District Court, City and County of Denver, Colorado 1437 Bannock Street, Room 256 Denver, CO 80202	DATE FILED: February 10, 2023 5:31 PM CASE NUMBER: 2018CV33495 **▲COURT USE ONLY▲**
PLAINTIFF: DENVER TRANSIT PARTNERS, LLC, a Delaware limited liability company, v. **DEFENDANT:** REGIONAL TRANSPORTATION DISTRICT, a political subdivision of the State of Colorado.	Case No.: 2018-CV-33495 Courtroom 466
FINDINGS OF FACT, CONCLUSIONS OF LAW and ORDER FOR ENTRY OF JUDGMENT	

SUMMARY

This dispute arises out of a $2.2 billion commuter rail transit project known as the Eagle Project. The Eagle Project connects the Denver metro area with DIA (the A-line) and surrounding areas as far north as Westminster (the B-line) and as far west as Arvada and Wheat Ridge (the G-line). Plaintiff Denver Transit Partners (DTP) and its affiliates agreed to design, build, finance, operate and maintain this commuter rail system pursuant to a public-private partnership with Defendant RTD.

This case presents complex technical and commercial issues relating to the wireless crossing activation system (WCAS) that DTP proposed for traffic control at twenty-nine intersections that the passenger trains had to cross. When the WCAS failed to operate properly in 2016 federal and state regulators undertook what turned out to be a nearly three-year review of the warning system. During this regulatory review DTP was required to post crossing attendants at each intersection in both directions for twenty-four hours a day, seven days a week, 365 days a year for over two years on the A-line, one and half years on the B-line and nearly three

and a half years on the G-line. The crossing attendants and related equipment and facilities cost DTP over $111.5 million.

DTP seeks to recover these and other costs from RTD, claiming that the regulatory review undertaken by the federal and state authorities of the warning system resulted in a change in law and force majeure event that entitles DTP to relief under the parties' Concession and Lease Agreement (the CA). *See* ex. 1.

RTD disputes this claim and argues that DTP bears the responsibility for these costs as it failed to design, construct and operate a warning system that satisfied existing federal and state standards. RTD seeks to recover the extended overhead and other costs it incurred as a result of the noncompliant warning system. RTD also seeks declaratory relief allowing it to terminate the public-private partnership under the CA. Finally, RTD seeks future damages for defective bridges that DTP installed on the project.

Trial to the Court without a jury proceeded over the course of nineteen days from September 21 – October 16, 2020. The trial was conducted under the public health protection protocols relating to the COVID-19 pandemic, requiring all counsel, witnesses, spectators and staff attending the trial in-person to wear a mask and maintain a social distance of six-feet.

The trial involved seven trial counsel, two legal assistants in Court with numerous support staff and attorneys working behind the scenes around the clock. The parties designated nearly 2,000 exhibits. The Court admitted 489 trial and demonstrative exhibits that contain thousands of pages and 3.38 GB of evidence. Ten expert witnesses testified at trial, four of whom were also fact witnesses. The Court received testimony from seven additional fact witness and ten transcripts of designated deposition testimony.

After trial, the parties filed a combined 470 pages of proposed findings of fact and conclusions of law and responses to these proposed findings and conclusions. The parties also provided the Court with transcripts of all of the witnesses' testimony presented at trial.

The Court has reviewed all of this testimony, the exhibits admitted into evidence, the transcripts of the designated deposition testimony, the proposed findings and conclusions and responses submitted by the parties, the entire file in this matter and the applicable authorities. The Court has also considered the arguments presented by counsel. Upon consideration of all of this testimony,

evidence, briefing, argument and authority the Court enters the following findings of fact, conclusions of law and order for entry of judgment.

The Court determines that the federal and state authorities applied existing regulations and enforcement policies when they undertook the regulatory review of the warning system. Therefore, the Court finds that there was no change in law or force majeure event that entitles DTP to relief under the CA.

The Court also denies relief to RTD on its counterclaims, including its request for declaratory relief seeking to terminate this massive public-private partnership under the CA.

Judgment shall enter accordingly.

FINDINGS OF FACT[1]

I. Background

In 2010, the parties agreed to a public-private partnership for DTP to design, build, finance, operate and maintain a new commuter rail transit system in the Denver metro area. The transit system, known as the Eagle Project, has three rail transit lines: the A-line operating between Union Station and DIA; the B-line operating between Union Station and Westminster; and the G-line operating between Union Station and Arvada and Wheat Ridge. DTP also agreed to build a commuter rail maintenance facility as part of the Eagle Project.

The Eagle Project added 36 miles of new commuter rail lines and another 12 miles of relocated and new freight track throughout the Denver metro area. *See* ex.

[1] These findings of fact contain general findings relating to all claims, counterclaims and defenses. These findings are also specific to DTP's change in law and force majeure claims asserted against RTD and RTD's counterclaim seeking to recover damages for its increased overhead and other costs relating to the federal and state regulators' review of the warning system.

Additional findings of fact and conclusions of law specific to the parties' other claims, counterclaims and defenses are set forth later in this order. *See, infra,* at pp. 52 – 70. However, all findings of fact and conclusions of law set forth in this order are to be taken together and considered in support of the Court's resolution of all claims, counterclaims and defenses asserted in this matter.

1875. It also added 14 park-and-ride stations that could be accessed through RTD's bus routes or light rail transit system. *Id.*

The Eagle Project operates in an urban environment. It is designed to operate at grade, which requires it to cross several busy streets throughout the Denver metro area. There are 32 bridges and 29 at-grade crossings. *Id.* Many of these at-grade crossings are at intersections with major streets throughout the Denver metro area. The A-line has at-grade crossings at: Chambers; Steele; Clayton; Havana; York / Josephine; Sable; Quebec; Dahlia; Holly; Monaco; and Ulster. *See* ex. 1871, summary of PUC proceedings concerning at-grade crossings.

The G-line has at-grade crossings at: Balsam; Allison; Garrison; Parfet; Vance; Olde Wadsworth; Carr; Tabor; Independence; Lamar; 60th Avenue; Salsbury; Miller; Tennyson; and Lowell. *Id.*

The B-line has only one private crossing at a fuel yard used for the BNSF railroad. Because this crossing is not used by the public, the PUC has no jurisdiction over this crossing.

The at-grade crossings require the transit system to have a warning system that warns traffic of an approaching train and keeps the traffic stopped as the train passes through the intersection. The at-grade crossings along the Eagle Project have four quadrant gates that block traffic in each direction. Each crossing also has warning lights and concrete medians that keep traffic in place while the gates are down and a train proceeds through the intersection.

DTP retained Wabtec/XoRail to design a wireless crossing activation system (WCAS) to provide warnings at the 29 at-grade crossings. The WCAS activates the warning lights and closes the gates using a wireless communication system rather than circuits installed in the tracks. The WCAS is discussed in more detail below. A wireless system is able to ensure that the gates are down for less time than a convention warning system because the wireless system can more precisely activate the warning lights and gates based on the train's location and speed. As discussed in more detail below, a wireless communication system has a benefit in an urban environment because it results in less gate down time, which in turn prevents traffic back-ups and less dangerous driving behavior.

The Federal Railroad Administration (FRA) had to approve the transit system, including the WCAS, before it went into operation. The Colorado Public Utilities Commission (PUC) also had to approve the WCAS because it regulates public safety at all public rail crossings. This action arises out of the FRA and PUC's three and a half year regulatory review of the warning system before they finally approved the system and allowed the crossing attendants to be removed.

During this regulatory review process the transit lines were required to have crossing attendants stationed at each crossing in each direction for twenty-four hours a day, seven days a week, 365 days a year. Staffing these crossings with crossing attendants and necessary equipment, facilities and lighting for this extended period of time cost DTP over $111.5 million.

On July 9, 2010 the parties entered into the CA. *See* ex. 1. The CA governs nearly every aspect of the parties' relationship. It contains the design standards for the entire transit system, including the warning system and bridges. *See id.*, attachment 7, part B, infrastructure requirements.

It also contains provisions that govern relief available to a party when there has been a change in law or force majeure event. *See id.*, § 37 (change in law); and § 39 (force majeure).

Under the CA, DTP is responsible for operating the transit system through December 31, 2044. During this time DTP earns revenue from passenger fares. Therefore, it was important for DTP to receiver regulatory approval to enter into revenue service as scheduled.

In 2045 DTP is required to turn the system over to RTD, unless the period of DTP's operations is extended under the CA.

Under the CA, the A-line was scheduled to open and begin revenue service on April 22, 2016. The B-line was scheduled to open for revenue service on July 25, 2016. The G-line was scheduled to open for revenue service on October 26, 2016.

The FRA approved the A-line and B-line for revenue service by these dates. The G-line did not enter into revenue service until two and a half years later, on April 26, 2019.

The FRA waivers to open the A-line and B-line by the revenue service dates on the condition that DTP post crossing attendants at each at-grade crossing. The regulators required crossing attendants because the warning system was not operating properly. The crossing attendants were there to warn the travelling public in the event the gates did not activate properly and to prevent traffic problems and discourage bad driving behavior in the event the gates were down too long.

As discussed in more detail below the gates did not descend properly on three occasions approximately six weeks before the A-line was to open. There was a near miss as a result of one malfunction. The other problem was the that gates were down for long periods time. As a result of this long gate down time local traffic could not pass through the intersections. Law enforcement reported that this caused problems as officers responded to calls. These problems were discovered during the testing period in the run up to the April 22, 2016 opening date of the A-line.

DTP promised that it could provide a functioning warning system when it bid on the project. The warning system's design standards set forth in the CA and DTP's proposal are discussed next.

II. Warning System Design Standards

The CA required DTP to design a warning system for a train that crosses a street or highway at grade. *See* ex. 1, attachment 7, part B, § 9.10. The warning system had to be designed in accordance with applicable law and various highway safety standards. *Id.*, § 9.10.1.

One of these highway safety standards is MUTCD. *Id.*, § 9.10.1(a)(i). MUTCD defines constant warning time detection as:

> a means of detecting rail traffic that provides relatively uniform warning time for the approach of trains or light rail transit traffic that are not accelerating or decelerating after being detected.

See ex. 1015, ¶ 37.

Another one of these highway safety standards is part 3.3.10 of AREMA. *See* ex. 15. This standard provides for a minimum warning time of 20 seconds plus an allowance for clearance time. *Id.*

The CA also required that the at-grade crossings be designed to allow for quiet zones to be established pursuant to the FRA's regulations. *Id.*, § 9.10.2(a). The crossings required quiet zone approval so that a train could pass through an intersection without sounding its horn. DTP sought to achieve this quiet zone approval by using the WCAS to control traffic at the crossings. Therefore, approval of the WCAS was also necessary to obtain quiet zone approval.

The CA further provides that: "Except as directed by PUC, the total warning time shall be 20 seconds, plus any additional warning time that may be required for clearance and/or traffic preemption." *Id.*

These design standards are consistent with the following FRA regulation which was in effect when the parties entered into the CA:

> A highway-rail grade crossing warning system shall be maintained to activate in accordance with the design of the warning system, but in no event shall it provide less than 20 seconds warning time for the normal operation of through trains before the grade crossing is occupied by rail traffic.

49 C.F.R. § 234.225, ex. 1007, FRA regulations for maintenance, inspection and testing of an at-grade crossing signal systems.

This regulation is at the heart of DTP's change in law and force majeure claim. DTP claims that it designed the WCAS to provide the required minimum 20 seconds warning time. DTP contends that the FRA and PUC imposed a maximum

warning time that is found nowhere in the law, regulations, enforcement policies or existing industry standards. Therefore, DTP claims that there was a change in law that entitles it to relief for the cost of the crossing attendants and other damages that it incurred on the Eagle Project.

III. DTP's Proposal

The CA provides that the Concessionaire's proposal should be reasonably interpreted "as offers to provide higher quality items or to adhere to more stringent requirements than otherwise required by the other Contract Documents, or to perform services or meet standards in addition to or better than those otherwise required . . ." *See* ex. 1, § 1.3(b) & (c) at pp. 64 - 65.

DTP promised that the system was going to have "robust constant warning times" for the highway crossings. Ex. 2026, at p. 10. The technology employed could track "variable train speed to accommodate complex advance preemption applications." *Id.*, at p. 11. The system would slow a train down to prevent a train from entering the crossing too early. *Id*. DTP also stated that "[t]he PTC system will be used as an overlay to support reliable constant warning functions for variable train speeds." *Id.*, at p. 24.

Traditionally, crossing warning systems were triggered using conventional circuit detection methods in the tracks. A conventional circuit track warning system did not allow an adjustment of the warning time once it was activated. Therefore, if a train slowed after activation, the warning system could not be changed. This resulted in long wait time for traffic stopped at the crossing.

Furthermore, a conventional circuit track detection system could not be used in this environment because the trains were powered by electricity. A conventional system could not be used in this electrified environment to provide reliable warnings at the crossing. Therefore, the Eagle Project required a crossing warning system that used a wireless communication system to activate the warning system at the crossings.

The benefit of a wireless controlled warning system is that the warning time can be adjusted to account for a train that slows or stops. A train may slow or stop

due to operator handling, curves in the track or any number of other variables encountered while enroute to the crossing. The wireless system promised to reduce the amount of time that gates are down and local traffic is stopped at a crossing. This is one of the innovations DTP identified in its proposal. DTP specifically promised that "[i]f the train slows or stops, a longer time to arrival message time can be sent, which will allow the crossing to change plans (hold the gate open longer)." *Id*., at p. 11.

Therefore, DTP promised to provide a system that lessened warning times as compared to conventional warning systems. The Court finds this aspect of DTP's proposal to be an important selling point because the train system was operating in a busy urban environment. The trains were crossing main throughfares with heavy local traffic throughout the Denver metro area. A system that could adjust the warning times to lessen the amount of time that this traffic must wait at crossings was a key benefit of DTP's proposal. The WCAS offered a benefit that a conventional circuit track system could not provide.

In its proposal, DTP identified Wabtec as an industry leader with respect to PTC. *Id.* DTP selected Wabtec's system named I-ETMS to be the centerpiece of the WCAS. *Id.* Wabtec formed a subsidiary, XoRail, which then designed the WCAS system.

DTP also stated that the proposed warning system would allow the project to be certified for quiet zones. Ex. 2026, at pp. 3 & 27.

The individuals who designed the WCAS are Aaron Marx and Mike Steffen. They both testified at trial. Their testimony is reviewed in detail later. *See* § VII.B., *infra*, at pp. 33 – 39. Both agreed that this was the first of its kind system in the nation that used a wireless system to activate the warning system in an urban environment.

IV. Problems with the Warning System

DTP started testing the transit system during the fall of 2015. Testing continued through April 2016 in anticipation of opening the A-line by the revenue service date of April 22, 2016. During this testing period there were numerous

complaints from the public about extended gate down time that prevented traffic from passing through the intersections. *See* ex. 2353, log of public complaints re: A-line crossings from 9/8/15 – 3/23/16.[2]

During the fall of 2015, Denver police officers and representatives with Denver's traffic operations reported that the gates were down for long periods of time. *See* ex. 65, emails from 10/29/15 – 11/4/15 & ex. 2111, emails from 10/22/15 – 10/29/15. A Denver traffic engineer pointed out that this long gate down time presented problems for emergency responders trying to get through an intersection. *See* ex. 2111, at pp. 15 & 16, 10/22/15 email from Robert Dorroh, Engineering Specialist with Denver Right of Way Services.

