

# National Transportation Safety Board

Office of Railroad, Pipeline and Hazardous Materials

Washington, DC 20594



HMY23MH006

## **RAIL OPERATIONS**

Group Chair's Factual Report

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**A. CRASH**

Location: Delray Beach, Palm Beach County, Florida  
Date: February 8, 2023  
Time: 8:06 p.m. (EST)

**B. RAIL OPERATIONS GROUP**

Group Chair	Michael Bachmeier National Transportation Safety Board Operations Group Chair
Party Coordinator	Michael Lefevre Brightline VP Operations
Party Coordinator	James Turpen Federal Railroad Administration (FRA) Railroad Safety Inspector (Operating Practices)
Group Member	Emanuel Couto Brightline VP Transportation

**C. SUMMARY**

For a summary of the crash, refer to the *Crash Information and Summary Report*, which can be found in the NTSB docket for this investigation.

## **D. DETAILS OF THE INVESTIGATION**

The Rail Operations Group was formed to evaluate the operational factors associated with the Brightline train crew involved in this accident. This report describes the makeup of the train and crew at the time of the crash, method of operation, applicable rules, crew performance, train handling, information obtained from the lead locomotives forward facing video, and a detailed timeline of events leading up to the crash. Factual reports prepared by other NTSB investigative groups should be consulted for information related to other aspects of the investigation, including information referenced within this report.

### **1.0 Brightline Train #559**

On February 8, 2023, the crew for train #543 reported for duty at 3:00 p.m. local time, at the Running Repair Facility (RRF) in West Palm Beach, Fl. The crew consisted of a locomotive engineer and a conductor. After acquiring all of their bulletins and messages for their train, they had a job briefing and was transported to their train. According to the interviews, once they arrived on their train, they completed their inspection and testing, known as Class II Air Brake Test (CFR 238.317<sup>1</sup>). Their train consisted of two locomotives positioned on opposite ends with four passenger cars in the middle.

The crew completed their first-round trip from West Palm Beach to Miami and return to West Palm Beach at approximately 7:03 p.m. The crew stated that they normally perform two round trips per shift. The average round trip is determined by the designation of the train. If they are in expedited service, they could complete a round trip in approximately three hours and twelve minutes . If they complete all of the station stops it takes approximately three hours and twenty-two minutes. Once they got back to West Palm Beach, the 543-train crew had a 30-minute layover where they took a break before getting on their next train (559).

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<sup>1</sup> CFR 238.317 Class II Brake Test - A Class II brake test shall be performed on a passenger train when any of the following events occurs: Whenever the control stand used to control the train is changed; When an operator first takes charge of the train, except for face-to-face relief.

**Table 1:** The schedule for the first trip was #12 (BLF #543) and the second trip #17 (BLF 559) shown below.

February 8 & 13, 2023												FTX Arena - MIA Heat							
Direction	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
<b>Southbound</b>	BLF # 501	BLF # 505	BLF # 507	BLF # 509	BLF # 511	BLF # 515	BLF # 519	BLF # 523	BLF # 527	BLF # 531	BLF # 535	BLF # 543	BLF # 547	BLF # 551	BLF # 553	BLF # 555	BLF # 559	BLF # 567	
Crew On Duty	4:15	5:15	5:53	6:15	6:53					12:05	13:00	15:00	16:05		17:13				
RRF	Dep	4:50	5:50	6:28	6:50	7:28									17:48				
West Palm Beach	Dep	5:05	6:05	6:43	7:05	7:43	8:48	9:43	10:48	11:43	12:48	13:43	15:43	16:48	17:43	18:03	18:23	19:48	21:43
Boca Raton	Arr	5:27	6:27	7:05	7:27	8:05		10:05		12:05		14:05	16:05		18:05				22:05
Boca Raton	Dep	5:29	6:29	7:07	7:29	8:07		10:07		12:07		14:07	16:07		18:07				22:07
Fort Lauderdale	Arr	5:45	6:45	7:23	7:45	8:23	9:23	10:23	11:23	12:23	13:23	14:23	16:23	17:23	18:23	18:38	18:58	20:23	22:23
Fort Lauderdale	Dep	5:47	6:47	7:25	7:47	8:25	9:25	10:25	11:25	12:25	13:25	14:25	16:25	17:25	18:25	18:40	19:00	20:25	22:25
Aventura	Arr	6:01	7:01	7:39	8:01	8:39		10:39		12:39		14:39	16:39		18:39				22:39
Aventura	Dep	6:03	7:03	7:41	8:03	8:41		10:41		12:41		14:41	16:41		18:41				22:41
Miami	Arr	6:25	7:25	8:03	8:25	9:03	10:00	11:03	12:00	13:03	14:00	15:03	17:03	18:00	19:03	19:15	19:35	21:00	23:03
Trainset	A	B	C	D	E	A	B	C	E	A	B	C	E	A	F	B	C	E	
FDC Id#	701	702	703	704	705	701	702	703	705	706	707	709	710	706	708	707	709	710	

