

City of Mississauga
Corporate Report



<p>Date: May 26, 2022</p> <p>To: Chair and Members of General Committee</p>	<p>Originator's files:</p>
<p>From: Geoff Wright, P.Eng, MBA, Commissioner of Transportation and Works</p>	<p>Meeting date: June 15, 2022</p>

Subject

Research Partnership and Collaboration with the Transit Analytics Lab (TAL) from the University of Toronto (U of T) for On-Route Charging Feasibility Study and On-Demand Transit Feasibility Study

Recommendation

That the report to General Committee entitled “Research Partnership and Collaboration with the Transit Analytics Lab (TAL) from the University of Toronto (U of T) for On-Demand Feasibility Study and On-Route Charging Feasibility Study” dated May 26, 2022 from the Commissioner of Transportation and Works be received for information.

Background

One of the service goals identified in MiWay’s Ridership Recovery Strategy is *Planning and Adapting to the Future*. It was clearly noted that in order to achieve this goal, MiWay would need to focus its growth investments in the following areas: on-demand transit service and building sustainability, which includes an on-route charging feasibility study.

Both these projects are high on the priority list for the City. The future capability of MiWay’s garages to support zero emissions buses is necessary to ensure that the City’s Climate Change Action Plan targets are achieved by 2050. To this end, Council approved a capital budget of \$150,000 (PN#: 22218) in 2022 for an on-route charging feasibility study. On-Demand Transit (ODT) is a key action plan (Action 17) identified in Mississauga’s Transportation Master Plan (Mississauga Moves) to evaluate opportunities, costs and benefits in Mississauga to complement existing fixed route transit service provided by MiWay. Due to the COVID-19 pandemic, the need for the city to understand and review ODT and the associated operating strategy became more urgent; however, the 2022 Capital Budget did not include funding for this project as the intent was to apply for external funding.

With this change in priority, staff needed to identify an innovative approach by which to meet the City’s goals and objectives within existing budgetary constraints while achieving a high standard for

project delivery. During this time, the U of T's TAL, reached out to the City to discuss partnership opportunities to foster innovation in transit within Canada, utilizing higher levels of government research funding.

Comments

Transit Analytics Lab (TAL) of the U of T, established in 2020 with U of T funding from the Faculty of Applied Science & Engineering Dean's Strategic Fund, is an expert in urban public transit and one of Canada's largest transportation research institutes leading in developing analytical tools and models of transport demand and performance with advanced transit analytics. TAL's research projects and publications were achieved through research partnerships and collaborations supported by funding from government organizations.

Through partnership and collaboration with TAL, the City will be able to complete both studies, the on-route charging feasibility study and the on-demand transit feasibility study, using the approved budget of \$150,000 from PN #22218. The approved budget will be the City's contribution to fund the both research studies with the MiWay's staff participation in the research allows TAL to access research funding from Mitacs (<https://www.mitacs.ca/en/about>) and NSERC-Natural Sciences and Engineering Research Council of Canada (https://www.nserc-crsng.gc.ca/index_eng.asp). Therefore, both of these studies with total estimated cost of \$450,000 will be achieved through the Council approved budget of \$150,000 (PN# 22218).

	On-Route Charging Feasibility Study	On-Demand Transit Feasibility Study	Total
Total Estimated Research Study Cost	\$350,000	\$100,000	\$450,000
City's contribution	\$100,000	\$50,000	\$150,000 (PN#22218)
Mitacs and NSERC's Contribution	\$250,000	\$50,000	\$300,000

The on-route charging feasibility study will confirm whether MiWay's bus fleet at the main garage (Edward J. Dowling Transit Facility - Central Parkway/CPY), if fully converted to battery electric buses, can meet all service requirements. It assumed that minimal charging infrastructure will be located on-site at CPY and will instead be supported with a network of on-route chargers throughout the City due to existing space, power supply and building constraints at the main garage site.

The on-demand transit feasibility study will assess the best fit ODT option and its feasibility to compliment MiWay's fixed route network and close service gaps in under served areas with low demand and potential expansion of service coverage where transit service is not currently available. This study will be a complete review of end to end service delivery model that includes integrated trip planning and fare payment, accessible service delivery, infrastructure/capital requirements, and integration with other transit services (neighbouring transit agencies and Metrolinx/GO Transit) within

Mississauga. This research project is not only to provide a recommendation for MiWay with a fit-tested ODT operational strategy and model but also to provide a systematic approach and unbiased decision making tool for the municipal transit operating agencies including TransHelp of Region of Peel and Brampton Transit facing similar challenges or opportunities considering permanent or pilot implementation of ODT service.

There are multiple benefits in collaborating with TAL in addition to the project costs to complete both these projects as:

- U of T provides research and analytical expertise while MiWay provides practical experience and operational expertise to bring implementable and applicable solutions to address existing needs and set the future direction for transit.
- Research professionals can use this opportunity to enhance transit business insights and operational knowledge in order to deepen their expertise and bring innovative ideas to their research work.

Financial Impact

There are no additional financial impacts resulting from the recommendation in this report.

PN#22218 – Electrification/On Route Charging has sufficient funding of \$150,000 to complete both the on-route feasibility study and the on-demand transit feasibility study. This capital funding of \$150,000 is the city's contribution towards the total estimated cost of \$450,000 to undertake these two studies. The rest of the project cost of \$300,000 is funded by other funding partners (Mitacs and NSERC).

Conclusion

MiWay will be collaborating with the University of Toronto's Transit Analytics Lab (TAL) to complete an on-route charging feasibility study and an on-demand transit feasibility study, which would provide direction for transit in the future. This research partnership with the City's contribution fund allows TAL to access additional research funding from Mitacs and NSERC for Canadian economy innovation and developing talents. Therefore, both of these studies with total estimated cost of \$450,000 will be achieved through the Council approved budget of \$150,000 (PN# 22218) with no additional implications for funds. This opportunity allows MiWay to live out the City's values of trust, quality, excellence, whereby ensuring that the citizens of Mississauga receive value for money while delivering excellence internally through innovation in the services MiWay provides.



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