Table 5-VA-1
Virginia Rail Line Segments which Meet or Exceed Board Environmental Thresholds

Site ID	From	To	Description	Length in miles	County/City	Setting
N-100	Riverton Jct, VA	Roanoke, VA	NS Hagerstown, Roanoke Districts	5	Waynesboro City	Rural Town

C = CSX
N = NS
S = Shared with Amtrak's Northeast Corridor (not Shared Asset Areas as described in the Application).

5-VA.4 VIRGINIA SAFETY: FREIGHT RAIL OPERATIONS

SEA conducted a statistical analysis to evaluate the potential change in safety on all rail line segments where the proposed Conrail Acquisition would result in eight or more additional freight trains per day. SEA identified three rail line segments within Virginia that would experience this level of increased activity. While increased freight train activity would increase the probability of a freight train accident, SEA did not consider an increase significant unless the predicted accident rate shortened the duration between accidents to one every 100 years or less per mile. Table 5-VA-2 presents results of the analysis, showing the approximate mileage of each rail line segment within the state.

Table 5-VA-2
Estimated Change in Years Between Accidents - Freight Rail Operations

Site ID	Between	And	Miles in State	Increase in Trains Per Day	Pre-Acquisition Accident Interval [a]	Post-Acquisition Accident Interval [a]
C-002	Virginia Ave.	Potomac Yd.	4	10.7	277	181
N-091	Harrisburg, PA	Riverton Jct., VA	24	8.5	417	231
N-100	Riverton Jct.	Roanoke	181	8.2	1209	379

[a] Accident Interval figures show the years/mile.

The Federal Railroad Administration (FRA) requires all railroads to submit reports for all train accidents resulting in personal injury or causing property damage greater than $6,300 (1996 FRA reporting threshold). Train accidents meeting this reporting requirement are relatively

infrequent. The FRA reported about 2,600 accidents (3.69 accidents per million train miles[1]) nationally in 1996. Most of these accidents were relatively minor; almost 90 percent of these accidents caused less than $100,000 in damage. In addition, most of the train accidents did not affect people or non-railroad property.

Accident risk predictions are best expressed by describing the elapsed time expected between any two consecutive events. The current national average is that a main line freight train accident occurs once every 117 years on each mile of route. FRA records, as described in Chapter 4, "System-Wide and Regional Setting Impacts," show a substantial decrease, both in total number of accidents and in accidents per million train miles, a standard industry measure. Because there are few accidents, and most of these accidents are relatively minor, it is not possible for SEA to accurately predict either the frequency or severity of actual accidents.

SEA estimated the change in the risk of an accident resulting from the increased activity on rail line segments as a result of the proposed Conrail Acquisition. Because SEA analyzed rail line segments that vary in length from one mile to more than 100 miles, and because freight train accidents typically have little impact on surrounding areas, SEA expressed all predicted risks of accidents on a route-mile basis. Section 3.2 "Safety: Freight Rail Operations," discusses the analysis process in greater detail.

5-VA.4.1 Summary of Potential Effects and Preliminary Recommended Mitigation

In Virginia, SEA found that no rail line segments met its criteria of significance (one accident expected every 100 years or less per mile of route). Therefore, SEA does not recommend mitigation.

5-VA.5 VIRGINIA SAFETY: PASSENGER RAIL OPERATIONS

In Virginia, passenger trains share certain tracks with freight trains. SEA evaluated the potential for increased accidents between freight trains and passenger trains, for both intercity and commuter trains. Because changes in the frequency of rail accidents are directly related to changes in overall train activity, SEA's analysis concentrated on rail line segments carrying both passenger and freight trains that would experience an increase in freight train traffic of one or more trains per day.

In Chapter 4, "System-Wide and Regional Setting, Impacts and Proposed Mitigation," SEA addresses the issue of potential increased risk to passenger train operations associated with the proposed Conrail Acquisition. System-wide, SEA identified 197 freight rail line segments that

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[1] "Train miles" are calculated by multiplying the number of trains by the distance traveled. For example, on a typical 100 mile rail line, one million annual train miles results from operating 28 trains per day every day for 365 days.

also carry passenger trains. Of these, SEA analyzed 93 rail line segments that would experience an increase of one or more freight trains per day resulting from the proposed Acquisition. Nine of these rail line segments are located in Virginia; these rail line segments are part of Amtrak Cardinal and VRE passenger train routes.

FRA requires reports from railroads concerning all train accidents resulting in personal injury or causing property damage greater than $6,300 (1996 FRA reporting threshold). FRA requires the same reporting for passenger train accidents. A nationwide average of fewer than 200 passenger train accidents per year (for both Amtrak intercity and urban area commuter trains) has occurred over the last three years. Most of these accidents were relatively minor and rarely involved any fatalities, but because the safety of passengers as well as property is frequently involved, their occurrence is of serious concern.

Given the limited number of passenger rail accidents, SEA was unable to accurately predict the severity, location, or timing of actual accidents. SEA therefore focused on estimating the potential risks of an accident. In this safety analysis, SEA used increased freight activity on rail line segments to estimate the changes in passenger train accident risks. To assess significance, SEA first determined whether the proposed Acquisition-related change in the projected accident rate was greater than an annual increase of 25 percent. SEA then determined if the predicted accident frequency was less than one accident in 150 years. Thus, SEA determined a potential impact to be significant if the projected annual increase in accidents was greater than 25 percent and the frequency was less than one accident in 150 years.

5-VA.5.1 Summary of Potential Effects and Preliminary Recommended Mitigation

The pre-Acquisition accident interval for each rail line segment is shown in Table 5-VA-3. Accidents pose potential threats to passengers on the train; therefore, for each rail line segment, risk is expressed as the expected interval between events over the length of the rail line segment. Table 5-VA-3 shows the expected change in years between accidents for the individual rail line segments.

Based on information provided by the railroads and SEA's independent analysis, SEA determined that the increase in risk for passenger train accidents for two of the rail line segments, S. Richmond to Weldon and Fredericksburg to Potomac Yard, exceeded SEA's criteria for significance. For these rail line segments, SEA anticipates that potential conflicts can be minimized by reinforcing passenger trains' priority over freight trains. It is SEA's preliminary recommendation that all freight trains, both opposing and moving in the same direction as passenger trains, be clear of the main track at least 15 minutes prior to the estimated arrival of the passenger train. In doing so, the passenger train can pass safely and without delay.

Table 5-VA-3
Estimated Change in Years Between Accidents for Passenger Rail Operations

Site ID	From	To	Miles in State	Pre-Acquisition Accident Interval [a]	Post-Acquisition Accident Interval [a]
N-315	Alexandria	Manassas	22	618	502
C-234	Clifton Forge	St. Albans, WV	25	2,241	2,014
C-100	Doswell	Fredricksburg	37	485	345
C-101	Fredericksburg	Potomac Yard	49	154	107
N-317	Montview	Alta Vista	21	1,328	1,044
C-102	Richmond	Doswell	24	476	342
C-002	Virginia Av., DC	Potomac Yard	4	307	279
N-316	Manassas	Mt. View	142	1,021	933
C-103	S. Richmond	Weldon, NC	74	49	39

[a] Accident Intervals shows years between accidents.

5-VA.6 VIRGINIA SAFETY: HIGHWAY/RAIL AT-GRADE CROSSINGS

Increased train activity could affect the safety of roadway users at highway/rail at-grade crossings. To address potential changes in accident frequency, SEA compared existing accident frequency rates with accident frequency rates at all highway/rail at-grade crossings that would experience a Conrail Acquisition-related increase of eight or more trains per day. At these locations, SEA looked at the most recent five years of accident history available, and calculated the potential change in the number of years between accidents. SEA's analysis procedure considered the type of existing warning devices at the highway/rail at-grade crossings, including passive devices (signs or crossbucks), flashing lights, or gates.

To evaluate the significance of potential changes in accident frequency in Virginia, SEA categorized highway/rail at-grade crossings into two categories:

- Category A consisted of highway/rail at-grade crossings with a history of relatively frequent train-vehicle accidents. SEA considered highway/rail at-grade crossings in Virginia with accident frequency rates at or above the state's 50th highest accident frequency rate of one accident every nine years (0.1167 accident frequency rate) to be Category A highway/rail at-grade crossings. For all Category A highway/rail at-grade crossings, SEA considered the relatively small accident frequency rate increase of one accident every 100 years (a 0.01 accident frequency rate increase) to be significant.

- Category B consisted of highway/rail at-grade crossings with a history of relatively infrequent train-vehicle accidents. SEA considered highway/rail at-grade crossings in Virginia with accident frequency rates less than one accident nine years (less than 0.1167 accident frequency rate) to be Category B highway/rail at-grade crossings. For these crossings, SEA considered an accident frequency rate increase of one accident every 20 years (a 0.05 accident frequency rate increase) to be significant.

Table 5.VA-4, presented at the end of this state discussion, presents the results of SEA's analysis. A county by county summary of results follows.

5-VA.6.1 County Analysis

Augusta County

SEA's safety analysis showed that for the 21 highway/rail at-grade crossings studied in Augusta County, the predicted increases in accident frequency would range from 0.0032 to 0.0207. This translates into a range of increases from one accident every 313 years to one accident every 48 years. SEA found these predicted increases to be below the criteria for significance.

Botetourt County

SEA's safety analysis showed that for the 18 highway/rail at-grade crossings studied in Botetourt County, the predicted increases in accident frequency would range from 0.0042 to 0.0178. This translates into a range of increases from one accident every 238 years to one accident every 56 years. SEA found these predicted increases to be below the criteria for significance.

Buchanan County

SEA's safety analysis showed that for the one highway/rail at-grade crossing studied in Buchanan County, the predicted increase in accident frequency is 0.0048, which represents one accident every 208 years. SEA found this predicted increase to be below the criteria for significance.

Clarke County

SEA's safety analysis showed that for the 10 highway/rail at-grade crossings studied in Clarke County, the predicted increases in accident frequency would range from 0.0027 to 0.0155. This translates into a range of increases from one accident every 370 years to one accident every 65 years. SEA determined that the predicted increase resulting from the proposed Conrail Acquisition was significant at State Route 7. This highway/rail at-grade crossing is classified as Category A. SEA found the predicted increases at the other locations to be below the criteria for significance.

Page County

SEA's safety analysis showed that for the 19 highway/rail at-grade crossings studied in Page County, the predicted increases in accident frequency would range from 0.0034 to 0.0187. This translates into a range of increases from one accident every 294 years to one accident every 53 years. SEA found these predicted increases to be below the criteria for significance.

Roanoke County

SEA's safety analysis showed that for the two highway/rail at-grade crossings studied in Roanoke County, the predicted increases in accident frequency would range from 0.0076 to 0.0159. This translates into a range of increases from one accident every 132 years to one accident every 63 years. SEA found these predicted increases to be below the criteria for significance.

Rockbridge County

SEA's safety analysis showed that for the 12 highway/rail at-grade crossings studied in Rockbridge County, the predicted increases in accident frequency would range from 0.0047 to 0.0149. This translates into a range of increases from one accident every 213 years to one accident every 67 years. SEA found these predicted increases to be below the criteria for significance.

Rockingham County

SEA's safety analysis showed that for the 12 highway/rail at-grade crossings studied in Rockingham County, the predicted increases in accident frequency would range from 0.0031 to 0.0165. This translates into a range of increases from one accident every 323 years to one accident every 61 years. SEA found these predicted increases to be below the criteria for significance.

Warren County

SEA's safety analysis showed that for the 10 highway/rail at-grade crossings studied in Warren County, the predicted increases in accident frequency would range from 0.0027 to 0.0194. This translates into a range of increases from one accident every 370 years to one accident every 52 years. SEA determined that the predicted increase resulting from the proposed Conrail Acquisition was significant at Rockland Road. This highway/rail at-grade crossing is classified as Category A. SEA found the predicted increases at the other locations to be below the criteria for significance.

City of Waynesboro

SEA's safety analysis showed that for the one at-grade roadway crossing studied in the City of Waynesboro, the predicted increase in accident frequency is 0.0078 which represents one accident every 128 years. SEA found this predicted increase to be below the criteria for significance.

5-VA.6.2 Summary of Potential Effects and Preliminary Recommended Mitigation

SEA determined that the proposed Conrail Acquisition would significantly increase the predicted accident risk at two highway/rail at-grade crossings in Virginia. Table 5-VA-5 shows SEA's recommended mitigation to reduce these risks.

SEA analyzed the accident frequencies with and without these upgraded warning devices in place, as shown in Table 5-VA-4. With the mitigation measures, the accident frequencies at these locations would decrease to well below the pre-Acquisition levels. SEA recommends that NS upgrade the existing warning devices, as shown in Table 5-VA-5. For State Route 7, SEA recommends that NS upgrade the existing gates to four-quadrant gates or install median barriers to prevent drivers from going around the gates. These recommendations would eliminate the adverse effects on highway/rail at-grade crossing safety resulting from the proposed Conrail Acquisition in Virginia.

Table 5-VA-5
Recommended Mitigation to Improve Safety at Highway/Rail At-Grade Crossings in Virginia

County	Railroad Segment	FRA ID	At-Grade Roadway Crossing	Existing Warning Devices	SEA's Proposed Mitigation
Clarke	N-091	468599F	State Route 7	Gates	Four-Quad Gates or Median Barriers
Warren	N-091	468634S	Rockland Road	Flashing Lights	Gates

5-VA.7 VIRGINIA SAFETY: RAIL TRANSPORT OF HAZARDOUS MATERIALS

The primary concern with the rail transportation of hazardous materials is a spill or accidental release resulting from a train accident. SEA analyzed all rail line segments where the number of car loads containing hazardous materials would increase as a result of the proposed Acquisition. This resulted in SEA evaluating rail line segments that were below the Board's thresholds for environmental analysis.

The Association of American Railroads (AAR), in conjunction with the Chemical Manufacturer's Association (CMA), developed standards and practices to manage the risk of a hazardous material

spill that the railroads have adopted. The practices include identifying "key routes" as those rail lines that handle in excess of 10,000 car loads of hazardous material each year. Key trains are trains with at least five car loads of poison inhalation hazard (PIH) material, or 20 car loads of other hazardous material. Key trains are restricted to 50 miles per hour maximum authorized speed and normally operate on Class 2 track or better. The AAR key route practices include special train handling procedures and extra inspection and special actions whenever wayside detectors indicate potential concerns. The standards and practices for key routes are shown in AAR Circular No. OT-55-B. A copy of this Circular is included in Attachment 10 of Appendix B, "Safety."

5-VA.7.1 Rail Line Segment Analysis

As a result of the proposed Conrail Acquisition, the railroads would change the routing of many car loads of hazardous material. The designation of key routes would change as the railroads shift hazardous material traffic from one rail line to another. In addition, certain rail line segments that are currently key routes would carry increased volumes of cars containing hazardous material.

SEA applied two different criteria to determine if the effects of rerouting hazardous material car loads are potentially significant:

1. The volume of hazardous materials transported on a rail line would be 10,000 or more car loads per year. The Acquisition-related change in volume of hazardous material car loads would upgrade a rail line segment to a key route designation.

2. The volume of hazardous material car loads doubles, and exceeds 20,000 or more car loads per year. SEA has termed rail line segments which meet these criteria a "major key route."

Rail line segments that would meet the first criteria are considered "key routes" and warrant the base level mitigation. Rail line segments that meet the second criteria are considered "major key routes" and warrant expanded mitigation. Depending on the individual circumstances, a rail line segment could meet both criteria and therefore warrant both the base level and the expanded mitigation.

5-VA.7.2 Summary of Potential Effects and Preliminary Recommended Mitigation

Potential Effects. Based on the information provided by the Applicants and SEA's independent analysis, SEA determined that two rail line segments in Virginia carrying increased amounts of hazardous material are of potential concern. Table 5-VA-6 shows these rail line segments, indicates the estimated annual car loads of hazardous material for both pre- and post-Acquisition, and identifies the key route status of each. SEA determined that three rail line segments currently carry less than 10,000 car loads of hazardous material per year but would increase to at least 10,000 car loads per year due to the proposed Acquisition.

Table 5-VA-6
Rail Line Segments with Significant Increases in Annual Hazardous Material Car Loads

Site ID	Between	And	Miles in State	Estimated Annual Car Loads		Significance Thresholds	
				Pre-Acquisition	Post-Acquisition	New Key Route	Major Key Route
N-315	Alexandria, VA	Manassas, VA	22	0	16,000	X	
N-432	Poe Mi, VA	Petersburg, VA	3	7,000	11,000	X	

Preliminary Mitigation Recommendation. SEA recommends requiring NS to bring the rail line segments into compliance with AAR key route standards and practices for those rail line segments that would become a new key route.

5.VA.8 VIRGINIA TRANSPORTATION: PASSENGER RAIL SERVICE

In Virginia, passenger trains share certain tracks with freight trains. SEA evaluated potential Acquisition-related effects on the ability of rail line segments to accommodate existing passenger rail service, both intercity and commuter rail, and reasonably foreseeable new or expanded passenger service. SEA identified those rail line segments that carry both freight and passenger trains and would experience an increase of one or more freight trains per day.

Amtrak

Amtrak currently provides service to the Alexandria, Manassas, Danville, Charlottesville, Clifton Forge, Fredericksburg, Petersburg, Quantico, Woodbridge, Richmond, Stanton, Lynchburg, and Newport News areas on NS and CSX lines. Section 4.7.1, "Intercity Passenger Rail Service," discusses intercity passenger rail service effects.

Commuter Rail

SEA's evaluation included an assessment of the projected level of train traffic and the capacity of the railroad facilities including the number of main tracks, maximum authorized speed for freight and passenger trains, and the type of train control, signaling and train dispatching system utilized. SEA also examined the frequency of interlockings, which permit faster trains to move around slower trains. SEA utilized experienced railroad operating personnel to assess each line segment using timetables, track charts, existing and proposed train levels, professional experience and personal familiarity with the rail facilities.

Virginia Railway Express (VRE) is a subsidiary of the Northern Virginia Transportation Commission and the Potomac and Rappahannock Transportation Commission. VRE provides service to Washington, D.C., from Northern Virginia. VRE does not own any route miles. It owns equipment and markets services utilizing both CSX and NS lines. VRE contracts with Amtrak to provide crews, operate, and maintain the trains. Trains operate on CSX to Fredericksburg, and on NS to Broad Run, south of Manassas. There are 26 daily trains serving 18 stations on two routes. Daily ridership peaked above 8,000, but has declined during 1997 by as much as one third in a large part due to schedule performance problems resulting from temporary delays caused by track work and derailments on CSX. Since that time, the completion of the CSX track maintenance and signal upgrades have resolved the operating constraint on existing VRE service reliability.

VRE operates service on CSX and NS during weekday peak commuter hours. Like Maryland Commuter Rail Service (MARC), VRE's operation on CSX is on one of the most dense freight train routes with commuter service in the eastern United States. VRE's operating agreement with CSX requires that VRE fund substantial capacity expansion before any increase in service can be implemented. The CSX line also serves 18 Amtrak trains per day. The Federal Railroad Administration along with CSX, Amtrak, the State of Virginia and VRE, are presently developing a long-term transportation plan for the Washington-Richmond route which will identify capital funding requirements for both operating speed and service increases.

VRE's Manassas Line has substantial capacity for expansion of service on the NS rail line segment. However, the capacity limitations on CSX and Conrail between Alexandria, and the District of Columbia constrain expansion. The constraints include the Potomac River Bridge and the slow-speed single track in the Virginia Avenue Tunnel in the District of Columbia. These conditions have the effect of restricting line capacity substantially for both passenger and freight train operations in the area.

VRE's operating agreement with CSX expires on June 30, 1999, and includes incentive payments for performance. VRE has an annually renewable operating agreement with NS that also includes incentive payments for performance.

5-VA.8.1 Summary of Potential Effects and Preliminary Recommended Mitigation

Based on the evaluation of railroad capacity issues and information provided by the Applicants including operating plans and existing and projected train traffic, SEA concluded that there would be no effect on present VRE service. Therefore, SEA does not anticipate that mitigation would be required. Additional details regarding the potential effects of freight operations on passenger service in Virginia are presented in Section 4.7.1, "Intercity Passenger Rail Service."

5-VA.9 VIRGINIA TRANSPORTATION: ROADWAY CROSSING DELAY

In order to analyze the effects of the proposed Conrail Acquisition on the roadway system at existing highway/rail at-grade crossings, SEA identified the crossings on rail line segments that would exceed the Board's environmental analysis thresholds for air quality. SEA then calculated potential changes in vehicle delay at these crossings where average daily traffic (ADT) volumes are 5,000 or greater. SEA concluded that the potential effect of increased train traffic for highways with ADT volumes below 5,000 would be experienced by very few drivers and the additional vehicular delay would be minimal. The description of levels of service and criteria of significance have been addressed in Chapter 3, "Analysis Methods and Potential Mitigation Strategies," and Appendix C, "Traffic and Transportation."

5-VA.9.1 County Analysis

There are six counties and two cities in Virginia that have highway/rail at-grade crossings for which SEA performed vehicle delay calculations. Table 5-VA-7, presented at the end of this state discussion, contains a summary of these results.

Augusta County

The single crossing analyzed in Augusta County would have a minimal increase in crossing delay per stopped vehicle. The level of service under post-Acquisition conditions would be A. There would be an increase in maximum queue of one vehicle.

Chesterfield County

The single crossing analyzed in Chesterfield County would have a minimal increase in crossing delay per stopped vehicle. The level of service under post-Acquisition conditions would be B. There would be no increase in maximum queue.

Clarke County

The single crossing analyzed in Clarke County would have a minimal increase in crossing delay per stopped vehicle. The level of service under post-Acquisition conditions would be B. There would be no increase in maximum queue.

Emporia City

The single crossing analyzed in the City of Emporia would have a minimal increase in crossing delay per stopped vehicle. The level of service under post-Acquisition conditions would be B. There would be no increase in maximum queue.

Hanover County

The single crossing analyzed in Hanover County would have a minimal increase in crossing delay per stopped vehicle. The level of service under post-Acquisition conditions would be B. The maximum queue would increase by one vehicle.

Henrico County

The single crossing analyzed in Henrico County would have a minimal increase in crossing delay per stopped vehicle. The level of service under post-Acquisition conditions would be B. There would be no increase in maximum queue.

Page County

The single crossing analyzed in Page County would have a minimal increase in crossing delay per stopped vehicle. The level of service under post-Acquisition conditions would be A. There would be no increase in maximum queue.

Richmond City

The three crossings analyzed in the City of Richmond would have a minimal increase in crossing delay per stopped vehicle. The levels of service under post-Acquisition conditions would be B. The largest increase in maximum queue would be one vehicle.

5-VA.9.2 Summary of Potential Effects and Preliminary Recommended Mitigation

It is SEA's preliminary conclusion that the proposed Conrail Acquisition would have no significant effect on vehicle delay at highway/rail at-grade crossings in Virginia. Therefore, SEA does not propose mitigation.

5-VA.10 VIRGINIA TRANSPORTATION: NAVIGATION

To evaluate potential effects of train traffic on shipping where interaction could occur, SEA reviewed proposed Acquisition-related activities on rail line segments, new constructions (rail line connections only), and rail line abandonments that meet or exceed the Board's thresholds for environmental analysis and involve movable bridges.

SEA identified one movable bridge which carries rail traffic over navigable waterways in Virginia that would meet or exceed the Board's environmental analysis thresholds. CSX owns the bridge which is on rail line segment C-103. The bridge crosses the Appomattox River near Hopewell. The proposed Conrail Acquisition would result in an increase of 4.6 trains per day on the bridge.

As stated in Section 3.9.1 "Methods for Navigation Issues," the U.S. Coast Guard has jurisdiction over specific actions affecting navigable waters of the U.S. and in all instances waterborne navigation has the right-of-way. Therefore, any operating constraints due to the post-Acquisition activities would be placed on the railroad and not the waterborne users at movable bridges extending across navigable waterways. The railroads operate bridges under conditions established by the U.S. Coast Guard for the convenience of navigation. SEA evaluated the potential effect of the increase in train traffic on moving the bridge for navigation. Based on the analysis and the small proposed increase in train traffic, SEA expects no adverse impacts from the proposed Conrail Acquisition at this bridge.

5-VA.11 VIRGINIA AIR QUALITY

This section summarizes the change in air pollutant emissions that would result from the proposed Acquisition-related operational changes in the state of Virginia. The primary air pollutant emission sources from trains and related activities include locomotive emissions on rail line segments, at rail yards, and at intermodal facilities. In addition to locomotive emissions, SEA evaluated emissions from other sources at intermodal facilities (idling trucks, lift cranes, etc.), motor vehicles idling near at-grade crossings, and decreases in truck emissions due to truck-to-rail freight diversions.

To analyze the air quality effects of the proposed Acquisition, SEA evaluated rail line segments, rail yards, and intermodal facilities that would meet or exceed the Board's thresholds for environmental analysis defined in Chapter 2, "Proposed Action and Alternatives." See Chapter 3, "Analysis Methods and Potential Mitigation Strategies," for additional information and a summary of the air quality analysis methodology. Appendix E, "Air Quality," contains a detailed description of methodology and detailed tables of results.

SEA addressed air pollutant emissions for sulfur dioxide (SO_2), volatile organic compounds (VOCs), particulate matter (PM), lead (Pb), nitrogen oxides (NO_x) and carbon monoxide (CO). SEA determined that emissions for SO_2, VOCs, PM and Pb would not exceed the emission screening thresholds for environmental analysis in any county. However, SEA found that these thresholds would be exceeded for NO_x in various counties in 17 states, and CO in three counties in two states (IL and OH). NO_x air pollutant emissions may affect a region's ability to attain the National Ambient Air Quality Standards for ozone. CO emissions may affect a local area's ability to attain the National Ambient Air Quality Standards for CO.

Two NS and five CSX rail line segments exceeded the Board's threshold for air quality analysis in Virginia. Table 5-VA-8 shows the air quality evaluation process that was followed. SEA identified 21 jurisdictions in Virginia which include any part of these rail facilities. For these jurisdictions, SEA summed air emissions increases from changes on rail line segments and other activities and compared them to the air emission screening level that would require a permit if the

Table 5-VA-8
Virginia Jurisdictions Evaluated in Air Quality Analysis

Jurisdictions Exceeding the Board's Activity Thresholds	O_3 Status[a]	Exceeds Emissions Screening Level Before Netting	Exceeds Emissions Screening Level After Netting	Exceeds 1% of Jurisdiction Emissions
Alexandria	N (Serious)	No	-	-
Arlington County	N (Serious)	No	-	-
Augusta County	A	Yes	No	-
Botetourt County	A	Yes	No	-
Buena Vista	A	No	-	-
Chesterfield County	N (Moderate)	No	-	-
Clarke County	A	Yes	Yes	Yes
Colonial Heights	N (Moderate)	No	-	-
Fairfax County	N (Serious)	Yes	No	-
Hanover County	N (Moderate)	No	-	-
Henrico	N (Moderate)	No	-	-
Page County	A	Yes	Yes	Yes
Prince William County	N (Serious)	No	-	-
Richmond	N (Moderate)	No	-	-
Roanoke	A	No	-	-
Roanoke County	A	No	-	-
Rockbridge County	A	Yes	No	-
Rockingham County	A	Yes	No	-
Stafford County	N (Serious)	Yes	Yes	Yes
Warren County	A	Yes	Yes	Yes
Waynesboro	A	No	-	-

[a] A= Attainment Area, M = Maintenance Area, N= Nonattainment Area, as defined in the Clean Air Act.

source were a stationary source (rather than a mobile source, such as trains, trucks, and other vehicles). If the calculated air emissions exceeded this screening level, SEA conducted a detailed air emissions analysis known as a "netting analysis" in these jurisdictions. The netting analysis considered all emissions increases and decreases from Acquisition-relatedactivity changes. SEA compared the netting analysis results to the air emission screening level and additional analyses were performed for jurisdictions where netting analysis results exceeded the air emission screening level. For these jurisdictions, SEA inventoried all air pollutant emissions sources to

evaluate if proposed Acquisition-related air emissions represented more than one percent of all air emissions sources in the jurisdiction.

Chapter 4, "System-wide and Regional Setting, Impacts and Proposed Mitigation," contains a discussion of NO_x emissions, on a regional basis, relative to its potential contribution to O_3 formation in the Ozone Transport Region (OTR). A portion of northern Virginia is included in the OTR.

The emissions estimates presented in Appendix E, "Air Quality," show that the increased county-wide air pollutant emissions from the facilities described above exceed the threshold for nine counties in Virginia. SEA's analysis results for these counties are presented below.

5-VA.11.1 County Analysis

Augusta County

EPA has designated Augusta County an attainment area for all pollutants, with no maintenance areas for any pollutant. Table 5-VA-9 shows that the net NO_x emissions increase in Augusta County, considering all calculated Acquisition-related emissions changes, is below the emissions screening threshold of 100 tons per year used to determine if emissions changes are potentially significant. A decrease in NO_x emissions due to a projected diversion of truck freight to rail largely offsets the increase in emissions from additional rail traffic. SEA does not expect significant air quality impacts due to this NO_x emissions increase.

Table 5-VA-9
Augusta County Annual NO_x Emissions Summary

Activity Type (RR)	Identification	NO_x Emissions (tons/year)
Rail Segment (NS)	Riverton Jct., VA to Roanoke, VA	292.35
Truck Diversions (both)	County-wide	-205.38
At-grade Crossings (both)	Affected Crossings >5000 Vehicles/Day [a]	0.01
Total Acquisition-related Net NO_x Emissions Increase		86.98
NO_x Emissions Screening Level		100.00

[a] "Affected Crossings" are those with an increase in rail segment activity over Board air quality analysis thresholds, and which have vehicle traffic levels over 5000 vehicles/day.

Botetourt County

EPA has designated Botetourt County an attainment area for all pollutants, with no maintenance areas for any pollutant. Table 5-VA-10 shows that the net NO_x emissions increase in Botetourt County, considering all calculated Acquisition-relatedemissions changes, is below the emissions screening threshold of 100 tons per year used to determine if emissions changes are potentially significant. A decrease in NO_x emissions due to a projected diversion of truck freight to rail largely offset the increase in emissions from additional rail traffic. SEA does not expect a significant air quality effect due to this NO_x emission increase.

Table 5-VA-10
Botetourt County Annual NO_x Emissions Summary

Activity Type (RR)	Identification	NO_x Emissions (tons/year)
Rail Segment (NS)	Riverton Jct., VA to Roanoke, VA	225.46
Rail Segment (NS)	Pamplin, VA to Roanoke, VA	9.34
Rail Segment (CSX)	Rivanna Jct., VA to Clifton Forge, VA	-16.84
Truck Diversions (both)	County-wide	-137.66
Total Acquisition-related Net NO_x Emissions Increase		80.30
NO_x Emissions Screening Level		100.00

Clarke County

EPA has designated Clarke County an attainment area for all pollutants, with no maintenance areas for any pollutant. Table 5-VA-11 shows that the net NO_x emissions increase in Clarke County, considering all calculated Acquisition-relatedemissions changes, is below the emissions screening threshold of 100 tons per year used to determine if emissions changes are potentially significant. SEA does not expect any significant air quality effect due to this NO_x emissions increase.

Fairfax County

EPA has designated Fairfax County as a serious nonattainment area for O_3. Table 5-VA-12 shows that the net NO_x emissions increase in Fairfax County, considering all calculated Acquisition-related emissions changes, is below the emissions screening threshold of 50 tons per year used

to determine if emissions changes are potentially significant. Therefore, SEA did not consider the NO_x emissions increase to be significant and no further analysis was performed.

Table 5-VA-11
Clarke County Annual NO_x Emissions Summary

Activity Type (RR)	Identification	NO_x Emissions (tons/year)
Rail Segment (NS)	Harrisburg, PA to Riverton Jct, VA	99.82
Truck Diversions (both)	County-wide	-0.15
At-grade Crossings (both)	Affected Crossings >5000 Vehicles/Day [a]	0.01
Total Acquisition-related Net NO_x Emissions Increase		99.68
NO_x Emissions Screening Level		100.00

[a] "Affected Crossings" are those with an increase in rail segment activity over Board air quality analysis thresholds, and which have vehicle traffic levels over 5000 vehicles/day.

Table 5-VA-12
Fairfax County Annual NO_x Emissions Summary

Activity Type (RR)	Identification	NO_x Emissions (tons/year)
Rail Segment (CSX)	Fredricksburg, VA to Potomac Yard, VA	52.84
Rail Segment (NS)	Alexandria, VA to Manassas, VA	16.22
Rail Yard (NS)	Alexandria	-2.21
Truck Diversions (both)	County-wide	-59.16
Total Acquisition-related Net NO_x Emissions Increase		7.54
NO_x Emissions Screening Level		50.00

Page County

EPA has designated Page County as attainment for all pollutants, with no maintenance areas for any pollutant. Table 5-VA-13 shows that the net NO_x emissions increase in Page County, considering all calculated Acquisition-related emissions changes, is above the emissions screening threshold of 100 tons per year used to determine if emissions changes are potentially significant.

Table 5-VA-13
Page County Annual NO_x Emissions Summary

Activity Type (RR)	Identification	NO_x Emissions (tons/year)
Rail Segment (NS)	Riverton Jct, VA to Roanoke, VA	258.66
Rail Yard (NS)	Shenandoah	0.49
At-grade Crossings (both)	Affected Crossings >5000 Vehicles/Day [a]	0.01
Total Acquisition-related Net NO_x Emissions Increase		259.16
NO_x Emissions Screening Level		100.00
Existing (1995) County Total NO_x Emissions		1,477.62
Percent Increase in County NO_x Emissions		17.54%

[a] "Affected Crossings" are those with an increase in rail segment activity over Board air quality analysis Thresholds, and which have vehicle traffic levels over 5000 vehicles/day.

