



NOTICE OF NON-COMPLIANCE: C-0072, ELEVATED STRUCTURES LOAD RATINGS ISSUED OCTOBER 15, 2024

Summary

As part of the [2021 Audit of Elevated Structures Inspection, Maintenance and Repair](https://wmsc.gov/audits/) (<https://wmsc.gov/audits/>), the WMSC identified that the Washington Metropolitan Area Transit Authority (WMATA) Metrorail does not have basic load ratings for its elevated structures. Basic load ratings confirm the number or type of trains or size of equipment that can safely traverse these structures. Without basic load ratings, there is a risk that the structures could be overloaded. Load ratings are an industry standard; load ratings are basic engineering information. As a result of identifying Metrorail's lack of load ratings, the WMSC required the implementation of corrective action plan C-0072, which is now more than a year behind the WMSC original approved schedule, and which Metrorail now expects to complete by May 2025. WMATA should be working aggressively to rectify this deficiency.

Authority

The Washington Metrorail Safety Commission (WMSC) Compact (P.L. 115-54), Article IV, Powers, Sec. 30(a) states "In carrying out its purposes, the Commission, through its Board or designated employees or agents, shall, consistent with federal law: (a) Adopt, revise, and distribute a written State Safety Oversight Program[]" and Sec. 30(c) states "(c) Require, review, approve, oversee, and enforce the adoption and implementation of any Corrective Action Plans that the Commission deems appropriate[.]" Further, WMSC Compact Section 31(c) provides that the WMSC may "[c]ompel WMATA's compliance with any Corrective Action Plan or order of the Commission by such means as the Commission deems appropriate...."

Pursuant to WMSC Compact Sec. 30(a) and 30(b) and 49 CFR sec. 674.27(a)(1), version 7 of the WMSC Program Standard became effective on July 1, 2024 (may be found at <https://wmsc.gov/program-standard/>). Program Standard section 9.C states that "[p]roper CAPs are achievable, verifiable, assigned to a WMATA individual (not only a department or office), and include a realistic schedule. CAPs are neither conditional nor advisory from one WMATA department to another; rather they are statements of specific actions that must be taken." And "[t]he WMSC considers the [CAP] submission timely when QICO submits it to the WMSC by the Friday of that week." (Program Standard section 9.C.5.)

This Notice of Non-Compliance is brought in accordance with Program Standard Section 11.B:

In the event WMATA fails to comply with any provision of this Program Standard, the WMSC may issue a notice of non-compliance, provide notice that the WMSC is invoking a power provided in Section 11.C, or both. The WMSC will identify the noncompliance issue and state any action required of WMATA in an email to the WMATA Executive Vice

President and Chief Safety & Readiness Officer, or the General Manager. WMATA must then respond by the deadline set by the WMSC. If WMATA fails to address the issue, the WMSC may take further action described in this Section 11.

Background

On January 25, 2021, the WMSC issued its Audit of Elevated Structures Inspection, Maintenance and Repair. Finding 2 stated that “WMATA does not have load ratings for its bridges and aerial structures.” The corresponding corrective action plan was approved as C-0072 on June 21, 2021 with eight actionable items. Actionable items 5–7 outline the submission of three status reports that expressly required “progress on the load rating assessment until all load ratings are completed.” This set the requirement for all load ratings to be completed by the time Actionable Item 7 (Status Report III) was submitted.

At the time of this 2021 Elevated Structures Audit, there were 148 elevated structures. There are now 161 (since the opening of Silver Line Phase II). Of the 161 structures, 84 have no load rating.

The original timeline stated that all load ratings were to be completed by March 2023. On March 17, 2023, WMATA submitted Actionable Item 7, which indicated a completion rate of 65% (not the 100% that was due). On May 2, 2023, the WMSC declined to close C-0072 based on the incomplete load rating assessments that were provided in the March 17, 2023 submission. As a result of identifying this deficiency—and through communications with WMATA regarding the time needed to complete the load ratings—on May 24, 2023, the WMSC granted an extension until July 3, 2024. This extension was granted based on WMATA’s statement that “all [load rating] assessments” would be completed by July 3, 2024.

WMATA’s July 3, 2024 submission showed that all load ratings assessments were not complete. The July 3, 2024 submission also listed different completion percentages than were included in the March 17, 2023 submission (that is, the original Actionable Item 7 submission). The July 3 submission summarized load rating status as follows: 36% completed, 40% in draft form, and 24% have not yet begun. This conflicts with the prior March 2023 update that had indicated a completion rate of 65%.

On July 17, 2024, the WMSC asked for an explanation on why the load ratings were not completed despite WMATA receiving an additional 10 months. On July 25, 2024 WMATA replied:

The load rating of a bridge is a complex process involving extensive research and verification of multiple as-built documents and inspection reports. Producing calculations and determining present capacities can be particularly challenging, depending on the type of bridge.

WMATA’s bridge inventory is extensive. While some bridges are easier to load rate, others require special considerations and assumptions that need to be discussed and agreed upon. The availability of software, manpower, and the need to constantly research as-built drawings of various complex bridges, along with multiple levels of quality control and revisions, made meeting the July 2024 deadline unattainable.

Given these complexities, an additional 10 months is required to complete this work. This extension will allow us to ensure thorough research, accurate calculations, and proper quality control to meet the necessary standards.

The WMSC notes that WMATA's July 25, 2024 justification, that load ratings are complex and resources are limited, were facts known to WMATA at the outset of this CAP. Further, the WMSC had already provided WMATA a 10-month extension.

On July 31, 2024, the WMSC requested a meeting with WMATA to discuss their late modification request in accordance with Program Standard section 9.C.4.a. The WMSC also requested a load rating assessment status for all structures as well as a forward-looking project schedule showing the future work plan for completing all load ratings.

On August 7, 2024, WMATA provided the requested table with information on load rating assessments completed to date. The forward-looking schedule was not provided as that information was not yet available, but WMATA believed that information could be produced within 30 days. Even though a schedule was not yet available, WMATA personnel believed the remaining load rating assessments could be completed by the end of May 2025.

During the August 23, 2024 meeting with WMATA, the WMSC learned that the proposed May 2025 completion date for the remaining load ratings faces risks due to resource constraints and competing priorities. WMATA personnel also sought clarification on what a forward-looking schedule of work for the remaining load ratings should contain.

Also, of direct relevance to load ratings: WMATA is contemplating speed increases for its trains. Vehicle speed is a factor in determining the dynamic load placed on an aerial structure because faster vehicle speeds add greater dynamic load, which affects the load rating. Consequently, to safely increase vehicle speed, it is necessary to know the load rating of all structures over which trains travel.

On September 6, 2024, a forward-looking schedule of work for the remaining 84 structures was submitted to the WMSC as requested. As of October 10, 2024, WMATA maintained the position that the load ratings will be completed by May 2025—nearly 10 months late.

Compliance

C-0072 is late. For WMATA to return to compliance with C-0072, WMATA must complete all elevated structures load ratings as required by this CAP. WMATA should direct whatever additional resources are required by relevant teams involved to ensure this effort is completed expeditiously. WMATA must hold progress meetings with the WMSC every two months between the issuance of this notice and the completion of this CAP.



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