3.17.1 Environmental Justice Analysis

1. Identify the potential health and environmental effects of the proposed Conrail Acquisition.

Even though an environmental justice analysis technically is not required for independent agencies such as the Board, SEA examined a broad range of potential health and environmental effects that would result from the proposed Conrail Acquisition, including effects on safety, traffic, air quality, noise, cultural resources, hazardous waste sites and hazardous materials transport, natural resources, and land use/socioeconomics. These effects might result from four activity types related to the proposed Acquisition:

- Increases and decreases in rail traffic.
- Construction of new rail line connections and other facilities.
- Changes in activity levels at intermodal facilities and primary vehicle access routes to these facilities.
- Changes in activities at certain rail yards.

Temporary, minor effects on natural resources might result in the few locations where tracks would be removed due to proposed rail line abandonments. These natural resources effects are regulated by other Federal, state, and local environmental agencies. SEA did not perform an environmental justice analysis of these temporary effects because the long-term effects typically are beneficial to the communities (e.g., eliminating noise and barriers to access within the community and offering opportunities for rail-to-trail conversions), rather than adverse.

The preceding sections of this chapter describe the methods for evaluating types and significance of impacts which could occur if the proposed Acquisition were approved. These results form the basis for SEA's environmental justice analysis.

2. Determine whether these potential effects might occur in minority or low-income communities.

To make this determination, SEA identified the following geographic and demographic information:

- Over what geographic area potential effects were likely to occur.
- The minority and low-income population of each potentially affected area.

SEA began by defining the geographic area where potential effects could occur around each of the four types of Acquisition-related activities (rail lines, rail yard and intermodal operations, and construction activities). SEA termed this the "area of potential effect."

Neither the Executive Order, the draft CEQ guidelines, the draft EPA guidelines, nor the DOT Order define how to select the "area of potential effect." SEA defined the "area of potential effect" as the maximum area potentially exposed to the Board's noise threshold of 65 dBA. SEA chose the 65 dBA threshold because it offered a practical, uniform approach to identifying the outer boundary of areas where communities could reasonably be expected to experience localized environmental impacts such as noise, traffic congestion, grade crossings delays, visual intrusion, pedestrian and safety effects, and construction impacts associated with the proposed Acquisition.

SEA examined all proposed new constructions, rail yards, intermodal facilities, and rail line segments which would meet or exceed any of the Board's thresholds for environmental analysis identified in Chapter 1 of this Draft EIS. SEA determined the outer boundary of the 65 dBA noise level threshold around each of these locations. The resultant boundaries range from 400 to 1,200 feet--roughly two to eight blocks in a typical urban area. Table 3-2 shows the "area of potential effect" for each type of rail Acquisition-related activity.

Table 3-2 overstates the extent of actual noise impacts that could result from the proposed Acquisition at rail line segments because SEA made two assumptions: (1) an increase of three to seven trains per day would generate as much noise as an increase of eight trains per day, and (2) all rail line segments, even those without grade crossings, would experience the highest noise level generated at grade crossings where horns were sounded as a safety measure. (This resulted in a uniform "area of potential effect" along the entire length of each rail segment.) These two assumptions expanded the number of populations subject to further demographic analysis.

Next, SEA determined the minority and low-income population of each area of potential effect. The Executive Order does not define the terms "minority" or "low-income," so SEA (like CEQ, EPA, and DOT) defined these terms as follows:

- A "minority" is someone who is Black (Non-Hispanic), Hispanic, Asian American, American Indian or Alaskan Native;[8]
- A "low-income" person is someone whose median household income is below the Department of Health and Human Services poverty guidelines.[9]

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[8] For a further definition of this term, see Appendix K, "Environmental Justice."

[9] Poverty thresholds vary by family size. In 1989 the poverty income threshold was approximately $12,674 for a family of four. SEA used 1989 data, the most recent year for which actual population counts, rather than statistical estimates, are available. The U.S. Bureau of the Census will issue new data in the year 2000.

Using these definitions, SEA collected detailed U.S. Census data on total population, total minority population, and total low-income population for each county where Acquisition-related activity could occur. To avoid missing minority and low-income communities located in largely non-minority or more affluent counties, SEA also collected the same data for each area of potential effect. SEA collected census data at the "block group" level. ("Block groups" are small, statistical subdivisions of census tracts.) SEA overlaid the block group data on a computerized geographic information system (GIS) base map for each area of potential effect to obtain accurate population counts for each specific area.

Table 3-2
Areas of Potential Effect by Type of Action

RAIL ACTIVITY	AREA OF POTENTIAL EFFECT (IN FEET)
Rail Line Segments	• 400 feet on both sides of a rail line with increases of 3-8 trains per day • 640 feet on both sides of a rail line with increases of 9-16 trains per day • 1200 feet on both sides of a rail line with increases of 17 or more trains per day
Constructions	• 400 feet on both sides of a rail line with increases of 3-8 trains per day • 640 feet on both sides of a rail line with increases of 9-16 trains per day • 1200 feet on both sides of a rail line with increases of 17 or more trains per day
Intermodal Facilities	• 400 feet around the perimeter of the facility
	• 400 feet on both sides of major truck access routes to the nearest interstate highway
Rail Yards	• 400 feet around the perimeter of the facility
Abandonments	• 400 feet on both sides of the rail line

Neither the Executive Order nor the DOT Order on Environmental Justice define what constitutes a minority or low-income community. Using CEQ's and EPA's draft guidance, SEA determined that potential effects would occur in a minority or low-income community whenever the percent of minority or low-income people in the area of potential effect:

- Equaled or exceeded 20% of the population.
- Was 10% greater than the minority or low-income population percentage of the county as a whole.

3. Assess whether potential effects in minority or low-income communities could be "high" and "adverse."

Neither the Executive Order nor DOT's Order on Environmental Justice define how an agency is to assess "high" and "adverse" impacts. As a conservative means of assessing impacts on minority and low-income communities, SEA evaluated any area with a significant adverse effect

For each area of potential effect in a minority or low-income community, SEA then assessed the "significance" of the potential effect. SEA used the criteria for "significance" described in the preceding sections of this chapter.

4. Determine whether potentially high adverse effects "disproportionately affect" minority or low-income communities.

To make this determination, SEA evaluated whether potential effects:

- Would be predominately borne by minority or low-income communities.
- Would be more severe or greater in magnitude in those minority or low-income communities.

The latter analysis required considering the cumulative exposure to potential environmental impacts.

Analyzing whether the potential adverse effects are more severe or greater in magnitude in minority or low-income communities requires consultation with those potentially affected communities.

For each such potentially affected community, SEA is conducting an expanded public outreach effort. Appendix K describes SEA's outreach strategy in more detail. This effort supplements the extensive public outreach already undertaken by SEA and described in Chapters 1 and 6 of this Draft EIS. This additional outreach, directed to business and neighborhood associations, city council members, religious organizations, libraries, and other appropriate community representatives is designed to accomplish the following:

- Provide widespread notice and dissemination of SEA's Draft EIS.
- Provide additional opportunities for community input in the NEPA process.
- Inform communities of SEA's analysis.
- Consult with the potentially affected minority or low-income communities about alternatives and potential mitigation measures.

The preceding sections of this chapter outline potential mitigation measures for each of the types of potential impacts from the proposed Acquisition (e.g., safety, noise, etc.). In seeking comments on these proposals, SEA seeks public input on the following:

- Whether there is a disproportionate impact on any minority or low-income community.

- The appropriateness of the mitigation measures proposed in this Draft EIS that are designed to reduce or avoid any disproportionate impact.
- Additional alternatives and potential mitigation to reduce or avoid any disproportionate impact.
- Negotiation strategies that could facilitate mutually acceptable agreements that would address environmental justice concerns.

SEA encourages the affected communities and the railroads to work together to develop negotiable solutions to address environmental justice concerns.

3.18 CUMULATIVE IMPACTS

According to the CEQ regulations implementing NEPA, cumulative effects result "from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. [These impacts] can result from individually minor but collectively significant actions taking place over a period of time." The cumulative effects of an action may be undetectable when viewed in the individual context of direct and even secondary effects, but they can add to other disturbances and eventually lead to a measurable environmental change.

3.18.1 Approach to Cumulative Impacts Assessment As Set Forth in the Final Scope

There are no established regulations or procedures for assessing cumulative effects. SEA reviewed published reports that discuss cumulative effects, either for methodologies or for determining consequences, and used as the principal source of guidance the CEQ handbook, Considering Cumulative Effects Under the National Environmental Policy Act.

CEQ was created by NEPA to develop policy guidelines and oversee federal agencies' implementation of NEPA. In the handbook, CEQ states that the purpose of the cumulative impact analysis is to enable a more informed Federal decision, rather than to create a perfect cumulative impacts analysis.

The CEQ handbook provided SEA with various analytical techniques, data sources and practical methods for addressing cumulative impacts, both adverse and beneficial. In preparing a cumulative impacts analysis, CEQ recommends that an agency's analysis accomplish the following:

- Focus only on the effects and resources within the context of the proposed action.
- Present a concise list of issues that have relevance to the anticipated effects of the proposed action or eventual decision.

- Keep conclusions based on the best available data at the time of the analysis.

- Rely on information from other agencies and organizations on resources/plus forecasts or activities that are beyond the scope of the analysing agency's purview.

- Relate to the geographic scope of the proposed action.

SEA integrated the CEQ guidelines into the cumulative effects analyses presented in Chapter 4, "System-Wide and Regional Setting, Impacts, and Proposed Mitigation" and Chapter 5, "State Setting, Impacts, and Proposed Mitigation."

The Final Scope of the EIS reflects the integration of the CEQ guidelines on cumulative impact analysis into the environmental review process for this case and outlines a three tier analysis of cumulative effects. To identify cumulative impacts SEA stated that it would complete the following:

1. Address cumulative effects of environmental impacts that have regional or system-wide ramifications for the Applicants. SEA completed this analysis for environmental impacts that warrant such analysis given the context and scope of the proposed transaction including air quality and energy.

2. Evaluate cumulative effects, as appropriate, for other projects or activities that relate to the proposed transaction, where information was provided to the Board by local communities, local, regional, state or Federal officials, or other interested parties. The information provided to the Board had to describe (1) those other projects or activities, (2) their interrelationship with the proposed transaction, (3) the type and severity of the potential environmental impacts. SEA stated that it would then determine whether there is the likelihood of significant environmental impacts. Information on other projects and activities must be provided to the Board within sufficient time to allow for review and analysis within the schedule for the preparation of the EIS (i.e., no later than the due date for comments on the Draft EIS).

3. Discuss the potential environmental impacts of construction or facility modification activities within railroad-owned right-of-way property (e.g. extension of sidings, rehabilitation of bridges, etc.) affected by the proposed Conrail Acquisition, and additional environmental impacts related to the proposed transaction but not subject to Board approval.

3.18.3 Context of the Cumulative Effects Analysis

Cumulative effects analysis is generally done for a defined geographic area. In this case, the geographic scope covers the 24 states and the District of Columbia affected by the proposed Acquisition. Within this study area, the proposed Conrail Acquisition has the potential to affect certain resources, such as air quality, at a national or multi-state level. To determine cumulative

effects, SEA examined several types of major on-going Federal actions or activities occurring at the national level, including the following:

- Past and present actions, such as technological changes and large-scale transportation projects.
- Laws and regulations, such as NEPA, the Clean Air Act of 1970, and the Energy Policy and Conservation Act of 1975.
- Major transportation-related planning and funding programs, such as the Major Investment Studies, Federal Transit Administration (FTA) community rail initiatives, and regional transportation improvement plans.

These actions, when evaluated with the proposed Corridor Acquisition, formed the basis of SEA's cumulative effects analysis.

SEA considered the information sources available to analyze the cumulative effects of the proposed Acquisition. SEA used several sources to assess cumulative effects, including the following:

- Major Investment Studies.
- FTA funding for enhancement and expansion of existing rail systems and for new rail system planning studies.
- Public comments on the draft scope of the EIS that identified projects or actions.
- Public comments from communities obtained during SEA's analysis of land use.

3.18.3 Cumulative Effects Analysis Methodology

In the first tier approach to cumulative effects assessment, SEA used tables and narrative to display, evaluate and aggregate information across multiple resources and actions. Each table reports the following:

1. Past Actions.
2. Present Actions.
3. Proposed Actions (i.e., actions that would result from the Corridor Acquisition).
4. Future Actions (i.e., reasonably foreseeable actions that are planned).
5. Cumulative Effects Summary.

System-Wide Analysis

SEA examined each of the technical areas of analysis and determined that cumulative effects
having regional or system-wide ramifications are primarily confined to effects on air quality,
energy, and transportation. SEA analyzed the following system-wide factors in conducting the
analysis:

- Quantitative, system-wide magnitude of energy (fuel) savings to be achieved as a result of
  the proposed Conrail Acquisition.
- Quantitative, system-wide magnitude of resulting air quality effects.
- Quantitative, system-wide changes of freight transport by truck as a result of truck-to-rail
  diversions.
- EHWA\FTA Major Investment Studies that have been identified, including planned and
  funded studies of significant, long-term multi-modal transportation improvements in the
  eastern U.S.
- FTA plans for existing and proposed fixed guideway rail systems (light rail, commuter rail,
  inter-city trains)
- Other relevant information.

System-wide cumulative effects are discussed in Chapter 4, "System-Wide and Regional Scoring,
Impacts, and Proposed Mitigation."

Related and Non-Jurisdictional Actions Analysis

SEA considered two types of other actions as a part of the cumulative effects analysis:

1. Unrelated actions that were brought to the Board's attention which could impact resources
   affected by Acquisition-related activities.
2. Related actions that would not otherwise be subject to the Board's jurisdiction, but could
   have effects on the same resources that the proposed Acquisition-related activities are
   affecting. Each type of action is described below.

SEA evaluated cumulative effects of other projects or activities such as major infrastructure
projects, community development improvements or private developments that are geographically
related to the proposed Conrail Acquisition. SEA aggregated available information on a state-
by-state basis. SEA reviewed interview notes and written correspondence to them from various
state, regional, local agencies and planning officials to determine planned community actions or
projects that may contribute to cumulative effects.

SEA also reviewed local agency officials' comment letters related to new constructions and abandonments, as well as information concerning businesses or jobs potentially affected by the proposed abandonments. SEA's state-by-state analysis of cumulative effects can be found in Chapter 5, "State Settings, Impacts, and Proposed Mitigation."

SEA also evaluated several different railroad related projects that do not normally require the approval of the Board such as proposed modifications of existing railroad properties, siding extensions, and signal upgrades. SEA included analysis of three of these projects in the Draft EIS because it concluded that these projects could have potentially significant environmental effects on of existing right-of-way. SEA looked at over 70 other activities to be undertaken by the Applicants. These actions are not specifically addressed in the Draft EIS because they are limited in size and consequence. Many of these actions are track-related work on existing railroad right-of-way and track beds.

Additionally, SEA performed separate Environmental Assessments for construction of the seven rail line segments that the Applicants have proposed to build, but not operate, prior to approval of the proposed Acquisition. The Board gave its final approval to these projects in Decision Sup. No. 1-7 issued on November 25, 1997. SEA also reviewed the 15 Inconsistent and Responsive (IR) Applications received in response to the Application for the proposed Acquisition. The Board gave its final approval to these IRs in Decision No. 24, issued on November 20, 1997. The cumulative impacts assessment for these actions is found in Chapter 4, "System-Wide and Regional Setting, Impacts, and Proposed Mitigation."

CHAPTER 4

System-Wide and Regional Setting, Impacts, and Proposed Mitigation

The proposed Conrail Acquisition, with its 44,000 miles of rail in 24 states and the District of Columbia, has the potential to affect resources at the national, regional, and local level. The resources include transportation systems and safety as well as the physical environment. These potential effects, both beneficial and adverse, could be far-reaching. The existing Conrail CSX and NS rail systems cover an area where over 60 percent of the nation's population resides and serve every major city in the eastern United States. In deciding whether to approve the proposed Acquisition, the Board will consider the potential national, regional, and local environmental effects, SEA's recommended actions to mitigate potentially significant effects, and public comments on this Draft EIS.

This Chapter addresses the environmental effects related to the entire rail transportation system proposed in the Application. These system-wide and regional issues have the potential to affect people residing in the broad geographic area covered by the three existing rail systems. These issues include the following:

- Safety: Freight Operation - The overall safety of the proposed freight rail system the Applicants presented in their Application.
- Safety: Passenger Rail - The overall potential change in passenger rail system safety, where that system shares track with the proposed freight rail system.
- Safety: Highway\Rail At-Grade Crossings - The general safety implications of the proposed rail system, where grade-level highways and roadways cross rail line segments.
- Safety: Transport of Hazardous Material - The potential for change in the overall safety of transporting hazardous materials by rail.
- Safety: Integration Planning - The Applicants' plans for ensuring safe railroad operations during the transition to the proposed rail systems.

- Traffic and Transportation: Passenger Rail - The effects on passenger rail service that could result from increases of freight traffic on rail line segments that carry Amtrak or regional passenger rail service.
- Traffic and Transportation: Highway System - The potential changes in truck traffic levels on major interstate corridors.
- Traffic and Transportation: Emergency Response - The general potential to affect response times for emergency vehicles that use roads crossing rail line segments at grade.
- Traffic and Transportation: Navigation - The general effects of the proposed Corinth Acquisition on navigation, where rivers flow under railroad bridges.
- Energy - The change in national energy use that would result from shifts from highway to rail transportation.
- Air Quality - The change in the overall level and distribution of air pollutants that would result from the proposed Acquisition.
- Native American Lands - The general effects of the proposed Acquisition on Native American lands and tribes.

This chapter also discusses issues that frame the general environmental questions the Board must consider while deciding whether to approve the proposed Acquisition. These issues include:

- The effects of the No-Action Alternative on the environment.
- The cumulative effects that would result from the proposed Corinth Acquisition when analyzed in the context of other projects and activities in the study area.
- The relationship between short-term uses of the environment (primarily temporary construction uses) and potential long-term productivity gains that could result from the proposed Corinth Acquisition.
- The irretrievable commitment of natural, physical, human, and fiscal resources that would result from the Board's approval and subsequent implementation of the proposed Corinth Acquisition.

The proposed Corinth Acquisition also has the potential to affect environmental resources at the local or community level. Chapter 5, "State Settings, Impacts and Proposed Mitigation" presents the potential local and community effects that could result from the changes in operations along specific rail line segments, proposed changes in operations at rail yards and intermodal facilities, construction of new facilities, and abandonment of rail line segments. In Chapter 5, SEA's

analysis of potential site-specific issues, along with SEA's recommended mitigation, is organized by state. For some issues, SEA developed both a system-wide and local-level analysis.

4.1 SYSTEM-WIDE SETTING

Currently Conrail, CSX, and Norfolk Southern (NS), operate 44,000 miles of rail lines and related facilities in the eastern United States. Figure 1-1 in Chapter 1 illustrates the existing rail lines of the three railroads. Chapter 3, Section 3.1 discusses the existing Conrail, CSX, and NS systems, and provides a system-wide description of the expanded CSX and NS systems that would result from the proposed Conrail Acquisition.

4.1.1 General Background Setting

The Conrail, CSX, and NS railroads cover an area where over 60 percent of the nation's population resides. At least one of the three railroads serves every major metropolitan area east of the Mississippi River, plus Kansas City. Combined, they extend through all of the eastern states and parts of Canada, from Florida in the south to the Provinces of Ontario and Quebec, Canada, in the north. Together, the Conrail, CSX, and NS railroads serve most of the major and secondary ports along the Atlantic Coast, Great Lakes, and Gulf of Mexico. The combined network of rail lines traverses farmlands, industrial centers, coal fields, suburban areas and small towns, mountainous areas and river valleys as well as major metropolitan areas. Most of the infrastructure of each of the three railroads has been in place since at least the turn of the century, with some rail corridors dating back to the mid-1800s. The more recent additions to the infrastructure are rail line spurs constructed to serve modern industrial parks, port facilities, and power plants. Table 4-1 lists the states in which Conrail, CSX, and NS currently have railroad operations.

The project area for the proposed Conrail Acquisition encompasses 1,061 counties in 24 states and the District of Columbia. Rail activities in 188 counties would exceed the Board's thresholds for environmental analysis. Figure 4-1 identifies the locations of these counties. Most of these counties occur along the current Conrail network, which is briefly discussed below.

The formation of Conrail in 1976 resulted in the opportunity to segregate freight and commuter passenger services to a greater extent than had been previously possible. Both as a result of the Penn Central bankruptcy and the legislation establishing Conrail, the states of Massachusetts, Connecticut, New York, New Jersey, and Pennsylvania aggressively sedimented rail line segments primarily those used in commuter services. Simultaneously with the creation of Conrail, the Northeast Corridor between Boston and Washington was transferred from Penn Central to Amtrak, with the exception of certain rail line segments in Massachusetts, Connecticut, and New York.

