

December 12, 2018

The Honorable Robert L. Sumwalt, Chairman
National Transportation Safety Board
490 L'Enfant Plaza East, SW
Washington, DC 20594

**RE: DuPont Amtrak Derailment
NTSB Accident Number: RRD - 18MR001**

Dear Chairman Sumwalt:

The Washington State Department of Transportation (WSDOT) as a designated party to the DuPont derailment investigation respectfully submits this letter and the enclosed documents containing analysis, proposed findings, probable cause determinations and proposed safety recommendations for the National Transportation Safety Board's (NTSB) consideration in this investigation. In support of this letter, we reference previously supplied documents for consideration as the NTSB reaches probable cause conclusions regarding this accident. WSDOT also encloses additional factual supporting documents for your consideration and for inclusion into the docket. We request all documents supplied and referenced in this letter become part of the official public record.

1. Accident Summary

On December 18, 2017 at approximately 7:33 am (PST) southbound Amtrak passenger train 501 derailed as it failed to negotiate a curve just before an overpass above Interstate 5 near DuPont, Washington. This was the inaugural run on the Point Defiance Bypass (Bypass) for revenue service. Just prior to the derailment, train speed was 83 MPH.¹ The engineer knew the posted speed restriction before entering the curve was 30 mph.² The lead locomotive and the following 12 cars derailed, with train cars landing under and on both sides of the freeway overpass.³ Several vehicles on Interstate 5 were struck by the derailed locomotive and train cars. Other vehicles struck derailed train cars as the accident occurred. Three train passengers were killed and 62 of the 83 people onboard were injured. Individuals in numerous vehicles on the interstate were also injured.

¹ NTSB Report, Group B, Exhibit 6, p. 4. (Locomotive Event Recorder Factual Report) *For all footnote references, we cite to the page listed on the document, excluding the NTSB coversheet.*

² NTSB Report, Group F, Exhibit 1, p. 43. (Interview of DuPont Engineer)

³ NTSB Report, Group D, Exhibit 23. (Illustrated Accident Diagram, DuPont)

The engineer was well rested prior to the 6 am departure out of Seattle. In his statement to the NTSB, he stated he was familiar with the curve near DuPont.⁴ The engineer knew the curve on the Bypass was at milepost (MP)19.8; he recalls seeing MP 16 and 17⁵. He planned, before starting the route out of Seattle, to reduce train speed to negotiate the train through the curve at the posted speed of 30 mph. The engineer planned to start slowing the train one mile before the curve in order to be at the restricted curve speed of 30 mph before entering the curve.⁶

The onboard data recording devices recovered by the NTSB showed the train speed was at 83 mph twenty-four seconds before the derailment.⁷ The engineer does not recall seeing any other visible mileposts or control point signs indicating the curve and speed restrictions after MP 17⁸. The train was traveling in excess of the maximum rail speed of 79 mph⁹ (and the curve speed of 30 mph) at the time of derailment with no emergency brakes applied by the engineer.¹⁰ The NTSB investigation confirmed these wayside signs were present on the track before the derailment, including at two miles before the curve.¹¹

2. Additional Analysis

On January 26, 2018, WSDOT provided documents to the NTSB for background and assistance in understanding the various participants involved in the development of the Point Defiance Bypass Project. The Bypass was a part of the federally funded improvements to existing track between the cities of Tacoma and DuPont that had, in the past, been used for freight transport.

Additional documents were provided by WSDOT to the NTSB on March 20, 2018. We understand all parties (and others) provided large volumes of materials to the NTSB for the investigation. After reviewing the NTSB Factual Reports released July 10, 2018 and participating in the two day July hearing, we request the following previously supplied documents be considered to support the conclusions of this investigation as set forth below.

Below is the map showing the prior route of the *Cascades* train (in green) and the Bypass is in orange.