The increased NO_x emissions in Page County are over one percent of the existing (1995) jurisdiction-wide NO_x emissions. However, Page County is a largely rural area, and its existing NO_x emissions are small in comparison to urban areas that have O_3 nonattainment problems. Given the current low existing NO_x emissions and current O_3 attainment status of the county, SEA expects no adverse impact despite the relatively large percentage increase in NO_x emissions.

Rockbridge County

EPA has designated Rockbridge County as an attainment area for all pollutants, with no maintenance areas for any pollutant. Table 5-VA-14 shows that the net NO_x emissions increase in Rockbridge County, considering all calculated Acquisition-relatedemissions changes, is below the emissions screening threshold of 100 tons per year used to determine if emissions changes are potentially significant. A decrease in NO_x emissions due to a projected diversion of truck freight to rail largely offset the increase in emissions from additional rail traffic. SEA does not expect a potential adverse air quality effect due to this NO_x emissions increase.

Rockingham County

EPA has designated Rockingham County as an attainment area for all pollutants, with no maintenance areas for any pollutant. Table 5-VA-15 shows that the net NO_x emissions increase in Rockingham County, considering all calculated Acquisition-relatedemissions changes, is below

the emissions screening threshold of 100 tons per year used to determine if emissions changes are potentially significant. A decrease in NO_x emissions due to a projected diversion of truck freight to rail largely offsets the increase in emissions from additional rail traffic. Therefore, SEA does not expect a potential adverse air quality effect due to this NO_x emissions increase.

Table 5-VA-14
Rockbridge County Annual NO_x Emissions Summary

Activity Type (RR)	Identification	NO_x Emissions (tons/year)
Rail Segment (NS)	Riverton Jct, VA to Roanoke, VA	283.85
Rail Segment (CSX)	Rivanna Jct, VA to Clifton Forge, VA	-3.70
Truck Diversions (both)	County-wide	-239.97
Total Acquisition-related Net NO_x Emissions Increase		40.18
NO_x Emissions Screening Level		100.00

Table 5-VA-15
Rockingham County Annual NO_x Emissions Summary

Activity Type (RR)	Identification	NO_x Emissions (tons/year)
Rail Segment (NS)	Riverton Jct, VA to Roanoke, VA	176.79
Rail Segment (NS)	Elkton, VA to Harrisonburg, VA	1.62
Truck Diversions (both)	County-wide	-157.56
Total Acquisition-related Net NO_x Emissions Increase		20.85
NO_x Emissions Screening Level		100.00

Stafford County

EPA has designated Stafford County as a serious nonattainment area for O_3. Table 5-VA-16 shows that the net NO_x emissions increase in Stafford County, considering all calculated Acquisition-related emissions changes, is above the emissions screening threshold of 50 tons per year used to determine if emissions changes are potentially significant.

Table 5-VA-16
Stafford County Annual NO_x Emissions Summary

Activity Type (RR)	Identification	NO_x Emissions (tons/year)
Rail Segment (CSX)	Fredricksburg, VA to Potomac Yard, VA	84.17
Truck Diversions (both)	County-wide	-15.59
Total Acquisition-related Net NO_x Emissions Increase		68.58
NO_x Emissions Screening Level		50.00
Existing (1995) County Total NO_x Emissions		3,787.71
Percent Increase in County NO_x Emissions		1.81%

The increased NO_x emissions in Stafford County are over one percent of the existing (1995) county-wide NO_x emissions. Therefore, additional review was performed to compare the increased NO_x emissions in all jurisdictions in the northern Virginia O_3 nonattainment area with the total existing NO_x emissions in the same area. Because these emissions could contribute to O_3 formation on a regional level, refer to Section 4.12 "Air Quality" for further discussion of NO_x emissions on a regional level relative to ozone formation in the Ozone Transport Region (OTR). Stafford County is one of the Northern Virginia counties in the OTR.

The 1995 total NO_x emissions in the ten-jurisdiction northern Virginia nonattainment area were approximately 97,000 tons/year. The total estimated NO_x emissions increases from all the Board's activities thresholds less truck diversion decreases in these counties is 230 tons per year, or about 0.24 percent of the total. Given the small percentage increase in total NO_x emissions, which were conservatively estimated, SEA expects no significant potential adverse impact in the northern Virginia nonattainment area.

Warren County

EPA has designated Warren County as an attainment area for all pollutants, with no maintenance areas for any pollutant. Table 5-VA-17 shows that the net NO_x emissions increase in Warren County, considering all calculated Acquisition-related emissions changes, is above the emissions screening threshold of 100 tons per year used to determine if emissions changes are potentially significant.

The increased NO_x emissions in Warren County are over one percent of the existing (1995) jurisdiction-wide NO_x emissions. However, Warren County is a largely rural area, and its existing

NO_x emissions are small in comparison to urban areas that have O_3 nonattainment problems. Given the current low existing NO_x emissions and current O_3 attainment status of the county, SEA expects no potential adverse impact despite the greater than one percent increase in NO_x emissions.

Table 5-VA-17
Warren County Annual NO_x Emissions Summary

Activity Type (RR)	Identification	NO_x Emissions (tons/year)
Rail Segment (NS)	Riverton Jct, VA to Roanoke, VA	128.76
Rail Segment (NS)	Riverton Jct, VA to Manassas, VA	-9.99
Rail Segment (NS)	Harrisburg, PA to Riverton Jct, VA	42.81
Truck Diversion (both)	County-wide	-24.74
Total Acquisition-related Net NO_x Emissions Increase		136.84
NO_x Emissions Screening Level		100.00
Existing (1995) County Total NO_x Emissions		6,126.55
Percent Increase in County NO_x Emissions		2.23%

[a] "Affected Crossings" are those with an increase in rail segment activity over Board air quality analysis thresholds, and which have vehicle traffic levels over 5000 vehicles/day.

5-VA.11.2 Summary of Potential Effects and Preliminary Recommended Mitigation

While there are localized increases in emissions in Virginia, the increases are not likely to affect compliance with air quality standards. Therefore, SEA has determined that air quality will not be significantly affected and no mitigation is necessary. See system-wide and regional discussion in Section 4.12 "Air Quality."

5-VA.12 VIRGINIA NOISE

To analyze the potential noise impacts of the proposed Acquisition, SEA evaluated rail line segments, rail yards and intermodal facilities that would meet or exceed the Board's thresholds for environmental analysis of noise. Although new construction projects and rail line abandonments can result in noise increases, the noise effects would be temporary and therefore, SEA did not evaluate them.

5-VA.12.1 Proposed Activities

Train noise sources include diesel locomotive engine and wheel/rail interaction noise (or wayside noise) and horn noise. Wayside noise affects all locations in the vicinity of the rail facility, and generally diminishes with distance from the source. Horn noise is an additional noise source at grade crossings, and also generally diminishes with distance. SEA performed an analysis to identify rail line segments, rail yards and intermodal facilities where the proposed changes in operations meet or exceed the Board's environmental analysis thresholds at 49 CFR 1105.7(e)(6). Where the proposed rail activity would exceed these thresholds, SEA calculated the 65 dBA L_{dn} noise contours for the pre- and post-Acquisition conditions. SEA based the noise level impact assessment on the projected activity level data provided by the railroads. SEA counted sensitive receptors (e.g., schools, libraries, hospitals, residences, retirement communities, and nursing homes) within the noise contours for both pre-Acquisition and post-Acquisition operating conditions.

The CSX and NS rail line segments that would experience increases in traffic or activity meeting the Board's environmental analysis thresholds for Virginia are listed in Table 5-VA-18. Table 5-VA-19 shows the facilities with noise sensitive receptors exceeding 65 dBA L_{dn}. For the Virginia Ave., D.C. to Potomac Yard rail line segment, SEA calculated an increase of less than 2 dBA due to increased rail activity. In accordance with the methodology in Appendix F, this increase is insignificant and receptor counts were not made.

The counties where these facilities are located are listed in Section 5-VA.2, "Proposed Conrail Acquisition Activities in Virginia."

Table 5-VA-18
Rail Line Segments That Exceed Board Thresholds for Noise Analysis

Site ID	Segment		Trains Per Day			Percent Change in Gross Ton Miles
	From	To	Pre-Acquisition	Post-Acquisition	Increase	
C-002[a]	Virginia Ave.	Potomac Yard	17.9	28.6	10.7	18
N-100	Riverton Jct.	Roanoke	3.9	12.1	8.2	228
N-091	Harrisburg, PA	Riverton Junction	11.1	19.6	8.6	82

[a] SEA determined that the increase in noise due to increased rail activity was insignificant and receptor counts were unnecessary. Refer to the screening methodology in Appendix F for additional detail.

Table 5-VA-19
Noise Sensitive Receptors In Virginia Exceeding 65 dBA L_{dn}

Site ID	Name	Pre-Acquisition	Post-Acquisition	Increase
Rail Line Segments				
N-100	Riverton Jct.-Roanoke	340	1,269	929
N-091	Harrisburg, PA-Riverton Junction	611	1,000	389

5-VA.12.2 Summary of Potential Effects and Preliminary Recommended Mitigation

There are different noise mitigation techniques used to reduce horn noise and wayside noise. These different types of noise and mitigation techniques are as follows:

Grade Crossing Noise Effects. FRA has indicated that it will propose new rules on train horn blowing procedures in 1998. These new rules may allow communities to apply for an exception to horn blowing at certain grade crossings that meet explicit criteria. These criteria relate to so-called "quiet zones" where FRA would no longer require train engineers to sound the train horn at grade crossings with special upgraded safety features. Examples of such safety features include four-quadrant gates and median barriers that preclude motorists from entering the crossings while the crossing arm is down. Until FRA develops and implements these regulations, these measures are not feasible for SEA to require as mitigation. However, communities will have the opportunity to qualify for "quiet zones" once the FRA regulations are in place.

Wayside Noise Effect. Wayside noise is the sound of a train as it passes by. Wayside noise is comprised of steel wheel/ rail interaction noise, and locomotive diesel engine noise. This type of noise can be reduced by constructing barriers between the railway noise source and adjoining land uses, and by installing building sound insulation. Noise barriers include earth berms and walls that block the sound. Rail lubrication can be used to reduce "wheel squeal" noise on curved track. Building sound insulation consists of special windows and other building treatments that reduce interior noise. Noise barriers are the preferred type of noise mitigation for this project since barriers can be built on railroad property. Additional discussion of noise mitigation measures is included in Appendix F, "Noise Methods."

As noted above, for receptors near grade crossings that would experience increases in noise resulting from horn sounding, mitigation is not currently feasible. For areas affected by wayside noise, SEA considered rail line segments eligible for noise mitigation for noise sensitive receptors exposed to at least 70 dBA L_{dn} and an increase of at least 5 dBA L_{dn} due to increased rail activity.

It is SEA's preliminary conclusion that no rail line segments in the state of Virginia warrant noise mitigation according to the project mitigation criteria.

5-VA.13 VIRGINIA ENVIRONMENTAL JUSTICE

As part of its analysis, SEA examined activities associated with the proposed Conrail Acquisition for environmental justice impacts (disproportionately high and adverse impacts to minority and low-income populations) in accordance with Executive Order 12898. As described in the Environmental Justice Methodology in Chapter 3, "Analysis Methods and Potential Mitigation Strategies," SEA first categorized the nature of the populations in areas where Acquisition-related activities are proposed. SEA determined whether the population in such areas met the following environmental justice thresholds: (1) greater than 50 percent of the population is minority or low-income, or (2) the minority or low-income population percentage is 10 percent greater than the minority or low-income population percentage in the county.

Next, SEA ascertained whether this population fell within an area of potential effect. SEA defined a typical zone on either side of a rail line segment or proposed construction site, or bordering a railroad intermodal facility or rail yard, as an area of potential effect. In general, the extent of an area of potential effect may vary depending on the nature of the changes in rail activity associated with it, but such areas typically extend 400 to 1500 feet out from the rail line segment or facility being analyzed.

SEA then evaluated these areas of potential effect for proposed Acquisition-related activities that would meet or exceed the Board's thresholds for environmental analysis. In this analysis, SEA evaluated potential impacts on safety, transportation, air quality, noise, cultural resources, hazardous waste sites, hazardous materials transport, natural resources, and land use/socioeconomic effects. SEA also visited the sites of proposed construction for new rail line connections, rail line segments, intermodal facilities, and rail yards.

SEA developed and executed expanded public outreach efforts for those jurisdictions that met both SEA's thresholds for environmental justice and the Board's thresholds for environmental significance. SEA designed the public outreach process to seek widespread notice and dissemination of SEA's environmental impact analysis; provide additional opportunities for community input to the NEPA process; solicit information about cumulative effects in minority and low-income communities; and allow minority and low-income communities to assist in fashioning appropriate alternatives and mitigation measures. SEA is placing additional copies of the Draft EIS in jurisdictions with high proportions of minority and low-income populations that do not have significant environmental impacts which could result from the proposed Acquisition.

This section presents the results of those evaluations and analysis. A complete list of all the sites analyzed for environmental justice impacts is presented in Appendix K.

5-VA.13.1 Virginia Environmental Justice Settings

There are no new constructions or changes in activity at rail yards or intermodal facilities proposed in the state of Virginia as part of the proposed Conrail Acquisition.

Rail Line Segment

Table 5-VA-20 presents the existing minority and low-income composition of the area of potential effect surrounding the rail line segment with proposed changes which meets the Board's environmental justice population thresholds.

Table 5-VA-20
Virginia Environmental Justice Summary of Rail Line Segments

Area of Potential Effect	Total Population	Total Minority Percentage	Total Low-Income Percentage	Population of Concern	
				Minority Population	Low Income Population
Caroline, Hanover, Spotsylvania, Fredericksburg Counties	158,953	17.2%	6.3%	NA	
Doswell - Fredericksburg (C-100)	558	42.7%	11.0%	Yes	No

5-VA.13.2 Summary of Potential Effects and Preliminary Recommended Mitigation

Based on currently available information and after reviewing the findings of each of the resource analyses (noise, air quality, transportation, etc.), SEA identified no potentially significant environmental effects along the CSX rail line segment between Doswell and Fredericksburg (C-100) within Virginia. Therefore, SEA's preliminary determination is that no environmental justice effects would occur in Virginia as a result of the proposed Conrail Acquisition, and no mitigation would be necessary.

5-VA.14 VIRGINIA CUMULATIVE EFFECTS

Within the State of Virginia, the Applicants propose to increase traffic on seven rail line segments to levels that meet or exceed the Board's thresholds for environmental analysis. Table 5-VA-21 addresses other potential actions brought to SEA's attention that, when combined with the proposed Acquisition, could contribute to a cumulative impact. SEA was made aware of these activities through site visits and public comment. Other information below was provided to SEA within the schedule specified in the scope for review and analysis.

Table 5-VA-21
Information Provided to SEA About Other Activities or Projects

Action-Type	Site	Information from Site Visit or Public Comment	Relationship to Proposed Acquisition
Rail Line Segment	Haymarket (VA)	Concerns with at-grade crossing safety.	Related. Pre-existing condition. Acquisition would reduce train traffic and improve safety.

Cumulative Effects Findings

As discussed in Chapter 6, "Agency Coordination and Public Outreach," SEA conducted extensive scoping and data collection for this Draft EIS. At this point in its investigation, SEA is unaware of any activities that would require a cumulative effects analysis. Therefore, based on its independent analysis and all information available to date, SEA has made a preliminary conclusion that there would be no significant cumulative effects associated with the proposed Acquisition in the State of Virginia.

Cumulative Effects Mitigation Measures

Due to a lack of cumulative effects, no mitigation measures are necessary.

5-VA.15 VIRGINIA AREAS OF CONCERN

This Draft EIS examines system-wide and site-specific issues. An important part of SEA's analysis of the proposed Acquisition is the evaluation and consideration of environmental comments. Table 5-VA-22 provides a list of agencies and local governments that have submitted environmental comments for the State of Virginia. A complete list of entities that have submitted environmental comments to SEA on or before October 31, 1997 is provided in Appendix O of this document.

Table 5-VA-22
Agencies in Virginia Submitting Environmental Comments

Entity	Nature of Comment(s)
Department of Environmental Quality	Air and commuter operations
Department of Transportation	At-grade crossing safety, commuter operations, and safety
Lord Fairfax Planning District Commission	Commuter operations, traffic congestion, hazardous materials, air, noise, and abandonment
Mount Rogers Planning District Commission	Traffic and at-grade crossing safety
Northern Virginia Transportation Commission	Commuter operations
Potomac and Rappahannock Transportation Commission	Commuter operations
Richmond, City of	Abandonment and rail traffic
West Piedmont Planning District Commission	Abandonment

SEA appreciates these comments and considers all comments in its environmental analysis and the development of potential system-wide and/or site-specific mitigation. For issue areas that do not meet the Board's environmental analysis thresholds or are not Acquisition-related, SEA has not conducted detailed analysis. SEA encourages parties to submit site-specific, Acquisition-related comments. SEA will review all comments submitted during the 45-day comment period on this Draft EIS in the preparation of the Final EIS.

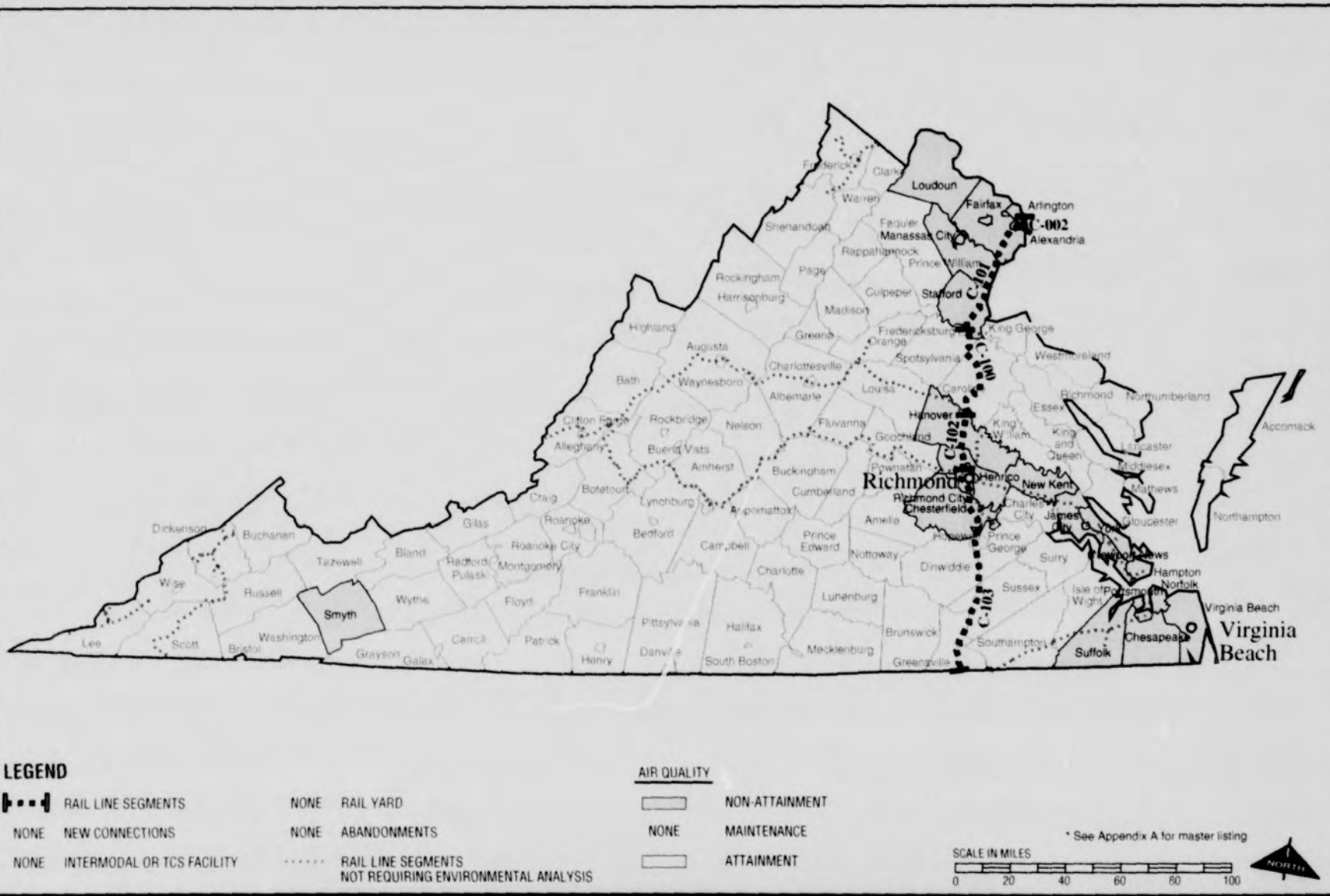
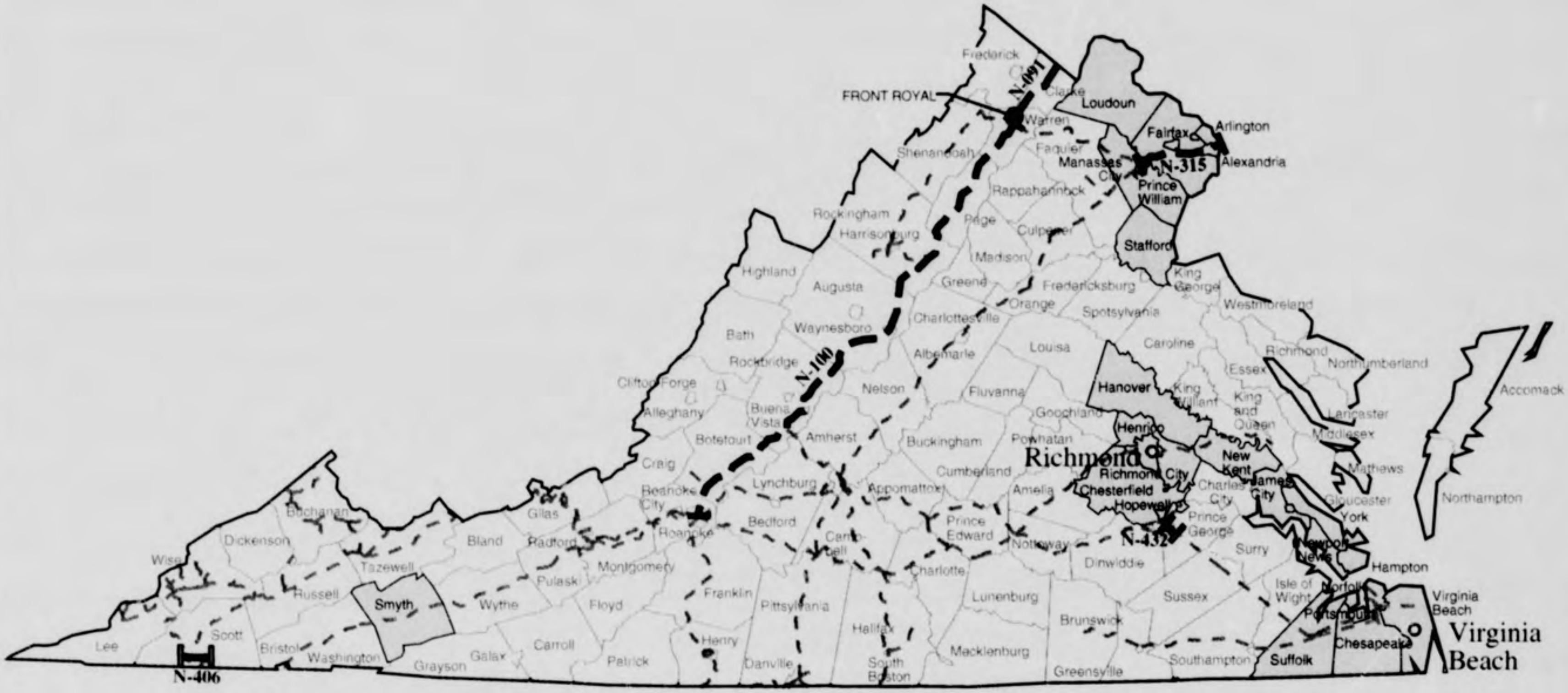


FIGURE 5-VA-1a

RAIL LINE SEGMENTS, NEW CONNECTIONS, INTERMODAL FACILITIES, RAIL YARDS AND ABANDONMENTS REQUIRING ENVIRONMENTAL ANALYSIS

VIRGINIA - CSX



LEGEND

RAIL LINE SEGMENTS

NONE NEW CONNECTIONS

NONE INTERMODAL OR TCS FACILITY

NONE RAIL YARD

NONE ABANDONMENTS

RAIL LINE SEGMENTS NOT REQUIRING ENVIRONMENTAL ANALYSIS

AIR QUALITY

NON-ATTAINMENT

MAINTENANCE

ATTAINMENT

* See Appendix A for master listing

SCALE IN MILES

0 20 40 60 80 100

NORTH

Proposed Conrail Acquisition *Draft Environmental Impact Statement*

FIGURE 5-VA-1b

RAIL LINE SEGMENTS, NEW CONNECTIONS, INTERMODAL FACILITIES, RAIL YARDS AND ABANDONMENTS REQUIRING ENVIRONMENTAL ANALYSIS

VIRGINIA - NORFOLK SOUTHERN

Table 5-VA-4
Virginia
Highway/Rail At-Grade Crossing Accident Frequency

County	Railroad Segment	FRA ID	Street Name	Present Safety Device	ADT	Number of Roadway Lanes	Maximum Speed	Total Accidents 1991-1995	Freight Trains		Accidents Per Year			
									Pre-Acquisition	Post Acquisition	Pre-Acquisition	Post Acquisition	Change	Post Acquisition With Mitigation
AUGUSTA	N-100	468075U	2ND ST/SR 256	Flasher	1,457	2	50	0	3.9	12.1	0.0203	0.0327	0.0124	
AUGUSTA	N-100	468085A	SR 616	Flasher	55	2	50	0	3.9	12.1	0.0059	0.0103	0.0044	
AUGUSTA	N-100	468086G	SR 628	Flasher	113	2	50	0	3.9	12.1	0.0079	0.0135	0.0057	
AUGUSTA	N-100	468091D	SR 612	Gate	982	2	50	0	3.9	12.1	0.0106	0.0169	0.0064	
AUGUSTA	N-100	468095F	SR 619	Flasher	46	2	50	0	3.9	12.1	0.0055	0.0096	0.0041	
AUGUSTA	N-100	468101G	SR 611	Gate	706	2	50	0	3.9	12.1	0.0097	0.0156	0.0059	
AUGUSTA	N-100	468115P	WINDSOR ROAD	Gate	2,570	2	50	0	3.9	12.1	0.0137	0.0216	0.0079	
AUGUSTA	N-100	468118K	OAKLAND	Flasher	600	2	50	0	3.9	12.1	0.0148	0.0245	0.0097	
AUGUSTA	N-100	468120L	SR 664	Gate	2,366	2	50	0	3.9	12.1	0.0134	0.0212	0.0078	
AUGUSTA	N-100	468125V	SR 635	Flasher	133	1	50	0	3.9	12.1	0.0071	0.0122	0.0051	
AUGUSTA	N-100	468127J	SR 634	Flasher	78	2	50	0	3.9	12.1	0.0068	0.0118	0.0050	
AUGUSTA	N-100	468135B	SR 608	Gate	5,476	2	50	0	3.9	12.1	0.0167	0.0259	0.0093	
AUGUSTA	N-100	468137P	SR 909	Flasher	1,441	2	50	0	3.9	12.1	0.0203	0.0326	0.0123	
AUGUSTA	N-100	468139D	SR 656	Flasher	920	2	50	1	3.9	12.1	0.0588	0.0785	0.0197	
AUGUSTA	N-100	468143T	WILDA RD	Gate	62	2	50	0	3.9	12.1	0.0049	0.0081	0.0032	
AUGUSTA	N-100	468146N	SR 658	Flasher	43	2	50	0	3.9	12.1	0.0054	0.0094	0.0040	
AUGUSTA	N-100	468149J	SR 662	Flasher	786	2	50	0	3.9	12.1	0.0163	0.0268	0.0105	
AUGUSTA	N-100	468150D	FARM X-ING	Passive	327	2	45	0	3.9	12.1	0.0386	0.0594	0.0207	
AUGUSTA	N-100	468153Y	SR 666	Flasher	434	2	45	0	3.9	12.1	0.0131	0.0219	0.0088	
AUGUSTA	N-100	468159P	SR 1212	Passive	25	2	45	0	3.9	12.1	0.0101	0.0176	0.0075	
AUGUSTA	N-100	468161R	SR 702	Passive	43	2	45	1	3.9	12.1	0.0548	0.0708	0.0160	
BOTETOURT	N-100	468224T	SR 614	Flasher	387	2	35	0	3.9	12.1	0.0126	0.0211	0.0085	
BOTETOURT	N-100	468230W	BRIDGE ST.	Flasher	325	2	35	0	3.9	12.1	0.0118	0.0198	0.0080	
BOTETOURT	N-100	468232K	PINE ST	Gate	325	2	40	0	3.9	12.1	0.0078	0.0127	0.0049	
BOTETOURT	N-100	468233S	STATION RD. (SR	Gate	550	2	40	0	3.9	12.1	0.0090	0.0146	0.0055	
BOTETOURT	N-100	468236M	SR 617	Gate	512	2	50	1	3.9	12.1	0.0428	0.0526	0.0098	
BOTETOURT	N-100	468237U	SR 625	Flasher	444	2	40	0	3.9	12.1	0.0132	0.0221	0.0089	
BOTETOURT	N-100	468239H	SR 640	Gate	801	2	50	0	3.9	12.1	0.0100	0.0161	0.0061	
BOTETOURT	N-100	468244E	SR 640	Gate	211	2	40	0	3.9	12.1	0.0069	0.011	0.0044	
BOTETOURT	N-100	468248G	SR 784	Passive	51	2	30	0	3.9	12.1	0.0199	0.0332	0.0133	
BOTETOURT	N-100	468250H	SR 640	Gate	181	2	30	0	3.9	12.1	0.0066	0.0108	0.0042	
BOTETOURT	N-100	468253D	SR 645	Passive	41	2	30	0	3.9	12.1	0.0107	0.0187	0.0080	
BOTETOURT	N-100	468256Y	SR 763	Passive	71	2	30	0	3.9	12.1	0.0221	0.0366	0.0144	
BOTETOURT	N-100	468264R	SR 640	Gate	227	2	30	0	3.9	12.1	0.0071	0.0115	0.0044	
BOTETOURT	N-100	468269A	SR 716	Gate	418	2	40	0	3.9	12.1	0.0084	0.0136	0.0052	
BOTETOURT	N-100	468270U	MOUNTAIN AVENUE	Gate	321	2	40	0	3.9	12.1	0.0078	0.0126	0.0048	
BOTETOURT	N-100	468271B	BOONE DR	Passive	150	2	40	0	3.9	12.1	0.0298	0.0476	0.0178	
BOTETOURT	N-100	468272H	BLUE RIDGE ROAD	Flasher	521	2	40	0	3.9	12.1	0.0140	0.0233	0.0093	
BOTETOURT	N-100	468281G	SR 654	Gate	4,930	2	50	0	3.9	12.1	0.0162	0.0253	0.0091	

