

15TH REPORT OF THE
STRATEGIC PRIORITIES AND POLICY COMMITTEE

Meeting held on May 26, 2016, commencing at 4:00 PM, in the Council Chambers, Second Floor, London City Hall.

PRESENT: Mayor M. Brown and Councillors M. van Holst, B. Armstrong, M. Salih, J. Helmer, M. Cassidy, P. Squire, J. Morgan, P. Hubert, A. Hopkins, V. Ridley, S. Turner, H.L. Usher, T. Park and J. Zaifman and L. Rowe (Secretary).

ALSO PRESENT: A. Zuidema, B. Coxhead, S. Datars Bere, A. Dunbar, J.M. Fleming, M. Hayward, B. Hollingworth (IBI), L. Livingstone, D. MacRae, V. McAlea Major, D. O'Brien, K. Paleczny (LTC), E. Peissel (WSP), C. Saunders, C. Smith, E. Soldo, S. Spring, A. Thompson and P. Yeoman.

I. CALL TO ORDER

1. Disclosures of Pecuniary Interest

That it BE NOTED that no pecuniary interests were disclosed.

II. CONSENT ITEMS

None.

III. SCHEDULED ITEMS

2. Shift Rapid Transit - Business Case

That on the recommendation of the City Manager, the following actions be taken with respect to the Shift Rapid Transit initiative:

- a) the Full Bus Rapid Transit Network Alternative BE APPROVED as the preferred option, based on the cost benefit analysis and other findings of the Rapid Transit Environmental Assessment and Business Case, giving preference to the use of electric vehicles, and subject to the final approval of the Rapid Transit Master Plan;
- b) a Rapid Transit conversion to Light Rail Transit technology BE ENDORSED as a strategic direction subject to a review of transit technologies undertaken as part of future updates to the Transportation Master Plan and confirmation through a new business case;
- c) the Civic Administration BE DIRECTED to design the Full Bus Rapid Transit Network Alternative taking into consideration a future transition to a Light Rail Transit technology and utility infrastructure lifecycle renewal requirements;
- d) the Civic Administration BE DIRECTED to utilize the Full Bus Rapid Transit Network Alternative, as the preferred alternative for the completion of the Rapid Transit Environmental Assessment Master Plan;
- e) the Shift Rapid Transit Business Case, substantially in the form attached as Appendix A to the staff report dated May 5, 2016, BE APPROVED;
- f) the Shift Rapid Transit Business Case BE SUBMITTED to the Provincial and Federal Governments and Civic Administration continue to pursue available funding opportunities;
- g) the Financial Model for the Full Bus Rapid Transit Network Alternative BE RECEIVED; it being noted that the costs and expenses for the plan were provided by the consultant, IBI; it being further noted that the plan will be subject to update and revision as a result of the ongoing Environmental Assessment process, analysis on the impact of Bill 73 on the contribution

from Development Charges, and commitment of funding from other levels of government; and

- h) the Civic Administration BE DIRECTED to provide a future report detailing the needs and approach to establishment of a Rapid Transit Implementation Office;
- i) the following written submissions BE RECEIVED:
 - i) a communication from L. McCardle, 31 Cartwright Street;
 - ii) a communication from B. Brock;
 - iii) a communication from Dr. Don Millar;
 - iv) a communication from K.E. Risler;
 - v) a communication from C. Butler, 863 Waterloo Street;
 - vi) a communication from S. Hunt;
 - vii) a communication from M. Drangova, Old East Village Board Chair;
 - viii) a communication from J. Eray;
 - ix) a communication from London Tech Companies;
 - x) a communication from A. Nathoo;
 - xi) a communication from J. Weststar, Assistant Professor, Western Social Science;
 - xii) a communication from J. Fisher;
 - xiii) a communication from E. Jones, Stitch Media;
 - xiv) the attached communication from G. Gallacher, Chair London Downtown Business Association, D. McCallum, Chair, MainStreet London and J. MacDonald, CEO, Downtown London;
 - xv) a communication dated May 26, 2016 from J. Kennedy, President, London Development Institute; and
 - xvi) a communication dated May 26, 2016 from J. Kennedy, President, London Development Institute, M. Carter, Executive Director, London & District Construction Association, T. McKenzie, McKenzie Homes, President, London Home Builders' Association, S. Evoy, President London & St. Thomas Association of Realtors;

it being noted that the Strategic Priorities and Policy Committee received the attached information from the Director, Roads and Transportation, the General Manager, London Transit Commission, B. Hollingworth, IBI and E. Peissel WSP, with respect to this matter;

it being pointed out that at the public participation meeting associated with this matter, oral submissions were made as detailed on the attached public participation meeting record.

Voting Record:

Motion to Approve part a).

Motion Passed

YEAS: M. Brown, M. van Holst, B. Armstrong, M. Cassidy, P. Squire, J. Morgan, P. Hubert, A. Hopkins, H.L. Usher, T. Park (10)

NAYS: M. Salih, J. Helmer, V. Ridley, S. Turner, J. Zaifman (5)

Motion to Approve part b).

Motion Passed

YEAS: M. Brown, B. Armstrong, M. Salih, J. Helmer, M. Cassidy, J. Morgan, P. Hubert, A. Hopkins, V. Ridley, S. Turner, H.L. Usher, T. Park (12)

NAYS: M. van Holst, P. Squire, J. Zaifman (3)

Motion to Approve parts c) to h).

Motion Passed

YEAS: M. Brown, M. van Holst, B. Armstrong, M. Salih, J. Helmer, M. Cassidy, P. Squire, J. Morgan, P. Hubert, A. Hopkins, V. Ridley, H.L. Usher, T. Park (13)

NAYS: S. Turner, J. Zaifman (2)

Motion to Approve part i).

Motion Passed

YEAS: M. Brown, M. van Holst, B. Armstrong, M. Salih, J. Helmer, M. Cassidy, J. Morgan, P. Hubert, A. Hopkins, V. Ridley, S. Turner, H.L. Usher, T. Park, J. Zaifman (14)

Motion to Open the Public Participation Meeting.

Motion Passed

YEAS: M. Brown, M. van Holst, B. Armstrong, M. Salih, J. Helmer, M. Cassidy, P. Squire, J. Morgan, P. Hubert, A. Hopkins, H.L. Usher, T. Park (12)

Motion to Close the Public Participation Meeting.

Motion Passed

YEAS: M. Brown, M. van Holst, B. Armstrong, M. Salih, J. Helmer, M. Cassidy, J. Morgan, P. Hubert, A. Hopkins, V. Ridley, S. Turner, H.L. Usher, T. Park (13)

Shall the ruling of the Chair be sustained with respect to permitting a motion to amend the motion on the floor in order to provide for LRT instead of BRT?

Motion Passed

YEAS: M. Brown, M. van Holst, B. Armstrong, M. Cassidy, P. Squire, J. Morgan, P. Hubert, A. Hopkins, S. Turner, H.L. Usher, T. Park (11)

NAYS: M. Salih, J. Helmer, V. Ridley, J. Zaifman (4)

IV. ITEMS FOR DIRECTION

None.

V. DEFERRED MATTERS/ADDITIONAL BUSINESS

None.

VI. ADJOURNMENT

The meeting adjourned at 11:30 PM.

Ensuring a best in class experience

RAPID TRANSIT FOR LONDON

On behalf of the board and management team of Downtown London, we are pleased to submit our position on rapid transit.

WHAT WE BELIEVE

A best-in-class city requires - and deserves - a best-in-class transit system. Whether on wheels or on rails, Downtown London is advocating for a modern rapid transit system, **which above all, focuses on a high quality experience**, and:

1. Is operationally efficient and arrives with frequency and speed
2. Effectively supports both daytime commuters and the nighttime economy
3. Is attractive, flexible and adaptable as ridership increases
4. Can be supported by a comprehensive business case

When we talk about experience, efficiency and effectiveness, we are unequivocally focused on a solution of stellar quality. This includes routes that make sense for downtown, high quality vehicles and stations, and a high quality operational partner. For any rapid transit solution to be successful, there must be a high degree of alignment, in both vision and operational planning, between the City of London and the operator.

A MADE IN LONDON, FOR LONDON, SOLUTION

It is no secret that London is far behind in our transit offerings. It's time to catch up and to plan for the future. In some ways, our community has history of settling for the "Chevy that works" instead of shooting for an attractive, future-forward model.

With the most transformative infrastructure project in London's history, we cannot let that be the case. Similarly, we should not let ourselves be seduced by the strategies of other communities or by what we perceive is the "sexiest" technology. This has to be a solution that is uniquely designed for London, one that meets our current needs, builds for the future by considering other major infrastructure investments already underway, and can be completed in a timely and budget-wise way.

Our board has examined the business case for BRT/LRT which is limited to capital expenditures. It represents a significant step forward, in particular if it allows for flexibility and adaptability as ridership increases.

HOW WE'LL SUPPORT THIS WORK

Downtown London is connector and catalyst between partners and projects in the region to ensure progressive policies, bold investments and smart growth, which benefit our members and the downtown, and through them, London's economy.

As a key economic partner, representing 1000 downtown merchants and ratepayers, over \$1 billion of taxable assessment and as home to over 30,000 employees, we will actively participate in detailed decisions being made throughout the process, in particular surrounding downtown routes.

In this project, as in all major infrastructure investments in and around the downtown, we commit to being a key partner in helping manage communications, minimize disruption and ensure business retention.

We appreciate the opportunity to share this position and the thoughtful process with which the City is approaching this important decision.

Respectfully submitted,

Gerald Gallacher
Chair, London Downtown
Business Association

Don McCallum
Chair, MainStreet London

Janette MacDonald
CEO, Downtown London

Our Rapid Transit Initiative



STRATEGIC PRIORITIES AND POLICY COMMITTEE
MAY 26, 2016



Shift Rapid Transit Initiative

- Largest infrastructure project in the city's history.
- Rapid Transit initiative will transform London's public transit service – serving as the backbone for a redefined route structure.
- Major investment that will alter how Londoners travel and how the city will grow.