Direction	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
<b>Northbound</b>	BLF # 508	BLF # 512	BLF # 516	BLF # 520	BLF # 524	BLF # 528	BLF # 536	BLF # 540	BLF # 544	BLF # 548	BLF # 550	BLF # 552	BLF # 556	BLF # 560	BLF # 564	BLF # 570	BLF # 572	BLF # 576	
Miami	Dep	6:48	7:48	8:45	9:45	10:48	11:45	13:48	14:45	15:48	16:45	17:15	17:45	18:45	19:45	20:48	22:18	22:45	23:15
Aventura	Arr			9:02	10:02		12:02		15:02		17:02	17:32	18:02	19:02	20:02			23:02	23:32
Aventura	Dep			9:04	10:04		12:04		15:04		17:04	17:34	18:04	19:04	20:04			23:04	23:34
Fort Lauderdale	Arr	7:18	8:18	9:18	10:18	11:18	12:18	14:18	15:18	16:18	17:18	17:48	18:18	19:18	20:18	21:18	22:48	23:18	23:48
Fort Lauderdale	Dep	7:20	8:20	9:20	10:20	11:20	12:20	14:20	15:20	16:20	17:20	17:50	18:20	19:20	20:20	21:20	22:50	23:20	23:50
Boca Raton	Arr			9:36	10:36		12:36		15:36		17:36		18:36	19:36	20:36			23:36	0:06
Boca Raton	Dep			9:38	10:38		12:38		15:38		17:38		18:38	19:38	20:38			23:38	0:08
West Palm Beach	Arr	8:00	9:00	10:05	11:05	12:00	13:05	15:00	16:05	17:00	18:05	18:30	19:05	20:05	21:05	22:00	23:30	0:05	0:35
RRF	Arr										18:53			21:28	22:23	23:53	0:28	0:58	
Trainset	A	B	C	E	A	B	C	E	A	B	D	C	E	A	B	C	F	E	
FDC Id#	701	702	703	705	701	702	703	705	706	707	704	709	710	706	707	709	708	710	
Crew Off Duty				12:46	13:41	15:41	16:46				19:03		21:38	22:33	0:03	0:38	1:08		
Hours of Service				8:31	8:26	9:48	9:53				4:43		9:33	9:33	9:03	7:25	9:03		

**Table 1:** Schedule of Brightline for February 8, 2023 (Source: Brightline)

According to the interviews with NTSB, after their break, the crew began preparing for a second trip. The crew called for any changes to their bulletins and new messages for their new train, (#559) and completed their mandatory air brake tests. The crew stated in the interview that they departed West Palm Beach to Miami on-time at 7:48 p.m., southbound on the east main.

The crew stated that their train was operating as intended as it approached Delray Beach and up to Lindell Boulevard grade crossing. They saw a Florida East Coast (FEC) Freight Train coming northbound on the west main while they were traveling at a recorded speed of 78 MPH going southbound on the east main of the

two main tracks. The Brightline engineer stated that he saw the ditch lights<sup>2</sup> start oscillating on the FEC train, noticed some reflectors at the crossing, and then heard the FEC train crew call over the radio at approximately 8:05:52 that there was a car on the tracks, in which the engineer immediately placed the train into emergency at 8:05:57 p.m. and sounded the locomotive horn.