Table 5-VA-4
Virginia
Highway/Rail At-Grade Crossing Accident Frequency

County	Railroad Segment	FRA ID	Street Name	Present Safety Device	ADT	Number of Roadway Lanes	Maximum Speed	Total Accidents 1991-1995	Freight Trains		Accidents Per Year			
									Pre-Acquisition	Post Acquisition	Pre-Acquisition	Post Acquisition	Change	Post Acquisition With Mitigation
BUCHANAN	N-100	468247A	SR 640	Gate	307	2	30	0	3.9	12.1	0.0077	0.0125	0.0048	
CLARKE	N-091	468598Y	BOOM RD (SR 615)	Gate	431	2	50	0	11.1	19.6	0.0132	0.0167	0.0035	
CLARKE	N-091	468599F	SR 7	Gate	5,315	2	40	2	11.1	19.6	0.1202	0.1357	0.0155	a
CLARKE	N-091	468600X	JOSEPHINE ST. (SR 614)	Gate	1,072	2	50	0	11.1	19.6	0.0171	0.0215	0.0044	
CLARKE	N-091	468601E	SR 680	Passive	27	2	50	0	11.1	19.6	0.0306	0.0390	0.0085	
CLARKE	N-091	468609J	BROWNTOWN RD (SR 620)	Gate	169	2	50	0	11.1	19.6	0.0105	0.0134	0.0029	
CLARKE	N-091	468610D	OLD CHAPEL AVE	Gate	130	2	50	0	11.1	19.6	0.0098	0.0125	0.0027	
CLARKE	N-091	468611K	MAIN ST	Gate	1,579	2	50	0	11.1	19.6	0.0189	0.0236	0.0047	
CLARKE	N-091	468618H	DEPOT ROAD (SR 628)	Gate	216	2	50	1	11.1	19.6	0.0475	0.0531	0.0056	
CLARKE	N-091	468621R	F LOFTON RD (SR 627)	Gate	130	2	50	0	11.1	19.6	0.0100	0.0128	0.0028	
CLARKE	N-091	468623E	SR 644	Gate	185	2	50	0	11.1	19.6	0.0110	0.0140	0.0030	
PAGE	N-100	468670M	ST 664	Passive	58	2	30	0	3.9	12.1	0.0121	0.0210	0.0089	
PAGE	N-100	468676D	SR 662	Flasher	381	2	45	0	3.9	12.1	0.0125	0.0209	0.0084	
PAGE	N-100	468679Y	SR 661	Gate	150	2	40	0	3.9	12.1	0.0063	0.0103	0.0040	
PAGE	N-100	468680T	SR 611	Gate	126	2	35	0	3.9	12.1	0.0060	0.0098	0.0038	
PAGE	N-100	468684V	SR 611	Gate	77	2	40	0	3.9	12.1	0.0052	0.0086	0.0034	
PAGE	N-100	468686J	SR 611	Passive	70	2	50	0	3.9	12.1	0.0149	0.0254	0.0105	
PAGE	N-100	468689E	SR 658	Flasher	166	2	40	0	3.9	12.1	0.0091	0.0156	0.0064	
PAGE	N-100	468696P	WALLACE AV	Flasher	904	2	50	0	3.9	12.1	0.0172	0.0281	0.0109	
PAGE	N-100	468699K	EAST MAIN ST	Flasher	7,485	2	50	0	3.9	12.1	0.0349	0.0522	0.0173	
PAGE	N-100	468700C	CAVE ST/CAMPBELL	Flasher	800	2	50	0	3.9	12.1	0.0164	0.0270	0.0105	
PAGE	N-100	468706T	SR 629	Passive	117	2	50	0	3.9	12.1	0.0176	0.0297	0.0121	
PAGE	N-100	468708G	SR 633	Gate	169	2	50	0	3.9	12.1	0.0065	0.0106	0.0041	
PAGE	N-100	468710H	SR 632	Passive	160	2	50	0	3.9	12.1	0.0324	0.0511	0.0187	
PAGE	N-100	468711P	SR 631	Flasher	59	2	50	0	3.9	12.1	0.0061	0.0106	0.0045	
PAGE	N-100	468714K	SR 624	Gate	183	2	50	0	3.9	12.1	0.0067	0.0109	0.0042	
PAGE	N-100	468715S	MAIN ST. (US 24)	Gate	4,045	2	50	0	3.9	12.1	0.0154	0.0241	0.0087	
PAGE	N-100	468716Y	SR 622	Gate	955	2	50	0	3.9	12.1	0.0105	0.0168	0.0063	
PAGE	N-100	468717F	SR 723	Gate	858	2	50	0	3.9	12.1	0.0102	0.0164	0.0062	
PAGE	N-100	468718M	SR 621	Flasher	463	2	50	0	3.9	12.1	0.0134	0.0224	0.0090	
ROANOKE	N-100	468284C	SHADWELL DR	Gate	2,101	2	40	0	3.9	12.1	0.0130	0.0205	0.0076	
ROANOKE	N-100	468286R	CARLOS DR	Passive	87	2	40	0	3.9	12.1	0.0252	0.0411	0.0159	
ROCKBRIDGE	N-100	468166A	SR 56	Gate	175	2	45	0	3.9	12.1	0.0076	0.0123	0.0047	
ROCKBRIDGE	N-100	468171W	SR 608	Flasher	361	2	45	0	3.9	12.1	0.0123	0.0206	0.0083	
ROCKBRIDGE	N-100	468173K	SR 709	Passive	23	2	30	0	3.9	12.1	0.0153	0.0261	0.0108	

Table 5-VA-4
Virginia
Highway/Rail At-Grade Crossing Accident Frequency

County	Railroad Segment	FRA ID	Street Name	Present Safety Device	ADT	Number of Roadway Lanes	Maximum Speed	Total Accidents 1991-1995	Freight Trains		Accidents Per Year			
									Pre-Acquisition	Post Acquisition	Pre-Acquisition	Post Acquisition	Change	Post Acquisition With Mitigation
ROCKBRIDGE	N-100	468175Y	SR 710	Flasher	301	2	45	0	3.9	12.1	0.0114	0.0193	0.0078	
ROCKBRIDGE	N-100	468177M	SR 714	Passive	53	2	45	0	3.9	12.1	0.0223	0.0368	0.0145	
ROCKBRIDGE	N-100	468190B	SR 805	Passive	67	2	40	0	3.9	12.1	0.0232	0.0382	0.0149	
ROCKBRIDGE	N-100	468192P	SR 631	Gate	1,359	2	40	0	3.9	12.1	0.0116	0.0184	0.0069	
ROCKBRIDGE	N-100	468196S	FACTORY ST	Flasher	1,060	2	40	0	3.9	12.1	0.0182	0.0296	0.0114	
ROCKBRIDGE	N-100	468197Y	21ST STREET	Flasher	200	2	40	0	3.9	12.1	0.0098	0.0167	0.0069	
ROCKBRIDGE	N-100	468198F	10TH ST	Gate	2,000	2	40	0	3.9	12.1	0.0128	0.0203	0.0075	
ROCKBRIDGE	N-100	468205N	SR 1101	Gate	820	2	50	0	3.9	12.1	0.0101	0.0162	0.0061	
ROCKBRIDGE	N-100	468206V	SR 684	Gate	1,308	2	50	1	3.9	12.1	0.0474	0.0597	0.0122	
ROCKINGHAM	N-100	468067C	SR 708	Gate	214	2	50	0	3.9	12.1	0.0070	0.0113	0.0044	
ROCKINGHAM	N-100	468070K	SR 955	Gate	58	2	50	0	3.9	12.1	0.0048	0.0079	0.0031	
ROCKINGHAM	N-100	468072Y	SR 659	Gate	2,177	2	50	0	3.9	12.1	0.0131	0.0207	0.0076	
ROCKINGHAM	N-100	468074M	SR 256	Gate	3,325	2	50	0	3.9	12.1	0.0147	0.0230	0.0083	
ROCKINGHAM	N-100	468744C	COUNTY RD	Gate	237	2	40	0	3.9	12.1	0.0072	0.0117	0.0045	
ROCKINGHAM	N-100	468745J	SR 884	Gate	203	2	40	0	3.9	12.1	0.0069	0.0112	0.0043	
ROCKINGHAM	N-100	468750F	SR-1706	Gate	2,436	2	50	0	3.9	12.1	0.0143	0.0225	0.0082	
ROCKINGHAM	N-100	468751M	ELK RUN	Gate	3,550	2	50	0	3.9	12.1	0.0149	0.0234	0.0085	
ROCKINGHAM	N-100	468753B	MARSHALL AVE	Gate	535	2	50	0	3.9	12.1	0.0090	0.0145	0.0055	
ROCKINGHAM	N-100	468754H	SR 1709	Passive	84	2	50	0	3.9	12.1	0.0266	0.0431	0.0165	
ROCKINGHAM	N-100	468757D	SR 642	Gate	225	2	50	0	3.9	12.1	0.0071	0.0115	0.0044	
ROCKINGHAM	N-100	468767J	SR 649	Gate	1,353	2	50	0	3.9	12.1	0.0115	0.0184	0.0068	
WARREN	N-091	468628N	ASHBY STN RD	Gate	122	2	50	0	11.1	19.6	0.0098	0.0125	0.0027	
WARREN	N-091	468631W	FAIRGROUNDS RD (SR 661)	Gate	1,313	2	50	0	11.1	19.6	0.0184	0.0230	0.0047	
WARREN	N-091	468634S	ROCKLAND ROAD	Flasher	700	2	50	2	11.1	19.6	0.1222	0.1399	0.0176	0.0153
WARREN	N-100	468656S	MAIN ST. (SR 622)	Flasher	58	2	35	0	3.9	12.1	0.0061	0.0105	0.0045	
WARREN	N-100	468657Y	SPANGLER LANE	Flasher	38	2	35	0	3.9	12.1	0.0051	0.0090	0.0038	
WARREN	N-100	468660G	SR 613	Gate	1,009	2	35	0	3.9	12.1	0.0107	0.0171	0.0064	
WARREN	N-100	714417V		Passive	58	2	25	0	3.9	12.1	0.0130	0.0225	0.0095	
WARREN	N-100	714419J		Gate	1,972	2	35	2	3.9	12.1	0.0869	0.1063	0.0194	
WARREN	N-100	714423Y	MANASSAS AVE	Gate	815	2	35	1	3.9	12.1	0.0450	0.0559	0.0109	
WARREN	N-100	714424F	MANASSAS AVE	Passive	10	2	35	0	3.9	12.1	0.0119	0.0207	0.0087	
WAYNESBORO	N-100	468109L	7TH ST	Gate	2,500	2	25	0	3.9	12.1	0.0136	0.0214	0.0078	

a Improvements in accident rate with four-quadrant gates or roadway median not quantifiable.

Table 5-VA-7
Virginia
Highway/Rail At-Grade Crossing Vehicle Delay and Queues

						Pre Acquisition								*Post Acquisition*								
County	Seg. No.	Crossing FRA ID	Roadway Name	Number of Roadway Lanes	ADT	Trains per day	Train Speed (mph)	Train Length (feet)	No. of Veh. Delayed per day	Max. No. of Veh. in Queue per lane	Crossing Delay per stopped veh (min./veh)	Avg. Delay per Vehicle (All vehicles) (sec/veh)	Level of Service	Trains per day	Train Speed (mph)	Train Length (feet)	No. of Veh. Delayed per day	Max. No. of Veh. in Queue per lane	Crossing Delay per stopped veh (min./veh)	Avg. Delay per Vehicle (All vehicles) (sec/veh)	Level of Service	Level of Service with Mitigation
Augusta	N-100	468135B	SR 608	2	5,476	3.9	40	4,869	28	10	2.15	1.31	A	12.1	40	5,000	88	11	2.19	4.24	A	
Chesterfield	C-103	623681B	CENTRALIA RD	2	5,130	18.4	50	6,000	122	10	2.11	6.02	B	23.0	50	6,200	156	10	2.16	7.89	B	
Clarke	N-091	468599F	SR 7	2	5,315	11.3	35	4,869	87	11	2.36	4.63	A	19.9	35	5,000	156	11	2.41	8.49	B	
Emporia City	C-103	623755K	E ATLANTIC ST.	3	11,250	18.4	50	6,000	268	14	2.24	6.40	B	23	50	6,200	343	14	2.30	8.40	B	
Hanover	C-102	860459F	ENGLAND ST.	2	7,775	17.8	50	6,000	179	14	2.26	6.24	B	24.8	50	6,200	256	15	2.31	9.13	B	
Henrico	C-102	860437F	HUNGARY RD	2	5,910	17.8	50	6,000	136	11	2.15	5.94	B	24.8	50	6,200	194	11	2.20	8.68	B	
Page	N-100	468699K	EAST MAIN ST.	2	7,485	3.9	40	4,869	38	14	2.26	1.39	A	12.1	40	5,000	121	14	2.31	4.47	A	
Richmond Cit	C-103	623663D	JAHNKE RD	2	10,320	18.4	50	6,000	246	19	2.43	6.93	B	23.0	50	6,200	315	20	2.49	9.10	B	
Richmond Cit	C-103	623668M	BROAD ROCK RD	2	13,570	18.4	50	6,000	323	25	2.68	7.67	B	23.0	50	6,200	414	26	2.75	10.05	B	
Richmond Cit	C-103	623672C	WALMSLEY BLVD	2	8,636	18.4	50	6,000	206	16	2.31	6.61	B	23.0	50	6,200	263	16	2.37	8.67	B	

5-WV
WEST VIRGINIA

This section provides background information for resources in West Virginia. Tables list the proposed Conrail Acquisition-relatedactivities in West Virginia that meet or exceed the Board's thresholds for environmental analysis. This section also presents the various technical analyses conducted for these activities in West Virginia. The analyses highlight the potential environmental impacts and proposed mitigation actions that SEA recommends as part of the Draft EIS study.

5-WV.1 WEST VIRGINIA SETTING

West Virginia is a mid-Atlantic state. Principal products of West Virginia include coal, chemicals, primary metals, stone, clay, glass products, milk, beef, cattle, apples, poultry, eggs, petroleum, natural gas and natural gas liquids, sand and gravel. The railroad network throughout the state provides a means of transporting and distributing many of these goods and for other products imported into the state.

Transportation Facilities

Major interstates in West Virginia are I-64, an east/west facility; I-68, an east/west facility; I-77, a north/south facility; and I-79, a north/south facility. These interstates provide service to major cities such as Parkersburg, Charleston, Huntington, Beckley, Morgantown, Wheeling, Fairmont, and Clarksburg.

Railroad Facilities

Nine railroads operate in West Virginia covering a total of 2,589 route miles. Conrail, CSX and NS are the three Class I Railroads serving the state. Of the 2,589 route miles in the state:

- Conrail operates 245 route miles in West Virginia, which is 9 percent of the state's total rail miles.
- CSX operates 1,715 route miles in West Virginia, which is 66 percent of the state's total rail miles.

- NS operates 600 route miles in West Virginia, which is 23 percent of the state's total rail miles.

These railroads serve cities such as Charleston, Beckley, Huntington, Grafton, Clarksburg, and Parkersburg.

CSX operates freight classification yards in Beckley (Raleigh), Charleston, Grafton, Hinton, and Huntington. Other CSX rail-related facilities are located in Benwood, Charleston, Clarksburg, Huntington, Parkersburg, Danville, Logan, Grafton, and Saint Albans. Conrail operates a yard in Dickinson, near Charleston. NS operates yards at Bluefield, Williamson and Kenova.

Intercity Passenger and Commuter Rail Services

Amtrak's tri-weekly Cardinal route on CSX provides service to Charleston, Huntington, Thurmond, Prince, Hinton and Alderson. Maryland Area Rail Commuter (MARC) provides extended commuter rail service into the Martinsburg area of West Virginia.

5-WV.2 PROPOSED CONRAIL ACQUISITION ACTIVITIES IN WEST VIRGINIA

In the Operating Plans submitted to the Board, the Applicants indicate that both the expanded CSX and NS systems would open new markets for West Virginia rail shippers.

West Virginia would be served by CSX service routes between the East and Midwest. Following the proposed Conrail Acquisition, West Virginia would be served by four of the CSX service routes, including the Central Service Route, linking the Southeast with Detroit and Chicago via Charleston and Huntington, and the Memphis Gateway Service Route, linking Memphis with New England via Martinsburg.

NS would serve West Virginia via its existing east-west main line through Kenova, plus two Conrail lines, one out of Columbus, Ohio to Charleston with connections south at Deepwater, and the Monogahela Railway via Pittsburgh, Pennsylvania. Coal traffic from Conrail mines in the Charleston area destined to points generally north and east of Harrisburg, Pennsylvania would see a reduction in circuit, averaging 143 miles. This would be due to a rerouting over a shorter combination of the Conrail line to Deepwater instead of the existing NS via Elmore to Hagerstown, Maryland and beyond. To handle increased tonnage attributable to coal train rerouting, NS proposes a $6.9 million investment to improve rail and tie conditions at Deepwater Bridge/Elmore, West Virginia.

CSX and NS would share certain facilities now operated by Conrail. The Monongahela Railway (MGA) would be owned and operated by NS, with CSX having equal access to all current and future facilities on the line. The MGA serves coal producers in Monogahela and Marion counties. West Virginia coal producers would benefit from dual CSX and NS access to the port

at Ashtabula, Ohio for shipments to the Great Lakes. New markets would open for MGA and West Virginia coal to the export docks at Newsport News and Norfolk, Virginia and Baltimore, Maryland.

Both CSX and NS plan to undertake service improvement in West Virginia as part of the proposed Conrail Acquisition. The proposed Conrail Acquisition-related activities that would meet or exceed the Board's thresholds for environmental analysis in West Virginia include increased train operations on a total of five rail line segments. Figures 5-WV-1a and 5-WV-1b show the general location of these rail line segments. The figures also show the additional segments SEA analyzed, and appear at the end of this state discussion.

In West Virginia, there are no intermodal facilities or rail yards that would meet or exceed the Board's thresholds for environmental analysis, or new connections or proposed abandonments. Table 5-WV-1 shows rail line segments in West Virginia.

Table 5-WV-1
West Virginia Rail Line Segments Which Meet or Exceed Board Environmental Thresholds

Site ID	From	To	Description	Length in miles	County	Setting
C-036	Pt of Rock, MD	Harpers Ferry, WV	CSX Metropolitan, Cumberland Subdivision	1	Jefferson	Rural with sporadic development/ Agriculture
C-110	WD Tower, WV	Rivesville, WV	CSX Fairmont Subdivision	4	Marion	Rural
N-110	Elmore, WV	Deep Water, WV	NS Princeton Deepwater District	28	Fayette	Rural
				21	Raleigh	Rural
				8	Wyoming	Rural
				3	Kanawha	Rural
N-111	Fola Mine, WV	Deep Water, WV	Conrail West Virginia Secondary	15	Fayette	Rural
				2	Nicholas	Rural
N-091	Harrisburg, PA	Riverton Jct., VA	NS Hagerstown to Roanoke	20	Jefferson	Rural with sporadic development/ Agriculture

C = CSX
N = NS

5-WV.3 WEST VIRGINIA SUMMARY OF ANALYSIS

Based on the nature of the proposed Conrail Acquisition-related activities in West Virginia that meet the Board's thresholds for environmental analysis and the scope for the Draft EIS, SEA determined that a site-specific analysis did not apply for the following technical areas:

- Transportation (Roadway Effects from Rail Facility Modifications; Navigation).
- Energy.
- Cultural Resources.
- Hazardous Materials and Waste Sites.
- Natural Resources.
- Land Use/Socioeconomics.
- Environmental Justice.

Details of the environmental analysis for West Virginia follow.

5-WV.4 WEST VIRGINIA SAFETY: FREIGHT RAIL OPERATIONS

SEA conducted a statistical analysis to evaluate the potential change in safety on all rail line segments where the proposed Conrail Acquisition would result in eight or more additional freight trains per day. SEA identified two rail line segments within West Virginia that would experience this level of increased activity. While increased freight train activity would increase the probability of a freight train accident, SEA did not consider an increase significant unless the predicted accident rate shortened the duration between accidents to one every 100 years or less per mile. Table 5-WV-2 presents results of the analysis, showing the approximate mileage of each rail line segment within the state.

The Federal Railroad Administration (FRA) requires all railroads to submit reports for all train accidents resulting in personal injury or causing property damage greater than $6,300 (1996 FRA reporting threshold). Train accidents meeting this reporting requirement are relatively infrequent. The FRA reported about 2,600 accidents (3.69 accidents per million train miles[1]) nationally in 1996. Most of these accidents were relatively minor; almost 90 percent of these

[1] "Train miles" are calculated by multiplying the number of trains by the distance traveled. For example, on a typical 100 mile rail line, one million annual train miles results from operating 28 trains per day every day for 365 days.

Table 5-WV-2
Estimated Change in Years Between Accidents - Freight Rail Operations

Site ID	Between	And	Miles in State	Increase in Trains Per Day	Pre-Acquisition Accident Interval *	Post-Acquisition Accident Interval *
C-036	Pt. Of Rocks, MD	Harper's Ferry	1	8.3	155	122
N-091	Harrisburg, PA	Riverton Jct., VA	20	8.5	417	231

* Accident interval figures show the years/mile.

accidents caused less than $100,000 in damage. In addition, most of the train accidents did not affect people or non-railroad property.

Accident risk predictions are best expressed by describing the elapsed time expected between any two consecutive events. The current national average is that a main line freight train accident occurs once every 117 years on each mile of route. FRA records, as described in Chapter 4, "System-Wide and Regional Setting Impacts," show a substantial decrease, both in total number of accidents and in accidents per million train miles, a standard industry measure. Because there are few accidents, and most of these accidents are relatively minor, it is not possible for SEA to accurately predict either the frequency or severity of actual accidents.

SEA estimated the change in the risk of an accident resulting from the increased activity on rail line segments as a result of the proposed Conrail Acquisition. Because SEA analyzed rail line segments that vary in length from one mile to more than 100 miles, and because freight train accidents typically have little impact on surrounding areas, SEA expressed all predicted risks of accidents on a route-mile basis. Section 3.2 "Safety: Freight Rail Operations," discusses the analysis process in greater detail.

5-WV.4.1 Summary of Potential Effects and Preliminary Recommended Mitigation

In West Virginia, SEA found that no rail line segments met its criteria of significance (one accident expected every 100 years or less per mile of route). Therefore, SEA does not recommend mitigation.

5-WV.5 WEST VIRGINIA SAFETY: PASSENGER RAIL OPERATIONS

In West Virginia, passenger trains share certain tracks with freight trains. SEA evaluated the potential for increased accidents between freight trains and passenger trains, for both intercity and commuter trains. Because changes in the frequency of rail accidents are directly related to changes in overall train activity, SEA's analysis concentrated on rail line segments carrying both

passenger and freight trains that would experience an increase in freight train traffic of one or more trains per day.

In Chapter 4, "System-Wide and Regional Setting, Impacts and Proposed Mitigation," SEA addresses the issue of potential increased risk to passenger train operations associated with the proposed Conrail Acquisition. System-wide, SEA identified 197 freight rail line segments that also carry passenger trains. Of these, SEA analyzed 93 rail line segments that would experience an increase of one or more freight trains per day resulting from the proposed Acquisition. Eight of these rail line segments are located in West Virginia; these rail line segments are part of Amtrak Cardinal and MARC passenger train routes.

The Federal Railroad Administration (FRA) requires reports from railroads concerning all train accidents resulting in personal injury or causing property damage greater than $6,300 (1996 FRA reporting threshold). FRA requires the same reporting for passenger train accidents. A nationwide average of fewer than 200 passenger train accidents per year (for both Amtrak intercity and urban area commuter trains) has occurred over the last three years. Most of these accidents were relatively minor and rarely involved any fatalities, but because the safety of passengers as well as property is frequently involved, their occurrence is of serious concern.

Given the limited number of passenger rail accidents, SEA was unable to accurately predict the severity, location, or timing of actual accidents. Therefore, SEA focused on estimating the potential risks of an accident. In this safety analysis, SEA used increased freight activity on rail line segments to estimate the changes in passenger train accident risks. To assess significance, SEA first determined whether the proposed Acquisition-related change in the projected accident rate was greater than an annual increase of 25 percent. SEA then determined if the predicted accident frequency was less than one accident in 150 years. Thus, SEA determined a potential impact to be significant if the projected annual increase in accidents was greater than 25 percent and the frequency was less than one accident in 150 years.

5-WV.5.1 Summary of Potential Effects and Preliminary Recommended Mitigation

The pre-Acquisition accident interval for each rail line segment is shown in Table 5-WV-3. Accidents pose potential threats to passengers on the train; therefore, for each rail line segment, risk is expressed as the expected interval between events over the length of the rail line segment. Table 5-WV-3 shows the expected change in years between accidents for the individual rail line segments.

Table 5-WV-3
Estimated Change in Years Between Accidents for Passenger Rail Operations

Site ID	From	To	Miles in State	Pre-Acquisition Accident Interval [a]	Post-Acquisition Accident Interval [a]
C-236	Barborsville	Huntington	10	31,953	28,737
C-203	Cherry Run	Cumberland, MD	59	1,054	986
C-202	Harper's Ferry	Cherry Run	32	254	208
C-238	Kenova	Big Sandy Jct.	1	278,036	128,968
C-235	St. Albans	Barborsville	29	13,546	11,535
C-036	Pt. of Rocks, MD	Harper's Ferry	1	188	151
C-237	Huntington	Kenova	8	34,530	31,858
C-234	Clifton Forge, VA	St. Albans	170	2,241	2,014

[a] Accident Intervals shows years between accidents.

Based on information provided by the railroads and SEA's independent analysis, SEA determined that the increased risk for passenger train accidents for these eight rail line segments did not exceed SEA's criteria for significance. As a result, SEA does not propose mitigation.

5-WV.6 WEST VIRGINIA SAFETY: HIGHWAY/RAIL AT-GRADE CROSSINGS

Increased train activity could affect the safety of roadway users at highway/raii at-grade crossings. To address potential changes in accident frequency, SEA compared existing accident frequency rates with accident frequency rates at all highway/rail at-grade crossings that would experience a Conrail Acquisition-related increase of eight or more trains per day. At these locations, SEA looked at the most recent five years of accident history available, and calculated the potential change in the number of years between accidents. SEA's analysis procedure considered the type of existing warning devices at the highway/rail at-grade crossings, including passive devices (signs or crossbucks), flashing lights, or gates.

To evaluate the signif cance of potential changes in accident frequency in West Virginia, SEA categorized highway/rail at-grade crossings into two categories:

- Category A consisted of highway/rail at-grade crossings with a history of relatively frequent train-vehicle accidents. SEA considered highway/rail at-grade crossings in West Virginia with accident frequency rates at or above the state's 50th highest accident frequency rate of

one accident every 14 years (0.0708 accident frequency rate) to be Category A highway/rail at-grade crossings. For all Category A highway/rail at-grade crossings, SEA considered the relatively small accident frequency rate increase of one accident every 100 years (a 0.01 accident frequency rate increase) to be significant.

- Category B consisted of highway/rail at-grade crossings with a history of relatively infrequent train-vehicle accidents. SEA considered highway/rail at-grade crossings in West Virginia with accident frequency rates less than one accident 14 years (less than 0.0708 accident frequency rate) to be Category B highway/rail at-grade crossings. For these crossings, SEA considered an accident frequency rate increase of one accident every 20 years (a 0.05 accident frequency rate increase) to be significant.

Table 5-WV-4, presented at the end of this state discussion, presents the results of SEA's analysis. A county by county summary of results follows.

5-WVA.6.1 County Analysis

Jefferson County

SEA's safety analysis showed that for the 16 highway/rail at-grade crossings studied in Jefferson County, the predicted increases in accident frequency would range from 0.0018 to 0.0096. This translates into a range of increases from one accident every 556 years to one accident every 104 years. SEA found these predicted increases to be below the criteria for significance.

5-WV.6.2 Summary of Potential Effects and Preliminary Recommended Mitigation

SEA determined that the proposed Conrail Acquisition would not significantly increase the predicted accident risk for highway/rail at-grade crossings in West Virginia. Therefore, SEA anticipates that mitigation for highway/rail at-grade crossings would not be necessary.

5-WV.7 WEST VIRGINIA TRANSPORTATION: PASSENGER RAIL SERVICE

In West Virginia, passenger trains share certain tracks with freight trains. SEA evaluated potential Acquisition-relatedeffects on the ability of rail line segments to accommodate existing passenger rail service, both intercity and commuter rail, and reasonably foreseeable new or expanded passenger service. SEA identified those rail line segments that carry both freight and passenger trains and would experience an increase of one or more freight trains per day.

Amtrak

Amtrak currently provides service to the Charleston and Huntington areas on CSX lines. Section 4.7.1, "Intercity Passenger Rail Service," discusses intercity passenger rail service effects.

Commuter Rail

SEA's evaluation included an assessment of the projected level of train traffic and the capacity of the railroad facilities including the number of main tracks, maximum authorized speed for freight and passenger trains, and the type of train control, signaling and train dispatching system utilized. SEA also examined the frequency of interlockings, which permit faster trains to move around slower trains. SEA utilized experienced railroad operating personnel to assess each rail line segment using timetables, track charts, existing and proposed train levels, professional experience and personal familiarity with the rail facilities.

The Maryland Rail Commuter Service (MARC), a division of the Maryland Mass Transit Administration, provides extended commuter rail service into the Martinsburg, West Virginia area from Union Station in Washington, D.C. using a CSX rail line.

5-WV.7.1 Summary of Potential Effects and Preliminary Recommended Mitigation

Based on the evaluation of railroad capacity issues and information provided by the Applicants including operating plans and existing and projected train traffic, SEA concluded that the existing capacity of the commuter rail line segments evaluated could accommodate the proposed increase in freight train levels without adverse effects on MARC passenger train service in West Virginia. Therefore, SEA does not anticipate that mitigation would be required. Additional details regarding the potential effects of freight operations on passenger service in West Virginia are presented in a regional context in Chapter 4, Section 4.7, "Transportation: Passenger Rail Service."

5-WV.8 WEST VIRGINIA TRANSPORTATION: ROADWAY CROSSING DELAY

In order to analyze the effects of the proposed Conrail Acquisition on the roadway system at existing highway/rail at-grade crossings, SEA identified the crossings on rail line segments that would exceed the Board's environmental analysis thresholds for air quality. SEA then calculated potential changes in vehicle delay at these crossings where average daily traffic (ADT) volumes are 5,000 or greater. SEA concluded that the potential effect of increased train traffic for highways with ADT volumes below 5,000 would be experienced by very few drivers and the additional vehicular delay would be minimal. The description of levels of service and criteria of significance have been addressed in Chapter 3, "Analysis Methods and Potential Mitigation Strategies," and Appendix C, "Traffic and Transportation."

5-WV.8.1 County Analysis

There is one county in West Virginia that has a highway/rail at-grade crossing for which SEA performed vehicle delay calculations. Table 5-WV-5, presented at the end of this state discussion contains a summary of these results.

Jefferson County

The single crossing analyzed in Jefferson County would have a minimal increase in crossing delay per stopped vehicle. The level of service under post-Acquisition conditions would be B. There would be no increase in maximum queue.

5-WV.8.2 Summary of Potential Effects and Preliminary Recommended Mitigation

It is SEA's preliminary conclusion that the proposed Conrail Acquisition would have no significant effect on vehicle delay at highway/rail at-grade crossings in West Virginia. Therefore, SEA does not propose mitigation.

5-WV.9 WEST VIRGINIA AIR QUALITY

This section summarizes the change in air pollutant emissions that would result from the proposed Acquisition-relatedoperational changes in the state of West Virginia. The primary air pollutant emission sources from trains and related activities include locomotive emissions on rail line segments, at rail yards, and at intermodal facilities. In addition to locomotive emissions, SEA evaluated emissions from other sources at intermodal facilities (idling trucks, lift cranes, etc.), motor vehicles idling near at-grade crossings, and decreases in truck emissions due to truck-to-rail freight diversions.

To analyze the air quality effects of the proposed Acquisition, SEA evaluated rail line segments, rail yards, and intermodal facilities that would meet or exceed the Board's thresholds for environmental analysis defined in Chapter 2, "Proposed Action and Alternatives." See Chapter 3, "Analysis Methods and Potential Mitigation Strategies," for additional information and a summary of the air quality analysis methodology. Appendix E, "Air Quality," contains a detailed description of methodology and detailed tables of results.

SEA addressed air pollutant emissions for sulfur dioxide (SO_2), volatile organic compounds (VOCs), particulate matter (PM), lead (Pb), nitrogen oxides (NO_x) and carbon monoxide (CO). SEA determined that emissions for SO_2, VOCs, PM and Pb would not exceed the emission screening thresholds for environmental analysis in any county. However, SEA found that these thresholds would be exceeded for NO_x in various counties in 17 states, and CO in three counties in two states (Illinois and Ohio). NO_x air pollutant emissions may affect a region's ability to attain the National Ambient Air Quality Standards for ozone. CO emissions may affect a local area's ability to attain the National Ambient Air Quality Standards for CO.

Three NS and two CSX rail line segments exceeded the Board's thresholds for air quality analysis in West Virginia. Table 5-WV-6 shows the air quality evaluation process that was followed. SEA identified seven counties in West Virginia which include any part of these rail line segments. For these counties, SEA summed air emissions increases from changes on rail

Table 5-WV-6
West Virginia Counties Evaluated in Air Quality Analysis

Counties Exceeding the Board's Activity Thresholds	O_3 Status *	Exceeds Emissions Screening Level Before Netting	Exceeds Emissions Screening Level After Netting	Exceeds 1% of County Emissions
Berkeley	A	No	-	-
Fayette	A	No	-	-
Jefferson	A	Yes	Yes	Yes
Kanawah	A	No	-	-
Marion	A	No	-	-
Raleigh	A	No	-	-
Wyoming	A	No	-	-

* A= Attainment Area, M= Maintenance Area, N= Nonattainment Area, as defined in the Clean Air Act.

line segments and other activities and compared them to the air emission screening level that would require a permit if the source were a stationary source (rather than a mobile source, such as trains, trucks, and other vehicles). If the calculated air emissions exceeded this screening level, SEA conducted a detailed air emissions analysis known as a "netting analysis" in these counties. The netting analysis considered all emissions increases and decreases from Acquisition-related activity changes. SEA compared the netting analysis results to the air emission screening level and additional analyses were performed for counties where netting analysis results exceeded the air emission screening level. For these counties, SEA inventoried all county air pollutant emissions sources to evaluate if proposed Acquisition-related air emissions represented more than one percent of all air emissions sources in the county.

The emissions estimates presented in Appendix E, "Air Quality," show that the increased county-wide air pollutant emissions from the facilities described above exceed the threshold for Jefferson County, West Virginia. SEA's analysis results for these counties are presented below:

5-WV.9.1 County Analysis

Jefferson County

EPA has designated Jefferson County as an attainment area for all pollutants, with no maintenance areas. Table 5-WV-7 shows that the net NO_x emissions increase in Jefferson County, considering all calculated Acquisition-relatedemissions changes, is above the emissions screening threshold of 100 tons per year used to determine if emissions changes are potentially significant.