Shift Rapid Transit Recommendation

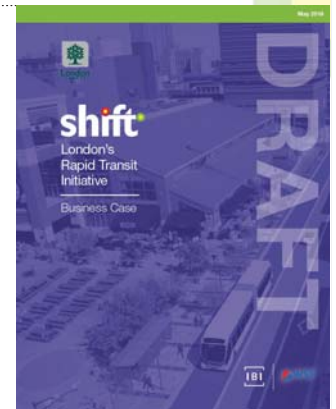
- Full Bus Rapid Transit provides the greatest value as it meets ridership needs, provides significant benefits from an economic growth, social, environmental and city building perspective.
- Best solution from a financial return on investment perspective.
- Full Bus Rapid Transit will modernize transit and make it a more attractive, reliable and convenient mode of travel.
- Protect and design for a future transition to LRT technology once growth and ridership needs require change.

The right solution at the right time.

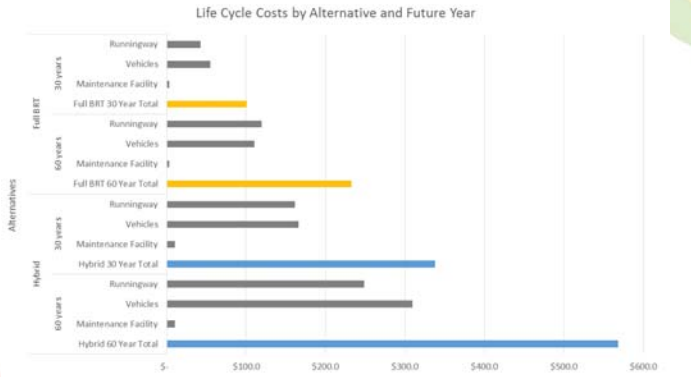


Business Case Overview

- Transit investments funded by Province and Federal government require a Business Case
- Demonstrated need for project based evidence-based decision making and objective comparison of proposals for funding
- Aligns with new *Infrastructure for Jobs and Prosperity Act*
- Shift Business Case compares the four different rapid transit alternatives
- Lifecycle costs are outside of Business Case analysis



Lifecycle Costs

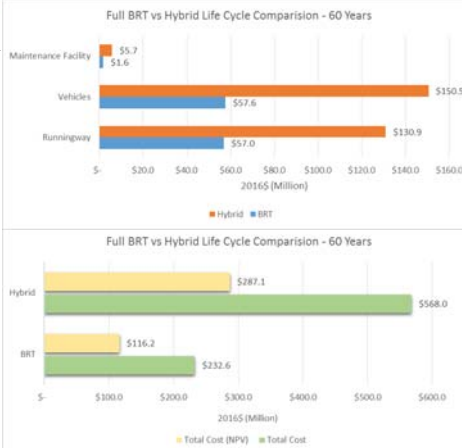


Financial Summary

Financial Element	Full BRT (Million \$)	Hybrid (Million \$)
Capital Cost	\$500	\$880
Capital Cost (NPV)	\$440.2	\$781.5
City Allocation	\$129	\$129
Required Investment	\$371	\$751
Operating Cost Over 30 Years (NPV)	\$234.9	\$215.6
Operating Cost Per Year	\$12.2	\$11.1
Lifecycle Investment Required over 60 Years	\$233	\$568
Lifecycle Investment Required over 60 Years (NPV)	\$116	\$287
Average Lifecycle Investment Required Per Year	\$3.9	\$9.5

Lifecycle Costs

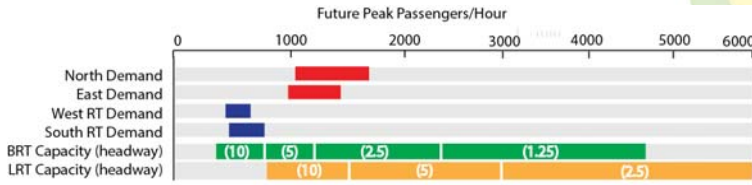
- Current value of transportation system is \$2.1 billion.
- The 10 year transportation infrastructure gap in 2015 was \$216 M or \$21.6 M per annum.
- The lifecycle costs for the Hybrid are significantly more expensive than the Full BRT (250 percent).
- Hybrid would add \$9.5 M per annum to the infrastructure gap.
- Full BRT would add \$3.9 M per annum to the infrastructure gap.
- Life cycle cost difference of \$5.6 M vs \$1.1 M operating cost difference



Existing Ridership (Peak Hour)



Rapid Transit Future Projected Ridership - 2035



- Future ridership on rapid transit will vary depending on base LTC service levels.
- Full BRT provides a scalable solution where capacity can be matched to demand.
- BRT also permits higher frequencies in the off-peak periods and lower demand corridors.

Financial – Development Charge Implications

- The City portion of \$129 M is currently funded primarily through development charges (\$117 M – 2014 Development Charges Study).
- Changes in the Development Charges Act, effective January 1st, 2016, identify a new methodology to determine Transit service development charges. This methodology includes:
 - forward looking service standards
 - consideration of trip generation (existing vs. future riders)
 - consideration of ridership forecasts and excess capacity by transit mode (i.e. LRT, BRT, Conventional Buses) over a 10 and 20 year planning horizon
 - the remaining calculation requirements for DC's also remain in place
- With regard to determination of excess capacity, the Hybrid option is anticipated to have a greater excess capacity vs a BRT system at the end of 10 year timeframe. Implications of this on the growth share require further analysis however the financing costs of the growth share for LRT could be expected to be substantially more than the BRT.

What is Full Bus Rapid Transit?

Characteristics

- ✓ **Faster**, more reliable and frequent service
- ✓ **Integrated** with local transit
- ✓ **Connects** major employers, downtown and institutions
- ✓ **22 km** of BRT along a semi-exclusive right of way
- ✓ **1.6 km** of BRT mixed traffic
- ✓ Corridors are **adaptable** to new technologies over time



Funding Scenarios

Rapid Transit Capital Investment

Investment Partner	Split	Hybrid (\$880 M)	BRT (\$500 M)
London	33/25	290.4/220	165/125
Provincial	33/25	290.4/220	165/125
Federal	33/50	290.4/440	165/250

Investment Partner	Split	Hybrid (\$880 M)	BRT (\$500 M)
London (\$129 Cap)	15 / 26	129.0	129
Provincial	35 / 24	311.0	121
Federal	50	440.0	250

PUBLIC PARTICIPATION MEETING COMMENTS

2. Shift Rapid Transit – Business Plan

- Sheryl Rooth, 23 Wethered Street – providing the attached submission;
- Doug Perkins – providing the submission as appended to the Added Agenda;
- Saul Morrison – indicating that he has worked in the high tech industry for 30 years prior to retirement 3 years ago, consulting with London companies in infrastructure matters, primarily computer systems; providing the attached submission and relaying his experience with an autonomous vehicle which currently exists today and is the future; noting that LRT could push traffic into surrounding streets causing a safety issue, whereas BRT is a much more flexible system; and adding that 5 cities who implemented LRT in the 1980s each experienced a decline in use of public transit by workers.
- Zach Anderson, 706 Berkshire Drive (on behalf of Adam Fearnall) – advising of the 14 focus groups undertaken by the London Youth Advisory Council researchers, which consulted with hundreds of youth and was done in conjunction with the City of London; highlighting the concerns young people have regarding transit and the environment, which are detailed in the submission attached to the Added Agenda; indicating that the London Youth Advisory Council (LYAC) went to various youth groups of various backgrounds and facilitated storytelling sessions; advising that through the focus groups, surveys, etc. there seemed to be no singular preference between BRT and LRT, rather there was more interest in discussing a better experience on public transit in three general areas: customer service, transit experience and growth (accessibility, multilingual information, WiFi access, multi-purpose terminals to act as hub and connect rural areas; safety (adequate lighting at stops and shelters, providing a mechanism to contact Police at stops and shelters, and conductors who would welcome passengers, settle disputes and provide information); and fares and affordability since many young people find it difficult to afford public transit (special pricing for high school students, extending transfer times, multiple payment options); and summarizing that their main feedback was to have a transit system that works and that is flexible enough to evolve with resident feedback, as summarized in the submission attached to the Added Agenda.
- Helen Riordin, 590 Piccadilly Street – noting I am not a millennial, but I would still really like the hybrid option; noting she can ride her bike faster than taking London Transit, which may explain why ridership is a little low; providing the submission as appended to the Added Agenda; emphasizing just because a technology is “old” is not a reason not to use it and re-emphasizing that LRT will get people out of their cars; and noting that by the time the system is built there will be many Londoners in their 80s who will be ready to use it; and that LRT is a much for environmentally friendly option; stating she has raised her children to walk, bike or take public transit and some people take their cars because the bus system is slow.
- Amir Farahi, Executive Director, London Institute for Public Policy – providing the attached presentation; encouraging London to consider emerging technologies; encouraging London to go with BRT but not purchase buses until 2022; indicating that to remain relevant you have to be a forward thinking, unique and innovative City, which falls in line with London’s various plans; suggesting that neither encouraging London to look at technology options; pointing out that Ben Baker of Stanford University indicates small autonomous vehicles are the way of the future; advising he has done some research into NEXT, a startup company doing work in the United States and Dubai and Qatar; explaining what Dubai’s goals are in terms of being fully autonomous by 2030 and also the goals of Austin, Texas to be the “smartest” city; drawing attention to electric module vehicles and providing a general cost breakdown for the modules; indicating that London should stop playing catch up and be a leader as London can be a beacon; noting that London’s citizens expect leadership and asking the Committee to think about putting London into the international spotlight for its leadership in building a system for the future; and noting that in January 2016 the Province agreed to undertake autonomous testing in Ontario and the provisions of Bill 6.