Table 4-1
Location of Existing Railroad Operations

Location	Conrail	CSX	NS
Alabama		X	X
Connecticut	X		
Delaware	X	X	
Florida		X	X
Georgia		X	X
Illinois	X	X	X
Indiana	X	X	X
Kentucky		X	X
Louisiana		X	X
Maryland	X	X	X
Massachusetts	X		
Michigan	X	X	X
Mississippi		X	X
Missouri			X
New Jersey	X		
New York	X	X	X
North Carolina		X	X
Ohio	X	X	X
Pennsylvania	X	X	X
Rhode Island *			
South Carolina		X	X
Tennessee		X	X
Virginia	X	X	X
West Virginia	X	X	X
District of Columbia	X	X	
Province of Ontario		X	X
Province of Quebec	X		

* Rhode Island has no Class I freight railroads

Proposed Conrail Acquisition *Draft Environmental Impact Statement*

FIGURE 4-1

COUNTIES POTENTIALLY AFFECTED BY THE PROPOSED ACQUISITION

Consequently, Conrail focused its freight movements on routes other than primary passenger and commuter lines. For example, the former Reading Company rail lines, in conjunction with the former Lehigh Valley Railroad rail lines in central New Jersey, provide a primarily freight-only route through Philadelphia to Oak Island Yard in Newark, NJ, which connects to the freight-only River Line on the west shore of the Hudson River to Selkirk Yard near Albany. Similarly, the former Reading Company, also in conjunction with the former Lehigh Valley Railroad, provides a freight-only route from Harrisburg, Pennsylvania, to Philadelphia, and via Allentown, Pennsylvania, to Northern New Jersey. As a result, the vast majority of rail tonnage in this region is transported to, from, and through Philadelphia and Northern New Jersey without interfering significantly with either Amtrak or commuter authority operations. The Applicants state that, if permitted to acquire these Conrail rail lines and assets, they plan to continue to provide freight service in a similar manner.

4.1.2 Identification of System-Wide Environmental Issues

Because of the regional and interstate characteristics and potential environmental effects of various operational elements of the proposed Conrail Acquisition, SEA has determined that system-wide analysis is appropriate for certain environmental issues. These are briefly listed below and discussed in greater detail in the rest of this chapter.

Safety

The term "safety" can apply to many areas. SEA has focused on mainline derailments and accidents between freight trains, passenger rail operations, highway/rail at-grade crossings, transport of hazardous materials, and finally the Applicants' proposed Safety Integration Plans.

Traffic and Transportation Systems

SEA has considered several system-wide traffic and transportation issues, including reduced truck traffic on interstate routes, emergency vehicle response times, and navigation.

Energy Resources

SEA evaluated energy use resulting from the proposed Acquisition. The calculations address fuel consumption on a system-wide basis from rail-to-truck and truck-to-rail diversions.

Air Quality

Regional and state-wide analysis of pollutant emissions included numerous calculations covering the broad geographic spectrum of the eastern U.S. SEA evaluated emissions changes from locomotives, truck-to-rail diversions, and idling vehicles at highway/rail at-grade crossings.

Native American Lands

SEA considered issues related to changes in use of Native Americans in terms of tribes and recognized lands.

Discussions on each of these environmental areas and their system-wide results are presented later in Chapter 4. Some of these issues also contain elements that warrant evaluation on a site-specific basis, as identified in Chapter 3. Site-specific discussions appear in Chapter 5 for the appropriate state.

4.1.3 Identification of Site-Specific Environmental Issues

Many environmental issues relate only to site-specific conditions and types of actions. Discussions of the localized impacts that would result from changes resulting from the proposed Conrail Acquisition appear in Chapter 5. The site-specific issue areas are the following:

- Safety.
- Traffic and Transportation.
- Air Quality.
- Noise.
- Cultural resources.
- Hazardous materials and waste sites.
- Natural resources.
- Land use/socioeconomics.
- Environmental justice.

4.2 SAFETY: FREIGHT RAIL OPERATIONS

SEA considers safety of primary importance in the environmental review of the proposed Conrail Acquisition. During the development of this Draft EIS, SEA has received many comments which express concern on potentially adverse safety effects resulting from the proposed Acquisition. This particular section addresses the potential Acquisition-related changes in the risk of derailments or accidents between freight trains. Other sections later in this chapter address safety in terms of passenger rail operations, highway/rail at-grade crossings, transport of hazardous materials, and finally the Applicants' proposed Safety Integration Plans.

Background

As mentioned in Chapter 1, the Federal Railroad Administration (FRA) is the Federal agency with primary responsibility for enforcement of railroad safety. FRA has indicated to the Board its concern over implementation of satisfactory safety measures by the Applicants after the Acquisition, due in part to the recently merged Union Pacific/Southern Pacific Rail Systems and Burlington Northern and Sante Fe Rail Systems. Detailed Safety Integration Plans have been prepared by each of the Applicants in response to this requirement, which are presented in Section 4.6.

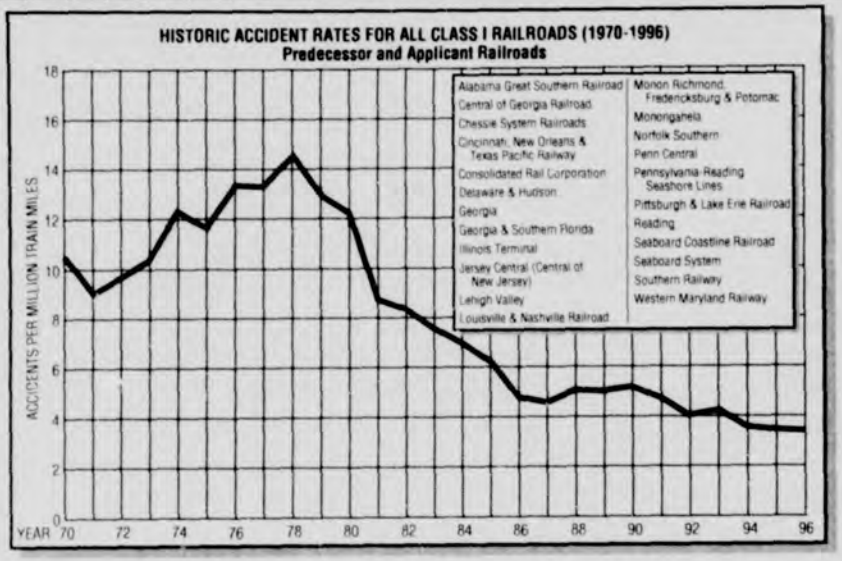
SEA analyzed safety issue for the combined railroad companies. SEA analysis included a review of information provided by FRA and the Applicants, independent analyses, and site visits. SEA evaluated changes in safety that could reasonably be expected to result from the proposed Conrail Acquisition. The system-wide evaluation of the three pre-Acquisition railroads encompassed 1,022 rail line segments and 375 rail yards collectively, handling over 107,000 railroad cars per day. SEA's evaluation of the post-Acquisition system assumed that all of the changes and appropriate actions specified in the Applicants' Operating Plans would be implemented. SEA also assumed the successful implementation by the Applicants of their Safety Integration Plans covering the Acquisition transition period and beyond. (See Section 4.6.)

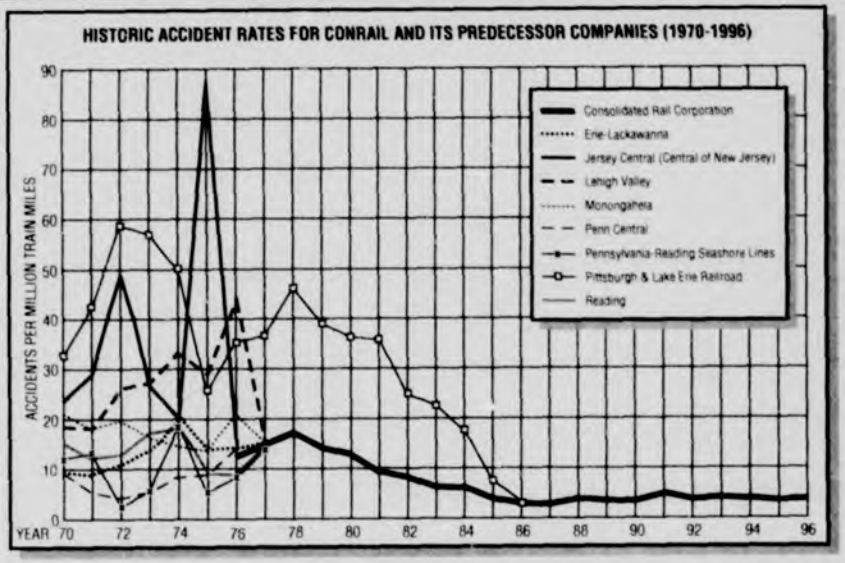
According to FRA data, railroads in the United States have, in general, improved their collective safety performance over the past two decades. The common industry measure for safety performance is the number of accidents per million train-miles. From 1970 until 1996, the national average accident rate has decreased from 15.0 to 3.7 accidents per million train-miles. Figure 4-2 illustrates this trend in improved safety for the Applicants and their predecessor companies. In general, this trend has resulted from improvements in technology and management practices.

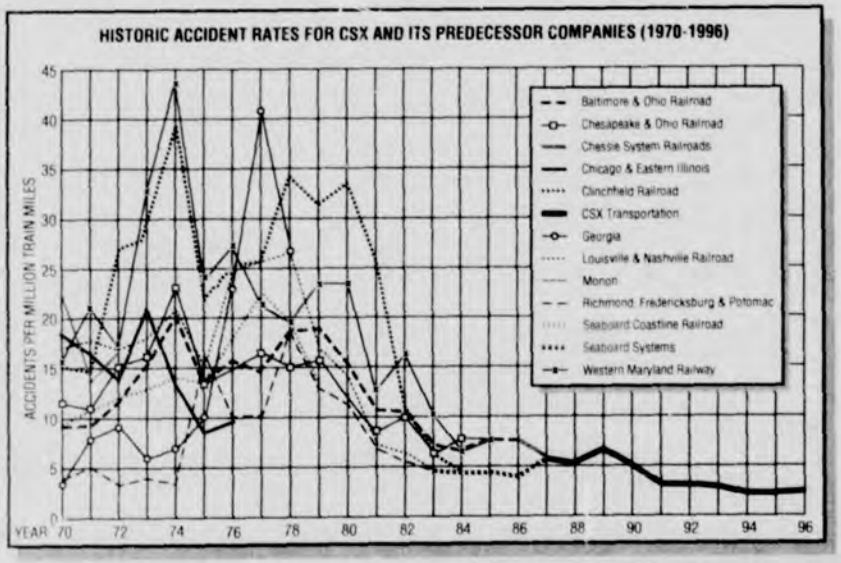
While the individual occurrences of train accidents are both infrequent and unpredictable, the number occurring on any single carrier varies significantly around long-term average rates. SEA established a statistical model to determine the estimated likelihood of accident occurrences. SEA modeled the national trends in railroad accident rates and adjusted these trends based on each Applicant's performance. Rather than attempting to predict exactly when and where an accident would occur, SEA estimated the frequency at which an accident is likely to occur.

System-wide Freight Rail Operations Safety Evaluation

SEA evaluated the Applicants' railroad operations at two different points in time: pre-Acquisition, or the current system, and post-Acquisition. SEA performed analyses to estimate the predicted change in the number of yearly accidents, both on individual rail line segments (explained in Chapter 5), and on system-wide rail line segments. Chapter 5 describes in detail the individual rail line segments which meet or exceed SEA's criteria of significance and warrant







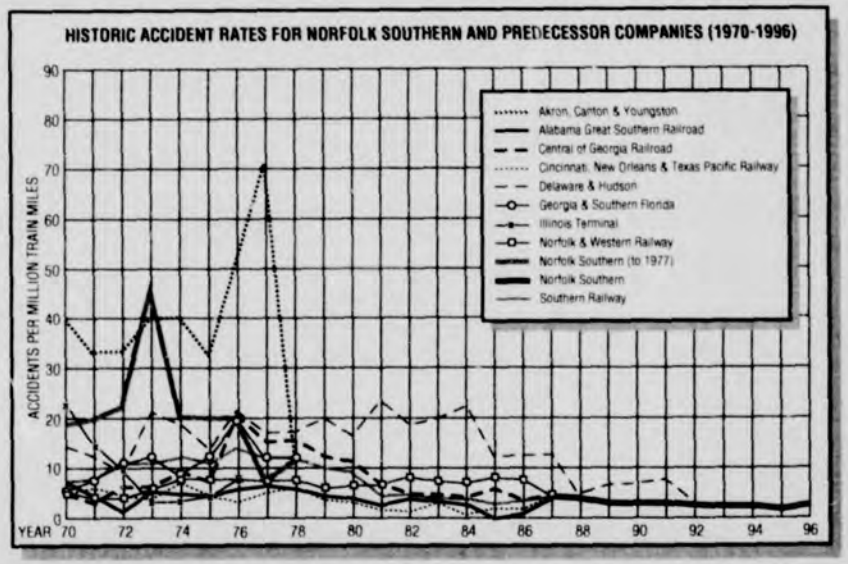


FIGURE 4-2

HISTORIC ACCIDENT RATES

SOURCE: ACCIDENT/INCIDENT BULLETIN - FRA

consideration for safety mitigation. These segments are located in Ohio, Indiana, and Pennsylvania.

The proposed Acquisition will have a system-wide impact, both on rail line and rail yard activities. SEA notes that implementation of the post-Acquisition Operating Plan would increase the total rail systems' activity, including the total number of freight train miles and gross ton-miles for both CSX and NS. These increases occur because of both railroads' projected diversion of freight from trucks and other railroads. SEA found that the number of daily freight trains would increase on 353 of the 1,022 total rail line segments if the proposed Acquisition is implemented. Consequently, 669 of the rail line segments, or 65 percent, would experience no change or a decrease in the number of daily freight trains.

The results of the system-wide analysis are shown in Table 4-2. Because both NS and CSX would gain trackage and facilities from the proposed Acquisition, SEA anticipates that both railroads would experience an increase in their total number of accidents. Correspondingly, with reduced trackage and facilities, Conrail shows a marked decrease in total number of estimated accidents. Although the total number of estimated accidents show a small decline, a more important result is the estimated increase of nearly 5 percent in projected rail line accidents. This estimated increase is due to the increases in freight train miles and gross ton-miles from the estimated diversions from trucks and other railroads.

The Applicants estimated that the volume of cars switched in rail yards would decrease at over half of the yards throughout the post-Acquisition systems. SEA estimated that there would be a total of 3.8 percent fewer cars switched in all yards after the proposed Acquisition than under current conditions.

Combined, the changes in freight traffic on rail line segments and freight activity in rail yards would result in a small overall decrease in the likelihood of freight rail accidents and derailments. While the post-Acquisition changes may not affect overall accident frequency, the shifts in train traffic from one line to another, and the changes in yard operations, would shift the probable locations of accidents. In general, those lines with fewer trains and rail yards handling fewer cars would have fewer accidents.

SEA notes that the Applicants have stated that there would be a related reduction in highway traffic accidents. The Applicants estimated that the competition resulting from the proposed Acquisition could divert 782 million truck-miles of freight to rail service. Based on accident rates from the U.S. Bureau of Transportation Statistics, this reduction in truck-miles could result in 1,600 fewer annual highway accidents.

Based on this analysis, it is SEA's preliminary finding that the Acquisition would not result in significantly adverse system-wide safety effects for freight rail operations. At this time, SEA does not propose system-wide mitigation measures; however, SEA has proposed safety measures

on several specific rail line segments in Chapter 5, "State Setting, Impacts and Proposed Mitigation."

Table 4-2
System-Wide Annual Railroad Accident Evaluation Pre- to Post-Acquisition

Operator Before Acquisition	Operator After Acquisition	Pre-Acquisition	Post-Acquisition	Annual Change[a]	Percentage of Change
Rail Line Accidents					
Conrail	Shared Areas[a]	79	4	(75)	(95.0%)
CSX	CSX	81	120	39	48.1%
NS	NS	36	81	45	124.6%
Subtotal		**196**	**205**	**9**	**4.9%**
Yard, Siding and Industrial Track Accidents					
Conrail	Shared Areas[a]	127	7	(120)	(94.6%)
CSX	CSX	106	149	43	40.9%
NS	NS	80	137	57	70.8%
Subtotal		313	293	(20)	(6.3%)
Total		**509**	**498**	**(11)**	**(2.0%)**

[a] Statistics for Conrail post-Acquisition represent shared operations.

4.3 SAFETY: PASSENGER RAIL OPERATIONS

To provide a thorough analysis of all potential safety effects which could result from the proposed Conrail Acquisition, SEA conducted a system-wide analysis of potential safety effects from rail accidents involving passenger rail operations. To determine the most significant potential system-wide impacts, SEA focused its analysis on the risk of passenger rail accidents occurring on rail line segments.

SEA's evaluations of the post-Acquisition system assumed that all of the changes and appropriate actions specified in the Operating Plans and Safety Integration Plans would be successfully implemented by the Applicants. The Applicants' approach to implementing these safety measures effectively into the new CSX and NS systems is discussed in Section 4.6.

Background

Traveling by train has been a safe mode of travel for passengers for many years. The U.S. Department of Transportation's *Transportation Statistics Annual Report for 1996* categorizes passenger train travel, along with commercial air travel, as one of the safest modes of travel. However, when passenger train accidents occur, the potential for severe injury to a large number of people is always present. There have been several recent passenger train accidents affecting both intercity and commuter rail services, including the July 1997 accident involving a CSX freight train and an Amtrak intercity train in Alexandria, VA. In addition, several transit agencies operating commuter rail service on lines involved in the proposed Acquisition have expressed concerns about present and future passenger operations. For these reasons, SEA conducted a special safety analysis of rail line segments used by passenger trains, even though these combined use lines, as explained earlier, make up a small percentage of the total merged system.

Passenger Rail Operations Evaluation

SEA considered all rail line segments of the Applicants' railroads which have passenger rail operations. Of these 197 segments, SEA further analyzed those segments which would experience an increase of one or more freight trains per day as a result of the proposed Conrail Acquisition. SEA estimated the predicted accident rate for incidents between freight and passenger trains on 93 segments.

For 84 of the 93 rail line segments, totaling 3,042 miles, SEA's preliminary findings indicate that the risk of an accident would be insignificant. However, SEA's analysis identified nine rail line segments, totaling 531 miles, where the increase in freight trains would increase the accident risk of passenger rail operations beyond the SEA criteria of significance established for this project. SEA applied the factors of a 25 percent increase in accident risk and an expected interval between accidents of less than 150 years to determine significance. (See Chapter 2, Table 2-1.)

The detailed safety analysis for these nine rail line segments is presented in Appendix B and further described in Chapter 5, on a state-by-state basis. These segments are located in the following states: Georgia, Maryland, Michigan, New York, North Carolina, Virginia, and the District of Columbia.

SEA further analyzed these results to consider broader regional or system-wide impacts of passenger rail accidents. The results of this broader analysis revealed that seven of the nine affected segments are on the following two Amtrak intercity passenger routes: (1) the north-south corridor through Virginia, North Carolina and Georgia, and (2) the route between Detroit and Chicago. These are both regional. After further analysis of these two particular routes, SEA believes the potential Acquisition-related increase in accident risk is effectively mitigated by the segment-specific mitigation proposed in Chapter 5. For the nine segments, SEA has proposed mitigation to require greater time spacing between freight and passenger trains, which would

provide an additional margin of safety. Chapter 7, "Summary of Impacts and Preliminary Recommended Mitigation," also describes the mitigation as a regional issue.

SEA notes that, system-wide, there are more than 100 rail line segments with passenger rail operations on which freight train traffic is projected to increase less than one train per day, to be unchanged, or to decrease as a result of the proposed Conrail Acquisition. In these instances, no change or a modest reduction in the risk of passenger-train accidents may occur.

Therefore, SEA determined that, with the segment-specific mitigation proposed in Chapter 5, no significant system-wide or regional passenger rail safety impacts would be expected from the proposed Conrail Acquisition. SEA believes that these proposed local mitigation actions sufficiently address passenger rail line safety issues, and no system-wide mitigation is warranted.

4.4 SAFETY: HIGHWAY/RAIL AT-GRADE CROSSINGS

During the development of this Draft EIS, SEA has received numerous comments expressing concern over current and future safety practices of the Applicants. This section addresses freight train effects which potentially occur at locations where automobiles and other vehicles could have direct contact with freight trains, namely highway/rail at-grade crossings.

Other concerns have been expressed for SEA's consideration, such as effects to pedestrians at crossings or to emergency response vehicles. SEA's research located no systematic analytical method to evaluate potential pedestrian incidents. Although SEA did not separately consider potential pedestrian impacts, some localized areas of concern have been addressed in Chapter 5. SEA evaluated emergency response vehicles delay in the sections discussing traffic delay because it is closely related to potential traffic delay resulting from train traffic blocking highway/rail at-grade crossings. A discussion on emergency response vehicles appears later in this chapter, in Section 4.9, as well as in Chapter 5 for several states where specific emergency response concerns were raised.

SEA performed an analysis to determine the effect on accident frequency at highway/rail at-grade crossings that would result from proposed changes in the daily number of trains as well as the type of warning device and roadway traffic volumes. SEA considered the effect of changes in the number of trains along rail line segments with proposed increases in freight train traffic.

SEA developed tables showing accident frequencies based on trains per day, type of warning device, and average daily traffic (ADT). These tables appear in Appendix B. SEA's analysis shows that accident frequency at highway/rail at-grade crossings increases as the number of trains increase and at roadways with higher traffic volumes. The analysis further shows that accident frequency decreases substantially as the at-grade warning devices are improved. These general trends can be applied to individual crossings throughout the rail system.