Table 5-WV-7
Jefferson County Annual NO_x Emissions Summary

Activity Type (RR)	Identification	NO_x Emissions (tons/year)
Rail Segment (CSX)	Point of Rocks, MD to Harpers Ferry, WV	1.19
Rail Segment (CSX)	Harpers Ferry, WV to Cherry Run, WV	79.49
Rail Segment (NS)	Harrisburg, PA to Riverton Jct, VA	112.07
Truck Diversions (both)	County-wide	-0.27
At-grade Crossings (both)	Affected Crossings >5000 Vehicles/Day*	0.32
Total Acquisition-related Net NO_x Emissions Increase		192.80
NO_x Emissions Screening Level		100.00
Existing (1995) County Total NO_x Emissions		1,961.82
Percent Increase in County NO_x Emissions		9.83%

* "Affected Crossings" are those with an increase in rail segment activity over Board air quality analysis thresholds, and which have vehicle traffic levels over 5000 vehicles/day.

The increased NO_x emissions in Jefferson County are above one percent of the existing (1995) county-wide NO_x emissions. However, Jefferson County is a largely rural area, and its existing NO_x emissions are small in comparison to urban areas that have O_3 nonattainment problems. Given the low existing emissions and current O_3 attainment status, SEA expects no potential adverse impact despite the 9.8 percent increase in NO_x emissions.

5-WV.9.2 Summary of Potential Effects and Preliminary Recommended Mitigation

While there are localized increases in emissions in Jefferson County, West Virginia, the increases are not likely to affect compliance with air quality standards. Therefore, SEA has determined that air quality will not be significantly affected and no mitigation is necessary. See system-wide and regional discussion in Section 4.12 "Air Quality."

5-WV.10 WEST VIRGINIA NOISE

To analyze the potential noise impacts of the proposed Acquisition, SEA evaluated rail line segments, rail yards and intermodal facilities that would meet or exceed the Board's thresholds for environmental analysis of noise. Although new construction projects and rail line abandonments can result in noise increases, the noise effects would be temporary and therefore, SEA did not evaluate them.

5-WV.10.1 Proposed Activities

Train noise sources include diesel locomotive engine and wheel/rail interaction noise (or wayside noise) and horn noise. Wayside noise affects all locations in the vicinity of the rail facility, and generally diminishes with distance from the source. Horn noise is an additional noise source at grade crossings, and also generally diminishes with distance. SEA performed an analysis to identify rail line segments, rail yards and intermodal facilities where the proposed changes in operations meet or exceed the Board's environmental analysis thresholds at 49 CFR 1105.7(e)(6). Where the proposed rail activity would exceed these thresholds, SEA calculated the 65 dBA L_{dn} noise contours for the pre- and post-Acquisition conditions. SEA based the noise level impact assessment on the projected activity level data provided by the railroads. SEA counted sensitive receptors (e.g., schools, libraries, hospitals, residences, retirement communities, and nursing homes) within the noise contours for both pre-Acquisition and post-Acquisition operating conditions.

The CSX and NS rail line segments that would experience increases in traffic or activity meeting the Board's environmental analysis thresholds for West Virginia are listed in Table 5-WV-8. Table 5-WV-9 shows the facilities with noise sensitive receptors exceeding 65 dBA L_{dn}.

The counties where these facilities are located are listed in Section 5-WV.2 , "Proposed Conrail Acquisition Activities in West Virginia."

Table 5-WV-8
Rail Line Segments That Meet or Exceed Board Thresholds for Noise Analysis

Site ID	Segment		Trains Per Day			Percent Change in Gross Ton Miles
	From	To	Pre-Acquisition	Post-Acquisition	Increase	
C-036[a]	Pt. of Rocks, MD	Harpers Ferry, WV	33.3	41.6	8.3	31
C-110	WD Tower	Rivesville	1.5	3.4	1.9	108
N-091	Harrisburg, PA	Riverton Junction, VA	11 1	19.6	8.5	82
N-110	Elmore	Deepwater	0.3	2.3	2	1142
N-111	Fola Mine	Deepwater	0.6	2	1.4	331

[a] SEA determined that the increase in noise due to increased rail activity was insignificant and receptor counts were unnecessary. Refer to the screening methodology in Appendix F for additional detail.

5-WV.10.2 Summary of Potential Effects and Preliminary Recommended Noise Mitigation

There are different noise mitigation techniques used to reduce horn noise and wayside noise. These different types of noise and mitigation techniques are as follows:

Table 5-WV-9
Noise Sensitive Receptors In West Virginia Exceeding 65 dBA L_{dn}

Site ID	Name	Pre-Acquisition	Post-Acquisition	Increase
Rail Line Segments				
C-110	WD Tower-Rivesville	8	13	5
N-091	Harrisburg, PA-Riverton Junction, VA	611	1,000	389
N-110	Elmore-Deepwater	0	498	498
N-111	Fola Mine-Deepwater	0	249	249

Grade Crossing Noise Effects. The Federal Railroad Administration (FRA) has indicated that it will propose new rules on train horn blowing procedures in 1998. These new rules may allow communities to apply for an exception to horn blowing at certain grade crossings that meet explicit criteria. These criteria relate to so-called "quiet zones" where FRA would no longer require train engineers to sound the train horn at grade crossings with special upgraded safety features. Examples of such safety features include four-quadrant gates and median barriers that preclude motorists from entering the crossings while the crossing arm is down. Until FRA develops and implements these regulations, these measures are not feasible for SEA to require as mitigation. However, communities will have the opportunity to qualify for "quiet zones" once the FRA regulations are in place.

Wayside Noise Effect. Wayside noise is the sound of a train as it passes by. Wayside noise is comprised of steel wheel/ rail interaction noise, and locomotive diesel engine noise. This type of noise can be reduced by constructing barriers between the railway noise source and adjoining land uses, and by installing building sound insulation. Noise barriers include earth berms and walls that block the sound. Rail lubrication can be used to reduce "wheel squeal" noise on curved track. Building sound insulation consists of special windows and other building treatments that reduce interior noise. Noise barriers are the preferred type of noise mitigation for this project since barriers can be built on railroad property. Additional discussion of noise mitigation measures is included in Appendix F, "Noise Methods."

As noted above, for receptors near grade crossings that would experience increases in noise resulting from horn sounding, mitigation is not currently feasible. For areas affected by wayside noise, SEA considered rail line segments eligible for noise mitigation for noise sensitive receptors exposed to at least 70 dBA L_{dn} and an increase of at least 5 dBA L_{dn} due to increased rail activity.

It is SEA's preliminary conclusion that no rail line segments in the state of West Virginia warrant noise mitigation according to the project mitigation criteria.

5-WV.11 WEST VIRGINIA ENVIRONMENTAL JUSTICE

As part of its analysis, SEA examined activities associated with the proposed Conrail Acquisition for environmental justice impacts (disproportionately high and adverse impacts to minority and low-income populations) in accordance with Executive Order 12898. As described in the Environmental Justice Methodology in Chapter 3, "Analysis Methods and Potential Mitigation Strategies," SEA first categorized the nature of the populations in areas where Acquisition-related activities are proposed. SEA determined whether the population in such areas met the following environmental justice thresholds: (1) greater than 50 percent of the population is minority or low-income, or (2) the minority or low-income population percentage is 10 percent greater than the minority or low-income population percentage in the county.

Next, SEA ascertained whether this population fell within an area of potential effect. SEA defined a typical zone on either side of a rail line segment or proposed construction site, or bordering a railroad intermodal facility or rail yard, as an area of potential effect. In general, the extent of an area of potential effect may vary depending on the nature of the changes in rail activity associated with it, but such areas typically extend 400 to 1500 feet out from the rail line segment or facility being analyzed.

SEA then evaluated these areas of potential effect for proposed Acquisition-related activities that would meet or exceed the Board's thresholds for environmental analysis. In this analysis, SEA evaluated potential impacts on safety, transportation, air quality, noise, cultural resources, hazardous waste sites, hazardous materials transport, natural resources, and land use/socioeconomic effects. SEA also visited the sites of proposed construction for new rail line connections, rail line segments, intermodal facilities, and rail yards.

SEA developed and executed expanded public outreach efforts for those jurisdictions that met both SEA's thresholds for environmental justice and the Board's thresholds for environmental significance. SEA designed the public outreach process to seek widespread notice and dissemination of SEA's environmental impact analysis; provide additional opportunities for community input to the NEPA process; solicit information about cumulative effects in minority and low-income communities; and allow minority and low-income communities to assist in fashioning appropriate alternatives and mitigation measures. SEA is placing additional copies of the Draft EIS in jurisdictions with high proportions of minority and low-income populations that do not have significant environmental impacts which could result from the proposed Acquisition.

This section presents the results of those evaluations and analysis. A complete list of all the sites analyzed for environmental justice impacts is presented in Appendix K.

5-WV.11.1 West Virginia Environmental Justice Setting

There are no new constructions or changes in activity at rail yards or intermodal facilities proposed in the state of West Virginia as part of the proposed Conrail Acquisition. The five rail line segments with proposed increases in rail traffic in West Virginia did not meet either the minority or low-income population thresholds for further environmental analysis.

5-WV.11.2 Summary of Potential Effects and Preliminary Recommended Mitigation

Based on currently available information, SEA has identified no proposed activities that meet the thresholds for environmental justice analysis, and SEA's preliminary finding, therefore, is that no environmental justice effects exist in West Virginia as a result of the proposed Conrail Acquisition, and no mitigation would be necessary.

5-WV.12 WEST VIRGINIA CUMULATIVE EFFECTS

Within the State of West Virginia, the Applicants propose to increase traffic on five rail line segments to levels that meet or exceed the Board's thresholds for environmental analysis.

Cumulative Effects Findings

As discussed in Chapter 6, "Agency Coordination and Public Outreach," SEA conducted extensive scoping and data collection for this Draft EIS. At this point in its investigation, SEA is unaware of any activities that would require a cumulative effects analysis. Therefore, based on its independent analysis and all information available to date, SEA has made a preliminary conclusion that there would be no significant cumulative effects associated with the proposed Acquisition in the State of West Virginia.

Cumulative Effects Mitigation Measures

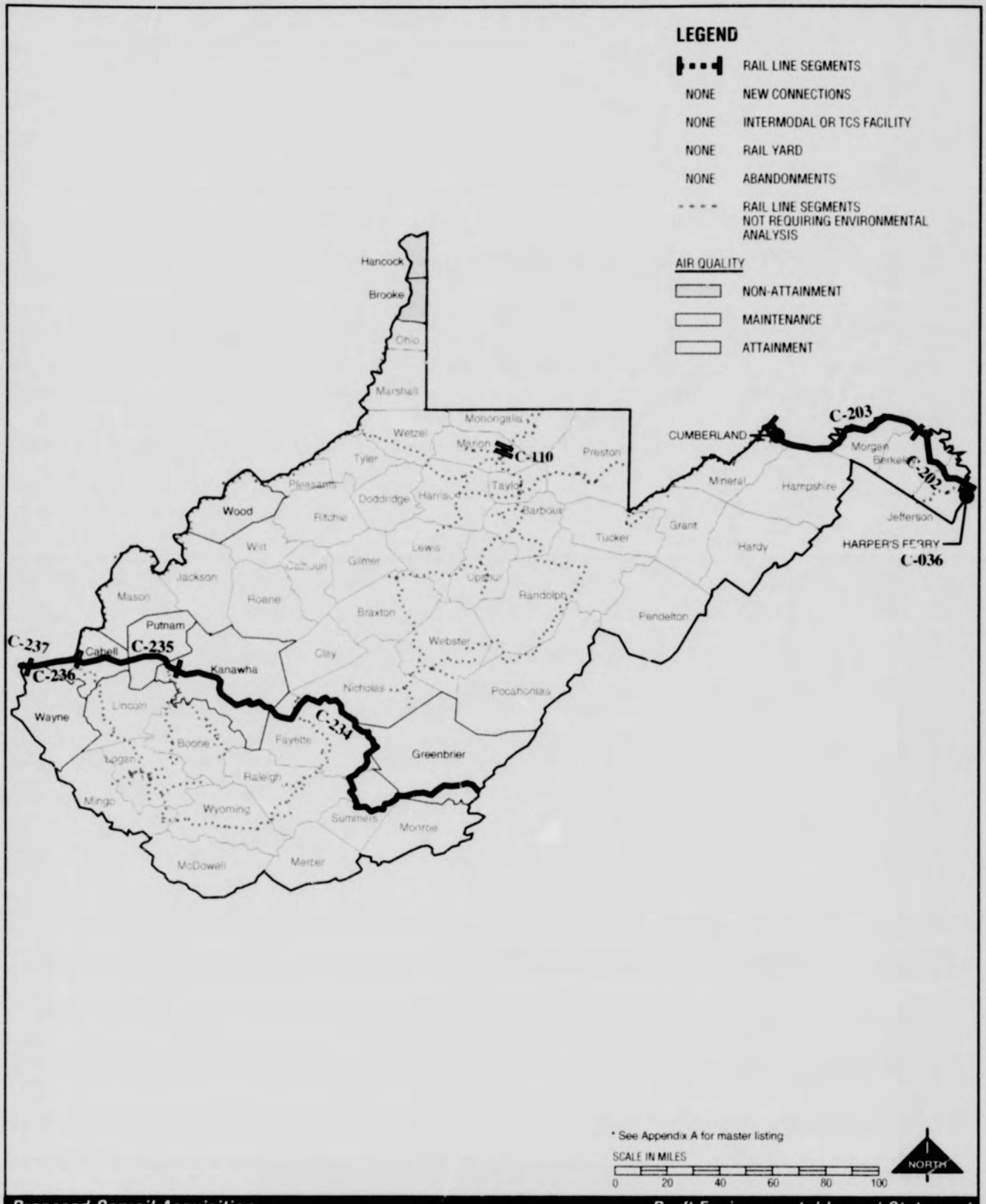
Due to a lack of cumulative effects, no mitigation measures are necessary.

5-WV.13 WEST VIRGINIA AREAS OF CONCERN

This Draft EIS examines system-wide and site-specific issues. An important part of SEA's analysis of the proposed Acquisition is the evaluation and consideration of environmental comments. A complete list of entities in the State of West Virginia that have submitted environmental comments to SEA on or before October 31, 1997 is provided in Appendix O of this document.

SEA appreciates these comments and considers all comments in its environmental analysis and the development of potential system-wide and/or site-specific mitigation. For issue areas that do not meet the Board's environmental analysis thresholds or are not Acquisition-related, SEA

has not conducted detailed analysis. SEA encourages parties to submit site-specific, Acquisition-related comments. SEA will review all comments submitted during the 45-day comment period on this Draft EIS in the preparation of the Final EIS.



Proposed Conrail Acquisition *Draft Environmental Impact Statement*

FIGURE 5-WV-1a

RAIL LINE SEGMENTS, NEW CONNECTIONS, INTERMODAL FACILITIES, RAIL YARDS AND ABANDONMENTS REQUIRING ENVIRONMENTAL ANALYSIS

WEST VIRGINIA - CSX

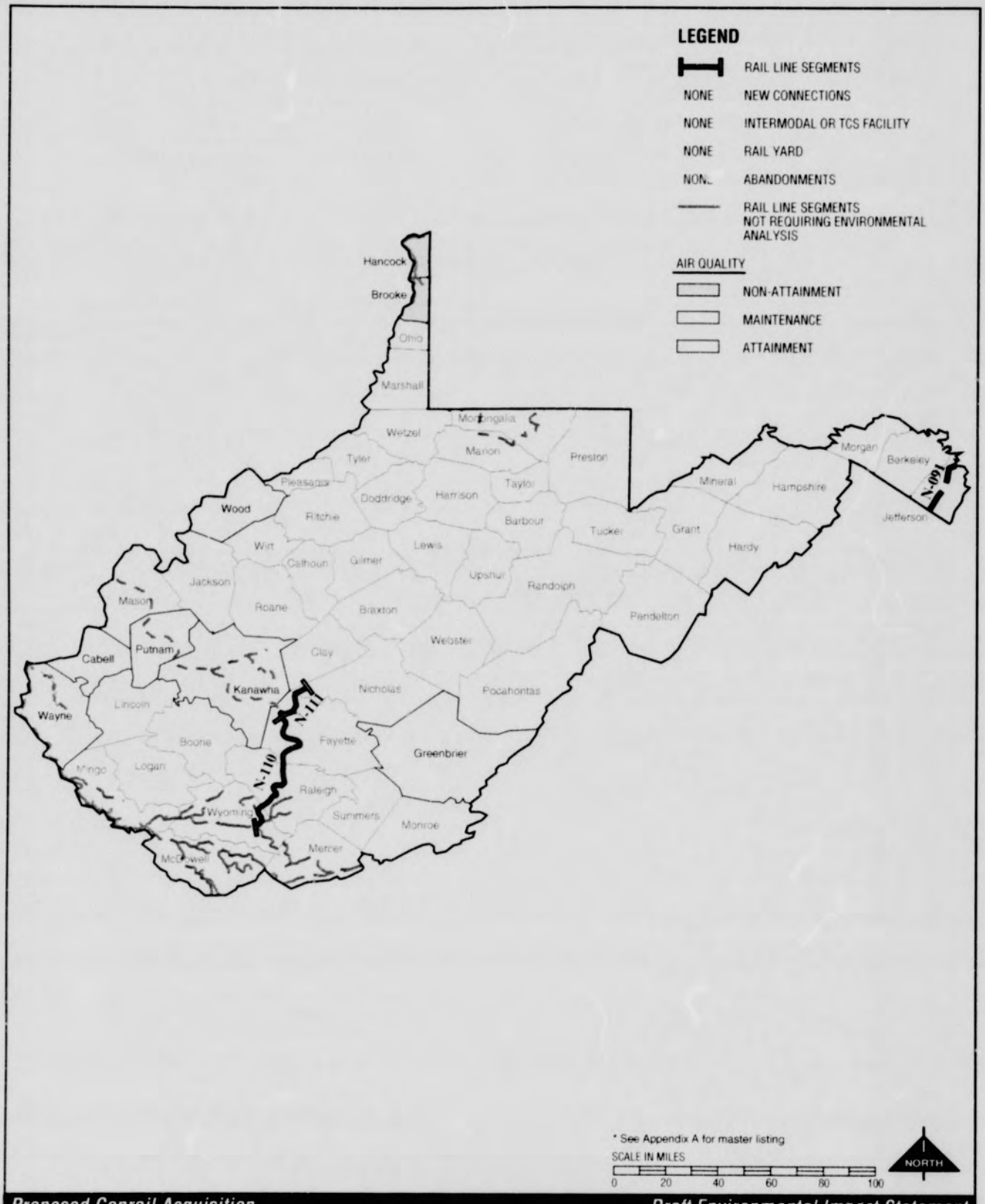


FIGURE 5-WV-1b

RAIL LINE SEGMENTS, NEW CONNECTIONS, INTERMODAL FACILITIES, RAIL YARDS AND ABANDONMENTS REQUIRING ENVIRONMENTAL ANALYSIS

WEST VIRGINIA - NORFOLK SOUTHERN

Table 5-WV-4
West Virginia
Highway/Rail At-Grade Crossing Accident Frequency

County	Railroad Segment	FRA ID	Street Name	Present Safety Device	ADT	Number of Roadway Lanes	Maximum Speed	Total Accidents 1991-1995	Freight Trains		Accidents Per Year			
									Pre-Acquisition	Post Acquisition	Pre-Acquisition	Post Acquisition	Change	Post Acquisition With Mitigation
JEFFERSON	N-091	469342Y	HIGH	Gate	1,700	2	45	0	11.1	19.6	0.0192	0.0240	0.0048	
JEFFERSON	N-091	469343F	GERMAN	Gate	2,700	2	45	0	11.1	19.6	0.0168	0.0211	0.0043	
JEFFERSON	N-091	469345U	WASHINGTON	Gate	3,400	2	45	0	11.1	19.6	0.0228	0.0283	0.0055	
JEFFERSON	N-091	469348P	MORGAN-GROVE	Gate	150	2	50	0	11.1	19.6	0.0101	0.0129	0.0028	
JEFFERSON	N-091	469350R	GARDNER'S-LANE	Gate	100	2	50	1	11.1	19.6	0.0432	0.0477	0.0045	
JEFFERSON	N-091	469354T	SR 16/3	Gate	50	1	50	0	11.1	19.6	0.0064	0.0082	0.0018	
JEFFERSON	N-091	469355A	LUTHER JONES (SR 14)	Flasher	150	1	50	0	11.1	19.6	0.0122	0.0160	0.0037	
JEFFERSON	N-091	469358V	SR 20	Gate	1,600	2	35	1	11.1	19.6	0.0602	0.0686	0.0084	
JEFFERSON	N-091	469361D	SR 9	Gate	8,800	2	50	0	11.1	19.6	0.0281	0.0344	0.0064	
JEFFERSON	N-091	469362K	CRANES-LANE	Gate	95	1	50	0	11.1	19.6	0.0078	0.0100	0.0022	
JEFFERSON	N-091	469366M	SR 51	Gate	2,900	2	50	1	11.1	19.6	0.0663	0.0759	0.0096	
JEFFERSON	N-091	469369F	SUMMIT-POINT-PIKE	Gate	2,700	2	50	0	11.1	19.6	0.0211	0.0263	0.0052	
JEFFERSON	N-091	469373X	WHEATLAND RD	Gate	300	2	50	0	11.1	19.6	0.0122	0.0155	0.0033	
JEFFERSON	N-091	469375L	WITHER/LARLE (SR 19)	Gate	250	2	50	0	11.1	19.6	0.0116	0.0148	0.0032	
JEFFERSON	N-091	469378G	PUBLIC XING	Passive	50	1	50	0	11.1	19.6	0.0120	0.0159	0.0039	
JEFFERSON	N-091	469380H	DARK LANE W	Gate	250	2	50	0	11.1	19.6	0.0116	0.0148	0.0032	

Table 5-WV-5
West Virginia
Highway/Rail At-Grade Crossing Vehicle Delay and Queues

County	Seg. No.	Crossing FRA ID	Roadway Name	Number of Roadway Lanes	ADT	*Pre Acquisition*								*Post Acquisition*								
						Trains per day	Train Speed (mph)	Train Length (feet)	No. of Veh. Delayed per day	Max. No. of Veh. in Queue per lane	Crossing Delay per stopped veh (min./veh)	Avg. Delay per Vehicle (All vehicles) (sec/veh)	Level of Service	Trains per day	Train Speed (mph)	Train Length (feet)	No. of Veh. Delayed per day	Max. No. of Veh. in Queue per lane	Crossing Delay per stopped veh (min./veh)	Avg. Delay per Vehicle (All vehicles) (sec/veh)	Level of Service	Level of Service with Mitigation
Jefferson	N-091	469361D	SR 9	2	8,800	11.1	40	4,869	128	17	2.35	4.09	A	19.6	40	5,000	230	17	2.39	7.51	B	

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5-DC
WASHINGTON, D.C.

This section provides background information for resources in Washington, D.C. Tables list the proposed Conrail Acquisition-related activities in Washington, D.C., that meet or exceed the Board's thresholds for environmental analysis. This section also presents the various technical analyses conducted for these activities in Washington, D.C. The analyses highlight the potential environmental impacts and proposed mitigation actions that SEA recommends as part of the Draft EIS study.

5-DC.1 WASHINGTON, D.C. SETTING

Washington, D.C., the capital city of the United States, is located in the mid-Atlantic region of the country. The city has a service-oriented economy without major manufacturers.

Transportation Facilities

Major interstates in the Washington, D.C. area are I-95, a major north/south route for the eastern United States, and I-66, an east/west route. I-495 is a beltway that serves Washington, D.C., Virginia, and Maryland.

Railroad Facilities

Washington, D.C. has two Class I Railroads: Conrail and CSX covering a total of 36 route miles. Of the total route miles:

- Conrail operates 13 route miles in Washington, D.C., which is 36 percent of the city's total rail miles.
- CSX operates 20 route miles in Washington, D.C., which is 56 percent of the city's total rail miles.

Conrail owns and operates a rail yard at Benning Road. CSX and NS do not have rail yards or intermodal facilities in Washington, D.C.

Intercity Passenger and Commuter Rail Services

Amtrak operates the Northeast Corridor from Washington, D.C. to Boston including Baltimore, New York City and Philadelphia. The Capitol Limited provides daily service from Washington, D.C. to Pittsburgh Pennsylvania; Cleveland, Ohio; Toledo, Ohio; and Chicago, Illinois. The Cardinal provides tri-weekly service to Charleston, West Virginia; Cincinnati, Ohio; Indianapolis, Indiana; and Chicago, Illinois. The Vermonter provides daily service from Washington, D.C. to St. Albans and Burlington via New York City. In addition, Amtrak operates south of Washington, D.C. on CSX and NS rail lines to cities such as Richmond, Virginia; Raleigh, North Carolina; Charlotte, North Carolina; Atlanta, Georgia; Birmingham, Alabama; New Orleans, Louisiana; Jacksonville, Florida and Miami, Florida via Washington, D.C.

Within the Washington metropolitan area, Maryland Rail Commuter (MARC) and the Virginia Railway Express (VRE) provide commuter rail service. On weekdays, MARC operates 80 commuter trains on three routes between Washington, D.C. and Brunswick, Maryland, and to Baltimore and Perryville, Maryland and Martinsburg, West Virginia. VRE operates 26 commuter trains on an average weekday between Washington, D.C. and Alexandria, Virginia, 12 of which operate on CSX trackage to Fredericksburg, Virginia and 14 on NS trackage to Manassas, Virginia.

5-DC.2 PROPOSED CONRAIL ACQUISITION ACTIVITIES IN WASHINGTON D.C.

In the Operating Plans submitted to the Board, the Applicants indicate that the expanded CSX and NS systems would extend two-carrier competition between CSX and NS to the Washington, D.C. area.

New truck-competitive rail service would help alleviate highway congestion in the Washington, D.C. area, and main line rail corridors will operate more efficiently. CSX and NS would become more competitive with motor carriers as a result of their expanded networks and enhanced abilities to offer attractive intermodal services to shippers of time-sensitive freight. Thus, relatively short and medium haul freight traffic lines would experience an increase in intermodal market share, resulting in less traffic congestion along roadways and environmental benefits of improved air quality and safety. CSX would also increase clearance at the Virginia Avenue Tunnel for multi-level rail car service on the Atlantic Coast Service Lane.

Neither the CSX nor the NS operating plans are expected to have an adverse impact upon passenger operations in the Washington, D.C. NS would have trackage rights on the CSX line from Alexandria, VA through Washington, D.C. via Anacostia to Landover, Maryland to connect

with Amtrak's Northeast Corridor (NEC). CSX would be assigned Benning Yard in Washington, as well as the Pope's Creek Secondary.

NS would provide local freight service on Amtrak's NEC in Washington between Landover, Maryland and Union Station. Both CSX and NS would have overhead trackage rights to operate trains on the NEC between New York and Washington, D.C. NS would also have trackage rights on CSX between suburban Washington, D.C. and Philadelphia, Pennsylvania.

Both CSX and NS plan to undertake service improvements in Washington D.C. as part of the proposed Conrail Acquisition. The proposed Conrail Acquisition-related activities that would meet or exceed the Board's thresholds for environmental analysis in Washington D.C. include increased train operations on a total of six rail line segments.

In Washington D.C., there are no intermodal facilities, rail yards, new connections or abandonments that would meet or exceed the Board's thresholds for environmental analysis. Table 5-DC-1 shows rail segments in Washington, D.C. Figure 5-DC-1, presented at the end of this city discussion, shows the general locations of these facilities.

Table 5-DC-1
Rail Segments Which Meet or Exceed Board Environmental Thresholds

Site ID	From	To	Description	Length in miles	County	Setting
C-001	Anacostia, DC	Virginia Ave., DC	Conrail Landover Line	3	Washington, D.C.	Urban/ Industrial
C-002	Virginia Ave., DC	Potomac Yard, VA	Conrail Landover Line	4	Washington, D.C.	Urban/ Industrial
C-003	Washington, D.C.	Pt. of Rocks, MD	CSX Metropolitan Subdivision	5	Washington, D.C.	Urban/ Industrial
C-030	Alexandria Jct, MD	Benning, DC	CSX Local Line	3	Washington, D.C.	Urban/ Industrial
C-031	Alexandria Jct, MD	Washington, D.C.	CSX Capital Subdivision	2	Washington, D.C.	Urban/ Suburban/ Industrial
C-035	Landover, MD	Anacostia, DC	Conrail Landover Line	3	Washington, D.C.	Urban/ Industrial

5-DC.3 WASHINGTON, D.C. SUMMARY OF ANALYSIS

Based on the nature of the proposed Conrail Acquisition-related activities in Washington, D.C. that meet the Board's thresholds for environmental analysis and the scope for the Draft EIS, SEA determined that a site-specific analysis did not apply for the following technical areas:

- Safety (Highway/Rail At-Grade Crossings).
- Transportation (Highway/Rail At-Grade Crossing Delay; Roadway Effects from Rail Facility Modifications).
- Energy.
- Cultural Resources.
- Hazardous Materials and Waste Sites.
- Natural Resources.
- Land Use/Socioeconomics.

Details of the environmental analysis for Washington, D.C. follow.

5-DC.4 WASHINGTON, D.C. SAFETY: FREIGHT RAIL OPERATIONS

SEA conducted a statistical analysis to evaluate the potential change in safety on all rail line segments where the proposed Conrail Acquisition would result in eight or more additional freight trains per day. SEA identified two rail line segments within Washington, D.C. that would experience this level of increased activity. While increased freight train activity would increase the probability of a freight train accident, SEA did not consider an increase significant unless the predicted accident rate shortened the duration between accidents to one every 100 years or less per mile. Table 5-DC-2 presents results of the analysis, showing the approximate mileage of each rail line segment within Washington, D.C.

The Federal Railroad Administration (FRA) requires all railroads to submit reports for all train accidents resulting in personal injury or causing property damage greater than $6,300 (1996 FRA reporting threshold). Train accidents meeting this reporting requirement are relatively infrequent. The FRA reported about 2,600 accidents (3.69 accidents per million train miles[1])

[1] "Train miles" are calculated by multiplying the number of trains by the distance traveled. For example, on a typical 100 mile rail line, one million annual train miles results from operating 28 trains per day every day for 365 days.

Table 5-DC-2
Estimated Change in Years Between Accidents - Freight Rail Operations

Site ID	Between	And	Miles in District	Increase in Trains Per Day	Pre-Acquisition Accident Interval [a]	Post-Acquisition Accident Interval [a]
C-001	Anacostia	Virginia Ave	3	9.3	263	184
C-002	Virginia Ave, DC	Potomac Yd, VA	4	10.7	277	181

[a] Accident interval figures show the years/mile.

nationally in 1996. Most of these accidents were relatively minor; almost 90% of these accidents caused less than $100,000 in damage. In addition, most of the train accidents did not affect people or non-railroad property.

Accident risk predictions are best expressed by describing the elapsed time expected between any two consecutive events. The current national average is that a main line freight train accident occurs once every 117 years on each mile of route. FRA records, as described in Chapter 4, "System-Wide and Regional Setting Impacts," have shown a substantial decrease, both in total number of accidents and in accidents per million train miles, a standard industry measure. Because there are few accidents, and most of these accidents are relatively minor, it is not possible for SEA to accurately predict either the frequency or severity of actual accidents.

SEA estimated the change in the risk of an accident resulting from the increased activity on rail line segments as a result of the proposed Conrail Acquisition. Because SEA analyzed rail line segments that vary in length from one mile to more than 100 miles, and because freight train accidents typically have little potential impact on surrounding areas, SEA expressed all predicted risks of accidents on a route-mile basis. Chapter 3, Section 3.2 "Safety: Freight Rail Operations," discusses the analysis process in greater detail.

5-DC.4.1 Summary of Potential Effects and Preliminary Recommended Mitigation

In Washington, D.C., SEA found that no rail line segments met its criteria of significance (one accident expected every 100 years or less per mile of route). Therefore, SEA does not recommend mitigation.

5-DC.5 WASHINGTON, D.C. SAFETY: PASSENGER RAIL OPERATIONS

In Washington, D.C., passenger trains share certain tracks with freight trains. SEA evaluated the potential for increased accidents between freight trains and passenger trains, for both intercity and commuter trains. Because changes in the frequency of rail accidents are directly

related to changes in overall train activity, SEA's analysis concentrated on rail line segments carrying both passenger and freight trains that would experience an increase in freight train traffic of one or more trains per day.

In Chapter 4, "System-Wide and Regional Setting, Impacts and Proposed Mitigation," SEA addresses the issue of potential increased risk to passenger train operations associated with the proposed Conrail Acquisition. System-wide, SEA identified 197 freight rail line segments that also carry passenger trains. Of these, SEA analyzed 93 rail line segments that would experience an increase of one or more freight trains per day resulting from the proposed Acquisition. Three of these rail line segments are located in Washington, D.C.; these rail line segments are part of Amtrak's Limited and Northeast Corridor passenger train routes as well as Maryland Rail Commuter's (MARC) Camden/Brunswick commuter service.

The Federal Railroad Administration (FRA) requires reports from railroads concerning all train accidents resulting in personal injury or causing property damage greater than $6,300 (1996 FRA reporting threshold). FRA requires the same reporting for passenger train accidents. A nationwide average of fewer than 200 passenger train accidents per year (for both Amtrak intercity and urban area commuter trains) has occurred over the last three years. Most of these accidents were relatively minor and rarely involved any fatalities, but because the safety of passengers as well as property is frequently involved, their occurrence is of serious concern.