The crews usually don't see ditch lights oscillating while operating within a quiet zone<sup>3</sup>. Within a designated quiet zone, the whistle must not be sounded approaching a public crossing at grade, except when its necessary to provide warning in an emergency. When the whistle is sounded, it activates the ditch lights to start oscillating back and forth.

The Brightline crew stated in the interviews that they could not see the vehicle on the crossing due to the bright headlight of the oncoming FEC train, but as soon as their train passed the lead locomotive of the northbound FEC train at 8:06:00 p.m., they could see the vehicle on the crossing. The Brightline train struck the vehicle on the passenger front side resulting in fatalities to both occupants at 8:06:02 p.m. traveling 76 mph.

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<sup>2</sup>Ditch lights, also known as auxiliary lights or crossing lights, are additional lights at the front and sometimes rear of a locomotive or cab car that are positioned closer to the track than normal headlights. They are used to make trains easier to spot, for safety.

<sup>3</sup> A Quiet Zone is a segment of a rail line, with one or a number of consecutive public highway-rail grade crossings at which locomotive horns are not routinely sounded per 49 CFR Part 222.



BLF\_00010100FORWARD20230208200557

**Figure 2:** Photo from the outward facing camera from the Brightline train meeting the headend of the northbound FEC Train which shows the bright headlight. (Source: Brightline Outward Facing Camera)

## **2.0 Brightline Outward & Inward Facing Camera, Brightline Locomotive Event Recorder, and FEC Locomotive Event Recorder Review**

The operations working group reviewed the Brightline outward & inward facing camera, Brightline locomotive event recorder, and the FEC locomotive event recorder on scene. A summary of these reviews is contained in the Onboard recorder factual report.

## **3.0 Interviews**

The operations working group interviewed the locomotive engineer and conductor on February 10, 2023, at the Embassy Suites, 661 NW 53<sup>rd</sup> St., Boca Raton, Florida, 33487. Below is the summary of the interviews and the full transcripts are in the docket.<sup>4</sup>

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<sup>4</sup> The full interview transcripts will be located in the public docket. [NTSB Docket - Docket Management System](#)

### **3.1 Conductor, Brightline**

- Conductor stated they reported for duty at 3:00 p.m. local time at the RRF facility at West Palm Beach, Florida
- The conductor had about 4 months of experience as a conductor with Brightline and 5 years' experience at a shortline and CSX.
- He said they normally complete 2 round trips between West Palm Beach and Miami on a typical shift.
- After an initial job briefing and confirmation of bulletins, they departed by crew van from the WPB facility to change crews arriving at approximately 15:30.
- The corridor run is currently 68 miles from WPB station to Miami.
- Once a round trip had been completed from WPB/Miami, the crew started the 3rd leg of their tour of duty headed SB on the East main. As they approached the crossing at Lindell, MP 319.298 Del Ray Beach, a northbound FEC train, FEC 20808 was approaching the crossing and had activated lights/gates.
- Conductor stated the FEC train called them via radio twice in rapid succession telling them about a car on the crossing at Lindell.
- Conductor stated before the second transmission the locomotive engineer had already placed the train into emergency.
- He said he could not see the vehicle on the crossing account the FEC northbound trains headlights.
- He could see the vehicle as soon as the FEC train had passed by the head end of their train seated in the conductor's side (east side) of the locomotive.

### **3.2 Engineer, Brightline**

- Engineer stated they reported for duty at 3:00 p.m. local time at the RRF facility at West Palm Beach, Florida
- He stated that he had about 5 months of experience as an engineer with Brightline and 4 years of experience as an engineer with the MTA/Long Island Railroad.
- After an initial job briefing and confirmation of bulletins, they departed by crew van from the WPB facility to change crews arriving at approximately 15:30.
- Once he got on his train, he conducted a Class II Air Brake test and running brake test as he departed.
- The corridor run is currently 68 miles from WPB station to Miami.