⁴ NTSB Report, Group F, Exhibit 1, p. 14. (Interview of DuPont Engineer)

⁵ NTSB Report, Group F, Exhibit 1, p. 43. (Interview of DuPont Engineer)

⁶ NTSB Report, Group F, Exhibit 1, p. 43, 65. (Interview of DuPont Engineer)

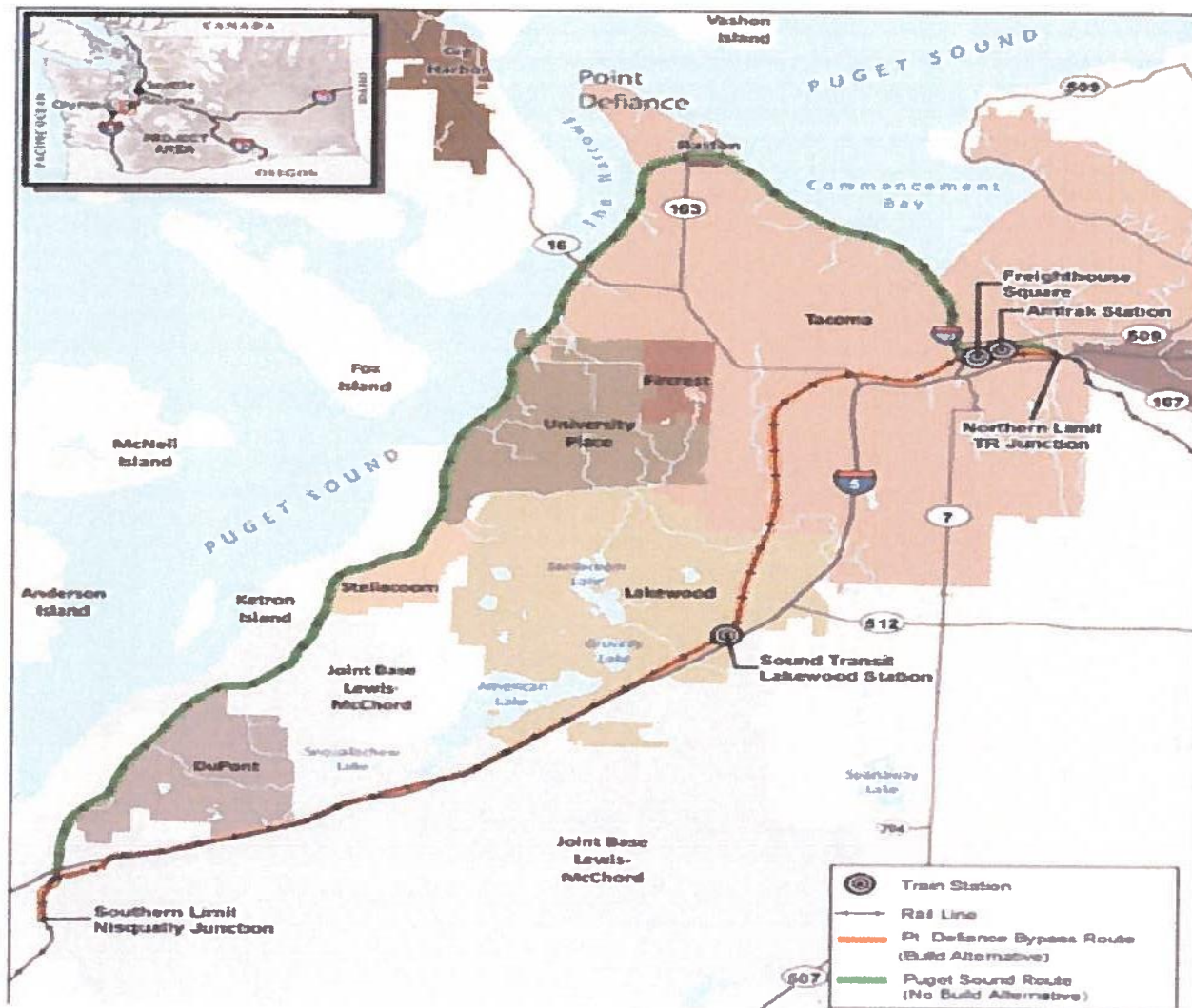
⁷ NTSB Report, Group B, Exhibit 6, p. 4. (Locomotive Event Recorder Factual Report)

⁸ NTSB Report, Group F, Exhibit 1, p. 43. (Interview of DuPont Engineer)

⁹ NTSB Report, Group D, Exhibit 38, p. 2. (Sound Transit Timetable #2)

