

# Concerns Deepen Over Ottawa's LRT Ridership Study

*Memo from City Official to Councilors Attempts and Fails to Downplay Concerns Over Secret Results From Ottawa's North-South LRT Ridership Study.*

The purpose of this document is to respond to a memo addressing North-South LRT Ridership, issued by Mr. Rejean Chartrand and sent to the Mayor and Councilors on July 19<sup>th</sup>, 2006. Mr. Chartrand's intention was to provide clarification on a news story by CBC Radio that implied City staff had not been forthcoming with the Mayor and Council regarding what he described as a "small portion" of the IBI Transit Ridership Study.

This "small portion" of the study is a reference to the projected measurement of "net new riders" which are those riders diverted from using cars to using the LRT because of the level-of-service and coverage of the proposed LRT project. All other projected riders would otherwise have used conventional bus transit services.

## Claims Made in the Memo

For reference purposes, a copy of the memo is attached at the end of this document and its paragraphs have been numbered. In the memo, Mr. Chartrand appears to make the following claims:

1. Certain portions of the Ridership study, by their very nature are "highly technical and therefore susceptible to misinterpretation. This was the case in today's media report that noted that the system would only attract 1,090 net new transit riders." (Paragraph 2 of the memo.)
2. The "Base Case simulation... represents a hypothetical scenario that is impractical, if not impossible to implement due to the extensive road expansion required, related land acquisitions, financial limitations (i.e. fleet, storage, maintenance), and public expectations." (Paragraph 5 of the memo.)
3. The following are specifically described as impracticalities resulting from not proceeding with the proposed LRT project (paragraph 3 of the memo.):
  - a. The provision of bus transit service to Riverside South, Leitrim, and Barrhaven, equivalent to the total demand supported by the proposed LRT service, would require the expansion of the of the road network as follows:
    - i. Limebank Road, currently 2-lanes and growing to 4 lanes under the current LRT plan, would have to add a further two lanes;
    - ii. Riverside Drive from Limebank Road to Hunt Club, currently 2 lanes and growing to 6 lanes under the current LRT plan, would have to add a further 2 lanes; and
    - iii. Unspecified widening to Bank Street, Conroy Road, and downstream roads inside the Greenbelt.
4. That "net new riders to the LRT system will amount to 53,600/weekday" by 2021. (Paragraph 6.1 of the memo.)
5. That by 2011 "16% of N-S LRT ridership of 43,500 would only use transit if the N-S LRT is introduced as opposed to other conventional transit service that would have been provided to these communities. This represents a gain in net new transit ridership of about 7,000/weekday." (Paragraph 6.2 of the memo.)
6. That "45% of N-S LRT ridership will be from the communities of Riverside South and Barrhaven." (Paragraph 6.3 of the memo.)

## **Response to the Claims**

1. *Certain portions of the Ridership study, by their very nature are "highly technical and therefore susceptible to misinterpretation. This was the case in today's media report that noted that the system would only attract 1,090 net new transit riders."*

Mr. Chartrand appears to be attempting to make two points, the first regarding misinterpretation and the second that the media report was in error. There is no dispute with the claim that the IBI ridership analysis is susceptible to misinterpretation. The ridership study is indeed technical and quite possibly would require assistance for a lay reader to fully follow the methodology, assumptions, analysis and conclusions.

Concurrence with the claim however does not mean that knowledge of the study's results is beyond the capacity of the Mayor or Council to understand, if the information was provided to them along with informed and objective guidance from staff. Nor would knowledge and scrutiny of ridership projections be outside the realm of either Council's interests or its responsibility to the public. This is because an understanding of forecasted ridership projections is at the core of understanding the design rationale, the service requirements, its contribution to achieving the modal split objectives, as well as the strength of the business case and value for money the proposed LRT project demonstrates relative to needs and other alternatives.

Thus, the degree to which the study is technical is irrelevant to the importance of the information or the need for it to be disclosed and understood. Council had a right to expect from staff *all* relevant ridership data, not simply selective data that might only show the proposed project in an artificially positive light. Countless other highly technical topics, documents and data related to this project have been presented to Council, discussed and sometimes heavily debated. Ridership, specifically projected net new ridership should have been presented to Council and the failure to have done so raises deeply disturbing questions for both Council and the public.

The memo next uses careful language in paragraph 2 but seems to clearly insinuate that CBC report, that made public the news that the proposed project would generate only 1,090 net new transit riders, is a misinterpretation. This is curious however because the entire text of paragraph 4 leads to the conclusion that the media story was indeed correct:

*"The IBI Study determined that by 2021... The difference, 1090 riders, (7,320 – 6,230) is the Net New Riders gained due to improved level of service above the conventional bus transit service."*

One can only conclude that Mr. Chartrand seems to be agreeing that the primary factual claim in the media story is true. This is not the first inconsistency in the memo intended to otherwise clarify issues of ridership.