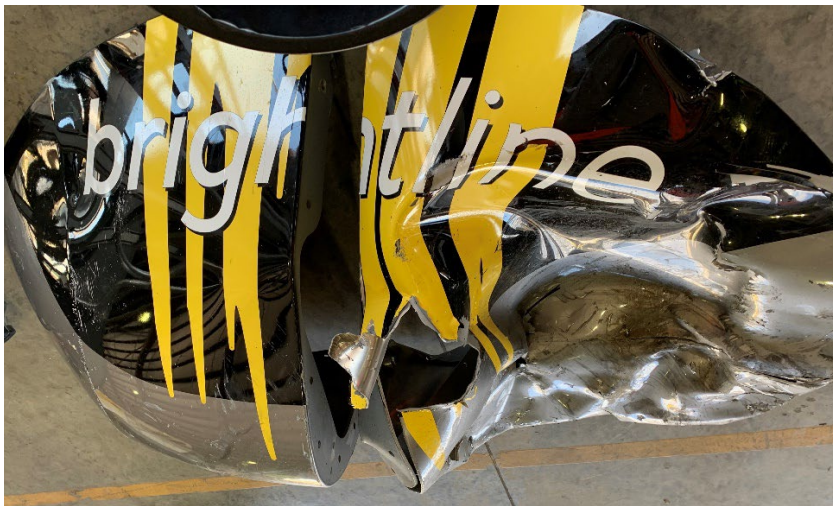


- Once a round trip had been completed from WPB/Miami, the crew started the 3rd leg of their tour of duty headed SB on the East main. As they approached the crossing at Lindell, MP 319.298 Del Ray Beach, a northbound FEC train, FEC 20808 was approaching the crossing and had activated lights/gates.
- Engineer stated the FEC Northbound train on the west main called out to them on the radio stating that there was a vehicle on the crossing. The FEC made two calls on the radio in rapid succession.
- Engineer said he initiated an emergency brake application once he heard the FEC train crew call about the vehicle because he saw the ditch lights oscillate and also thought he noticed a reflection at the crossing.
- He stated that the emergency personal arrived on scene within a few minutes. He said it was like they just called them, and they were there.

#### **4.0 Mechanical inspection**

The investigation team met at the RRF Facility in West Palm Beach on Saturday morning, February 11, 2023, to inspect the lead locomotive, BLF 101 with the FRA Mechanical Inspector.

The inspection found no exceptions to the locomotive air brake system, head lights, locomotive horn, and the auxiliary lights functioned as designed.



**Figure 3:** Brightline front cowling damage.

#### **5.0 Internal Oversight and Crew Qualifications**

Brightline safety oversight is conducted through a written operations testing program developed as required in title 49 Codified Federal Regulations (CFR)

Section 217.9, Program of Operational Testing, and Inspections. This regulation requires that railroads have a written testing program and periodically conduct operational tests and inspections of their employees. These tests and inspections determine compliance with and reinforce expectations of operating rules, timetables, and special instructions.

Brightline managers are required to perform efficiency testing in accordance with their written program. As part of this investigation, the operational tests conducted on the crew involved in this incident were reviewed. Employee records reflect the following testing was performed on the involved crew in the preceding four months:

- Conductor- 39 observations/tests entered with no exceptions noted.
- Engineer- 24 observations/tests entered with no exceptions noted.

The requirements for certification of engineers are contained in title 49 CFR part 240, Qualification and Certification of Locomotive Engineers. Within these requirements there are initial training requirements and recurring training that are needed for an engineer to stay current and qualified. As part of the investigation, records were reviewed for the engineer pertaining to certification. In accordance with Brightline rules, the engineer was licensed, qualified and current to operate on the Florida East Coast Railway.

The requirements for certification of conductors are contained in title 49 CFR part 242, Qualification and Certification of Conductors. Within these requirements there are initial training requirements and recurring training that is needed for a conductor to stay current and qualified. As part of the investigation, records were reviewed for the conductor pertaining to certification. In accordance with Brightline rules, the conductor was licensed, qualified and current to operate on the Florida East Coast Railway

## 6.0 **Brightline Rail Service**

This section of the report briefly describes Brightline rail operations and in more detail, risks associated with highway rail grade crossings.