¹⁰ NTSB Report, Group B, Exhibit 6, p. 4. (Locomotive Event Recorder Factual Report)

¹¹ NTSB Report, Group B, Exhibit 4, p. 5-6. (Operations/System Report)



A. FRA Approvals.

In order to advance federal funds for the Washington State rail improvement projects, the Federal Railroad Administration (FRA) required submission of design plans, proposed expenditures, construction bids, and other formal documents that supported High-Speed InterCity Passenger Rail Program (*HSIPR* Program) funding requests under the American Recovery and Reinvestment Act of 2009 (ARRA). The FRA provided written approvals to WSDOT and other entities that included approvals for preliminary engineering, final design implementation, and construction stages for the Bypass.¹²

¹² WSDOT document # 3.1.1.1-3.1 provided to NTSB on 1/26/2018. See 2/26/15 email on Sound Transit Final Design 3.1.1.3; 2/8/15 letter from FRA on Sound Transit, Signal and Roadway Final Design WSDOT #3.1.1.1.

Below are several other areas, and supporting documents and analysis, for consideration by the NTSB that answer additional questions raised during the July 2018 hearing. These are public records available from WSDOT and submitted for your consideration.

B. Track Time, Training, and Funding.

At the July hearing, numerous questions¹³ were raised about the amount of track time that was available for Amtrak staff to train and familiarize themselves with the Bypass before the inaugural run. WSDOT funded Amtrak training and familiarization as a component of WSDOT's ARRA High Speed Rail Program. All training cost estimates were provided by Amtrak prior to the start of training and familiarization. Amtrak did not expend all of the training funding. All track time for the Lakewood Subdivision was coordinated and authorized by Sound Transit. WSDOT has provided information and communications in previous communications to the NTSB concerning the notice of track time availability and funding information.

C. Dates for Start of Revenue Service.

Questions arose at the hearing about whether there was a "rush" to begin revenue service on the Bypass and whether rushing contributed in any way to the derailment.¹⁴ As the testimony at the hearing showed, this did not occur. Rather, several earlier dates were proposed for the beginning of revenue service on the Bypass. As the enclosed emails show, whenever postponements for revenue service dates were needed, the date was changed to accommodate circumstances.¹⁵

D. FRA Waivers for Talgo Trainsets.

Two FRA-approved waivers involving the Talgo trainsets were discussed at the hearing. The Talgo trainsets were put into revenue service in Washington State in December 1998. No waivers were required at this time. However, in May 1999, the FRA issued new regulations on crashworthiness that were more stringent than previous regulations. New regulations required passenger train equipment to resist minimum static end load of 800,000 pounds applied on the line of draft without permanent deformation of the body structure. This was an increased strength load as the earlier regulations required 400,000 pounds of end load resistance. In an initial decision issued in 2000¹⁶ and then in the FRA's 2009 Final Decision,¹⁷ the FRA determined the compressive end strength or "buff strength" of the Talgo trainsets could be demonstrated in collisions and derailments such that the FRA waived the 800,000 pound safety requirement with

(This voluminous group of records is not re-submitted herein. Should NTSB staff need these records, WSDOT can re-submit them.)

¹³ July 10, 2018 Hearing, Transcript p. 223-24.

¹⁴ July 10, 2018 Hearing, Transcript p. 220-21.

¹⁵ These documents are enclosed as Attachment A to this letter.

¹⁶ NTSB Report, Group D, Exhibit 15 (FRA 2000 Initial Decision No. 1999-6404).

¹⁷ NTSB Report, Group D Exhibit 19 (FRA 2009 Final Decision No. 1999-6404).

modifications of the trainsets. The FRA relied on the Volpe Summary Report¹⁸ that evaluated structural crashworthiness of the Talgo trainsets. Volpe concluded the trainset was crashworthy; and in some circumstances, exceeded crashworthiness standards of conventional trainsets of the same weight. Design modifications were added that factored into the decision to grant the grandfathering of the Talgo trainsets. The Final Decision also notes that “full PTC functionalities on all passenger main lines, regardless of speed, effective December 31, 2015” will occur.¹⁹

A second waiver was approved by the FRA in 2017. The re-routing of the Amtrak *Cascades* service over the Point Defiance Bypass required an addition to the 2009 waiver since this rail line was new (for passenger service) and now owned by Sound Transit. On December 14, 2017, the FRA conditionally approved Amtrak’s request to modify the original waiver to include the Bypass.²⁰ Amtrak was to provide a written summary of the test results from the Bypass runs within 30 days after starting revenue service and to provide a quantitative risk assessment using the same factors used in a previous analysis within 60 days of granting the waiver.

