750 First St. NE • Ste. 900 • Washington, D.C. 20002
Office: 202-384-1520 • Website: www.wmsc.gov

Mr. Brian Dwyer
Executive Vice President & Chief Operating Officer
Washington Metropolitan Area Transit Authority

October 17, 2022

Mr. Dwyer,

Metrorail submitted data to the WMSC on Thursday night, October 13, 2022 that demonstrates that Metrorail's plan, resubmitted at the same time, is not supported by available safety information. Therefore, the WMSC has technical objections to this plan.

For example:

- Wheelset assembly data demonstrates that 81% of 7000 Series axles meet updated higher press tonnage specifications and 19% do not. However, 63% of the 79 documented measurement exceedances on 7000 Series axles as of September 28, 2022 have occurred on the lower press tonnage axles, a disproportionate share (even excluding an additional back-to-back exceedance was detected after this date on a lower tonnage axle that had been used for non-passenger movement, and a separate car with a documented journal bearing gap exceedance). Said another way, according to the data submitted by Metrorail, more than 8 percent of lower press tonnage axles have had documented wheel migration compared to approximately 1 percent of axles that meet the higher specifications. Metrorail in the past increased these press tonnage specifications as a safety mitigation following wheel migration on legacy railcars, and Metrorail in its May 19 Return to Service Plan specifically selected railcars with higher press tonnage for passenger service. The NTSB investigation continues its work and analysis, but this data demonstrates that, regardless of the specific causes, axles meeting the higher press tonnage specification provide for a higher level of safety pending any other mitigations Metrorail may implement. In addition, Metrorail's Reliability Engineering and Asset Management (REAM) determined in November 2021 that there is a significant statistical difference between the mean value of interference fit for axles that had documented measurement exceedances at that time and those that did not, and that there was a significant statistical difference between the mean value of mounting tonnage for railcars that had documented measurement exceedances and those that did not. This Metrorail-specific data is further supported by industry research obtained as part of the NTSB investigation and a 2015 Metrorail engineering consultant report that identified that a relatively low level of force on a wheel flange compared to press tonnage can contribute to wheel migration, and that increased press tonnage may not fully address a root cause but does reduce risk. Metrorail's September 28 submission, resubmitted on October 13, proposed utilizing cars in passenger service that do not meet the higher press tonnage specification.

- Despite Metrorail Vehicle Track Interaction (VTI) data and data from investigative dynamic testing demonstrating that vehicle track interaction is different in different parts of the rail system, the data submitted on October 13 noting specific differences including curves on the Blue, Orange and Silver Lines, and the other as-built variations across the rail system including in non-mainline tracks, Metrorail has claimed as part of its submissions to the WMSC that only the systemwide design criteria are relevant, not the real-world track infrastructure conditions that vary across the system based on design, installation and maintenance. These available data demonstrate there are differences and that introducing new sections of the system must be carefully monitored. Metrorail's September 28 and October 13 submission proposed utilizing trains in all parts of the system at the same time that inspection frequencies were reduced, and low press tonnage axles were introduced to passenger service.
- Metrorail's statement that it did not detect measurement exceedances for the first 10.5 million miles of passenger service does not account for the current conditions of the railcars and the more than 79 documented exceedances since that time, including the increasing number of these detected exceedances over time.

Under the plan currently in effect, Metrorail has more than 300 7000 Series railcars eligible for use. The current plan specifies that Metrorail will use up to 20 7000 Series trains (160 cars) in passenger service per service day. Metrorail has generally run 11-14 7000 Series trains (88-112 cars) in passenger service each day since September 14, and has not neared 20 trains on any day, so has not used all trains eligible daily under its current plan.

As part of our communication on October 11 (both orally and in writing), which included our notification that we had technical objections to Metrorail's plan submitted on September 28, the WMSC highlighted paths that Metrorail could take almost immediately to progress toward safely returning even more trains to passenger service based on the data currently available using a controlled, data-driven approach. These options included running 7000 Series trains in passenger service on the Blue, Orange and Silver Lines under all other elements of the current plan for two back-to-back inspection cycles, then, if supported by track inspection, vehicle inspection, and other data, providing further plan revisions to extend passenger service inspection intervals to seven days for these cars meeting higher press tonnage requirements and thereby significantly increasing the number of trains Metrorail could safely place in passenger service as soon as next month. The WMSC had also communicated to Metrorail regarding train usage on the Blue, Orange, and Silver Lines on October 7. Metrorail has opted not to utilize these data-supported approaches to ensure that changes are only made in a controlled manner that is supported by a holistic safety process.

It is concerning to the WMSC that Metrorail may not be interested in carrying out its safety responsibilities, even going so far as to have senior leadership suggest at a public WMATA Board Meeting that Metrorail will only mitigate known safety issues if ordered to do so. The WMSC is deeply

concerned about Metrorail senior leadership's incorrect statements that a failure to follow procedures in place to control known hazards such a wheel migration does not lead to unsafe conditions. These statements are expressly contrary to logic and sound safety practices, as well as, more specifically, Metrorail's Public Transportation Agency Safety Plan (PTASP) and the WMSC Program Standard. If controls in place to ensure the safety of passengers and workers are ignored, then those controls do not provide the intended level of safety for Metrorail passengers and employees.

As always, the WMSC endeavors to work with WMATA to ensure that Metrorail provides a system that is as safe as reasonably practicable for the public, employees, contractors, and first responders.

Earlier this year, after Metrorail had decided to pause 7000 Series return to service plan development for several months, Metrorail worked with the WMSC through an iterative process that led to the WMSC's swift communication of no technical objection to Metrorail's May 19, 2022 Return to Service Plan. Elements of this process were also used in relation to the later stages of Metrorail's September 2, 2022 Return to Service Plan. The WMSC continues to offer every opportunity for interaction with Metrorail as we gather, review, and act upon safety data obtained through our regular oversight activities, including our oversight of Metrorail's Return to Service Plan and our participation in the NTSB investigation.

We look forward to receiving a revised plan from Metrorail that is based on all available data.

Sincerely,

Sharmila Samarasinghe

Deputy CEO & Chief Operating Officer

Washington Metrorail Safety Commission