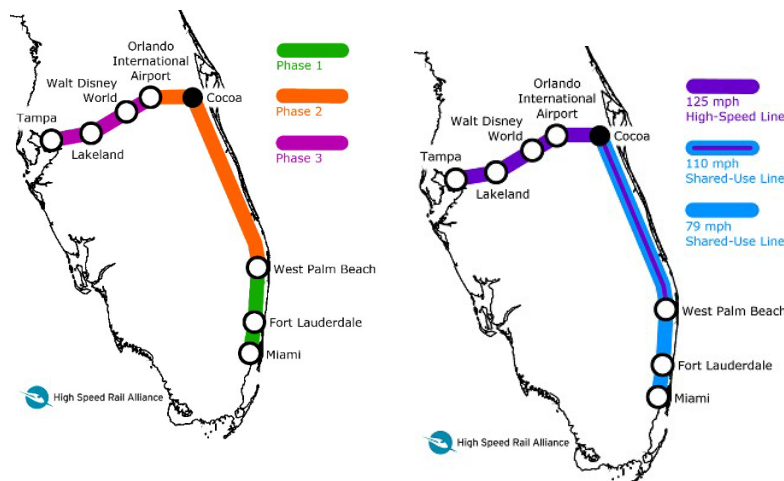
Brightline is a privately owned intercity passenger rail service operating between Miami and Orlando, Florida. At the time of crash, Brightline service was operating between Miami and West Palm Beach only, with the Orlando extension still

under construction. Design of the Brightline project began in March 2012 as “All Aboard Florida”, by Florida East Coast Industries. The project was later rebranded as Brightline. Construction began in November 2014 and was completed in 2018 in South Florida and 2023 in Central Florida. (See figure x). The rail service consists of a 235-mile corridor connecting Miami to Orlando, with a planned future expansion to Tampa.

At the time of the crash, the service operated on 66.5 miles of the Florida East Coast Railway (FECR) Corridor, traversing 178 highway-rail grade crossings; 177 are protected by active warning devices, and 1 limited-access private golf course crossing protected by stop signs. The maximum speed for the Brightline trains on this corridor is 79 mph. To accommodate the Brightline service, the corridor was upgraded with new track segments, signalization and train control, new bridges, and improvements to the existing grade crossings.

Beginning on September 22, 2023, Brightline extended its service from West Palm Beach to Cocoa on a shared line with FECR, and from Cocoa to Orlando International Airport on a dedicated line. Train speeds on the West Palm Beach to Cocoa segment are 110mph, and 125mph on the Cocoa to Orlando segment, with train speeds lowered where civil constraints and railroad bridge structures exist. Phase 3 will operate from Orlando International Airport to Tampa, Florida on a dedicated line with no grade crossings, and speeds up to 125 mph.

On the segments of track that Brightline shares with FECR, the joint service agreement, FECR is responsible for conducting inspections and maintenance of the railroad infrastructure.



**Phase 1** – West Palm Beach to Miami, currently operating, 65-mile shared use line with speeds up to 79 mph.

**Phase 2** - West Palm Beach to Cocoa, under construction and projected operational 2023, 120-mile upgraded shared use line with speeds up to 110 mph.

Cocoa to Orlando International Airport, under construction and projected operational 2023, 35-mile new dedicated high-speed line with speeds up to 125 mph.

**Phase 3** - Orlando International Airport to Tampa, still in the planning stages, 85-mile dedicated line with speeds up to 125 mph.

## 7.0 Grade Crossing Safety

Along the FEC South Corridor, there were 187 highway grade crossings and 1 pedestrian grade crossing along the FECR corridor; 180 active crossings, three passive crossings, and five crossings were closed. Since phase 1 became operational until late 2022, there have been 103 highway grade crossing crashes (See table 2). In support of this investigation, the NTSB initiated two other investigations involving grade crossings; North Miami, FL (HWY23FH009) and Hollywood, FL (HWY23FH011). Information regarding these investigations can be found in the NTSB Investigations Docket.