SEA used these tables to estimate the change in accident frequency from increases or decreases in daily train activity as well as to assess the reduction in accident frequency that would occur with improved warning devices. These tables provide an index to show the relative differences in accident frequency. For example, increasing the number of trains per day from 10 to 15 at a highway/rail at-grade crossing with a passive warning device (crossbucks) and with a roadway traffic volume of 5,000 or less would result in an increase in accident index from 1.77 to 1.83. This represents a three percent increase in accident frequency. With the same train increase, upgrading the warning device to flashing lights reduces the accident index at the same crossing to 1.49. In other words, upgrading the warning device with 15 trains per day results in a lower accident frequency than with the original 10 trains per day and the passive warning device.

Chapter 5 presents a site-specific evaluation of potential safety effects on more than 2,000 highway/rail at-grade crossings, within appropriate state discussions. These crossings are along rail line segments with increases of eight or more trains per day, which represents the Board's environmental threshold for environmental analysis. The site-specific analysis in Chapter 5 includes recommendations for mitigation at locations where significant effects would occur. Therefore, SEA believes that no system-wide mitigation is appropriate, except to recommend that CSX and NS provide prominently displayed instructions designating a toll-free telephone number and a unique grade crossing identification number to report warning device malfunctions.

4.5 SAFETY: TRANSPORT OF HAZARDOUS MATERIALS

To provide a thorough analysis of all potential safety effects which could result from the proposed Conrail Acquisition, SEA conducted a system-wide analysis of potential safety effects from rail incidents involving the transport of hazardous materials, including accidental releases resulting from freight train accidents. The movement of hazardous materials is an area of general concern to the population at large. Although the risk of occurrence for a rail accident involving hazardous materials is very low based on statistics, the potential for widespread effects exists.

Background

U.S. Department of Transportation (DOT) and Federal Railroad Administration (FRA) regulations closely control the movement of hazardous materials. The regulations described in detail in Appendix B, "Safety," require each rail car (or block of cars) containing hazardous materials to have the proper documentation, including identification of the material and an emergency response telephone number. Cars carrying hazardous materials must display a special sign (placard) and/or other markings to identify contents. Regulations also govern the location of hazardous materials cars in a train.

Cars which are incompatible, or contain incompatible commodities, are not to be placed next to each other. For example, a placarded car may not be placed next to a flat car loaded with steel pipe, as the steel pipe could shift and damage the car carrying hazardous materials.

The Association of American Railroads (AAR) publishes guidelines concerning the transport of hazardous materials. These guidelines call for all trains that carry five or more carloads of poison inhalation hazard (PIH) or 20 or more carloads of hazardous materials to be designated as "key trains." These trains are subject to special operating practices. For example, the maximum authorized speed is 50 miles per hour.

AAR's guidelines also address the safe movement of trains carrying hazardous materials shipments over rail line segments. Rail line segments which may carry over 10,000 rail carloads of hazardous materials per year are designated "key routes." In accordance with AAR's guidelines, these key route rail segments have special requirements. For example, rail car defect dectors must be at a maximum of 40 miles apart, rail/track inspections have specific and more rigorous requirements, and tracks must meet at least FRA Class 2 standards. (The defect detectors are sensors which automatically radio the train engineers regarding any unusual mechanical conditions related to the rail cars.) Major railroads voluntarily comply with the AAR guidelines, and, in some cases, establish more stringent procedures.

Analysis and Mitigation

For the years 1992 through 1996, the DOT's Hazardous Materials Incident Reporting System (HMIRS) database reported 1,918 rail incidents involving hazardous materials for the applicants. Table 4-3 summarizes the three railroads' annual totals. (See Appendix B, "Safety" for more detail.) The DOT database indicates that these reported system-wide incidents decreased from 439 incidents in 1992 to 358 incidents in 1996.

Table 4-3
Total Incidents Involving Hazardous Materials
Reported by Conrail, CSX, and NS 1992 - 1996

Carrier	1992	1993	1994	1995	1996	Grand Total
Conrail	61	65	92	97	101	416
CSX	276	203	161	187	167	994
NS	102	104	111	101	90	508
Total per Year	439	372	364	385	358	1,918

Source: HMIRS, 1997.

Table 4-4 categorizes these 1,918 incidents into the following four causes: human error, package failure, vehicle accident or derailment, or other. The 'other' category includes vandalism, pressure release or venting incidents, and incidents with unreported causes. More than 95 percent of the 1,918 incidents were attributed to human error, package failure, or other causes excluding derailments/vehicle accidents. SEA found that train-vehicle accidents or train derailments caused less than five percent of the total incidents. These 89 incidents occurred in 68 separate accidents or derailments. (Each separate hazardous material release is counted.)

Table 4-4
Causes of Incidents Involving Hazardous Materials Reported by Conrail, CSX, and NS 1992 through 1996

Cause	Conrail	CSX	NS	Total	Percentage
Human Error	188	452	210	850	44.3%
Package Failure	173	482	276	931	48.6%
Vehicle-Train Accident/Derailment	40	31	18	89	4.6%
Other	15	29	4	48	2.5%
Total	416	994	508	1,918	100.0%

Source: HMIRS, 1997.

Table 4-5 presents the total 1,918 incidents, by cause, for various ranges of released quantity. The following highlights a few examples:

- 97 percent of the total 1,918 hazardous materials incidents, or 1,861 incidents, had material release quantities of fewer than 1,000 units (reported in gallons, pounds, or cubic feet).

- Over 95 percent of the total 1,918 hazardous materials incidents were caused by human error, package failure, or factors other than vehicle accidents/derailments.

- Of the 5 percent hazardous materials incidents caused by derailments/vehicle accidents, 36 incidents involved larger material releases of over 1,000 units (reported in gallons, pounds, or cubic feet).

Thus, while the number of derailments or vehicle accidents are relatively few in number, those that did occur resulted in larger releases than the incidents caused by human error, package failure, or other causes. According to DOT's HMIRS, only eight incident reports during the period of 1992 to 1996 noted environmental impacts. Four of the incidents were for Conrail, four for NS, and none for CSX. The DOT generally characterizes environmental damage as any hazardous materials release causing contamination or pollution.

To determine the most significant potential impacts, SEA focused its analyses on the risk of incidents occurring on rail line segments. SEA considered the rerouting of hazardous material car loads to be potentially significant if the change in volume would make a rail line segment a key route post-Acquisition although pre-Acquisition volume did not warrant key route designation. Statistically, that means that if the volume of car loads would exceed the AAR's guideline of 10,000 or more annual carloads on a rail line segment, SEA considered mitigation for the rail line segment. A second environmental threshold of significance was an increase in volume that would double the number of hazardous material car loads traveling on a key route. For lines whose pre-Acquisition volume did not warrant key route designation, this second threshold was set at 20,000 annual car loads. (See Appendix B, "Safety".) A rail line segment meeting this threshold was identified as a "major key route."

Table 4-5
Quantity of Hazardous Material Released by Cause of Incident as Reported by Conrail, CSX, and NS 1992 through 1996

Carrier	Cause	Released Quantity Range (units reported in gallons, pounds, or cubic feet)				Total Incidents
		<1	1 to 100	>100 to 1,000	> 1,000	
Conrail	Human Error	93	86	7	1	188
	Package Failure	86	78	6	3	173
	Vehicle Accident/ Derailment	18	9	4	9	40
	Other	9	5	1	0	15
CSX	Human Error	125	316	6	5	452
	Package Failure	154	305	16	7	482
	Vehicle Accident/ Derailment	2	9	4	16	31
	Other	14	13	2	0	29
NS	Human Error	95	110	4	1	210
	Package Failure	117	150	5	4	276
	Vehicle Accident/ Derailment	3	3	1	11	18
	Other	1	3	0	0	4
Totals Incident for Each Released Quantity Range		717	1,087	57	57	1,918

Source: HMIRS, 1997.

In accordance with this approach, SEA analyzed rail line segments with any increase in the transport of hazardous material car load traffic. These results are reported in Chapter 5 on a state-by-state basis for 97 rail line segments in the following states: Alabama, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, Missouri, Mississippi, North Carolina, New Jersey, New York, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and the District of Columbia. SEA also analyzed the changes in the risk of hazardous material being released resulting from a train accident along these segments. These results are reported in Appendix B for all segments experiencing increases in car load traffic.

SEA further analyzed these results to consider broader regional or system-wide hazardous materials transport impacts. This broader analysis revealed a number of affected segments collectively representing the same railroad corridor across two or more states. Table 4-6 shows the resulting railroad corridors and states which SEA identified as warranting further consideration for system-wide or regional mitigation.

Table 4-6
Regional Rail Corridors with Hazardous Materials Increases Warranting Mitigation

New Key Routes			
Corridor	**Railroad**	**Segments**	**Counties**
From: Parkwood, AL To: Thomasville, GA	CSX	C-270 C-380	AL - Montgomery, Elmore, Autauga, Chilton, Shelby, Houston, Dale and Pike; GA - Thomas, Grady, Decatur, Seminole and Early
From: Parkwood, AL To: Manchester, GA	CSX	C-376 C-377	AL - Jefferson, Shelby, Talladega, Clay, Randolph, Chambers; GA - Troup and Meriwether
From: Atlanta, GA To: Flomaton, AL	CSX	C-355 C-356 C-271	GA - Fulton, Coweta and Troup; AL - Chambers, Lee, Macon, Montgomery, Loundes, Butler, Conecuh and Escambia
From: Cartersville, GA To: Latonia, KY	CSX	C-292 C-293 C-294 C-295	KY - Rockcastle, Madison, Clark, Knox, Laurel and Whitley; TN - Campbell, Anderson, Blount, Knox, Monroe, McMinn and Polk; GA - Murray, Gordon and Bartow
From: Alexandria Jct., MD To: Washington, D.C.	CSX	C-031	District of Columbia; MD - Prince Georges
From: Pembroke, NC To: Dillon, SC	CSX	C-339	SC - Dillon; NC - Robeson
From: Hamlet, NC To: McBee, SC	CSX	C-357	NC - Richmond and Marlboro; SC - Chesterfield
From: Ashville, NC To: Leadvale, TN	NS	N-361	NC - Buncombe and Madison; TN - Cocke
From: Port Jervis, NY To: Bellevue, OH	NS	N-062 N-063 N-065 N-070 N-072 N-075 N-080 N-245 N-246 N-247	NY - Rockland, Orange, Broome, Delaware, Sullivan, Tioga, Chemung, Steuben, Allegany, Livingston, Wyoming, Genesee, Erie and Chautauqua; PA - Erie, Pike; OH - Ashtabula, Lake, Cuyahoga, Lorain, Erie, Sandusky and Huron
From: Ashtabula, OH To: Rochester, PA	NS	N-082 N-095	PA - Beaver, Lawrence, Mahoning, Trumbull; OH - Ashtabula
From: New Castle, PA To: Youngstown, OH	CSX	C-081	OH - Mahoning; PA - Lawrence
From: Park Junction, PA To: Camden, NJ	Shared	S-232 S-233	PA - Philadelphia; NJ - Camden
From: Ashley Jct., SC To: Savannah, GA	CSX	C-344 C-345	SC - Charleston, Colleton, Hampton and Jasper; GA - Chatham

Table 4-6
Regional Rail Corridors with Hazardous Materials Increases Warranting Mitigation

Major Key Routes			
Corridor	**Railroad**	**Segments**	**Counties**
From: Decatur, AL To: New Orleans, LA	CSX	C-267 C-268 C-269 C-270 C-271 C-386 C-387	AL - Escambia, Baldwin, Mobile; LA - Orleans and St. Bernard
From: Parkwood, AL To: Lagrange, GA	CSX	C-376	AL - Jefferson, Shelby, Talladega, Clay, Randolph, and Chambers; GA - Troup
From: Athens, GA To: Montgomery, AL	CSX	C-354 C-355 C-356	GA - Clark, Barrow, Gwinnett, De Kalb, Fulton, Coweta, and Troup; AL - Chambers, Lee, Macon, and Montgomery
From: Butler, IN To: Tilton, IL	NS	N-041 N-044 N-045 N-046	IN - De Kalb, Allen, Huntington, Wabash, Miami, Cass, Carroll, Tippecanoe, Fountain and Warren; IL - Vermillion
From: Covington, KY To: Amqui, TN	CSX	C-287 C-288 C-289 C-291	KY - Kenton, Boone, Grant, Owen, Carroll, Henry, Oldham, Jefferson, Bullitt, Hardin, Hart, Barren, Edmonson, Warren, and Simpson; TN - Summer and Davidson in TN
From: Carleton, MI To: Deshler, OH	CSX	C-040 C-065	OH - Henry, Wood and Lucas; MI - Monroe
From: Hamlet, NC To: Clinton, SC	CSX	C-350 C-351	NC - Richmond, Anson and Union; SC - Lancaster, Chester, Union, Newberry, and Laurens
From: Quaker, OH To: Willow Creek, IN	CSX	C-061 C-066 C-068 C-069 C-073 C-074 C-075 C-206	OH - Cuyahoga, Lorain, Huron, Seneca, Wood, Henry and Defiance; IN - De Kalb, Noble, Kosciusko, Elkhart, Marshall, St. Joseph, LaPorte and Porter
From: Clinton, SC To: Athens, GA	CSX	C-352 C-353	SC - Laurens, Greenwood, Abbeville; NC - Elbert, Madison and Clarke
From: Nashville, TN To: Stevenson, AL	CSX	C-373	TN - Davidson, Rutherford, Bedford, Coffee, and Franklin; AL - Jackson

Based on changes in traffic transporting hazardous materials, SEA proposes two types of mitigation: one for new "key routes" and additional actions for "major key routes." For the new key routes, SEA recommends that the Board require the Applicants to comply with the AAR key route requirements before increasing hazardous materials transport on these routes. SEA also makes the preliminary recommendation that CSX and NS provide 24-hour telephone access to their dispatching centers to all emergency response forces for each community located along the key route corridors. For the major key routes, SEA recommends that the Board require the Applicants provide enhanced emergency preparedness by developing a Hazardous Materials Emergency Response Plan and participate with local communities in hazardous material response training and simulations.

SEA also reviewed the Operations Plan submitted by the Applicants. These plans show that the railroads have detailed policies and procedures for preventing and for rapidly responding to hazardous materials emergencies. These procedures are designed to prevent injuries, minimize property damage, and guard against significant environmental impacts. The procedures are described in more detail in Appendix B. In addition, CSX and NS have voluntarily adopted certain safety programs from third parties, as also described in Appendix B.

To minimize the risk from derailments or other accidents, the Applicants' current Operating Plans contain specific, written procedures that focus on preventing hazardous materials accidents. These procedures cover the safe handling of cars containing hazardous materials at rail yards, when making up and breaking up trains, and loading and unloading operations at intermodal facilities. SEA found that the Operation Plan of CSX and NS call for enhancing hazardous materials safety through:

- Capital improvements planned for certain routes, such as new double-tracked segments, new highway/rail at-grade crossing warning devices, and additional sidings.

- Capital improvements planned at rail yards and intermodal facilities that would minimize train handling and thus decrease risk.

Additional system-wide measures employed specifically for the safe movement of hazardous materials over rail line segments and at railroad yards and terminals include:

- Operating plans, which contain safety policies and procedures for handling and transporting hazardous materials.

- Emergency preparedness, prevention, and response plans.

It must be emphasized that, since there are so few incidents in one year, any single year's experience for one railroad or for a small group of railroads cannot reliably project or estimate future releases. On a system-wide basis, since the same people and equipment would be used, with changed procedures in some cases, the proposed Acquisition is not expected to change the

frequency or severity of accidents involving hazardous materials, for either CSX or NS. As discussed earlier, data suggest a gradual improvement in the safety records of both railroads from 1992 to 1996.

With the assumption that these Operating Plans continue to be carefully and completely implemented if the proposed Acquisition is approved, SEA's preliminary conclusion is that the Applicants have the proper general measures in place to handle any potential increase in hazardous materials accidents. Nevertheless, SEA believes that CSX and NS should establish a formal Failure Mode and Effects Analysis (FMEA) for reducing risk of spills both for storage and transport of hazardous materials. The purpose of this FMEA would identify more specifically the potential causes for such spills and ways to reduce or eliminate them prior to a possible incident.

SEA's review of the data in Applicants' Operating Plans shows that the Acquisition would result in the operation of approximately one percent fewer car miles per day of cars carrying hazardous material. This should result in a modest, but virtually unmeasurable, decrease in hazardous material releases from derailments. Similarly, the concentration of railroad freight traffic in larger quantities, allowing grouping of rail cars (called "blocking") for more distant destinations, as described in the Applicants' Operating Plans, results in a system-wide four percent decrease in freight car handling in rail yards. This, in turn, is expected to result in a slight reduction in hazardous material releases over time. These measures should also serve to improve the safety of rail transportation of hazardous materials, because reduced switching avoids exposure to yard accidents.

Based on the analysis and data available, SEA has concluded at this time that with the implementation of the proposed regional and segment-specific mitigation described here and in Chapter 5, there would be no system-wide or regional significant adverse impacts related to hazardous materials transport as a result of the proposed Conrail Acquisition. The proposed mitigation described above applies to new key route and major key route corridors.

4.6 SAFETY: APPLICANTS' SAFETY INTEGRATION PLANS

SEA believes that safe operations for the post-Acquisition CSX, NS, and Shared Asset Area operations would be determined in large part by an effective plan to integrate operations of the three Applicants. The Federal Railroad Administration (FRA) is the Federal agency with the primary responsibility for enforcing railroad operations safety. FRA initiated Safety Assurance and Compliance Program (SACP) reviews of Conrail, CSX, and NS in 1997. FRA's SACP process uses a multi-discipline team audit strategy to identify root causes of systemic safety concerns and propose remedies on a railroad company-wide basis. The SACP review process involves the cooperation and participation of railroad labor, railroad management, and FRA's technical experts.

Based in part on these reviews and FRA's review of the Union Pacific/Southern Pacific railroad merger approved by the Board in August 1996, the DOT and FRA submitted extensive comments to the Board on October 21, 1997. These comments addressed numerous issues related to maintaining safe rail operations during the Applicants' proposed Acquisition and integration process.

In response to DOT, the Board, in Decision No. 52 dated November 3, 1997, directed the Applicants to submit Safety Integration Plans for inclusion in the Draft EIS. The Safety Integration Plans are bound separately, with the DOT comments in Volume 2.

SEA recognizes and shares the DOT concerns regarding the potential effects on safety resulting from the integration of these three large, operationally complex, and culturally different railroads. The specific concerns and items to be addressed in the Safety Integration Plans were set forth in the FRA report included with the DOT comments of October 21, 1997.

In accordance with the Board's directive, the Safety Integration Plans were prepared and submitted by the Applicants on December 3, 1997. At the time of this printing, these documents have not been reviewed by the Board or SEA and some inconsistencies may exist with other parts of the Draft EIS. Nonetheless, the Safety Integration Plans are included in the Draft EIS to facilitate the broadest possible public and agency participation in providing comments and input to SEA and the Board regarding these plans. In this regard, SEA asks all who comment to aggregate and identify their comments on the Safety Integration Plans as distinct from comments on the balance of the Draft EIS.

4.7 TRANSPORTATION: PASSENGER RAIL OPERATIONS

SEA and its independent team of railroad operations experts specifically assessed potential impacts, other than safety impacts, to passenger rail service resulting from the proposed Conrail Acquisition. This section describes the results of that evaluation. Section 4.3, above, described the system-wide safety-related implications to passenger rail service capability.

Background

Conrail, CSX, and NS are freight railroads. Their principal function is to provide efficient, reliable service to meet the needs of freight shippers. However, certain of their rail lines are used for passenger services, although these lines constitute only a small percentage of their total systems. On an average weekday, the National Railroad Passenger Corporation (Amtrak) operates over 80 intercity passenger trains on the Conrail, CSX, and NS rail lines that also carry freight traffic. Additionally, eight commuter agencies operate over 300 daily commuter trains using rail lines owned by Conrail, CSX, and NS. Conversely, Conrail, CSX, and NS also operate freight trains on rail lines owned by Amtrak and various commuter agencies. Currently, only Conrail operates on Amtrak-owned rail lines, including portions of the Northeast Corridor

(NEC) and the Amtrak-owned Michigan Line, between Kalamazoo, Michigan, and Porter, Indiana.

In assessing the impact of the proposed Conrail Acquisition on both intercity and commuter passenger service, SEA examined rail line segments with an increase of one or more freight train(s) per day. The analysis included:

- The number and types of proposed freight trains.
- The number of passenger trains.
- The operating characteristics, such as the maximum authorized speed for freight and passenger trains.
- The number of main tracks.
- The type of train control system.
- The spacing of interlockings (crossovers) and resulting flexibility in dispatching trains of differing operating speeds.

The following text and tables present SEA's analysis of the potential effects of the proposed Acquisition on the two types of passenger service: intercity passenger and commuter operations.

4.7.1 Intercity Passenger Rail Service

Amtrak operates intercity rail passenger service throughout the nation. Amtrak operates a national system pursuant to the Rail Passenger Service Act of 1970. The Applicants are required, under the terms of the Act and their operating agreements with Amtrak, to afford operating priority to Amtrak trains. Appendix C, "Transportation," includes a list of line segments on which Amtrak operates passenger service on Conrail, CSX, and NS railroad lines. Amtrak and the Applicants (as well as other railroads) have two types of operating arrangements. One involves trackage which Amtrak owns and over which Amtrak controls all train movements. The other involves most of the other Amtrak routes, which are owned and controlled by the Applicants. The first type of operating arrangement, that which Amtrak controls, applies to most of the NEC and to the Michigan Line. Both are discussed in additional detail below.