2. *The "Base Case simulation... represents a hypothetical scenario that is impractical, if not impossible to implement due to the extensive road expansion required, related land acquisitions, financial limitations (i.e. fleet, storage, maintenance), and public expectations."*

The use of the word "hypothetical" seems to be designed to diminish the legitimacy and importance of the ridership study and its detailed findings. In fact, the study is not a formality

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and its detailed findings, including in particular projected net new ridership, are essential to determining the value and utility of the proposed project.

In addition to the rationale for importance presented in the first rebuttal above, Mr. Chartrand states in paragraph #3:

*"...the IBI Transit Ridership Study was completed as a requirement of the Government of Canada's Treasury Board funding submission."*

That the study is a requirement of the \$200 million federal financial assistance should be clear evidence of both the legitimacy and importance of the ridership analysis. Net new ridership analysis is also central to the development of a sound business case for the proposed project and a sound business case is also a requirement of both the federal and provincial financial assistance. Further, net new ridership analysis is a regulatory requirement in other jurisdictions and must be publicly disclosed for major public transit investments.

Finally, trivializing the methodology used by IBI is curious, to say the least, given that the City would have fully understood and accepted it as part of the selection process to hire IBI to conduct the ridership study in the first place. IBI is a leading international provider of public transit ridership studies. They have won multiple competitively tendered contracts with the City, the results of which were accepted and formed the basis of subsequent planning decisions. Notably, for example, it was IBI that conducted the ridership study for the O-Train Pilot Project, the results of which were available to Council and included net new ridership analysis.

The claim that any alternative to the proposed LRT is "impractical if not impossible" has not been substantiated in any document or process related to the LRT project. A possible explanation for Mr. Chartrand's belief that anything else would be impractical if not impossible is his own misunderstanding of net new ridership analysis. One example, among others, of a highly practical and completely possible alternative to the proposed LRT is as follows.

- The capacity of the current O-Train could easily be upgraded by a factor of *four times* simply by running double car trains and increasing headway from 15-minutes to 7.5 minutes. With modest line and station improvements, and single-track extension to a Leitrim Park & Ride, the peak hour capacity would be in excess of 9,000 riders at a total capital cost of well less than \$50 million. This would represent sufficient peak hour capacity for IBI's ridership projections through to 2031. (Even further capacity could be achieved using triple car trains.)

Compared with the proposed LRT, this one enhancement of the existing O-Train service would provide well over 100% of the ridership capacity and infrastructure requirements at about 5% of the cost of the proposed LRT. This approach, combined with local and feeder bus routes as well as using the underutilized capacity on both south Transitways, will provide all the N-S transit capacity needed to service all the growth in Barrhaven and Riverside South for decades to come. This would also leave the \$400 million in federal and provincial funds, as well as the \$200 million in debt that can be supported by provincial gas tax revenue effectively all available for an optimal solution for the Bayview to Hurdman corridor.

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Thus it is completely false to suggest, as Mr. Chartrand does in the memo, that no practical or possible transit alternatives exist to the proposed LRT.

It is also completely false to suggest that there is no alternative to the proposed LRT by claiming that incremental arterial road lanes would be required if the LRT was not approved. This is proven in detail in the next section of this document.

3. *The following are described as specific impracticalities, resulting from not proceeding with the proposed LRT (paragraph 3 in the memo):*
  - a. *The provision of bus transit service to Riverside South, Leitrim, and Barrhaven that would be equivalent to the total demand supported by the LRT service would be impractical.*

There are two parts to this rebuttal. The first part deals with the replacement, by an evolution of existing transit infrastructure, of the 2021 Base case share of ridership the proposed LRT ridership with other practical and possible alternatives. The second part, discussed in 3b below, deals claim of road lane expansions needed because the net new ridership attributed to the proposed LRT would otherwise commute by car.