Given the limited number of passenger rail accidents, SEA was unable to accurately predict the severity, location, or timing of actual accidents. SEA therefore focused on estimating the potential risks of an accident. In this safety analysis, SEA used increased freight activity on rail line segments to estimate the changes in passenger train accident risks. To assess significance, SEA first determined whether the proposed Acquisition-related change in the projected accident rate was greater than an annual increase of 25 percent. SEA then determined if the predicted accident frequency was less than one accident in 150 years. Thus, SEA determined an impact to be significant if the projected annual increase in accidents was greater than 25 percent and the frequency was less than one accident in 150 years.

5-DC.5.1 Summary of Potential Effects and Preliminary Recommended Mitigation

The pre-Acquisition accident interval for each rail line segment is shown in Table 5-DC-3. Accidents pose potential threats to passengers on the train; therefore, for each rail line segment, risk is expressed as the expected interval between events over the length of the rail line segment. Table 5-DC-3 also shows the expected change in years between accidents for the individual rail line segments.

Table 5-DC-3
Estimated Change in Years Between Accidents for Freight Rail Operations

Site ID	From	To	Miles in District	Pre-Acquisition Accident Interval *	Post-Acquisition Accident Interval *
C-002	Virginia Ave.	Potomac Yard, VA	4	538	337
C-003	Washington, D.C.	Pt. of Rocks, MD	5	90	70
C-031	Alexandria, VA	Washington , D.C.	2	695	540

* Accident Intervals shows years between accidents.

SEA determined that the increase in risk for passenger train accidents on one rail line segment, Washington, D.C. to Point of Rocks, Maryland, exceeded SEA's criteria for significance. For this rail line segment, SEA anticipates that potential conflicts could be minimized by reinforcing passenger trains' priority over freight trains. It is SEA's preliminary recommendation that all freight trains, both opposing and moving in the same direction as passenger trains, be clear of the main track at least 15 minutes prior to the estimated arrival of the passenger train. In doing so, the passenger train can safely pass without delay.

5-DC.6 WASHINGTON, D.C. SAFETY: RAIL TRANSPORT OF HAZARDOUS MATERIALS

The primary concern with the rail transportation of hazardous materials is a spill or accidental release resulting from a train accident. SEA analyzed all rail line segments where the number of car loads containing hazardous materials would increase as a result of the proposed Acquisition. This resulted in SEA evaluating rail line segments that were below the Board's thresholds for environmental analysis.

The Association of American Railroads (AAR), in conjunction with the Chemical Manufacturer's Association (CMA), developed standards and practices to manage the risk of a hazardous material spill that the railroads have adopted. The practices include identifying "key routes" as those rail lines that handle in excess of 10,000 car loads of hazardous material each year. Key trains are trains with at least five car loads of poison inhalation hazard (PIH) material, or 20 car loads of other hazardous material. Key trains are restricted to 50 miles per hour maximum authorized speed and normally operate on Class 2 track or better. The AAR key route practices include special train handling procedures and extra inspection and special actions whenever wayside detectors indicate potential concerns. The standards and practices for key

routes are shown in AAR Circular No. OT-55-B. A copy of this Circular is included in Attachment 10 of Appendix B, "Safety."

5-DC.6.1 Rail Line Segment Analysis

As a result of the proposed Conrail Acquisition, the railroads would change the routing of many car loads of hazardous material. The designation of key routes would change as the railroads shift hazardous material traffic from one rail line to another. In addition, certain rail line segments that are currently key routes would carry increased volumes of cars containing hazardous material.

SEA applied two different criteria to determine if the effects of rerouting hazardous material car loads are potentially significant:

1. The volume of hazardous materials transported on a rail line would be 10,000 or more car loads per year. The Acquisition-related change in volume of hazardous material car loads would upgrade a rail line segment to a key route designation.

2. The volume of hazardous material car loads doubles, and exceeds 20,000 or more car loads per year. SEA has termed rail line segments which meet these criteria a "major key route."

Rail line segments that would meet the first criteria are considered "key routes" and warrant the base level mitigation. Rail line segments that meet the second criteria are considered "major key routes" and warrant expanded mitigation. Depending on the individual circumstances, a rail line segment could meet both criteria and therefore warrant both the base level and the expanded mitigation.

5-DC.6.2 Summary of Potential Effects and Preliminary Recommended Mitigation

Potential Effects. Based on the information provided by the Applicants and SEA's independent analysis, SEA determined that one rail line segment in the Washington, D.C. carrying an increased amount of hazardous material is of potential concern. Table 5-DC-4 shows this rail line segment, indicates the estimated annual car loads of hazardous material for both pre- and post-Acquisition, and identifies the rail segment's key route status. SEA determined that this rail line segment currently carries less than 10,000 car loads of hazardous material per year but would increase to at least 10,000 car loads per year due to the proposed Acquisition.

Table 5-DC-4
Rail Line Segment with Significant Increase in Annual Hazardous Material Car Loads

Site ID	Between	And	Miles in District	Estimated Annual Car Loads		Significance Thresholds	
				Pre-Acquisition	Post-Acquisition	New Key Route	Major Key Route
C-031	Alexandria Jct, MD	Washington, DC	2	3,000	17,000	X	

Preliminary Mitigation Recommendation. SEA recommends requiring CSX to bring the rail line segment into compliance with AAR key route standards and practices.

5-DC.7 WASHINGTON, D.C. TRANSPORTATION: PASSENGER RAIL SERVICE

In Washington, D.C., passenger trains share certain tracks with freight trains. SEA evaluated potential Acquisition-relatedeffects on the ability of rail line segments to accommodate existing passenger rail service, both intercity and commuter rail, and reasonably foreseeable new or expanded passenger service. SEA identified those rail line segments that carry both freight and passenger trains and would experience an increase of one or more freight trains per day.

Amtrak

Amtrak currently provides service from Washington, D.C. to other cities on Amtrak's Northeast Corridor, as well as other major cities via Conrail and CSX lines. Chapter 4, Section 4.7.1, "Intercity Passenger Rail Service," discusses intercity passenger rail service effects.

Commuter Rail

SEA's evaluation included an assessment of the projected level of train traffic and the capacity of the railroad facilities including the number of main tracks, maximum authorized speed for freight and passenger trains, and the type of train control, signaling and train dispatching system utilized. SEA also examined the frequency of interlockings, which permit faster trains to move around slower trains. SEA utilized experienced railroad operating personnel to assess each line segment using timetables, track charts, existing and proposed train levels, professional experience and personal familiarity with the rail facilities.

Two commuter rail operators serve the greater Washington area. MARC, a division of the Maryland Mass Transit Administration, operates the Camden and Brunswick lines on CSX, and the Penn line on Amtrak's Northeast corridor to Washington's Union Station. Virginia Railway

Express (VRE) provides service between Washington, D.C. and Fredericksburg, VA, and Manassas, VA, utilizing CSX and NS.

5-DC.7.1 Summary of Potential Effects and Preliminary Recommended Mitigation

Based on the evaluation of railroad capacity issues and information provided by the Applicants including operating plans and existing and projected train traffic, SEA concluded that the existing capacity of the commuter rail line segments evaluated could accommodate the proposed increase in freight train levels without adverse effects on MARC or VRE passenger train service in the Washington, D.C. Therefore, SEA does not anticipate that mitigation would be required. Additional details regarding the potential effects of freight operations on passenger service in the Washington D.C. are presented in Section 4.7.1, "Intercity Passenger Rail Service."

5-DC.8 WASHINGTON, D.C. TRANSPORTATION: NAVIGATION

To evaluate potential effects of train traffic on shipping where interaction could occur, SEA reviewed proposed Acquisition-related activities on rail line segments, new constructions (rail line connections only), and rail line abandonments that meet or exceed the Board's thresholds for environmental analysis and involve movable bridges.

SEA identified one movable bridge which carries rail traffic over navigable waterways in Washington, D.C. that would meet or exceed the Board's environmental analysis thresholds. Conrail owns the bridge which is on rail line segment C-001. The bridge crosses the Anacostia River in Washington, D.C. The proposed Conrail Acquisition would result in an increase of 9.3 trains per day on the bridge.

As stated in Section 3.9.1 "Methods for Navigation Issues," the U.S. Coast Guard has jurisdiction over specific actions affecting navigable waters of the U.S. and in all instances waterborne navigation has the right-of-way. Therefore, any operating constraints due to the post-Acquisition activities would be placed on the railroad and not the waterborne users at movable bridges extending across navigable waterways. The railroads operate bridges under conditions established by the U.S. Coast Guard for the convenience of navigation. SEA evaluated the potential effect of the increase in train traffic on moving the bridge for navigation. Based on the analysis and the small proposed increase in train traffic, SEA expects no adverse impacts from the proposed Conrail Acquisition at this bridge.

5-DC.9 WASHINGTON, D.C. AIR QUALITY

This section summarizes the change in air pollutant emissions that would result from the proposed Acquisition-relatedoperational changes in Washington, D.C. The primary air pollutant emission sources from trains and related activities include locomotive emissions on rail line

segments, at rail yards, and at intermodal facilities. In addition to locomotive emissions, SEA evaluated emissions from other sources at intermodal facilities (idling trucks, lift cranes, etc.), motor vehicles idling near at-grade crossings, and decreases in truck emissions due to truck-to-rail freight diversions.

To analyze the air quality effects of the proposed Acquisition, SEA evaluated rail line segments, rail yards, and intermodal facilities that would meet or exceed the Board's thresholds for environmental analysis defined in Chapter 2, "Proposed Action and Alternatives." See Chapter 3, "Analysis Methods and Potential Mitigation Strategies," for additional information and a summary of the air quality analysis methodology. Appendix E, "Air Quality," contains a detailed description of methodology and detailed tables of results.

SEA addressed air pollutant emissions for sulfur dioxide (SO_2), volatile organic compounds (VOCs), particulate matter (PM), lead (Pb), nitrogen oxides (NO_x) and carbon monoxide (CO). SEA determined that emissions for SO_2, VOCs, PM and Pb would not exceed the emission screening thresholds for environmental analysis in any county. However, SEA found that these thresholds would be exceeded for NO_x in various counties in 17 states, and CO in three counties in two states (IL and OH). NO_x air pollutant emissions may affect a region's ability to attain the National Ambient Air Quality Standards for ozone. CO emissions may affect a local area's ability to attain the National Ambient Air Quality Standards for CO.

Six CSX rail line segments in Washington, D.C. exceeded the Board's threshold for air quality analysis. Table 5-DC-5 shows the air quality evaluation process that was followed. SEA summed air emissions increases from changes on these rail line segments and compared them to the air emission screening level that would require a permit if the source were stationary (rather than a mobile source, such as trains, trucks, and other vehicles). Because the calculated air emissions exceeded this screening level, SEA conducted a detailed air emissions analysis known as a "netting analysis". The netting analysis considered all emissions increases and decreases from Acquisition-related activity changes. SEA compared the netting analysis results to the air emission screening level and an additional analysis was performed because the netting analysis results exceeded the air emission screening level. SEA inventoried all air pollutant emissions sources to evaluate if proposed Acquisition-related air emissions represented more than one percent of all air emissions sources in the area.

Chapter 4, "System-wide and Regional Setting, Impacts and Proposed Mitigation," contains a discussion of NO_x emissions, on a regional basis, relative to its potential contribution to O_3 formation in the Ozone Transport Region (OTR). Washington, D.C. is in the OTR.

Table 5-DC-5
Washington, D.C. Air Quality Evaluation Process

Jurisdiction Exceeding the Board's Activity Thresholds	O_3 Status [a]	Exceeds Emissions Screening Level Before Netting	Exceeds Emissions Screening Level After Netting	Exceeds 1 Percent of Jurisdiction Emissions
Washington, D.C.	N (Severe)	Yes	Yes	No

[a] A= Attainment Area, M= Maintenance Area, N= Nonattainment Area, as defined in the Clean Air Act.

The emissions estimates presented in Appendix E, "Air Quality," show that the increased jurisdiction-wide air pollutant emissions from the facilities described above exceed the emissions screening levels for Washington, D.C. Therefore, a detailed netting analysis is presented below for Washington, D.C.

5-DC.9.1 Washington, D.C. Summary

EPA has designated Washington, D.C. as a severe nonattainment area for O_3 and a maintenance area for CO. Table 5-DC-6 shows that the net NO_x emissions increase in Washington, D.C., considering all Acquisition-related emissions changes, is above the emissions screening threshold of 25 tons per year used to determine if emissions changes are potentially significant. However, the NO_x emission increase is less than one percent of the existing jurisdiction-wide NO_x emissions. SEA considers that this net emissions increase is insignificant.

5-DC.9.2 Summary of Potential Effects and Preliminary Recommended Mitigation

While there are projected localized increases in emissions, the increases are not likely to affect compliance with air quality standards. Therefore, SEA has determined that air quality will not be significantly affected and no mitigation is necessary. See system-wide and regional discussion in Chapter 4, Section 4.12 "Air Quality."

Table 5-DC-6
Washington, D.C. Annual NO_x Emissions Summary

Activity Type (RR)	Identification	NO_x Emissions (tons/year)
Rail Segment (CSX)	Anacostia, DC to Virginia Ave, DC	4.87
Rail Segment (CSX)	Virginia Ave, DC to Potomac Yd, VA	8.73
Rail Segment (CSX)	Landover, MD to Anacostia, DC	7.25
Rail Segment (CSX)	Washington, D.C. to Pt of Rocks, MD	35.77
Rail Segment (CSX)	Alexandria Jct, MD to Washington, D.C.	21.28
Rail Segment (CSX)	Alexandria Jct, MD to Benning, DC	11.14
Rail Yard (CSX)	Washington - Benning	-4.57
Total Acquisition-related Net NO_x Emissions Increase		84.47
NO_x Emissions Screening Level		25.00
Existing (1995) District Total NO_x Emissions		18,415.16
Percent Increase in District NO_x Emissions		0.51%

5-DC.10 WASHINGTON, D.C. NOISE

To analyze the potential noise impacts of the proposed Acquisition, SEA evaluated the rail line segments that would meet or exceed the Board's thresholds for environmental analysis of noise. Although new construction projects and rail line abandonments can result in noise increases, the noise effects would be temporary and therefore, SEA did not evaluate them.

5-DC.10.1 Proposed Activities

Train noise sources include diesel locomotive engine and wheel/rail interaction noise (or wayside noise) and horn noise. Wayside noise affects all locations in the vicinity of the rail facility, and generally diminishes with distance from the source. Horn noise is an additional noise source at grade crossings, and also generally diminishes with distance. SEA performed an analysis to identify rail line segments, rail yards and intermodal facilities where the proposed changes in operations meet or exceed these thresholds at 49 CFR 1105.7(e)(6). Where the proposed rail activity would exceed the Board's environmental analysis thresholds, SEA calculated the 65 dBA L_{dn} noise contours for the pre- and post-Acquisition conditions. SEA based the noise level impact assessment on the projected activity level data provided by the railroads. SEA counted sensitive receptors (e.g., schools, libraries, hospitals, residences, retirement communities, and

nursing homes) within the noise contours for both pre-Acquisition and post-Acquisition operating conditions.

The CSX and NS rail line segments that would experience increases in traffic or activity meeting the Board's environmental analysis thresholds for the Washington D.C. are listed in Table 5-DC-7. For the Anacostia to Virginia Avenue and the Virginia Avenue to Potomac Yard, Virginia rail line segments, SEA calculated an increase of less than 2 dBA due to increased rail activity. In accordance with the methodology in Appendix F, this increase is insignificant and receptor counts were therefore not made.

The counties where these facilities are located are listed in Section 5-DC.2, "Proposed Conrail Acquisition Activities in Washington, D.C."

Table 5-DC-7
Rail Line Segments That Meet or Exceed Board Thresholds for Noise Analysis

Site ID	Segment		Trains Per Day			Percent Change in Gross Ton Miles
	From	To	Pre-Acquisition	Post-Acquisition	Increase	
C-001 [a]	Anacostia	Virginia Ave.	19.3	28.6	9.3	13
C-002 [a]	Virginia Ave.	Potomac Yard, VA	17.9	28.6	10.7	20
C-035	Landover, MD	Anacostia	3.4	9.1	5.7	117

[a] SEA determined that the increase in noise due to increased rail activity was insignificant and receptor counts were unnecessary. Refer to the screening methodology in Appendix F for additional detail.

Table 5-DC-8
Noise Sensitive Receptors In Washington Exceeding 65 dBA L_{dn}

Site ID	Name	Pre-Acquisition	Post-Acquisition	Increase
Rail Line Segments				
C-035	Landover, MD-Anacostia	4	31	27

5-DC.10.2 Summary of Potential Effects and Preliminary Recommended Noise Mitigation

There are different noise mitigation techniques used to reduce horn noise and wayside noise. These different types of noise and mitigation techniques are as follows:

Grade Crossing Noise Effects. FRA has indicated that it will propose new rules on train horn blowing procedures in 1998. These new rules may allow communities to apply for an exception to horn blowing at certain grade crossings that meet explicit criteria. These criteria relate to so-

called "quiet zones" where FRA would no longer require train engineers to sound the train horn at grade crossings with special upgraded safety features. Examples of such safety features include four-quadrant gates and median barriers that preclude motorists from entering the crossings while the crossing arm is down. Until FRA develops and implements these regulations, these measures are not feasible for SEA to require as mitigation. However, communities will have the opportunity to qualify for "quiet zones" once the FRA regulations are in place.

Wayside Noise Effect. Wayside noise is the sound of a train as it passes by. Wayside noise is comprised of steel wheel/ rail interaction noise, and locomotive diesel engine noise. This type of noise can be reduced by constructing barriers between the railway noise source and adjoining land uses, and by installing building sound insulation. Noise barriers include earth berms and walls that block the sound. Rail lubrication can be used to reduce "wheel squeal" noise on curved track. Building sound insulation consists of special windows and other building treatments that reduce interior noise. Noise barriers are the preferred type of noise mitigation for this project since barriers can be built on railroad property. Additional discussion of noise mitigation measures is included in Appendix F, "Noise Methods."

As noted above, for receptors near grade crossings that would experience increases in noise resulting from horn sounding, mitigation is not currently feasible. For areas affected by wayside noise, SEA considered rail line segments eligible for noise mitigation for noise sensitive receptors exposed to at least 70 dBA L_{dn} and an increase of at least 5 dBA L_{dn} due to increased rail activity.

It is SEA's preliminary conclusion that no rail line segments, rail yards, or intermodal facilities in Washington, D.C. warrant noise mitigation according to the project mitigation criteria.

5-DC.11 WASHINGTON, D.C. ENVIRONMENTAL JUSTICE

As part of its analysis, SEA examined activities associated with the proposed Conrail Acquisition for environmental justice impacts (disproportionately high and adverse impacts to minority and low-income populations) in accordance with Executive Order 12898. As described in the Environmental Justice Methodology in Chapter 3, "Analysis Methods and Potential Mitigation Strategies," SEA first categorized the nature of the populations in areas where Acquisition-related activities are proposed. SEA determined whether the population in such areas met the following environmental justice thresholds: (1) greater than 50 percent of the population is minority or low-income, or (2) the minority or low-income population percentage is 10 percent greater than the minority or low-income population percentage in the county.

Next, SEA ascertained whether this population fell within an area of potential effect. SEA defined a typical zone on either side of a rail line segment or proposed construction site, or bordering a railroad intermodal facility or rail yard, as an area of potential effect. In general, the extent of an area of potential effect may vary depending on the nature of the changes in rail activity associated with it, but such areas typically extend 400 to 1500 feet out from the rail line segment or facility being analyzed.

SEA then evaluated these areas of potential effect for proposed Acquisition-relatedactivities that would meet or exceed the Board's thresholds for environmental analysis. In this analysis, SEA evaluated potential impacts on safety, transportation, air quality, noise, cultural resources, hazardous waste sites, hazardous materials transport, natural resources, and land use/socioeconomic effects. SEA also visited the sites of proposed construction for new rail line connections, rail line segments, intermodal facilities, and rail yards.

SEA developed and executed expanded public outreach efforts for those jurisdictions that met both SEA's thresholds for environmental justice and the Board's thresholds for environmental significance. SEA designed the public outreach process to seek widespread notice and dissemination of SEA's environmental impact analysis; provide additional opportunities for community input to the NEPA process; solicit information about cumulative effects in minority and low-income communities; and allow minority and low-income communities to assist in fashioning appropriate alternatives and mitigation measures. SEA is placing additional copies of the DEIS in jurisdictions with high proportions of minority and low-income populations that do not have significant environmental impacts which could result from the proposed Acquisition.

This section presents the results of those evaluations and analysis. A complete list of all the sites analyzed for environmental justice impacts is presented in Appendix K.

5-DC.11.1 Washington, D.C. Environmental Justice Setting

There are no new constructions or change in activity at rail yards, intermodal facilities, or truck routes that meet or exceed the Board's thresholds for environmental analysis in the Washington, D.C., as part of the proposed Conrail Acquisition.

Rail Line Segments

Table 5-DC-9 presents the existing minority and low-income composition of the area of potential effect surrounding the five rail line segments with proposed changes that meet the environmental justice population thresholds.

Table 5-DC-9
Washington, D.C. Environmental Justice Summary for Rail Line Segments

Area of Potential Effect	Total Population	Total Minority Percentage	Total Low-Income Percentage	Population of Concern	
				Minority Population	Low Income Population
Washington, D.C.	606,900	72.6%	16.9%	NA	
Anacostia - Virginia Ave. (C-001)	5,427	72.1%	27.1%	Yes	Yes
Washington, D.C., Frederick and Montgomery Counties, MD	1,514,135	43.6%	9.2%	NA	
Washington, D.C. - Pt. Of Rocks, MD (C-003)	19,706	50.8%	8.6%	Yes	No
Washington, D.C., Prince Georges County	2,672,336	64.9%	10.7%	NA	
Alexandria Jct., MD - Benning, D.C. (C-030)	3,462	91.2%	18.5%	Yes	No
Alexandria Jct., MD - Washington, D.C. (C-031)	2,462	74.2%	9.3%	Yes	No
Landover, MD - Anacostia, D.C.. (C-035)	2,751	92.2%	16.6%	Yes	No

5-DC.11.2 Summary of Potential Effects and Preliminary Recommended Mitigation

Table 5-DC-10 summarizes the rail line segments that met either the minority or low-income population thresholds, and for which, based on currently available information and after reviewing the findings of each of the resource analyses (noise, air quality, transportation, etc.), SEA identified the potentially significant environmental effects. Sites and rail line segments that did not meet both population and impact criteria are not discussed further in this section. Public Outreach efforts are described below for those sites or rail line segments for which significance

thresholds have been exceeded. Mitigation strategies for the Washington, D.C. are described at the end of this section.

Table 5-DC-10
Washington, D.C. Potential Environmental Justice Impacts Summary

Location (Area of Potential Effect)	Impact Area							
	Noise	Air Quality	Hazardous Materials Transport	Hazardous Materials	Natural Resources	Transpo r-tation / Safety	Land Use	Cultural Resources
Rail Line Segments								
Alexandria Jct., MD-Benning, D.C. (C-030)	N	N	N	NA	NA	Y	NA	NA
Alexandria Jct., MD - Washington, D.C. (C-031)	N	N	Y	NA	NA	N	NA	NA
Landover, MD - Anacostia, D.C. (C-035)	Y[a]	N	N	NA	NA	N	NA	NA

Y[a]= Impact that does not meet Board thresholds for Significance
Y = Impact that meets Board thresholds for Significance
N = No impact
NA = Not applicable/No environmental analysis performed according to Scope

Alexandria Jct., MD - Benning, D.C. Based on currently available information, SEA has identified potentially significant highway/rail at-grade crossing delays at Decatur Street, Upshur Street, and Annapolis Road in suburban Washington, D.C. and Prince George's County, Maryland. Potentially substantial traffic delays could result from the proposed increase in train traffic, from 18.7 to 24.3 trains per day on this CSX rail line segment. This rail line segment begins from a junction in Hyattsville, Maryland, and runs south through Bladensburg to junction with Conrail at Benning, D.C. near the Anacostia River crossing.

The population affected by the project is predominately African-American. Based on the potential environmental effects identified and the characteristics of the community affected, SEA has found that the proposed increase in activity along this rail line segment may result in a potential environmental justice effect. In accordance with the Executive Order on

Environmental Justice, SEA is conducting additional public outreach in the District of Columbia and Prince George's County (See Public Outreach discussion below).

Alexandria Junction, MD -Washington, D.C. Based on currently available information, SEA's preliminary determination is that this CSX rail line segment would result in a potentially significant hazardous materials transportation effect because the proposed increase in hazardous materials carried over this rail line segment would increase to over 10,000 car loads per year. The proposed increase, from 3,000 to 17,000 car loads yearly, would require this CSX rail line segment to be designated as a hazardous materials "key route", thus further requiring special safety and mitigation measures, including assistance to communities by CSX in formulating emergency response plans.

The majority of the population exceeding the environmental justice thresholds is located in Washington, D.C.. The potentially affected population is African-American. Based on the potential environmental effects identified and the characteristics of the population affected, the proposed increase in activity along this rail line segment may result in a potential environmental justice effect. In accordance with the Executive Order on Environmental Justice, SEA is conducting additional public outreach in the Washington, D.C. and Prince George's County (See Public Outreach below).

Public Outreach

SEA identified potentially affected populations in Washington, D.C. along the Alexandria Junction, MD to Benning, D.C. and the Alexandria Junction, MD to Washington, D.C. rail line segments. The area of potential impact is primarily northeast Washington, D.C. and some portions of the southeast and northwest portions of the city. SEA identified predominantly low-income African American populations with some Hispanic populations, and is conducting public outreach to notify these populations. SEA is translating the fact sheet and the Executive Summary of the DEIS into Spanish.

SEA is sending copies of the DEIS to libraries throughout Washington, D.C. that are located around areas of potential impact. SEA is submitting notices to area newspapers, including weekly publications that focus on the local African American and Hispanic communities, announcing the availability of the DEIS and is also submitting public service announcements to local radio stations.

SEA will issue fact sheets and notification of DEIS availability to local organizations. SEA is also sending notice to the Mayor's office and all members of the Council of the Washington, D.C.. Additionally, SEA will send Draft EIS notification and fact sheets to Commissioners who serve on local Advisory Neighborhood Commissions in Washington, D.C.

Landover, MD - Anacostia, D.C. Based on currently available information, SEA has identified potential noise effects along this CSX rail line segment, which begins just north of Landover Road in Landover, Maryland, and runs south to the junction with CSX near Benning at the Anacostia River. Up to 27 noise receptors could be affected by the proposed increase in train traffic.

The majority of the population along this rail line segment that exceeds the minority environmental justice threshold resides in Prince George's County, Maryland. Based on the potential noise effects identified and the characteristics of the population affected, the proposed increased activity along this rail line segment may result in a potential environmental justice effect. In accordance with the Executive Order on Environmental Justice, SEA is conducting additional studies to determine if environmental justice populations are impacted by noise.

Mitigation

SEA is currently developing additional mitigation strategies in coordination with the local communities in the Washington, D.C. surrounding the sites and rail line segments and will report on these strategies in the FEIS. As SEA continues to perform public outreach and additional site-specific noise analysis, SEA will determine the extent and nature of the potential environmental justice impacts. If an environmental justice impact exists, SEA will determine if mitigation would be practicable. This coordination with the local communities as part of the on-going public outreach process will be reported in the FEIS.

5-DC.12 WASHINGTON, D.C. CUMULATIVE EFFECTS

Within the District of Columbia, the Applicants propose to increase traffic on six rail line segments to levels that meet or exceed the Board's thresholds for environmental analysis. The following table addresses other potential actions brought to SEA's attention that, when combined with the proposed Acquisition, could contribute to a cumulative impact. SEA was made aware of these activities through site visits and public comment. Other information below was provided to SEA within the schedule specified in the scope for review and analysis.

Cumulative Effects Findings

As discussed in Chapter 6, "Agency Coordination and Public Outreach," SEA conducted extensive scoping and data collection for this Draft EIS. At this point in its investigation, SEA is unaware of any activities that would require a cumulative effects analysis. Therefore, based on its independent analysis and all information available to date, SEA has made a preliminary conclusion that there would be no significant cumulative effects associated with the proposed Acquisition in the District of Columbia.

Table 5-DC-11
Information Provided to SEA About Other Activities or Projects

Action-Type	Site	Information from Site Visit or Public Comment	Relationship to Proposed Acquisition
Tunnel Rehabilitation	Washington, D.C.	CSX has proposed to increase the clearance of the Virginia Avenue Tunnel as part of a long-standing project.	Related. Tunnel improvements would accommodate increased freight and eliminate a current restriction that affects passenger rail. SEA has concluded that this project is being implemented by CSX independent of the proposed Acquisition.

Cumulative Effects Mitigation Measures

Due to a lack of cumulative effects, no mitigation measures are necessary.

5-DC.13 WASHINGTON, D.C. AREAS OF CONCERN

This Draft EIS examines system-wide and site-specific issues. An important part of SEA's analysis of the proposed Acquisition is the evaluation and consideration of environmental comments. Table 5-DC-12 provides a list of agencies and local governments that have submitted environmental comments for the District of Columbia. A complete list of entities that have submitted environmental comments to SEA on or before October 31, 1997 is provided in Appendix O of this Draft EIS.

Table 5-DC-12
Agencies in the District of Columbia Submitting Environmental Comments

Entity	Nature of Comment(s)
American Public Transit Association	Safety, traffic congestion, air, commuter operations, at-grade crossing delay, and energy
Washington Metro Area Transit Authority	Commuter operations, rail operations, and safety
Women Like Us	Environmental Justice

SEA appreciates these comments and considers all comments in its environmental analysis and the development of potential system-wide and/or site-specific mitigation. For issue areas that

do not meet the Board's environmental analysis thresholds or are not Acquisition-related, SEA has not conducted detailed analysis. SEA encourages parties to submit site-specific, Acquisition-related comments. SEA will review all comments submitted during the 45-day comment period on this Draft EIS in the preparation of the Final EIS.

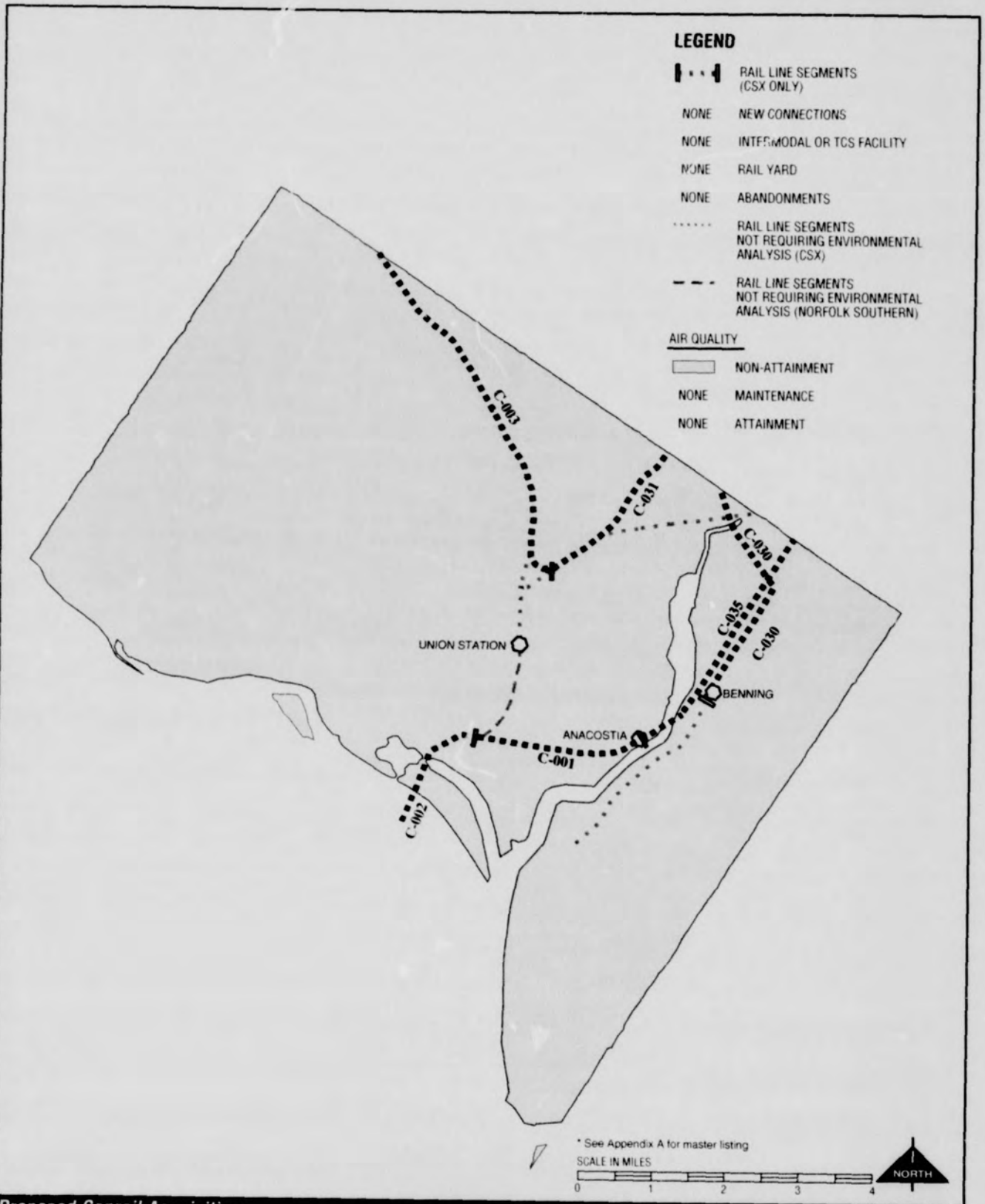

FIGURE 5-DC-1

RAIL LINE SEGMENTS, NEW CONNECTIONS, INTERMODAL FACILITIES, RAIL YARDS AND ABANDONMENTS REQUIRING ENVIRONMENTAL ANALYSIS

DISTRICT OF COLUMBIA - CSX AND NORFOLK SOUTHERN

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Decision ID No. 28629

Service Date: December 12,1997
Comment Date: February 2,1998

DRAFT ENVIRONMENTAL IMPACT STATEMENT

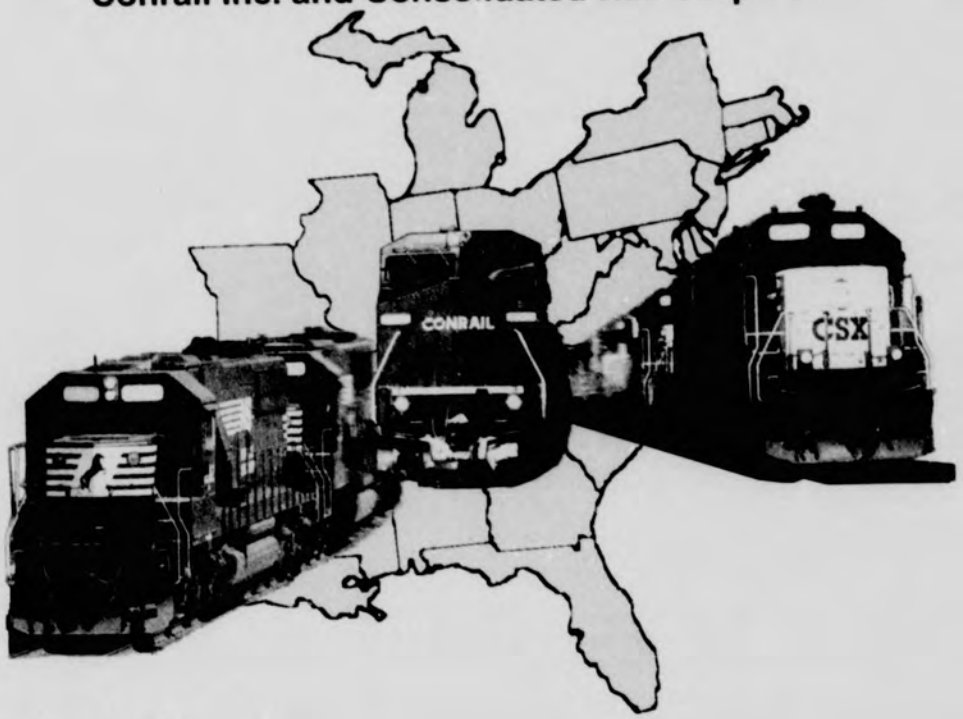
Finance Docket No. 33388

"PROPOSED CONRAIL ACQUISITION"

CSX Corporation and CSX Transportation, Inc.
Norfolk Southern Corporation and
Norfolk Southern Railway Company

Control and Operating Leases/Agreements

Conrail Inc. and Consolidated Rail Corporation



Volume 2
Safety Integration Plans

prepared by:

Surface Transportation Board
Section of Environmental Analysis
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Environmental Specialist
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Volume 2

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INTRODUCTION

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VOLUME 2

Applicants' Safety Integration Plans and Background Materials

The Surface Transportation Board's (Board) Section of Environmental Analysis (SEA) provides in this Volume of the Draft EIS the Safety Integration Plans submitted to the Board on December 3, 1997 by CSX, NS, and Conrail (Applicants).