Year	X-ing Accidents	Fatalities	Injuries
2018	18	2	6
2019	35	14	9
2020 – Covid Year	8	2	2
2021 – Covid Year	9	6	4
2022	33	12	12
<b>Total</b>	<b>103</b>	<b>34</b>	<b>31</b>

Table 2: FECR Corridor Grade Crossing Crashes

## 8.0 Brightline System Safety Plan

United States Code 49 CFR Part 270 requires commuter and intercity passenger railroads to develop and implement a system safety plan (SSP) prior to operations. The SSP provides a structured method to identify and mitigate hazards

associated with passenger rail operations. Railroads have the flexibility to tailor the plan to meet the specific needs and conditions of their operation. The plan must be submitted to the Federal Rail Administration (FRA) for review and approval. Additionally, the FRA is responsible for audits and inspections of SSP implementation and compliance. The SSP is a controlled document; only the Brightline Chief of Safety and Security Officer and the Director of Safety are authorized to make revisions or updates to the document.

FRA requires that rail operators submit a SSP to ensure operational safety in accordance with 49 CFR Part 270.201. This SSP shall be approved by FRA under the process specified in [§ 270.201](#). The plan, required to be developed by commuter and intercity passenger railroads is intended to outline a structured program with proactive processes and procedures to address safety. An SSP must include a railroad's program to identify and mitigate or eliminate hazards and the resulting risks on each railroad's system.

Brightline developed their SSP with their contractors and the Florida East Coast Railway (FECR). The Brightline SSP was approved by the FRA on October 22, 2021. At the time of the crash, version 8.1 of the SSP, dated January 23, 2023, was in effect. The implementation of the SSP across all Brightline departments is overseen and maintained by the Chief Safety & Security Officer.

The SSP covers many operational and organizational factors associated with passenger rail operations. This report focuses narrowly on factors associated with grade crossing safety. The broadly stated goal of the SSP, with respect to grade crossing safety, is to reduce grade crossing events by 5% using the following:

- Conduct a review of grade crossing events over previous years to perform a trend analysis and establish a baseline.
- Conduct a semiannual review of incident data to determine effective hazard mitigation strategies.

## **8.1 Operation Lifesaver**

The SSP outlines Brightline involvement in Operation Lifesaver; a public safety education campaign focused on safety near railroad tracks. Brightline participates in periodic organizational meetings with Florida Operation Lifesaver, CSX Transportation, FECR, and Florida Department of Transportation to coordinate outreach efforts to the community. Brightline utilizes trained volunteers from within

the company to participate in public outreach to schools, driver's education providers, community centers and other transportation providers to share information and statistics and to encourage safe behavior near the tracks.

## **8.2 Risk Based Hazard Analysis**

The SSP outlines the process for which hazards are identified, assessed, and resolved. Major elements of the rail system are assessed for potential hazards then categorized to determine a suitable method for mitigating risks. Hazards are further categorized according to the likelihood of occurrence and severity. Brightline has assumed the FRA's approach to trade-offs of hazard management: design for minimum risk, incorporate safety devices, provide warning devices, and develop special procedures and training.

## **9.0 Brightline Safety Initiatives**

NTSB Staff met with representatives from Brightline about the company's response to grade crossing safety concerns. The company asserts that their grade crossing safety initiatives began prior to the commencement of revenue service and is ongoing. In addition to safety mitigation strategies outlined in the SSP, Brightline has created several initiatives intentioned to improve grade crossing safety.

### **9.1 Automated Enforcement**

In 2021, Brightline began using NovoaGlobal Railroad-Safe traffic monitoring to increase grade crossing safety along the FECR southern corridor. Brightline initially acquired 3 camera systems and had expanded to 6 when the crash occurred. The camera system detects drivers who violate grade crossing warning devices including stopping within 15 feet of or on a rail, driving around lowered crossing gates, entering grade crossings without space to clear the crossing, and the failure to stop by vehicles mandated to do so.