Denver police officers also reported that long gate down time presented problems when responding to calls. *See id.*, at pp. 13 – 14, 10/22/15 email from J. Mohr, Sergeant with the Denver Police Department. *See also id.*, 10/22/15 email from Sergeant Ian Culverhouse reporting gates down along Smith Road that delayed his response to a call. Police officers continued to experience long gate time throughout October 2015 to the point when Sergeant Culverhouse stated in an email: "Quite frankly, at this point the situation is becoming a little ridiculous." *Id.*, 10/29/15 email at pp. 3 – 4.

At this time the issue came to the attention of the PUC. *See* ex. 65, 11/3/15 email from Dr. Fischhaber. Dr. Fischhaber is the PUC's Section Chief for Railroad Transit Safety. *Id.* Dr. Fischhaber expressed concern that the long gate down time was "putting public health and safety in jeopardy." *Id.*, at p. 2. Dr. Fischhaber recommended that RTD and DTP stop running the test trains, get to the bottom of the problem and propose a solution. *Id.* Dr. Fischhaber stated that if the problem is

[2] Some of the complaints discussed next were registered before the FRA granted approval for field testing of the WCAS. *See* ex. 1063, 12/17/15 FRA letter. However, many of the same complaints concerning "gate arms are stuck down" were registered after the FRA approved field testing of the WCAS. *See* ex. 2353, at pp. 5 – 9. Therefore, the Court finds that problems encountered as a result of long gate down before the FRA approved field testing of the WCAS are relevant to problems the travelling public experienced as a result of long gate down time after the FRA approved the WCAS for field testing.

not fixed the Commission "may take action up to and including shutting RTD's commuter rail operations down until these problems are fixed." *Id.*

Problems with warning system arose again on March 1, 2016. During testing on the A-line, there were three separate incidents when the gates did not close properly at the intersections with Chambers, Holly and Dahlia Streets. There was a near miss with a vehicle at the Dahlia Street crossing. *See* ex. 240, RTD's independent incident report, at p. 4. At the Holly Street crossing the train passed through the intersection with the gates still up. *Id.* At the Chambers Street crossing the crew was able to detect the problem and proceeding safely through the intersection. *Id.* Jacobs Engineering performed an independent investigation into these system failures. *See* ex. 174.

Also on March 1, 2016, a Denver traffic control engineer reported long flashing warnings at Quebec Street. Ex. 196, 3/1/16 email re: Feb 24 issue. The traffic control staff on the scene "reported a lot of undesirable driver behavior was occurring." *See id.*, 3/1/16 email from Mr. Dorroh.

Undesirable driving resulting from long gate down time was also noticed during limited testing on the G-line.[3] On June 22, 2016, an Adams County senior transportation engineer reported that there was long gate down time at the crossings on Lowell and Tennyson. *See* ex. 2443, email dated 6/22/16. An Adams County engineer on-site reported that "motorists were quite outraged." *Id.* The engineer observed "long lines, and frustrated driving techniques." *Id.*

In early April 2016, the FRA notified RTD that it had to apply for a waiver to commence revenue service on the transit lines by the April 22, 2016 deadline. In the application for a waiver RTD admitted that the "Wireless Crossing Activation System is designed to provide constant warning times for the at-grade crossings, but the WCAS will not be fully functional for the opening date of revenue service." Ex. 20, 4/7/16 letter to FRA.

[3] The Court notes that the WCAS was not in use on the G-line at this time as the FRA had not yet approved testing using the Positive Train Control (PTC). This evidence is mentioned, however, because it supports the fact that long gate down time will cause waiting motorists to engage in undesirable driving behavior.

The FRA granted a waiver but imposed a condition that each crossing be staffed with crossing attendants. *See* ex. 21, 4/19/16 letter from Robert Lauby to Greg Straight. The PUC issued a separate order also requiring crossing attendants at each at-grade crossing.

Even though the Independent Engineer had not approved the system and issued a Revenue Service Commencement Certificate ("RSCC") the parties reached a side agreement to allow the A-line to go into revenue service by April 22, 2016. *See* ex. 2031. The side agreement deducts $250,000 per month from DTP's payment after June 30, 2016 until the Independent Engineer approves the system and issues the RSCC for the A-line. In the side agreement the parties agreed that DTP must meet the applicable requirements of the FRA and PUC regarding operations "prior to the completion of the constant warning time function…" *Id.*

The parties entered into a second side agreement to allow the B-line to enter into revenue service by the date set forth in the CA, July 25, 2016. *See* ex. 2032. The second side agreement is similar to the first side agreement. It deducts an additional $100,000 from the service payment after September 30, 2016 if the Independent Engineer does not issue an RSCC for the B-line. *Id*. Greg Straight, the project director for RTD, testified that the purpose of these side agreements was to provide a further financial incentive for DTP to gain regulatory approval from the FRA and PUC, not to assign the cost of the crossing guards.

Thereafter the FRA conducted an extended review of WCAS before finally approving the system and allowing the removal of the crossing attendants. This extended regulatory review is discussed next. While the FRA analyzed the WCAS it prohibited DTP from testing the G-line. This delayed the G-line opening for approximately two and one-half years.

V. The FRA and PUC's Regulatory Review of the WCAS

After the FRA granted the waivers allowing the A-line and B-line to enter into revenue service, the FRA and PUC undertook a review of the warning system and the warning times traffic was experiencing at the crossings.

During the fall of 2016 independent engineering firms and Wabtec, the designer of the WCAS, analyzed the system and the warning times. Also during this time and throughout 2017 the parties held regular meetings with the FRA.

RTD and DTP had regular meetings with the FRA in Washington, DC from October 2016 through September 2017 when the FRA ultimately approved a plan for removal of the crossing attendants. Henry Stopplecamp, RTD's Chief Engineer, testified that DTP coordinated the presentations and arranged for all of the data collection and presentation to the FRA at these meetings. Mr. Stopplecamp also testified that DTP authored the official correspondence that contained the major proposals for the FRA to resolve the issues. But because RTD was the railroad of record, RTD would submit all of this correspondence to the FRA under RTD's name.

All of this analysis from 2016 – 2017 resulted in changes to the warning system. These changes ultimately brought the warning times in line with designed warning times. By September 2017 the FRA approved a metric that allowed the actual warning times at each crossing to fall within a twenty (20) second range. Under this metric (hereinafter "-5/+15 metric"), activation of the warning system may fall within a range of five (5) seconds before or fifteen (15) seconds after the programmed warning time. DTP contends that this new metric, among other things, is a change in law that entitles it to relief under the CA.

A. Analysis of the Warning System and Changes to the System

DTP retained an engineering firm, Ascent Signal, to review the warning times and propose an alternative analysis. *See* ex. 2073, Crossing Warning Time Review and Alternative Analysis, dated 9/20/16. Ascent Signal summarized the issue as follows: "Denver EP3 A-Line is experiencing issues relating to inconsistent and long crossing warning times that impede its ability to implement the quiet zone, disrupts roadway traffic, and threatens continued operation of this line." *Id.*, at p. 8. Ascent Signal's report states that the designed warning time fails to account for train handling and other variations in train speed. *Id.* Ascent Signal provides some recommendations for studying the warning system and implementing changes. *Id.*

Also around this time RTD retained an engineering firm, LTK Engineering Services, to evaluate the WCAS and suggest ways to improve warning time performance. *See* ex. 242, LTK's Crossing Constant Warning Times Investigation Report, dated September 16, 2016. This report concluded that the WCAS needed to "continue to improve its reliability", (*id.*, at p. 9), and suggested adjustments that could be made to the system to ensure constant warning times.

DTP ultimately changed the system after Wabtec reviewed the system and issued a white paper. A Wabtec analysis completed in August 2016 showed that the WCAS was not "functioning as intended" at several crossings along the A-line. *See* ex. 2732 (Wabtec report showing several crossings with warning times longer than designed times). *See also* ex. 2121, at p. 9, Wabtec analysis of July 2016 warning times in excess of design times at crossing along the A-line.

On September 9, 2016 Wabtec issued a white paper with a recommendation for improving the warning times. *See* ex. 2075. In this white paper, Wabtec describes the problem as follows:

> Due to concerns about excessive warning times for at-grade crossings a change in the Wireless Crossing Activation (WCA) is required. The original WCA software was designed with a conservative, safety first methodology that defaults to longer down time during normal operation and when anomalies occur. Since the Denver Eagle installation is an extremely challenging environment with numerous crossings and station stops, long approach circuits and many speed restrictions over 21 miles of track, there are longer than desired warning times. To counteract this, the WCA system will be modified to allow for the tuning of each unique crossing to account for driver behavior and unique approach condition factors.

Id., ¶ 1.2, at p. 5.

The white paper recommends an update to the software to adjust approach conditions adjustment factors (ACAF). *Id.*, ¶ 2.1, at p. 6. The white paper states that this software update will introduce greater flexibility in the system to account for operational conditions and train handling. *Id.* These changes will allow the system to predict a more accurate arrival time at the crossings, thereby lowering

crossing warning time. *Id.* The white paper also notes that this safety precaution can be implemented to prevent early arrivals at the crossings. *Id.*, ¶ 2.2, at p. 6.

On September 26, 2016 DTP submitted an implementation plan for the ACAF software update. *See* ex. 2157.

This proposal raised some concerns with the FRA. *See* ex. 2042, at pp. 2 – 3, 10/13/16 email from Dave Blackmore. The waivers originally granted by the FRA were about to expire. However, the FRA was not convinced that the warning system was operating reliably.

By September / October 2016, the matter had become so urgent that the FRA cited RTD's project manager, Greg Straight, personally with a notice of civil penalties.

The FRA's Administrator, Sarah Feinberg, personally approached DTP's board chair, David Ruston with the FRA's concerns about the project. Ms. Feinberg followed up with a letter to the board chairs of RTD and DTP in which she expresses concerns about the warning system and overall safety of the Eagle Project. *See* ex. 25, letter from Ms. Feinberg to Mr. Ruston and Tom Tobiassen, RTD's board chair.

The FRA was not convinced that the WCAS was operating in a reliable manner at this time. *See* ex. 26, October 14, 2016 letter from Robert Lauby, the FRA's Associate Administrator for Railroad Safety and Chief Safety Officer. The FRA was aware of an assessment underway by HNTB, another independent engineering firm hired by DTP. *Id.* The FRA set forth several steps that DTP and RTD would have to complete in order to give the FRA greater confidence that the warning system was operating properly. *Id.* It requested a briefing on the HNTB assessment, a preliminary action plan and requested that RTD schedule a face-to-face meeting to review the HNTB assessment and action plan. *Id.*

DTP hired HNTB to provide an independent assessment of the WCAS. *See* ex. 2247, HNTB report dated 10/28/16. The designers of the WCAS, Messrs. Steffen and Marx, were employed with HNTB at this time and they authored this report. At a meeting held on October 28, 2016, HNTB provided the FRA with a preliminary assessment of the WCAS and its preliminary recommendations. *See id.*

HNTB recommended changes to the WCAS that were designed to improve warning time performance. *Id. See also*, ex. 2043, 10/28/16 HNTB power point presentation, at p. 3 ("The modifications described in this presentation will enable the system to deliver design warning times."). In this power point presentation HNTB also recognized that "Higher than Design Warning Times are causing disruptions to the public." *Id.*, at p. 11.

At this meeting HNTB recommended a change known as "decoupling." *See* ex. 2247, § 4.6.3, at p. 4. Decoupling separated the preemption time from the warning time. The report stated that the expected result of decoupling is: "Wireless Express move warning times will be closer to design warning time eliminating observed 1s to 12s of extended ring time during grade crossing warning device activation. Less Gate Down Time outside of designed warning time will be experienced." *Id.*, § 4.6.3.3, at p. 5.

After receiving HNTB's preliminary findings and recommendation at the October 28, 2016 meeting, the FRA approved extensions of the waivers for another 90-days. *See* ex. 2483, 11/2/16 Letter from Mr. Lauby to Greg Straight.

HNTB's evaluation of the WCAS continued through March 2017. At a meeting held March 2, 2017 with the FRA, HNTB presented a comparison of how warning times are designed under other industry systems. *See* ex. 2149, 3/2/17 meeting minutes, ¶ E.10, at p. 3. HNTB stated that it is industry practice to include a parameter known as allowable acceleration (AA) in the designed warning time. *Id.* HNTB pointed out that AA was not included in the designed warning times for the crossings at issue here. *Id.* HNTB demonstrated that "when they add AA time range (10-15 seconds) to their calculations, the design warning times are on par with other implemented systems." *Id.* HNTB then presented simulations adding AA to the designed warning times for certain crossings at issue here. *Id.*, ¶ E.11, at p. 3. These simulations showed that when AA is added there is greater consistency between design time and testing data. *Id.*

When presented with this information the "FRA expressed concern that this missed parameter was just now being discovered and that RTD is not holding its contractors accountable." *Id.*, ¶ E.12, at p. 3.

On March 17, 2017, Wabtec prepared another white paper in which it sets forth a plan for incorporating buffer times, including allowable acceleration, in calculating warning times. *See* ex. 2529.

The parties and the FRA held another meeting one month later, on April 3, 2017, when many of the issues central to this case were discussed and a plan was introduced that ultimately resulted in adoption of the -5/+15 metric.

At the April 3, 2017 meeting, DTP presented a summary of the changes that had been made to the WCAS, including decoupling and ACAF deployment and optimization. *See* ex. 2166, power point, at p. 3. At this meeting DTP proposed adding 15 seconds to the design time using something called the wireless crossing activation buffer time (WCABT). *See id*., at p. 5. The WCABT included various buffer times, including "allowable acceleration buffer time." *Id*. In the power point, DTP states that "It is obvious that the above design warning time did not consider wireless crossing activation system." *Id*.

The Court finds it significant that the 15 seconds added for WCABT is also consistent with the 10-15 seconds that was added for the allowable acceleration, which was described as a "missed parameter" at the March 2, 2017 meeting. As discussed next, the -5/+15 metric ultimately adopted by the FRA is consistent with all of this analysis.

The Court also finds it significant that before these changes were implement traffic waiting at the crossings experienced long gate down time and unreliable performance of the warning system. The system operated more reliably and provided warning times consistent with designed warning times after DTP implemented changes for ACAF optimization, decoupling and adding WCABT.

The Court finds that the WCAS was not activating in accordance with its design when it went into operation. All of the analysis and changes to the warning system that occurred during the fall of 2016 and spring of 2017 reviewed above support this finding.

DTP argues that the system was operating properly and as designed at this time. DTP urges the Court to draw no conclusions from the analysis discussed

above. DTP claims that these changes were not really changes to the warning system. In addition, DTP claims that RTD prevented it from challenging the view that the system was not operating properly. According to DTP, it did not challenge the FRA during this regulatory review because it wanted to appease the FRA. DTP blames RTD for dictating this posture. DTP contends that RTD did not want to jeopardize its standing with the regulators. Therefore, DTP contends that it was forced into a posture where everyone operated from the premise that the system was not operating properly and that a change had to be demonstrated to appease the FRA.

Messrs. Steffen and Marx testified that they were forced to stand down even though they felt that the system was operating properly and as designed. The Court discusses Messrs. Steffen and Marx's testimony in more detail below. See § VII.B., *infra*, at pp. 33 – 39. However, as discussed later the Court was not persuaded by their characterization of this situation, or that the WCAS was operating properly or as designed.