On October 21, 1997, the Federal Railroad Administration (FRA) submitted to the Board extensive comments on the proposed Conrail Acquisition. FRA's comments addressed numerous issues relating to the proposed Acquisition and the safety of the railroad integration process. In its comments, FRA requested that the Board require Applicants to submit detailed Safety Integration Plans explaining how they propose to ensure the safe integration of their corporate cultures and separate systems. FRA's comments also included the suggested contents of these Safety Integration Plans.

In response to FRA's comments and the Board's concern for safety, the Board issued Decision No. 52 on November 3, 1997 directing Conrail, CSX, and NS to submit detailed Safety Integration Plans to the Board by December 3, 1997. Because of the due date, this Draft EIS does not contain an analysis of these plans. To facilitate public review of this important issue, the complete Safety Integration Plans are included in this volume as follows:

1. Safety Integration Plan of CSX Corporation and CSX Transportation, Inc.
2. Norfolk Southern Safety Integration Plan.
3. CSX/NS Safety Integration Plan for Conrail Shared Assets Operations.

In addition, this volume contains:

4. Preliminary Comments of the United States Department of Transportation (Federal Railroad Administration), dated October 21, 1997.

5. Surface Transportation Board Decision No. 52, dated November 3, 1997.

SEA will assess the adequacy of these plans during the public comment period on this Draft EIS. SEA encourages FRA and the public to carefully review these plans and provide specific comments to SEA. SEA will consider all comments in preparing the Final EIS, which will include SEA's final environmental recommendations. All comments on the Draft EIS, including those on the Safety Integration Plans, must be submitted within the 45-day comment period, which will close on February 2, 1998. When submitting written comments on the Safety Integration Plans, please be as specific as possible and substantiate the concerns and recommendations. To file comments, please send one original and ten copies to:

Office of the Secretary
Case Control Unit
STB Finance Docket No. 33388
Surface Transportation Board
1925 K Street, N.W.
Washington, D.C. 20423-0001

Indicate in the lower left-hand corner:

Attention: Elaine K. Kaiser
Environmental Project Director
Environmental Filing - Safety Integration Plans

A: SAFETY INTEGRATION PLAN OF CSX CORPORATION AND CSX TRANSPORTATION, INC.

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BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 33388

CSX CORPORATION AND CSX TRANSPORTATION, INC.,
NORFOLK SOUTHERN CORPORATION AND
NORFOLK SOUTHERN RAILWAY COMPANY
-- CONTROL AND OPERATING LEASES/AGREEMENTS --
CONRAIL INC. AND CONSOLIDATED RAIL CORPORATION

SAFETY INTEGRATION PLAN
OF
CSX CORPORATION AND CSX TRANSPORTATION, INC.

December 3, 1997

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SAFETY INTEGRATION PLAN
OF
CSX CORPORATION AND CSX TRANSPORTATION, INC.

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BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 33388

CSX CORPORATION AND CSX TRANSPORTATION, INC.,
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NORFOLK SOUTHERN RAILWAY COMPANY
-- CONTROL AND OPERATING LEASES/AGREEMENTS --
CONRAIL INC. AND CONSOLIDATED RAIL CORPORATION

SAFETY INTEGRATION PLAN
OF
CSX CORPORATION AND CSX TRANSPORTATION, INC.

This Safety Integration Plan ("SIP") is submitted on behalf of CSX Corporation and CSX Transportation, Inc. (jointly, "CSX") in connection with the proposed acquisition of control of Conrail Inc. and Consolidated Railroad Corporation ("Conrail") by CSX and Norfolk Southern Corporation and Norfolk Southern Railway Company (jointly, "NS"). This SIP has been prepared in compliance with Decision No. 52 issued by the Surface Transportation Board ("Board") on November 3, 1997 for inclusion in the Draft Environmental Impact Statement ("DEIS") issued in connection with this proceeding. The purpose of this SIP is to describe the process by which the safety standards, procedures and programs administered by CSX Transportation,

Inc. ("CSXT") will be integrated with Conrail's standards, procedures and programs so as to ensure a safe transition from Conrail operation to CSXT operation on those Conrail lines that will be allocated to CSXT. Separate SIPs have been prepared that address NS safety integration and safety integration plans for the Conrail Shared Assets Operations ("CSAO"), the operator of the three Shared Assets Areas.

Safety has been a focus of CSXT's planning for the Conrail transaction for many months. As explained further below, CSXT has been engaged in meticulously studying Conrail's operating practices, identifying differences between Conrail and CSXT practices, and determining the best means of effectuating the transaction in a manner that will ensure continued safe operations. Certain safety-related impacts of the transaction were addressed in the Environmental Report submitted as part of the Application and are addressed in other sections of the DEIS. This SIP provides additional information as to certain of these matters (e.g., grade crossing programs and hazardous materials programs), and also addresses other matters not previously addressed in the Environmental Report.

The genesis for the preparation and submission of this SIP is found in the October 21, 1997 Comments filed in this

proceeding on behalf of the Department of Transportation ("DOT Comments"). Those comments proposed that CSX and NS be required to submit SIPs for the Conrail lines allocated to them and for the CSAO operations. The Verified Statement of Edward R. English, Director of the Office of Safety, Assurance and Compliance of the Federal Railroad Administration ("FRA") was appended to the DOT Comments. The English Statement set forth in substantial detail the matters that FRA believes should be addressed in the SIP.

Following the submission of the DOT Comments, and the issuance of Decision No. 52 by the Board, CSXT personnel engaged in extensive consultations with FRA officials concerning the scope and contents of this SIP. This SIP adheres to SIP Guidelines provided by FRA and covers each of the matters addressed in the English Statement.

In the next section of this SIP, CSXT will describe its safety planning and integration process. Following that discussion, the SIP will address the specific subject matter areas defined in the FRA Guidelines as follows: (A) corporate safety culture, (B) training, (C) operating practices, (D) mechanical (motive power and equipment), (E) signal and train control, (F) engineering (track and structures), (G) hazardous materials, (H) dispatching

operations, (I) highway-rail grade crossings, (J) allocation and deployment of personnel in various operational and safety-related sectors, (K) employee quality of life/morale issues, (L) the relationship between freight and passenger service, and (M) information systems compatibility. While considerable detail is provided as to each of these areas, the safety integration process is a dynamic one. Therefore, in most instances, the actions to be taken by CSXT are subject to further review and consideration. No decisions will be made hastily; all will be carefully reviewed as the integration process is implemented.

I. OVERVIEW OF CSXT'S SAFETY PLANNING AND INTEGRATION PROCESS

A. CSXT's Long-Standing Commitment to Safety

CSXT has established itself as an industry leader in train accident and personal injury prevention. It has done so by selecting the best job applicants, providing formal and field training that exceeds industry standards, investing heavily in the maintenance of track and rolling stock, and targeting for elimination behavior that creates the risk of accidents and injury.

CSXT's leadership position in railroad safety is the direct result of a decade of intense focus on injury and accident reduction. At the core of this campaign is the shared belief that all casualty events are preventable and that no job is so important, no service so urgent, that the time cannot be taken to perform all work safely. CSXT's work force is empowered to make decisions and take actions necessary to prevent personal injuries. While these core beliefs are not sufficient to assure a successful safety record, they are necessary to making any safety program successful. A brief overview of some of the key aspects of CSXT's approach to safety follows.

1. The Overlapping Safety Committee Process

To assure that its commitment to safety is reflected in the behavior of everyone associated with CSXT, the Overlapping Safety Committee Process was initiated. The overlapping process drives communication up, down and across the organization structure.

The Executive Vice President & Chief Operating Officer of the railroad is the chairman of the CSXT Safety Committee. This committee meets monthly to act on concerns addressed to it by other -- departmental, divisional or field -- safety committees throughout the railroad. These other committees also meet at least monthly to share ideas, address safety concerns and raise issues for resolution at appropriate levels of the organization. The process facilitates participation by every company employee and manager -- at every level of the organization -- at least monthly.

This communication process has led to the development or enhancement of a very large number of safety initiatives which have generated dramatic improvements in CSXT's safety performance. Some of the key initiatives have been: the industrial track inspection program, new hire training, return-to-work training, consistent and effective root cause

analysis for accidents and injuries, new and improved items of personal protective equipment, training and awareness tools on the use of lifting and rigging devices, the publication of safe job procedures for every operating craft at the railroad, and peer intervention training programs to assist employees and managers in confronting the unsafe behavior of co-workers.

For example, Operation Prevention is a voluntary, craft employee-developed and run program that is used in the CSXT's Transportation, Engineering, and Mechanical Departments. It uses peer intervention instead of discipline to try to reduce unsafe behavior. Another example is Operation RedBlock. This alcohol and drug abuse prevention program is led exclusively by craft employees. CSXT provides funding for full-time coordinators and administrative services, but it is the daily, unpaid participation of thousands of employees that makes this program effective.

The overlapping safety process has also fostered the development of public safety programs. These initiatives include programs to eliminate highway grade crossings; to educate the public and law enforcement personnel on the dangers of ignoring grade crossing protection devices

(Operation Lifesaver); to train community emergency management personnel on rail accident prevention and emergency response procedures (the Transportation Community Awareness and Emergency Response, or TRANSCAER, Program); and to prevent hazardous materials incidents (the Responsible Care Program initiated by the Chemical Manufacturers Association).

2. Train Accident Prevention

CSXT is particularly proud of its approach to preventing derailments. Every field operating unit has a train accident prevention committee that investigates and determines the root cause of every derailment in its territory. Leadership of the committee is rotated throughout the year among the transportation, mechanical and engineering functions to encourage open-mindedness in the committees' deliberations. Committee members are trained by a specialized accident prevention team using a comprehensive cause finding manual that has become a model for other railroads to follow. Computer simulation equipment is used to analyze the effects of train and track alignment on buff and draft forces throughout the length of the train.

3. Continuous Improvement

Statistics show a track record of continuous improvement in safety at CSXT. In the past seven years, CSXT has reduced its employee injury rate by 79 percent and its train accident rate by 64 percent. 1996 was the railroad's seventh straight year of improvement in rail safety and, in that year, CSXT had the lowest accident rate per train mile traveled among all of the Class I railroads. CSXT has also reduced grade crossing collisions per train mile by 47 percent over the past several years.

Despite its excellent safety record, CSXT recognizes that there is always room for improvement. During the summer of 1997, CSXT was the subject of an intensive FRA Safety Assurance and Compliance Program ("SACP") review. CSXT did not wait for FRA to issue a final report before initiating projects to address FRA's concerns. The SACP process has led to the creation of 16 labor-management-FRA teams that are working together, building upon past successes, to find real and lasting improvements to the remaining safety challenges identified by FRA.

Very recently, CSXT hired Jim Schultz, FRA's former Associate Administrator for Safety, one of the highest-ranking FRA safety officials. Mr. Schultz will be

intimately involved in Conrail safety integration planning and implementation, with a focus on safety culture matters, a subject discussed in further detail later in this document.

B. Safety Has been Paramount During the Transition Planning Process in Connection with the Conrail Transaction

Safety issues will be the highest priority of CSXT as planning for the integration of the allocated portion of Conrail moves forward. The goal of this extensive planning process is to have a seamless transition, invisible to customers and to the communities in which CSXT will be operating on "Day 1" -- the date following any Board decision granting control on which the Conrail assets will be divided between CSXT and NS.

The integration process for rail operations does not contemplate an immediate "flip the switch" implementation. Rather, the transition will be structured to avoid major operational changes all at once. For example, Conrail computer systems vital to safe operations of the railroad will remain operational on Day 1. CSX systems will be transitioned to the allocated territory in a phased approach and system redundancy will be maintained through testing, user training and system acceptance. Training will be a key throughout the transition, as will an assessment of best practices from each railroad, as determined from review and experience. At the same time, operational inconsistencies

that could lead to confusion will be eliminated prior to Day 1 in a manner that focuses on a safe transition.

The four subsections which follow discuss CSXT's transition planning in more detail. These sections cover:

1. Learning from Other Mergers
2. Organizing for Integration
3. CSXT's Integration Planning Methodology
4. CSXT's Capital Budgeting Methodology

1. Learning from Other Mergers

CSXT has more experience in safety integration than many railroads, having evolved from the combination of the Chessie System and the Seaboard Lines in 1980, and from several prior mergers. CSXT has also more recently assumed control of and assimilated the rail assets of two smaller companies into the CSXT systems and culture. These assets were purchased from the Richmond, Fredericksburg & Potomac ("RF&P") and the Three Rivers Railroad (which purchased the track assets of the Pittsburgh & Lake Erie). In each of these transactions, and in the Chessie/Seaboard merger, employees learned new rules, received new or different training, became accustomed to different computer systems, territories, signal systems (including cab signals and train control systems) and processes without service interruptions

and without compromising safety. The key lessons of these activities were that advance planning and constant communications are essential to a smooth transition. As stated in other sections of this filing, the people who implement this type of change must play a critical role in the planning for change. Many of the lessons current CSXT management has learned through these successful past mergers will be applied to the Conrail transaction.

At the same time, many of the challenges that arose in the recent merger of the Union Pacific ("UP") and Southern Pacific ("SP") are not present here. The SP was in poor financial and operating condition before and at the time of its merger, while UP was still in the process of dealing with issues related to its earlier acquisition of CNW. This placed the combined UP-SP in a position of playing "catch-up" from the outset, particularly with respect to operations over the former SP lines. Further, as the DOT Comments observe, UP and SP had the first and second highest accident rates among the Class I railroads for five of the last six years (see the English Verified Statement at pages 3-4).

By contrast, the Conrail transaction involves three successful, well-run and financially healthy railroads with long-standing commitments to safety. As reflected in Table

1 at page 4 of the English Statement, CSXT and NS both have had a significantly lower accident rate than any of the other Class I railroads over the last five years.

Following the allocation of Conrail's assets, CSXT's safety and operations management teams will remain in place, buttressed by the addition of highly experienced Conrail officials that CSXT has added, and plans to add, to its management team. Thus, CSXT will be in a position to build on the strong safety culture that already is in place at Conrail -- with the assistance of Conrail expertise and senior management, as discussed further below.

In further contrast to the western mergers, the Conrail transaction will not involve the shedding of significant redundant lines or assets or a significant reduction in forces. Rather, this transaction contemplates the expansion of the CSXT network by approximately 4,100 miles of allocated track, with virtually no retirement of track. The recent western mergers were of much larger scope -- the merged UP/SP system has more than 36,000 miles of track and involved the absorption by UP of over 11,000 miles of SP track. The Conrail transaction will result in fewer employee reductions than in the western mergers. Furthermore, in key operational areas, employment will

actually be increased to handle the transition and expected traffic growth. Importantly, on Day 1 CSXT anticipates that no safety-sensitive areas will experience manpower reductions that would threaten safe operations.

CSXT is also committed to spending sufficient capital to ensure a smooth transition of operations by increasing expenditures on track maintenance, reducing signal pole lines and improving service reliability on CSXT property prior to Day 1.

2. Organizing for Integration

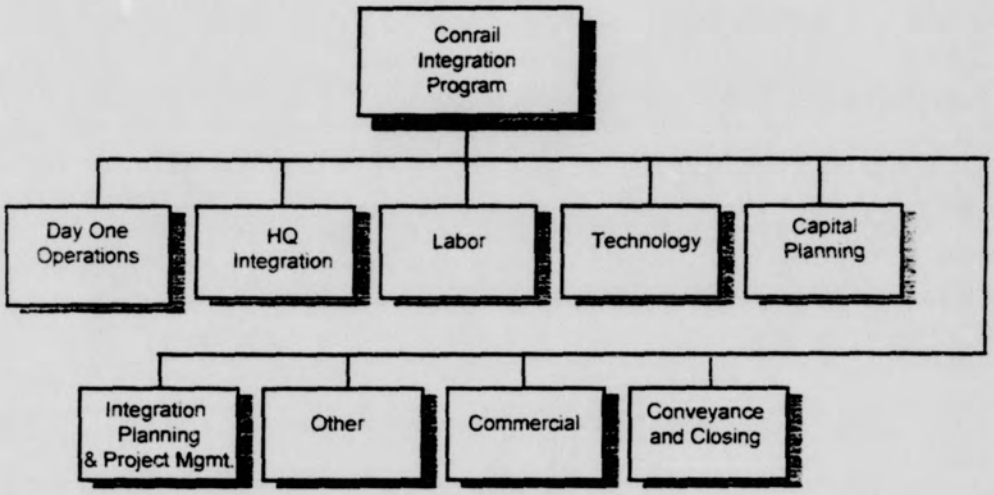
In its safety planning process, CSXT has also avoided two fundamental errors that others have made in the past -- the failure to commit adequate resources to integration planning at an early stage and the failure to recognize that the personnel that will be implementing the integration plan are the ones that need to be involved in the planning process. CSXT's planning for the safe integration of Conrail began shortly after its interest in the transaction was first made public, has continued unabated and will continue through and beyond Day 1.

In furtherance of its integration goals, CSXT is devoting a large number of high-level executive managers and other highly qualified operational staff and consultants to

plan and implement the transition effort. Significantly, CSXT has built integration teams with the people who will execute the plans. If the "planners" and the "doers" are one and the same, the result should be practical plans which operations people are ready to carry out because they were present at their creation.

Nearly a dozen major cross-functional groups of integration teams comprise the CSXT Transportation Integration Program. As shown below, teams are grouped under the following headings: Day 1 Operations, Headquarters Integration, Labor, Technology, Capital Planning, Integration Planning and Project Management, Commercial, Other (Financial Statement Management, Corporate Governance, etc.), and Conveyance and Closing (Asset Division). Cross-functional representation on the teams assures that interdependencies are ccnsidered. In all, there are more than 55 Teams.

Exhibit I.1
CSXT's Integration Team Groupings



CSXT's integration planning process includes the following steps:

- Project identification
- Scope definition and team establishment
- Deliverables identification and timeline establishment
- Fact discovery
- Best practices/synergies identification
- Establishment of desired-state vision
- Implementation plans development
- Resource/Technology training commitment
- Transition plans development

- Contingency planning
- Testing
- Implementation

Although many of the functional teams have a role to play in furthering CSXT's safety efforts, the areas with the most direct responsibility for safety are Day 1 Operations, Headquarters Integration, and Capital Planning.

a) **The Day 1 Operations Teams**

The Day 1 Operations Teams have a broadly defined mission of planning and implementing the actions necessary to prepare for the first day of railroad operations of the combined and shared companies to ensure that the present high levels of operations and safety are maintained or improved. The Teams' core activities include developing the following safety-related plans, among others:

- Comprehensive operating procedures and rules,
- A training and hiring plan for train crews and dispatchers,
- A special plan focused on the Chicago area and Indiana Harbor Belt operations,
- Plans for operations in the Shared Assets Areas (formulated in coordination with NS), and

- A technology plan to assure that all safety related information is available in the field and in the dispatch centers prior to Day 1 operations.

In order to achieve their mission, the Day 1 Operations Teams are addressing the safety related functions of train crew management (calling and assignment), dispatching, communications, train control systems (signals), operating rules, and the inspection and maintenance of track, rail cars and locomotives.

The Teams are headed by CSXT's Gerry Gates, Vice President for Consolidation who came to CSXT from Conrail in 1997, having formerly gained detailed knowledge of the Conrail operation by having served at Conrail in a variety of positions, including Vice President for Transportation, Mechanical and Customer Support. The Day 1 Operations Teams include eight sub-teams devoted to such important areas as work force, operations, technology, and the Shared Assets Areas. The sub-teams are led by a number of high-level personnel from CSXT, including vice presidents, assistant vice presidents, general managers, and assistant general managers.

b) The Headquarters Integration Teams

The Headquarters Integration Teams are responsible for ensuring that there is appropriate headquarters support for the combined railroad on Day 1, including establishing the infrastructure to ensure that CSXT's historical level of safety is maintained. The actions of the Headquarters Integration Teams are closely linked with those of the Day 1 Operations Teams -- and some employees have roles in both areas.

The Headquarters Integration Teams are co-headed by CSXT's Vice President and Controller and by the President of CSX Technology (a CSX Corporation subsidiary). They are assisted by a number of team members, including most notably for safety purposes, the CSXT Vice President-Operation Support, who also is the Safety Integration Officer. The Safety Integration Officer has primary responsibility for identifying and evaluating the best safety practices in the rail industry and applying those practices on CSXT and on the Conrail lines to be assigned to CSXT. He is currently working with other rail safety officers, including NS counterparts and Association of American Railroads ("AAR") officials, to identify and compare rail safety practices across other railroads and with other industries.

The Headquarters Integration Project Plan addresses four specific planning stages:

1. Determine CSXT and Conrail differences
2. Create a future state vision
3. Create detailed implementation plans
4. Execute detailed implementation plans

The first 2 tasks have been completed for the most part and significant progress has been made towards completing Step 3. Each area includes development, verification, and review.

c) The Capital Planning Team

The Capital Planning Team is responsible for coordinating the capital planning, budgeting and execution for the Conrail transaction. This Team is headed by CSX Technology's Vice President-Advanced Rail Signaling & Dispatch Technology. This Team serves important safety functions, including having responsibility for upgrading signaling systems where appropriate throughout the system.

As noted above, integration planning in each of these areas is well underway with an immediate goal of a safe and seamless "Day 1" transition and a longer-term goal of integrating the railroads in a way that takes advantage of the best practices of each. The following section discusses

certain aspects of CSXT's planning methodology in more detail.

3. CSXT's Integration Planning Methodology

Beginning in June, 1997, CSXT established its formal Conrail integration program to implement CSXT's operating plan. This formal planning effort has centered on creating a comprehensive integration of Conrail's management knowledge and expertise of its territory with CSXT's. This effort has, from the beginning, sought to explore and understand the differences between CSXT and Conrail approaches to management and safety, to identify the best practices of each company and to capitalize on those best practices at the earliest practical date. The integration planning effort at CSXT has been all-encompassing. Every area of management on both Conrail and CSXT has been involved in this effort. The focus of the planning effort has been to identify each activity which may require coordination or integration between Conrail and CSXT. As those activities were identified, coordination and integration requirements were documented. CSXT officers in every affected department have contacted their Conrail counterparts to understand their approach to the same management issues.

a) The Context for Choosing Best Practices

With the allocation of Conrail assets, CSXT will grow from approximately 18,500 route miles to approximately 22,650 route miles. In the expanded CSXT, former Conrail property will make up approximately 18 percent of the total system and former CSXT lines will make up 82 percent, excluding the Shared Assets Areas. Both Conrail and CSXT have systems and processes to ensure safe and efficient operations. Many of these systems and processes are parallel and would be redundant under common management. For most systems and processes, it is more efficient and cost effective to adopt one rather than meld two.

Where it is determined that CSXT's and Conrail's practices achieve the same level of safety, CSXT recognizes that it will be more efficient to change 18 percent of the network instead of 82 percent. At the same time, where there are obvious "best practices" which directly affect safety, those practices will be adopted, regardless of the practices' origin. The search for the best practice has been and will continue to be thorough. In some situations, both Conrail and CSXT processes will run in parallel until there is a good understanding of the advantages and disadvantages of both approaches. Conrail's expertise and

institutional knowledge will not only be respected, but Conrail employees will play a critical role in the successful melding of the two cultures and in creating a safe, efficient integration of operations.

b) Comprehensive Planning Enables a Flexible Response

The comprehensive nature of this planning has been such that safety programs and issues are specifically dealt with in every functional unit at both Conrail and CSXT. The planning effort is specifically designed to be flexible with respect to addressing new issues. At the same time, the plan is aggressively setting a course to integration so that all long lead time resources are identified and acquired prior to implementation.

This planning effort is not static. The plan must and will change to take advantage of any and every practical enhancement. In addition, where there are significant risks that an integration strategy may not occur by the time of implementation, those risks have been addressed with a contingency plan. This SIP is thus essentially a snapshot of CSXT's planning efforts to date. CSXT fully expects this plan to evolve not only until Day 1, but beyond, until a

complete integration of operations and management has been achieved.

The planning process addresses resource requirements including personnel, training, capital, technology and ongoing operating budgets. Timelines are also being developed for every implementation effort. However, no plan, no matter how detailed and well thought out, can be expected to perfectly predict future events. Flexible plans are more likely to be successful than static plans which are made too far in advance of the implementation. To the extent that CSXT's planning efforts deal with unknown or unknowable future events, the plan establishes a method for gaining the appropriate knowledge and then planning the integration. In some cases, that plan may involve operating CSXT and Conrail functions separately for a period of time to more fully understand the differences and advantages in each railroad's approach.

4. CSXT's Capital Budgeting Methodology

The capital budget process is an example of how this planning effort has led to immediate actions to address long lead-time issues. Shortly after the terms of the transaction were negotiated, a multi-disciplinary team reviewed the Conrail track structure, CSXT's track structure

and the anticipated traffic flows. This high level review determined that a substantial investment in capacity would be required. The major need is in the Chicago, IL to Albany, NY line segment. Specifically, major segments of double-track will be needed to handle additional business efficiently and safely. Given the high priority and long lead time, a $196 million project was initiated in June of this year. Using the planning methodology described above to ensure the coordination of material, personnel, and equipment, this construction is well underway.

In addition to the double-track project, other construction projects were identified and prioritized. Specific, detailed plans and funding are now in place to undertake construction of these most critical capacity investments. These projects have been detailed in CSXT's Operating Plan, Volume 3A of its June 23, 1997 Application filed with the Board. In future years, capital requirements will be identified and prioritized in virtually the same manner as they are today on both Conrail and CSXT. Future capital expenditures will be made as traffic levels and operations require.

II. DISCUSSION OF INTEGRATION PLANS FOR SPECIFIC FOCUS AREAS

In the discussion of each of the thirteen safety focus areas identified by FRA that follows, CSXT will address, as appropriate, how Conrail practices differ from CSXT's, how CSXT intends, as of this date, to operate the Conrail assets as of Day 1 and longer-term, how the integration process will proceed and how CSXT plans to ensure compliance with federal rules. The areas are: (A) corporate safety culture, (B) training, (C) operating practices, (D) mechanical (motive power and equipment), (E) signal and train control, (F) engineering (track and structures), (G) hazardous materials, (H) dispatching operations, (I) highway-rail grade crossings, (J) allocation and deployment of personnel in various operational and safety-related sectors, (K) employee quality of life/morale issues, (L) the relationship between freight and passenger service, and (M) information systems compatibility.

A. Corporate Safety Culture

There are few phrases so widely used yet so hard to define as "safety culture." Cultures normally evolve gradually through interactions among people engaged in collective experiences. Shared beliefs and values result, which define behavioral norms within an organizational structure. Present day CSXT comprises numerous different predecessor railroads, each bringing individual cultures to the combined company. Many of the lessons learned from these prior mergers are guiding the current effort to seamlessly integrate the CSXT and Conrail safety cultures.

CSXT's fundamental guiding principle is that there is nothing more critical to sound safety practices than a non-adversarial culture that recognizes and rewards safety advocacy at all levels. To enrich CSXT's "social contract" with its employees, the company is re-energizing its efforts to institute a system-wide safety culture that engages all stakeholders, with nobody left on the sidelines. CSXT is working toward a culture rooted in mutual trust, respect, and openness, where employees are rewarded for identifying safety concerns and helping in their resolution. To enable CSXT to take advantage of every safety opportunity, the

company is establishing an atmosphere where coaching, mentoring, and follow up are expected managerial qualities.

CSXT's goal is direct: achieve zero fatalities, injuries, collisions, and derailments. This goal is reachable and the employees and managers of CSXT will not be satisfied until it is achieved -- not only on current CSXT lines, but also on lines allocated from Conrail.

In building a sound corporate safety culture, several general principles are central. These include:

- CSXT is a good company, but it can get better.
- CSXT listens to employees, welcomes their ideas, and follows up.
- CSXT can significantly enhance service to its customers and increase the value of the company to all stakeholders through a revitalized corporate safety culture.
- CSXT employees are professionals who want to do a good job every day.
- Employees who have pride in their work/company feel a direct connection with the quality of service provided.

- CSXT can improve safety, further promote mutual respect/trust, and develop more openness in the workplace.

The remainder of this section on corporate safety culture covers four main topics:

1. The CSXT Way Program
2. Existing CSXT Safety Initiatives
3. Plans for Further Strengthening CSXT's Safety Culture
4. Integrating the Conrail Safety Culture

1. <u>The CSXT Way Program</u>

CSXT initiated a move toward a more open and inclusive safety culture about five years ago with the implementation of a progressive set of corporate values defined under the flag "*The CSXT Way*." These seven precepts are shown in Exhibit II.1. Developed with the input of hundreds of CSXT employees, these values have been the company's "North Star" and are central to its successes to date.

Exhibit II.1
"The CSXT Way"

1. We value our employees and respect their dignity.

2. We are committed to teamwork, openness and candor.

3. We are committed to increased quality and continuous improvement.

4. We are committed to increased empowerment and personal accountability.

5. We are committed to ethical conduct.

6. We encourage innovation and change.

7. We have a sense of urgency and a bias for action.

Through observance of these values the railroad has achieved increasing levels of safety and efficiency. As noted, in the past seven years, CSXT has reduced the employee injury rate by 79 percent and the train accident rate by 64 percent. In 1996, its seventh straight year of improvement, CSXT had the lowest train accident rate per train mile traveled of any Class 1 railroad. During this

same time period, CSXT also reduced grade crossing collisions per train mile by 47 percent.

2. Existing CSXT Safety Initiatives

CSXT has implemented Best Safety Practices in many phases of its operation. A "Best Safety Practice" is the best method for performing a task or accomplishing a safety objective. Best safety practices are used by professionals to perform quality work, safely, in a cost-effective manner. Repetitive use of best safety practices cultivates an atmosphere of empowered, injury-free performance.

The following CSXT processes and programs are considered to be Best Safety Practices:

a) Overlapping Safety Meeting (OLSM) Process

This process is used to survey safety issues, disseminate safety information, address unsafe conditions and develop policies designed to improve the effectiveness of safety efforts. The monthly, system-wide meetings create an environment that encourages participation by all employees. These safety committee meetings ensure dissemination of, and encourage compliance with, policies and procedures at all levels of the organization. Of equal value is the ability of these committees to bring ideas and

energies of employees at all levels into the process for upward consideration. There are four or more levels of meetings within the overlap process.