According to IBI, under the 2021 Build Scenario, total and net new peak hour LRT ridership from these locations is as follows:

- i. Riverside South and Leitrim – Exhibit 4.10, page 32, shows that total peak hour LRT trips originating in Rivierside South would be 1,390 persons. (Note: the 10-minute headway specified in the proposed project for Riverside South and Leitrim service were not modeled by IBI. The figures above use IBI's 5-minute headway data, which would overstate ridership at 10-minute intervals.)
- ii. Barrhaven – On page 86 IBI states, "Of the approximate 4,900 a.m. peak hour transit trips originating from Barrhaven, approximately 22% [1,078] are expected to be made via the North-South Corridor LRT." (Note: the 10-minute headway specified in the proposed project for the Barrhaven extension was not modeled by IBI. The figures above use IBI's 5-minute headway data, which would overstate ridership at 10-minute intervals.)
- iii. Therefore, by 2021 the LRT service will be used by a total of 2,468 peak hour riders (1,390 plus 1,078) from the entire Barrhaven Town Centre to Leitrim catchment area (16% of which, or 395, would be net new).
- iv. The study makes clear that a substantial portion of these riders will simply be traveling to and from points within Barrhaven and Riverside South. The remaining number of riders could easily and alternatively be serviced by adding regular local, O-Train feeder routes and south transitway bus routes. Mr. Chartrand's assertion that the provision of bus transit service instead of LRT would be impractical cannot be drawn from the information provided.

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- b. *The provision of bus transit service to Riverside South, Leitrim, and Barrhaven, equivalent to the total demand supported by the proposed LRT service, would require:*
- i. *The expansion of Limebank Road, currently 2-lanes and growing to 4 lanes under the current LRT plan, would have to add a further two lanes.*
  - ii. *The expansion of Riverside Drive from Limebank Road to Hunt Club, currently 2 lanes and growing to 6 lanes under the current LRT plan, would have to add a further 2 lanes.*
  - iii. *The expansion of unspecified widenings to Bank Street, Conroy Road, and downstream roads inside the Greenbelt."*

Interpreting the chart in Exhibit 4-4 B, a total of 1,600 peak hour northbound riders are forecast by 2021 from the Limebank to Leitrim catchment area. Using the TMP factor of an average of 1.3 riders per automobile, this would translate into 1,230 extra cars, if no alternative transit existed. Of course incremental peak hour bus service to this catchment area could and would reasonably be provided. In which case, only 256 net new riders drawn from this area specifically as a result of the LRT (1,600 times 16%). 256 riders equates to 197 cars during the peak hour commute; an incremental 197 cars is not sufficient to support the claim that two additional lanes (to a total of 6) would be required on Limebank Road. Similarly, an incremental 197 cars is not sufficient to support the claim that two additional lanes (to a total of 8) would be required on Riverside Drive from Limebank Road to Hunt Club or would it support the claim for any other road expansion for that matter.

Finally, because the current O-Train provides a quality of ridership experience that is similar to the proposed LRT, a strong case could be made that with optimized O-Train service, that arguably no net new riders would be obtained by the proposed LRT.

4. *That "net new riders to the LRT system will amount to 53,600/weekday" by 2021.*

This is a remarkable claim and indicates that Mr. Chartrand may well be a victim of his own assertion that ridership analysis is "highly technical and therefore susceptible to misinterpretation." The claim of 53,600 net new riders is false and demonstrates either a misunderstanding of IBI's analysis or a misleading use of it.

- a. IBI only ever used "net new rider" analysis with respect to peak hour ridership. From a transportation system design perspective, the significance of peak hour ridership is both fundamentally important and completely different than total daily ridership. Thus the use of net new ridership in this manner is false and misleading.
- b. The approach by which this number was calculated is a gross distortion. To compare current O-Train daily ridership (9,000) against a future Build case daily ridership (62,600) does equal 53,600, however this is a largely meaningless number for many reasons, including:
  - i. It assumes the city does nothing whatsoever to alter transit options or capacity along the corridor between now and the 2021 Build Case. Many practical and evolutionary options exist to increase N-S transit service levels, ridership and capacity including: reducing O-Train headway and running double car service, expanded O-Train service to a Leitrim Park and Ride, expanded O-Train

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- service along the VIA/CNR corridor, and expanded regular and Express bus service along both southern Transitways.
- ii. It ignores the fact that O-Train ridership has grown approximately 15% per year since its first year of operation, without any ridership promotion, and there is no reason this growth could not continue.
  - iii. It does not legitimately account for the effect of 50% population growth.
- c. One thing is clear; it is wrong to state that 53,600 represents net new riders as the phrase was used by IBI's experts. IBI's report defines and concludes, and Mr. Chartrand separately seems to support in paragraph 4 of his memo, that under the full build scenario, 1,090 net new riders peak hour would be achieved.
5. *That by 2011 "16% of N-S LRT ridership of 43,500 would only use transit if the N-S LRT is introduced as opposed to other conventional transit service that would have been provided to these communities. This represents a gain in net new transit ridership of about 7,000/weekday."*

Once again this number, and its supporting calculation, demonstrates a considerable lack of understanding of the principles or mathematics behind the concept of net new ridership.