Freight Service on Amtrak's Northeast Corridor

The 456-mile NEC between Washington, D.C., and Boston, MA, constitutes the most dense and most extensive passenger rail operation in the United States. The NEC was previously owned and operated by Conrail's predecessor railroad companies and was conveyed to Amtrak on April 1, 1976, upon the formation of Conrail. Amtrak controls the NEC, except for the 53-mile

segment in New York and Connecticut that Metro North Railroad controls. Other commuter operations occur on the NEC and are subject to similar controls.

The NEC is equipped with a Centralized Electronic Train Control system, cab-signaling system, and automatic train stop system. While Amtrak trains operate at speeds up to 125 mph, freight trains are not authorized to exceed 50 mph and have additional speed restrictions at specified locations.

The Applicants propose to increase freight trains on Amtrak's NEC, and expect to do so primarily during the late night or early morning hours when the fewest passenger trains operate. This would optimize available capacity. In two or three instances, freight trains have been proposed for operation on short segments of the NEC that may require that either the freight train schedule be adjusted or Amtrak modify its operating plan in terms of track assignments. Because Amtrak controls dispatching and all freight train operations on the NEC are governed by the existing Operating Agreement between Amtrak and Conrail, as well as Amtrak's Northeast Corridor Special Instructions, Amtrak is in a position to preclude any interference with passenger train operations. The Applicants have stated that NS and CSX would assume all terms of Conrail's Operating Agreement with Amtrak on the NEC.

Table 4-7 presents the estimated number of pre- and post-Acquisition passenger and freight trains along the NEC. Passenger trains include both Amtrak and commuter agencies. SEA derived the estimated freight train numbers from the Applicants' Environmental Report, with some modifications, and respective Operating Plans of NS, CSX, and their proposed North Jersey Shared Asset Area (New Jersey SAA). The Applicants' Operating Plans describe their plan to operate freight trains in the late night and early morning hours so as to avoid delays to passenger operations.

SEA's methodology to assess the effect of the Acquisition-related increase in freight trains on various segments of the NEC included an examination of the physical conditions such as the number of main tracks, spacing of interlockings, train control methods employed, maximum authorized speeds for both freight and passenger trains, and known operating constraints. SEA has consulted with Amtrak and the commuter operating authorities that use the NEC. SEA has also consulted with individuals and agencies with considerable experience related to the NEC, including the Federal Railroad Administration, which has oversight of the Northeast Corridor Improvement Program (NECIP).

For study purposes, SEA divided the NEC to the north and to the south of Newark, New Jersey. North of Newark, New Jersey (which corresponds with the Lane Interlocking, shown in Table 4-7), the Applicants propose no increase in freight train operations with the proposed Acquisition.

Table 4-7
Current and Proposed Operations on Amtrak's Northeast Corridor

Segment	Main Tracks	Miles	Passenger Trains per Weekday [a]		Freight Trains per Day	
			Amtrak	Commuter	Pre-Acquisition	Post-Acquisition
Boston, MA - Readville, MA	2-3	9.7	16	141	0.0	0.0
Readville, MA- Mansfield, MA	2	14.4	16	68	4.0	4.0
Mansfield, MA - RI State Line	2	13.3	16	32	4.0	4.0
RI State Line-New Haven, CT	2	117.2	16	10-20	0.0	0.0
New Haven, CT - Bridgeport, CT	4	17.3	25	68	3.0	3.0
Bridgeport, CT - Norwalk, CT	4	15.0	25	68	2.0	2.0
Norwalk, CT - New Rochelle, NY	4	24.0	25	93	5.0	5.0
New Rochelle, NY - Oak Point, NY	2	10.5	25	0	3.0	3.0
Oak Point, NY - Harold, NY	2	3.7	25	0	0.0	0.0
Harold, NY - Penn Station, NY	4	3.7	138	402	0.0	0.0
Penn Station, NY - Lane, NJ	2-4	12.3	93	240	0.0	0.0
Lane, NJ - Union, NJ	4	7.4	93	184	3.4	11.0
Union, NJ - County, NJ	4	13.1	93	96	3.4	11.0
County, NJ - Midway, NJ	4	8.5	93	82	3.4	11.0
Midway, NJ - Trenton, NJ	4	15.4	93	82	3.4	11.0
Trenton, NJ - Morrisville, PA	4	1.6	93	52	3.4	11.0
Morrisville, NJ - N.Phila., PA	4	26.7	93	52	3.4	7.1
N. Philadelphia, PA - Zoo, PA	5	3.0	93	148	3.4	7.1
Zoo, PA - Phil, PA (Pass.)[b]	4-5	3.6	93	148	n/a	n/a
Zoo, PA - Phil, PA (Freight)[b]	1	3.5	n/a	n/a	8.2	15.8
Phil, PA - Marcus Hook, PA	4	13.5	73	58	2.3	10.5
Marcus Hook, PA - Wilmington,	2-3	9.7	73	38	2.3	10.5
Wilmington, DE - Newark, DE	2-3	12.1	73	14	2.3	10.5
Newark, DE - Perryville, MD	2-3	20.5	73	0	4.5	12.4

Table 4-7
Current and Proposed Operations on Amtrak's Northeast Corridor

Perryville MD - Bay View Yard, MD	2-4	32.4	73	14	14.3	15.6
Bay View Yard, MD - Baltimore,	3-4	3.5	73	14	2.4	7.7
Baltimore, MD - Bowie, MD	2-3	24.8	73	44	2.4	7.7
Bowie, MD - Landover, MD	2-3	8.3	73	44	3.2	12.5
Landover, MD- Washington, D.C.	2	7.2	73	44	n/a	n/a

[a] SEA assumed no changes in Amtrak or commuter rail train traffic.
[b] The "Zoo-Phil" segment of the NEC entirely separates passenger trains from freight. This provides a freight- only bypass of Philadelphia's 30th Street Station.

On the NEC between New York City and Boston, there are no current or proposed through freight train operations. In Massachusetts, Conrail provides only local freight services on the NEC. Conrail does not operate any service in the State of Rhode Island. On the NEC west of New Haven, Conrail provides only local service in the New Haven to Bridgeport area. Portions of the NEC in Connecticut and New York carry no local freight service. There are no freight operations through the Hudson River and East River tunnels of the NEC, which are also used by New Jersey Transit and the Long Island Railroad.

Amtrak also owns and operates the Harrisburg Branch of the NEC (not shown in Table 4-7). This 105-mile branch connects Philadelphia, Pennsylvania, to Harrisburg, Pennsylvania. Conrail operates only local freight service on this branch. With the proposed Acquisition, NS does not expect to operate through freight service or increase service on this line.

As mentioned, the Applicants have stated they have no plans to increase the small number of local trains on the above portions of the NEC. Because of operational and physical considerations mentioned above, SEA believes that there is no effect from the proposed Acquisition on the Newark, New Jersey to Boston, Massachusetts, portion or the Harrisburg Branch of the NEC.

South of the Newark, New Jersey area, SEA evaluated other specific locations along the NEC. As shown in Table 4-7, at least four main line tracks exist between Newark, New Jersey, and Marcus Hook, Pennsylvania. This number of main line tracks provides higher capacity and allows Amtrak more operating flexibility than south of Marcus Hook. Between Newark, New Jersey and Marcus Hook, the Applicants propose various increases of between 3.7 and 8.2 freight trains per day as a result of the proposed Acquisition. (On the freight rail line segment identified by the Applicants that runs south of Marcus Hook to Newark, Delaware, the number of commuter trains decrease, considerably.)

Two other specific features north of Marcus Hook also facilitate the proposed freight traffic increases. The additional four freight trains passing through Philadelphia would not use the NEC, as they instead would use the 2.2-mile freight-only bypass of Amtrak's 30th Street Station area. As noted in Table 4-7, this Zoo to Phil trackage would enable freight trains to bypass the complex array of turnouts and switches at the 30th Street Station. Also, a substantial portion of freight trains operating on the NEC within New Jersey would either enter or exit the NEC at Morris Interlocking, at the Delaware River near Trenton. The "fly-over" arrangement of this Interlocking permits freight train movements to and from the NEC without crossing in opposition to other freight or passenger train movements.

South of Marcus Hook toward Washington, D.C., the NEC contains mostly a two and three-track main line. A four-track mainline exists for some stretches north of Baltimore. The two-track B&P Tunnels in Baltimore and double-track river crossings such as over the Susquehanna and Gunpowder Rivers in Maryland are potential operating constraints.

Between Marcus Hook and Baltimore, the total number of passenger trains becomes progressively smaller in the NEC. The Applicants have proposed to increase freight trains between 1.3 and 9.3 per day. The NS Operating Plan includes a capital expenditure in the Wilmington, Delaware, area for restoration of the Shellpot Connection, which would in turn remove freight operations from a 7.2-mile segment of the NEC. This routing would divert all of the proposed 10.5 freight trains per day to the freight-only Edgemoor Yard alignment, off of the NEC.

SEA noted other existing operating characteristics along the NEC south of Marcus Hook, including numbers of passenger trains and potential conflicts at night. For instance, between Marcus Hook and Newark, Delaware, commuter service on the NEC decreases by more than half. Between Newark, Delaware, and Perryville, Maryland, there are no Amtrak passenger stations or commuter train operations. Between midnight and 6:00 a.m., 4.3 passenger trains utilize this segment, along which the Applicants propose to add 7.9 freight trains.

On the segment between Perryville, Maryland and Bay View Yard, which is 3.5 miles north of Baltimore's Penn Station, current freight operations already include 14.3 trains per day. The Applicants propose to add 1.3 trains to this number. Between midnight and 6:00 a.m., 8.3 passenger trains operate on this segment and through to Baltimore's Penn Station. Most of the freight trains on the NEC between Perryville and Bay View Yard originate or terminate at Bay View Yard, which is the intermodal facility accessed from East Lombard Street. Other freight trains enter and exit the NEC at Perryville on the Port Road Branch to and from Harrisburg.

SEA examined the southernmost portion of the NEC, between Baltimore, Maryland and Washington, D.C. The Applicants propose to add 5.3 freight trains per day between Baltimore and Bowie, Maryland. Between Bowie and Landover, Maryland, the Applicants propose an increase of 9.3 freight trains, for a total of 12.5 per day. The segment between Baltimore and Landover has two or three main tracks. The significant constraint is the 1.0-mile, double-track,

1.35 percent grade southbound through the B&P Tunnels in Baltimore. Passenger trains are limited to 30 mph in the tunnels, freight trains to 20 mph. In addition, freight trains must be clear of the tunnels by the beginning of morning passenger train operations at about 5:00 a.m. From Landover to Washington, D.C., freight trains operate adjacent to but not on the NEC.

While increases in freight traffic would result from the proposed Acquisition, SEA's examination of the NEC south of Newark, New Jersey, considered the Applicants' proposed increases and general times (late night hours) of operations. SEA's evaluation indicates that the proposed Acquisition would be likely to have no effects on passenger service south of Newark, New Jersey.

After the proposed Acquisition, the number of freight trains on the NEC still would be no more than the number of freight trains on the NEC prior to the formation of Conrail in 1976. Since that time, there has been an increase in NEC capacity as a result of the Northeast Corridor Improvement Program (NECIP), including many of the facilities already mentioned and signal improvements. Through its operating control of the NEC, Amtrak controls the schedule for the necessary "track-out" time for maintenance of way, a substantial amount of which is done at night. As stipulated in the current Operating Agreement, which would be assumed by NS and CSX, it would be necessary for the Applicants and Amtrak to schedule freight operations carefully on the NEC.

In summary, the proposed increases in the number of freight trains on the Northeast Corridor should not affect existing passenger operations. These passenger operations occur mainly during the daytime hours. SEA believes at this time that there would be no Acquisition-related impact on passenger service on the Northeast Corridor by freight operations.

Freight Service on Amtrak's Michigan Line

The Amtrak Michigan Line operates between Kalamazoo, Michigan, and Porter, Indiana, a distance of 97 miles. Currently there are eight daily Amtrak trains and one Conrail local freight train on this rail line. Conrail dispatches this rail line on behalf of Amtrak. The Applicants propose to assign this function to NS. NS has not proposed any increases in freight traffic. The Michigan Line has frequent passing sidings to minimize delays and a traffic control system to optimize train routings and timings.

As of November 1997, NS and Canadian Pacific Railway (CP) continue to discuss potential haulage rights between Detroit, Michigan, and Chicago, Illinois, via Amtrak's Michigan Line. Currently, Canadian Pacific has trackage rights via CSX between Detroit and Chicago through Grand Rapids, Michigan, a generally parallel but more circuitous route. In addition, CP has filed a Responsive Application with the Board for granting of trackage rights over this rail line. At the time of SEA's analysis, no agreement has been reached between NS and CP.

Recognizing the pending discussions between NS and CP on haulage rights and the Board's pending consideration of the CP request for trackage rights on Amtrak's Michigan Line, SEA believes at this time that the proposed additional freight trains could be accommodated with no effect on rail passenger service on the Michigan Line. As on the NEC, Amtrak controls all access to the Michigan line even though Conrail provides the dispatching service; therefore, any proposed increases in freight operations would have to be approved by Amtrak. SEA concludes that there would be no impact from the proposed Acquisition on the passenger service on the Michigan Line.

Amtrak Service on Freight Lines

SEA compiled an inventory of rail line segments owned by the Applicants over which Amtrak operates passenger service that could be affected by the proposed Conrail Acquisition. SEA identified those segments that would have an increase of at least one or more freight trains per day as a result of the proposed Acquisition. SEA then analyzed these segments to assess their capability to accommodate intercity passenger service and the proposed increase in freight trains.

Of the approximately 44,000 route miles associated with the proposed Acquisition, Amtrak operates on approximately 7,200 miles. Conrail, CSX, and NS own the tracks on which much of the Amtrak system operates in the states of Alabama, Florida, Georgia, Indiana, Illinois, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Virginia and West Virginia. The Rail Passenger Service Act of 1970, as amended, provides substantial statutory powers of access by Amtrak over freight railroad lines.

The Applicants have Operating Agreements with Amtrak regarding its passenger service operations on their lines. These operating agreements contractually commit the Applicants to grant dispatching preference to Amtrak trains to accommodate the Amtrak schedule, which typically has between two and ten trains per day on specific freight routes. The Operating Agreements are relatively uniform in the provisions for liability, performance incentives, maintenance of a line's level of utility, arbitration of disputes, and contract renewal, with specific operating standards for each Amtrak route. Key elements of the operating agreements are highlighted below.

- The Conrail Operating Agreement with Amtrak will expire on April 14, 2006. As a result of the proposed Acquisition, CSX would assume control of 794 route miles of the 1,669 route miles of Conrail track on which Amtrak presently operates in Illinois, Indiana, Massachusetts, Michigan, New York, Ohio, Pennsylvania, and the District of Columbia. NS would assume control of 875 route miles of Conrail in Pennsylvania, Ohio, Indiana, Michigan, and Illinois on which Amtrak operates. In accordance with the terms of their contract, the Applicants would assume all Conrail responsibilities and terms.

- The CSX Operating Agreement with Amtrak will expire on March 31, 2002 for Amtrak service in the states of Alabama, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Mississippi, Ohio, Pennsylvania, North Carolina, South Carolina, Virginia, and West Virginia. Amtrak service utilizes approximately 4,189 route miles on CSX.

- The NS Operating Agreement with Amtrak will expire on May 1, 2000 for passenger service in the states of Alabama, Georgia, Mississippi, Missouri, North Carolina, South Carolina, and Virginia. Amtrak service utilizes approximately 1,311 route miles on NS.

SEA identified 112 post-Acquisition CSX rail line segments constituting 4,983 route miles that would have Amtrak passenger service. The segments that CSX would acquire from Conrail are located in Massachusetts, New York, Ohio, Pennsylvania, and the District of Columbia. The increases in freight train traffic resulting from the proposed Acquisition would range from one to 26 freight trains per day on 58 of the 112 post-Acquisition CSX segments with Amtrak trains; this represents about 2,440 route miles.

SEA also identified 39 post-Acquisition NS rail line segments constituting 2,186 route miles that would have Amtrak passenger service. The segments that NS would acquire from Conrail are located in Illinois, Indiana, Michigan, Ohio, and Pennsylvania. The increases in freight trains resulting from the proposed Acquisition would range from one to 14 freight trains per day on 14 of the 39 segments with Amtrak service, which represents about 980 route miles.

For those rail line segments with an increase of one or more freight trains per day, SEA examined the operating characteristics of the rail line segment, including the number of Amtrak trains, and any commuter trains, the number of main tracks, the spacing of crossovers, the spacing of passing sidings, the train control system, the maximum authorized speed, the incremental increase in freight trains per day, and known capital improvements planned for the line segment. Appendix C, "Transportation," presents the line segments with Amtrak service.

Based on its examination of the various characteristics of each rail line segment and the levels of Amtrak passenger service, SEA believes that there is sufficient capacity on all of these rail line segments to accommodate the increases in freight trains proposed by the Applicants, while also meeting contractual commitments to Amtrak. Therefore, there would be no impact on intercity rail service by increased freight train operations resulting from the proposed Conrail Acquisition. Each of the rail line segments with Amtrak service and an Acquisition-related increase of one or more freight trains per day are discussed in the appropriate state section of Chapter 5, "State Settings, Impacts and Proposed Mitigation."

4.7.2 Commuter Rail Service

The potential effect of the Conrail Acquisition on commuter rail service in metropolitan areas is addressed in this section. Several metropolitan areas where Conrail, CSX, and NS operate have commuter rail service. SEA evaluated those where any of the Applicants own rail line

segments, or have trackage rights on lines owned and operated by Amtrak, or on lines owned and operated by commuter authorities. Table 4-8 lists those metropolitan areas and the associated commuter authorities. Figure 4-3 shows their locations.

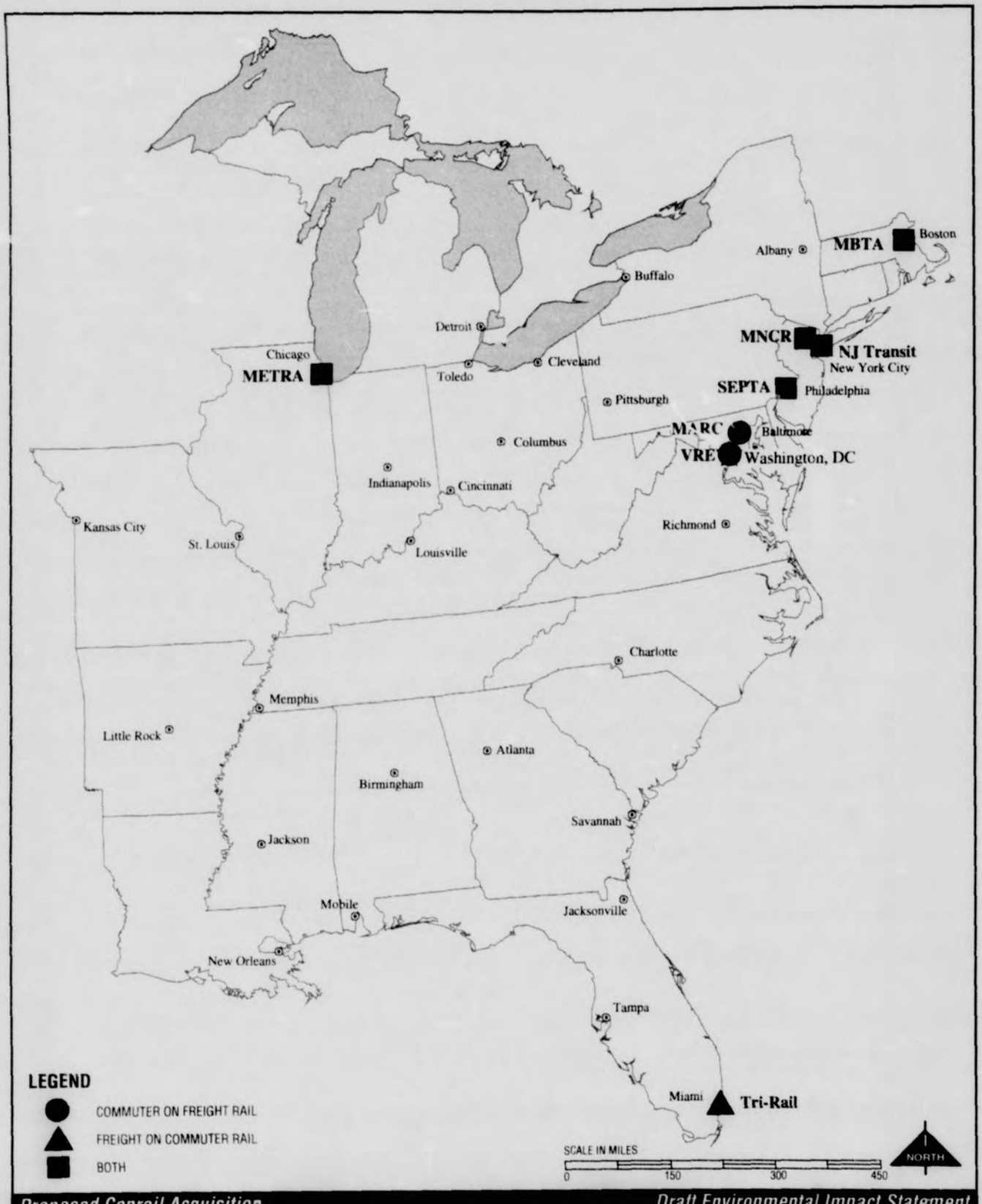
Table 4-8
Commuter Rail Operating Authorities

Metropolitan Area	Commuter Operating Authority	Daily Passengers
Boston, MA	Massachusetts Bay Transportation Authority (MBTA)	80,000
New York City	Metro North Railroad (MNR)	201,000
	New Jersey Transit Rail Operations (NJT)	179,900
Philadelphia, PA	Southeastern Pennsylvania Transportation Authority (SEPTA)	70,000
	New Jersey Transit Rail Operations (NJT)	2,500[a]
Washington, D.C.	State of Maryland Mass Transit Administration (MARC)	18,000
	Virginia Railway Express (VRE)	7,000
Miami, FL	Tri-County Commuter Rail Authority (Tri-Rail)	9,000
Chicago, IL	Northern Illinois Railroad Corp. (METRA)	233,000

[a] NJT operates from Philadelphia to Atlantic City.