System OLSM. The first senior officer level meeting is the System OLSM, chaired by the Executive Vice President & Chief Operating Officer (EVP&COO) and attended by his direct reports and operations department heads. Since the EVP&COO is ultimately responsible for safety, the major function of this committee is to establish policies and priority programs.

Operating OLSM. The Senior Vice President-Transportation & Mechanical and Chief Transportation Officer chairs the Operating OLSM. This OLSM ensures that safety policies are communicated to the next level and that all disciplines within the Operating Departments are involved in the process.

Departmental OLSM. The department heads conduct their OLSM with their direct reports to implement system policies and develop control measures unique to their respective areas of responsibility. They exercise functional authority over their respective safety processes and provide resources and leadership to ensure a safe environment for all employees.

Field OLSM. As each successive supervisory level conducts their meetings, out to and including each craft-person, the field OLSM implement system and departmental policy and further develop control measures specific to their needs. Ideas, opportunities and concerns which cannot be resolved in local level meetings are successively passed through the various levels of committees until brought to conclusion. Two-way communication is critical to the success of this process.

b) Local Safety Director and Committee

In addition to putting the OLSM process into action, the local safety director and his committee note unsafe practices and coach co-workers in how and why to change their behavior. They also recognize good behavior by teammates and urge them to continue working safely. They regularly receive safety suggestions and investigate reports of unsafe conditions. They also conduct safety audits of their areas, and initiate correction of safety hazards.

If there are injuries or close calls, the local team assists with the root cause analysis to make the necessary changes that will prevent recurrence. The safety director and team participate in safety conference calls to represent their location and to gain insight into what might be

working at other locations. The team also conducts safety training, safety meetings, safety blitzes, clean sweeps, cookouts and special safety initiatives.

c) System Safety Calls

In order to keep safety awareness high, conference calls are conducted on a regular basis to involve the field teams in safety discussions. The purpose for the calls is not to allow headquarters to convey a message to the field, but rather to give the field safety committees the opportunity to talk about their latest safety initiatives and successes. Every other Saturday there is a call conducted with all operating departments. Managers and craft-persons alike contribute to the call. Calls are also conducted at the beginning of each shift for safety and operations updates, and as needed to address areas of special focus.

d) Operation Prevention

The Operation Prevention Program is a craft employee-developed and run program. It was developed by a Waycross, GA sheet metal worker in 1992 to allow craft employees to help other craft employees become safer workers.

A three-person peer interview team is selected from craft employees recommended by the local chairman/chairmen

at each facility whose employees request the program. To be an interview team member you have to be honest, sincere and respected by your peers. The peer interview team is trained in basic interview skills, with particular emphasis on listening and on using forms of speech that reduce the likelihood of the other person tuning out or becoming defensive.

The peer intervention program allows employees to help each other become safer workers. At locations where Operation Prevention has been adopted, intervention is offered by the team to those employees it feels may be susceptible to injuries, for whatever reason. The program is supported by management and is recognized as an alternative to discipline; however, it is usually not offered to those employees who have flagrantly violated safety rules or safe practices, or who persistently work in an unsafe manner.

e) Safety Rules Certification

Each Operating Department craftsperson is safety certified each year. The process varies somewhat from department to department, but in each case requires a formal test, success on which is linked to the safety shoe subsidy program. Each employee who passes the certification test

with a score of 90 percent or better receives a coupon for a free pair of steel toe safety shoes. The coupon may be exchanged for another safety item if shoes are not needed.

The process for developing the certification program in the Engineering and Mechanical Departments is as follows. In the fall of each year a committee of craftsmen review the safety incidents that have occurred during the last 12 months and determine what areas should receive particular focus during the annual certification process. To make the subject more interesting to review, the committee develops a study guide with pictures, illustrations and captions. This guide is sent to each employee's home to make sure that he or she receives it and has time for self-study before classes are held, and also to get the family involved in safety. There is also a video depicting safety rules. The process in the Transportation Department culminates with testing through CSXT's network of multimedia computer "PODS," rather than in a classroom setting. (The PODS are described further in the description of Operating Rules Training, Section II.C.1.c).

f) <u>Behavior Observations</u>

1996 was the first year in eight that CSXT did not make a year-to-year reduction in personal injuries. In the fall

of 1996 CSXT benchmarked ten large companies with good safety records to see if there were any programs they were using that might enable CSXT to recapture the momentum that had been driving its injury rate downwards. The benchmarking revealed that CSXT, along with those companies, had used *rules compliance* first (requiring employees to comply) and then safety *programs* later (getting employees involved in development and implementation), to make safety improvements.

Of the companies that were benchmarked, the more successful ones had progressed from rule and program-based approaches to a behavior-based approach. This is considered to be the third and last step to safety excellence. Behavior-based safety is actually a systematic development and reinforcement of safe behavior. Initializing the process involves identifying tasks performed on the job (especially those which could potentially result in an injury if performed incorrectly), assembling a template of desired behaviors, and training volunteer observers.

Periodically, volunteers fan out and observe their co-workers at work. Positive, as well as "at-risk," behaviors are noted and discussed on site with those observed. All observations are non-punitive and the data is recorded and

aggregated. The data is then evaluated and action plans are developed to reduce incidences of at-risk behavior.

g) Take Stock in Safety

In 1995 a new program was created to reward good safety performance. The railroad was divided into field safety teams and the combined departments worked together to prevent injuries. Each individual on the teams that were successful in meeting a frequency index goal was awarded shares of company stock. There were two annual award levels: $500 in stock for those teams with good safety performance and $1,000 in stock for those with superior safety performance. The program has now been changed, at the request of the craft-persons, to smaller departmental teams who compete against a frequency index on a quarterly basis.

The program has caused employees to take a greater interest in the safety of those around them, resulting in fewer injuries, and rewarding those who work the hardest at being injury free.

h) Back In Motion

"Pro-Back" lifting principles (1. Keep it close, 2. Keep the upper body erect, 3. Lift smoothly, don't jerk, and 4. Don't lift and twist) were introduced at CSXT in the late

1980s. In 1994 "Back in Motion" was introduced as the next step in promoting physically fit and healthy employees.

The Back in Motion Program addresses the proper lifting techniques and exercises that will help employees elude injuries by avoiding positions that place undue stress on the back and joints. In most cases it is simply a difference between working hard and working smart.

i) Slips, Trips and Falls

CSXT has made tremendous strides toward reducing injuries. However, slips, trips and falls, as a category, have proven to be more difficult to eradicate than other areas. There is no single cause for slips, trips and falls and there is no single solution. But there are some common conditions and personal actions responsible for these injuries: slippery, unstable or uneven walking surfaces, horseplay, loss of balance, pushing, shoving and pulling, running or turning sharply, poor lighting, inappropriate footwear, contaminants (e.g., oil or grease) on walking surfaces or bottoms of shoes, inattentiveness, reduced vision, and carelessness.

To further combat the problem of slips, trips, and falls, CSXT introduced a program in 1996 called GAPS (Gait, Awareness, Physical Alignment, and Shoes). The brochure and

accompanying dialogue attempt to bring to the employee a fresh perspective on something most of us rarely think about -- the act of walking itself. GAPS reviews what factors can lead to unexpected walking failures, and which factors can lead to higher probabilities of success. The program contributes to employee well-being both on and off the job.

j) Tap On The Shoulder ("TOTS")

TOTS is a concept that was conceived by a CSXT craft-person at the Winston, FL Car Shop. He explained that everyone might not be willing to accept constructive criticism, but if they accepted and wore a "TOTS" hard hat decal, then everycne would know that person was ready to receive and share safety knowledge. The concept was distributed to the entire CSXT system and has become a commonly heard term associated with employees taking care of each other.

k) Job Briefings

One of the best real-time, ground-level safety practices is an effective job briefing that is conducted by the employees who are going to do the work, before beginning the job task. This is a routine that employees have been doing informally for years, but CSXT now makes it a

requirement before any job is started, and when any job changes. There are different types of job briefings:

- Supervisor to employee
- Employee to supervisor
- Employee to employee
- Self

Everyone who will be involved or could potentially be impacted by the job must be a part of the discussion and a plan must be developed to avoid every hazard identified. The step-by-step discussion of the job, with particular attention to potential hazards, is a hands-on approach to identifying the safest way to do a routine task.

1) Safe Job Procedures

One of the best ways to disseminate safe practices is through Safe Job Procedures ("SJPs"). SJPs are the result of a formal process used to identify the safest method for performing a task. The basic steps required to perform the job are listed and then each step is examined for potential safety hazards or opportunities for an accident. The actions that must be taken to prevent an injury are then included in the job step. The SJPs are distributed to all field locations as a ready reference to the craft-person doing the job.

m) CSXT Safe Way Rulebook

Unlike most rulebooks, which are a list of do's and dont's compiled by management, the CSXT Safe Way was developed by craft representatives as a guide to their peers on how to safely conduct themselves in the work place. Rather than try to create a rule for every occasion, they listed only general, department-specific rules and procedures. Where no rule or procedure applied, they empowered everyone with the right and responsibility to make safe decisions, to rely on good judgment and follow the safe course.

n) Personal Protective Equipment

CSXT has one of the best Personal Protective Equipment (PPE) programs in the transportation industry. All equipment necessary to protect the human body from known hazards is furnished at no cost to the employee, supplied by a single-source vendor and made available through a PPE Catalog. Operating Department representatives meet semi-annually with the vendor to review quality and usage of current stock and to evaluate new products.

CSXT, a fore-runner in requiring safety eye wear, has virtually eliminated eye injuries. Steel toe safety shoes are required for all employees involved in work that is

potentially hazardous to the feet and are made available as a reward for successfully completing the Safety Rules Certification Program.

3. Plans for Further Strengthening CSXT's Safety Culture

CSXT recognizes that safety requires continuing attention and commitment. CSXT's senior management is focusing its efforts to improve safety in several areas, including: (1) rewarding safety advocacy; (2) improving workplace quality of life; (3) review of discipline programs; (4) review of how employees/management relate with each other; (5) review of training programs and operational testing; (6) review of promotional opportunities and professional development; (7) engendering of a sense of community among all employee groups; and (8) finding ways to tie employee rewards to company performance.

Quick fixes are not the answer. A sustained effort is required with clearly articulated company values, vision, mission, goals, and strategies. It is essential that everyone be engaged and that all understand that they are individually important to the company's current and future success.

a) Safety Planning Team

In order to further enhance its company-wide safety efforts and build on its already strong programs, CSXT will be establishing a "Planning Team" to review existing programs and review possible new programs. The Team will consist of representatives of rail labor, safety management officials, and key operations, mechanical and other personnel, among others. This Team will review, among other matters, developing a methodology for a permanent "ombudsman" process to handle internal employee concerns; developing a suggested permanent "cultural change" team charter and membership; and making recommendations on what, if any, additional resources or programs will be required. The Team will also develop a strategy to translate objectives into action steps and prioritize issues. The Team's aim is to develop goals for review by senior management by late February 1998 and initiate a formal safety culture "reinvention" effort shortly thereafter.

b) Strengthening the Dialogue

CSXT will also be establishing a program of interviewing key employees over the next several months to gain their input on safety matters. In addition, CSXT will

review its Operations Center activities and develop objectives and plans to improve current operations.

To further underscore its commitment to safety, CSXT is planning a "President's Roundtable" in December 1997. This session will be chaired by CSXT President Pete Carpenter, who will be the first railroad president to host such a safety forum. The goal is to open a further dialogue on safety and enhance the feeling of "openness" on issues such as corporate culture and safety. FRA officials will be invited to the session, and the agenda will closely follow similar sessions hosted by the FRA.

In addition to all of the above, CSXT will be putting a formal "ombudsman" process into place shortly. The Planning Team described above will fill this role until a more formal process is developed. The ombudsman will document, handle and follow up on employee concerns.

CSXT is committed to the goal of becoming the first railroad to achieve zero collisions, injuries and fatalities. It is understood that reaching this goal means that CSXT must continue to build the relationships of mutual trust and respect on which a sound safety culture rely. The company's desire is to provide visible recognition for

safety advocacy. This is part and parcel of the CSXT business plan.

4. Integrating the Conrail Safety Culture

a) Conrail's Safety Culture

The culture at Conrail has changed significantly over the last several years, resulting in a solidly established environment in which safety and risk management are a first priority. Conrail tracks its progress in managing risk by structural oversight of five key focus areas: personal injury safety, environmental quality, damage prevention, public safety, and training provided to manage all areas of risk. In each of these focus areas, goals are monitored and measures applied to demonstrate progress. It is within this framework that Conrail has established a prevention-based risk management culture, in which safety is a value of the highest order.

The Vision Statement for the managing of risk at Conrail provides as follows:

> As risk managers, we are committed to anticipating, avoiding, preventing, reducing and responding to risk to our employees, customers and the public.
>
> We will establish and communicate integrated processes by which every employee recognizes and shares responsibility for identification, analysis and management of risk,

ensuring the preservation and enhancement of human, physical and financial assets.

In order to realize this vision, Conrail has established a broad-based cross-departmental organizational structure to support the safety effort. A Safety Focus Team is comprised of senior officers and staff and provides support for all corporate activities impacting safety and performance. They are charged with providing guidance, removing barriers to safety initiatives, and finding necessary resources for the achievement of identified objectives.

The Safety Focus Team sponsors the activities of five Quality Improvement Teams ("QITs") which report regularly to the Focus Team. These QITs deal with the areas of employee personal injury safety, damage prevention, environmental quality, public safety and training. Each of these teams is cross-functional in nature, drawing from various departments in the company, thus broadening the understanding and commitment to process improvement in these areas. Each group has specific goals, performance measures and in-process measures which drive their activities.

Senior management is visible and accessible to all employees, both at headquarters and in the field, through

the implementation of several interactive exchange mechanisms. 1-800 telephone lines are in place on all divisions and at headquarters to provide access for voicing any safety-related concerns. The electronic mail system in place throughout Conrail affords another means of surfacing issues for review and/or resolution. Conrail's Chairman has specifically assigned each non-operating officer as a "Safety Champion" to a division. Each Safety Champion averages one visit per month to his or her division, with maximum geographical and shift coverage within the assigned division.

The most ambitious and visible undertaking is the operation of Risk Management "Safety Train" trips each year. Under the direction of Conrail's Senior Vice President of Operations and the Risk Management Department, the business office car train makes an excursion to each of the operating divisions during the year, stopping along the route so that management may hold sessions with all field personnel available, both at small and large facilities. Employees communicate their concerns, suggestions and feedback on all issues directly to the officers of the corporation. All input is reviewed and action plans for meeting concerns are developed and communicated back to the employees. In 1995,

1996 and 1997, face-to-face discussions took place with over 15,000 employees each year on safety-related issues. These tangible manifestations of the commitment of the corporation to "be the safest carrier" provide a foundation and framework for all of the efforts undertaken to support the tenets of the "Safety First" culture.

Safety Committees in the field, at both the division and district level, are the next level of organizational structure involved in Conrail's safety efforts. Safety Committees are instrumental in (a) establishing and maintaining proper awareness and safety consciousness in employees; (b) identifying unsafe work behaviors and conditions; (c) formulating solutions to inappropriate work behaviors and conditions; and (d) positively reinforcing safe work behaviors. Safety Committees contain both craft and supervisory employees. Conrail's safety objective is to achieve consistently safe working conditions by instilling in employees a genuine interest and awareness in the safety program. Employees' interest and awareness is fostered through training, participation in local Safety Committee activities, and active leadership by supervisors at all levels.

Within the Conrail corporate structure, the Risk Management Department directs and guides the safety effort. Incorporating what had formerly been the departments of Safety, Environmental Quality, Hazardous Materials, Damage Prevention, Health Services, Claims Services, Insurance and Police, the Risk Management Department was formed as part of a strategic plan to manage all those factors of "risk" impacting performance.

The corporate Risk Management staff supports and enhances field efforts by supplying training programs, awareness of compliance and regulatory requirements, and staff specialists to help the field effort. Complimentary division-based risk management teams exist in the field to drive the effort to integrate risk management on a local level, and to partner with others in the Operating Department to reach Conrail's goals.

Two days of risk management training are required each year for all major crafts. The B-SAFE program emphasizes safe behaviors and positive reinforcement for reaching habit strength in those behaviors. Environmental compliance team training and the "I am Hazmat confident" campaign have resulted in greater knowledge and ownership in the field relative to environmental and hazardous materials

transportation responsibilities. Ride Quality Teams work with customers to eliminate damage to lading in transit, and industrial hygienists work with field management to help proactively create a protective work environment for employees. Conrail is an industry leader in the work/rest fatigue countermeasures area. Its hazardous materials program has been recognized as one of the best in the industry.

Conrail drives accountability for safety performance by applying a premium allocation system to the divisions, making each responsible for its own cost of risk. The company rewards safe behavior through one-to-one positive reinforcement, B-SAFE celebrations and the Safety Shares program, which provides financial rewards for reaching safety goals. Each employee knows that he is responsible for his own safe behavior and that his individual performance and safety district's team performance will be rewarded if appropriate. Most importantly, however, Conrail employees know that the company is committed to safety as its first priority, and have created an environment in which creative problem-solving, teamwork and open communication are encouraged.

b) Integration of Conrail and CSX Safety Cultures

Prior to and after Day 1, CSXT plans to integrate best practices from both Conrail and CSXT safety processes. These combined safety practices and programs will be established during the year following Day 1.

In particular, CSXT plans to adopt some form of Conrail's "B-Safe" safety program. This behavior-based program was established with assistance from a consulting firm called Aubry Daniels. The consulting firm trained Conrail management and safety committees to understand the B-Safe system and to perform safety observations in an analytical, structured manner. Managers and safety committees are now used to perform job, behavioral, and environmental safety observations, identify problems areas, and communicate issues to personnel.

The B-Safe program enables Conrail to iteratively identify three main "pinpoints" (specific behaviors or practices) to focus on during weekly or monthly safety audits. During these audits, managers or members of the safety committee provide feedback to employees. Feedback is in the form of positive reinforcement for safe practices or coaching for insufficient safety practices. A tracking

system is used to analyze safe behaviors and practices in the workplace. If a specific "pinpoint" is tracked for 21 days and results in over 95 percent safe performance, a positive habit or new behavior is considered to have been developed. Since this "pinpoint" is now "no longer" an issue, another "pinpoint" is identified. This system continues so that there are three "pinpoints" being investigated at all times. As discussed earlier, benchmarking has shown that such a behavior-based approach is the key third step to reduce injuries and accidents once the benefits due to rule- and program-based approaches have plateaued.

Melding the Conrail culture with the CSXT culture will be less daunting because of CSXT's up-front commitment to develop a standardized cultural enrichment action plan based upon collaboration with rail labor and the FRA. The programs now in place, CSXT's expanded focus represented by the action plan above, and the series of specific plans and actions described in this document, will together create an atmosphere conducive to cultural integration across the new CSXT-Conrail system.

Success is the best remedy for rough spots brought about by change. The changes coming from the transaction

will be successful because they will be met by a safety culture that has established parameters and the full commitment of management.

B. Training

The expanded CSXT railroad must have a sufficient number of well-trained employees to operate the expanded rail system in a safe and efficient manner. In order to maintain safety, CSXT plans to have more employees, including trainers, available on Day 1 than otherwise might be required. CSXT anticipates that additional engineers, conductors and trainmen will enter training early in 1998 so that necessary lead times will be met. (This hiring and training is distinct from and incremental to anticipated post-control hiring and training of current Conrail employees.) Thus, a sufficient number of employees will be available to serve as pilots to familiarize train crews with new territories until familiarity and regular schedules are established. By this means, CSXT will also help prevent problems associated with unreasonable employee fatigue and stress.

In addition, CSXT and NS will discuss with Conrail mechanisms to ensure an appropriate pool of train and engine service talent. CSXT is making every effort to retain experienced Conrail field operating personnel.

According to survey results and personal visits with CSXT Human Resources and management personnel, the majority

of Conrail's field management personnel have indicated a strong desire to continue their railroad employment after the transaction. By retaining experienced Conrail field personnel, CSXT will reduce the burden of training replacements and will retain the safety benefits associated with substantial railroading experience.

Training specific to each functional area is detailed within the broader discussion of that area in Sections C-M which follow. Training of train and engine crews is addressed next in Section C, Operating Practices.

C. Operating Practices

CSXT and Conrail will retain their existing operating practices for Day 1 in order to help maintain the focus on safe operations. CSXT plans to phase in most operating practices changes over time, rather than abruptly switching approaches on Day 1. For example, as noted further below, CSXT does not anticipate utilizing a unified operating rulebook on Day 1. Rather, separate rules will continue to govern operations until a combined rulebook is completed and distributed, and until all affected employees have been fully trained on any new rules.

Maintaining effective operating rules training is essential to Day 1 integration, and will continue to be a high priority after Day 1. Rules training programs will continue in their current state for employees receiving initial and refresher training. Employees who may cross over into territory operating under the other rulebook will be cross-trained: current CSXT employees in the Northeast Operating Rules Advisory Committee (NORAC) rules currently used by Conrail, and current Conrail employees in CSXT rules.

The remainder of this section on Operating Practices is divided into eight subsections, as follows:

1. Operating Rules
2. Trainman/Conductor Training
3. Locomotive Engineer Training, Certification, and Re-certification
4. Operational Testing
5. Accident/Incident Reporting
6. Alcohol and Drug Programs
7. Hours of Service Tracking & Initiatives
8. Yard/Terminal Operations

1. Operating Rules

a) Operating Rulebooks

CSXT and Conrail have different operating rulebooks. Operations over Conrail lines are governed by NORAC rules and over CSXT by its own rulebook. Even though CSXT has not adopted the NORAC rules, its management is familiar with them. CSXT officers began meeting with Conrail rules officers in July and have met on both CSXT and Conrail properties totaling 20 plus days. Additionally, CSXT officers have attended classes held by Conrail including Cab Signal operation, Train Dispatcher training classes and the NORAC fall meeting.

On Day 1, NORAC operating rules will continue to govern movements over rail line segments allocated from Conrail.

Regarding Metro North, SEPTA, New Jersey Transit and Amtrak, CSXT expects no change in their operation under NORAC rules, nor should there be. Operating rules for CSXT lines also will not change on Day 1.

Over the longer term, a single set of operating rules will govern operations over the expanded CSXT network. CSXT and Conrail representatives have already begun work on a combined set of operating rules. The head start gained from this activity will assure that unified rules will be available at the appropriate time and that comprehensive training can take place well prior to implementation. In addition, there is an early-stage initiative involving NORAC, CSXT, and NS to discuss the potential for a unified rulebook east of the Mississippi. Meetings are scheduled with CSXT, NS and Conrail beginning December 8, 1997 to initiate discussions on the subject.

b) Operating Rules Administration

The NORAC group administers changes to the Conrail rules. NORAC meetings are held three times a year to discuss operating rules. Administration of the CSXT operating rules is done autonomously by CSXT's System Operating Rules Committee. Conrail and CSXT have operating rules departments that:

- provide expert guidance to the field and to dispatching personnel on technical rules interpretation questions,
- design operating rules training, and
- provide periodic rule changes and updates.

On Day 1, it is anticipated that operating rules department personnel will continue to provide support to their respective territories. The former Conrail operating rules personnel employed by CSXT for its Conrail allocated areas will report to the Operating Rules Department of CSXT. CSXT plans to leave Conrail rules officers in place on Day 1 and to cross train them on both Conrail and CSXT rules. Longer term, the need for these field positions will be re-evaluated following the successful integration of operating rules, operating rules training, train dispatching, and systems for issuing directives and work orders.

c) Operating Rules Training

On Conrail, annual operating rules training is conducted in face-to-face, classroom settings, at the division level. Classes are conducted by two Conrail Operating Rules staff officers (Manager and Supervisor of Operating Rules) located in each of the divisions.

On CSXT, operating rules training and testing is conducted using interactive, multi-media computer systems (a.k.a. "PODS") installed at major field locations and at headquarters. The PODS use a multi-scenario, random-question-generation approach to testing. This means that employees sitting next to each other working on the same subject can be viewing different scenarios and addressing different questions.

The 1998 rules program is presently in the test mode with officer testing to begin shortly. The 1998 program has been enhanced to further reduce the potential for employees receiving outside assistance or cheating. This program has added two new "runs" (Work Train and Coal Train) to the existing six from 1997 (Mixed Freight, Intermodal, Passenger, Local, Road Switcher and Yard), and employees will have to answer questions from six of the eight runs during their test. In 1998, there are also 300 new questions that the computer will pick at random.

In addition to the new runs and question choices, Safety, Hazardous Material, and Environmental questions are now included in the rules program. Formerly, these areas were not tested using the random question generation approach. This further reduces the possibility of employees

receiving assistance or cheating during their annual testing.

(i) Benefits of Multi-Media Training

Multi-media training has been proven to aid retention. Studies show that people retain 20 percent of what they hear, and 40 percent of what they see and hear. Retention jumps to 70 percent, however, when, as in multi-media training, people hear, see and do something. Multi-media training, as implemented on the CSXT wide-area network, has the additional advantage of offering employees the convenience of scheduling their training themselves. Record keeping is built into the CSXT multi-media program.

(ii) Operating Rules Training on the Expanded System

On Day 1, operating rules training for employees operating over, dispatching or maintaining current CSXT lines will not change. Similarly, operating rules training for employees operating over, dispatching or maintaining line segments solely in the allocated territories will continue to be provided by Conrail divisional Operating Rules staff located at division headquarters.

As noted, employees who may cross over into territory operating under the other rulebook will be cross-trained prior to Day 1. CSXT intends to hold face-to-face rules classes for Conrail employees learning CSXT rules. CSXT feels these employees need to be able to interact with the instructors to clear up any misunderstandings that they may have. The same will hold true for CSXT employees learning NORAC rules.

Following the adoption of a unified operating rulebook, a unified approach to initial employee operating rules training will be developed. Annual refresher training is likely to be provided through the multi-media interactive network of PODS.

d) Timetables

CSXT and Conrail use somewhat different formats for their timetables. CSXT will endeavor to provide timetables for the new CSXT Service Lanes prior to Day 1. CSXT will furnish these timetables to FRA after they are completed. Should those timetables not be completed prior to Day 1, then those which had been in effect would remain in effect until new timetables are completed.

These timetables are likely to be in CSXT format. The reason for going to a single format is that the new CSXT

Service Lanes will include both former Conrail and CSXT operations. A single format will standardize the information and give the employees a single source of reference as to what the operation is at any given location. CSXT also intends to identify by shading or highlighting where NORAC rules apply.

One of the differences in the current CSXT and Conrail timetable production process is that CSXT prints its timetables in house, while Conrail uses a third party vendor. The plan going forward is that the expanded system timetables will be produced in house.

Later, when consolidated operating rules are ready for implementation, new timetables will be published for all CSXT Service Lanes, divisions and business units. Prior to that time, consideration will be given to the formatting differences that had existed pre-transaction, and a unified format will have been developed.

2. Trainman/Conductor Training and Qualifying

a) Trainman/Conductor Classroom Training

Currently, Conrail uses the services of an outside contractor, the Academy of Industrial Training ("AIT"), to train prospective Conrail train crew employees. AIT provides a three-week classroom training program for

prospective employees that covers rail safety, NORAC rules and rail equipment.

CSXT recruits individuals who have completed a five-week classroom training program offered by community colleges. The trainman training portion of the program provides the basics needed to perform trainman duties: safety, basic operating procedures, train movement, communication skills, speed rules, signals, hazardous materials, switching, train documents, and computer skills. The conductor portion of the program covers more advanced duties. Modules include computer skills, hazardous materials, restricted equipment, switching, proper train building, train inspection and air brake tests, signal systems, and train movement.

Currently, there are three community colleges offering this training. They are in Clayton, GA (near Atlanta), Cincinnati, OH, and Jacksonville, FL. A fourth location in Philadelphia is expected to begin this program in February 1998.

Crew Management and Employee Relations will determine where train service personnel shortages may exist and the extent of those shortages. Based on this assessment,

decisions will be made with regard to where, when, and how many new hires are required.

Once this information is made available, it will initially require about 22 weeks to hire, train, and qualify a new hire trainman/conductor. The administrative process to hire, assign, and establish payroll and crew management records requires about seven weeks. The total training process (college and CSXT) is approximately 15 weeks, as described further below.

On Day 1, each classroom training system will continue to be used in its respective territory. However, CSXT expects to migrate trainman/conductor classroom training to its current approach soon thereafter. The opening of CSXT's fourth classroom program in Philadelphia should help facilitate this transition.

b) Trainman/Conductor Field Training

Conrail does not have a formalized field training and testing policy that is uniformly applied throughout its system. Instead, Conrail divisions determine field training requirements for trainmen/conductors.

CSXT trainman/conductor field training occurs in two phases. The first phase is a one-week introduction, held in Atlanta. This one-week program provides structured hands-on

exercises and simulated practice in a safe, controlled environment. Simulations include switching cars and building trains, performing placements, completing work orders, performing railcar inspections and air brake tests, making necessary car repairs, coupling and uncoupling cars, etc. The students are also equipped with the appropriate gear and clothing necessary for the position. CSXT field supervisory personnel have been highly complimentary of this recently instituted phase of training. Orienting new trainman/conductor employees to field operations at a central location emphasizes standardized safe job procedures during this critical first week.

The second nine-week phase of trainman/conductor field training is on-the-job. It provides new hires with specific information regarding the physical plant and characteristics of assigned territories. Topics included are yard layouts, track capacities, close clearances, main tracks, industry layouts, terminal signals, and local radio procedures. At the conclusion of the nine weeks, the trainee takes the Advancement to Conductor Exam ("ACE"), and, if he or she passes, is promoted to conductor, qualified on a particular subdivision. This exam includes a general information test of 100 questions, with a passing grade of 85%, a physical

characteristics test of at least 25 questions, and the standard CSXT operating rules exam.

(i) Trainman/Conductor Field Training Program Integration

On Day 1, each training system will continue to be used in its respective territory. However, CSXT expects to migrate trainman/conductor hiring and training to its current approach soon thereafter. The one-week intensive introduction to field operations will continue to take place at CSXT's facility in Atlanta, with the potential for a second location at a future date.

CSXT's nine-week on-the-job training and examination process will be expanded to allocated Conrail properties with no major differences. The written tests on operating rules and general information will be modified to address knowledge of Conrail operating rules and any subject matter specific to Conrail property. Physical characteristics testing will also be the same for former Conrail properties, understanding that proper application of Conrail rules will be tested rather than CSXT rules.

Policies regarding promotion from trainman to conductor currently differ between Conrail and CSXT. In consultation with Conrail crew management in Dearborn, MI, Conrail

divisions set divisional guidelines, while CSXT headquarters sets uniform criteria that are used throughout most of its system. Subject to labor negotiations, it is planned that the expanded system will have a uniform set of guidelines.

Upon implementation of unified rules on CSXT and former Conrail properties, the rules and physical characteristics training will be adjusted to enhance understanding of the new rules.

c) Trainman/Conductor Qualifying on a New Territory

Trainmen or conductors who transfer or otherwise obtain new assignments also need to qualify on the physical characteristics of the new territory to which they are assigned. To become qualified on a new territory, the trainman or conductor must learn the specific physical characteristics of that territory.

Newly assigned employees receive a comprehensive package containing all reference materials applicable to the facility, including layouts, emergency contact data, any directives applicable to operations within the facility and any High Performance Organization ("HPO") playbook that may exist for the position (see Section II.C.8 for further discussion of CSXT's HPO process). If circumstances

require, qualified employees are to be assigned to work alongside the newly assigned employees until they can safely perform all functions of the position. At that time, the newly assigned employee takes a "physical characteristics" test. If he or she passes, they become qualified on that territory.

Physical characteristics qualifying is also needed for employees assigned to perform service in a yard or terminal where they have not previously worked. While it is anticipated that, subsequent to the transaction, implementing agreements will permit most employees to remain in the same job location where they previously worked, there may be some situations where assignments will change. If the new job assignment is in a yard unfamiliar to the employee, physical characteristics qualifying will be necessary.

3. Locomotive Engineer Training, Qualifying, Certification, and Re-certification

Currently, Conrail and CSXT both have extensive training, certification and re-certification programs for locomotive engineers. Locomotive engineers are certified in accordance with FRA regulations, undergo efficiency testing

on a regular basis, take annual operating rules tests and are re-certified every three years.

a) Locomotive Engineer Training - Classroom

(i) Conrail Programs

Conrail trains and certifies prospective locomotive engineers at a company-run school at Conway Yard. Training is not scheduled evenly throughout the year, but is based on needs. Conrail has a core staff of three trainers, supplemented by "Peer Trainers" as needed. Conrail also has a secretary and re-certification supervisor responsible for administration and record-keeping. The syllabus calls for a six- to seven-week training schedule depending on class size, which can be as large as 25 to 30 persons. The Conrail syllabus includes:

- Introduction and orientation
- Running gear (trucks & couplers)
- Prime mover (mechanical systems, fuel conservation)
- Air Brakes
  - Compressor, 26L locomotive brake system/EPIC, 24 and 6 locomotive brake systems
  - Freight car air brakes
  - Locomotive brake tests

- Train brake tests

- Electrical systems
- Operation of locomotives and train handling
  - Track train dynamics
  - Hands on training on all types of Conrail locomotives
- Troubleshooting and safety rules
- Inspection and reporting procedures
- Operating rules

The maximum student to instructor ratio for hands-on training is 5-to-1. Conrail provides simulator training in conjunction with classroom training. The simulator is of the type that provides students with a video depiction of the given line of road being reviewed in the training. At Conrail, all written examinations are completed during the classroom portion of training. (As described below in the section on field training, physical characteristics exams are administered locally.)

