

Decision No. C23-0213

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

PROCEEDING NO. 23I-0047R

IN THE MATTER OF THE REGIONAL TRANSPORTATION DISTRICT'S CORRECTIVE ACTION PLAN REGARDING THE 19TH STREET AND STOUT STREET CONDEMNED RAIL, RULE 4 CCR 723-7-7347.

**COMMISSION DECISION APPROVING
RTD CORRECTIVE ACTION PLAN**

Mailed Date: March 30, 2023

Adopted Date: March 29, 2023

I. BY THE COMMISSION

A. Statement

1. On November 15, 2022, the Regional Transportation District's (RTD) Maintenance-of-way (MOW) found a hazardous condition of the rail at 19th Street and Stout Street that revealed rail conditions that were below industry acceptable conditions for normal rail activities. A previous inspection of the 19th/Stout embedded curve/crossing shoed a negative superelevation and gauge widening conditions prompting the additional hazard investigation. MOW crews called for an immediate three mile per hour speed restriction on approach to the curve, through the curve, and out of the curve for the entire train consist. The rail was declared as condemned rail.

2. Under 4 *Code of Colorado Regulation* (CCR) 723-7-7347(d)(IV) of the Commission's Rules Regulating Railroads, Rail Fixed Guideways, Transportation by Rail and Rail Crossings, RTD determined that the condemned rail warranted an emergency corrective

action to immediately replace the rail to ensure safety and submitted Corrective Action Plan (CAP) 01-11222022 for the emergency corrective action to continue rail operations under the speed restrictions and with flaggers walking the LRV train through the intersection/crossing, and to replace the condemned rail starting December 23, 2022.

3. On March 6, 2023, RTD filed CAP02-11222022 as requested by the Commission.

4. On March 13, 2023, Staff of the Commission sent correspondence to RTD requesting that RTD make a correction to the CAP to provide a complete implementation schedule and requested RTD to include the hazard investigation as part of the filing to provide context to the CAP.

5. On March 14, 2023, RTD filed the corrected CAP and the hazard investigation.

6. Now being advised in these matters, we approve CAP02-11222022.

B. Analysis

7. RTD performed a hazard investigation for the 19th and Stout location requiring the emergency rail replacement.

8. The operational risk analysis undertaken by MOW management determined that the hazard had a risk index of 1B, or High. A PowerPoint presentation was created by the Maintenance-of-Way (MOW) showing the issues with the track at 19th and Stout along with the risk analysis and mitigation options for the downtown loop. By Rule 7347, for the existing condition of condemned rail. Hazards with a High-risk index must come before the Commission for review and approval of a Corrective Action Plan.

9. RTD also performed a hazard analysis of the restricted condition that RTD used before the new track was installed. Trains were to operate at three miles per hour (MPH)

approaching, through, and out of the curve with 24/7 flagger control and a track maintainer conducting visual inspections after each train passed through the area. The risk index was determined to be a Serious risk with a 3B-3C risk index.

10. RTD investigated this area to determine how the rail was allowed to deteriorate to a condition where it was condemned. RTD used a systematic cause analysis technique to identify systemic (management system) causal factors. RTD interviewed Capital Programs, Rail Operations, Service and Planning, Asset Management and Safety staff. RTD reviewed information from the interviews, site inspection and maintenance reports, e-mail correspondence, and policies and procedures.

11. The section of rail where the condemned rail is located is in the downtown loop, which is the oldest segment of the RTD light rail system, in service since 1994.

12. RTD determined the most probable and contributing causes to be age, wear, and the use of magnesium chloride during show events. These elements in combination with low voltage electric current and water (electrolysis) caused increased rust on the rail leading to faster deterioration. RTD had discovered that the E-clips used to fasten the rail to the ties were particularly vulnerable to corrosion. RTD's evaluation of the E-clips determined that the clips were sufficient to hold the rail in place with no track movement detected during or after train movement. RTD did install galvanized E-clips in the downtown area and Maintenance-of-Way (MOW) continues to regularly measure track movement and gauge to ensure safety train operation over that section of track. No movement of track was detected until the November 9, 2022, monthly inspection.