DTP also urges the Court to give little weight to the HNTB analysis and other documents presented to the FRA showing that the actual wait times were longer than the designed times. DTP says that these documents were for discussion purposes only or that they were put together to not offend the FRA's regulatory authority.

DTP introduced the deposition testimony of, Greg Straight, RTD's project manager for the Eagle Project to support its claim that RTD forced it to stand down during this time. During the summer of 2016, Mr. Straight informed DTP that it will "foster contempt" with the FRA and PUC if it disagrees with their interpretations of the regulations. *See* ex. 201, 7/6/16 meeting notes. *See also* ex. 202, 8/15/16 communication from Mr. Straight refusing to send a letter to the FRA regarding the B-line as the letter as drafted "would do more damage with the FRA than it would in helping." But by October, 2016 Mr. Straight had become frustrated with the FRA. He stated that he is now convinced that the FRA is not acting in good faith and that it never had any intention of approving the system. *See* ex. 213, 10/14/16 email from Mr. Straight to Mr. Stopplecamp.

The Court is not persuaded by DTP's characterization of this situation or that the warning system was operating properly. Independent engineering firms reviewed the WCAS and found that changes were necessary to improve its reliability. Messrs. Steffen and Marx even authored the HNTB October 28, 2016 report which proposed decoupling as a way to improve long gate down time. *See* ex. 2247, HNTB report dated 10/28/16, § 4.6.3.3, at p. 5 (An expected result from decoupling was stated as "Less Gate Down Time outside of designed warning time will be experienced.").

Even Wabtec, the designer of the WCAS, stated in August 2016 that the WCAS was not "functioning as intended." *See* ex. 2732. Wabtec then proposed a software update for the ACAF which would provide for less gate down time and more accuracy in the warning times. *See* ex. 2075, ¶ 2.1, at p. 6. Later, when allowable acceleration was noted as a missed parameter, Wabtec presented a second white paper recommending changes to the system to incorporate this buffer time in the calculation of the designed warning time. *See* ex. 2529. Finally at the April 3, 2017 meeting with the FRA, DTP recommended adding WCABT to the design time noting that "It is obvious that the above design warning time did not consider wireless crossing activation system." *See* ex. 2166, power point, at p. 5. These changes were necessary because the WCAS was not operating properly.

Furthermore, the actual experience of the travelling public who encountered long wait time at these crossings is compelling evidence that the WCAS was not working properly. Traffic stopped at these crossings encountered long gate down time with no train in sight. Police officers complained that they were delayed in responding to calls as a result of long gate down time. On March 1, 2016 there was a near miss and two other instances when the gates failed to descend in time to stop traffic. In light of these actual experiences it is difficult to accept DTP's position that the system was working properly or as designed.

Finally, while these independent assessments were being put together and meetings were held with the FRA, DTP had discussions with Wabtec/XoRail regarding problems with the WCAS. In an October 12, 2016 email DTP sought to withhold payments to XoRail and blamed it for delivering a system that did not work. *See* ex. 2058, at p. 6, email from Tom Marzolf to Nima Tehrani. DTP stated

that: "Clearly the proposed WCAS is not functioning as intended and significant improvement is urgently needed in order to achieve acceptance by the FRA and PUC." *Id.* DTP ultimately reached a tolling agreement with Wabtec/XoRail in the event it needed to pursue these companies for problems with WCAS.

The Court, therefore, rejects DTP's position that the WCAS was operating properly and as designed. The actual experience at the crossings and later assessments and changes to the system support the fact that the warning system was not activating in accordance with its design. As discussed next, the FRA properly responded to this problem and employed existing regulatory standards when it developed the -5/+15 metric.

B. The FRA Employed Existing Regulatory Standards When Focusing on the Designed Time.

By the April 3, 2017, meeting the FRA was becoming more comfortable with the performance of the warning system. *See* ex. 104, 4/3/17 meeting minutes, ¶ E.9, at p. 3. The meeting minutes reflect that the system is becoming more reliable and stable. *See id.*, ¶ E.10, at p. 3 (noting "performance will improve above 90% for the proposed design time 'because a lot of work was done on the system'"). *See also id.*, ¶ E.16, at p. 4 (HNTB proposes increased monitoring on a crossing by crossing basis "to see how stable the system is becoming.").

In light of this progress the FRA started to explore the circumstances under which it could approve the system. The discussions held at this meeting illuminate the regulatory standards that the FRA employed when determining whether it could approve the system.

The April 3, 2017, meeting minutes reflect HNTB's proposal to add 15 seconds to the design time using the WCABT. *Id.*, ¶ E.9, at p. 3. The parties discussed implementing this change and monitoring the warning times to determine how stable the system is becoming. *Id.*, ¶ E.16, at p. 4. The proposed additional 15 seconds are consistent with the -5/+15 metric ultimately adopted by the FRA.

After receiving this proposal, the FRA then turns its attention to the circumstances under which it can approve the warning system. *Id.*, ¶ E.16, at p. 4. Mr. Lauby asked: "how do we know when we've achieved our goal? When is it good enough?" *Id.*, ¶ E.17, at p. 4. The discussion that followed focused on the warning times the system was designed to provide. Compliance with the designed warning time was always the FRA's guiding consideration. While a range of acceptable times was discussed the guiding standard relied upon by the FRA was always the design time. As discussed later, the FRA's focus on the designed warning times is important because meeting this time is an indication whether the system is activating in accordance with its design, as is required under 49 C.F.R. § 234.225.

In response to Mr. Lauby's question "when is it good enough?" Dave Blackmore, the FRA's Railroad Safety Program Manager for Applied Technology, "jumped in to note that, 'Just like we talked about at the last meeting, the design warning time is the design warning time, until it is changed.'" *See* ex. 104, 4/3/17 meeting minutes, ¶ E.18, at p. 4. The parties discussed a range of 10% or -/+10 seconds from designed warning times. *See id.*, ¶¶ E.18 – E.20, at p. 4. Devin Rouse, Division Director for Passenger Rail within the FRA's Office of Safety Analysis, even mentioned that when you add up all the allowable times to the minimum they "would add up to a maximum." *Id.*, ¶ E.23, at p. 4. After discussion of this and other points, the meeting notes state: "Mr. Blackmore responded that, 'We don't care about how you get to your formula, we only care about a design warning time.'" *Id.*, ¶ E.26, at p. 4. Mr. Lauby added later that the FRA will lift the waiver if the system is "operating as designed." *Id.*, ¶ E.31, at p. 5.

Mr. Rouse also noted that the designed warning times would be different from crossing to crossing based on variables specific to each crossing. *Id.*, ¶ E.15, at p. 3. Mr. Rouse's recognition of this variability among warning times for each crossing further reflects that the FRA is assessing compliance within its existing regulatory framework. As discussed below an FRA technical bulletin that existed when Wabtec/XoRail designed the system allowed for variability when designing warning times for each crossing.

The Court spends some time discussing this meeting because it occurred as proposals were made to stabilize the system so that FRA could finally approve the warning system and remove the crossing attendants. This discussion reflects that the FRA has been consistent in basing its compliance determination on whether the warning system is activating in accordance with the design of the system. In particular the FRA was focused on whether the system provided actual warning times that met the designed warning times. The FRA employed this standard as it moved forward with approving the warning system. There is also evidence that the designed warning times were the compliance standard governing the FRA's regulatory review of the warning system in 2016. *See* ex. 1768, 5/16/16 email from Gabe Neal to Peter Strange. Therefore, the FRA has been consistent in focusing on the designed warning times as the compliance standard.

On May 18, 2017, Region VI of the FRA issued a memorandum that outlined its expectations and laid out a path forward for final approval of the warning system. *See* ex. 30, 5/18/17 letter. This letter reviews the FRA regulations and enforcement standards which were in existence when DTP and RTD entered into the CA and when Wabtec/XoRail designed the WCAS. In this letter, Region VI again uses the designed warning time as the guiding standard.

In this letter, Region VI instructs DTP and RTD to work with the PUC "to adopt a prescribed warning time for the conventional and PTC wireless crossing systems at each public [Highway-Grade Crossing System], and to install and calibrate each system *to function as designed*." *Id.* (emphasis added). Once these prescribed warning times are designed and after testing confirms that the system is operating in compliance with FRA's regulations, the FRA will rescind the waivers and allow the crossing attendants to be removed and the G-Line to move forward. *Id.* In this letter, Region VI states: "As a policy matter, FRA's Signal and Train Control Division generally allows up to a 10-percent variance as an acceptable range of the prescribed warning time.[4]" *Id.*

[4] In the footnote Region VI states:

> Please note that the 10-percent variance generally allowed is not to be part of the algorithm used to calculate the prescribed warning time. The variance is merely

On May 25, 2017, RTD issued a letter to the FRA which followed up on a May 22, 2017 meeting with the FRA. *See* ex. 31, letter from D. Genova, RTD's General Manager to Mr. Lauby. At this meeting RTD and DTP proposed adding the 15-second WCABT to the warning time. *Id.* With this change, RTD certifies that the system is working reliably and is ready for field demonstration. *Id.*

Mr. Stopplecamp testified that the May 22, 2017 meeting laid the groundwork for developing the -5/+15 metric and providing a path forward for removal of the crossing attendants. At the May 22, 2017 meeting there was an extensive discussion between the FRA, DTP and HNTB about the buffer and other times that needed to be added to adequately assess whether the warning system was meeting the design times. *See* ex. 2047, 5/22/17 meeting minutes. Mr. Choudri of HNTB suggested adding 15 seconds to meet design times. *See id.*, at ¶¶ E.77 & E.92, at pp. 9 – 10.

On June 16, 2017, the FRA approved the proposal contained in the May 25, 2017 letter. *See* ex. 32, 6/16/17 letter from Mr. Lauby to Mr. Straight. In this letter Mr. Lauby reiterates the existing FRA regulations that guide the FRA's approval of the system. Mr. Lauby notes the unique nature of this warning system and that it does not provide consistent warning times that are observed in other activation systems. *Id.* With that said, Mr. Lauby also states: "Nonetheless, FRA regulations do not prohibit the use of grade crossing activation circuits that provide wide variations in warning times as long as the system is *operating as designed* and the minimum warning time is not less than 20 seconds." *Id.* (emphasis added). Mr. Lauby instructs RTD to develop a proposal for measuring the warning times at each crossing. *Id.*[5]

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an enforcement policy tool used by the FRA to evaluate compliance with Federal regulations.

[5] Mr. Eby, DTP's FRA expert, testified that Mr. Lauby's June 16, 2017 letter was designed to "recover" from Region VI's May 18, 2017 letter, which set forth a 10% enforcement standard. As explained later the FRA did not ultimately use a 10% standard to determine whether the warning system provided the designed warning time. In any event, the Court is not persuaded that Region VI's letter was incorrect as the actual standard used by the

The day after submitting the May 25, 2017 letter containing DTP's proposal for adding the 15 seconds for WCABT, DTP submitted a notice to RTD claiming that it is entitled to relief as a result of a change in law and force majeure event. *See* ex. 8, 5/26/17 letter.

The May 18, 2017 memorandum from Region VI and June 16, 2017 letter from Mr. Lauby recite a regulatory approach that is not new. The standards set forth in these letters have been in place since the start of the project. These standards always required a warning system to activate in accordance with the design of the system, but in no event provide less than 20 seconds warning. *See* 49 C.F.R. § 234.225. To determine whether the WCAS met this standard the FRA focused on whether the system was activating to provide the designed warning times. This regulatory approach was consistently applied throughout the FRA's review of the warning system. This standard guided the FRA's discussions at the April 3, 2017 meeting. It is also reflected in the May 18, 2017 and June 22, 2017 letters in which the FRA laid out a path forward for approval of the warning system.

Therefore, the Court finds that the FRA was guided by its existing regulations and standards when it reviewed the WCAS in 2016 and 2017.

DTP maintains that the WCAS complied with these standards because it was designed to provide the minimum warning time of 20 seconds. According to DTP any regulation imposed beyond this minimum time requirement amounts to a change in law. This argument, however, fails to account for a system that does not operate properly. A warning system that is designed to meet the 20 second minimum warning time cannot be compliant if it fails in other important aspects of its operations.

FRA to determine compliance. Region VI's letter stated that the FRA's compliance determination is guided by whether the warning system is *operating as designed*. This is the standard set forth in 49 C.F.R. § 234.225, and is the standard set forth in both Region VI's May 18, 2017 memorandum and Mr. Lauby's June 16, 2017 letter. Therefore, the Court finds that Region VI's letter is consistent with the FRA's regulations and enforcement standards.

A system that has long gate down time and gates that fail to descend reliably is not activating in accordance with its design. These were the circumstances that confronted the FRA when it undertook this regulatory review of the WCAS. The discussions that occurred at the April 3, 2017 meeting and the standards set forth in the Region VI's May 18, 2017 memorandum and the FRA's June 16, 2017 letter reflect that the FRA was basing its compliance determination on its existing standards. The FRA was looking at the warning times that the warning system was designed to provide when determining whether it was activating in accordance with its design.

The Court finds that the FRA was employing existing standards when it focused on the warning times that the warning system was designed to provide at the crossings. The FRA, therefore, was not analyzing the warning times using a new standard or a new interpretation of its regulations and enforcement policies.

C. The FRA Adopts the -5/+15 Metric and Approves Removal of the Crossing Attendants

After receiving FRA approval as set forth in the June 16, 2017 letter and direction to develop warning times at each crossing that comport with the design of the system, DTP developed performance criteria for the WCAS. *See,* ex. 2245, Grade Crossing Warning Time Measurement and Performance Criteria, dated 9/5/17.

On September 8, 2017 DTP and RTD proposed that the FRA adopt the -5/+15 metric when determining whether actual warning times complied with 49 C.F.R. § 234.225 and the FRA's enforcement standards. *See* Ex. 35, 9/8/17 letter from Henry Stopplecamp to Mr. Lauby. The letter references an FRA enforcement policy which finds a violation of 49 C.F.R. § 234.225 if there is a "significant difference" between the warning time and the specified prescribed warning time for a crossing. *Id.* The letter also notes that FRA enforcement policy has deemed ± 5 seconds or ± 10% to be a "significant difference." *Id.* The letter states that these measures are not appropriate for the Eagle Project. *Id.* Therefore, the letter proposes that the FRA adopt the -5/+15 metric. *Id.*

Again, this metric allows the actual warning times at each crossing to fall within a twenty (20) second range of the designed warning time. Under the -5/+15 metric, activation of the warning system may fall within a range of five (5) seconds before or fifteen (15) seconds after the programmed warning time. The warning system time must also provide the minimum 20 second warning time required under 49 CFR § 234.225.

The FRA accepted this proposal on September 28, 2017. *See* ex. 36, letter from Mr. Lauby to Mr. Stopplecamp. The FRA also approved a plan for gradually removing the crossing attendants. *Id.* In October 2017, the FRA approved RTD's request to remove crossing attendants from the B-line, subject to a demobilization plan. Ex. 1540.

D. The PUC Approves the -5/+15 Metric and Removal of Crossing Attendants

The FRA required the PUC to approve an appropriate plan for removal of the crossing attendants at all public crossings. After initially rejecting RTD's proposal, the PUC eventually adopted the -5/+15 metric for measuring compliance with the designed warning times it approved in 2013 and 2014.

