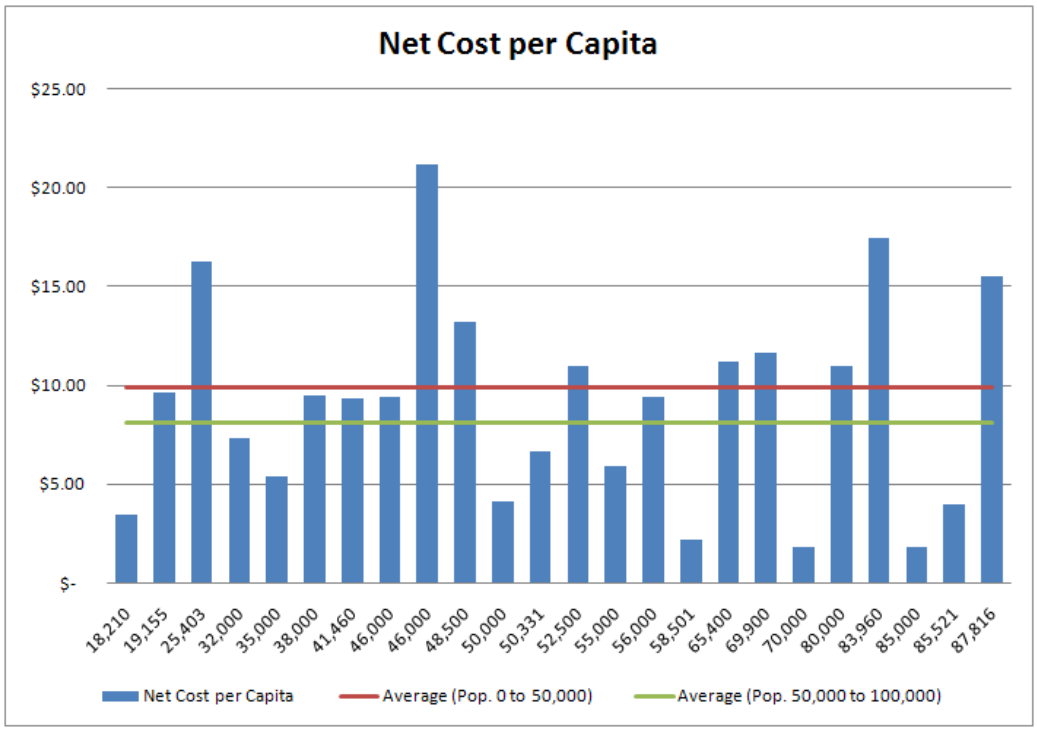


Exhibit 13: Specialized Transit Net Cost per Capita



2.2 Selling Transit

The case examples illustrated at a high level explain why municipalities should get into the transit business or consider expanding what they have if they do not meet community needs. However, transit loses money so why invest in a losing business?

Up to as late as the 1960's, transit was operated by the private sector and it made money. Then urban sprawl took place, which resulted in each kilometre of transit service serving fewer and fewer people. If you are running a business that loses money, you close up shop so it made sense for the public sector to take on the financial responsibility to ensure transit stayed 'in business'. It can be surmised that since the private sector kept track of statistics for business planning purposes, much of the practice carried over to the public sector.

The Revenue to Cost (R/C) ratio – the per cent of costs that are recovered by bus fares – was a mainstay statistic that is still around today - unfortunately. Other financial information such as the deficit per hour by route and time day, day of week, etc. was kept. It implied that transit was not being run properly so transit officials had to justify every dollar since it was scrutinized more than, say, the budget needed to run a community centre. Money can be saved at the municipal level if we didn't have such big transit deficits so it made sense that if we cut service and capital investment, we can save money. Or did it? Well, we all know what happened. This false economic approach resulted in such significant funding cut backs that fewer people used transit, road congestion and pollution became worse, and it made our cities less competitive. We are now playing catch up and ridership is now at historical highs.

