

July 24, 2023

Richard Bamber  
[greaterdenvertransit@gmail.com](mailto:greaterdenvertransit@gmail.com)

Dear Mr. Bamber,

RTD is in receipt of Greater Denver Transit's July 24, 2023, letter regarding R Line Grade Crossings.

This letter serves as RTD staff's response.

### **Background**

Supervisory Control and Data Acquisition (SCADA) is a control system architecture comprised of computers, networked data communications, and graphical user interfaces for high-level supervision of machines and processes, which in RTD's case is utilized for managing the rail system.

The agency recently migrated to new SCADA servers. In early June 2023, following the server migration, RTD suffered a SCADA network communications failure, thereby impacting certain crossings along the R Line alignment. In those locations, the crossing arms entered into safe mode, causing the gate crossing arms to lower and remain lowered until such time as they could be restored to automated operation.

Light railroad crossing design has strict engineering requirements that must be followed and approved by a state safety oversight agency. This requires appropriate interface with city traffic signals when applicable. Should a malfunction occur, one of the engineering requirements is that a railroad crossing fail in a safe condition. In other words, when a malfunction occurs (such as the SCADA network communication failure), the crossing mechanism moves to a safe position. Generally, this means that the gates come down and stay down until it can be verified that there are no trains in, or on approach to, the crossing. This is to prevent vehicular and pedestrian traffic from coming into contact with a train. This fail-safe mode can be overridden manually but only after appropriate operational protocols are put in place to ensure safety. Additionally, the rail system interfaces with the automobile traffic signals in order to prevent green traffic signals erroneously indicating that vehicles are safe to travel into the path of an oncoming train.

During the time the gate crossings were malfunctioning, the traffic lights located at the impacted gate crossings were set to four-way flashing red signals. RTD does not provide traffic control and is not equipped or staffed to do so. Rather, the local police jurisdiction's traffic division provides this service in locations where traffic signals are impacted. In this instance, RTD provided flaggers to monitor and regulate train movement, not to provide traffic control for vehicles or pedestrians. The Aurora Police Department was contacted and made aware of the traffic conditions at the impacted gate crossings.

The Colorado Public Utilities Commission (CPUC) acts as the state safety oversight agency pursuant to the Federal Transit Administration with respect to light rail operations. The CPUC, which approved and certified RTD's crossing design and functions and is aware of the agency's operational protocols at crossings, was made aware of the gate



crossing malfunction in Aurora, and the commission was provided with periodic updates. RTD was not made aware of any operational concerns from the CPUC regarding the agency's response in this instance.

### **Staff Responses to Specific Questions**

In response to specific questions raised in Greater Denver Transit's July 24, 2023, email, staff has provided the following responses:

Question 1: On what specific date did RTD first receive reports that the grade crossings on Peoria Street or those on 17th Place and 17th Avenue were malfunctioning?

Staff response: RTD became aware of the malfunction on Saturday, June 3, 2023. Staff was initially successful in mitigating the issue only for the malfunction to reoccur at a later date. The malfunction was finally resolved on Tuesday, June 20, 2023, and normally scheduled light rail service resumed Wednesday, June 21, 2023.

Question 2: What factors were considered in the decision making process which resulted in the crossings being operated with the gate arms up but with no highway flaggers?

Staff response: RTD does not provide traffic control and is not equipped or staffed to do so. Rather, the local police jurisdiction's traffic division provides this service in locations where traffic signals are impacted.

Question 3: Were the Colorado PUC advised of the situation? If so, did they formally approve a temporary operational plan or did they simply raise no objections to the temporary method of operation?

Staff response: Yes, RTD informed the Colorado Public Utilities Commission (CPUC) regarding this issue and provided periodic updates. The CPUC has not communicated any safety or operational concerns regarding the agency's response in this instance.

Should you have additional questions or concerns regarding this matter, please contact me directly at [generalmanager@rtd-denver.com](mailto:generalmanager@rtd-denver.com) or 303.299.2300.

Sincerely,

A handwritten signature in blue ink, appearing to read "Debra A. Johnson", with a long horizontal flourish extending to the right.

Debra A. Johnson  
General Manager and CEO

cc: Board of Directors  
James Flattum, Greater Denver Transit