When the PUC approved the original applications for each crossing in 2013 and 2014 there was a stated minimum warning time for each crossing. *See* ex. 1871, summary of PUC applications and orders. The PUC approved separate warning times for each crossing, but they all fell within a range of 25-34 seconds for A-line trains, and 22-36 seconds for G-line trains. *Id.* The B-line had only one private crossing, which did not require PUC approval. The PUC, however, set forth no maximum warning times when it entered its original orders in 2013 and 2014. *Id.*

On September 27, 20217, the PUC initially denied RTD's request to add 15 seconds for WCABT to the designed warning time, citing a lack of evidence. *See* ex. 1176, PUC orders issued 9/27/17 & 10/4/17. However, the next day, on September 28, 2017, the FRA issued its approval of the -5/+15 metric. *See* ex. 36. The PUC granted reconsideration of its order and referred the matter for a hearing before an ALJ on February 15, 2018.

After this hearing the matter was presented to the PUC for approval. The PUC approved the -5/+15 metric for measuring compliance with the designed warning times. *See* ex. 1486, April 25, 2018 order. In this order the PUC also approved removal of the crossing attendants on a crossing-by-crossing basis after field demonstrations verify that the WCAS is working as designed.

DTP relies on the PUC's April 25, 2018 order to support its change in law argument. DTP refers to language from this order recognizing that there is no maximum warning time imposed by law. *See id.*, ¶ 105, at p. 39. DTP also relies on a concurring opinion by one Commissioner pointing out how long the process as dragged out. *See id.*, at pp. 48 - 52.

The Court finds that the PUC's April 28, 2018 order is consistent with the FRA's regulatory approach. The PUC's regulatory approach is well stated in the majority opinion. *See* ex. 1486, ¶¶ 96 – 99, at p. 37. The PUC was satisfied that the system was operating properly after the ALJ received evidence demonstrating that actual warning times fell with an acceptable range of programmed warning times for each crossing. *See id.*, at ¶ 98.

Like the FRA, the PUC's analysis was focused on compliance with the designed warning times. A warning system that provides actual warning times in line with designed warning times is evidence that the system is activating in accordance with its design. This regulatory approach employs FRA regulations and enforcement standards that existed when the parties entered into the CA and when Wabtec/XoRail designed the system. Therefore, the PUC's regulatory approach did not employ a new standard.

Furthermore the length of time that it took for the PUC to approve the system and remove the crossing attendants does not support a change in law claim. The Court finds that this prolonged process was justified considering the public safety that was at stake.

The PUC is the local regulatory agency responsible for public safety at railroad crossings. The PUC is also the local agency that received public complaints about long gate down time, unreliable warnings and train horn noise. Several of these complaints came directly from law enforcement and Denver traffic

control who were impacted by the long gate down time. The PUC, therefore, felt the direct effects of the warning system's failures. Its regulatory scrutiny had to be commensurate with the risk posed by a warning system that is not operating in accordance with its design. The length of time that it took the PUC to approve removal of the crossing guards was appropriate considering the risks involved. The Court finds that this delay in approval does not amount to a change in law or any grounds for regulatory overreach.

Therefore, by April 25, 2018, both the FRA and PUC had approved the -5/+15 metric. Thereafter the FRA and PUC approved a plan submitted by RTD and DTP for demobilization of the crossing attendants. *See* ex. 1544, 6/18/18 letter from FRA approving demobilization plan.

VI. The FRA's Notice of Violations and Later Dismissal of the Violations

After FRA and PUC approved removal of the crossing attendants, the FRA continued to monitor wait times.

On November 7, 2018 the FRA issued a notice of violation for long wait times at the BNSF fuel yard crossing along the B-line and a violation for having only one flagger. *See* ex. 1810 & summary ex. 1878. Also on November 7, 2018 and May 6 & 13, 2019 and October 23, 2019, the FRA issued notices of violations for long wait times at several crossings along the A-line. *See* ex. 1810 & summary ex. 1878.

The inspection reports included in these notices of violations noted the wait times for each crossing using the -5/+15 metric that had been approved by the FRA in the September 28, 2017 letter. *See* ex. 1810 & summary ex. 1878.

DTP disputed these violations in a legal memorandum filed November 7, 2018 by the law firm of Gibson, Dunn and Crutcher. *See* ex. 39. Gibson Dunn supplemented this brief with another legal memorandum in April 2019. *See* ex. 1553. In both of these briefs DTP argued that the FRA was imposing a maximum warning time that is not found in any of the FRA's regulations or other legally enforceable directives. These legal memoranda pointed out that the only standard applicable to warning times is the requirement that the warning system provide a

minimum warning of 20 seconds. Therefore, these legal memoranda argue that imposing a standard with a -5/+15 range is a new standard that is not found anywhere in the FRA's regulatory standard.

On August 23, 2019 the FRA agreed to dismiss the violations. *See* ex. 118 email form Mr. Alexy to Andrea Warfield. The FRA also stated that enforcement staff will be instructed to not consider long wait times a violation unless it is because of system malfunction. *Id.* The FRA finally states that it will "begin internal discussions regarding clear guidance about long warning times and false activations." *Id.* On November 14, 2019, the FRA finally dismissed the violations against RTD and DTP. *See* ex. 50.

DTP argues that Mr. Alexy's August 23, 2019 email and dismissal of the violations demonstrate that the FRA was applying a new standard against DTP. DTP argues that the Court should view the FRA's dismissal of the violations as a recognition that the FRA erred in applying maximum wait times during its regulatory scrutiny of the warning system.

DTP also contends that this is a significant event because this is the first time in the entire regulatory process when DTP was allowed to advocate on its own behalf. When it was finally allowed to challenge the FRA and set forth the law and regulations, DTP concludes that the FRA had no basis to regulate long warning times.

The Court does not see the FRA's dismissal of the violations the same way as DTP. First, the Court was persuaded by RTD's expert and former FRA Chief Safety Officer, Mr. Gavalla, who testified that no conclusions can be taken from dismissal of a notice of violation. Second, Mr. Alexy's email supports the FRA's consistent application of its regulations against DTP. The FRA was not reversing field in this matter when it dismissed the violations.

The Court reviews Mr. Gavalla's testimony in more detail below. *See* § VII.C., *infra*, at pp. 39 – 45. Mr. Gavalla testified that the FRA has a long-standing enforcement policy prohibiting long warning times. Pursuant to this enforcement policy, Mr. Gavalla testified that it is appropriate to make compliance determinations by comparing the designed warning times with actual warning

times. He testified that the FRA's regulatory review of the warning system in this matter was consistent with this long-standing policy. He is of the opinion that the FRA did not apply a new or different standard to the warning system.

Mr. Gavalla also testified that when confronted with long warning times the FRA has various enforcement options. It can issue waivers and impose conditions on a railroad that still allow it to operate. Another enforcement option is to require a railroad to file an action plan. Finally, the FRA can issue notices of violations. Mr. Gavalla also testified that the FRA is not in the business of collecting fines to get a railroad into compliance. The FRA may issue notices of violation and later dismiss these notices or waive the fines to bring the railroad into compliance.

The FRA followed this progression of enforcement in this case. In this case, the FRA granted a waiver with conditions. It allowed DTP to enter into revenue service without final approval of the warning system. This waiver was granted with a condition that DTP staff each crossing with crossing attendants. The FRA also imposed several action plans with regular follow-up. Under these action plans, DTP was required to provide data showing progress in the warning system and improvement in the warning times.

Ultimately the FRA got to the point where it was comfortable with the reliability and stability of the warning system. At that point the FRA explored the circumstances under which it could approve the warning system and remove the crossing attendants. As discussed at length above, the April 3, 2017 meeting was the inflection point in this process. *See* § V.B., *supra*, at pp. 20 – 21. Throughout these meetings and correspondence, however, with DTP and RTD the FRA was clear that the FRA could always take enforcement action based on the designed warning times. *See* ex. 104, 4/3/17 meeting minutes, ¶ E.18 (Mr. Blackmore observed that whatever is decided as the metric, "we can only enforce by the design warning time"). *See also id.*, at ¶¶ E.31 & E.35 (Mr. Lauby notes that when waivers are removed the FRA will be left with issuing notices of violations as an enforcement option).

After the FRA approved the-5/+15 metric it continued to monitor warning times to determine if they fell within this range of the design times. On April 8,

2018 Mr. Lauby notified DTP and RTD that the FRA was concerned about the long wait times. *See* ex. 37, letter from Mr. Lauby to Mr. Stopplecamp. In this letter Mr. Lauby states that the FRA may bring an enforcement action if the warning times do not improve. *Id.*, at p. 3. When the times did not improve the FRA then issued the notices of violations. *See* ex. 1878, summary of notices of violations issued November 7, 2018, May 6 & 19, 2019, and October 23, 2019. As just discussed, the FRA ultimately dismissed these violations and did not impose any penalties.

The FRA followed this enforcement progression in this action. This sequence of events supports Mr. Gavalla's testimony that this progression is consistent with the FRA's long-standing enforcement policies. Therefore, the Court does not view the dismissal of the notices of violations as a reversal of course or admission by the FRA that it was employing an unannounced standard. The Court finds Mr. Gavalla's testimony credible that the FRA would use this progression of enforcement in order to bring a railroad into compliance. That is what occurred in this case.

DTP places significance on Mr. Alexy's statements in the August 23, 2019 email that the FRA will not cite long warning times as a violation unless there is a malfunction and that the FRA will begin internal discussions "regarding clear guidance about long warning times and false activations." *See* ex. 118, 8/23/19 email. DTP argues that Mr. Alexy's statements indicate that there is no existing guidance on long wait times.

The Court does not see Mr. Alexy's statements in the same way as DTP given the context in which he sent this email. Mr. Alexy made these statements in response to a request from Andrea Warfield with Fluor. Fluor is one of DTP's joint venture owners. Ms. Warfield is an executive with Fluor and was involved in negotiating the language of the letter that the FRA planned to send dismissing the violations. Ms. Warfield proposed that the letter state that: "*The FRA has determined that existing regulations and guidelines have not resulted in the consistent application of FRA authority relative to each railroad at the same or similar crossings.*" *See id.*, 8/22/19 email from Andrea Warfield to Mr. Alexy.

Mr. Alexy rejected this language and stated that he does "not intend to issue a second revision to the letter." *Id.*, 8/23/19 email from K. Alexy. He then made the statements indicating that long warning times will not be considered defects or violations and that the FRA will evaluate long warning times and issue clear guidance. *Id.*

This is not an admission that the FRA's regulatory scrutiny of the warning system lacked a regulatory basis. In fact, Mr. Alexy rejected proposed language that suggested the FRA treated DTP inconsistently. The Court finds that no conclusions can be drawn from Mr. Alexy's response. If anything Mr. Alexy's rejection of Ms. Warfield's language supports the fact that the FRA was applying its existing regulations consistently. This regulatory scrutiny always focused on whether the warning system was operating in accordance with the designed warning times. This is consistent with the FRA regulations and enforcement policies that existed when the parties entered into the CA and when Wabtec/XoRail designed the warning system.

Therefore, the Court rejects DTP's position that the FRA's dismissal of the violations and penalties indicates a lack of regulatory support for the FRA's review of the warning system. The Court was persuaded by Mr. Gavalla's testimony that the FRA was exercising an enforcement tool when it asserted and then withdrew the notices of violations in order to bring the warning times into compliance.

VII. DTP's Change in Law Arguments and Evidence

A. Overview

DTP argues that the -5/+15 metric is a change in law. Before the FRA approved this standard, it existed nowhere in the FRA's regulations or enforcement policies. DTP prepared a summary exhibit that demonstrates the effect of adopting the -5/+15 metric. *See* ex. 1871. The -5/+15 metric adds 20 seconds to the original warning times as approved by the PUC in 2013 and 2014 for the A-Line and G-Line. *Id*. The summary exhibit points out that the -5/+15 metric changed the compliance standard from a minimum warning time requirement to a maximum warning time. *See id.* DTP maintains that this is a new standard that qualifies as a change in law.

DTP witnesses testified that there is nothing in the law, regulations, agency interpretations, enforcement standards or industry standards that set forth a maximum wait time. A maximum wait time would create a safety issue because it would encourage a train to leave a station early or speed in transit to reach the crossing in order to satisfy the maximum warning time.

Also according to DTP, the regulators were asking for the impossible. DTP presented evidence that no crossing system can account for variability in train handling and operations as it moves between crossings and stations.

The Court first addresses the testimony of Mike Steffen and Aaron Marx, the designers of the system. They provided testimony as to the design of the system and their opinions that it was operating properly and as designed. The Court was not persuaded by their testimony.

The Court then addresses the expert testimony presented by Cliff Eby and George Gavalla. Mr. Eby testified on behalf of DTP. Mr. Eby concludes that the FRA applied a new standard when reviewing the warning system.

Mr. Gavalla testified on behalf of RTD. He concludes that the FRA applied existing regulations and long-standing enforcement policies when reviewing and ultimately approving the warning system as modified.

The Court was persuaded by Mr. Gavalla's testimony that the FRA employed existing regulations and long-standing enforcement policies. Therefore, the Court finds that there was no change in law.

B. Testimony Presented by Messrs. Steffen and Marx

DTP called the designers of the WCAS to testify at trial. Mike Steffen and Aaron Marx designed the WCAS when they were with Wabtec. Messrs. Steffen and Marx also worked at HNTB when DTP hired it to perform the independent review of the system in 2016. They prepared the October 28, 2016 presentation that provided the FRA with a preliminary assessment and findings regarding the WCAS. *See* ex. 2247.

Messrs. Steffen and Marx provided consistent testimony. Mr. Steffen agreed that the system was new and a first of its kind in the nation. Mr. Marx was somewhat more circumspect on this point, but ultimately admitted that using a wireless system to control a crossing warning system was an innovation over existing warning systems. Despite this minor qualification from Mr. Marx, the Court finds from their testimony that this was a new type of warning system.

Therefore, the FRA was dealing with a warning system that had not been used in a busy urban environment previously. This consideration heightened the need for regulatory scrutiny of the warning system.

Messrs. Steffen and Marx were critical of the FRA's scrutiny of the system. They both testified that the system was operating as designed and in accordance with existing FRA regulations and industry standards. These standards required the warning system to provide the 20 second minimum warning time. They maintain that it satisfied this minimum warning time requirement.

They further testified that it was not designed to have a maximum or constant warning time. They both agreed that it would be unsafe to have a maximum or constant warning time. Trains would be discouraged from leaving the station until it is safe.

They were also critical of the idea that the warning system could provide a consistent warning time that was going to fall within a range of the designed warning time. A consistent warning time does not account for variations in train handling and other variables in actual operations, including s-curves in the track, station dwell and train speed. These variables are not going to be known until the trains start moving passengers and encounter these real world conditions. Therefore, they testified that it is not feasible or safe to mandate a maximum or consistent warning time.

The testimony of Messrs. Steffen and Marx captures the essence of DTP's theory of liability in this action. They claim that the system was operating as designed and that the FRA was holding it to a standard that did not exist when it was designed. Therefore, they support DTP's position that there was a change in law.

DTP also points out that RTD did not present any experts to testify regarding the design of the WCAS. Messrs. Steffen and Marx were the only train signal engineers qualified as experts to testify to the design of the warning system. Therefore, DTP argues that their testimony must be accepted as uncontroverted.