Most of the above commuter rail services exist in the Conrail service area. As mentioned in Section 4.1.1, one of the many significant results of the formation of Conrail in 1976 was the opportunity to segregate freight and passenger services to a greater extent than had been possible previously. Until 1983, Conrail had been the contractor providing train crews, maintenance, ticketing, and other services for commuter authorities in the Boston, New York City, Philadelphia, and Washington, D.C. metropolitan areas. On January 1, 1983, Conrail withdrew from the provision of commuter support services, in accordance with the Northeast Rail Passenger Service Act of 1981.

The result allows Conrail to focus through freight train movements on rail lines other than primary intercity and commuter lines. Some of these Conrail lines include the River Line between Northern New Jersey and Selkirk Yard, near Albany; the Lehigh Line between Northern New Jersey and Harrisburg, Pennsylvania; the Trenton Line between Northern New Jersey and Philadelphia, Pennsylvania; and the Harrisburg Line between Philadelphia and Harrisburg. This separation of freight and passenger trains permits almost all freight rail tonnage between Philadelphia and Northern New Jersey to operate with negligible interference with either Amtrak's or commuter authorities' operations. For this reason, SEA expects that commuter operations in the New York and Philadelphia metropolitan areas would be unaffected by the proposed Acquisition.



Proposed Conrail Acquisition *Draft Environmental Impact Statement*

FIGURE 4-3

COMMUTER RAIL OPERATIONS SHARING FREIGHT LINES

As with Amtrak intercity passenger trains, SEA conducted an assessment of the effect on commuter service for those line segments which had an increase of one or more freight trains per day. Table 4-9 provides a summary of the metropolitan areas and the regional commuter rail routes where the Applicants propose to increase freight train service. In its evaluation of potential service effects, SEA considered the operating characteristics such as the number of main tracks, proposed number and type of freight trains, number of commuter trains and their distribution throughout the day, spacing of crossovers, and maximum authorized operating speeds as well as what authority controls dispatching.

The results of SEA's assessment follow, by metropolitan area and commuter operator, for commuter routes identified in the above table. Freight train operations on commuter lines in the Boston (MBTA) and Miami (Tri-Rail) areas would not increase more than one freight train per day. Therefore, these areas are not evaluated below.

New York City: New Jersey Transit

New York City (Penn Station) - Trenton, New Jersey

This commuter rail service, with 13 stations, is operated by New Jersey Transit (NJT) on Amtrak's Northeast Corridor for 58 miles between Trenton, New Jersey, and New York City (Penn Station). The line is dispatched by Amtrak and is one of the densest passenger train operations in the United States, with as many as 184 passenger trains on a weekday on the northern 20-mile portion of the route, as indicated in Table 4-9.

The NEC on this segment has four main tracks, with six main tracks for five miles at the Union Interlocking. NJT trains primarily use the outside tracks for access to station platforms. The inside tracks are utilized by faster trains, primarily Amtrak. Since there are few NJT and Amtrak trains in the late night hours on this segment, SEA anticipates that available capacity would permit passenger trains on the outside tracks while accommodating the additional proposed 7.6 freight trains on the inside tracks when necessary. Since the freight trains are proposed to operate in the nighttime period, SEA anticipates that the increase would have no adverse impact on commuter service between New York City and Trenton, New Jersey, on the Northeast Corridor. Therefore, at this time, SEA does not believe mitigation is necessary. Furthermore, Amtrak can control the access to the NEC to prevent freight operations at times that would conflict with passenger train movements.

Croxton Yard, New Jersey - Port Jervis, New York

This 93-mile commuter rail line is a unified operation of NJT in New Jersey and Metro North Railroad (MNR) in New York State, with dispatching control by NJT for the entire segment. If the proposed Acquisition is implemented, NS would acquire Conrail's trackage rights over the rail segments along this route and increase traffic by 3.1 freight trains per day. The rail line has two to four main tracks in New Jersey and is owned and operated by NJT. About 85 percent of the commuter trains operate on this portion of the route.

Table 4-9
Metropolitan Areas and Commuter Rail Line Segments With Post-Acquisition Increases in Freight Operations

Metropolitan Areas Origin-Destination	Current Track Owners	Post-Acquisition Rail Operators		Existing Daily Commuter Trains	Proposed Increase in Daily Freight Trains
		Commuter Rail	Freight Rail		
New York City, NY					
New York City to Trenton, NJ	Amtrak (Northeast Corridor)	NJ Transit	Shared Assets Operating Area	82 to 184	7.6
Croxton Yard, NJ to Port Jervis, NY	NJ Transit in NJ[a] Conrail in NY	NJ Transit[b]	NS	16 to 94	3.1
Philadelphia, PA					
Trenton, NJ to Philadelphia, PA	Amtrak (Northeast Corridor)	SEPTA	Shared Assets Operating Areas	52	3.7
Newark, DE to Philadelphia, PA	Amtrak (Northeast Corridor)	SEPTA	NS and CSX	14 to 100	8.2
Washington, D.C.					
Baltimore, MD (Penn Station) to Washington, D.C.	Amtrak (Northeast Corridor)	MARC	NS and CSX	40-44	5.3 to 9.3
Baltimore, MD (Camden Station) to Washington D.C.	CSX	MARC	CSX	22	3.1 to 6.9
Martinsburg, WV to Washington D.C.	CSX	MARC	CSX	10 to 18	7.0 to 8.3
Fredericksburg, VA to Washington D.C.	CSX	VRE	CSX	12 to 26	7.1 to 10.7

Table 4-9
Metropolitan Areas and Commuter Rail Line Segments With Post-Acquisition Increases in Freight Operations

Metropolitan Areas Origin-Destination	Current Track Owners	Post-Acquisition Rail Operators		Existing Daily Commuter Trains	Proposed Increase in Daily Freight Trains
		Commuter Rail	Freight Rail		
Manassas, VA to Washington, D.C.	NS, CSX, and Conrail	VRE	NS from Manassas to junction south of Alexandria, VA; CSX from junction to Washington, D.C.	14 to 26	1.8 to 10.7

[a] Conrail ownership New York with dispatch control by NJ Transit
[b] Operator for Metro North Commuter Railroad

The portion of the rail commuter line west of Suffern, New York, to Port Jervis, New York (66 miles) carries 16 passenger trains to Campbell Hall, New York. The Campbell Hall to Port Jervis portion includes about three daily freight trains operated presently on trackage rights by the New York, Susquehanna, and Western Railway (NYSW). Because NYSW trains currently carry both NS and CSX freight, it is uncertain whether the NYSW would operate all three trains after the proposed Acquisition is implemented.

Between four miles west of Suffern, New York, and Port Jervis, New York, Metro North Railroad sponsors the NJT-operated trains on a single main track, with three intermediate, controlled passing sidings. These trains generally operate inbound to Hoboken, New Jersey, in the morning peak period and outbound to Port Jervis, New York, in the afternoon peak period, with limited mid-day service. Thus, the Suffern to Port Jervis line has adequate time periods available for the proposed freight train operations. The portion of the line with single track and passing sidings does not permit substantial operating flexibility during the commuter peak periods. NS acknowledges these limitations and realizes that capacity expansion would be necessary if NS wants to operate the proposed increase of three to four freight trains during the peak commuter periods. However, SEA's preliminary conclusion is that adequate capacity exists to operate the proposed number of freight trains on the Suffern to Port Jervis portion. MNR has stated its desire to acquire the Suffern to Port Jervis portion and to increase capacity on the line for future expansion of commuter service.

SEA has analyzed the commuter line segment and believes that the present commuter operation would not be adversely effected by the proposed Conrail Acquisition. The line is dispatched by NJT and has adequate capacity to accommodate the proposed increase in freight trains. At this time, SEA does not believe mitigation is necessary.

Philadelphia: Southeastern Pennsylvania Transportation Authority

Trenton, New Jersey - Philadelphia, Pennsylvania

This 33-mile commuter rail segment is part of the Southeastern Pennsylvania Transportation Authority (SEPTA) system, operating frequent service between Trenton, New Jersey, and Philadelphia at the 30th Street Station on Amtrak's Northeast Corridor. This commuter route has four mainline tracks, with similar capacity to the route north of Trenton, New Jersey. Amtrak dispatches all trains and limits freight train movements on the NEC to optimal freight windows that include hours when commuter rail service does not operate. As indicated in Table 4-9, there would be an increase of 3.7 freight trains per day, for a total of 7.1 on this route. This increase would occur in the late night or early morning hours and thus would have no effect on SEPTA's ability to operate its service.

SEA has analyzed the potential effect of the proposed Acquisition and, based upon the substantial capacity available on this segment of the NEC during the night hours, SEA does not believe at this time that there would be any adverse impact on the SEPTA service between Trenton and Philadelphia. SEA does not believe mitigation is necessary.

Philadelphia, Pennsylvania - Newark, Delaware

This commuter rail service is part of the SEPTA system, with financial support from the State of Delaware for service in that state. The service is operated on Amtrak's NEC and dispatched by Amtrak. Most of this route has four main tracks. SEPTA's primary service is on the portion, with four main tracks between Philadelphia and Wilmington, Delaware.

NS proposes to operate 10.5 freight trains per day, an increase of 8.2 freight trains on the route. The increase in freight train levels would occur during the nighttime hours when there is minimal passenger service on the route. NS also proposes to rehabilitate the Shellpot Connection for restoration of freight train operations on the 7.2-mile bypass of Wilmington, Delaware, removing freight trains from the NEC.

Given that the increase in freight train operations on the line segment is proposed to be at night, the route is owned and dispatched by Amtrak, and the Shellpot Connection would bypass a portion of the route, SEA does not believe that there would be an impact on passenger service on the Philadelphia to Newark, Delaware, route. At this time, SEA does not believe mitigation is necessary.

Norristown, Pennsylvania, Connector

This 0.5-mile commuter rail segment, which connects Conrail's Morrisville and Harrisburg lines, is owned and controlled by SEPTA. The line segment would have a proposed post-Acquisition increase of 2.6 freight trains per day, for a total of 10.3 freight trains. The increase is planned by NS to be temporary until the completion of planned post-Acquisition work to increase clearance on the Pattenburg Tunnel on the Lehigh Line in New Jersey. Because the freight traffic increase is small, and SEPTA controls the interlocking for the 0.5-mile segment, the proposed temporary increase in freight trains would present no adverse effect on SEPTA passenger service on the Norristown Connector.

Upon completion of the Pattenburg Tunnel project, there will be approximately 1.4 fewer freight trains than at present on the route. At this time, SEA does not believe mitigation is necessary.

Washington, D.C.: Maryland Rail Commuter System

The Maryland Mass Transit Administration is responsible for the Maryland Rail Commuter System (MARC). The MARC system operates approximately 80 trains daily on three routes, constituting 187 route miles on rail lines owned by Amtrak and CSX. MARC's Penn Line trains use Amtrak's NEC and is MARC's highest ridership route. MARC's Camden Line and Brunswick Line operate on CSX lines which presently have substantial freight train levels that are proposed to increase after the proposed Acquisition. SEA notes that CSX and the Maryland Mass Transit Administration signed an operating agreement in September 1997 for services on these routes through 1999 and therefore believes that no mitigation is necessary.

Baltimore, Maryland (Penn Station) - Washington, D.C., on Northeast Corridor

This 40.3-mile commuter route, known as the Penn Line, is part of the MARC system which operates on Amtrak's Northeast Corridor. This route has three main tracks, with the exception of the B&P Tunnel in Baltimore, Maryland, which has two tracks. Amtrak dispatches MARC trains on the NEC, and provides crews and other services to MARC.

The proposed increase in freight trains on the route is planned for nighttime hours when freight trains can be more readily accommodated, because the B&P Tunnel is a constraining factor in dispatching on the route. The route would be principally utilized by NS, with CSX operating freight trains on the Bowie to Landover, Maryland, portion to access the Popes Creek Secondary, which is assigned to CSX in the proposed Acquisition. Because the Applicants propose to operate their planned increase of 5.3 to 9.3 freight trains during the night hours, SEA anticipates no effect on MARC service. As with other segments on the NEC, SEA recognizes Amtrak's ownership and ability to control the dispatching of trains on the line segment. At this time, SEA does not believe mitigation is necessary.

Baltimore, Maryland (Camden) - Washington, D.C.

This 38-mile commuter route, known as the Camden Line, is part of the MARC system that uses the CSX rail line between Baltimore and Washington. This route has two main tracks and is

dispatched by the CSX traffic control system. CSX also provides train crews and other passenger train-related services to MARC. The current Operating Agreement between MARC and CSX permits MARC to operate up to 20 commuter trains per weekday on this segment. This Agreement is in effect until December 31, 1999. Based on the route's capacity and the provisions of the Operating Agreement, and the fact that current MARC service is within the level provided for in the Agreement, SEA has determined that the proposed increase of between 3.1 and 6.9 freight trains per day on the route would not affect current MARC rail service. However, any future increase in commuter rail service would require a new operating agreement between MARC and CSX. Because it appears that no adverse impact to commuter operations exist on this segment, SEA does not believe mitigation is necessary at this time.

Martinsburg, West Virginia - Washington, D.C.

This 74-mile commuter rail service, known as the Brunswick Line, is part of the MARC system that is operated on CSX's route to the west from Washington, D.C. Amtrak's Capitol Limited also uses this commuter route. The route has two main tracks on which CSX proposes to operate 30.8 freight trains per day on the portion east of Point of Rocks, and 41.6 trains west of that point, where the Old Main Line Subdivision joins the Metropolitan Subdivision. The increase is 7.0 and 8.3 freight trains per day, respectively.

The Operating Agreement between MARC and CSX permits operation of up to 16 MARC trains on weekdays on this route, excluding a new service to Frederick, Maryland, which is planned to commence in 1999. The current Agreement is in effect until December 31, 1999, although the agreement for the service to Frederick extends through 2004. Based upon the capacity of the line segment, the provisions of the Operating Agreement, and the fact that the current level of MARC service is within the level provided for in the Agreement, SEA does not anticipate that the proposed increase in freight trains per day would affect current MARC service, including the planned service to Frederick, Maryland. Any further increases in commuter rail service would require a new operating agreement provision, except the Frederick, Maryland service, which has an operating provision through 2004.

SEA has analyzed the potential effect on MARC rail commuter service on this route and believes that there would be no effect as a result of the proposed Conrail Acquisition and that no mitigation is necessary at this time.

Washington, D.C.: Virginia Railway Express

Virginia Railway Express (VRE) is a subsidiary of the Northern Virginia Transportation Commission and the Potomac and Rappahannock Transportation Commission. VRE presently operates 26 trains on two routes: (1) the Fredericksburg Line, owned primarily by CSX and (2) the Manassas Line, owned primarily by NS.

Fredericksburg, Virginia - Washington, D.C.

This 55-mile commuter route is part of the VRE system, which operates 12 trains on weekdays on this route. The highest ridership is at L'Enfant Station in Washington, D.C. and Crystal City in Virginia. This route has two main tracks, except for one bridge at Quantico, Virginia, which is single track and an operating constraint at most times. The line segment is dispatched by CSX and is also used by 18 Amtrak trains, one of the densest Amtrak routes outside the NEC. VRE is presently limited to operating 12 trains per day in accordance with its Operating Agreement with CSX, which is in effect until June 30, 1999. The Operating Agreement specifies certain track capacity improvements that would have to be completed before service on the line segment could be increased. Section 4.7.1, above, discusses Amtrak service.

CSX proposes an increase of 7.1 to 10.7 freight trains per day, for a total of 23.4 trains. This total is well within the capacity of this route, including the Amtrak and VRE passenger trains. In addition, CSX has begun certain signal and crossover track improvements which will add some operating flexibility and reliability to the route. CSX has also proposed in its Operating Plan certain improvements to the Virginia Avenue Tunnel in Southeast Washington, D.C. The improvements would improve the movement of both passenger and freight trains through this tunnel, which currently is a constraint to passenger train operations in the District of Columbia.

Based upon the provisions of the Operating Agreement between VRE and CSX and the fact that VRE train service level on the Fredericksburg Line is within the level provided for, the proposed increase in CSX freight trains is not expected to adversely affect commuter service. SEA has analyzed the segment and believes, based upon the information available, that mitigation is not necessary at this time.

SEA has noted that FRA, Amtrak, the State of Virginia, VRE and CSX are conducting a study of the CSX Washington to Richmond route to identify needed improvements for future rail passenger service in this corridor. The report will include a priority for capital spending necessary for a major passenger service expansion, at higher operating speeds.

Manassas, Virginia - Washington, D.C.

This 36-mile commuter route is part of the VRE system, with 14 to 26 trains per weekday between Manassas, Virginia and Washington, D.C. The highest ridership is at L'Enfant Station in Washington, D.C. and Crystal City Station in Virginia. The VRE operates over NS rail lines for the 27-mile segment from Manassas to Alexandria, then over CSX and Conrail rail lines beyond to Washington, D.C.'s Union Station. The NS segment has two main tracks. NS proposes to operate 9.6 freight trains per day, an increase of 1.8 over the present level, which is far below the capacity of the route.

The Operating Agreement between VRE and CSX is annually renewable for the NS portion of the Manassas, Virginia, to Washington, D.C. commuter train service. Between Alexandria, Virginia, and Washington, D.C., the service is in accordance with the CSX Operating Agreement in effect through June 30, 1999. The NS portion of the Manassas Line has more than sufficient

capacity to accommodate expansion of VRE service. The present constraint on the CSX segment (described in the previous section on the Fredericksburg route) prevents an increase in VRE service to Manassas.

SEA has analyzed the VRE Manassas Line. Based upon the information available at this time, there does not appear to be an adverse impact on commuter service to Manassas. SEA does not believe mitigation is necessary at this time.

Chicago, IL: METRA (Northeast Illinois Railroad Corporation)

Chicago (Belt Junction) - Orland Park, IL

This 15-mile route is leased from NS by METRA, which operates 16 trains between Chicago Union Station and Orland Park, Illinois. The route is dispatched by NS. The Operating Agreement between NS and METRA is in effect through January 1, 2003, with METRA having the option to renew for two five-year periods.

This route is unique in that there would be a reduction of 5.2 NS freight trains per day on this route; however, the increase of 5.4 freight trains per day on the intersecting CSX Blue Island Subdivision may affect the METRA service. The CSX Blue Island Subdivision intersects the METRA route at 75th Street (Forest Hill) in an already congested area that includes Belt Junction, about one mile to the east of CSX at 75th Street. The Belt Railway of Chicago (BRC) controls Belt Junction, a heavy-volume freight train interlocking, and CSX controls the 75th Street interlocking, where CSX plans to construct a connection across METRA's leased NS line to the BRC.

SEA believes at this time that the proposed Conrail Acquisition would not necessarily adversely affect present METRA service to Orland Park. Freight train interference with METRA at these and other locations, such as Indiana Harbor Belt Railroad at Chicago Ridge and Canadian National at Ashburn, is a pre-existing situation that requires further attention by all the above parties to resolve. At this time, SEA recommends that CSX continue consulting with METRA to address potential traffic delays at the 75th Street interlocking and proposed connection.

4.8 TRAFFIC AND TRANSPORTATION: HIGHWAY SYSTEM

One of the most important positive aspects of the proposed Conrail Acquisition appears to be an expected benefit to the national and regional highway systems. The proposed Acquisition would result in changes to the freight rail network that would cause reductions in truck traffic on major highways, including the interstate system and on regional, state, and U.S. primary routes.

Background

The Applicants have stated that two types of freight trains -intermodal trains and merchandise trains- would experience increased use as a result of the proposed Conrail Acquisition.

Intermodal trains consist of flat cars that carry highway trailers and containers that are transported for the rail portion of a multi-modal movement. At the origin and destination of the train trips, the trailers and containers are lifted onto and off the trucks.

Merchandise trains consist of conventional rail cars, such as boxcars, flat cars, gondolas, and tank cars that transport various commodities. At the origin and destination of the merchandise train, the freight is loaded and unloaded with the appropriate equipment (for example, fork lifts and cranes) for each individual car. According to the Applicants, the increased use of both types of freight trains linking markets in the Northeast with the Southeast and with Midwestern gateways would result in reduced use of trucks for the movement of goods.

Following is a summary of CSX and NS estimates of system-wide reductions in truck traffic resulting from the proposed Conrail Acquisition. CSX and NS provided these estimates as part of their Application on June 23, 1997.