When a smaller municipality looks at the investment in transit, it must put the investment into perspective whether you are deciding to get into it for the first time or taking a closer look at what you have today. While we know that the R/C ratio tells us what the deficit is for transit, what is the deficit of other municipal services? As examples, what is the deficit per kilometre of our roads, the deficit per hour of our libraries and other service departments? Another way I prefer to look at it is what a non-car owner pays to support the car owner.

We all pay property taxes either directly through home ownership or indirectly as renters. These taxes pay for all municipal services, including roads. Since auto ownership is a surrogate of income, it means that the lower income resident who cannot afford a car is paying taxes to support a higher income resident who owns a car. Yet if there is no transit service then the higher income resident does not support the low income resident through the taxes needed to support a good level of transit service; herein lies the unfairness.

I think we all agree that transit has a role to play in any municipality – large or small, urban or rural. The bottom line is what will it cost and how does one proceed.

3. RIGHT-SIZING TRANSIT – A REASONABLE LEVEL OF INVESTMENT

The peer reviews provided earlier are a guide to help determine what your transit system would cost and how it could be expected to perform; however, each municipality is different. Some municipalities have conventional transit, some only have specialized transit, while some have both. And governance structures can vary. To answer the question "What is a reasonable level of transit investment?" an approach you can look at is first determining what the order-of-magnitude costs are likely to be and to put the costs into perspective.

3.1 Putting Public Transportation Costs into Perspective

In population centres less than 50,000, the average investment per capita (shown as net cost per capita) for conventional transit approximates $40 per year while specialized transit in the peer group averaged $10 per capita per year for a total of $50. This annual cost is about the same as the cost for a tank of gas. The point is that a little can go a long way and it can also make your municipality competitive with others that invest adequately in public transportation.

3.1.1 Getting Started With a Single Bus Route

As an example, if you are contemplating putting in a transit service and have a population of 15,000, based on the peer group you are looking at an hourly bus service cost of approximately $80 per hour. Providing 60 hours of service weekly (12 hours per weekday) would cost $249,600 per year. Assuming a low 10% R/C ratio ($24,960 in passenger revenues) to be conservative, the net annual cost would be $224,640 or about $15.00 per capita to support the service.

To put the example into perspective, a typical four-way intersection that is reconstructed with a new right-turn lane could cost in the area of $100,000 to $150,000 or more depending on utility relocations. If you have a few of them in your capital program, deferring one or two per year could provide your residents with bus service 12 hours per day, 5 days a week. This will provide the non-car owner with the ability to access jobs or it enables a resident to save $8,000 of disposable income per year by not having to buy that second or third car. Or it can help meet the needs of the aging market, which is not going away in your lifetime.

You know your own budgets and you can probably identify a number of examples.

3.2 Establishing Reasonable Expectations

Once you have put the costs into perspective, there are a number of questions that are being asked by those not familiar with transit.

3.2.1 How many people will use transit?

Regardless of the method that is applied to determine ridership, in the end, experiences must be drawn from other like municipalities (trips per service hour, mode share, etc). One can use the peer review results as a starting point to estimate ridership; however, if transit is being introduced for the first time, ridership growth does not happen overnight and it depends on how much service is introduced and what market you are after.

As a rule of thumb, it takes approximately a high school generation to reach reasonable ridership figures. The rationale is that in a small community, parents will still drive their children and young adults to appointments and events until the students realize they do not have to wait for the family car. Access to jobs will be new so those seeking employment will need time. And the second or third family car is not going to disappear overnight. It is, therefore, better to be conservative to ensure projected budget deficits are not exceeded.

3.2.2 What type of bus should we buy?

If a community has existing service – conventional or specialized transit, the fleet needs to be assessed in terms of age and condition, utilization (passengers per hour), whether or not they are wheelchair accessible, and what markets they are serving. Did a service club donate the vehicle to a not-for-profit agency to run an accessible seniors service? In the transit vehicle supplier industry, there have been recent developments that make a business case for larger wheelchair accessible vehicles with ramps that have a 7-10 year life, which is twice the cost of smaller high floor buses with wheelchair lifts that have a 5-year life. The buses can carry more passengers and are more flexible than the large conventional transit buses of the larger urban areas.