The Court was not persuaded by Messrs. Steffen and Marx's testimony. Their testimony was inconsistent with their own assessments in 2016 and with persuasive independent evidence that showed that the warning system was not working properly or reliably. In light of this independent evidence it was not necessary to present expert testimony countering their testimony.

But more fundamentally their testimony was inconsistent with the facts and circumstances as they existed. The warning system did not work reliably. The FRA's regulations and enforcement policies allow it to step in and ensure that the warning system is activating "in accordance with the design of the warning system." *See* 49 C.F.R. § 234.225. The FRA did just that in this case.

Messrs. Steffen's and Marx's testimony at trial was inconsistent with positions that they took in 2016 and 2017 when the FRA brought the system under review. By 2016 Messrs. Steffen and Marx were working for HNTB. When the FRA started to scrutinize the system, DTP hired HNTB to perform an independent assessment of the system.

Messrs. Steffen and Marx co-authored a report in October 2016 that set forth preliminary findings. *See* ex. 2247. This report recommended changes to the WCAS system. *See id.*, at ¶ 4.6.3, at pp. 4 – 5. It proposed "decoupling" as a way to improve warning times. *Id.*

At trial Messrs. Steffen and Marx explained that they felt they needed to take this approach, even though they didn't agree that the system was broken. They took this approach, however, to appease the FRA. Mr. Steffen testified that the FRA was approaching the system as flawed and in need of fixing. He didn't feel as if he had the freedom to push back against the FRA because it had the power to shut down the entire system.

Mr. Marx testified similarly. He felt that he needed to come up with a fix that didn't really affect the functionality of the warning system, but which could be presented as a solution to the FRA. Both witnesses testified consistently that they felt as if they were "walking a thin line" with the FRA. Although they disagreed with the FRA, they needed to go along with the belief that the system was flawed and propose a solution that fixed it. In this sense, Messrs. Steffen and Marx echo DTP's theory that RTD controlled the relationship with the regulators. Therefore, they were not at liberty to push back.

This theme was consistent among DTP's witnesses. Another DTP witness, Ann Hertzberg, testified in her deposition that DTP was just trying to satisfy the regulators. She stated that: "The wireless crossings have always worked as intended, it's just people kept telling us they weren't." Herzberg depo. at p. 147, ll. 5-21.

This view of the situation, however, does not match the independent evaluations and changes to the system. It also does not match the experience of the travelling public.

Changes to the system had results. Analyses showed that actual warning times came into line with designed warning times when the system was modified throughout the regulatory review process. *See, e.g.*, ex. 1486, 4/25/2018 PUC order, ¶ 98, at p. 37 (bell curve data showing approximately 91% of the warning times within a range of -5/+15 seconds around the programmed warning time, and approximately 67 to 70 percent of the warning time within a range of -5/+5 seconds around the programmed warning time). Therefore, the warning system improved performance when the WCAS was modified. This is persuasive evidence that the system was not operating properly or as designed.

The actual experiences of the traveling public show that the system was not operating properly or as designed. When the system went online under actual conditions the gates were down for a long time. This long gate down time created traffic problems and problems for police officers and emergency responders. This is a busy urban environment where every day traffic needs to get through. Aside from these everyday delays, it posed a genuine problem for emergency responders.

Traffic needed to be able to get through these crossings without inordinate delays. Long down time of the gates is not consistent with a system that worked.

Likewise the three instances on March 1, 2016 when the gates didn't descend in time could have had tragic results. Fortunately, there were no accidents that day, but there was a near miss. Yet, in light of these actual experiences, Messrs. Steffen and Marx were steadfast in their testimony that the system was operating properly and as designed. The Court cannot credit their testimony in light of these actual experiences.

Messrs. Steffen and Marx used the decoupling change as an example of the flaws in the FRA's regulatory approach. They testified that there was only one significant change made to the WCAS to come out of the FRA's regulatory review. Messrs. Steffen and Marx testified that they decoupled the automatic train control (ATC) and PTC systems. Messrs. Steffen and Marx testified that 90% of the change made to the system was this decoupling.

They testified, however, that decoupling resulted in no change in the time that motorists would have to wait at a crossing. Mr. Steffen presented a video demonstrating how this change made no difference in the wait times the public experienced. Therefore, they felt that the decoupling was not really a change, but had to be presented as a solution to appease the FRA.

The Court was not convinced by Messrs. Steffen's and Marx's characterization of the changes to the warning system and their view that they had to appease the FRA. They designed this system and were invested in defending it. They went to great lengths to defend the system even though it had problems that resulted in long gate down time and gates that did not descend in time on three occasions. As discussed above, there is persuasive evidence that these problems created traffic backups and posed safety risks to the traveling public.

Messrs. Steffen and Marx also testified that the FRA employed a new standard when it imposed a maximum wait time. They designed the WCAS with what they understood to be the existing the regulatory scheme. When they designed the system it did not have a maximum wait time. Yet, this is the standard

that the FRA was using. Therefore, they were critical of the FRA's focus on long wait times.

Casting the issue as imposing a maximum wait time takes a narrow view of the FRA's regulatory approach. This view is separated from the need for a designed warning time and the circumstances under which the -5/+15 metric was created.

First, there must be some meaning to a designed warning time. The FRA approached the designed warning time as a measure of whether the warning system was activating in accordance with its design. This is consistent with its existing regulations and enforcement policies.

Second, the -5/+15 metric was developed by DTP and adopted by the FRA to give meaning to the designed warning time. DTP developed the -5/+15 metric and proposed it to the FRA as a solution in September 2017. *See* ex. 35, 9/8/17 letter. This proposal followed nearly a year and a half of assessments and evaluations of the WCAS by independent engineering firms. Even HNTB with Messrs. Steffen and Marx performing the analysis found problems and proposed changes to the system. As found above, these assessments and proposed changes are persuasive evidence that there was a problem with the warning system and that changes were required in order for it to operate properly.

Furthermore, DTP developed and proposed the -5/+15 metric. It is a way to measure the performance of the warning system. This performance is measured against the designed warning times that the PUC approved in 2013 and 2014. It is a measure whether the warning system is activating in accordance with its design. Therefore, the -5/+15 metric is consistent with the FRA's existing regulations and enforcement policies.

There were legitimate safety concerns with a warning system that didn't perform properly. The Court is also convinced that dangerous driving habits can result if the gates are down for a long period of time. The four quadrant gates and concrete medians prevent drivers from charging through the crossing. Dangerous driving behavior was observed by staff with Adams County and Denver traffic control who were on the scene at the crossings during the testing phase when long

gate down time was observed. Also as discussed below, the FRA's compliance guidance that existed when the system was designed recognized that long gate down time can result in bad driving behavior. Thus, this dangerous driving behavior was not just a theoretical risk. Given all of these safety risks and the populated urban environment in which these trains operated the FRA was justified in thoroughly examining the wait times and determining whether the system was operating as designed.

When viewed in this context the Court finds that the FRA was not imposing a new standard when it took action to make sure that the warning system operated properly and as designed. The FRA was reacting to a new technology that was being used for the first time in a busy urban environment. The FRA was also reacting to the system failures that plagued this system in its testing phase. When viewed in this context the Court finds that it is not proper to view the FRA's regulatory approach as imposing a new standard. It was trying to ensure that the system was safe and worked in the busy urban environment in which the trains were operating.

The Court finds that the FRA followed its existing regulations and enforcement policies when it brought the WCAS under scrutiny. The FRA's regulatory approach was based on the compliance standard set forth in 49 C.F.R. § 234.225, which requires a warning system to activate in accordance with its design, but in no event provide less than 20 seconds warning time. A system that does not operate properly cannot be considered to be activating in accordance with its design. The FRA's response was designed to make the system operate reliably and properly. The Court finds that the FRA was acting within its authority to address this problem. No change of law can result from the FRA ensuring that a warning system operates properly and in accordance with its design.

C. Testimony Presented by Messrs. Eby and Gavalla

DTP presented expert testimony from Cliff Eby to support a change in law. Mr. Eby was the FRA's deputy administrator from 2005 – 2008, and its acting administrator from 2008 – 2009. DTP hired Mr. Eby to consult on the Eagle Project in 2016 and to facilitate communications with the FRA. Mr. Eby also

testified before the PUC in 2018, when the PUC ultimately approved removal of the crossing attendants.

Mr. Eby testified that the FRA applied a new interpretation of its regulations and enforcement standards when reviewing the warning system. He also opined that the Eagle Project was treated differently than other railroads.

Mr. Eby specifically testified that the FRA applied a maximum warning time that is not found in the FRA's regulations, enforcement policies or agency interpretations. He also testified that the -5/+15 metric is a new standard. He testified that the FRA failed to follow its own testing standards set forth in Technical Bulletin S-08-02, which the FRA issued in July 2008.

Mr. Eby walked through all of the FRA regulations, AREMA standards and MUCTD standards relating to warning systems and wait times. These standards are set forth in § II, *supra*, at pp. 6 – 8, where the Court discusses the warning system's design standards. Mr. Eby agrees that there is only a 20 second minimum warning time set forth under these regulations and standards.

Mr. Eby was critical of the FRA for focusing on long wait times. He testified that a railroad can add time to this 20 second minimum to account for variabilities in train operations and still be in compliance with the FRA's regulations and industry standards. Mr. Eby was of the opinion that the FRA was improperly leveraging its authority to grant quiet zone approval in order to achieve shorter warning times. Therefore, he supports DTP's position that it had to stand down and appease the FRA throughout this regulatory review process.

Mr. Eby believes that the FRA ultimately realized the flaw in its approach to the warning system when it dismissed the notices of violations in 2019. Mr. Eby pointed out that Technical Bulletin S-08-02 provides the standards for testing the warning system once a year. These annual tests are to be conducted under controlled conditions, with the train operating at a constant speed. As discussed above, the FRA issued notices of violations to DTP in 2018 for violating the -5/+15 metric. *See* § VI, *supra*, at pp. 28 – 32. Mr. Eby testified that it is inappropriate to apply a testing standard to everyday conditions under which the warning system operates. He testified that the FRA was applying this standard to

actual conditions where any number of factors will cause a warning time to deviate from the designed times. He believes this is an inappropriate application of Technical Bulletin S-08-02. Mr. Eby concludes that the FRA recognized the lack of support for its position when it dismissed the violations.

RTD presented Mr. Gavalla's testimony to refute Mr. Eby's testimony. Mr. Gavalla was the FRA's Chief Safety Officer from 1997 – 2004. This is the same position that Mr. Lauby held during the FRA's regulatory review of the warning system in this matter.

Mr. Gavalla credibly testified that long wait times at crossings results in bad driving behavior. Mr. Gavalla testified that the FRA has collected data that show two-thirds of auto-train accidents happen because of long and inconsistent wait times at crossings. Mr. Gavalla testified that drivers become impatient when wait times exceed 40 – 50 seconds.

Mr. Gavalla testified that a warning system needs to have credibility. If drivers experience long wait times with no train in sight they may attempt to drive around the gates. This finding is supported by the FRA's highway-rail crossing handbook, which existed when the parties entered into the CA and when Wabtec/XoRail designed the system. *See* ex. 2308, at p. 128 (Second ed., August 2007). This handbook refers to the research referenced by Mr. Gavalla showing that bad driving behavior results after 40 – 50 seconds. *Id.* The handbook also recognizes that: "Although mandated maximum warning times do not yet exist, efforts should be made to ensure that traffic interruptions are reasonable and consistent without compromising the intended safety function of an active control device system's design." *Id.*

This research is also consistent with the observations made by Adams County and Denver traffic control who were on the scene at these crossings during the testing phase. Their staff observed these undesirable driving behaviors firsthand.

According to Mr. Gavalla the FRA has a policy of taking enforcement action against a railroad when a warning system provides long and inconsistent warning

times at crossings. Mr. Gavalla also testified that this enforcement policy is based on long-standing FRA regulations and enforcement policies.

Mr. Gavalla supported this testimony with FRA enforcement standards found in Technical Bulletin S-08-02, issued on July 22, 2008, (ex. 1513), and the FRA's technical manual issued in April 2012, (ex. 2315).

Technical Bulletin S-08-02 creates a flexible standard that allows for variable wait times depending on site specific conditions for each crossing. *See* ex. 1513. Technical bulletin S-08-02 specifies that a violation occurs when the "crossing warning time is found to not be in accordance with the design of the warning system." *Id.*, at p. 3.

The Technical Bulletin goes on to say that this applies "where the system warning time *differs significantly* from the prescribed warning time, not the 'designed warning time' as is indicated in the Technical Manual." (Emphasis added). The technical bulletin defines a "significant difference" as:

> one that is meaningful or important to the safety and/or credibility of the warning system and a situation in which an expected corrective action must be taken. This criteria is based on the fact that train detection systems, such as motion detectors, constant warning time devices, and other authorized systems, are designed to function for trains operating at varying authorized speeds by providing warning times within an acceptable range of the prescribed warning time (e.g., plus or minus 5 seconds or more). This fact is considered when the applicable parties determine what the prescribed warning time should be at each crossing. Thus, prudent judgment must be exercised when reviewing the results of warning time testing to determine whether the actual warning time provide during testing was compliant with the standard.

Id.

The FRA technical manual contains further guidance when determining whether a warning system should be assigned a defect code for violating the

standards set forth in 49 C.F.R. § 234.225. *See* ex. 2315, at p. 39. The technical manual specifies that: "Defect code 234.225.A1 applies in instances where the system warning time differs significantly from the designed warning time." *Id.*

Technical bulletin S-08-02 was issued two years before the parties entered into the CA. The technical manual is dated April 2012, but it recites long-standing regulations that existed when the parties entered into the CA and when Wabtec/XoRail designed the system. The technical manual quotes the language of 49 C.F.R. § 234.225. It specifies that a violation occurs when "the system warning time differs significantly from the designed warning time." *Id.*

These FRA enforcement policies support Mr. Gavalla's testimony that the FRA has a long-standing enforcement policy prohibiting long and inconsistent warning times. The FRA's regulatory scrutiny of the warning system and the warning times are consistent with this long-standing enforcement policy.

Furthermore, these enforcement policies contain flexible standards that permit some leeway for compliance. Technical Bulletin S-08-02 sets for a "significant difference" standard for determining whether a warning time complies with a prescribed warning time.[6] Technical Bulletin S-08-02 then states that a significant difference is: "One that is meaningful or important to the safety and/or credibility of the warning system and a situation in which an expected corrective action must be taken." *See* ex. 1513, at p. 3.

This is the situation that confronted the FRA in 2016. The warning system was not operating reliably during the testing phase. It produced long gate down time that generated complaints from the public and law enforcement. Later the gates didn't descend in time, nearly resulting in an accident. These are situations that are meaningful or important to the safety and/or credibility of the warning

[6] Mr. Eby testified that the prescribed warning time is the clearance time plus the 20 second minimum wait time set forth in 49 C.F.R. § 234.225. This time does not include buffer time for train handling and operations. Therefore, the prescribed time is even lower than the designed warning times that the PUC approved in 2013 and 2014 for each crossing. The Court address below DTP's argument that it is inappropriate to use this testing standard as an enforcement standard.

system. These are also situations where DTP could expect to receive a corrective action.

Therefore, the Court finds Mr. Gavalla credibly testified that the FRA had a long-standing policy of taking enforcement action against long wait times.