- Judith Carter, 98 Chesley Avenue – noting she is a bus rider and wondering when service levels are almost non-existent in areas like Lambeth that were annexed in the early 1990s, how can the City even be considering LRT, especially in an area that is already well-served; indicating that her son spent several months in the hospital and she never had a problem getting to the hospitals from the Downtown; indicating that London needs buses that serve all areas, more frequency and with better hours of service, not light rail; buses would also probably create more business along the route; to say that it won't cost Londoners any more than London's share is out of touch as the provincial and federal funds come from the same taxpayers; noting that the cities that London is being compared to have more citizens and almost a fifth of Londoners are below the poverty level; advising that London would still not have a .5 million population even if we annexed St. Thomas; indicating that we are able citizens and do not need consultants; stating the Forks of the Thames is fine as it is and we don't need a flex street; stating "no more consultants, we need action"; asking that if there are monies left over from projects that we need a splash pad in Silverwood Park; advising we need more buses and better schedules and routes; and emphasizing that what you do in life lives after you.
- Jim Kennedy, London Development Institute (LDI) – thanking the Committee for the opportunity to speak; referring to his letter dated May 5, 2016, which was included on the May 5, 2016 agenda of the Strategic Priorities and Policy Committee; providing the attached written submissions; noting that the business case compared three main options based upon further analysis since December 2015; noting there was very little difference between BRT and LRT, except cost; advising that the business case shows that we won't hit the minimum target until 2035 and questioning what that means; suggesting that it could mean a 25% increase in taxes to support LRT; stating that 50% of the current ridership is provided by students going to Fanshawe College and Western University, which means that taxpayers will have to fund the costs associated with rapid transit; indicating that 55% of new buildings are single family homes, and there is some increase in some medium and high density, but property value uplift won't happen along the rapid transit corridors; stating that the BRT system would be the most flexible and could possibly include LRT in the future, and has less capital costs than LRT; further noting that capital replacement costs for BRT would be \$3.9 million per year, while LRT would be \$9.3 million per year; adding that since there would only be an 8% modal shift, and with an increasing population it would still require existing roads to handle current capacity; noting that LDI provided a letter of support to the Province for rapid transit, but LDI would not be able to support LRT.
- Amanda Stratton – Founder & Managing Partner, Hacker Studios – providing the submission attached to the Added Agenda, as well as the attached presentation; emphasizing that the hybrid option is the best option;
- Jason – indicating that he was OK with either option, but did raise concern about costs; and stating that the service zone should be expanded.
- Gil Warren, 16-624 William Street – indicating that he has been to all public meetings, read all the reports and has made a presentation at each meeting; indicating that he supported the hybrid option and still do; indicating that he is on the Executive of the Woodfield Community Association, former President of the London District Labour Council and Treasurer of the Unity Project, so is coming at this matter from a number of different angles; noting the Woodfield Community Association passed a motion saying they supported rapid transit but did not make a distinction between the two systems; also indicating that there are two conditions to his support of the hybrid option: LRT on the second route and that it be publicly done and any start up operating losses should be assumed by the Province; noting that with the Ottawa and Waterloo LRT systems, there was a public/private partnership and an agreement signed for a \$30 million long term private maintenance contract without taking into consideration what if there is a depression and transit business is cut in half and cars remained empty; indicating that he has had a private discussion with a prominent Council Member who is a Liberal and apparently the Province is now reconsidering the private model; stating that climate change won't be impacted if we only get to 20% ridership, but we will really have to do something and achieve 80% in order to address environmental concerns; noting there is not enough reserves if there is a really big surge in usage in the next 5 to 10 years; stating London's

growth rates are much lower and wondering if LRT are just street cars as he does not fully understand the technology.

- Mel Sheehan, 117-304 Oxford Street West – noting that she is an avid rider, supporter and contributor to everything that is transit; indicating that she is in favour of BRT mostly because it establishes what LRT completes later; stating that to just build LRT will not fix everything but will just make things more confusing and frustrating for traffic in general and the riders; suggesting that the amount of construction with LRT will plug up other major arteries; indicating we need overpasses and underpasses for all types of traffic, stating that BRT is more cost effective and can, therefore, be put in place much quicker.
- Colleen Murphy, 269 Taylor Street – indicating that a hybrid model would be the best for the environment and would increase ridership and connect Londoners; stating that she believes the system needs to have more equity as the current system leaves many under serviced; noting that once riders leave public transit, it is harder to get them to come back to using it and the only riders left will be those with no other choice; indicating that it is important to build bridges out of poverty and a good transit system will create a community of inclusion; emphasizing we need to bring new riders on board and suggesting that LRT is more appealing to those who are currently not riding on public transit; stating that work needs to be done to create future transit that works for everyone and this will bring new Londoners as transit riders; noting that no person under 20 is looking to get their driver's licence and we should be asking youth what they are looking for; asking that a decision is made quickly and that there be a commitment to the project.
- Connor Pirotti, 193 Cheapside Street – stating he used to live Downtown and went to Western University; indicating that he is seriously looking at leaving London as it is not forward thinking or innovative; stating he was initially very, very pro-LRT, but is now confused and cannot imagine the burden it is creating, though he can pick up and leave; requesting that the following be considered: whatever plan is followed it is a real plan for the future, take any dollars saved and spend them on automation, and consider underpasses, especially on Richmond Street; also encouraging Council to think longer term and don't make rash decisions, but invest in London and be forward thinking and try to shake off London's current image of not being forward thinking.
- Bill Wederill – this is essentially a negotiation involving a chunk of change from the taxpayers and City businesses; indicating that London has shown its cards with other levels of government when approaching this as an negotiation; stating we need to come up with something big and should not shy away from things; suggesting the number of Londoners giving up a car should be considered, so we need to get a sense of where people are in this regard; and asking that London start investigating removing CN and CP from the north and south of the City and perhaps using that corridor for local transit purposes.
- Tim Pearson – noting London needs a better transit infrastructure and he is a supporter of LRT; expressing concern for how this debate has split Council, which he feels is a lack of leadership; suggesting that London has shown its hand to other levels of government which may be concerned about the divide on Council; indicating that the issue is that attitude of what is "good enough" for London and that he would like to see Council take a lead; indicating that perhaps ridership is going down because people can't actually get on the bus because they are always full; stating that tonight's vote is about two systems with two different costs; wondering what is the harm in asking for the best, that we should insist on whatever is the best system; and finally asking to please build some bike lanes.
- Mike Bayliss, Wistow Street – stating most of the points he would make have already been stated; indicating that there seems to be a lot of things that people are ignoring; noting that construction will shut down about half the businesses on Richmond Street and most of the other places; pointing out that LRT in Toronto is situated in areas where there are 8 lanes of traffic and we only have 4 in London, so there will be a total jam up; wondering how, if the RT is in the middle of the road, students will cross the road as RT will stop traffic; stating there are already enough drivers without patience and people will get killed trying to catch the bus; in terms of NEXT Cubes, what will happen in our climate where we get snow as the weather will jam the things up even worse and where will the snow go when you have to plough the lanes; suggesting that the only way we can get everything is to tear down most of what is already here; and adding that he is almost fed up enough to get out of the City because London is so far behind.

- Maria Drangova, Old East Village – presenting the attached submission and noting the Old East Village BIA supported the LRT; indicating that she is concerned about placing a financial burden on future generations and extending appreciation for the support of Old East Village.
- Craig Linton, 1 McKenzie Avenue – encouraging Council to pick the best transit solution that allows you to adopt the best future technologies in the future;; noting transit is an important component of city building but city building really comes from the London Plan; the London Plan needs to facilitate the type of development we want to see and we need to look at that Plan very critically; and adding it doesn't matter if you do have the planning in place unless the bureaucrats are willing to move things forward.
- Female Resident – noting that she came from Toronto and London is not Toronto or Brantford or any other place and is so dysfunctional; noting that as an interior designer she knows the importance of having both form and function; stating you have to have good business acumen; noting when roads are being dug up buses can change a route within 20 minutes, yet it took over five years to get the 90 and 91 but she can she can now travel across the city to White Oaks in 15 to 20 minutes, so changes can be done; stating that politically speaking, every time she tries to be an activist the cliché from cops is that it takes money, but that is not correct...it takes effort; suggesting that sometimes political effort in this city is a battle zone; suggesting that everyone should walk the area and then reality would set in; adding that you will also have to deal with dysfunctional equipment and wait a long time for repairs; stating she is Canadian but there are all kinds of newcomers to London and she had to wait 1.5 hours for a bus and what chance would foreigners have in understanding the system and such things as the Oxford West bus goes East; and concluding that as an interior designer she knows there is a built in dollar figure and you don't go over that.
- Ann Thompson, 699 Queens Avenue – noting she is a college professor at Fanshawe College, with four children and has written an open letter to the Mayor; stating she was hugely excited when the Council changed; indicating her support for LRT as she believes it is the correct investment at this time and that there is presently an unprecedented interest in funding important transit projects, interest rates are low, and the environment is of great concern; suggesting that construction disruption have an overall shorter completion and use this as part of the public relations campaign in that all the pain should not be for a "second best" system; indicating that the City should look at the overall demographic interested in LRT, which is generally well educated, community minded and youngish---the kind of people that London wants to attract and retain; noting that London is behind and will continue to fall further behind, particularly if Council decides to take the conservative BRT route; advising that no one is going to ride the BRT, that you need to look at ridership as routes have been reduced and fares have risen; expressing her belief that London will sprawl; and adding that she will probably stay in London, but her kids probably won't stay here.
- Cynthia McNorgan – suggesting that instead of disrupting Richmond Street, why not build a monorail as there would be less disruption and noise and would be environmentally OK.
- Vicky Van Linden, 431 Ridgewood Crescent – thanking the Committee for taking this matter seriously and being willing to take this matter forward; acknowledging that where we are now is the fault of previous Councils; noting we all need to get out of our cars and transit service needs to reach outlying areas and right now there aren't even benches for people to sit on; stressing we need to show more respect for persons who are using public transit and we need to do what is most environmentally friendly and don't buy more diesel buses; and adding that better schedules are needed for transit riders.
- Sarah Hunt, 4 Millers Road – providing the attached presentation.
- Mary Bray – indicating that she is excited about the concept of driverless cars; noting that there was a driverless bus in Oman and this is what the future is; noting that we need to be the first city after Stratford to have these driverless cars; encouraging City Council to put London on the map; suggesting that an overpass is required on Richmond Street and there could be elevated rail; encouraging consideration of a bullet train to Toronto, but a bus system for London for now, but to be creative about it; and adding that London is an important city.
- Shelley Carr, 93 Antrim Crescent – indicating that she moved to London 8 years ago, but grew up in Kitchener-Waterloo and is proud that they wanted light rail, even though they

still have horses and buggies in the area; acknowledging that London is not the same as Kitchener-Waterloo, but it does need to bite the bullet; stating that being able to get to work should be a priority and available to everyone; encouraging London to stop being chicken and think forward otherwise no children will stay in London.