13. The downtown loop track and its condition were assessed by Rail Operations, Capital Programs, and Asset Management staff as early as November 2014 with a rail

replacement strategy and schedule prepared in February 2015. RTD notes that rail replacement requires significant planning resources and collaboration with local jurisdictions. With the amount of rail that would eventually need replacement and the anticipated length of time to complete the project, RTD planned a series of individual rail replacement projects with curves prioritized over tangent track beginning as early as 2016 with projects scheduled through present day. RTD provided an exhibit that diagrams the original rail replacement plan and the Gant chart showing the revised schedule starting in November 2020 and conducted through April 2023.

14. The track in question had the track replacement rescheduled from the original schedule to occur in Fall 2022 with specialized infrastructure ordered and received in 2020. MOW had identified the track ant 18th and Stout Streets intersection where tracks were settling and submitted a request to Capital Programs to add this intersection to the replacement project list. The decision to replace the rail at 18th and Stout in 2022 was made without following the asset management bypass process. No formal risk assessment was conducted to justify the urgent replacement of 18th and Stout. RTD decided to not replace 18th and Stout simultaneously with the 19th and Stout curve replacement, which was rescheduled to Spring 2023.

15. RTD has determined the most probable cause as gaps in internal policies, procedures, and oversight. The Asset Management System and the Safety Management System are relatively new and maturing at different rated through the agency. Documentation and processes need to be developed to address this challenge.

16. RTD determined contributing causes to include lack of organizational coordination, the rail replacement program not being adequate to maintain a state of good repair within the downtown loop, asset management tracking done by function and not by asset class, and the need for cross-department coordination on rail infrastructure replacement to ensure

alignment with and accountability for the Asset Management Plan and Public Transportation Agency Safety Plan not being optimized.

17. RTD proposes four interim measures to be completed by June 30, 2023, and four final measures to be completed by June 30, 2024, in CAP02-11222022.

18. The first interim measure is to use the Operational Risk Management assessments as part of the asset information (data) to make prioritizations for asset renewals.

19. The second interim measure involves evaluating the downtown rail replacement project, including revised conditional assessments of the remaining sections to update the prioritization of replacements scheduled.

20. The third interim measure is to evaluate industry track standards, including Federal Railroad Administration standards to determine whether a more robust classification method exists to document wear.

21. The fourth interim measure is to conduct asset management bypass process training at the asset steward level, including assistant general managers, superintendents, senior managers, and managers.

22. The first final measure is to develop an Asset Class Strategy for light rail infrastructure including all asset types and sub types.

23. The second final measure is to enhance the tracking and evaluation criteria for areas in the light rail infrastructure that have know accelerated wear, deterioration, or corrosion.

24. The third final measure includes evaluating the cross-department coordination procedures for rail infrastructure replacement to ensure alignment and accountability with the approved Transit Asset Management Plan and the Public Transportation Safety Plan.

25. The fourth final measure is to integrate operational risk management and safety assurance into the decision-making process for asset renewals.

26. RTD states that the Asset Management Accountability Team and the Safety Leadership Committee will monitor progress on completion of these corrective actions. In addition to monitoring CAP monitoring, the number of urgent or emergent repairs to the light rail infrastructure will be evaluated as an indicator of effectiveness.

27. The Assistant General Manager, Rail Operations will be the individual responsible for implementing the above corrective actions. The Senior Leadership Safety Committee under the direction of the Accountable Executive and the Chief Safety Officer/Senior Manager, Safety and Environmental Compliance will also be responsible for monitoring completion of the CAP.

C. Conclusion

28. We have reviewed CAP02-11222022 and see that there are both interim and final measures in place that will mitigate the most probable cause and the contributing causes identified in the hazard investigation and analysis.

29. Based on the Analysis, we find that good cause exists and that the requirements of public safety and necessity are met by approving CAP02-11222022.

II. ORDER

A. The Commission Orders That:

1. The amended Corrective Action Plan (CAP) 02-11222022 filed by the Regional Transportation District's (RTD) on March 14, 2023, to address the longer-term issues at 19th Street and Stout Street, and the remainder of the light rail system is approved.

2. This Decision is effective on its Mailed Date.

**B. ADOPTED IN COMMISSIONERS' WEEKLY MEETING
March 29, 2023.**

(S E A L)



ATTEST: A TRUE COPY

A handwritten signature in cursive script, appearing to read 'G. Harris Adams'.

G. Harris Adams,
Interim Director

THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

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Commissioners