These enforcement policies further support the FRA's analysis of the warning system and ultimate decision to adopt the -5/+15 metric. The FRA was always focused on whether the warning system was activating in accordance with its design. Compliance with the designed warning time was an indication whether the system was activating in accordance with its design. However, the FRA allowed for some variance in the actual warning times experienced by the public. The enforcement polices allow for some leeway so long as there is not a significant difference from the designed warning times. The -5/+15 metric ultimately adopted by the FRA reflects this leeway.

Therefore, the Court finds that the FRA's analysis and the -5/+15 metric it adopted are consistent with its long-standing regulations and enforcement policies that existed when the parties entered into the CA and Wabtec/XoRail designed the system.

DTP argues that it is inappropriate to rely on the testing standards set forth in Technical Bulletin S-08-02 and the technical manual. DTP argues that these are testing standards that are applied under controlled circumstances. First, the tests should be applied only once a year. DTP points out that the FRA applied this testing standard to every activation on a daily basis over a long period of time. There are 144 activations per day on the A-line alone. Therefore, DTP argues that no system will operate within its designed time over these number of activations.

Second, DTP argues that the test should be administered when a train is not accelerating or slowing down. The test is for a train operating at a constant speed, usually the maximum authorized speed. DTP points out that under actual conditions, train handling and operational conditions will not allow a train to maintain a constant maximum authorized speed. Therefore, it is not fair to use a testing standard that applies under controlled conditions.

Mr. Gavalla credibly refuted these arguments. Mr. Gavalla pointed out that a designed warning time exists for a reason. He testified that the FRA should not have to wait until the annual test to address a concern about long warning times. The warning system should work as it is designed under actual operations, not just when the system is being tested. Therefore, the FRA may take action if it has concerns about long wait times. Mr. Gavalla testified that this is a long-standing policy of the FRA.

Furthermore, the FRA applied a flexible standard in determining whether the actual warning time met the designed warning time. The FRA's enforcement standards allow for some leeway. The enforcement standard is whether actual warning times differ significantly from the design times. Mr. Gavalla pointed out that if a warning system produces long wait times that are out of line with design times then the system is not activating in accordance with its design.

MUTCD also builds in some flexibility in the designed warning time. The CA specified that the warning system must meet MUTCD standards. *See* ex. 1, attachment 7, § 9.10.1(a)(i), at p. 503. Under MUTCD a constant warning time detection system must provide "a means of detecting rail traffic that provides *relatively uniform* warning times for the approach of trains . . . that are not accelerating nor decelerating after being detected." *See* ex. 1015, ¶ 37 (emphasis added).

This design standard builds in some flexibility in measuring warning times. This flexibility recognizes that train handling under actual operating conditions will not produce the designed warning times in each instance. But that is not what the FRA required when it reviewed the warning system. Mr. Gavalla testified that the FRA exercised appropriate discretion that is set forth in its enforcement policies. These enforcement standards existed when the parties entered into the CA and when Wabtec/XoRail designed the system. Therefore, the FRA did not depart from its existing standards when imposing the -5/+15 metric.

The FRA followed this approach consistently as it reviewed the system. It was always guided by the designed warning time. It also showed tolerance for variances in the warning times. This reflects the leeway that was inherent in the

significant difference standard set forth in Technical Bulletin S-08-02. Therefore, the Court finds that the FRA was applying long-standing, existing standards when it brought the warning system under review and when it adopted the -5/+15 metric. There was not change in law as a result of the FRA's regulatory action in this matter.

CONCLUSIONS OF LAW

I. DTP's Claims for Change in Law and Force Majeure Events

A. Contract Interpretation

The "primary goal" in interpreting a contract "is to discern and effectuate the parties' intent." *School Dist. No. 1 in Cty. of Denver v. Denver Classroom Teacher's Ass'n*, 433 P.3d 38, 41 (Colo. 2019). The Court discerns intent "'primarily from the language of the instrument itself.'" *Id.* quoting *Rocky Mountain Exploration, Inc. v. Davis Graham & Stubbs LLP*, 420 P.3d 233, 235 (Colo. 2018). The Court uses the plain and generally accepted meaning of the words in the contract to determine whether provisions of the contract are ambiguous. *School Dist. No. 1*, 433 P.3d at 41. If there is more than one interpretation "the contract is ambiguous and 'the meaning of its terms is generally an issue of fact to be determined in the same manner as other disputed factual issues.'" *Id.* quoting *Dorman v. Petrol Aspen, Inc.*, 914 P.2d 909, 912 (Colo. 1996).

Separate provisions of a contract must be construed as a whole. *Newflower Market, Inc. v. Cook*, 229 P.3d 1058, 1061 (Colo. App. 2010). Contracts must be interpreted to give effect to each provision so that no provisions are rendered meaningless. *Id.*

B. Applicable Provisions of the CA

The CA's change in law and force majeure provisions are relatively straightforward. If the regulators applied a new standard or a different interpretation of the regulations or enforcement standards then DTP is entitled to relief for a change in law event. Also, if the regulators treated DTP differently than

other railroads then DTP is entitled to relief for a discriminatory change in law. DTP is entitled to relief for an unforeseen force majeure event so long as it did not have control of the event.

The CA defines a change in law as:

> the introduction or repeal (in whole or in part) of or amendment, alteration, or modification to or change in interpretation of (in each case including, to the extent applicable, by retroactive effect), any Law or standards, practices or guidelines issued or published by any Relevant Authority that are either binding on the Concessionaire or if non-binding on the Concessionaire are both typically complied with in the construction and/or railroad industries and are necessary in order to comply with Good Industry Practice . . .”

See ex. 1, at p. 17.

The CA also has a provision for any change in law that applies to the Eagle Project and either does not apply to other similar private sector surface transportation infrastructure projects or are not of general application. (Discriminatory Change in Law). *Id.*, at p. 22.

The agreement defines “Law” to include “federal … rules and regulations … permits, approvals … having the force of law.” *Id.*, at p. 37.

The CA provides that when there is a conflict of terms within the contract, the term is to be interpreted using a list of documents, including the CA itself, attachments, and the Concessionaire’s proposal. *Id.*, § 1.3(a) at p. 64. Additionally, terms in the Concessionaire’s proposal should be reasonably interpreted “as offers to provide higher quality items or to adhere to more stringent requirements than otherwise required by the other Contract Documents, or to perform services or meet standards in addition to or better than those otherwise required . . .” *Id.*, § 1.3(b) & (c) at pp. 64 - 65.

Under section 17.1 of the CA DTP is responsible for obtaining regulatory approval from the FRA and PUC, with the cooperation of RTD where required. This section provides:

> The Concessionaire shall apply for, obtain, renew, replace, extend the validity of and arrange necessary amendments to, all Permits legally required in connection with its performance of this Agreement except for RTD Permits, which RTD will obtain to the extent provided in Section 17.2 (RTD Permits), and any delay to or increase in the costs of the completion of the Work or any interruption or impairment of the operation of the Concessionaire-operated Components caused by the failure of or delay by the Concessionaire to apply for, obtain, renew, replace, extend the validity of or arrange necessary amendments to, any such Permit shall not constitute a Relief Event. RTD will cooperate with the Concessionaire in applying for the Permits and will, at the reasonable request of the Concessionaire and at the Concessionaire's cost, and where necessary to obtain, renew, replace, extend the validity of, or arrange necessary amendments to the Permits:
>
> (a) execute such documents as can only be executed by RTD;
>
> (b) make such applications, either in its own name or jointly with the Concessionaire as can only be made by RTD or in the joint names of the Concessionaire and RTD, as the case may be; and
>
> (c) attend meetings with appropriately qualified staff and cooperate with approval bodies as reasonably requested by the Concessionaire.

Id., § 17.1, at p. 109.

A change in law is a relief event under the CA that entitles DTP to relief. *Id.*, § 38.1(k), at p.188. This provision further provides that DTP can claim a relief event only to the extent that:

(i) such event or circumstance (and/or its effects and consequences on the Concessionaire) does not result from and is not contributed to by any breach by the Concessionaire of its obligations under this Agreement or any of the other Project Agreements or any negligent act or omission of the Concessionaire;

(ii) such event or circumstance has arisen notwithstanding the Concessionaire complying with its obligations under this Agreement, and in accordance with its obligations under Attachment 9 (Project and Construction Management) and the O&M Submittals; and

(iii) the Concessionaire has complied with its obligations under Section 38.3 (*Mitigation in Case of a Relief Event*).

Id., § 38.1, at pp. 190 - 191.

If work is delayed due to a relief event, the final completion deadlines are delayed as well. *Id.*, § 38.4, at p. 192.

C. Change in Law Events

Throughout this action, RTD argued that there can be no change in law unless the FRA or PUC issue a formal rulemaking notice and complete the rulemaking process and issues a new regulation or policy statement at the conclusion of this process. RTD points out that the FRA and PUC did not issue a new regulation or policy statement using this formal rulemaking process.

The Court interprets the CA to recognize a change in law even if the regulatory authority does not issue a formal rule or regulation through the formal rulemaking process. The CA defines a change in law in broad terms. It includes a "*change in interpretation* of (in each case including, to the extent applicable, by retroactive effect), any Law or standards, practices or guidelines issued or published by any Relevant Authority . . ." *See* ex. 1, at p. 17 (emphasis added). This broad standard can include a change in enforcement policy or change in interpretation of a regulation or enforcement policy. Therefore, the Court concludes that a regulatory agency does not need to issue a new rule, regulation or

policy statement pursuant to the formal rulemaking process in order to create a change in law under the CA.

DTP argued throughout this case that it was subjected to new and not previously known regulatory standards and enforcement policies. In particular, DTP introduced testimony and evidence that the FRA was enforcing a policy against long warning times that has no support in the FRA's existing rules, regulations or policy statements. DTP identifies the following specific actions by the FRA and PUC as change in law and force majeure relief events under the CA:

- Failed to view 49 C.F.R. § 234.223 as setting forth only a minimum 20-second warning time;
- Imposed a maximum warning time;
- Adopted the -5/+15 metric;
- Used improper testing procedures when evaluating actual warning times; and
- Improperly applied technical bulletin S-08-02.

The Court addressed each of these separate arguments in section VII, *supra*, at pp. 32 – 46. This case presents primarily factual questions. The central question is whether the FRA and PUC applied a new or different legal standard when they undertook the regulatory review of the warning system and imposed the -5/+15 metric.

The Court concludes that the regulators may exercise enforcement discretion so long as the actions are grounded in existing standards set forth in their rules, regulations and enforcement policies. As discussed above, the Court found that the regulators applied existing standards and enforcement policy interpretations to DTP during the regulatory review process. These standards and enforcement policies existed when the parties entered into the CA. The warning system design and performance were under DTP's control. Therefore, the Court determines that DTP is not entitled to relief for a change in law or discriminatory change in law.

D. Force Majeure Event

The force majeure provision includes several of the standard provisions providing protection from unforeseen events or regulatory action that is taken to protect public health, safety or security. *See*, CA, ex. 1 § 39.1, at pp. 196 – 198. The force majeure provisions include a catch-all provision for "any other event outside the reasonable control of the Affected Party, and which is not reasonably foreseeable by the Affected Party." *See*, CA, ex. 1 § 39.1(j)(ii), at p. 196. This provision also includes a caveat that a relief event can be claimed only to the extent that the events did not arise because of a party's failure to comply with its obligations and only to the extent that the party mitigated its damages. *Id.*, § 39.1(j)(ii), at pp. 197 - 198.

The Court concludes that the design and operation of the warning system were under the control of DTP. Therefore, it is appropriate to place the regulatory risk on DTP for a warning system that fails to activate properly or as designed.

DTP introduced testimony that RTD's then general manager, Phil Washington, provided to the House Committee on Transportation and Infrastructure in 2014 when RTD was seeking federal funding for the Eagle Project. *See* ex. 1846 written testimony, dated 3/5/14. Mr. Washington testified to the allocation of risks in this public-private partnership. *Id.*, at p. 4. Mr. Washington noted that some risks that would normally be assumed by the public agency can be transferred to the private participant. *Id.* As relevant here, Mr. Washington's testimony states:

> The risk allocation matrix on the project ideally assigns risk to the party (public or private) which can most effectively manage it and can therefore most effectively price it. It also holds the private sector partner responsible for certain elements inherent in project delivery and/or operation and involves compensation dependent upon efficient delivery, performance, or non-performance of the involved asset. ***With properly written contracts, the public sector transportation provider retains a high degree of control over crucial elements such as safety and training requirements, operational standards, fares,***

> ***and other items to ensure the private contractor provides a transportation product that meets the public agency's standards and expectations, and provides for seamless service to the public.***

Id. (bold and italics in original).

Mr. Washington's written testimony contains a risk allocation matrix that lists the risks assumed by the parties. Under this matrix, "[f]ailure to meet operating performance standards" is a risk DTP assumes. *Id.*, at p. 9. RTD assumes the risk for discriminatory legislative changes. *Id.* The parties share the risk for non-discriminatory legislative changes and force majeure events. *Id.*

The Court finds from this testimony that it is proper to place on DTP the risk of the regulators' scrutiny of the warning system. DTP controlled the selection, design, construction and implementation of this system. When it didn't operate as designed it failed to meet operating performance standards, which is identified as a risk assumed by DTP in the risk allocation matrix. Therefore, the Court concludes that DTP is not entitled to relief for a force majeure event.

E. RTD's Waiver Defense - Side Agreements

The side agreements (exs. 2031 & 2032) contain provisions with limited waivers. These limited waivers provide in relevant part that the side agreements do not provide a basis for a relief event as defined in the CA. *See id.*, ¶ 6. The side agreements also state that as between RTD and DTP, DTP "[i]s responsible for all increased costs necessitated by this stipulation and limited waiver, and such increased costs do not create the basis for a Relief Event." *Id.*, ¶ 10.

RTD argues that DTP waived all of its change in law and force majeure claims that provide a basis for a relief event as defined by the CA. The Court finds that DTP did not waive its right to assert a change in law or force majeure claim because the basis for these relief events followed after the parties entered into the side agreements.

As discussed above the regulators' review of the warning system and ultimate approval for removal of the crossing attendants lasted nearly three years after the parties entered into the side agreements. This regulatory review took many twists and turns. It stopped and started. DTP could not reasonably have known what it was waiving when it agreed to the limited waivers contained in the side agreements.

The Court agrees that the basis for DTP's change in law and force majeure relief events was not in existence when the parties entered into these side agreements. Therefore, the Court finds that DTP did not waive its right to assert claims for change in law and force majeure relief events based on the regulators' review of the warning system after the parties agreed to the side agreements.

ADDITIONAL FINDINGS OF FACT AND CONCLUSIONS OF LAW[7]

II. Other alleged changes in law or force majeure claims

A. Quiet Zones

The CA also required DTP to design a system that was approved for quiet zones. Quiet zones were necessary so that trains could pass through the intersections without sounding their horns.

In its proposal, DTP stated that it could meet the quiet zone requirement through its warning system. *See* ex. 2026, at p. 27, item 9.

In July 2018, the FRA notified RTD that the crossing warning times are too inconsistent to allow for quiet zone approval. Ex. 2610. Specifically, the FRA noted that too many warnings were too long. *Id.*, at p. 3. Therefore, if the FRA did not approve the warning system quiet zones could not be approved for the crossings. Eventually, the FRA granted quiet zone approval after the -5/+15 metric

[7] As mentioned in footnote no. 1, *supra*, the Court's findings of fact set forth above contained both general findings and findings specific to the claims, counterclaims and defenses relating to regulatory review of the warning system. Those findings also support the Court's resolution of the additional claims and counterclaims discussed next.

was approved and put in place. *See* ex. 45, 3/29/19 letter from Mr. Lauby to Mr. Stopplecamp.