- Steve Struthers – indicating support for Light Rail Transit; noting that the nexus of the situation is London has a rapidly aging population and fewer young people, and the older population will find themselves driving vehicles less; indicating LRT will provide for a smoother ride because it moves on tracks, so there would not be any potholes and less maintenance and repairs required; stating that the aging population will appreciate the comfort and millennials are not interested in buying or owning cars; indicating that BRT is seen as “old school” because of the use of fossil fuels, which create pollutants, whereas LRT use electricity and cities with LRT tend to attract more millennials; pointing out that London is currently having a problem attracting millennials, but population growth would add riders to the system; stating that bold action and risk taking is necessary as LRT is not about ridership, but planning for the future and quality of life cannot be quantified in dollars and cents and London has one chance and one chance only to get the project right and will cement London’s reputation into the future.
- Aidan McKendrick 700 King Street – indicating he ran for University Students’ Council and when he did so a lot of the students talked about living in their bubble; noting it takes him almost an hour to get groceries; suggesting that international students are having a hard time integrating without a proper transit system; indicating he was thinking about riding a bike, but decided not to as the bus was safer; advising people have told him they are leaving London as they can’t easily travel within the City; and stating that he was talking to two people who live in poverty, had job offers, but could not accept the jobs as there was no public transit to their employer.
- Jamie Cleary, 79 Condor Court – introducing himself as the incoming Vice President of the University Students’ Council at Western University and noting he has been a Ward 2 resident his entire life; indicating that he and other students are reliant on public transit, so there is a real need for an innovative and reliable transit system; London needs a good transit system so that London becomes a permanent home for graduating students, not just a temporary home away from home; stating that BRT is only a half-step, LRT is what’s needed; pointing out that London needs to invest in the future, stop settling for second best and reach toward its full potential for growth and the future; adding that this is the time for LRT and for London.
- Jeff Pastorius, Forest City Worker Cooperative – indicating that there are now 35 people employed with the Cooperative and that the Cooperative is in full support of the LRT; noting the Cooperative takes a triple bottom line approach with its business (i.e. fiscal, social and environmental) and firmly believes this is the model for the future; and further stating that LRT provides sustainable transportation; adding that he is concerned as a new father and that climate change is a serious reality that needs to be addressed and can’t be addressed through means other than LRT.
- David Loosee – indicating he is a 68 year resident of London who moved from Byron to the Downtown and who is encouraging Council to move forward with LRT; suggesting that the CPR needs to get out of London and the CP rail structure could then be effectively used as the LRT route as it crosses east to west, going near the Airport, to Richmond Street (where there is a natural stop at the Keg), and crosses Western Road; suggesting that LRT following that route would not take any more time than a roadway; suggesting that CP could be diverted to the CN tracks; similar to what was done in Toronto and is how the name “Union Station” came to be.
- Jared, 310 Dundas Street – indicating he is an LRT supporter and that Council should seek appropriate support from other levels of government; stating that LRT is the most beneficial system and that the millennials’ position needs to be weighed heavily as that demographic is under represented; suggesting that London has been losing its appeal to millennials; pointing out that London is a mid-sized city and is past the small city stage and needs rapid transit, specifically LRT; noting that he heard yesterday that BRT is still a bold step forward, but that he does not agree and London must upgrade to LRT, especially since it is the largest city in Canada without LRT.
- Joshua Randall, 1733 Wavell Street – indicating he moved to London about 9 years ago and has three children under 5; advising he tried to start 3 businesses unsuccessfully, so

he and his wife are going back to school; also noting that they have just renewed their mortgage for another 3 years but they are trying to decide if London is the place for them in the future and if London is willing to embrace a progressive future; stating that London thinks it is a city like a small town and the BRT solution is neither progressive nor does it address the transit needs of a city the size of London; what London does about transit will help his family decide where they will be in three years as right now every day they feel like they are hitting a brick wall of inflexibility; suggesting that LRT represents where the city wants to go; noting that London has a really bad habit of losing its students and London will continue to lose more, which will be bad for the city as it needs students to remain in London to support the aging community; advising he would not want to be in Council's shoes, but to please understand that what is done with transit represents where we should go with the London Plan.

- Christopher Barnes, 49 Lancton Road – indicating he is from London, but has spent about 25 years in Vancouver; would like London to be the greenest city in the world; noting that Vancouver has a good network in place for car sharing, bicycles and “Cars to Go” can be driven in that City; indicating that in London car sharing is two way...users have to bring the car back to where they picked it up in the first place, which is often too far from home; noting that Vancouver has BRT and it moves quickly but you can only put one bike up front and they are now moving to LRT; noting that Skytrain is LRT, Canada Line is LRT and all work together; thanking Council for allowing a public meeting on rapid transit and encouraging Council to choose rapid transit that runs on electricity, is green, is sustainable and is integrated as all modes of transit need to work together, with stations you can drop your bike off at.
- David Winner – indicating he has seen a lot of changes over the years including bicycle racks on buses, hybrid buses, smart buses, articulating buses; stating that the London Transit Commission did not stand still, but pursued new opportunities; suggesting that rapid transit is the culmination of those efforts and noting that the cost of rapid transit has risen from \$380 million two years ago to \$500 million; indicating that it has always been his view that as we grow, we can afford to realize our dreams; suggesting that we are 380,000 people, not 1,000,000 so BRT is the way to go; noting Calgary is replacing its transit system over a 30-40 year period and if London gets a larger population it could move toward LRT too; pointing out there have been a lot of advances in London, but there is still a lot of work to be done that needs to be planned for and needs a population base to justify changes.
- Resident, 95 Fiddlers Green – indicating he has four children and really wants to love London; noting he came to London 6 years ago and works in the non-profit sector, coming first to attend Western University; stating that he has found that many people come to London but then leave as they cannot see a future here; indicating that London Transit was his first experience of a not so good London when he first moved here from London, England; indicating the first time he saw Shift and the London Plan, was the first time he saw a London he could love; stating that while a lot has been said about population, not much has been said to suggest LRT is impossible; adding that LRT and BRT are both expensive and if the City can't afford either, why not select the best.
- Shawn Adamson, Ward 11 – indicating his support for LRT; advising he has spoken to almost a 100 people and that he regards BRT as LTC 1.5; pointing out the BRT in Winnipeg, the LRT in Waterloo where there are cranes in the air and optimism; noting that rapid transit builds cities and civic pride; indicating that LRT moves people around the city efficiently but it also avoids fuel consumption and is better environmentally; pointing out that while some say BRT can be changed to LRT in the future, which is what Ottawa is doing now, he has spoken to an engineer in Ottawa who is despondent that they didn't put in LRT 25 years ago; advising that he was told that the change from BRT to LRT in Ottawa, was an economic, environmental and traffic nightmare that could have been avoided by a Council with a vision; stating that he is a business owner and met with each of his team and found out that one of his coop students was looking to leave London, which would be a huge loss; navel gazing is holding London back; stating we should push hard for a progressive city and take a leap forward as this will be our legacy and encouraging Council to take a leap and make us proud.
- Joseph Liberatore, 18 Greenfield Court – indicating he is a millennial who resigned from a position in Toronto as he wanted to come back to London to try and make a difference;

Toronto decision making is “go bold”; noting he worked in urban development; one of his employers said when it comes to the construction of transportation, it is short term pain to make the city work well in the future; indicating he understands LRT is a huge capital investment up front but they are decisions that need to be made that affect the city years from now; and encouraging the city to make the bold decision.

- Don Miller – stating he is an ordinary citizen who has taken an interest in this as he believes the Council has taken the wrong direction; indicating BRT should have been done 10 years ago; suggesting that London has a defeatist attitude and that will be a self-fulfilling prophecy; suggesting ridership will never increase if you don't address overcrowding and passengers left behind at the bus stops; stating he spoke to a London Transit driver today who said the bus is full before it gets to Western and they have to turn away passengers; noting that if it was LRT and this problem arose, another car could just be added; advising that London has a cap in the investment so the other dollars could come from the provincial and federal governments; adding that the federal and provincial governments are favourable now for funding transit but may not be in the future; noting that buses will only be good for 10 years, but LRT will be good for 30 years, LRT is electric, but BRT is diesel with high costs and maintenance and LRT would attract more riders and is a much smoother ride; suggesting that LRTs would have priority over cars at lights so people in cars will want to be on the LRT instead; and adding that Hazel McCallion at the age of 92 spoke about the mistake Mississauga made going with BRT and then having to change to LRT and said London should not make that same mistake.

Sheryl Roach

When I first heard that there would be a PPM for the Rapid Transit business case, I really didn't think it was warranted. But in seeing how this project has divided a city, I gave it a second thought.

I have done a lot of research on BRT and LRT. And when I say a lot, I can tell you that it has permeated my family life. I wouldn't say I am a transit nerd, but my kitchen table is covered in reports and scribbled notes. Where we once at dinner is now stacked with CUTA reports, business cases, magazine articles and anything else I could get my hands on. I've spoken with transit officials across this country, asking their opinions, experiences and outcomes for the choices they made. And I did this for two reasons. Number One: As the chair of the London Transit Commission, I wanted to be as knowledgeable on both sides of the issue as I could. Number Two: This is where I live.

We've heard many tangible arguments for and against. And I appreciate the passion I've seen. If only that passion could be applied to all of our city initiatives. But when all is said and done, our focus needs to be on moving people efficiently and cost-effectively. The city building comes second. I'm not saying it isn't important. It absolutely is. But to put all of our eggs into one development basket makes no sense to me.