The current rail network does not permit CSX and NS to serve several major markets without interchanging with Conrail. This makes it difficult to link market segments such as produce growers in Florida and consumers in the northeastern U.S. Further, there are current capacity constraints at key interchange points between north-south and east-west lines, such as in Cincinnati, and congestion at gateways to railroads serving the western U.S., such as in Chicago. These conditions have, according to CSX and NS, reduced their competitiveness with long haul truck transport. System-wide reductions of truck traffic would result primarily from intermodal truck-to-rail diversions and general merchandise truck-to-rail diversions. SEA acknowledges that some of the truck-to-rail diversions expected by each railroad could be duplicates. This possible double-counting is understandable, particularly for the Northeast Corridor and I-95. Antitrust law principles preclude the railroads from cooperatively dividing freight transport between them. The effect of this partial double counting of truck-to-rail diversions is a somewhat overestimated increase in rail traffic and truck-to-rail diversion of freight transport in some areas.

CSX System Truck-to-Rail Diversions

For CSX, new market diversions represent truck traffic from the major highway corridors onto the expanded CSX intermodal system. These new market opportunities for rail service would result if the proposed Acquisition is approved because of the ability of single carriers to serve extended major travel corridors more efficiently and competitively. Table 4-10 provides the truck-to-rail diversion figures, classified by major highway corridors, provided by CSX for those rail lines that it would acquire from Conrail. These figures represent long-distance truck trips that would be diverted to rail. The estimated length of these intermodal truck trips is slightly less than 1,100 miles per truck load.

CSX has noted that, in addition to the anticipated truck-to-rail diversions on the CSX major corridors described above, the proposed Acquisition would result in the use of intermodal

terminals located closer to shipper markets. Thus, a greater percentage of freight transport trips would be by rail and there would be a further reduction in the number of truck miles traveled. CSX estimates that 42,655 truck loads per year would be diverted from truck to rail as a result of intermodal extended hauls. This would result in an additional annual reduction of 7.4 million highway miles of travel. Each of these trips would represent approximately 175 additional miles of travel by rail for each intermodal truck load. These figures represent only a small portion of the freight transport trips that would be diverted to rail.

Table 4-10
CSX Estimated Truck-to-Rail Diversions on Major Highway Corridors

Highway Corridor	Truck-to-Rail Diversions (truck loads per year)	Reduction in Highway Miles (per year)
Interstate 95 Florida to New England	26,033	30.8 million
Interstate 85 Atlanta to New England	39,980	30.5 million
Interstates 75/79 Southeast to Midwest Memphis Gateway	20,122	19.2 million
Memphis and Midwest to Mid-Atlantic, Northeast, and New England	114,280	116.9 million
Interstates 70/80/90 Northeast to Midwest	121,185	152.1 million
Totals for Corridors	**321,600**	**349.5 million**

Source: Verified Statement of Joseph G.B. Bryan, Volume 2A of Railroad Control Application.

CSX also estimated that truck-to-rail diversions for the shipment of general merchandise would result in an annual reduction of 73,723 truck loads and 46 million highway miles of travel. These general merchandise diversions represent medium-length trips of approximately 625 miles per diverted truck load.

For the CSX system, the estimated system-wide reductions in truck traffic as result of the proposed Conrail Acquisition thus would total 402.9 million highway miles.

NS System Truck-to-Rail Diversions

NS similarly estimated the system-wide diversion of truck traffic from the major highway corridors onto the expanded NS system. Table 4-11 provides the estimated truck-to-rail

intermodal diversion figures for the NS lines. The average length of these diverted truck trips would be approximately 775 miles.

NS estimated truck-to-rail diversions for the shipment of general merchandise. These diversions would result in an additional annual reduction of 113,224 truck loads and of 11 million highway miles of travel. The average length of these diverted truck trips is slightly less than 100 miles.

Table 4-11
NS Estimated Truck-to-Rail Diversions on Major Highway Corridors

Highway Corridor	Truck-to-Rail Diversions (truck loads per year)	Reduction in Highway Miles (per year)
Interstate 95 Florida to New England	17,119	18.5 million
Interstates 81/77 Northeast to Southeast	179,946	151.9 million
Interstates 65/75 Great Lakes to Florida and Gulf Coast	9,096	6.6 million
Interstates 76/80/90 Chicago to Northeast	126,002	82.7 million
Interstates 78/70/71 St. Louis and Cincinnati to New York City	143,613	108.4 million
Totals for Corridors	**475,776**	**368.1 million**

Source: Verified Statements of Patrick J. Krick and John Williams, Volume 2B of Railroad Control Application.

NS noted that the proposed Acquisition would result in the potential diversion of 90 rail cars to truck loads annually as a result of two proposed NS rail line abandonments, one in northern Indiana (Dillon Junction to South Bend) and the second in Ohio (Toledo to Maumee). This would result in an estimated 360 additional truck loads per year. A third rail line abandonment in Illinois by CSX (Paris to Danville) would not result in any rail-to-truck freight diversions. The relative estimated impact of these additional trucks would be less than 0.1 percent of the truck-to-rail diversions and is thus insignificant.

For the NS system, the estimated system-wide reductions in truck traffic resulting from the proposed Conrail Acquisition thus would total almost 380 million highway miles.

System-wide Roadway Evaluation Findings

SEA has reviewed the data and analyses made by CSX and NS for estimating truck-to-rail diversions. SEA finds these procedures and the results reasonable. SEA expects that some duplicate counting occurred but believes it not likely to have changed the order-of-magnitude of the projected diversions. SEA projects that the yearly net reduction in truck travel caused by the proposed Acquisition would be approximately 1.03 million truck trips and approximately 782 million truck miles. SEA further concluded that there would be no adverse environmental impact from the reduction in truck travel as a result of the proposed Conrail Acquisition and that no mitigation is necessary. SEA has determined that this reduction in truck miles traveled would result in beneficial effects on air quality, energy consumption, and the use and associated safety concerns of the interstate highway system. The proposed Acquisition also has the potential to affect traffic near specific intermodal facilities, which are addressed in Chapter 5 in the appropriate state sections.

4.9 TRANSPORTATION: EMERGENCY VEHICLE RESPONSE

In many communities, response to emergency incidents by fire, police, and emergency medical service (EMS) vehicles requires crossing railroad tracks at a highway/rail at-grade crossing. The crossing could be blocked by a train when the emergency vehicle needs to cross the track, potentially delaying the response. Most communities plan and prepare for possible train delays by providing emergency response services (hospitals, fire and police stations, etc.) on both sides of the tracks, constructing separated grade crossings, or improving dispatch center capabilities for knowing where trains are and dispatching emergency response vehicles to avoid potential impacts.

Potential impacts to emergency response vehicles are influenced by specific local conditions, including roadway configuration, the location of separated grade crossings, and the location of emergency response facilities. Appendix C, "Transportation," contains a detailed methodology and table that shows the variation of crossing delay per stopped vehicle with changes in train length and train speed along roadways with different traffic volumes. Because local conditions vary substantially, there is no way to predict, from a system-wide perspective, where Acquisition-related impacts to emergency response vehicles could occur. Figure 4-4 shows the counties analyzed for this issue. SEA has addressed specific local emergency response impacts when communities identified concerns about potential Acquisition-related impacts. These specific locations are discussed in Chapter 5, "State Setting, Impacts and Proposed Mitigation."

Emergency response events are random events that can occur at any time of the day. Likewise, freight trains are not typically scheduled to pass any location at specified times. Because of the randomness of these events, SEA acknowledges that it is impossible to predict actual delays that would occur as a result of Acquisition-related changes in train traffic. There are no national standards for measuring emergency response vehicle delay or the significance of any delay impacts. Therefore, SEA considered evaluation methods for emergency response delays that

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FIGURE 4-4

COUNTIES WITH HIGHWAY / RAIL AT-GRADE CROSSINGS OVER 5,000 ADT ON RAIL LINE SEGMENTS THAT MEET OR EXCEED BOARD THRESHOLDS

would assess the change in possibility of a delay. However, the analysis test applies to the site-specific locale, as discussed in Chapter 5. Train speed changes, community dispatching improvements, and locations of the emergency response equipment/centers are not suited to a system-wide approach. SEA's preliminary conclusion is that there would be no system-wide effect for emergency response, and therefore no system-wide mitigation is recommended.

4.10 TRANSPORTATION IMPACTS: NAVIGATION

A total of 181 railroad bridges which open over navigable waters exist on the three railroads, according to a Federal Railroad Administration database. Of these 181 bridges, 13 movable bridges in Indiana, New Jersey, Ohio, Pennsylvania, Tennessee, Virginia, and the District of Columbia would experience increases in freight train traffic that would meet or exceed the Board's environmental analysis thresholds. The Applicants propose no physical modifications to these movable bridges as a result of the proposed Acquisition, except for the proposed removal of a bridge in Toledo, Ohio, over which the Applicants would cease operations. No new bridges over navigable waters would be constructed as a result of the proposed Acquisition.

U.S. Coast Guard permits dictate all operations on all bridges over navigable waters which currently experience train traffic. Similarly, future operations related to bridge closings and openings are subject to Coast Guard requirements. In accordance with Coast Guard regulations, waterborne traffic has the right-of-way over train traffic at movable bridges. Therefore, SEA believes there would be no system-wide adverse impacts on navigation as a result of increased train traffic. The one bridge abandonment would reduce impacts to navigation. Because there would be no adverse effect, SEA proposes no system-wide mitigation measures. Details on the 13 bridges are presented in Chapter 5 in the appropriate state sections.

Conrail, CSX, and NS state that they currently serve a combined total of 17 ports on the Atlantic and Gulf coasts and 27 ports on the Great Lakes and inland waterways. The Applicants propose to maintain service to these ports. Neither SEA nor the railroads are able to predict any shifts in maritime trade resulting from the proposed Conrail Acquisition.

4.11 ENERGY

4.11.1 Background

In the eastern United States, both railroads and trucks transport freight. Both modes use diesel fuel as their primary fuel source but transport freight at different levels of efficiency.

Chapter 3, Section 3.10, discusses the methods used for SEA's analysis of system-wide energy effects, including the effects of truck-to-rail diversions. According to the Applicants, the proposed Conrail Acquisition would open new single-line service routes. These new routes would, in many cases, provide a more direct and cost-competitive option than the existing highway truck system. Thus, the Applicants predict that the routes would result in truck to rail

diversions of freight traffic. In general, diverting freight from trucks to rail would result in reduced fuel consumption.

4.11.2 Potential System-wide Energy Impacts

SEA evaluated the system-wide impacts of the proposed Conrail Acquisition on the consumption of diesel fuel. Based on the verified statements of CSX and NS, and SEA's analysis of available data, SEA estimated the changes in fuel consumed to transport freight, primarily as a result of the Applicants' estimated truck-to-rail diversions. As noted in Section 4.8, above, SEA acknowledges the probability of some level of double-counting between CSX and NS in terms of truck-to-rail diversions. SEA also analyzed proposed changes in operations at rail yards and intermodal facilities that could affect energy resources.

Additionally, SEA considered the proposed Acquisition's effect on the transportation of energy resources and recyclable commodities. SEA also considered the consumption of energy resulting from vehicular traffic delays at highway/rail at-grade crossings.

Changes in Overall Energy Consumption

The proposed Conrail Acquisition would cause system-wide changes in energy consumption resulting from new traffic that would otherwise be transported by other railroads or other modes of transport (such as trucks), rail-to-truck diversions, and changes in operations at rail yards and intermodal facilities. CSX and NS estimate that the proposed Acquisition would result in diversions of almost 438,000 truckloads of freight to the CSX system[1] and 589,000 truckloads to the NS system[2]. These diversions would move approximately 37.8 billion gross ton-miles to the new CSX and NS systems, which is almost half of the proposed Acquisition's estimated overall increase in gross ton-miles (79.1 billion gross ton-miles). SEA estimated that CSX and NS would experience a post-Acquisition system-wide increased consumption of 106.3 million gallons of diesel fuel as a result of the projected increase in gross ton-miles; of this amount, 52.8 million gallons would be attributable to truck-to-rail diversions. This increase would be more than offset by the estimated decrease in fuel consumed by trucks (186.4 million gallons). SEA estimated that these projected truck-to-rail diversions would result in an annual reduction in diesel fuel consumption of 133.6 million gallons. (See Table 4-12.) Combining these two measures, the annual reduction in fuel consumption would be 80.1 million gallons.

In the Application, CSX and NS state that they anticipate other sources of changes in energy consumption to be insignificant in comparison with the changes from truck-to-rail diversions. SEA analyzed other sources of changes in energy consumption to verify the Applicants' assumptions. Based on this analysis, SEA believes that the anticipated system-wide rail-to-truck

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1 Bryan, G. B., 1997. Verified Statement in Railroad Control Application, Volume 2A.

2 Krick, Patrick J. 1997. Verified Statement in Railroad Control Application, Volume 2B.

diversions (90 rail carloads, which would result in 360 additional truckloads per year based on the ratio of four truckloads per rail car load) would be insignificant when compared with the anticipated truck-to-rail diversions. The proposed changes in rail yard and intermodal facility operations would result in a system-wide increase of 439,000 gallons of diesel fuel. SEA considers this minor because it is 0.3 percent of the estimated fuel consumption change attributable to truck-to-rail diversions.

Table 4-12
Anticipated System-Wide Fuel Consumption from Truck-to-Rail Diversions

Truck-to-Rail Diversion Gross Ton-Miles (GTM)	Diesel Fuel Consumption in Gallons
CSX Truck-to-Rail Diversions	
Fuel from increase rail GTM	28,729,000
Fuel from decrease truck GTM	(83,500,000)
CSX Net Truck-to-Rail Fuel Change	**(54,771,000)**
NS Truck-to-Rail Diversions	
Fuel from increase rail GTM	24,043,000
Fuel from decrease truck GTM	(102,857,000)
CSX Net Truck-to-Rail Fuel Change	**(78,771,000)**
Total System-wide Fuel Consumption Change from Truck-to-Rail Diversions	**(133,585,000)**

Effects on Energy Resources and Recyclable Commodities

Coal is by far the dominant energy resource that CSX, NS, and Conrail currently transport. The Applicants transport coal to electric power utilities, industrial users (such as steel mills), and major ports for export.

CSX and NS state in their Application that the proposed Acquisition would result in greater efficiency in the transportation of coal products in most areas currently served, benefiting coal producers and users on a system-wide basis. Based on available information, SEA anticipates that the proposed Acquisition may result in shifts in marketing of energy resources from one area to another but not decreases in access to energy resources.

Recyclable commodities transported by rail include aluminum alloy scrap, iron and steel scrap, and waste paper. CSX and NS state in their Application that they have no specific plans regarding changes in the transportation of recyclable commodities and do not anticipate the

quantities of recyclable commodities to change as a result of the proposed Conrail Acquisition. However, increased efficiency and competition expected to result from the proposed Conrail Acquisition would enhance the transportation of recyclable commodities.

Energy Effects of Vehicular Traffic Delays at Highway/Rail At-Grade Crossings

Based on its analysis of vehicle delays at highway/rail at-grade crossings, SEA believes that no significant system-wide energy changes would result from these delays. SEA estimated the increase in fuel consumption from expected delays at more than 300 highway/rail at-grade crossings that would have average daily traffic greater than 5,000 vehicles and train traffic increases of eight or more trains per day (air quality attainment areas) or three or more trains per day (air quality nonattainment areas). This analysis is consistent with the air quality impact analysis for crossing delays discussed in Chapter 4, Section 4.12.2, "System-wide Air Quality Impacts." By multiplying the grade crossing vehicle delay by the fuel consumption factor for idling vehicles, SEA estimated that fuel consumption from delays would increase by approximately 2,000 gallons of gasoline per day. Because this increase represents approximately 0.014 percent of total daily motor vehicle gasoline consumption in those states where crossings were analyzed, SEA considered this to be an insignificant impact to energy resources.

Energy Conclusions

The proposed Conrail Acquisition could decrease annual diesel fuel consumption by approximately 133.6 million gallons as a result of the potential truck-to-rail diversions. SEA acknowledges that there probably is a level of duplication in this summary number; however, SEA concurs in the order-of-magnitude presented by the railroads. Other sources of change in fuel consumption are insignificant when compared with the change attributable to truck-to-rail diversions. SEA has concluded that there would be no significant environmental impacts on energy consumption, transportation of energy resources, or recyclable commodities as a result of the proposed Conrail Acquisition.

4.12 AIR QUALITY

4.12.1 System-Wide Air Quality Setting

Air quality is Federally regulated and is measured in comparison with the Environmental Protection Agency's (EPA) National Ambient Air Quality Standards (NAAQS). The attainment status of each county is based on that county's compliance with the NAAQS, which has been established for six air pollutants: sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), carbon monoxide (CO), lead (Pb), and particles under ten microns in diameter (PM_{10}). (See Chapter 3, Table 3-2.) Areas where pollutant concentrations exceed an ambient (outdoor) air quality standard are designated "nonattainment." "Maintenance" areas are areas which the EPA had previously designated nonattainment but has since redesignated attainment because of improvement in air quality.

Figures 4-5 and 4-6 show air quality attainment status by county, as of the Application date. The first figure shows the status (attainment, nonattainment, maintenance) for ozone (O_3) in states potentially affected by the proposed Conrail Acquisition. Volatile organic compounds (VOCs) and NO_x are ozone precursors, which means that ozone is formed through complex photochemical reactions with these gases in the atmosphere in the presence of sunlight. The second figure shows areas that are classified as nonattainment for SO_2, CO, Pb, and PM_{10}.

As described in the air quality methodology in Chapter 3 and Appendix E, "Air Quality," SEA applied more stringent analysis criteria to nonattainment areas than to attainment areas. These criteria helped determine the locations (counties/jurisdictions) for detailed emissions analysis.

The 1977 Clean Air Act Amendments (CAAA) designated Prevention of Significant Deterioration (PSD) Class I areas as all national parks and wilderness areas above certain sizes, and established more stringent standards for certain pollutants (SO_2, NO_2, and PM_{10}). Figure 4-7 shows the Class I air quality areas in the states served by Conrail, CSX, and NS.

SEA determined that no changes in any activity proposed by the Applicants would adversely affect Class I air quality areas. Emissions of the pollutants from rail activities are relatively small and widely dispersed in comparison with major stationary sources that may sometimes adversely affect Class I areas. Rail activities would need to be very close to, or within, Class I areas to adversely affect them. Because there would be no increase in pollutant-emitting rail activities in or adjacent to Class I areas, SEA concludes that air quality in Class I areas would not be significantly affected by the proposed Acquisition.

Northeast Ozone Transport Region

The Northeast Ozone Transport Region (OTR) is an area consisting of the eastern states from Maine southwest through Pennsylvania and Maryland. The OTR also includes just the northern ozone nonattainment portion of Virginia. The Northeast OTR was delineated by the 1990 Clean Air Act Amendments as an area of special concern because of substantial transport of ozone and its precursor pollutants (NO_x and VOC) across state and county boundaries. Because of this transport, many local areas exceeding the ozone NAAQS cannot, through local control, bring their nonattainment areas into compliance with the ozone NAAQS.

