Sender:
City of Gothenburg, Urban Environmental Administration
File no. SMF-2025-01224

Gothenburg 21/08/2026

Receiver:
Swedish Accident Investigation Authority
SHK File no. J-9/25

This document is a translation made by SHK of the original response in Swedish to the safety recommendations. In case of discrepancies between this translation and the Swedish original text, the Swedish text shall prevail in the interpretation of the response.

The City of Gothenburg's Urban Environment Administrations response to the Swedish Accident Investigation Authority concerning Tram Accident in Gothenburg, SHK 2026:06 (J-9/25)

The City of Gothenburg, Urban Environment Administration, is recommended to review how speed supervision systems can interact with driver monitoring systems (see section 4.3.2). *(SHK 2026:06 R3)*.

The Urban Environment Administration has begun work to address the recommendation. An initial review is being undertaken of technical solutions, experience from other tramway systems and relevant accidents that have occurred. The work also encompasses ongoing initiatives by Göteborgs Spårvägar and Västtrafik concerning, among other matters, safety controls, driver vigilance monitoring, obstacle detection, collision warning and automation. Göteborgs Spårvägar has carried out a technical investigation which indicates a need for continued collaboration on speed supervision, collision protection and technical driver-support systems.

As a next step, the Urban Environment Administration will carry out a risk assessment of the tramway infrastructure, focusing on overspeeding and particularly critical locations, such as points, curves and other locations where overspeeding may result in a derailment or serious consequences. The risk assessment will be used to clarify which risk scenarios need to be managed, which safety barriers are already in place and where further measures are required.

The work will also include analysis of relevant accidents in other tramway systems. The 2024 accident in Oslo, in which a tram passed through points at 37 km/h where the permissible speed was 15 km/h after the driver lost consciousness, and the 2016 Croydon accident, in which a tram entered a sharp curve at a significantly excessive speed, are

examples of occurrences relevant to further learning. Other similar accidents that have occurred recently in Europe are also being reviewed, including the accident in Milan, Italy, on 27 February 2026.

The further review will then establish the functional requirements for future speed supervision and how it can interact with driver vigilance monitoring and other safety functions. This will also include an analysis of the interfaces between infrastructure, rolling stock and drivers, as well as human–machine interaction and any new risks that technical systems may introduce.

The work will be carried out in stages and in collaboration with Göteborgs Spårvägar and Västtrafik. This collaboration does not alter the respective organisations' responsibilities or powers to act. The Urban Environment Administration will remain responsible, within its remit as the infrastructure manager, for managing identified risks and assessing the need for safety-enhancing measures to the infrastructure and requirements to be imposed on the users of the infrastructure.

The Urban Environment Administration's continuing work will therefore focus on:

- Enhanced horizon scanning and the incorporation of lessons learned from occurrences;
- Horizon scanning and analysis of technical solutions for driver support and speed supervision;
- Risk assessment of overspeeding on the infrastructure;
- Identification of critical locations and risk scenarios;
- Analysis of potential technical and organisational safety barriers;
- Collaboration with Göteborgs Spårvägar and Västtrafik on interfaces and functions; and
- Preparation of documentation to support decisions on any further measures.

The work will be documented and monitored as part of the Urban Environment Administration's systematic safety management.

Timescale and further work

The Urban Environment Administration has commenced work to address the recommendation. The work is being undertaken in stages and includes both internal activities and collaboration with Göteborgs Spårvägar, Västtrafik, and external centres of expertise and research organisations.

Action already taken

The Urban Environment Administration has already incorporated the risk of overspeeding into its routine risk assessment process for the construction and alteration of tramway infrastructure. This means that overspeeding and its potential consequences are to be systematically considered when changes are made to the infrastructure, for example in the design of points, curves and other speed-critical features. This will now be supplemented by

the more detailed risk assessment of the existing infrastructure, which is planned to be completed before the end of the year.

Ongoing work – autumn 2026

Västtrafik is conducting a request for information (RFI) covering, among other matters, technical driver-assistance systems, obstacle detection, collision protection and automation. The RFI includes the functionality available on the market, technological maturity, retrofit potential, and requirements relating to vehicles and infrastructure. The proposed phased approach is to introduce warning functions initially, followed by the possible introduction of automatic braking. The Urban Environment Administration is monitoring this work, as any future functions will need to be assessed in terms of the interaction between vehicles, drivers and infrastructure, as well as each organisation's respective safety responsibilities.

Göteborgs Spårvägar is continuing, in parallel, its work on measures relating to driver vigilance monitoring and driver safety devices. Its investigation includes pilot trials of driver vigilance monitoring and more detailed analysis of the integration between driver vigilance monitoring, driver safety devices, traffic management and other vehicle functions.

At the same time, the Urban Environment Administration has initiated a more detailed review of developments. This includes technical solutions and experience from comparable tramway systems, as well as analysis of relevant accidents and incidents. Dialogue has also been initiated with the research community, including CHARMEC at Chalmers University of Technology, in order to bring research and systems perspectives to the further work.

By the end of 2026

The Urban Environment Administration will carry out a risk assessment of the tramway infrastructure, focusing on overspeeding. The assessment will identify critical locations and risk scenarios, including points, curves and other locations where overspeeding could lead to derailment or other serious consequences. Existing safety barriers, and the need for additional barriers, will also be analysed.

The results will provide the basis for further work to determine the functions that need to be achieved before a decision is made on a specific technical solution.

2027 – detailed analysis and selection of approach

Drawing on the risk assessment, the review of developments and experience elsewhere, GSAB's work, Västtrafik's RFI and dialogue with research bodies, the work will continue to assess potential safety barriers and how they may interact. This will include speed supervision, driver vigilance monitoring, driver safety devices, obstacle detection and collision warning.

The work will also need to establish the role of technology in relation to the driver: whether it should provide information and enhance situational awareness, issue warnings, check a decision, or, in certain circumstances, intervene automatically. The greater the influence a system has over the driving of the tram, the greater the need for detailed analysis of, among other matters, human–machine interaction, technical interfaces, new risks and the allocation of responsibilities.

Further technical and safety investigations will therefore be required before decisions can be made on specific solutions or implementation. The aim is not to preselect a particular technology, but to identify and verify, on the basis of Gothenburg's risk profile, the safety barriers that will provide the greatest benefit to the tramway system as a whole.

Yours sincerely,

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