DTP argues that RTD should bear the regulatory risk of the FRA review because it knew that a wireless warning system was necessary in an electrified power environment. DTP argues that RTD knew the risks associated with a new wireless system, but it was willing to assume these risks because it wanted quiet zone approval. RTD knew that this system could not operate in such a populated environment with train horns sounding at each crossing. Therefore, DTP argues that RTD's quiet zone requirement opened it up to the regulatory risk associated with a new wireless communication system that would be used to activate the warning system at the crossings.

The Court is not persuaded by this argument. The Court finds that the failures of the WCAS appropriately rest with DTP because it promised that it could design and provide a wireless warning system that worked. Furthermore, this risk appropriately rests with DTP because it was responsible for designing the system to comply with all regulatory requirements. It is clear from the events as they unfolded that the WCAS did not work as designed. This is a risk that DTP as the designer and builder of this system assumed when it entered into this public-private partnership. Therefore, the Court does not accept DTP's argument that RTD should assume the risk of this new wireless technology.

The Court was also persuaded by the testimony of Joe Christie that DTP was responsible for the design of the system. Mr. Christie was RTD's deputy project manager on the Eagle Project. He became the acting project manager after Mr. Straight departed in August 2017. When Mr. Christie was the deputy project manager he interfaced with DTP on design requirements. He testified that RTD served only in an oversight role during the design process. While it reviewed DTP's work, Mr. Christie estimates that RTD touched approximately 10% of its design work.

The Court is persuaded by Mr. Christie's testimony that RTD was not in a position to control the design features of the WCAS. This public-private partnership placed the design risk on DTP. Therefore, RTD was not involved to an

extent in the warning system design that warrants placing the regulatory risk on RTD.

B. Bicycle Detection Requirements

DTP contends that RTD's handling of the bicycle sensors invited regulatory scrutiny by the PUC in late 2015. This regulatory scrutiny then opened the door for crossing attendants to be assigned at each crossing on the A-line and delayed the opening of the G-line.

The Court finds that even if the bicycle sensor issue introduced a change of law, DTP failed to show that it was damaged by this requirement. The Court further finds that the regulatory scrutiny brought by this issue cannot be separated from the system failures in 2015 and 2016 that ultimately resulted in the crossing attendant requirement.

DTP was able to address the PUC's concern regarding cyclists getting trapped in the crossing with a relatively quick fix. It added a delay to the exit gate in order to allow a bicycle to get out of the crossing without getting trapped. The PUC approved this fix on April 1, 2016. *See* ex. 1104, 4/1/16 order.

The bicycle sensors were the first issue that required crossing attendants to be posted at each crossing. After the near miss incidents on March 1, 2016 and the resulting regulatory scrutiny of the WCAS the crossing attendants were required to remain at the crossings until the WCAS system could be analyzed by the FRA.

Assuming this was a change in law event, the Court finds no damages have been proven for this addition. The crossing attendants were already on-site at the grade crossings because of the problems with the WCAS. The attendants had to remain on site to address that problem. Therefore, there was no damages as a result of the PUC's requirement for the bicycle sensor.

C. FAST Act Requirement

The FAST Act required changes to the system to ensure that trains did not speed. The FAST Act was passed in response to certain train accidents in 2013 and

2015. DTP alleges that this new requirement caused delays on the A-line. As a result DTP violated on-time performance requirements in CA. As a result of these delays DTP had to pay for violating on-time performance obligation. *See* ex. 6, change in law notice.

DTP estimates that its on-time performance would have improved by two minutes if it didn't have to comply with the FAST Act. DTP estimates its damages as a result of this change in law is $157,431.

Mr. Gavalla testified that had DTP provided a fully functioning warning system then it would not have incurred these damages. The Court agrees with Mr. Gavalla. Therefore, the Court finds that the FAST Act did not impose a change in law.

D. FRA Designation of I-EMTS as Non-vital

In August 2018, the FRA told DTP to give up on declaring that wireless system as "vital" because the system was not working under that classification. *See* ex. 11. This required DTP rewrite its safety plan at the cost of $128,000.

The Court finds that the FRA did not "declare" the system "non-vital." DTP's design for the WCAS did not meet the requirements to be declared vital. Therefore, the Court finds that this claim does not provide grounds for a change in law relief event.

E. Lightning Strike - 5/24/16

On May 24, 2016 a lightning strike snapped an electric power line on the A-line. On June 16, 2016 DTP sent a notice of a force majeure event to RTD. *See* ex. 12.

DTP seeks relief as a result of this lightning strike. However, DTP fails to specify what delay or damages it incurred as a result of this event. The Court finds that DTP failed to prove its damages by a preponderance of the evidence as a result of this lightning strike.

III. Breach of the Duty of Good Faith and Fair Dealing

Every contract includes an implied duty of good faith and fair dealing. *Amoco Oil Co. v. Ervin*, 908 P.2d 493, 498 (Colo. 1995). A party breaches this duty when it acts contrary to the agreed common purpose of the contract and reasonable expectations of the parties. *See* CJI-Civ. 30:16.

DTP raises a host of arguments in which it contends that RTD breached the duty of good faith and fair dealing and a separate duty under the section 17.1 of the CA to cooperate with DTP. These arguments fall into two categories. First, DTP argues that RTD undermined DTP with regulators in order to protect RTD's standing with these authorities. Second, it contends that RTD improperly influenced important parties, namely HNTB and the Independent Engineer.

DTP raises other instances where RTD acted improperly during the course of the parties' relationship. However, the Court finds these instances to be minor. There is no evidence to support any damages sustained by DTP by these minor incidents.

The Court likewise finds that DTP's allegations concerning RTD's influence of the regulators and other important parties was not proven by a preponderance of the evidence.

A. RTD's Dealings with the FRA

DTP cites instances when RTD was undermining DTP with the FRA. Allen Miller secretly told the FRA that DTP lacks a safety culture. *See* ex. 1783, 4/19/16 letter. Mr. Miller also invited the FRA to undertake a full regulatory review of the Eagle Project. *Id.* DTP accuses Mr. Miller of planting the idea with the FRA of imposing a maximum wait time or range of acceptable range times. *See* ex. 120, 5/26/16 email.

DTP also claims that RTD secretly communicated with the FRA outside of DTP's presence. DTP presented evidence that RTD attempted to turn the FRA against DTP when it sent the FRA DTP's change in law notice and the complaint filed in this action. *See* ex. 1601, 6/5/17 email from Dave Genova to Mr. Lauby

attaching DTP's 5/26/17 change in law and force majeure notice. *See also* ex. 1919, 9/20/18 email from Mr. Genova sending complaint to FRA and Dr. Fischhaber at the PUC.

The Court finds that the FRA's treatment of DTP and its regulatory review of the warning system cannot be attributed to any improper actions by RTD.

The Court again returns to the actual experience of the warning system during testing of the system from the fall of 2015 through the spring of 2016. The regulators were confronted with a warning system that did not operate properly or reliably.

These problems persisted through the spring of 2016. When the gates failed to descend properly there was a near miss on March 1, 2016. These complaints and actual experiences reflected real problems with the warning system.

The FRA then undertook an extensive review of the system. Independent engineering firms and Wabtec completed studies and an analysis of the warning system. They found problems and proposed solutions that ultimately improved the performance and reliability of the warning system.

DTP emphasized the pre-meeting that RTD had with the FRA on May 22, 2017 as evidence that RTD undermined DTP. This was a perilous moment in the FRA's regulatory review process. The warning system was stabilizing and the FRA was exploring the circumstances under which it could approve the system and remove the crossing attendants. Shortly after this meeting RTD and DTP proposed the 15 second WCABT change, which the FRA accepted on June 16, 2017. The FRA's approval set forth a path forward for removal of the crossing attendants.

In light of the progress shown after the May 22, 2017 meeting it is difficult to see how RTD undermined DTP with the FRA. The Court is not persuaded that RTD's separate communications with FRA caused problems for DTP with the FRA.

DTP also points out that in May 2016 Mr. Miller suggested that "10-15% over design time is the max." *See* ex. 120, 5/26/16 email from Mr. Miller to

various FRA personnel. Gabe Neal, with the FRA, chortled back: "Heck we should let you run the call . . . LOL we understand and agree with your thoughts." *Id.* Mr. Miller sent this email the same day DTP and the FRA had a meeting. Yet, Mr. Miller said nothing about this overture and didn't include anyone from DTP on the email.

Again, the Court finds that the review process that ultimately resulted in the -5/+15 metric was not influenced by this email or any of Mr. Miller's or RTD's ex parte communications with the FRA. The Court reviewed above the extensive process that resulted in adoption of the -5/+15 metric. This metric was consistent with proposals to add 15 seconds to the design time.

Moreover, in DTP's September 8, 2017 proposal, it states that a 10% standard is not appropriate for its warning system. *See* ex. 35, letter from Mr. Stopplecamp to Mr. Lauby. DTP then proposes the -5/+15 metric, which the FRA adopted. *See* ex. 36, 9/28/17 letter from Mr. Lauby to Mr. Stopplecamp. The FRA adopted this proposal after extensive study and changes to the warning system. It is hard to believe that a short proposal made by Mr. Miller early in the regulatory review process, which the FRA ultimately rejected, would have influenced the FRA to adopt the -5/+15 metric.

Finally, the Court is not persuaded that RTD's approach with the FRA resulted in the prolonged regulatory review or any unfair treatment by the FRA. As discussed above DTP felt that RTD dictated a posture with the FRA that assumed that there were problems with the warning system and that the warning system need to be fixed. DTP felt that this posture left it unable to challenge the FRA even if the FRA was in the wrong. *See* ex. 99 (Mr. Straight informs RTD's press office not to blame or scapegoat the FRA "even if it is true").

The Court is not persuaded that RTD's approach with the FRA resulted in negative treatment of DTP. All of the objective evidence supports the fact that the regulators had legitimate concerns about the warning system. In light of all of this objective evidence the Court finds that the FRA was not motivated to bring the system under scrutiny because of any ill-will spread by Mr. Miller or any attempt to protect RTD's standing with the regulators. Instead, the Court finds that the

regulators had legitimate concerns that arose out of genuine public safety risks from a warning system that was not operating reliably. After extensive study, independent assessments and changes to the warning system the regulators ultimately adopted the -5/+15 metric to bring the warning system in line with its designed warning times.

B. RTD Dealings with the PUC

1. RTD failed to support DTP's relationship with the PUC

DTP also argues that RTD failed to support DTP's relationship with the PUC. DTP presented evidence that Dr. Fischhaber was unreasonable, and imposed arbitrary requirements, such as the bicycle sensor. She also refused to meet and communicate with DTP in a professional manner. DTP contends that RTD insisted on managing the relationship with the PUC because its long-standing relationship with the PUC. DTP contends that RTD placed the blame on DTP in order to protect its relationship with the PUC.

Many of the same points just discussed regarding RTD's dealings with the FRA also apply to DTP's theory that RTD undermined DTP's relationship with the PUC. The Court is not persuaded that RTD undermined DTP with the PUC.

The PUC experienced first-hand the public complaints registered as a result of problems with the warning system. The PUC received complaints about long gate down time. In November 2015 Dr. Fischhaber had to explain the system's failures to RTD's chairman after Denver police and traffic control had relayed that the long gate time was causing problems for the travelling public and law enforcement. *See* ex. 65, 11/3/15 email from Dr. Fischhaber. In light of this direct experience the PUC was concerned about the safety of the warning system. *Id.* Dr. Fischhaber suggested that RTD and DTP get to the root of the problem and fix it. *Id.* Dr. Fischhaber even pointed out that it is possible that the PUC may shut down the entire commuter rail operations until the problems are fixed. *Id.*

The Court is not persuaded that RTD turned the PUC against DTP. This email was directed at both RTD and DTP, among many others. The PUC's overriding concern was public safety. The PUC took a dim view of both RTD and

DTP in light of these real public safety concerns. The Court finds that RTD did not turn the PUC or Dr. Fischhaber against DTP. Instead, the PUC's regulatory actions were taken out of a genuine concern for public safety.

2. RTD's Refusal to Submit Certifications to the PUC

DTP submits evidence that RTD failed to submit certificates of completion to the PUC that would have allowed it to enter into full revenue service in June 2016. *See* ex. 1871 at p. 2, summary of certifications given to RTD and RTD's refusal to submit to PUC on 6/22/16. In these certificates of completion DTP certified the crossings as safe and that they were ready for final approval. *See* exs. 2063, 2427, 2428, 2432, & 2433, notice of certifications for certain A-line crossings, dated 6/3/16 & 6/14/16.

RTD rejected sending these certifications to the PUC because the actual warning times did not match the design times. *See* ex. 1833, 6/22/18 communication from Joe Christie to DTP.

DTP argues again that RTD was trying to protect its standing with the PUC when it refused to submit these certifications to the PUC for approval. RTD was right to withhold the certifications given the circumstances that existed in June 2016. As the Court found above, the system was not operating properly at this time. The regulators were just embarking on a regulatory review of the warning system. From June 2016 it would take another 15 months of analysis and changes to the system before the FRA was comfortable authorizing a plan for demobilizing the crossing attendants. It would take the PUC another seven months, from September 2017 to April 2018, before it was comfortable authorizing removal of the crossing attendants. The transit system was not ready for certification in June 2016. RTD properly withheld the certifications at this time.

Finally, it would have been futile to submit the certifications to the PUC at this time. On June 15, 2016 RTD and DTP had a meeting with Dr. Fischhaber to discuss drafts of the certifications. *See* ex. 73, 6/15/16 meeting minutes. After reviewing the warning time data at this meeting, Dr. Fischhaber stated that she would not recommend approval of the certifications to the PUC. In light of this information RTD properly withheld the certifications. As events later unfolded it

would be many more months and years before the regulators were comfortable enough to approve the system without the need for crossing attendants.

C. RTD's Dealings with HNTB

Likewise, DTP alleges that RTD leveraged HNTB's interest in obtaining a contract for work on the North Metro line to influence HNTB's evaluation of the warning system in 2016. HNTB terminated its contract with DTP in March 2017. Mr. Choudri notified RTD about these plans and stated that he still was thinking about how to inform Messrs. Lauby and Fender at the FRA meetings without hurting DTP's standing with the agency. *See* ex. 1719, 3/16/17 email to Messrs. Genova and Stopplecamp. Mr. Choudri asked RTD to keep this information confidential. *Id.* In this email, Mr. Choudri also states HNTB's plans to move forward with work on the North Metro line. *Id.*

The Court is not persuaded that RTD influenced HNTB's analysis of the system or that its withdrawal harmed DTP before the FRA. There is no persuasive evidence that RTD held out the contract for the North Metro work as any kind of incentive to HNTB to color its analysis. HNTB appeared to be operating independently and in good faith when it evaluated the warning system. In fact, Messrs. Steffen and Marx were working for HNTB at this time, and they authored the preliminary assessment provided to the FRA on October 28, 2016. *See* ex. 2247. The Court finds that RTD did not influence HNTB during the evaluation process.