Recent Ozone Studies

The issue of ozone (and precursor) transport across large geographic areas has recently received greater attention. This is due, in large part, to studies completed by the Ozone Transport Assessment Group (OTAG), which is a consortium representing 37 states. OTAG was formed to study ozone transport in states east of the Rocky Mountains. It conducted large-scale modeling of ozone transport, including many simulations to determine the effects of emissions on ozone concentrations for areas downwind of the sources. OTAG has found that the transport of ozone and precursors is even a larger-scale concern than implied by the boundaries of the

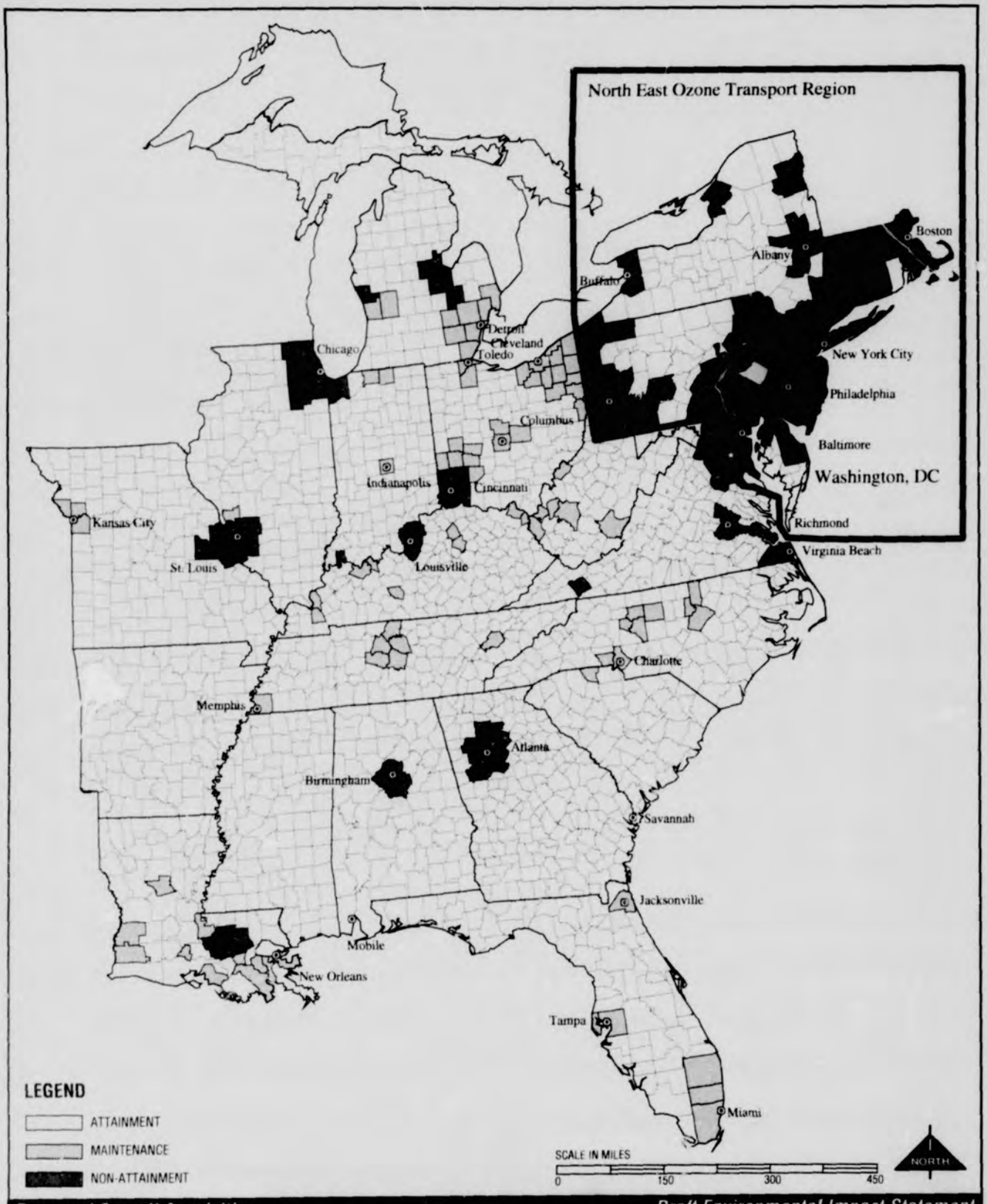

FIGURE 4-5

AREAS OF ATTAINMENT, NON-ATTAINMENT AND MAINTENANCE FOR OZONE (O_3)

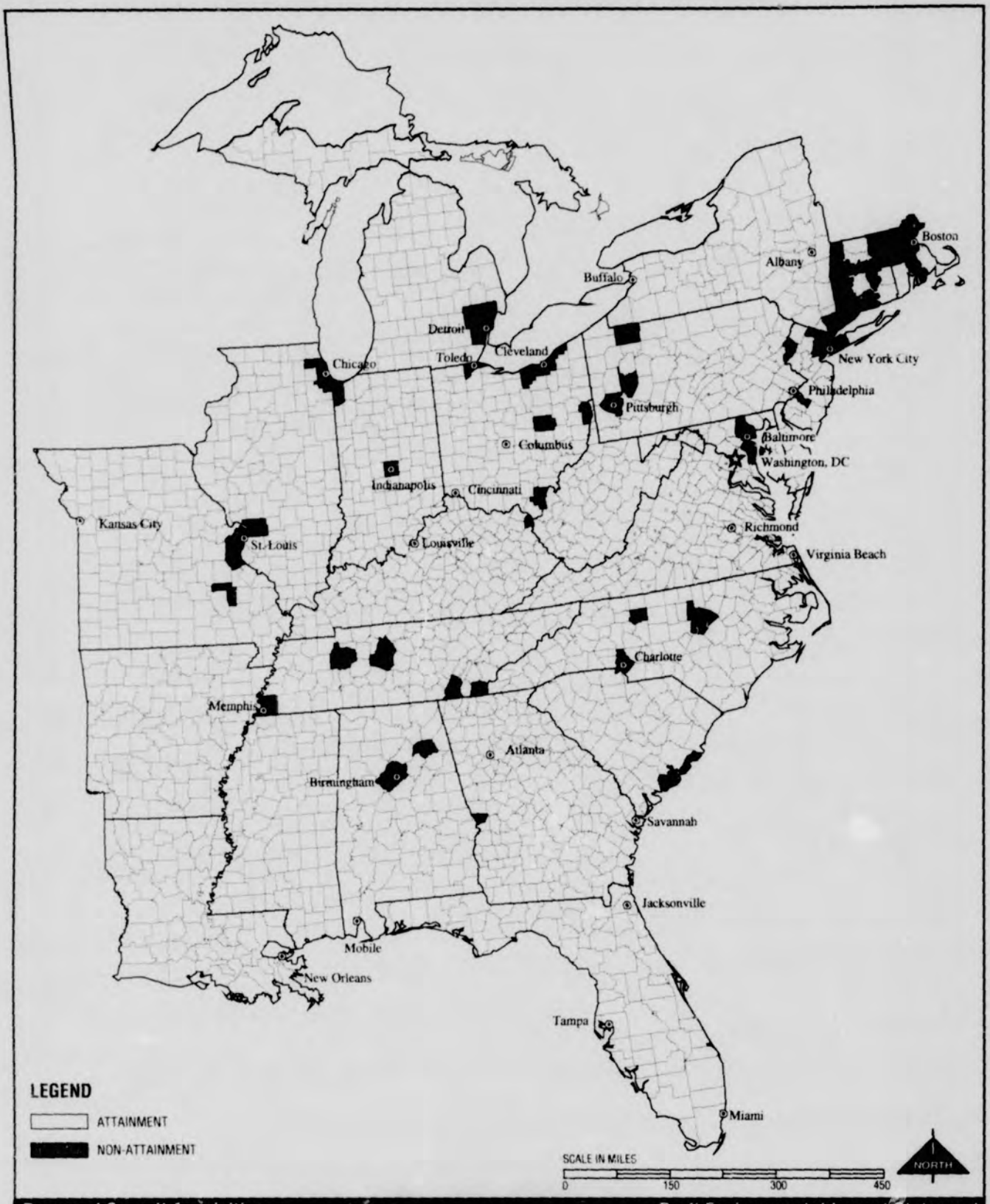

FIGURE 4-6

AREAS OF NON-ATTAINMENT FOR SO_2, CO, LEAD (Pb) AND PARTICULATE MATTER (PM)

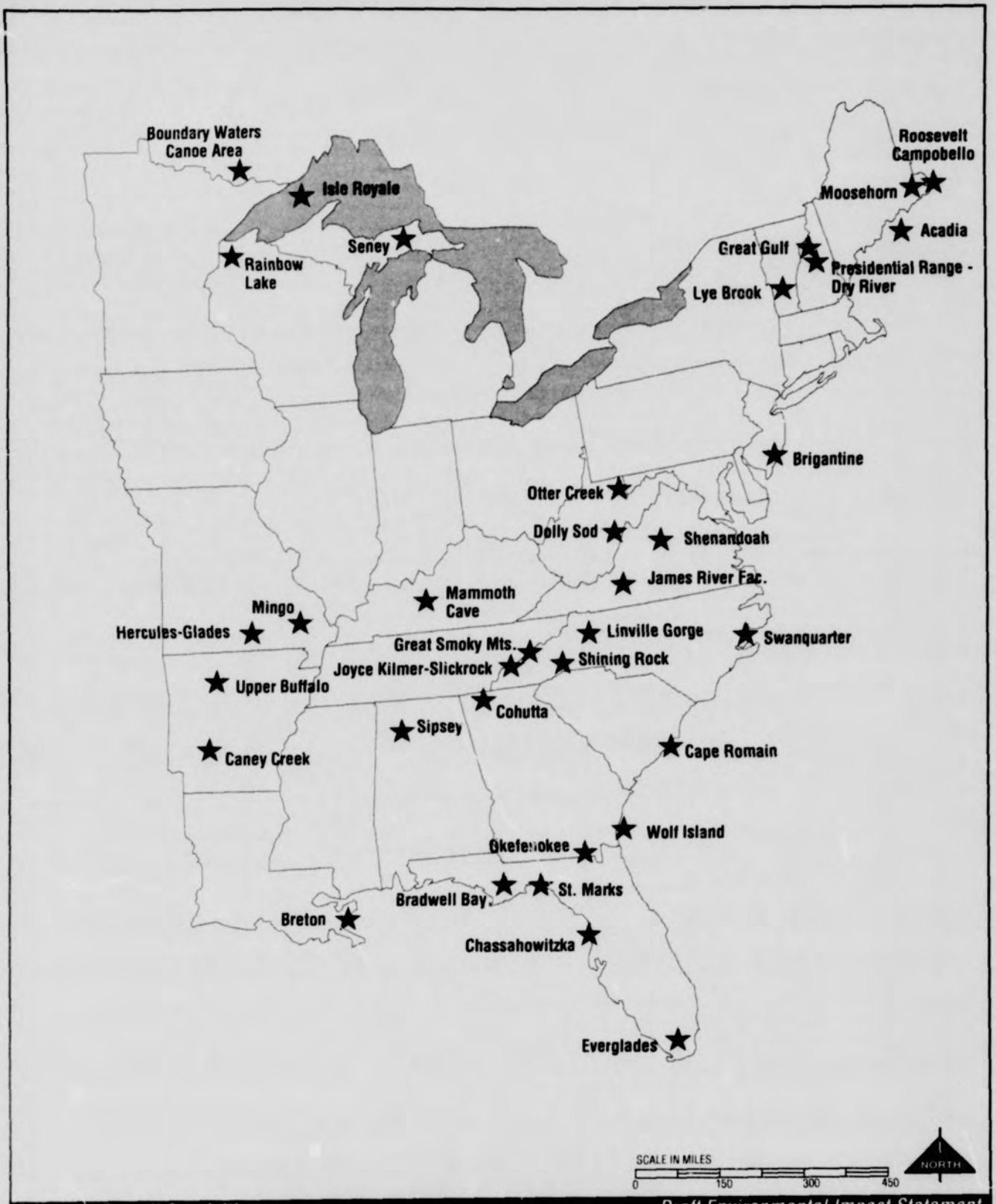

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FIGURE 4-7

DESIGNATED CLASS I AIR QUALITY AREAS

Northeast OTR. Consequently, EPA has recently proposed new emissions control requirements for 25 eastern states, which are intended to reduce NO_x emissions in these states by 35 percent.

The delineation of the Northeast OTR, and especially the EPA's proposed new NO_x emission control requirements for 25 eastern states, emphasize an evolving understanding of ozone nonattainment problems. This understanding includes recognition that such problems require a large regional-scale or national-scale solution rather than only local emissions control efforts.

4.12.2 System-wide Air Quality Impacts

SEA used the Board's thresholds for environmental analysis to determine which areas to investigate for potential air quality impacts. (See Chapter 2, Table 2-1.) Chapter 3, Section 3.1, "Air Quality Methods" contains details of the methods used for the air quality analysis. SEA coordinated with the U.S. EPA Office of Federal Activities (OFA) while preparing the air quality analysis for the Draft EIS. The approach and methodology for the analysis were reviewed in meetings held with OFA and Region 2 EPA staff. (See correspondence in Appendix M.)

Table 4-13 identifies the type and number of proposed Acquisition activities that meet the thresholds for air quality analysis.

Table 4-13
Number of Proposed Activities Meeting the Board's Air Quality Thresholds for Impact Analysis

Type of Activity	Proposed Operator		
	CSX	NS	Shared Assets Areas/Northeast Corridor
Rail Line Segments	56	50	13
Rail Yards	5	9	1
Intermodal Facilities	5	17	1
Abandonments	1	3	0
Construction Projects	6	12	0

Air Quality - Rail and Truck Freight Diversions

Both CSX and NS expect that the proposed Acquisition would result in significant diversions of freight from trucks to rail. According to the Applicants, only a negligible amount of freight would be diverted from rail to trucks or other delivery modes. Freight movement by rail is more energy efficient because it results in a substantial reduction in fuel consumption. (See Chapter 4, Section 4.11 "Energy.")

As explained in Chapter 3, Section 3.1, "Air Quality Methods", SEA used estimated fuel use changes for truck and rail transport to calculate system-wide net changes in air pollutant emissions resulting from freight diversions. Using average fuel efficiency factors, expressed as gross ton-miles per gallon of fuel burned, SEA converted projected ton-mile increases on rail lines and the ton-mile decreases from trucks to determine the overall fuel use changes for each transportation mode. Chapter 4, Section 4.11, "Energy," provides projected annual fuel use changes for CSX and NS rail transport increases and associated truck transport decreases. As noted in previous sections, SEA acknowledges that some overestimation of the truck-to-rail diversions has probably occurred; however, the air quality analysis is based on the figures provided.

SEA found that lower fuel use for rail transport more than offsets the higher nitrogen oxides (NO_x) emission factor for locomotives as compared with trucks. The locomotive NO_x emission factor for rail transport is approximately three times higher than the emission factor for truck freight hauling. However, locomotives use approximately five times less fuel per ton-mile of freight hauled than do trucks. (See Appendix E for emission factors and fuel efficiencies.) This same trend occurs for all pollutants evaluated, except for SO_2, since the sulfur content of locomotive fuel is typically higher than for trucks. By EPA regulation (40 CFR 80.29), diesel trucks must use fuel with no more than 0.05 percent sulfur by weight. Diesel-powered locomotives can use fuel containing up to 0.5 percent sulfur. SEA applied a typical value of 0.26 percent sulfur by weight based on the Applicants' actual laboratory tests of sulfur context of 1996 diesel fuel.

Air Quality - Rail Yards and Intermodal Facilities

Based on projections provided by the Applicants, the proposed Acquisition would result in a net system-wide increase in activity at intermodal facilities and a net system-wide decrease in activity at rail yards. SEA calculated emissions based on changes in operations for all rail yards and intermodal facilities of the Applicants. SEA calculated net system-wide changes in emissions for rail yards and intermodal facilities by summing the changes for all individual facilities. Emissions for individual facilities are shown in Appendix E. Table 4-14 shows the estimated system-wide changes in emissions for rail yards and intermodal facilities.

Air Quality at Highway/Rail At-Grade Crossings

For the system-wide analysis, SEA calculated changes in emissions generated by motor vehicles idling near highway/rail at-grade crossings that have traffic levels over 5,000 vehicles per day and are also along rail line segments projected to meet or exceed the Board's threshold for air quality. (See Chapter 3, Table 3-3.)

SEA calculated emissions for motor vehicles idling near highway/rail at-grade crossings based on changes in the numbers of vehicles delayed and the duration of delays resulting from Acquisition-related increases in train traffic. SEA calculated net system-wide changes in

emissions for highway/rail at-grade crossings by summing the changes for all the individual crossings analyzed. Appendix E presents details for individual highway/rail at-grade crossings. Table 4-14 shows the estimated system-wide changes in emissions increases for idling motor vehicles near at-grade roadway crossings, along with total system-wide estimated emissions changes for all activities considered.

SEA analyzed all rail line segments and highway/rail at-grade crossings in Cuyahoga County, Ohio. This provided an example of the effect that analyzing all at-grade crossings has relative to only analyzing grade crossings that meet or exceed the Board thresholds stated above. SEA's analysis of emissions at all at-grade roadway crossings in this county shows a minor effect on county-wide emissions results. Therefore, SEA determined that an analysis of changes in emissions at all highway/rail at-grade crossings for crossings below such thresholds was not necessary. Appendix E presents the detailed results for Cuyahoga County.

System-wide Air Quality Summary

Table 4-14 shows the system-wide post-Acquisition estimated emissions changes for rail line segments, truck-to-rail diversions, rail yards, intermodal facilities and highway/rail at-grade crossings for all air pollutants evaluated. These data show that there are net decreases in the emissions of NO_x, PM_{10}, VOC, and CO. SEA found a slight SO_2 emissions increase (521 tons/year). Existing SO_2 emissions in the eastern U.S. from all sources exceed several million tons/year. Thus, given the small relative increase and the broad geographic area, SEA considers the SO_2 emissions increase from the proposed Acquisition to be insignificant.

Table 4-14
System-Wide Emissions Change Summary

Emissions Component	Estimated Emissions Changes in Tons/Year					
	NO_x	CO	VOC	SO_2	PM_{10}	Pb
Rail line segments	14,395	1,599	534	932	364	0.030
Truck Diversions	(18,605)	(8,159)	(1,617)	(408)	(483)	(0.095)
Rail Yards	(725)	(88)	(40)	(32)	(15)	(0.001)
Intermodal Facilities	403	244	54	29	44	0.002
At-Grade Crossings	9	358	42	0.2	0.2	0
Total Change	(4,523)	(6,046)	(1,027)	521	(90)	(0.064)

Locomotive Emissions Standards

In order to provide some perspective relative to the magnitude of the emissions changes discussed above and provide information on relevant EPA actions, this section discusses the status and projected effects of locomotive emissions changes. The emissions changes discussed above can be compared with the EPA's nationwide emissions estimates in its proposed rule to regulate NO_x emissions from new and rebuilt locomotive engines. Table 4-15 shows the EPA's 1990 nationwide emissions estimates of NO_x, PM_{10}, VOC, and CO for all sources, mobile sources, and railroad locomotives. In this context, the emissions changes estimated in Table 4-14 (increases, decreases, and net changes) are miniscule. For example, the 4,523 tons/year decrease in net projected NO_x emissions represents about 0.4 percent of the nationwide total locomotive emissions. Nationwide locomotive emissions represent less than five percent of the total nationwide NO_x emissions from all sources.[3]

Table 4-15
National Emissions of All Sources, Mobile Sources, and Locomotives, 1990
(Estimated in million tons/yr)

Pollutant	All Sources	Mobile Sources	Locomotives
Nitrogen Oxides (NO_x)	23.04	10.33	1.08
Particles Under 10 Microns (PM_{10})	43.33	0.73	0.026
Volatile Organic Compounds (VOC)	23.60	8.97	0.42
Carbon Monoxide (CO)	100.65	77.50	0.12

EPA did not present SO_2 or Pb emissions in its proposed rule to regulate locomotives. However, the relative proportions of locomotive SO_2 and Pb emissions to other pollutant emissions nationwide should be similar to the proportions represented for rail line segments in Table 4-15.

Table 4-16 presents EPA estimated reductions in nationwide locomotive NO_x and PM compared with 1990 levels. These projections are based on implementation of the rule in the form proposed by EPA on February 11, 1997.

4.12.3 Regional Perspective - Air Quality

The regional areas of concern for air quality impacts are generally multi-county and often multi-state areas that are not in attainment with the NAAQS for ozone. NAAQS attainment problems

[3] Federal Register, Vol. 62, February 11, 1997.

for most of the other air pollutants are generally confined to relatively small geographic areas surrounding industrial facilities or heavily traveled roadway intersections.

Table 4-16
Projected Nationwide Reductions in Locomotive NO_x and PM Emissions, Compared with 1990 Baseline Levels of Locomotive Emissions

Year	Nitrogen Oxides (NO_x)		Particulate Matter (PM)	
	Tons/year	Percentage of Locomotive	Tons/year	Percentage of Locomotive
2000	72,243	6.7	0	0.0
2005	383,625	35.7	321	1.2
2010	421,477	39.2	1,926	7.3
2020	497,179	46.2	5,133	19.3
2040	641,466	59.7	11,292	42.4

Estimates per EPA, Federal Register, Vol. 62, February 11, 1997.

One large region of concern for ozone, explicitly defined under the 1990 Clean Air Act Amendments (CAAA), is the Northeast OTR, which covers the entire northeastern United States from Maine to northern Virginia. Substantial transport of ozone precursor pollutants (primarily VOCs and NO_x) across several states occurs within this region. While this entire region is not in violation of the NAAQS for ozone, it contains a chain of metropolitan areas stretching from Washington, D.C. to Boston, Massachusetts, which form a contiguous corridor of nonattainment counties (or other jurisdictions) for ozone, as depicted in Figures 4-5 and 4-6.

NO_x is the only pollutant with emissions of potential concern for the Northeast OTR, since VOC emissions are very small system-wide and regionally. Table 4-17 shows a conservative accounting of total projected NO_x changes for the Northeast OTR states which are projected to have railroad activity changes that meet or exceed the Board's environmental thresholds. The table also shows total NO_x emissions from the counties included in the emissions netting analysis (see Chapter 5). The analysis determined net air emissions in counties with potentially significant increased locomotive emissions by adding total increases and decreases to arrive at a net amount. Adding emissions for these counties should overestimate actual NO_x emissions increases because SEA did not identify or include those counties that would experience substantive decreases in NO_x emissions as a result of Acquisition-related reductions in train traffic and other activities. (That is, SEA took a conservative approach and analyzed those counties with potentially significant increases in emissions associated with rail activity changes.)

Therefore, the total NO_x emissions changes for the Northeast OTR that would result from the proposed Acquisition should be lower than shown in Table 4-17.

The NO_x emissions netting totals in Table 4-17 include truck diversion emissions decreases only for those counties analyzed by SEA (that is, counties with emissions increases above screening levels, prior to netting.) However, NS and CSX have provided truck diversion estimates for all counties affected by truck diversion. Even with the potential double counting explained earlier, SEA believes that the order of magnitude for truck diversions is suitable for analysis. The additional truck diversions emissions decreases, beyond those for counties already included in the aggregated states column (that is, the "netting totals"), also appear in Table 4-17.