After the derailment, the FRA has made changes to the required risk assessment on the Bypass in order for the waiver to continue. This is in progress by Amtrak. The Bypass is not currently being utilized for passenger service until Positive Train Control (PTC) is operational within the State of Washington.

E. WSDOT’s 2006 Long Range Plan for Amtrak *Cascades*.²¹

WSDOT’s presentation to the NTSB in July referenced this 300+ page, long-range planning document. The Plan provides history on legislation, routes and proposed funding for the entire rail corridor from Vancouver, BC to the south of Portland, OR. It recounts that long-range planning began in 1992. The 2006 Plan projected (based on future funding from foreign countries, other states, Washington’s Legislature and Congress) to continue through 2023. This is a financially unconstrained *plan* rather than a directive on what will be built and by when. It makes clear that no funding commitments for the Plan occurred; and much of the Plan remains unfunded today. It discusses commuter rail plans, and ways that expected partners (BNSF, Amtrak, Canada, Oregon, federal government agencies, Sound Transit) may participate.

This Amtrak *Cascades* Long Range Plan provides a vision of potential opportunities for intercity rail passenger development in our region. . . . The infrastructures and operation plans are integrated using a “building block” format. . . . *This plan was not developed using financial constraints.* As a rule, the plan’s “building blocks” with their operational benefits are intended to be implemented incrementally while we continue to seek funding alternatives to

¹⁸ NTSB Report, Group D, Exhibit 16 (Volpe Summary Report)

¹⁹ The date for mandating Positive Train Control was changed from 2015 to January 1, 2019; 49 C.F.R. § 236.1005

²⁰ NTSB Report, Group D, Exhibit 24 (FRA Approval for Bypass, 2017)

²¹ This document is supplied as Attachment B to this letter.

include a federal capital funding partnership consistent with other modes of transportation.²²

F. Derailment Location—Curve at MP 19.8.

All design and construction plans utilized the existing curve on the Point Defiance Bypass for passenger service. Safety concerns were not identified or documented by any involved party (FRA, Sound Transit, BNSF, Amtrak, and construction and design contractors) about the curve at MP 19 before derailment. The engineer, per his statement, knew the curve and its speed limit.²³ The morning of the derailment he and other Amtrak employees discussed their plan to slow the train for the curve.²⁴

While addressing curves is an element of railroad design and construction when and where feasible, we urge the NTSB to consider the incontrovertible information that *had the engineer entered the curve at 30 mph, this derailment would not have occurred*. Finally, the FRA approved all track designs on the Bypass prior to the launch of passenger service.²⁵

G. Construction and Maintenance Agreement--March 27, 2013.²⁶

WSDOT received, and administered, approximately \$ 790,000,000 in grant funds through the federal High-Speed InterCity Passenger Rail Program (*HSIPR* Program) including funding under the American Recovery and Reinvestment Act of 2009 (ARRA).²⁷ The purpose of these grant funds was to construct improvements that would result in certain public benefits, including more frequent, efficient, and reliable *Cascades* intercity passenger rail services within Washington State. WSDOT was required to enter into agreements with any railroad company owning property on which the HSIPR Program would be undertaken. NTSB Report, Group D, Exhibit 37 is “Part 2” of a larger contract. Part 1 (Attachment C) states that project description, between the parties is as follows:

This agreement provides for Sound Transit to complete all work, including design, permitting, construction, administration of construction contracts, plan review, and inspection related to infrastructure improvements within the Sound Transit Corridor....

WSDOT administered grants for the entirety of the rail corridor improvements by providing financial resources and financial oversight of contracts, task orders, consultant administration

²² Interim Secretary of Transportation cover letter dated September, 2007.