To identify the owners of vehicles that are captured by the system, Brightline partnered with the Florida East Coast Railroad Police Department. The police department provides automated license plate reader (ALPR) in conjunction with the camera system. The ALPR captures a digital image of a vehicle license plate number. The person associated with the license plate information is obtained through the DMV database of the state that issued the license plate. Once identified, the police department sends out a violation warning notice (see figure 4). Florida law does not permit the assessment of fines related to the automated violation cameras.

At the time of the crash, Brightline operated 6 automated camera violation systems. The camera systems are mobile and were deployed at locations based on history of incidents, including crashes or train emergency brake deployment. A

violation notice is triggered when a driver passes a lowered gate, stops within 15 feet of a grade crossing, or enters a grade crossing with insufficient space to clear. A photo of the driver committing the violation is then sent to the address associated with the vehicle's license plate with a letter stating the violation of a safety issue, the statistics on the number of injuries and fatalities at a grade crossing, Florida statutes for vehicle operations at grade crossings, and instructions on how motorists should operate their vehicles at grade crossings (see figure X). While Brightline monitors the number of violation notices, a ticket or financial penalties are not assessed.

The locations of camera system deployments are reassessed periodically using traffic incident data and the number of violations as the number of violations decrease, the cameras are moved. Brightline reports that there have been over 8,500 violation notices issued since the automated enforcement systems have been installed.

The Lindell Blvd grade crossing was not equipped with a violation camera system when the crash occurred.