- a. Again, net new ridership is used by IBI only to refer to peak hour riders, not daily riders. It is an obvious fact that the behaviour of peak hour commuters is materially different than that of commuters traveling outside the normal rush hour period. To simply appropriate the 16% peak hour net new factor and apply it to total daily ridership is false.
  - b. By 2011, while total daily ridership is projected to be 43,500 (the correct reference for this number is Exhibit 9-2, page 106 in the IBI final report), the peak hour riders are 5,280, 16% of which – 845 riders – are net new. The same table similarly presents 62,600 as the daily ridership in 2021, 7,830 as the daily peak hour ridership, and net new ridership of 1,090 represents the 14% factor IBI used to reflect the effects of the Barrhaven extension. Note, this calculation is based on 5-minute headway, when the proposed plan is 10-minute headway and thus expected net new peak hour ridership would be even less.
  - c. So, in the span of a single brief memo, and without definitional context other than picking different numbers to subtract, net new ridership has been described by Mr. Chartrand as both 7,000 riders per weekday and 53,000 riders per weekday as well as 1,090 riders per peak hour. Which number is it? For its part IBI was clear that only 1,090 peak hour riders would be achieved.
6. *That "45% of N-S LRT ridership will be from the communities of Riverside South and Barrhaven."*

This calculation is not explained or self-evident from either the chart referred to on page 83 or from anywhere else in the ridership study.

With respect to the question of how many peak hour LRT riders Riverside South and Barrhaven are projected to account for by 2021, IBI provides the following clear information:

- a. IBI states on page 86, "Of the approximate 4,900 a.m. peak hour transit trips [all modes] originating from Barrhaven, approximately 22% [1,078] are expected to be made via the North-South Corridor LRT."

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- b. On page 32 IBI states in Exhibit 4-10 that peak hour LRT trips originating from Riverside South total 1,390.
- c. Therefore a total of 2,468 (1,078 plus 1,390) peak hour LRT riders will be originating from Barrhaven and Riverside South. This represents 31% (2,468 divided by 7,830) of the total peak hour ridership along the entire N-S LRT corridor.
- d. However even this number (31%) is overstated because a significant portion of these riders will only be traveling to and from points within Barrhaven and Riverside South and would have had no adverse impact on northbound corridor transit or arterial road congestion. Local bus routes could otherwise serve these riders. On page 84 IBI states that "In 2021, it is projected that Barrhaven will be much more of a trip destination relative to 2001, given the substantial growth in employment, such that reverse commuting into the area is expected to account for 45% of trips to and from it, indicating fairly even, two-way travel. The majority of this two-way travel balance is due to travel from Riverside South, Kanata and Rural Ottawa as well as a significant increase in intra-Barrhaven travel."
- e. Finally, the proposed LRT dramatically reduces the number of stations in Barrhaven and Riverside South, from 12 stations planned at the time of the IBI study, to only 5 stations and 2 Park & Rides in the current plan. A direct result of this will be a further precipitous drop in ridership from these communities, as people will either have too far to walk to the nearest LRT station or will have to first take a bus simply to get to the station.

Thus, Mr. Chartrand's claim that 45% of ridership will come from Barrhaven and Riverside South is both contradicted by the IBI findings and further discredited as a result of the station reductions in the current plan.

## **Conclusion**

What conclusions may safely be drawn from this analysis of Mr. Chartrand's July 19th memo?

1. The core assertions of the CBC Radio story of July 19 were correct:
  - o According to IBI the proposed N-S LRT will attract only 1,090 net new riders by 2021;
  - o Both the ridership study and its findings about net new ridership were knowingly withheld from Council and the public;
  - o That the ridership study plays a central role in the federal and provincial government assistance for the project; and
  - o An objective and unbiased understanding of the full findings of the study would have been both important to, and in the interests of, Council and the public.
2. That Mr. Chartrand's memo of July 19 reflects either misunderstanding or misrepresentation of IBI's ridership data as well as confusion about the nature and role of net new ridership analysis.

Trivializing the net new ridership methodology is certainly consistent with the decision to hide the document from Council and the public. On the other hand, the simplest explanation would be that the ridership study could have been hidden purely because it contained data that would have undermined support for the LRT project.

The ridership study was released to the bidding consortia as part of a bidding process that was so "commercially confidential" that the public did not even have access to the request for proposals. While it is acknowledged that the bidders responses must be confidential during the

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procurement, it now seems plausible that the sweeping secrecy of the procurement was simply used as an effective means of keeping the ridership study out of the public eye.