²³ NTSB Report, Group F, Exhibit 1, p. 43. (Interview of DuPont Engineer)

²⁴ NTSB Report, Group F, Exhibit 1, p. 25-26 (Interview of DuPont Engineer); NTSB Report, Group F, Exhibit 6, p. 21 (Interview Amtrak Road Foreman).

²⁵ WSDOT submissions to NTSB 1/26/18; Documents 3.1—Approvals. (*Not re-submitted herein*)

²⁶ This document is supplied as Attachment C to this letter.

²⁷ NTSB Report, Group D, Exhibit 37 (High Speed Intercity Passenger Construction and Maintenance Agreement between WSDOT and Sound Transit, 2016)

and coordination; however, this oversight did not include final acceptance and approval responsibilities for the design, construction and safety aspects of Sound Transit's railroad.

H. Oversight for ARRA Program and 49 C.F.R. Part 270.

As WSDOT presented to the NTSB and through various submissions, the role of state entities that financially sponsor Amtrak service is limited. Over the past several years there have been proposals by the FRA to develop requirements in 49 C.F.R. Part 270 to make a sponsor of a passenger rail service a "railroad." WSDOT has communicated with the FRA through various entities to understand the impact and responsibilities of States in this role, as this has not been clearly defined from the FRA. In most cases, states do not have authority over railroad owners; they do not directly receive information from host railroads and from regulatory inspections; and do not have expertise to reasonably fulfill a safety oversight role that is meaningful and effective. WSDOT does not have regulatory authority over railroads.

The Operating Agreement between the State and Amtrak defines the requirements and provisions for intercity passenger rail service. States, including Washington, have provided their Operating Agreements with Amtrak to the FRA for review to provide feedback. The FRA has not provided a response.

To place a sponsoring entity in an undefined role of safety oversight, that entity must have the appropriate expertise and receive timely information to make decisions or take actions. WSDOT has not been given legal authority from its State Legislature to make or enforce passenger railroad safety decisions. Nor has WSDOT received guidance, access to the FRA inspection reports, or information on its equipment or infrastructure to make safety decisions or to take action in the event either the railroad owner or operator fail to act. For example, before the NTSB pre-hearing in Washington D.C., WSDOT was not aware there were regular FRA inspections being performed, and reports developed on equipment or infrastructure WSDOT has ownership in. Upon learning there are regular FRA reports that are given to the operator or maintainer, WSDOT requested copies from regulatory agencies. WSDOT was informed they could not get the reports unless a public disclosure request was filed. WSDOT filed a public disclosure request with the FRA on July 6, 2018. WSDOT received a reply that the FRA is currently experiencing a high number of Freedom of Information Act (FOIA) requests and is addressing backlogged requests with all due diligence on a first-in, first-out basis. FRA Region 8 has since responded that they will work to send information monthly to WSDOT so as to not burden inspectors having to send reports to multiple agencies directly. To date, WSDOT has not been given the documents requested and there has not been a formal process documented on how WSDOT would obtain those on a continued basis.

I. Fleet Management Plan.

At the NTSB hearing in July 2018, WSDOT provided information on its Fleet Management Plan. WSDOT will continue to work with its operator, Amtrak, on replacement of the fleet as part of

the Plan. WSDOT will consider information provided by the NTSB investigation and formal recommendations for fleet replacement planning and procurement.

J. WSDOT's Post Derailment Activities.

1. WSDOT has updated and hired a safety and security manager position that reports directly to the Director of Rail. This position has already begun developing a safety and security plan for WSDOT in its current financial administration role and is preparing for any potential new federal requirements like 49 C.F.R. Part 270.
2. WSDOT will continue to request federal reports or information related to WSDOT assets and seek opportunities to improve collaboration.
3. WSDOT has started a proactive safety and security review process of freight shortline infrastructure it owns (Palouse Coulee City Railroad) to improve the state of good repair and create a work plan with funding that is prioritized.
4. WSDOT is coordinating meetings with all appropriate parties to work with communities and perform public outreach before the restart of the revenue service on the Lakewood Subdivision.
5. WSDOT will continue to coordinate with Amtrak on management of the fleet and addressing any recommendations from the NTSB.