This notion that BRT is second best or for second class citizens as I read in an open letter to the mayor today or for those stuck with taking the bus ordinarily is frankly, ridiculous. BRT is a premium service. A service that is successful in many major Canadian cities, including Calgary, Ottawa, York Region, Brampton, Halifax, Kelowna, Saskatoon and Waterloo. Many of whom are competitive, growing their populations at explosive rates all the while expanding their BRT services. How does this make it a second best idea for London?

Last week, I attended the CUTA Conference. I had the opportunity to sit and talk with many of the general managers and planners in the public transit industry. If you think for one second that this conflict over upgrading London's transit system hasn't reached their ears, you would be mistaken. And I can tell you, it was embarrassing. This has passed the point of a discussion and become a cause, something so do or die that people are willing to compromise their integrity and sacrifice the respect of their peers and for what I ask you? Because of what they *feel* we deserve over what we need and can utilize. This isn't about opinion. I don't much care about how you *feel* about BRT or LRT, I want to know what you think about the *facts*. Just as any level of government would when they look at this business case.

I'm tired. I'm tired of biting my tongue. I'm tired of being disappointed by people I once respected. I'm tired of seeing some of the brightest minds in transit being second-guessed by people who have become transit experts in the last month. I'm tired of London being made an example of how to squander an opportunity over infighting and egos. I'm tired of us forgetting

that this is about moving Londoners. I know that we are all aware that the Post 2019 Transit Requirements Study from Dillon will be completed in early June. It is my opinion that while it may change the master plan, it will have little bearing on the business case. So I'm asking you please, do not make any motions to defer decisions that could be made tonight. Let's put this plan forward and show as united a front as possible. The LTC FULLY endorsed this *business plan*. It's solid. Let's get it rolling.

BRT Good

- Flexible for foreseeable future
- Follows 2030 London Transportation Master Plan (Sep 2012)
 - Well thought out BRT plan. Zero mention of LRT
- Faster to test and implement, less disruption
- Can coexist with Autonomous cars
 - Autonomous vehicles: 2021. 2025 for buses and BRT's
- Geography
 - London 420 SqKm, KW 205 SqKm
 - Small Autonomous feeder buses for BRT system.
- Fallback to HOV lanes
- BRT is more community friendly.

LRT BAD

- London Tax base will be reduced for 3-5 years.
- Ruin North London Streets forever. 12-Jun-2011
- Could reduce use of transit and cause decline of downtown
 - Kitchener, Hamilton have alternatives for cars – we don't
 - 2014 article: Buffalo, Portland, Sacramento, San Diego, even San Jose
- Start a shift for easy parking at Malls, including SouthWest
- Difficult to move tracks.
- Hard to put two LRT tracks on same street with cars. ie King St.
- Time savings LRT vs BRT - zero. 7.5min vs. 13min for car today
- Business uncertainty until 2030.
 - May cause other business to move to Masonville Mall. The Keg.

LRT UGLY and Conclusion

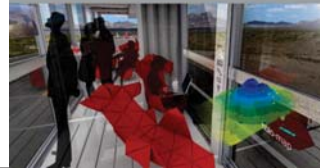
- Richmond Row –destroyed for 3 or 5 years
- Only significant advantage is London reputation
 - But overruns and not Business friendly is what investors really remember
- Cost \$1B if on budget.
 - Give every regular non-student a Prius & 10 years of gas instead.
- Tracks cross major streets.
 - Bicycle unfriendly, maybe gates–Edmonton
- Richmond St Hill & St Patrick's Day 2029
- Conclusion:
 - LRT NO BRT YES
 - And first build the Adelaide St. Overpass





Next is

- A road transportation system based on **electric modular vehicles**.
- The modules are able to physically couple and decouple each other creating a **bus-like walkable open space** that allows people and goods to move from one module to another.
- This unique feature guarantee a huge traffic, price, and efficiency optimization both in a **human driving** scenario and in a **self-driving** one.



Drivers

- Efficiency & Sustainability
- No new infrastructures
- Radically optimize logistics
- Satisfy future passengers needs
- Unlock all the potential of self-driving
- Scalable ecosystem

6 people in the length of a Smart?

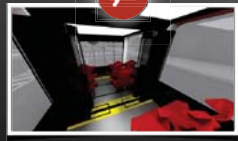
With next you can!
A single **next** module can fit 6 people sitting plus 4 standing.

next future transportation inc. next-future-transportation.com

Short as a Smart and with Optimized Occupancy Rate Logistics

Why NEXT is different?

Not just stackable, it's a modular ecosystem



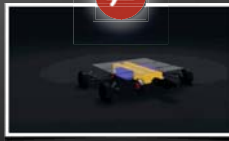
Joined Modules Openspace

People can stand inside and walk through connected NEXT modules, like in a train or in a bus



Not a Pod or Minibus

Other solutions even if stackable or self-driving are not modular, so not expandable or optimizable



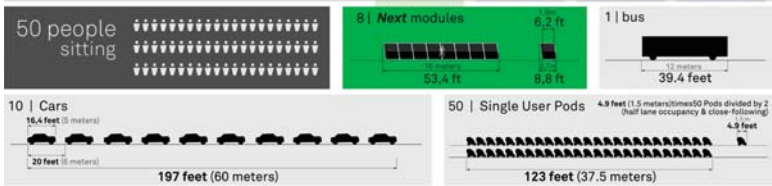
No New Infrastructures

NEXT is different from people mover or analog solutions because it goes on regular roads.

Competitors Comparison



	next	Self-Driving Car	Modular Pods	Self-Driving Bus
Average Occupancy Rate	75%	55%	100%	35%
Traffic Footprint	54 ft	197 ft	123 ft	40 ft
Total Cost per Passenger per km <small>estimations for revenue, traffic, revenue</small>	\$0.08	\$0.07	\$0.06	\$0.20



In-Motion-Re-Distribution Goods Routing Software

IP: Packages dispatch optimization system via in-motion NDR re-distribution

In-Motion-Re-Distribution People Routing Software

IP: Passengers transport optimization system via in-motion NDR re-distribution

Door to Door No Waiting Time

On Demand Local Pickup

Less Consumption

The Local Pickup Following Module carries the Passengers to the Main Colony and Replaces the Passengers Entry and Brings them at Home

No Intermediate Stops Door to Door Service

Users directly delivered at home

Need in rush hours to avoid like a regular bus, with bus stations and lines

Need in middle traffic hours to avoid like a regular bus, with bus stations and lines

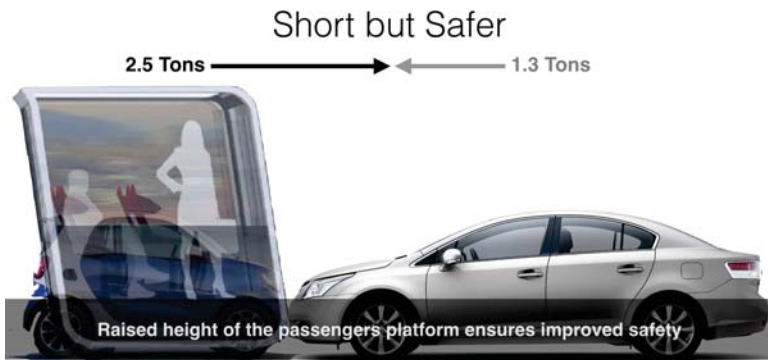
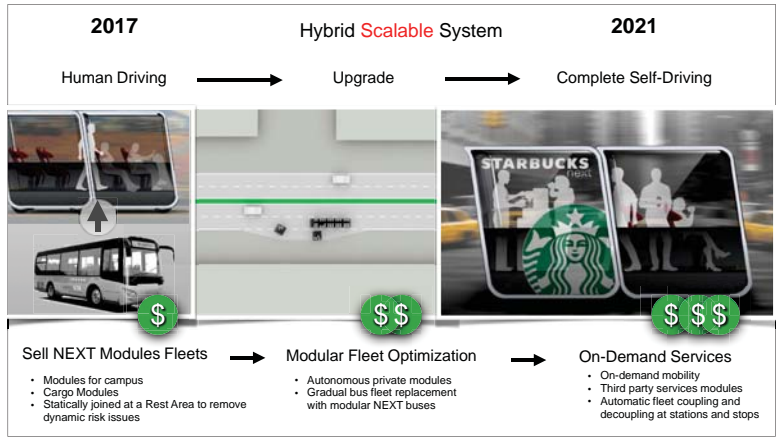
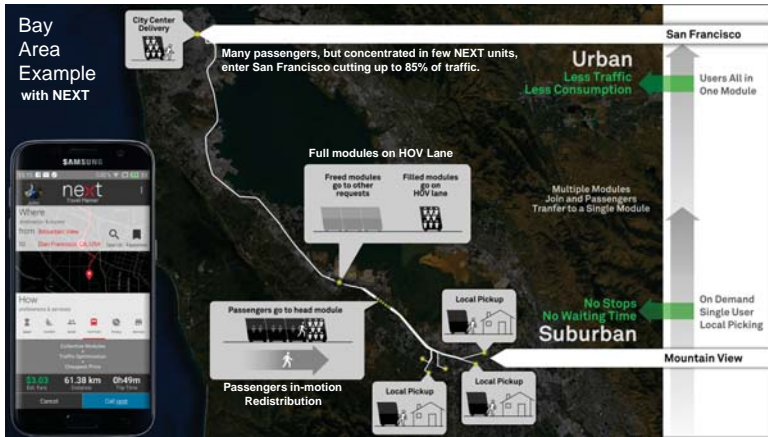
On Demand

Future Transportation Inc.

UPS

Bay Area Example Today

Single passenger cars from the entire Bay Area concentrate in San Francisco, creating huge traffic congestion



Short Length as a Smart but Safer than a regular Self-Driving-Car



100 Miles of Range but Actually Infinite Mileage thanks to Swap-in-Motion

Roadmap of Key Milestones (long term)



Press

Huge and positive press coverage and public excitement

theguardian

"Tech innovators reshaping transit"

FAST COMPANY

"Why Should Your Self-Driving Car Look Like A Car?"

