



## MEMO / NOTE DE SERVICE

To / Destinataire	Mayor and Members of Council Chair and Members of the Transit Commission
From / Expéditeur	Steve Kanellakos, City Manager
Subject / Objet	Rail Safety Advisory Letter – August 8      Date : September 28, 2021 Derailment

The purpose of this memo is to advise Members of Council and the Transit Commission that on Monday, September 27, 2021, the City received a Rail Safety Advisory (RSA) letter from the Transportation Safety Board (TSB) in reference to the August 8, 2021 derailment on O-Train Line1 (attached). The RSA letter includes details of the TSB's view on the root cause of the derailment, preliminary mitigation measures to improve the safety of the system and additional recommendations to enhance O-Train Confederation Line1.

Council is aware that the numerous issues and challenges experienced on O-Train Confederation Line1 to date are as unacceptable to staff as they are to Council and the public, and they are highly abnormal for a light rail system of its kind. The City is working with RTG to address and rectify these issues as its highest priority so that OC Transpo can return to operating a safe and reliable Light Rail Transit system the residents and transit customers of Ottawa expect and deserve.

The City of Ottawa has a letter of understanding with the TSB giving the TSB jurisdiction over the City's transit system. The City benefits from having the TSB as external investigators for accidents and events. While TSB's rail expertise is primarily in the area of heavy passenger rail (commuter light rail investigations are relatively new for this agency), they remain experts in post-incident investigation and the City values their perspective. The TSB input to date on both the O-Train Confederation and Trillium lines has contributed materially to augmenting the robust safety measures for both lines. Staff appreciates the TSB's timely investigations and communications.

For the August 8<sup>th</sup> event, the City has undertaken an initial review and agrees in general with all the TSB's findings and recommendations, noting that further review will be needed to address specific technical aspects, described in more detail below. Earlier today, I sent a preliminary response to the TSB, acknowledging the RSA. I will also send a letter to Rideau Transit Group (RTG) detailing the mitigation actions they must take in response to the August 8 derailment and the TSB findings. I will send a comprehensive update when the investigation and correction plan is in place.

[Rail Safety Advisory letter on August 8, 2021 Derailment](#)

The TSB is an independent federal agency that investigates air, marine, pipeline, and rail transportation occurrences with the sole aim of advancing transportation safety. As noted above, while their primary expertise for rail relates to heavy passenger rail, the City's unique status as a federally-regulated light rail system also gives the TSB the ability to investigate LRT incidents in the City of Ottawa, and their work helps the City identify any issues and address them. Rail Safety Advisory (RSA) letters are issued to suggest remedial action to reduce risks to safety.

The September 27, 2021 RSA letter speaks to the derailment that occurred on August 8, 2021 when an out of service train was being removed from the mainline. The letter provides additional details on the failure mode of the axle and wheel, and points to a potential root cause, also suggested by Alstom through their investigation process. The letter also identifies the mitigation measures that have been implemented since the derailment.

The letter also details the work that occurred during the design, manufacturing and testing of the light rail trains to document potential hazards, mitigating strategies and safety-related activities. As per the Project Agreement, Rideau Transit Group (RTG) is responsible for the selection and implementation of hazard mitigations and forms part of their signoff and approval of the integrated system. This safety process was and continues to be used to assess potential hazards and identify appropriate mitigation strategies.

RTG and their sub-contractors were responsible for identifying hazards, assessing risks, and designing the approach to mitigate these risks. The Alstom vehicle design did not include an onboard heat detection hot bearings system. While a limited number of urban light rail systems include this feature, it is not consistently applied on Canadian urban light rail systems. Alstom's maintenance regime should manage and mitigate this risk, according to their established practices. The City and the TSB have now determined that these practices are insufficient. In reviewing RTG's safety documentation and the recent derailment, the TSB specifically notes in the RSA letter that the current mitigations for a roller bearing failure have proven to be insufficient and this is the area that RTG needs to address with Alstom.

### Next Steps

RTG is reviewing the design, assembly, and ongoing maintenance of the axle and wheel as part of the root cause investigation with the aim to find a solution that ultimately eliminates this hazard. A final determination of the root cause for this failure is required from RTG and their subcontractor to determine the repairs and mitigation strategies that are required.

In parallel with the root cause investigation, the City will be using our rights under the Project Agreement, to require RTG to explore solutions that would provide an early detection of bearing failures. As noted in the TSB letter, the arrangement of bearings precludes effective visual inspection and temperatures cannot be monitored by traditional wayside hot bearing detectors (heat detection units mounted at track level).

Given the subsequent derailment on September 19, 2021, the City and RTG are also taking an exhaustive look at a variety of condition monitoring solutions that could provide early detection of defects and could add another layer of checks and balances to the integrity of the overall network. As an additional layer of safety, the City has also requested Sam Berrada, the

Regulatory Monitor and Compliance Officer, undertake an independent review of the monitoring system proposed by RTG and report back with their findings.

### OC Transpo Regulatory Framework

As a reminder to Council, the City of Ottawa's LRT has a different regulatory framework than other municipal light rail systems in Canada. Canada, urban light rail systems are self-regulating; meaning that municipalities, for example Toronto, Montreal, Calgary etc., have their own self-regulating regimes. The cross-border nature of our bus system means the Confederation Line is the only municipal light rail system in Canada subject to federal rail transit regulatory oversight. Due to this unique circumstance, Transport Canada's federal legislation and regulations have not been developed for application to municipal light rail systems. As a result, Transport Canada delegated the authority to the City of Ottawa to regulate its light rail system in October 2011.

The City's LRT regulatory regime is more robust and formal than other municipal LRT systems in Canada and is described in The Ottawa Light Rail (OLRT) Regulatory Framework Report ([ACS2015-CMR-OCM-0018](#)) approved by Council in September 2015.

The Delegation Agreement with Transport Canada is one component of the light rail regulatory regime and requires the City to develop, implement and enforce a comprehensive regulatory framework. The Delegation Agreement also requires that compliance with the OLRT regulations be monitored and reported by a Compliance Officer to the City Manager. The Regulatory Monitor and Compliance Officer (RMCO) does so on an ongoing basis through site visits, interviews with field operations and maintenance staff, reviews with senior organizational personnel, review of documentation and records, and review of performance reporting.

The RMCO is independent of Transit Services and reports annually to Transit Commission and Ottawa City Council. As directed by the Delegation Agreement, the City also submits an annual regulatory filing on the OLRT to Transport Canada and undertakes triennial audits, led by a third-party reviewer.

Public safety and security is the top priority for the City, OC Transpo and its contractors. The City is well-positioned to provide effective oversight of all aspects of the Confederation Line system – just as other municipal transit authorities do for their LRT systems. The City and OC Transpo remain committed to continuous improvement and are always available to work with all regulatory bodies to benefit the operation of Ottawa's transit system.

I will provide Members of Council and Transit Commission with further details once the investigations are complete. If you have any questions or comments, please contact Brandon Richards, Chief Safety Officer.

*Original signed by  
Steve Kanellakos*

cc: Senior Leadership Team  
Transportation Services Departmental Leadership Team  
Director, Public Information and Media Relations