K. Proposed Findings and Probable Cause for Derailment.

1. The engineer failed to respond to clearly visible warning and speed signs showing the approaching 30 mph curve.
2. The engineer did not slow the train prior to the derailment at MP 19.8.
3. There is no evidence that there would have been a derailment had the train entered the curve at 30 mph.
4. Amtrak operated the train during the derailment.
5. WSDOT owned the Siemen's Locomotive and the Talgo trainset involved in the derailment.
6. WSDOT had financial oversight for approximately \$790 million dollars for capital improvements funded by the FRA for the Point Defiance Bypass and other rail improvements.

7. The FRA approved the design, expenditures, and construction of the Point Defiance Bypass.
8. WSDOT had no control in determining track availability times for testing and training on the Bypass.
9. The FRA granted waivers to Amtrak to run the Talgo trainsets in Washington State and on the Point Defiance Bypass.
10. Had any safety reason occurred that would have necessitated the delay of the start of revenue service, the parties (Amtrak, Sound Transit or WSDOT) would have changed the date of revenue service, as they had in the past.
11. WSDOT contracted with a consultant for the track and signal designs on the Bypass, subject to Sound Transit's standards. WSDOT's role was financial administration oversight and coordination along the *Cascades* service route.
12. WSDOT had no role in the final construction decisions on the Point Defiance Bypass.
13. PTC was not required to be active on the Bypass until December 31, 2018.
14. No parties to the Bypass rushed the start of revenue service. Any known reason for delays would have resulted in additional time needed for the beginning of revenue service.

L. Safety Recommendations.

1. Create, at the local, state and federal levels, an external stakeholder review process consistent with appropriate regulations that include the train operator of infrastructure and operational items such as highly rated hazards, timetables and speeds. Here, the parties would include Sound Transit, Utilities and Transportation Commission, WSDOT, Tacoma Rail²⁸, Amtrak, BNSF²⁹, the FRA and other interested entities, including the NTSB. The operator and the FRA must acknowledge and agree to, or

²⁸ Tacoma Rail runs freight rail service on the Bypass.

²⁹ BNSF dispatches trains on the *Cascade* run and owns the track north and south of the Bypass.

- approve prior to the start of revenue service, any changes to infrastructure or operations.
2. Fast Act requirements and timetables should be coordinated and reviewed between the host railroad and with the operator's general orders.
 3. The FRA should require the Administration's Office of Safety to actively participate in project development, delivery, and safety analysis activities on state supported railroads.
 4. The FRA should require the Administration's Office of Safety to have an audit and/or review process of safety certification procedures prior to the start of testing, qualifications, and revenue service on state supported railroads.
 5. The FRA and certified support agencies should allow states that sponsor passenger rail services to receive any Federal Railroad inspection reports, or other documents that contain information on equipment, services, or assets they own, sponsor, or finance.

We appreciate the opportunity to participate in the investigation. Please contact me with any questions or concerns you may have regarding this letter or any aspect of WSDOT's role relating to the Point Defiance Bypass.

Sincerely,



Ron Pate, PLS
Director
Rail, Freight, and Ports Division

CERTIFICATE OF SERVICE

I, Joy Dopita, certify that on December 12, 2018, I mailed the above letter and enclosed documents containing analysis, proposed findings, probable cause determinations and proposed safety recommendations regarding the December 18, 2017 derailment of Amtrak 501 near DuPont, Washington (NTSB Docket No. RRD-18MR001) to the Honorable Robert L. Sumwalt, Chairman of the National Transportation Safety Board. I further electronically served a complete copy on the below listed individuals.

Herb Krohn
SMART National Safety Team

[Redacted]

Scott Barrett
Chief Inspector
FRA/Region 8

[Redacted]

Martin Young
Sound Transit
Commuter Rail Operations Manager

[Redacted]

Kathy Hunter
Washington State
Utilities and Transportation
Commission

[Redacted]

Paul Aichholzer
Siemens Industry, Inc.
Director Locomotive Projects
Rail Systems

[Redacted]

Theresa Impastato
National Railroad Passenger
Corporation
Senior Director System Safety

[Redacted]

Stephen J. Bruno
Brotherhood of Locomotive Engineers & Trainmen
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