(ii) <u>CSXT Programs</u>

CSXT schedules its training programs evenly throughout the year. Engineer training is conducted by full-time staff at CSXT's facility in Cumberland, MD. Historically, the staff size has varied depending on the level of hiring and

the training needs for that year. A five-week training schedule is followed and standard class sizes are 10 to 12 persons, smaller than the maximum Conrail class size. Two instructors are assigned to each class. CSXT does not have any personnel devoted exclusively to record keeping.

The syllabus for the classroom portion of the CSXT engineer training course includes:

- Orientation to CSXT and safety
- Locomotive mechanical systems, e.g., lube oil, fuel, and cooling systems -- both EMD and GE
- Locomotive electrical systems
- Starting and stopping a diesel engine
- Air brake theory, mechanical systems, and tests
- Train handling
- Operating rules
- Signals
- Hazardous material, restricted equipment, and on-track worker safety rules.

At the end of the five-week course, the engineer trainee is subjected to three tests: a signal exam, an operating rules exam, and a mechanical exam. To pass the tests, the trainee must achieve a score of 100 percent correct on the signal portion (18 or 22 questions), 85

percent on the operating rules portion (50 questions), and 80 percent on the mechanical portion (150 questions). If the student passes each of these tests, he receives his Student Engineers Card, and moves on to the field portion of the training process.

CSXT uses a Train Dynamics Analyzer ("TDA") to show students how buff and draft forces are managed while operating various train consists over differing terrain features. Conrail's use of a simulator provides students with a somewhat more realistic classroom training experience than TDA equipment does because the simulator is equipped with a video display that allows the student to see what an engineer would see were he operating the train.

(iii) Program Integration

While the content of the engineer training offered by CSXT and Conrail is essentially the same, there are some process differences. The smaller class size and the larger number of full-time instructors combine to produce an enhanced student-to-teacher ratio for the CSXT engineer training program. For this reason, CSXT expects to find that its program would result in a better educational

experience. CSXT's use of two instructors and the smaller class sizes also facilitate having field trips as part of the curriculum.

Conrail's practice of having a secretary and re-certification supervisor dedicated to the administration and record-keeping of engineer training and engineer certification may be preferable. This would free instructors of that administrative burden, and allow them more time to devote to program and technological development.

Immediately following the transaction, new locomotive engineers for the expanded system will be trained at CSXT's Cumberland facility, since Conrail's school will become part of the Norfolk Southern system. Qualified NORAC instructors will be included on the training staff. As described earlier, training will be based on separate rulebooks until such time as a combined rulebook is completed. A separate curriculum will be designed for employees who will only operate on former Conrail territory.

b) Locomotive Engineer Training - Field

(i) Conrail Programs

Conrail requires a minimum of 240 hours of Road Freight Train "seat time" as well as three to four weeks of yard and

local service by the engineer trainee prior to certification. Locomotive Engineer trainees meet with the Division Road Foreman periodically as required. Road Foremen participate in two progress rides and a qualification ride. Additional observation rides are held with peer trainers. There are no limits on the number of trainees assigned to a Division Road Foreman or a particular location.

(ii) CSXT Programs

CSXT has a formalized field training program used system-wide. The program requirements are well documented, and a comprehensive training manual guides both the student engineer and the instructors through the process to ensure system-wide consistency of topics covered. Written testing is required at the end of the field training portion, just as it is at the end of the classroom training. The field program is 21 weeks long and there is no minimum amount of "seat time." The CSXT Road Foreman of Engines ("RFE") has primary responsibility for monitoring training. The program is designed for the RFE to meet with the trainee, and conduct observation rides, biweekly. At a minimum, the RFE must conduct observation rides with the trainee seven times during the course of the field training.

At the end of the 21 weeks of field training, the CSXT engineer trainee is again subject to a series of three tests: an operating rules exam, the Locomotive Operations and Train Handling ("LOTH") exam, and a physical characteristics test (a.k.a. the "Qualification Ride"). To pass the tests, the trainee must achieve a score of 90 percent correct on the operating rules portion (100 questions), and 85 percent on the Locomotive Operations and Train Handling portion (150 questions). The physical characteristics test is administered by the RFE and is designed to demonstrate that the student engineer has mastered the specific characteristics, appropriate train handling capabilities, and method of operation of a particular railroad subdivision -- anything from where the tunnels and curves are, to what types of signals are in use, to the characteristics of the grade crossings; a score of 85 percent is required to pass.

If the student passes each of these tests, he or she then is a certified locomotive engineer, qualified to operate on a particular subdivision.

(iii) Program Integration

There are several key process differences between Conrail's and CSXT's field programs. At Conrail, the

classroom training staff is more involved in monitoring the trainee's performance during the field training phase; at CSXT, that responsibility is held completely by the RFE. Consequently, the CSXT RFE has a more involved relationship with the trainee, participating in more frequent observation rides. This more closely monitored and personal approach may prove to be preferable, but this depends on RFE staffing levels being adequate to oversee all trainees. To support and maintain this strong commitment to field training of engineers, CSXT is currently in the process of selecting and training more than 30 new RFEs.

Locomotive Engineer data which is maintained in the Certification Validation screen will be revised to enable identification of separate rosters/categories of engineers. Currently, engineers are identified as Train Service Engineers or Servicing Engineers (hostler). Two new categories will be added to identify Officer Engineers (engineers working a non-contract position) and Student Engineers (training for initial certification as a train service engineer).

c) Locomotive Engineer Qualifying on a New Territory

To become qualified on a new territory, a certified locomotive engineer must learn the specific physical characteristics of that territory. The new-to-the-territory engineer rides with a fully qualified engineer for a period of time until he is comfortable that he knows the territory. At that time, he takes a "physical characteristics" test (qualifying ride), administered by the RFE. If he passes, he becomes qualified on that territory.

It is intended that promoted engineers will be required to complete a specified number of round-trips over a new territory. The first round-trip may be an "observation trip," however, the remaining round-trips must be actual operating time under the guidance of a qualified-on-that-territory engineer. Additionally, the responsible road foreman may establish a higher "familiarization trip" minimum if deemed necessary. The road foreman, or any other supervisor, will conduct an observation ride with the qualifying engineer prior to that engineer being permitted to operate over the territory without pilot services.

Physical characteristics qualifying is also needed for engineers assigned to perform service in a yard or terminal

where they have not previously worked. While it is anticipated that implementing agreements will permit most employees to remain in the same job location where they previously worked, there may be some situations where assignments will change. If the new job assignment is in a yard unfamiliar to the employee, physical characteristics qualifying will be necessary.

Newly assigned engineers will receive a comprehensive package containing all reference materials applicable to the facility, including layouts, emergency contact data, any directives applicable to operations within the facility and any HPO playbook that may exist for the position (see Section II.C.8 for further discussion of CSXT's HPO process). If circumstances require, qualified employees will be assigned to work alongside the newly assigned employees until the newly assigned employee can safely perform all functions of the position.

d) Locomotive Engineer Annual Observation Ride

In addition to formal re-certification as described under the next subhead, CSXT requires its engineers to satisfactorily complete an annual observation ride with the RFE, at which time the RFE will sign the engineer's license.

Each annual ride carries the same weight as his or her tri-annual skills performance ride.

e) **Locomotive Engineer Re-certification**

By law, locomotive engineers are subject to re-certification testing every three years. Conrail schedules engineers to be re-certified during a specified half-year. The re-certification is administered in the field by local division rules personnel. In conjunction with Conrail's annual Operating and Safety rules classes, re-certification questions are posed along with the operating and safety sections. This test is supplemented by a physical characteristics exam. Tests are mailed by the division rules personnel to Conrail's central training school for processing. The Road Foremen mail or fax qualification data to Conrail headquarters, where the data is input into a computer tracking system.

A two-day, re-certification program is conducted by CSXT at Cumberland and Atlanta. Engineers are asked to report on a specific date, and re-certification is handled by centralized training personnel. The process is conducted separately from annual operating rules and safety training. In addition to a comprehensive written test, the CSXT engineer re-certification syllabus currently includes:

- Personal injuries
- Efficiency tests
- Human factor derailments
- Train handling/operation procedures manual
- Fuel conservation
- Dynamic braking
- Train documentation
- AC locomotives
- Train Dynamics Analyzer (TDA) and pre-trip analysis
- Air compressors/air brake tests
- Telemetry
- Operating rules

The CSXT commitment to engineer re-certification represents a substantial investment. Given hours of service regulations, the time required to travel to the training facility, and the two-day duration of the course itself, the total loss of operating time per engineer is typically four days. CSXT's centralized approach appears to provide a more comprehensive instructional experience, and as such, is currently planned to be the approach used in the expanded system.

In the expanded system, re-certification will be conducted at two-day training sessions to be held at both

Cumberland and Atlanta. Engineers requiring re-certification will be mailed study material, instructions and a date to report to the designated CSXT facility. This mailing will be made 60-90 days prior to the scheduled training session. CSXT's current record-keeping system will be retained. These plans will be carried through on a longer-term basis following Day 1 implementation.

A key step in the migration from today's approaches to the approach under the expanded system will be for CSXT to input Conrail certification/re-certification data into its computer system. This will facilitate correct identification of those Conrail engineers needing to be re-certified at a particular time.

4. Operational Testing

Operational tests (a.k.a. "Efficiency Tests") evaluate the employee's ability to comply with operating rules and procedures. In general, any employee operating on the track or controlling the movement of trains is subject to operational testing. Currently, CSXT and Conrail have separate systems for conducting and documenting operational tests and inspections pursuant to FRA rules at 49 C.F.R. Part 217.

a) CSXT's Operational Tests

CSXT's operational tests are conducted by supervisory personnel following standard guidelines documented in the CSXT Efficiency Test Manual. Specific efficiency tests have been developed to evaluate the employee's ability to perform specific tasks with or without supervision, in compliance with specific operating rules. Operating rules and safety practices are an area which leave no margin for shortcuts or misinterpretation. The Manual covers or will (when revised) cover:

- The definition and objectives of efficiency testing
- The types of tests
- The organization and officers responsible for the testing
- Groups of employees to be tested
- Frequency of testing
- Regulations governing the tests
- Procedures for preparing for and performing specific tests safely
- Intervention protocols for immediately addressing unsafe behaviors
- Providing crews with positive feedback on satisfactory performance

- Record keeping

b) Conrail's Operational Tests

The Conrail Operating Rules Testing Policy also spells out the reasons for operational testing, frequency of testing, methods to be used, and actions to be taken in the case of a test failure. Conrail's guidelines note that non-contract field supervisors in transportation, mechanical, and engineering must conduct at least 25 tests per month.

c) Similarities and Differences in Operational Testing

Both CSXT and Conrail operational testing programs advise employees that they are subject to operational testing at any time or place. Both railroads also specify the frequency with which each type of testing is to be conducted, as will the combined entity. There are some differences in the reporting systems of both railroads, but these have been identified and will not pose safety integration issues.

d) Operational Testing on the Expanded System

For Day 1 implementation, separate systems for documenting the performance and results of operational tests will be maintained for tests conducted under the NORAC rules

and tests performed under the CSXT rules. These records will be maintained at CSXT headquarters in Jacksonville.

After the transaction, Conrail and CSXT trackage will be divided into field management areas known as Service Lanes. Conrail management hired by CSXT and in place on the new Service Lanes will perform operational testing as in the past in former Conrail territories. Where both ex-Conrail and CSXT supervision coexist on given Service Lanes, CSXT will arrange cross training of management on both CSXT and NORAC rules. CSXT intends to have qualified officers on each affected Service Lane by having a "Train the Trainer" program. It is intended to bring representatives from each Service Lane to a centralized location for operational testing instruction. Those managers will then return and train officers on their Service Lanes.

When a single, integrated rulebook is adopted for the expanded CSXT system, only one operational testing system will be retained, with the exception that records stored in the abandoned system will be maintained long enough to meet statutory recordkeeping requirements.

e) <u>The Safety Action Team</u>

To further enhance CSXT's efficiency testing program, a safety action team consisting of CSXT managers, affected

craft employees, and FRA representatives formed in September 1997 is collaboratively revising the CSXT Efficiency Test Manual and procedures. This team has already produced the first draft of the CSXT 1998 operational testing program.

5. Accident/Incident Reporting

Both CSXT and Conrail currently have Internal Control Plans for reporting railroad accidents and incidents as required by FRA regulations at 49 C.F.R. Part 225. There are three types of events reported:

- Personal Injuries
- Train Accidents
- Crossing Accidents

The subsections below address current procedures and differences for each of these three areas, while a summary subsection addresses the Day 1 and long-term expectations for accident and incident reporting as a whole.

a) Personal Injuries

At Conrail, a third-party vendor inputs the data related to a personal injury. The process begins when the vendor is contacted by the supervisor. The vendor then creates a CT75 tracking form on line with basic information surrounding the incident. The vendor then notifies the

Claims department, which initiates an investigation. Claims completes the second portion of the CT75 by providing additional information, e.g., the temperature at the time of the incident, the chronology of events, etc. Claims then forwards the CT75 to the Government Reporting department. Accident reporting clerks evaluate the information provided and status for reportability according to FRA criteria. Any updates or revisions are handled by this Reporting function. The 55A FRA report is generated from the database of CT75 reports.

Injury posting at Conrail is accomplished through a combination of reporting systems that access the CT75 database and e-mail. Monthly and weekly statistical reports are generated and are posted in accordance with guidelines.

At CSXT, two personal injury report forms (PI-1A/PI-1) are completed, the former by the employee and the latter by a supervisor. The forms are faxed to the Safety Department. Accident reporting clerks enter the data into the mainframe tracking system, evaluate the information provided, follow up to collect any additional information required, and determine the status for reportability according to FRA criteria. Once a month, personal injury information is forwarded to FRA via e-mail. Entering data from the PI form

into the mainframe tracking system automatically alerts the Claims department of the incident. The Claims department then follows through to complete their portion of the process.

Injury posting on the CSXT property is completed via an e-mail system connected with CSXT's mainframe database. Monthly and weekly statistical reports are generated off of the mainframe, and are posted in accordance with guidelines.

The main difference between the two railroads in this area is that at CSXT, a supervisor fills out a separate report contemporaneous to that completed by the employee. Another difference is that since the Conrail data surrounding the event is entered on-line, the employee does not sign the report.

b) Train and Crossing Accidents

The train accident reporting process and repository of historical train accident data at Conrail have recently been improved. The current process uses a PC database package linked to online data entry screens. This replaced a system which relied on initial paper reports that were later keypunched. One of the business advantages of the newer approach is that the initial data entry can be

simultaneously routed to other departments, e.g., the divisions, freight claims and damage, hazmat, etc.

To complete FRA reporting requirements, however, relevant data is re-keyed into the AIRG FRA reporting system. This is a stand-alone system, not linked to internal Conrail databases. FRA train accident report forms 54 and 57 are printed from this system, and a diskette accompanies these reports to FRA.

At CSXT, accidents are recorded in the field on paper (RE-2I and RE-2 for Rail Equipment incidents, and HX-3 for Highway Crossing incidents), then faxed to headquarters. There, reporting clerks enter the train accident information into the mainframe computer system. Once a month, this train accident information is forwarded to FRA via e-mail.

For both personal injuries and accidents, the CSXT mainframe database is accessible from the field through a variety of online screens for interactive queries, and through the FOCUS report generation language. Thus, performance statistics by division, Service Lane, etc., can be easily determined.

c) Accident/Incident Reporting for the Expanded System

Immediately following Day 1 implementation, CSXT's procedures will be followed for completion of mandatory monthly reporting for accidents and incidents. A thorough plan for communicating CSXT's procedures and values will help ensure that a consistent reporting culture develops across the expanded system.

(i) Harassment and Intimidation

Conrail employees joining CSXT will be advised in writing of CSXT's, like Conrail's, commitment to complete and accurate reporting of all accidents, injuries, incidents, and occupational illnesses arising from railroad operations. New and existing employees will also be advised that CSXT requires its employees to comply with the letter and spirit of the FRA's accident/incident reporting regulations and that the following conduct will constitute a violation of this requirement:

- Harassment or intimidation of any person calculated to discourage or prevent that person from receiving proper medical treatment or from reporting any accident, incident, injury or illness;

- Falsification of any accident, incident, injury or illness record or report;
- Retaliation against any person for complaining that this policy has been violated.

These written policies and guidelines will be conveyed to Conrail employees working for CSXT by any of several means, e.g., with their initial employment and benefits package, with their first paycheck, and/or by some equally effective means that CSXT may devise. All CSXT employees will also be given telephone numbers, both a toll free number and a company line, and an address to use for reporting any violation of policy, including any situation where intimidation or harassment is perceived. Periodic reminders of the existence and contents of this policy will be included in company publications, such as, *CSXT Today*.

(ii) <u>Training</u>

Another key step in implementation will be to clearly communicate to new Conrail territory supervisors their expected role in accident/incident reporting.

All former Conrail/CSXT supervisors will be trained prior to Day 1 in regard to accident reporting procedures. This will be accomplished through the Human Resources Training and Development Department. This group is

currently developing a comprehensive training program to cover all facets of CSXT policies and procedures. This training may be conveyed through any of the following vehicles: face to face classroom setting, multi-media pods, or videos, among others.

In order to expedite this transition, the new territories will be furnished with all reporting forms for personal injuries, train accidents, and grade crossings. They will also be given instructions on how to secure these forms in the future. The Accident/Incident Reporting Procedures Manual will also be furnished for their use.

(iii) Record Keeping

The transition from the current separate reporting systems to the CSXT systems will involve several important steps. A key step is to extend CSXT's accident/incident reporting computer and communication systems, including the injury files, train accident files, grade crossing files and FRA monthly submission files, to the allocated territory. CSXT's current systems and databases are sufficient to support this additional requirement.

Posting of FRA injuries on the allocated Conrail territory will remain in place prior to Day 1 and then will be replaced by the CSXT posting the following month. Once

Conrail employees have been assigned CSXT IDs, any new injuries incurred would be added to the CSXT posting. This would be accomplished by the employee completing a CSXT personal injury form which would then be input into the mainframe database.

The new territories will obtain their postings through CSXT's internal communications network. They will be furnished with instructions on how to accomplish this.

6. Alcohol and Drug Programs

Both CSXT and Conrail have strong programs in place to educate employees about the problems associated with drug and alcohol use. Both companies also have policies and rules prohibiting employees from having in their possession, using, or being under the influence of, alccholic beverages, intoxicants, illegal drugs, or medicines that could impair alertness or coordination when reporting for duty, on duty, on company property or occupying facilities provided by the company. Also, both companies conduct DOT/FRA mandated Pre-Employment (Drugs Only), Post-Accident, Random, and Reasonable Suspicion Drug and Alcohol Testing programs under the terms of 49 CFR Parts 40 and 219, as well as additional testing beyond that mandated by these federal rules. Each company's programs are on file with, and approved by the

FRA. The programs are discussed in further detail below as are CSXT's plans for integrating its programs with Conrail's.

a) Operation RedBlock

CSXT provides funding for full-time coordinators and donates administrative services for a craft employee-designed and managed drug and alcohol abuse prevention program called Operation RedBlock. The program educates employees on the effects of drugs and alcohol, and provides employees with training on how to intervene when they notice a fellow employee who appears to have a substance abuse problem.

Further, Operation RedBlock provides a procedure for identifying and removing from railroad property workers who report to work in an impaired state, and by doing so, creates a safer workplace environment for all employees. This union-initiated, management-supported program also contributes to a healthy labor/management safety culture by creating an initial level of intervention that is peer-to-peer and non-disciplinary. In short, Operation RedBlock is a program that addresses a real problem in a no-nonsense manner, but without adversely affecting the level of trust between labor and management.

The program was initiated in 1984 by the Brotherhood of Locomotive Engineers (BLE) and the United Transportation Union (UTU). In 1986 the Railroad Yardmasters of America merged with the UTU, bringing their members into Operation RedBlock. During the following year the Brotherhood of Railway Signalmen (BRS) joined the program. In 1994, the American Train Dispatchers Association (ATDA) joined and, in 1997, the International Brotherhood of Firemen & Oilers (IBF&O) became the first non-operating craft to join Operation RedBlock. (Subsequent to their participation, the ATDA became the ATDD, the American Train Dispatchers Division of the BLE). For these crafts, the program is systemwide.

Currently, Conrail has an Operation RedBlock agreement with the BLE only. CSXT would welcome further labor initiation of Operation RedBlock in the allocated Conrail territory.

b) Further Substance Abuse Information Programs

In addition to Operation RedBlock, CSXT's substance abuse information and public communications response is quite varied. Its other components include:

- The Employee Assistance Program ("EAP") brochure

- EAP Supervisory Manual
- Videos including:
  - EAP informational video
  - CSXT Alcohol & Drug Education companion video to on-site training (60 minutes)
  - Drug and Alcohol supervisor training
- Educational interaction at employee meetings by EAP Managers

The CSXT EAP consists of six full time managers (supported by contract service providers), a clinical director and an administrative director whose responsibility overlies all functions. All clinical personnel are Certified Employee Assistance Professionals ("CEAPs") and can perform Substance Abuse Professional ("SAP") evaluations. EAP Managers interact with the chosen SAP in order to complete all requirements and pass all relevant information to the Medical Department for return-to-work considerations.

EAP Managers are also an integral component of the follow-up testing program. They interact with the employee to obtain a return-to-work treatment contract and determine a schedule for follow-up testing. They remain in contact with the employee to ensure compliance with aftercare

programs such as Alcoholics Anonymous. It is anticipated that Conrail employees will be brought into the CSXT EAP.

c) **CSXT Drug and Alcohol Testing Policies**

CSXT has rules concerning the use of alcohol or drugs. They state:

- Employees reporting for duty, on duty, on CSXT property or occupying facilities provided by CSXT are prohibited from having in their possession, using, or being under the influence of alcoholic beverages or intoxicants.
- Employees shall neither report for duty nor perform service while under the influence of, nor use while on duty or on CSXT property any drug, medication or other substance, including prescribed medication, that will in any way adversely affect the employees' alertness, coordination, reaction, response or safety.
- The illegal use and/or possession of a drug, narcotic or other substance that affects alertness, coordination, reaction, response or safety, is prohibited while on or off duty.

CSXT uses several different testing programs in coordination with its policies:

1. FRA Random Testing
2. FRA Post-Accident Testing
3. FRA Reasonable Suspicion Testing
4. CSXT Agreement Testing
5. Federal Highway Administration Testing
6. CSXT Random Testing for Officers
7. Physical Examinations

These programs are described in further detail below.

1. FRA Random Testing - Random testing for hours of service employees.
2. FRA Post-Accident Testing - Testing based on one of the following criteria being met (A through D, with exceptions as noted).

   A. Major Train Accident:

   - FRA Reportable Accident with a fatality to any person
   - FRA Reportable Accident with a release of hazardous material with an evacuation or reportable injury as a result of the hazardous materials leak.
   - FRA Reportable Accident with $1,000,000 or more railroad damage.

   B. Impact Accident:

- FRA Reportable Accident with a reportable injury to any person.
- FRA Reportable Accident with $150,000 or more railroad damage.

C. Fatal Train Accident:

- A fatality resulting from movement of on-track equipment where the fatality was an on-duty railroad employee.

D. Passenger Train Accident:

- A FRA Reportable Accident of a passenger train with reportable injuries to any person.

Note: If the incident qualifies as a major train accident all train crews must be tested regardless of whose fault it is. Other categories require that only those responsible for the accident are to be tested. Exceptions: No testing is required if the incident is:

- A rail/highway grade crossing accident, and
- wholly attributable to a natural cause, or
- wholly attributable to vandalism.

3. FRA Reasonable Suspicion Testing - Testing on hours of service employees where suspicion exists

that they are under the influence of either drugs or alcohol.

4. CSXT Agreement Testing - CSXT has labor agreements which permit toxicological testing under specified circumstances *on injuries* (both non-reportable and reportable that are the fault of the employee) and *FRA reportable accidents* (accidents not qualifying for FRA Post-Accident Testing) that were caused by the employee. Such agreements have been structured with the United Transportation Union (UTU), the Railroad Yardmasters of America (RYA)(now merged with the UTU), Brotherhood of Locomotive Engineers (BLE), Brotherhood of Railroad Signalmen (BRS), the American Train Dispatchers Division of the BLE (ATDD), the Transportation Clerks Union (TCU), and the Brotherhood of Maintenance of Way Employees (BMWE). For the most part, these agreements are system-wide.

5. FHWA Testing - Certain CSXT employees are subject to drug and alcohol testing under regulations issued by the DOT and FHWA. These employees operate commercial motor vehicles and are required

to obtain commercial driver's licenses. FHWA regulations require pre-employment (drugs only), random, post accident, reasonable suspicion, return to duty and follow-up drug and alcohol testing.

6. CSXT Random Testing for Officers - Officers who have specified job functions are required to be randomly tested under conditions similar to those required by DOT/FRA for hours of service employees.

7. Physical Examinations - Drug tests are required on pre-employment and specified return-to-service physical examinations.

In all of these programs, CSXT follows FRA guidelines for collection and analysis. An employee who tests positive for drugs or alcohol (except for Agreement testing) is charged with the appropriate rules violations and violations of FRA regulations. The employee charged with a violation has the option of choosing to participate in a bypass program to set aside the rule charges provided the employee agrees to participate in the company's employee assistance program. Upon completion of the requirements established by the EAP counselor, the employee will return to work, but

must remain in a short-notice monitoring program, subject to certain conditions, for a period of five years from the time of the incident. Failure to comply with the program, or another positive drug and/or alcohol test within the five-year period, will subject the employee to dismissal from the company. If the employee is a locomotive engineer, CSXT follows the FRA's regulations with respect to the consequences of positive test results.

An employee who tests positive for drugs or alcohol in the Agreement testing program is deemed medically disqualified and will not be allowed to return to work until certain conditions are met. The employee must also agree to participate in the company's employee assistance program.

d) Conrail Drug and Alcohol Testing Policies -- Key Differences

The selection process for FRA Random Testing varies between CSXT and Conrail. CSXT's selection for testing is by train number or job number at a certain location and for a specified period of time. Currently Conrail tests all hours of service employees at a randomly selected location and shift.

Conrail does not have Agreement Testing. Rather, Conrail uses FRA Reasonable Cause testing (Section

219.301) -- hours of service employees having a FRA reportable injury or accident which was the employee's fault and/or certain rule violations are subject to testing.

The process an employee goes through following a positive drug and/or alcohol test, and the time period during which employees are subject to dismissal if a second positive test occurs also differ between the two railroads. CSXT's policy is described above. Conrail employees found to be positive for drugs or alcohol (except for FRA Post-Accident Testing) are medically disqualified, and, if in a ten-year period, are again tested positive, are subject to dismissal from the company.

Another area of difference between the CSXT and Conrail programs are the procedures for follow up short notice testing post-positives. Under Conrail's system the Medical Department notifies the employee's supervisor of the need for a test. It is then the supervisor's responsibility to obtain the test at the appointed time. In the CSXT program, the EAP Manager (who has remained in contact with the employee) arranges for the test. The manager makes sure the appropriate form is used and the proper substance (breath alcohol vs. urine drug) is tested. He functions as an agent of the company in this regard.

e) Drug and Alcohol Testing Policies on the Expanded System

On Day 1, CSXT will implement the following tests on allocated Conrail territories:

- FRA Random Testing - CSXT currently anticipates that its FRA random testing plan which has been approved and is on file with the FRA will be applied to the allocated Conrail territories. Any changes in the random testing plan will be preceded by appropriate notice to FRA. The transition from the current separate database systems for random testing selection will be to migrate historical Conrail data into the CSXT database in time for the Day 1 beginning of the program. Prior to Day 1 a list of Conrail trains and job numbers will be loaded into the randomization program and a pick of the train numbers and job numbers will be available for testing by Day 1. The list will be run separately until the CSXT list is generated again on a quarterly basis.
- FRA Post-Accident Testing - Both companies have the same criteria for qualifying and testing as

per Part 219 (subpart C) of the federal regulations. CSXT will implement its policy of requiring approval for testing from certain headquarters personnel.

- FRA Reasonable Suspicion Testing - Both companies have the same criteria for qualifying and testing as per Part 219 (subpart D) of the federal regulations.
- FRA Reasonable Cause Testing - CSXT does not do this type of testing, but will continue to use this type of testing on allocated Conrail properties until/unless other testing agreements can be accomplished.
- FHWA Testing - Certain CSXT employees are subject to drug and alcohol testing under regulations issued by the DOT and FHWA. These employees operate commercial motor vehicles and are required to obtain commercial driver's licenses. FHWA regulations require pre-employment (drugs only), random, post accident, reasonable suspicion, return to duty and follow-up drug and alcohol testing.

- Random Testing for Officers - CSXT will apply its current testing program to its expanded system after Day 1. This will require integration of the database (for officers on allocated Conrail territory) into the CSXT database in time for the Day 1 beginning of the program.

CSXT will use its present collector (EMSI) to handle all testing on allocated Conrail properties. EMSI has been notified and has assured the carrier that it can provide collection functions at Conrail facilities. EMSI is a nationwide organization with many existing offices in Conrail territory.

Conrail employees who accept employment with CSXT will be given appropriate notice of CSXT policies on drugs and alcohol and programs associated thereto. CSXT intends to seek application of its current agreement provisions for voluntary (reasonable cause) testing to allocated Conrail territory.

f) Recent Drug & Alcohol Testing Results

As shown below in Exhibit II.2, results of random drug tests performed on CSXT employees since 1990 demonstrate a generally favorable trend with respect to drug and alcohol

use (note that the threshold levels for positive tests were lowered in 1994).

Exhibit II.2
CSXT Random Testing Results

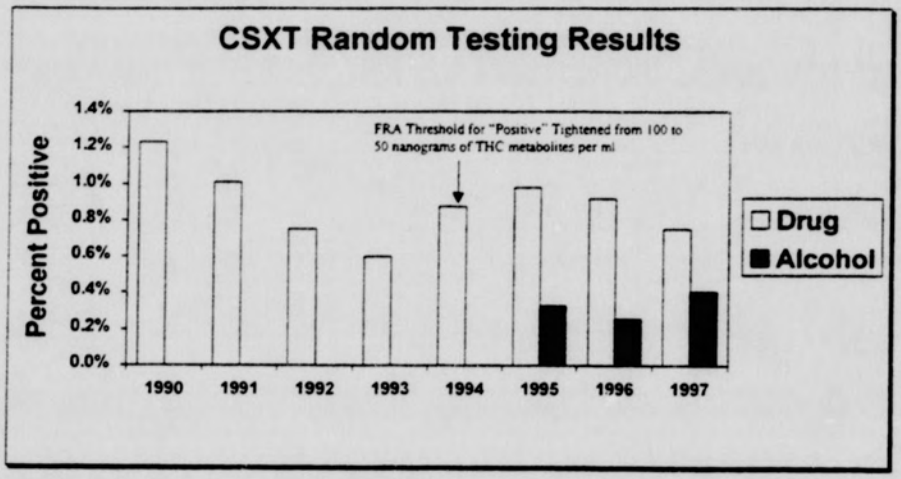
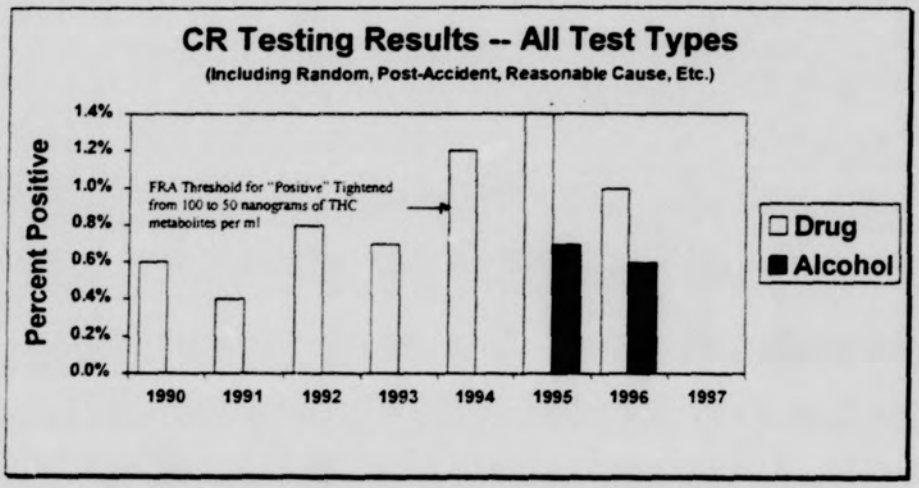


Exhibit II.3 shows Conrail positive test results. The percent positive is based on the total number of tested personnel - not just those tested under FRA random testing.

Exhibit II.3
Conrail Testing Results



7. Hours of Service Tracking & Initiatives

Certain FRA prescribed reporting and record keeping requirements are necessary with respect to the hours of service of certain railroad employees. These employees are individuals who 1) are actually engaged in or connected with the movement of any train including a hostler, 2) are dispatching, reporting, transmitting, receiving, or delivering orders pertaining to train movements by the use of telephone, radio, or any other electrical or mechanical device, or 3) are engaged in installing, repairing or maintaining signal systems.