The Court further finds that HNTB's termination of its relationship with DTP did not harm DTP with the FRA. Shortly after HNTB terminated its relationship with DTP the FRA started to discuss the circumstances under which it could approve the warning system. The April 3, 2017 meeting followed shortly after HNTB terminated its relationship with DTP. As discussed in detail above, during this meeting the FRA started to feel comfortable with the warning system and started to explore the circumstances under which it could approve the warning system. *See* ex. 104, 4/3/17 meeting minutes. Then by May 25, 2017, DTP submitted a proposal that outlined a path forward for removal of the crossing attendants. *See* ex. 31. The FRA approved this plan on June 16, 2017. *See* ex. 32.

By September 2017, the FRA accepted DTP's proposal for the -5/+15 metric and a plan was approved for the gradual removal of the crossing attendants. *See* exs. 35 & 36.

This sequence of events does not indicate that HNTB's absence from this process harmed DTP with the FRA. Shortly after HNTB left this process, the warning system's performance improved and the FRA started to explore approval of the system and eventual removal of the crossing attendants. The Court finds that RTD did not influence HNTB in this process.

D. RTD's Dealings with the Independent Engineer

DTP argues that RTD also improperly influenced the Independent Engineer to delay certifications of compliance with the contract. DTP presented the deposition testimony of Michael Loehr and Tom Ragland. RTD presented the testimony by Don Ulrich. These individuals were most involved in the Independent Engineer's decision to issue the certificates of compliance.

The Independent Engineer was established as an objective third party to certify that a requirement under the CA had been completed. The Independent Engineer, therefore, eliminated any dispute between the parties as to completion of a contract term. Mr. Ulrich credibly testified that the Independent Engineer was in the position of determining whether a requirement had been completed or was not completed. It was designed to be an objective voice in this public-private partnership.

To aid the Independent Engineer in reaching its determinations the parties developed a matrix that divides the CA into separate compliance obligations. Metrics were then developed to determine whether each of the CA's separate compliance requirements had been completed. The metrics are contained in a matrix ("the CCVM"). It took nearly two years to develop the CCVM.

Mr. Ulrich credibly testified that the final certificates of completion were not going to be issued for the A-line, B-line and G-line until the FRA approved the warning system and the crossing attendants were removed. Mr. Ulrich testified that while the crossing attendants were still stationed at the intersections the

Independent Engineer would not consider the warning system completed. Therefore, the FRA and PUC had to approve removal of the crossing attendants before the Independent Engineer would issue the final certificates of completion.

DTP points to instances where RTD communicated with the Independent Engineer on important matters of contract compliance without including DTP in these communications. In particular, DTP presented evidence that on September 27, 2017 Messrs. Ragland and Ulrich met with RTD and its lawyers regarding the certificates of completion. DTP was not present at this meeting. DTP also presented evidence that Mr. Christie was trying to influence the Independent Engineer to add quiet zone approval as an outstanding requirement before issuing the final certificates of completion. *See* ex. 1685, 3/16/18 email from Mr. Ragland to Mr. Loehr.

Mr. Christie testified that it was common for both parties to have communications with staff for the Independent Engineer that did not include the other party. Mr. Christie also testified that when RTD communicated with the Independent Engineer RTD did not provide direction as to whether the certifications should be issued.

DTP also alleges that RTD used financial pressure to delay the Independent Engineer's certifications of compliance. The Independent Engineer's representatives, Messrs. Ragland and Ulrich even provided advice to RTD about how to dispute a force majeure claim asserted by DTP. *See* ex. 87.

The Court finds RTD did not influence the Independent Engineer against DTP or persuade the Independent Engineer to delay its issuance of the certificates of compliance. The Independent Engineer used objective criteria to determine whether it should issue the final certificates of compliance. It took two years to develop the CCVM matrix. Given these objective criteria the Court finds that the Independent Engineer was not influenced by RTD to delay the certificates of completion.

The Independent Engineer properly viewed FRA and PUC approval of the warning system and removal of the crossing attendants as necessary conditions for issuance of the certificates of completion. These are objective criteria that the

Independent Engineer could rely on to indicate that the warning system was completed in accordance with the CA.

The Court was persuaded that this objective criteria guided the Independent Engineer's decision to issue the certificates of compliance. It was not influenced by RTD to delay the certificates of compliance.

IV. Breach of Contract – Insurance Coverage

DTP contends that RTD was obligated to maintain owner-controlled insurance throughout the design-build phase of the CA. *See* ex. 1, CA, § 1.2(b)(i). Because revenue service certification was delayed, DTP contends that RTD was obligated to maintain this insurance coverage. DTP calculates these insurance costs to be $1,668,903.

RTD contends that it satisfied the insurance requirement by maintaining an occurrence-based policy with an eight-year completed operations endorsement. *See* ex. 2757, at p. 53 & p. 70. The Court finds that RTD satisfied its obligation under CA by providing this insurance.

RTD'S COUNTERCLAIMS

I. Delays in Approval of the Warning System Caused RTD to Incur Extended Overhead and Consultant Costs

RTD claims that DTP breached the CA by failing to deliver a compliant warning system by the deadlines for commencement of revenue service on all three lines. RTD claims that it incurred increased costs of approximately $11.6 million as a result of having to maintain staff, pay consultants and travel to Washington, DC to work through these issues with the FRA and PUC.

RTD presented the testimony of Chris Beirise, a construction expert to support these increased costs. Mr. Beirise presented an analysis that estimated the delays on the project as a result of the regulators' delay in approving the warning system and the Independent Engineer's issuance of the RSCC.

The largest component of Mr. Beirise's incremental costs are attributable to staff and consultant costs. Mr. Beirise estimates that nine RTD employees had to devote time to the Eagle Project because of the delay. Mr. Beirise estimates RTD's increased staff cost to be just over $1.2 million. Mr. Beirise estimates the increased costs for the services of RTD's consultants, (Jacobs, FRSC and Triunity-Hill), to be almost $8.7 million. Mr. Beirise estimates additional insurance and travel costs to be approximately $1.7 million.

Rob Hutchins testified as DTP's economic damages expert. Mr. Hutchins is a CPA and has extensive experience in calculating damages in complex commercial litigations.

Mr. Hutchins effectively refuted Mr. Beirise's estimate of RTD's increased costs as a result of the delay. Mr. Hutchins pointed out that Mr. Beirise included as increased costs portions of the salaries of employees who still work at RTD, including Joe Christie and Allen Miller. After realizing this error Mr. Beirise excluded Mr. Miller and revised his estimate to include portions of the salaries of only nine employees. Mr. Hutchins pointed out that this estimate is still inaccurate because six of these employees are still employed by RTD.

These employees are paid a salary. Their employment costs are costs that RTD would have regardless of the delays in approving the warning system or issuance of the RSCC. The Court is not persuaded that RTD had increased staff costs as a result of delays in approving the warning system.

Mr. Hutchins also refuted the $8.7 million in increased costs that Mr. Beirise attributed to the fees charged by the consultants. Mr. Beirise claims to have segregated out the work that these consultants performed only on the G-line. The Independent Engineer did not issue the RSCC for the G-line until March 31, 2019. It entered revenue service approximately one month later on April 26, 2019.

Mr. Beirise excluded work that these consultants performed on the A-line and B-line because these lines entered into revenue service by their scheduled opening dates of April 22, 2016 and July 25, 2016, respectively. But the G-line was delayed two and a half years and did not enter into revenue service until April 26, 2019.

Mr. Hutchins reviewed the status reports submitted by the consultants for their work. He found instances of work that they performed on the A-line and B-line. Mr. Hutchins pointed out that these two lines went into revenue service by their designated opening dates. In fact, RTD was earning greater revenue on these lines because the side agreements deducted monthly amounts from revenues earned on these lines until the Independent Engineer issued RSCC for these lines. Therefore, Mr. Hutchins pointed out that Mr. Beirise's analysis was not a true accounting of RTD's incremental costs.

Finally, Mr. Hutchins pointed out that the increased insurance costs could not be attributed to delays associated with the G-line alone.

The Court finds Mr. Hutchins's rebuttal testimony to be credible. He effectively refuted Mr. Beirise's testimony regarding RTD's increased costs. Therefore, the Court finds that RTD failed to prove its damages for increased costs by a preponderance of the evidence. This claim, therefore, fails for lack of proof of damages.

II. Breach of Contract - Defective Bridges

RTD seeks damages for DTP's failure to design the bridges in accordance with AREMA standards. The CA required DTP to design bridges using AREMA standards. Under the CA the bridges had to have a 60-year design life. *See* ex. 1, attachment 7, part A, § 5.3(a)(i), at p. 427.

RTD introduced the expert testimony of a forensic engineer, Dennis McCann, to support its claim. Dr. McCann testified that DTP failed to design the bridges under these standards. Dr. McCann also testified that the retrofits made to the bridges to compensate for these design flaws will not last. It is Dr. McCann's opinion that the bridges will need to be replaced or require greater maintenance when RTD takes over the transit system in 2045.

DTP has already retrofitted the bridges with fiber reinforce polymer (FRP) to strengthen and reinforce the decking on the bridges. Dr. McCann testified that studies have found that FRP will not last. It is his opinion that the bridges will become unstable and need to be replaced.

Dr. McCann also testified that the steel jackets used to strengthen the columns will require repainting every 10-years. Again, had the columns been designed properly, Dr. McCann testified that this extra maintenance would not be required.

On cross-examination Dr. McCann admitted that it is impossible to know the condition of the bridges by 2045 when RTD takes ownership of the Eagle Project. Dr. McCann agreed that if the bridges must be replaced or stabilized because of the design flaws the repairs or replacements will likely occur before then.

RTD contends that it will be damaged even though it won't be responsible for maintaining the bridges until 2045. Mr. Beirise calculated RTD's damages for bridge maintenance or replacement costs to be $15.0 million. Mr. Beirise based this calculation on the $10.0 million O&M claim with credit given for the time value of money and an estimate of inflation and inflation in future construction costs over time, which he put at 2.6%.

RTD also points out that DTP has already made a claim against Fluor for the costs incurred in maintaining the bridges. Fluor's insurance carrier already paid DTP $44.0 million on this claim. During negotiations on this claim, DTP valued the maintenance costs for the bridges at $66.0 million. RTD argues that DTP's claim for maintenance of the bridges and recovery of $44.0 million is evidence that RTD will have to pay maintenance costs to take care of the bridges as a result of the design flaws. Therefore, it argues that its claim is ripe and that its damages can be determined.

When questioned about the maintenance costs RTD can expect to incur for the bridges, Mr. Stopplecamp testified that the "the biggest damages are unknown." This testimony captures the essence of the problem with this claim. It will be many years until RTD knows whether it will be responsible for repairing or replacing the bridges due to DTP's failure to design them with a 60-year design life or construct them in accordance with AREMA.

Also, as Dr. McCann admitted, the problems with bridges will likely arise before RTD takes ownership of the project. Therefore, DTP will likely be

responsible for replacing or fixing the bridges before RTD takes over. RTD's damages are speculative at this point.

Furthermore, DTP presented expert testimony from a structural engineer, Mr. Ron Hamburger. Mr. Hamburger has extensive experience with the design of major public works projects, such as the bridges at issue here. Mr. Hamburger testified that FRP was used to repair bridges damaged in the 1989 bay area earthquake in Northern California and the 1994 Northridge, California earthquake. Mr. Hamburger had direct experience with FRP used to repair bridges damaged in the 1994 Northridge earthquake. He credibly testified that these FRP reinforced bridges have held up well over the years. Based on this approximate thirty-year track record, he testified that there is no reason to believe the FRP reinforced bridges will fail.

Mr. Hamburger also refuted Mr. McCann's testimony that the FRP will degrade over time. Mr. Hamburger agreed that FRP will degrade over time, especially with Colorado's freeze/thaw weather. Mr. Hamburger also testified that regular preventative maintenance can extend the life of the FRP reinforced bridges. Painting will protect the FRP from degradation. Therefore, in Mr. Hamburger's opinion there is a possibility that RTD will never experience a problem with the FRP reinforced bridges.

Mr. Hamburger was a credible witness. He supported his testimony with actual experience as to the reliability and strength of the FRP reinforcements. His testimony supports the speculative nature of RTD's damages. RTD may never incur damages as a result of the bridges' design flaws or retrofits. The Court finds that RTD failed to prove its damages relating to the bridges' design flaws or retrofits by a preponderance of the evidence.

While a party may recover future damages, it must be demonstrated that a party will accrue damages at some point in the future. *Pomeranz v. McDonald's Corp.*, 843 P.2d 1378, 1382 (Colo. 1993). Future damages do not have to be proven to a mathematical certainty. *Id.* But there must be some basis for the Court to make a fair approximation of future damages. *Id.*

RTD failed to meet this standard. There is no persuasive evidence that it will incur costs for maintenance or repair of the bridges 22 years from now as result of the design defects or retrofits. Therefore, this counterclaim fails for lack of proof of damages.

III. Declaratory Relief

RTD requests declaratory relief finding that DTP is in default under the CA and that one or more Terminating Events have occurred. RTD claims that DTP failed to provide a compliant warning system by the opening dates set forth in the CA. RTD also claims that the problems with the bridges breached the CA. RTD claims that these breaches are events that permit it to terminate the CA.

The Court declines to provide this relief. The warning system has been approved by the FRA and the PUC. It is operating properly and carrying passengers on a daily basis throughout the Denver metro area.

Furthermore, the intent of this public-private partnership was that DTP would earn revenue through 2044 to gain a return on its substantial investment in the Eagle Project. According to Mr. Stopplecamp, RTD has already paid DTP $1.48 billion under the CA. In addition, he testified that DTP has already earned $225.0 million in service revenue and earns $8.0 million per month on the A-line alone.

Mr. Stopplecamp also testified, however, that the overall cost of the Eagle Project was $2.2 billion. The Eagle Project was financed largely through FasTracks funding approved by Denver metro area voters in 2004, federal funding and federally back loans obtained by RTD. Mr. Strange did not testify to the total cost that the DTP entities and partners have invested in the project. However, he testified that the DTP entities issued $500.0 million in private equity bonds to finance the design, construction and operation of the project. He further testified that RTD would not have had access to this financing if not for this public-private partnership.

It would be unfair to allow RTD to walk away from all of this now. Therefore, declaratory relief allowing RTD to terminate the CA is not appropriate. The Court denies RTD this relief on its declaratory relief counterclaim.

ORDER FOR ENTRY OF JUDGMENT

IT IS ORDERED, ADJUDGED, AND DECREED that pursuant to Rules 58 and 79(d) of the Colorado Rules of Civil Procedure, the Clerk of the Court shall, enter upon the register of actions of the Court, judgment as follows:

1. On Plaintiff DTP's claims for breach of contract and breach of the duty of good faith in fair deal in favor of Defendant RTD and against DTP;

2. On Defendant RTD's counterclaims for breach of contract and for declaratory relief in favor of Plaintiff DTP and against RTD.

IT IS FURTHER ORDERED that post-judgment motions are due twenty-one (21) days after the date of this order for entry of judgment. Any motion for attorney fees and a bill of costs are due twenty-one (21) days after the date of this order for entry of judgment. Taxing and determination of attorney fees and costs shall be in accordance with Colorado Rules of Civil Procedure 54(d) and Practice Standards 1-15 and 1-22.

SO ORDERED AND DATED: Friday, February 10, 2023.

BY THE COURT:

Andrew P. McCallin
District Court Judge