In Council sessions leading up to the July 12<sup>th</sup> vote, Mr. Chartrand demonstrated himself to be an otherwise informed and at times intimidating spokesperson for the LRT project. However, he also demonstrated that he could be selective with what he chooses to disclose, particularly if it may challenge support for the LRT project.

In this memo, in particular with respect to the issue of net new ridership, he has demonstrated that he can be both fallible and opportunistic in his assertions. None of his typical persuasiveness, otherwise evident in his performances during Council sessions, is evidenced in this memo. Instead, he has presented no compelling reason to withhold the ridership study and, at best, unsound and unconvincing arguments against the claims in the CBC Radio report.

What issues and questions for further investigation arise as a result of this memo?

1. Every documented misunderstanding or misrepresentation of ridership data, in this memo and in the June and July representations to Council on the LRT project, has been presented in a manner that either overstates the case in favour of project approval or overstates the negative consequences on not approving the project. This suggests an intentional and consistent bias for a pre-determined outcome.
2. That the IBI ridership study is considered of insufficient importance to even be released to Council is highly suspect.
3. That Council was asked to approve the project without any knowledge of net new ridership brings into question the legitimacy of the July 12<sup>th</sup> vote.

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Questions or comments should be directed to:

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July 24, 2006

# MEMO / NOTE DE SERVICE



To / Destinataire	Mayor and Council	File/N° de fichier:
From / Expéditeur	Rejean Chartrand Director, Economic Development & Strategic Projects	
Subject / Objet	North-South LRT Ridership	Date: 19 July 2006

1 *The purpose of this memo is to provide clarification with respect to a media interview this morning that focused on a small portion of the IBI Transit Ridership Study and implying that staff was not forthcoming with the Mayor and Council with respect to the projected ridership of the North-South LRT project.*

2 *Staff has provided correct and factual information. By its very nature, some of the information is highly technical and therefore susceptible to misinterpretation. This was the case in today's media report that noted that the system would only attract 1,090 net new transit riders.*

3 The study referred to in the media report, the IBI Transit Ridership Study, was completed as a requirement of the Government of Canada's Treasury Board funding submission. As a component of the study, the City was required to undertake a modeling exercise to create a "Base Case" predicated on the provision of meeting forecasted travel demand through conventional transit and road network expansion. **This Base Case provided the equivalent bus transit service to Riverside South, Leitrim, and Barrhaven and the expansion of the road network which would require the additional widening of existing and planned roads (above what was identified in the TMP), including Limebank Road (currently 2-lane road) to 6 lanes instead of 4 lanes; Riverside Drive from Limebank Road to Hunt Club (currently 2-lane road) to 8 lanes instead of 6 lanes as identified in the TMP; as well as widenings to Bank Street, Conroy Road, and downstream roads inside the Greenbelt.**

4 The IBI Study determined that by 2021, without the N-S LRT and assuming that the City was able to provide the Base Case conventional bus transit service and road network expansion to these communities, bus ridership of 6,230 per peak hour above 2001 bus transit ridership would be gained. When the construction of the N-S LRT is added to the Base Case simulation, Net New Transit ridership (both bus and LRT) per peak hour increases to 7,320 riders per hour above 2001 figures. The difference, 1090 riders, (7,320 – 6,230) is the Net New Riders gained due to improved level of service above the conventional bus transit service.

- 5 While the Base Case simulation is a standard requirement of any funding submission, it represents a hypothetical scenario that is impractical, if not impossible to implement due to the extensive road expansion required, related land acquisitions, financial limitations (i.e. fleet, storage, maintenance), and public expectations.

Therefore, to reiterate based on the information previously provided to Council:

- 6.1 • The current O-Train ridership is 9,000/weekday. It is estimated that by 2021, ridership would be in excess of 62,600 riders/weekday (Source: IBI Ridership Transit Ridership Study, pg. 106). **Therefore net new riders to the LRT system will amount to 53,600/weekday.**
- 6.2 • In 2011, 16% of N-S LRT ridership of 43,500 would only use transit if the N-S LRT is introduced as opposed to other conventional transit service that would have been provided to these communities. **This represents a gain in net new transit ridership of about 7,000/weekday** (Source: Exhibit 7-7 A and B. pg. 89 and 90 of the IBI Transit Ridership Study)
- 6.3 • 45% of N-S LRT ridership will be from the communities of Riverside South and Barrhaven (Source: Exhibit 7-3 A, pg. 83 of the IBI Transit Ridership Study)

Should you require any further clarification, please do not hesitate to contact me.

Thank you,

Rejean Chartrand  
Director,  
Economic Development & Strategic Projects