WIRED

"A futuristic cross between Uber and the city bus"

TECH INSIDER

"These self-driving pods could change how we travel"

gizmag

"Next Future modular transportation swarms the commuting hordes"

CORRIERE INNOVAZIONE

"In futuro viaggeremo nei moduli intelligenti"

c|net

"Rooms on wheels"

INTERESTING ENGINEERING

"New innovation"

WIRED

"Diese fahrenden Kisten sollen den Verkehr revolutionieren"



London Development Institute

May 26, 2016

By Email

City of London
300 Dufferin Avenue
London, Ontario
N6A 4L9

Attn.: Chair and Members of the Strategic Priorities and Policy
Committee

Re: SHIFT Rapid Transit (RT) Business Case May 5, 2016

Chair and Members of the Committee

The LDI supports the May 5, 2016 Staff recommendation to accept the business case proposing Bus Rapid Transit (BRT) as the preferred alternative for Rapid Transit in the City of London.

Members of the industry have watched, read and participated with great interest in the vigorous discussion regarding London's transit future and the London Plan. We believe strongly an efficient and robust transportation system for the City of London is one key to London's prosperity and is strongly linked to how our city will develop in years to come.

London's Tech Leaders have publicly stated that London needs to attract and retain highly skilled, creative thinking young talent and we could not agree more with this sentiment but it has to be the right solution for London. London's time for rapid transit has come and we believe that Bus Rapid Transit can provide all of the benefits of light rail at a fraction of the cost. In many cities across the world, BRT is being implemented using busses that are electrically powered, passenger friendly and as aesthetically pleasing as any light rail car. BRT has advanced to the point that it must be thought of as the cutting edge form of RT. It can easily adapt to future technological advances, like an autonomous public transportation system that could simply utilize the corridor created by the BRT system. This is something that the leaders of our tech sector should applaud as aspirational future thinking.

We need to ensure that the planning (financial and development), engineering, and implementation of whatever form rapid transit takes is done with proper care and due diligence. London is currently in the midst of an Environmental Assessment (EA) which is a public engagement, planning, engineering and budgeting exercise that has resulted in a business case recommending a preferred alternative,

562 Wellington Street
Suite 2003
London, ON N6A 3R5

... .. developing and planning for a strong London
Phone: (519) 642-4331
Fax: (519) 642-7203
e-mail: jkennedy@londondev.ca

meaning that the mode of RT (bus or rail or a combination thereof) has been determined and the final routing is yet to be determined.

On November 9, 2015, a preliminary staff report was tabled at the Strategic Priorities and Policy Committee (SPPC) as a first step in the RT EA process. To summarize the report, it concluded that the “preliminary preferred alternative” was to be a Hybrid RT network comprised of LRT along the Masonville/University/Downtown/Fanshawe College corridor, and a BRT system for Oxford St. West/Downtown/White Oaks Mall corridor. This conclusion was based on a very preliminary review of capital costs, capacity/mobility issues, operating costs, ease of implementation, lifecycle renewal costs etc.

In the November report the “Full BRT” scored similarly to the LRT and Hybrid systems on many factors like operating cost, capacity and mobility but BRT scored higher because of lower capital cost, ease of implementation and operational viability on these very objective criteria. The LRT and Hybrid models scored higher on community, economic development and city building which are more subjective criteria in nature in that they cannot be easily quantified with any real certainty. The LDI position is that mode of RT has little affect on city building and intensification. Land use policies and political will have the greatest affect on city building.

Moving forward to May 5, 2016, the SPPC received a staff report presenting the business case for a full BRT network as the preferred alternative after a more detailed cost-benefit analysis and progression of the EA process. It was determined by staff and the consultant, IBI, that BRT is the preferred alternative for RT in London. To summarize the business case the benefit to cost ratios were calculated, and the full BRT system scored higher than any other alternative evaluated. In general, the BRT was shown to perform equally to a hybrid or full LRT system, but at a significantly reduced capital cost. The total “benefits” calculation shows that BRT provides 98% of the benefits of the hybrid system for 57% (\$500m vs \$880m) of the cost and provides 97% of the benefits of a full LRT system for less than 50% (\$500m vs \$1.2b) of the cost of a full LRT system.

The May report also factored in subjective analysis like the potential impact on city image, urban regeneration effects and catalyst for transit oriented development (TOD) for both LRT and BRT.

In the business case the BRT is cited to allow for more frequent service, can be better integrated with “regular” bus routes, is more flexible in meeting peak and off peak ridership demands and can also be extended more easily to provide service to areas like the airport. BRT appears to be better able to expand into new areas in the future with little capital costs, as well as be flexible to optimize levels of service as required.

Optimization of service levels at all times is an important key in gaining new ridership. The frequency at which a BRT system operates in off peak hours is higher than LRT – in other words, a bus would arrive every 15 minutes in off-peak hours, whereas a rail car would only arrive every 30 minutes. Gaining new ridership and shifting the modal split towards public transit must be a paramount consideration of any RT system and frequency of service is a major factor in the selection of a method of travel.

The report also notes that a key consideration of BRT implementation would be to utilize next generation bus technology in the form of all electric busses. It needs to be recognized that the business case uses the standard diesel bus for evaluation purposes (like modeling trip times), but the budget of \$500,000,000 includes a \$135m contingency which Council can use for the purchase of state of the art electric busses. BRT appears to be the most flexible form of RT to best accommodate new technological advances – be they bus or light rail. The report clearly sees the future conversion to LRT as a real possibility. The BRT system can lay the foundation for conversion to new forms of RT technologies, and as such truly has the ability to be transformational for the city of London.

A major aspect of cost for RT is the life cycle renewal expense for transit vehicles and infrastructure. Busses typically last 12.5 years, while rail cars last 25 years, however, the cost of a high end all electric bus is one quarter the cost of a rail car, so the bus replacement costs are only half that of a rail car over a 25-year period. BRT allows for the incremental increase in the requirement for new buses based on the increase in ridership. Additional busses can be added as routes expand and ridership increases.

Replacement costs of the rail bed and overhead electrical power system for LRT are not experienced in a bus-based system. A reserve fund is required to be created with any public infrastructure project to ultimately pay for replacement costs of the infrastructure when renewal is required to maintain a sustainable RT system. The life cycle renewal investment cost for BRT is currently estimated at \$3.9m/year, and \$9.5m/year for LRT. BRT life cycle renewal costs are only 41% that of a rail based system. Proponents of LRT trumpet the fact that the yearly operating costs of LRT are over \$1m/year less than BRT, however, this is clearly negated many times over by the life cycle renewal cost difference of \$5.6m/year. Life cycle renewal costs are covered by London taxpayers, not higher levels of government.

In the wide variety of public discussions and forums regarding the transit issue, there are supporters of full BRT, the Hybrid Model and Full LRT systems. Many people have provided thought provoking and passionate pleas for their own preferred alternative. LRT supporters cite that London must build LRT to enhance its image on the world stage and

attract/retain young people, attract new higher density development along the corridors and provide users with a world-class transit experience.

The question we must ask ourselves is “Can BRT help facilitate all of these things too?” The business case establishes that the answer to this question is also “yes”. Numerous case studies comparing different types of rapid transit systems from around the world confirm the value of RT in any form as being a benefit to a city. The most important factor that emerges from all of the reports is that the form of RT system (BRT or LRT) has a very limited transformational influence on a city and the economic uplift of properties along the corridors.

It is Official Plan (OP) policies, the pre-zoning of lands along the RT corridors and the political willingness to facilitate incentives that make the largest impacts on “city-building”. It is the policy framework and political will that must truly be aspirational when it comes to city-building. The larger issue of city building should be addressed in the London Plan.

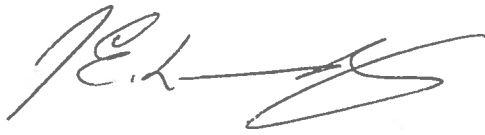
People need to stop thinking that BRT is somehow inferior, not world-class, not forward thinking, or lacking in any measurable way to LRT. In fact, when one reads RT reports, it becomes clear that BRT can play a part in the transformational change that everyone is looking for because it provides flexibility in accommodating ridership demands with an option for adopting new transit technologies to best serve our city into the future. BRT is a fraction of the cost of light rail which lacks the ability to adapt quickly to ridership needs and to be able to embrace new technologies. LRT is becoming a technological dinosaur that you are married to for 60+ years.

Many Londoners dismiss BRT by saying we are not aspirational enough in selecting BRT as the RT solution for London. Many cities across the world see BRT as more forward thinking and adaptable to change in the future. BRT does not dismiss LRT in the future when ridership may increase but it provides the flexibility to adapt to emerging transit technologies.

One concern that the LDI wants to raise is that there should be no net loss of existing traffic capacity along the RT corridors as determined by the city due to RT infrastructure. Much of the existing capacity was built with Development Charge monies to accommodate growth and an 8% model shift proposed for RT will not decrease capacity demand in a growing city.

The LDI submitted a letter in support of the City’s request for provincial funding for RT in the past but we will not be able to send letters of support to the higher levels of Government for a LRT system based on the findings of the RT Business Case proposing BRT presented to SPPC on May 3, 2016.