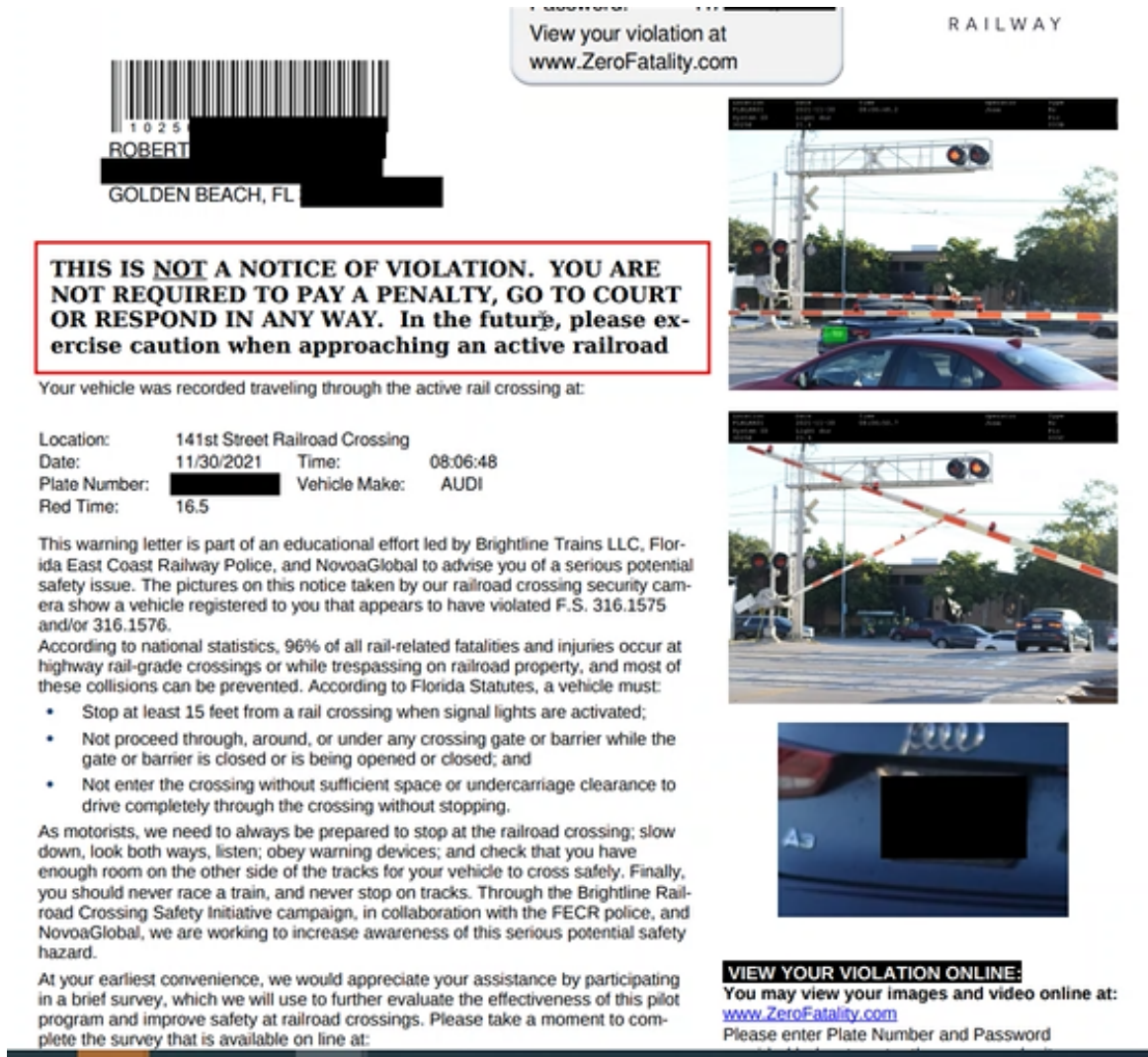


Figure 4: violation warning notice

## 9.2 Community Outreach and Education

Brightline has developed an outreach program to increase awareness, education and safety pertaining to issues with the railroad. This report will focus specifically on issues surrounding grade crossing safety.

### 9.2.1 Safety Campaigns

Brightline has created several safety campaigns intended to increase rail safety. The campaigns use a variety of methods to engage with the community. Buzz Boxx is a campaign designed to engage residents along its rail corridor to promote rail safety and mental health awareness. The campaign encourages participants to take a rail safety pledge in exchange for a free haircut. The campaign seeks to engage with those who may not respond to traditional safety messaging.



In February 2023, Brightline launched a new rail safety website called Get On Board with Rail Safety. The campaign brings awareness of dangers associated with grade crossings. The campaign further directs the community to sign a digital safety pledge and to share it on their social media platforms. The pledge is available on Brightline’s website.<sup>5</sup>

### **9.2.2 Education Outreach**

In South Florida, Brightline established partnerships with the South Florida schools to distribute materials to students and their parents in the driver’s education course and provide safety training to school bus drivers.

Brightline has also partnered with Waze, a widely used cellphone navigation application, to notify drivers as they approach grade crossings.

### **9.2.3 Public Safety**

Brightline has created partnerships with the law enforcement agencies within the Southern FECR corridor. Brightline staff teamed up with law enforcement officers to distribute safety literature to motorists at high-traffic grade crossings. Brightline also provides ongoing training to law enforcement officers focusing on enforcement of violations and safety at grade crossings.

Brightline also collaborated with law enforcement during selective traffic enforcement operations. In 2022 during Operation Crossing Guard (June) and Rail Safety Week (September), law enforcement officers issued over 5,000 traffic citations for rail-related and other traffic violations. Brightline also coordinated with Hollywood Police Department, Palm Beach Sheriff Office, and the Fort Lauderdale Police Department to obtain grant funding for selective traffic enforcement along the FECR Southern Corridor.

## **E. ATTACHMENTS**

- Rail Operations Attachment – Air Brake and GCOR Rules
- Rail Operations Attachment – Locomotive Download
- Rail Operations Attachment – FRA Xing 57 Form (2-8-23)
- Rail Operations Attachment – Mechanical Final Damage Cost
- Rail Operations Attachment – BLF 709 Bulletins
- Rail Operations Attachment – Mechanical Paperwork
- Rail Operations Attachment – BLF Train Schedule
- Rail Operations Attachment – FRA 57 reports for 2022

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<sup>5</sup> [Home - Brightline \(brightlinesafety.com\)](https://www.brightlinesafety.com)

Submitted by:

Michael Bachmeier, Group Chairman  
Rail Accident Investigator  
NTSB - RPH

Kenneth Bragg, Investigator-In-Charge  
Highway Investigator  
NTSB - OHS