3.2.3 How do we start a service? Who will run it?

If you have a service out there now – conventional transit or specialized transit - it is important to build on what you have by assessing gaps and opportunities through extensive consultations with the service providers and the community stakeholders. In terms of who will run the service, you should first build on what you have and assess the role the private sector can play. There is no sense in building a transit facility or having a full staffing complement until there is a business case to do so.

There is no one size fits all to running or starting a transit system but there are lessons learned elsewhere. Regardless of the governance structure in place, the transit service agency must have accountability to the funding municipality. In this regard, the entire process requires a champion within the municipal organization that can monitor the service on behalf of the municipality. This person could be from Public Works, Parks and Recreation or even a qualified administrative assistant with an interest in having additional responsibility. Without a champion, there will be no change.

3.2.4 How do we get Council buy-in?

The only way to secure Council buy-in is to ensure they are part of the process. This begins by educating them on the role conventional transit and specialized transit plays in the quality of life of the residents today and in the future. In the larger communities, the need for transit by businesses will be greater. If the population ages and the specialized transit service budgets are not increasing, residents will become more vocal at the political level. By nipping the issue in the bud (i.e. providing additional funds), the life of the councillor will get easier. There is also the potential that a do-nothing approach can come at a political cost, especially since seniors are becoming a larger portion of the population.

If you are contemplating the introduction of new service or expanding service significantly, it is suggested that the service is phased in over a few years based on your community's own financial position. For example, if you are staring out, a few dollars per capita could meet many of the more critical needs in the community today such as improving access to medical services on certain days of the week. A community bus route can be operated 5 days a week, 12 hours a day and be expanded to 7 days, 16 hours a day within a few years. As demand increases, service can be expanded as Council recognizes the benefits. The 'walk before you run approach' to setting up or expanding transit demonstrates fiscal responsibility.

In terms of governance, there is a mix of examples across Canada that one can emulate; however, you need to have an understanding of what exists today in your community and build on it.

It was announced on April 1, 2009, the federal Gas Tax Transfers to support municipal infrastructure will remain beyond 2014 to provide municipalities with stable funding for long-term infrastructure priorities such as water, wastewater and solid waste infrastructure, **public transit**, community energy systems, and local roads and bridges. If you are in a position to reallocate some of the funding to support public transit, this would probably be more palatable than adding to the budget.

Unfortunately, sustainable external transit capital and operating funding varies from province to province and it also varies between municipalities. Municipal officials must assess their own provincial jurisdiction to determine what funding programs exist that they can tap into and also investigate other funding programs at the federal level. Where no provincial transit funding exists, municipalities must unfortunately fend for themselves and push for provincial funding while they do.

It is of paramount importance that all decision-makers – staff and Council – are fully aware of the role that transit can play in your own community in terms of addressing quality of life, economic and environmental issues BEFORE you present the costs, which need to be put into perspective. Council needs to be in a position where they want to buy the service rather than having to be sold.

4. SUMMARY AND NEXT STEPS

A high-level understanding of the conventional transit and specialized transit market was presented to assist municipal representatives that have little understanding of transit. There are numerous case examples of the transportation issues and challenges faced by residents in every community across Canada, whether they have a disability or not. Only a few real life examples of the hundreds out there were addressed. While the larger urban centres have the expertise and resources to understand and fully address transit at the political level and at budget time, smaller communities do not.

To assist smaller municipalities, a peer review was presented to provide you with order-of-magnitude comparisons that one can use to estimate what costs are likely to be and what the demand for transit service can be. A brief overview of the myriad of statistics available in the transit industry today is indicative of how transit is operated as a business and why challenges are faced at budget time. Budgets are struck to minimize deficits rather than maximize profits. However, if costs are put into perspective relative to other municipal services and capital programs, transit can be viewed to be more of a long-term investment rather than a money-losing business in trouble.

One cannot be expected to be a transit expert overnight so it is important that you first possess a high-level understanding of the service and can speak to the role public transportation plays or can play in your own community. And it is hoped that transit is more understood by you today than it was yesterday.