Sincerely,
London Development Institute



Jim Kennedy
President, LDI

cc LDI Members
cc Art Zuidema, CAO
cc John Fleming, City Planner
cc Martin Hayward, CFO
cc Edward Soldo, Transportation Manager
cc John Braam, City Engineer

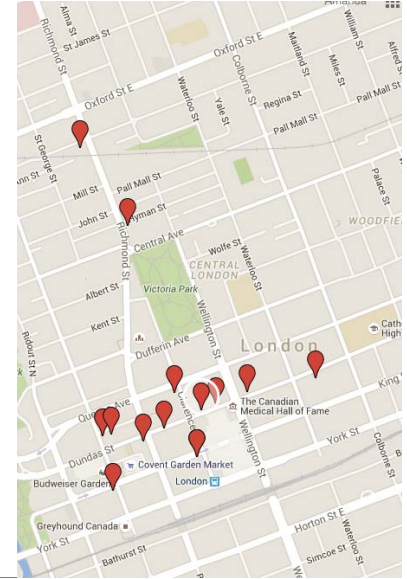


Light Rail Transit in London

Amanda Stratton

7 Reasons Businesses Support LRT

1. More Ridership = More People Downtown
2. Less Traffic Congestion
3. Better Air Quality
4. Less Stigma; More Customers
5. Doing it Right the First Time is Always Better
6. 30 Years of Benefits > A Few Months of Construction
7. It's Better Bang For Our Buck



17 Downtown Businesses That Support LRT

1. Joel Adams and Amanda Stratton, **Hacker Studios** (252 Dundas Street)
2. Vanessa Brown and Jason Dickson, **Brown & Dickson** (211 King Street)
3. Gena Brumitt, **BRUMITT Management & PR Group** (151 Dundas Street)
4. Dave Cooke, **Fire Roasted Coffee** (105 King Street)
5. Jeff Crane, **POI Business Interiors** (201 Queen Street)
6. Titus Ferguson, **UnLondon Digital Media Association** (211 King Street)
7. Christine Gionet, **Renegade** (232 Dundas Street)
8. Felipe Gomes, **Aroma Mediterranean Restaurant & Cafe** (717 Richmond Street)
9. Milos Kral, **Milos' Craft Beer Emporium** (420 Talbot Street)
10. Chris McInnis, **Uber Cool Stuff** (123 Carling Street)
11. Colin R. Nash, **Nash Jewellers** (182 Dundas Street)
12. Jodi Simpson, **CityMatch**
13. Howard and Suzanne Pennell, **Crabby Joe's Tap & Grill** (276 Dundas St.)
14. Mark A. Rayner, **Author**
15. Mark Serre, **The Morrissey House** (361 Dundas Street)
16. Kevin Wu, **Chil Frozen Yogurt Bar** (620 Richmond Street)
17. Mike Sherlock, **knighthunter.com**



capacity

Capacity - Current Peak Hour Ridership

Existing Ridership (Peak Hour)



These charts are public domain, right?

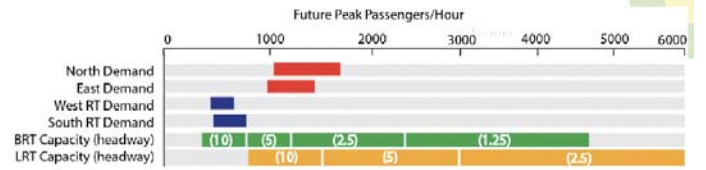


Exhibit 3-1: Assumed Service Levels

ATTRIBUTE	Bus Rapid Transit Alternatives	
	Headway (min)	5
Capacity per vehicle	70	70
Capacity Provided (passengers/hr)	840	420
ATTRIBUTE	Light Rail Transit Alternatives	
	Headway (min)	7
Capacity per vehicle	170	170
Capacity Provided (passengers/hr)	1457	1020

Exhibit 3-2: Vehicle and Rolling Stock Requirements

ALTERNATIVE	PEAK BRT VEHICLES*	PEAK LRT VEHICLES*
Base BRT	33	-
Full BRT	30	-
Hybrid	11	15
Full LRT	-	26

*Includes spare vehicles

These charts are public domain, right?

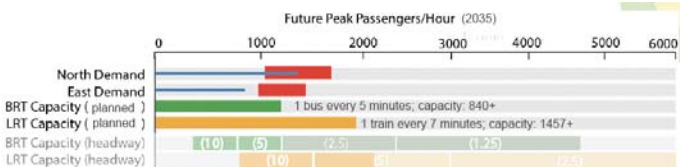


Exhibit 3-1: Assumed Service Levels

ATTRIBUTE	Bus Rapid Transit Alternatives	
	Headway (min)	5
Capacity per vehicle	70	70
Capacity Provided (passengers/hr)	840	420
ATTRIBUTE	Light Rail Transit Alternatives	
	Headway (min)	7
Capacity per vehicle	170	170
Capacity Provided (passengers/hr)	1457	1020

Exhibit 3-2: Vehicle and Rolling Stock Requirements

ALTERNATIVE	PEAK BRT VEHICLES*	PEAK LRT VEHICLES*
Base BRT	33	-
Full BRT	30	-
Hybrid	11	15
Full LRT	-	26

*Includes spare vehicles

Our current Hybrid plan provides adequate capacity, while the BRT plan may not.

“Smaller vehicles with more frequent service”

It may improve efficiency, but it may significantly decrease the quality of the ride.

This is a plan to maintain the status quo: crowded buses running frequently.



What about growth?

While the capital plans for the Hybrid system include room for growth, the BRT system does not.

Increased ridership on a BRT system will mean increased costs for the City of London that won't be shared with the province and federal government.

If we want to test and measure outcomes of promoting transit use, social pricing, or other programs, LRT is the best option to allow for that.



Capacity - Some Questions to Ask

Are there enough vehicles to meet immediate or 2035 demand?

If not, how much more will it cost to meet demand?

What will fleet growth cost the City of London over the project horizon?

Is there room to grow ridership sustainably and affordably?



environmental impact

Environmental Impact

GHG emissions based on assumed reduction in car usage:

Exhibit 4-9: Greenhouse Gas Emissions Reductions

CRITERIA	FULL BRT	HYBRID
Reduction in GHG Emissions (t)	194,649	221,320
Value of GHG Reduction (\$M NPV*)	20.5	23.3

*These values represent the discounted benefits in NPV (2018\$)

But **NOT** accounting for the difference in GHG emissions between buses and trains.



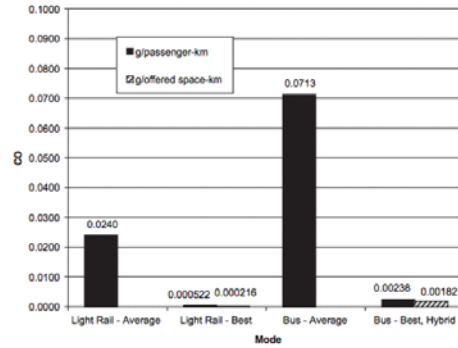
Environmental Impact

“All modern, urban light-rail systems are electrically powered and have no local emissions. Some cities have taken the extra step to power their LRT fleet with renewable energy to reduce total emissions to near-zero throughout the vehicle lifecycle.”

- Shift Rapid Transit Business Case



Comparison of CO emissions for LRT and BRT systems in the United States.



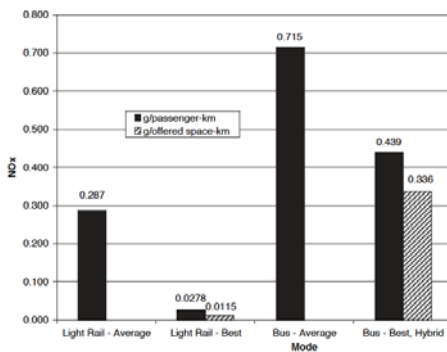
Diesel CO emissions are

136x

Light Rail CO emissions

Since electricity in Ontario is produced primarily through hydro-electric and nuclear power generation, our electric vehicle emissions would be on the low end.

Comparison of NOx emissions for LRT and BRT systems in the United States.



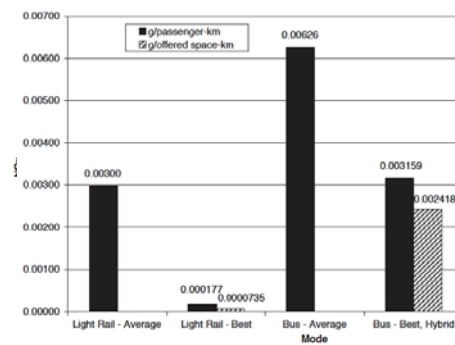
Diesel NOx emissions are

26x

Light Rail NOx emissions

Since electricity in Ontario is produced primarily through hydro-electric and nuclear power generation, our electric vehicle emissions would be on the low end.

Comparison of VOC emissions for LRT and BRT systems in the United States.



Diesel VOC emissions are

35x

Light Rail VOC emissions

Since electricity in Ontario is produced primarily through hydro-electric and nuclear power generation, our electric vehicle emissions would be on the low end.

Environmental Impact

“There are also **options** for reducing emissions and energy consumption in the BRT alternatives, through such design choices as hybrid or electric buses, clean diesel, or biofuel.”

- Shift Rapid Transit Business Case

These aren't options the BRT business case is built around pursuing.



Electric buses: some questions to ask

Increased capital costs?

- vehicles are \$200,000 - \$500,000 more each (and only shared the first time)
- charging infrastructure is not included in our plans

Effect on fleet size?
Unknown technology?
Political will to spend?

What are the potential costs if we don't go electric?



sustainability of the system

Sustainability of the System

Exhibit 3-4: Rapid Transit Operating Costs between 2019 and 2030 (in 2016\$)

Year	BASE BRT			FULL BRT			HYBRID			FULL LRT		
	RT Operating Cost (\$2016)	N	W	RT Operating Cost (\$2016)	N	W	RT Operating Cost (\$2016)	N	W	RT Operating Cost (\$2016)	N	W
2019	\$860,000			\$860,000			\$860,000			\$860,000		
2020	\$860,000			\$860,000			\$860,000			\$860,000		
2021	\$860,000			\$860,000			\$860,000			\$860,000		
2022	\$860,000			\$860,000			\$860,000			\$860,000		
2023	\$6,040,349			\$6,040,349			\$6,040,349			\$6,040,349		
2024	\$6,040,349			\$6,484,873			\$6,484,873			\$6,484,873		
2025	\$6,040,349			\$6,484,873			\$6,484,873			\$6,484,873		
2026	\$6,040,349			\$6,484,873			\$6,484,873			\$6,484,873		
2027	\$13,799,000			\$12,193,000			\$11,082,000			\$11,082,000		
2028	\$13,799,000			\$12,193,000			\$11,082,000			\$11,082,000		
2029	\$13,799,000			\$12,193,000			\$11,082,000			\$11,082,000		
2030	\$13,799,000			\$12,193,000			\$11,082,000			\$11,082,000		
2031	\$13,799,000			\$12,193,000			\$11,082,000			\$11,082,000		

The one to one comparison of costs is as follows:

Operating Cost Component	Full BRT	Hybrid
Labour and Administration Costs	\$ 4,933,000	\$ 4,577,000
Fuel and Energy Costs	\$ 1,268,000	\$ 1,924,000
Vehicle and Plant Maintenance Costs	\$ 4,089,000	\$ 2,347,000
Line Maintenance Cost	\$ 1,185,000	\$ 2,244,000
Total O&M Cost (Rapid Transit)	\$ 12,193,000	\$ 11,082,000

Note that there are many factors that affect operating costs and a wide range of costs for other systems. The level of uncertainty is greater for LRT due to the fact that there is no base data for London.

Sustainability of the System



Financial Element	Full BRT (Million \$)	Hybrid (Million \$)
Capital Cost	\$500	\$800
Capital Cost (NPV)	\$440.2	\$781.5
City Allocation	\$129	\$129
Required Investment	\$373	\$751
Operating Cost Over 30 Years (NPV)	\$134.9	\$115.6
Operating Cost Per Year	\$12.2	\$11.1
Lifecycle Investment Required over 60 Years	\$233	\$568
Lifecycle Investment Required over 60 Years (NPV)	\$116	\$287

Questions to ask:

Does this include increasing the fleet size over the next 60 years?

How much more ridership do we need on the Hybrid system to pay for the difference?

Does each system's capacity allow for enough ridership growth to cover its own costs?



conclusions

Hybrid is the best option

Conclusions

A really great Bus Rapid Transit system is possible, but this isn't a plan for one. It would cost millions of dollars more than what's currently proposed, and includes a lot of cost uncertainty.

When we look at a great BRT system, the difference in capital is not worth the sacrifice of capacity, environmental savings, quality of experience, intensification ability, and city-building potential.



amanda@hackerstudios.com

@amandastratton



For Submission to:
Strategic Policy and Priority Committee
May 26, 2016

Presentation by Maria Drangova, Old East Village BIA Board Chair

- Thank you to Members of City Council and City Staff for the opportunity to speak at this public meeting.
- We note that despite differences on what form of Rapid Transit London should implement there appears to be agreement that London requires a Rapid Transit system.
- London's largest infrastructure project ever proposed, the decision is a difficult one.
- The Old East Village BIA endorsed the Hybrid LRT/BRT model at our May board meeting.
- We supported the Hybrid model because of:
 - the environmental benefits,
 - the potential for increased investment,
 - the long term gains over the short term pain of construction,
 - and the opportunity for the greatest possible transformational change for generations to come.
- To arrive at this position, these were some of the issues the Board considered:
 - The environmental impacts of both systems and emissions produced by full BRT or the Hybrid models

- The potential financial impacts on future generations to upgrade from BRT to LRT.
 - The opportunity for full BRT to contribute significantly to the City's investment in Old East Village
 - The amount of further investment that will be encouraged by both options
 - The long term cost effectiveness of LRT vs BRT
 - The trade-off between construction lengths in the short term and the value and longevity of the transit system.
 - The impact of each option on Londoners views of transit and the correlation between their views and the potential for greater ridership
 - We also discussed the Kitchener-Waterloo-Cambridge Baseline report, and it was clear that the LRT system as a result would provide greater long term benefits for The Old East Village and London as a whole.
- Because we know any kind of on street construction is a challenge for small business we nevertheless opted to endorse the Hybrid model and will be providing assistance to our businesses.
 - Federal and Provincial funds and the political will to invest in both a cost effective and efficient hybrid model exists now, we believe it is a wise investment.
 - Finally, we look forward to working with the City of London to mitigate negative impacts of construction for the business community as we also anticipate collaborating with the City in the implementation of the determined Transit system.

Rapid Transit Public Participation Meeting: The Importance of Proactive Accessibility

Introduction

Hello, my name is Sarah Hunt, and I am London resident and today I want to talk to you about the importance of proactive accessibility in the new proposed transportation systems. Thank you for allowing me to speak today. I hope to compel you to learn that proactive accessibility is so crucial to the success of this new proposed system that it needs to be a topic on the table at every step (or ramp) of the way or failure is inevitable.

Proactive Accessibility Definition

Proactive accessibility means welcoming in feedback from people with disability from the very early conceptual stages and making a commitment to revisit accessibility on an ongoing basis to ensure continued feedback, upgrades and maintenance. When I first viewed the photo of the proposed Light Rail Transit stops on the Municipality of London's Facebook Page, I too, missed a common barrier for people who use wheelchairs at first glance. After some research and discussion with various consultants at the Accessibility for Ontarians with Disability Alliance, I discovered the placement of the enclosed shelters at the stops for the Light Rail Transit Model (or LRT), are counter to the standards set for accessibility in the

Accessibility for Ontarians with Disabilities Act (AODA)

<https://www.ontario.ca/laws/statute/05a11>). While I appreciate this photo is only conceptual in nature, it sends me and others like me the message that Londoners with disabilities are not proactively being included in this exciting new endeavour at the level we deserve to be!

My Personal Experience

I, like at least ⁷⁶⁹⁰⁰~~15330~~ people, 21 percent (Statistics Canada 2006) of the London, Ontario population identify as a person with a disability. In 2012 I sustained a significant injury forcing me to use a wheelchair for two years and I learned the vast majority of services i use in london are not conducive to the needs of a wheelchair user. This is why I am so passionate that accessibility for the proposed new transportation system, needs to start now!

The Risks of Inaccessibility

The price of inaccessibility is significant! Reiss (2015) in Forbes, estimates that inaccessibility translates to approximately 8 trillion dollars of lost potential revenue from people with disabilities in the global market (Reiss 2015). For a municipality the size of London we are looking at potential available revenues of approximately ^{\$440 million}~~\$91.3 million~~ that will not be

spent on this new transit system without being proactively accessible and attracting ridership from the London Ontario community of disabled persons.

Additionally, another significant cost of not being proactively accessible is looming for 2025. This is the year the AODA has committed the province of Ontario to be completely barrier free. Advocates, just last month, April 2016, successfully pressured the Wynne government to update 11 statutes in the AODA and they continue to push for more (www.aodaalliance.com Accessed May 20, 2016). This means that without proactive accessibility this transportation system could be shut down in 2025 and a system that does not last more than 7 years is not the definition of sustainable!

The Benefits of Accessibility

Every single person in this room will require some form of accessibility in their lives whether it is due to injury, disease, or old age..

How powerful would the argument be in favour of the new transportation system if we were welcoming in those ^{76 900}~~15 330~~ people and enticing them to help us understand on which they would most like to spend their ^{2 440}~~\$94.3~~ million of disposable income?

You may be asking how proactive accessibility facilitates the needs of the able bodied. Research shows that most people prefer more open design concepts and that able bodied people too benefit from accessible structures. To that end, I have provided in the power point the examples on which the Region of Waterloo based its proactive accessible structure. As you can see from the photos, open awning type structures are used at stops as opposed to enclosed structures. When surveyed most people preferred the awning structure because it is more inviting and can safely accommodate more people during inclement weather.

3 Step Solution to the Implementation of Proactive Accessibility in either LRT or BRT or Hybrid Model

So what can London be doing differently to ensure proactive accessibility on the new proposed transit systems?

Step 1: Immediately involve our already established AODA advocates as well as invite members of the London community who identify as having a disability to provide feedback on the proposed transit system. Not just people who use wheelchairs, but people from the deaf community; people who are blind; people who may fall on the spectrum of Autistic Disorders

just to name a few of the Londoners who could give crucial feedback on making this structure sustainable and profitable.

Step 2: Get Involved! I challenge all of you to spend one day using a wheelchair! Help yourselves become more aware. The more aware those in power are, the better this is for London. !

Step 3: Use Person First Language. Awareness comes with an understanding of what it is like for the person using the wheelchair to navigate crowds; bad weather; and avoiding falling on the tracks

Recap

To recap this presentation, the take home points are as follows:

Number 1: Proactive Accessibility means fostering a sense of belonging for the approximate ^{76 900}~~15 330~~ members of the London community who identify as having a disability.

Number 2: It does NOT matter if a structure fits basic AODA codes, if people with disabilities do not see it as a viable transportation option we will NOT use it and it will lose out on potential ridership and revenues.

Number 3: Ontario must be barrier free by 2025 (7.5 years away), standards keep increasing and this structure will be on the radar for audits and lawsuits at that time.

Number 4: Inviting ridership from Londoners with disabilities means significant revenues for this transportation system and London's taxpayers

Number 5: Proactive accessibility RIGHT NOW means long term sustainability for transportation in London.

Conclusion

With your help, I know we can ensure that this exciting and important idea for the city of London can be one that generates huge revenues for the city and that fosters connection and a sense of belonging for all of us here regardless of ability. Accessibility equals sustainability. Thank you for your time.

References

Accessibility for Ontarians with Disabilities Act Alliance, May 9, 2016.

“Wynne Government Makes

Limited Accessibility Ammendments to 11 of Ontario’s 750 Statues,
but Unjustifiably Rejects 11 Additional Accessibility Amendments the
NDP Proposed at Our Request.” www.aodaalliance.org Accessed
May 20, 2016.

Accessibility for Ontarians with Disabilities Act, 2005, S.O., 2005, c. 11.

[http://www.ontario.ca>laws>statues](http://www.ontario.ca/laws/statues)

Reiss, R. July 30, 2015, Business’s Next Frontier; People with Disabilities.

www.forbes.com Accessed May

20, 2016.

Statistics Canada (2006) Accessed on London, Ontario Municipality

Website. www.london.ca Accessed

May 20, 2016.

Toronto Transit Commision Report Macro. Meeting Date January 28, 2014,

<http://www.ttc.ca>