Table 4-17
Estimated NO_x Emissions Changes in Northeast Ozone Transport Region in Tons per Year

State	Emissions from Netting Analysis	Additional NS Truck Diversion Emissions	Additional CSX Truck Diversion Emissions	Adjusted State Totals
Delaware	185	(1)	(1)	183
Maryland	797	(61)	(47)	689
New Jersey	317	(221)	(133)	(37)
New York	1,024	(4)	(161)	859
Pennsylvania	1,216	(1,590)	(957)	(1,331)
Virginia[a]	800	(756)	(691)	(647)
Washington, D.C.	84	0	0	84
Region Total	**4,423**	**(2,633)**	**(1,990)**	**(200)**

[a] The entire State of Virginia is included here, rather than just that portion in the Northeast Ozone Transport Region.

The adjusted net NO_x emissions change for the Northeast OTR shows a decrease of 200 tons per year. Also, as explained above, this overestimates the result (that is, the actual decrease is probably greater) because of the way counties were chosen by SEA for the netting analysis (that is, only those counties that would experience emission increases as a result of the proposed Acquisition were chosen). The finding of a small emissions decrease for the Northeast OTR as a whole is consistent with SEA's system-wide analysis, which found that NO_x emissions decreases from truck diversions more than offset system-wide rail line segment increases in NO_x emissions.

Based on the net NO_x emissions analysis, SEA expects no adverse impacts on ozone levels in the Northeast OTR. Also, the decrease in NO_x emissions in the region is too small to have any measurable beneficial effect on reducing ozone.

In addition to the ozone nonattainment corridor within the Northeast OTR, there are a number of smaller ozone nonattainment areas in the eastern United States that could potentially be affected by the proposed Conrail Acquisition. As shown in Figure 4-5, the largest of these other nonattainment areas are generally associated with the larger metropolitan regions such as Chicago, Detroit, St. Louis, and Atlanta.

SEA's state and county emissions analysis provided in Chapter 5 shows that the southern states and counties in those states would have insignificant increases or decreases in NO_x emissions as a result of the proposed Acquisition. However, a number of counties in Ohio, Indiana, Illinois, Michigan are projected to have NO_x emissions increases above the major stationary source thresholds used as screening levels on a county basis. (See Appendix E.) Some of the metropolitan area counties in these states have had, or presently have, ozone nonattainment problems.

SEA reviewed the status of nonattainment area plans in each of the above states to determine whether the estimated NO_x emissions increases would adversely affect plans to maintain or attain the ozone air quality standard. SEA found that each of these states had obtained "NO_x waivers" from the EPA for their ozone nonattainment areas (except for Vanderburgh County, Indiana, which is in the process of redesignation to "attainment"), which means EPA has determined that NO_x emissions locally are not a significant factor in causing higher ozone levels in the nonattainment areas of these states. Based on this information, SEA does not expect significant impacts on ozone levels in these states, despite the fact that there would be minor changes in the geographic distribution of total NO_x emissions in that region as a result of the projected rail activity changes.

4.12.4 Ozone-Depleting Materials

The Board's environmental rules require SEA to analyze the potential effects of rail transportation of ozone-depleting materials. Sections 602(a) and (e) of the CAAA as well as the Accelerated Phase out Final Rule issued by EPA[4] define those substances that are considered to contribute to depletion of the stratospheric ozone layer as ozone depleting materials. Table 4-18 lists the ozone-depleting substances transported by CSX, NS, and Conrail during 1996. SEA has assessed the anticipated changes in transportation of ozone-depleting materials on a system-wide basis.

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[4] "Accelerated Phaseout Final Rule," U.S. Environmental Protection Agency, Federal Register, December 10, 1993, 58 FR 65018.

Shipment and Quantities of Ozone Materials

Ozone depleting material is transported by rail between major producing and consuming points in the United States. These materials include many refrigerants (fluorocarbons) and other common chemicals such as carbon tetrachloride. Major origin points are in Texas, Louisiana, Michigan, and California, and major consuming points are in Louisiana, West Virginia, Michigan, and New Jersey. SEA analyzed data furnished by CSX, NS, and Conrail covering carload volumes and routes used for movement of cars transporting ozone-depleting materials both before and after the proposed Acquisition. Those data are summarized in Table 4-18. According to the Applicants, a substantial portion of the car movements would remain unchanged.

Table 4-18
Ozone-Depleting Materials Transported by CSX, NS, and Conrail in 1996

Group/Class[a]	Substance	Number of Rail Cars
Group I	Trichlorofluoromethane Dichlorodifluoromethane Chlorotetrafluoroethane Dichlorotetrafluoroethane	55
Group II	Dichlorodifluoromethane	631
Group III	Bromotrifluoromethane Monochloropentafluoroethane Chloropentafluoroethane Dichlorodifluoromethane Chlorotrifluoromethane	41
Group IV	Carbon Tetrachloride	6
Group V	1,1,1-trichloroethane Methyl Chloroform	847
Group VI	Methyl Bromide	83
Class II	Chlorodifluoromethane	767
Total		24,30

[a] Chemical Groups and Classes as defined in 40 CFR 82, Appendices A and B. Group numbers I - VI are all Class I.

Source: CSX and NS.

In 1996, CSX transported 1,274 carloads of ozone-depleting materials, NS transported 796 carloads, and Conrail transported 360 carloads, for a combined total of 2,430 carloads. After the proposed Acquisition, CSX anticipates that it would transport 1,311 carloads, and NS anticipates that it would transport 1,118 carloads of ozone-depleting materials. The post-Acquisition totals represent the reallocation of carloads transported by Conrail to CSX and NS.

Although, according to the Applicants, the total number of car movements would remain nearly the same, the post-Acquisition systems would provide more direct routing and would reduce the interchange of loads between railroads. This more direct routing is anticipated to reduce the total amount of travel distance for all transported materials, in terms of carload-miles, by about 1 percent after the proposed Acquisition. The same reduction is expected in carload-miles of ozone-depleting materials. The Applicants also expect, as a result of reduced interchange of loads, the total amount of freight handling required in railroad yards system-wide to decline by about four percent as a result of the proposed Acquisition. The same reduction is expected in the handling of ozone-depleting materials.

Prevention of Accidental Releases of Ozone-Depleting Materials

Both CSX and NS maintain comprehensive programs to reduce the likelihood of an accidental release of hazardous substances including ozone-depleting materials. These programs include established safety practices, hazardous materials management systems, contingency plans to address accidental releases, compliance with all applicable Federal and state regulations that address hazardous materials safety issues, and active participation in industry efforts to minimize chemical releases. Section 4.5, above, "Safety: Transport of Hazardous Materials," discusses these programs, the railroads' safety record, and contingency plans to address accidental releases.

Potential for Accidental Release of Ozone-Depleting Materials

Based on more efficient routing, SEA expects the proposed Acquisition to provide an overall, system-wide reduction in the potential for accidental releases of ozone-depleting materials in the event of a collision, derailment, or other accident. The total tonnage of ozone-depleting materials transported is not anticipated to change significantly as a result of the proposed Conrail acquisition. However, as noted above, more efficient routing would decrease the number of car-miles required to transport these ozone-depleting materials on the proposed CSX and NS systems. Specifically, the Applicants anticipate that the more direct routing would decrease car-miles by about one percent. SEA therefore expects a reduction in the potential for accidental release of ozone-depleting materials from accidents on rail line segments by a similar percentage. Also, the Applicants estimate a reduction of four percent in total freight handling at yards, as a result of reduced interchange requirements. SEA calculated that this, in turn, would reduce the potential for accidental release of ozone-depleting materials from yard accidents by a similar percentage.

4.12.5 System-wide Mitigation Measures for Air Quality

The pollutant of greatest concern with respect to the proposed Conrail Acquisition is NO_x, because it has recently been shown[5] to have more effect on ozone than does VOC, and because the emissions of NO_x are generally about 10 times higher than VOC for the dominant types of emitting activities (such as rail line segments) considered in this study.

System-wide Air Quality Mitigation

SEA's calculated system-wide emissions data provided in Table 4-14 indicate that, for most air pollutants, the proposed Conrail Acquisition would result in reduced air pollutant emissions. Estimated SO_2 system-wide emissions, however, are estimated to increase by 521 tons per year. This is an insignificant amount compared with the millions of tons of SO_2 emitted by stationary sources in the eastern states that would be affected by the proposed Conrail Acquisition. Based on this insignificant impact, SEA does not recommend air quality mitigation at this time.

Regional Air Quality Mitigation

A number of ozone nonattainment areas in the Midwest could have generally small NO_x emissions increases (relative to existing total NO_x emissions) which are above the screening levels used for this evaluation. These midwestern states have all obtained NO_x waivers in their ozone nonattainment areas, which are generally multi-county urban areas. This means that the EPA has determined that NO_x is not a significant contributor to the ozone problems in these areas. Given these facts, SEA has determined that there is no need to mitigate the relatively minor NO_x increases in this region.

4.13 NATIVE AMERICAN LANDS

As part of the analysis of potential environmental effects resulting from the proposed Conrail Acquisition Project, SEA evaluated potential effects on Native American Tribes and associated Indian Reservations. Figure 4-8 illustrates locations of Native American lands in the eastern U.S.

SEA evaluated whether any of the proposed construction and abandonments would occur on state and/or Federally designated Indian Reservations. This was accomplished through coordination with local planning officials and the Department of the Interior, Bureau of Indian Affairs (BIA), and by specific research on each tribe located within the project area. Based on this research, it was determined that none of the proposed constructions or abandonments would occur on Indian Reservations.

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[5] Environmental Science & Technology, Vol. 31, Environmental News, p. 126A, March 1997.

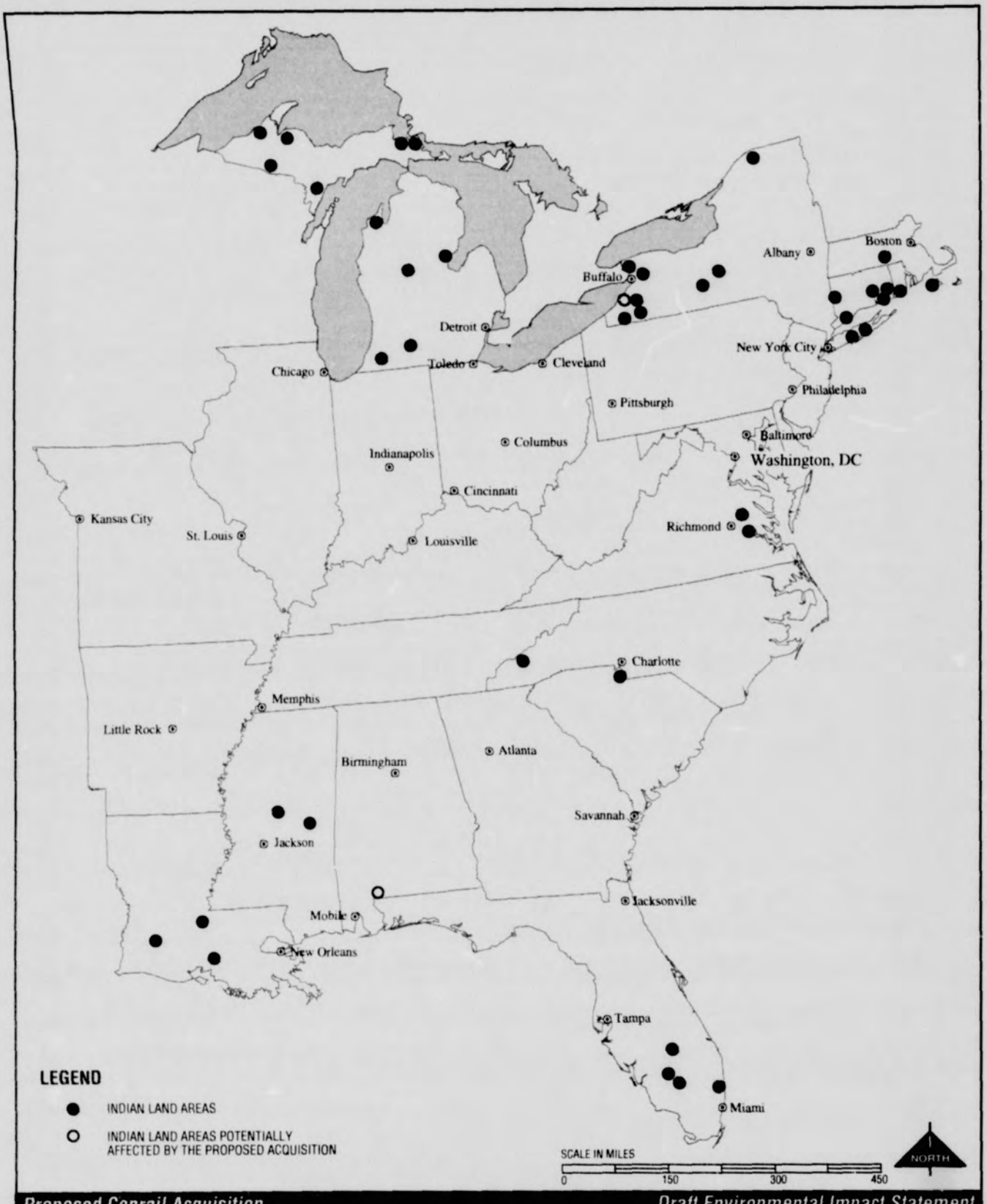

FIGURE 4-8
NATIVE AMERICAN LANDS

SEA also evaluated whether any rail segment which would meet or exceed the Board's thresholds for environmental analysis traverse through, or within one mile of, any Indian Reservations. The same was done for rail segments identified as 'key routes" for the transport of hazardous materials. (See Section 4.5 above.) SEA identified two such rail segments that traverse two Federally recognized Indian Reservations.

A rail line segment traverses the Seneca Nation of Indians, Cattaraugus Reservation (21,618 acres). This NS mainline in western New York (Ashtabula to Buffalo, N-070) meets the Board's threshold for environmental analysis. The Seneca Nation has a population of 6,700 and is a member of the Six Nations of the Iroquois Confederacy who occupy aboriginal lands in New York State.

A CSX key route for the transport of hazardous materials (C-271) traverses the Poarch Band of Creek Indians Reservation in Alabama. The Poarch Indian Reservation is located in southern Alabama and has a population of 2,000.

The potential environmental effects on Native American Lands is discussed in detail in Chapter 5 under Land Use for New York and Alabama.

4.14 NO-ACTION ALTERNATIVE

NEPA requires consideration of a "No Build" or "No-Action" alternative for Federal actions when preparing environmental documentation. As mentioned in Chapter 2, "Proposed Action and Alternatives," the No-Action Alternative offers no changes to existing conditions. This alternative identifies the baseline for comparison of different environmental issues. This section addresses the effects of the No-Action Alternative.

Overview and Purpose

The No-Action Alternative would result in no immediate changes to the Conrail, CSX, or NS systems. Under this alternative, the Board would not approve the proposed Conrail Acquisition and the planned changes in ownerships and operations of rail line segments, rail yards or intermodal facilities would not occur. Similarly, there would be no new constructions or abandonments. None of the anticipated beneficial or adverse environmental impacts of the proposed action would occur. As mentioned, the No-Action Alternative is the "base case" with which the other alternatives are compared. The railroads' existing systems and operations would remain essentially unchanged, except as may result from other decisions or actions determined by the railroads and from normal changes in economic conditions.

The Final Scope for this Draft EIS noted that SEA would consider only the potential environmental impacts that may result from the operational and physical changes that are directly related to the proposed Conrail Acquisition. Additionally, SEA would consider three alternatives as follows:

1. Approval of the proposed Conrail Acquisition.

2. Disapproval of the proposed Conrail Acquisition (No-Action Alternative).

3. Approval of the proposed Conrail Acquisition with conditions, including environmental mitigation.

SEA based its environmental analysis on a general comparison of the existing environmental conditions (as existed in 1995) with those that were reasonably expected to occur following completion of the proposed Acquisition. SEA examined pre-Acquisition environmental conditions and showed the activity changes and associated impacts that were expected to result following the Acquisition. The baseline conditions represent the environmental conditions that SEA determined would remain under the No-Action Alternative. SEA's analysis of the site-specific locations in Chapter 5, compares the changes incurred as a result of to the proposed Acquisition with the No-Action Alternative, namely the existing conditions.

System-Wide Effects of the No-Action Alternative

In general, SEA's evaluation notes that both beneficial and adverse environmental effects would result from the proposed Acquisition and would not occur under the No-Action Alternative. The following discussion highlights the overall effects of the No-Action Alternative. The No-Action Alternative would essentially maintain Conrail, CSX, and NS railroad systems as they currently exist. This would be the pre-Acquisition condition. Conrail, CSX, and NS would continue their operations.

Under the No-Action Alternative, railroad freight traffic would be likely to remain at current levels and would not shift to other lines. Activities at rail yards and intermodal facilities would be likely to remain the same, except for normal changes in market conditions. The railroads would not abandon three rail line segments and one bridge, and they would not construct 15 new rail connections. The CSX and NS systems would remain at their current respective sizes of 18,504 route miles for CSX and 14,282 route miles for NS.

Among the environmental categories studied, SEA notes the following effects of the No-Action Alternative.

Safety: Hazardous Materials Transport.
SEA evaluated all rail segments that would have an increase in hazardous materials rail car traffic. Under the No-Action Alternative, trains carrying hazardous materials would not be shifted to other routes; therefore, some rail segments would not experience increases and decreases in hazardous materials shipments. SEA's preliminary analysis indicated that the No-Action Alternative would forego some potential in net safety improvements resulting from more

efficient operations, less handling of cars containing hazardous materials at yards and terminals, and other improved safety measures.

Traffic and Transportation.
Based on review of the Applicant's Operating Plans, the Environmental Report, and information provide by the Applicants, including Verified Statements, SEA reached the preliminary conclusion that the proposed Acquisition would beneficially affect the national and regional highway systems by reducing truck traffic on major highways through changes to the rail hauling of commodities. This review also notes that the current rail network does not permit CSX and NS to serve several major markets without using Conrail rail lines. In addition, the Applicants state that capacity constraints at key interchange points between major north-south and east-west lines cause further restrictions in service. The collective effect is that it is difficult under the current rail systems to link important commodity production areas, such as the Southeast, with major market areas such as the northeastern United States.

According to the Applicants, the opening of new single-line routes would increase the use of intermodal trains and merchandise trains. Such opportunity would not exist with the No-Action Alternative. SEA's review of available data found that increased rail use would result in the diversion of more than one million truck loads of freight per year, representing a reduction in truck traffic of more than 700 million highway miles. SEA expects that this shift from truck to rail transportation would have a positive effect on reducing truck traffic and associated reductions in air emissions and energy consumption. Under the No-Action Alternative, these positive effects would not occur.

Energy.
SEA evaluated the system-wide effects that would result from the proposed Conrail Acquisition, including the comparative fuel consumption of freight train and truck transportation. Based on data provided by the Applicants and the use of standard formulas, SEA estimated that the proposed Acquisition would result in substantial changes in fuel consumption to transport freight, primarily because of truck-to-rail diversions as well as train traffic rerouting and changes in operations at rail yards and terminals. SEA also considered the energy consumption resulting from highway traffic delays at highway/rail at-grade crossings. From these analyses, SEA estimated that a net 80 million gallons per year of additional fuel would be consumed under the No-Action Alternative, compared with proposed Conrail Acquisition.

Air Quality.
SEA estimated the net system-wide changes in emissions for changes in rail traffic on rail line segments and at rail yards and terminals, for delays at highway/rail at-grade crossings, and for truck-to-rail diversions for pre- and post-Acquisition conditions. SEA's preliminary findings indicate that system-wide air quality benefits would not occur under the No-Action Alternative. With the No-Action alternative, the estimated small potential increase in SO_2 emissions would not occur.

4.15 CUMULATIVE EFFECTS

Context of System-wide Cumulative Effects Analysis

In many instances, major infrastructure and transportation improvement projects have effects and impacts that extend beyond the immediate area of the project. Often, too, these projects take place within communities, cities, and states where other construction and improvement projects have recently been completed, are underway, or are planned for the future. When two or more major projects are located close to each other, there is the potential for the impacts of each individual project to overlap or combine with those of other projects to result in combined impacts that are much greater than those of the individual projects alone. For example, a new intermodal facility planned by a railroad may be located near a major new shopping center. Although local highways may have the capacity to handle traffic from each individual project, together the projects may generate magnitudes of traffic that exceed the roadway network capacity. These types of combined effects are referred to as "cumulative effects."

The National Environmental Policy Act (NEPA) guidelines define a cumulative effect as "the impact on the environment which results from the incremental consequences of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions." (40 CFR 1508.7). Although certain actions may not be directly related to the proposed Conrail Acquisition, their environmental effects, when added to or in interaction with the proposed Conrail Acquisition, constitute *cumulative* effects which may be significant.

The President's Council on Environmental Quality (CEQ) was created by NEPA to develop policy guidelines and oversee Federal agencies' implementation of NEPA. To assist Federal agencies in assessing cumulative effects under NEPA, CEQ developed a handbook entitled *Considering Cumulative Effects Under the National Environmental Policy Act.*

Using these guidelines, SEA evaluated system-wide cumulative effects of the proposed Conrail Acquisition. SEA identified past, present and reasonably foreseeable projects that could result in similar system-wide environmental effects on the proposed Conrail Acquisition. As described in the scope for this Draft EIS, SEA evaluated cumulative impacts from both the system-wide (or the "big picture") viewpoint and the site-specific (or localized) viewpoint. The system-wide cumulative analysis evaluated potential effects on air quality, energy, and transportation s[illegible]s. These resources each have system-wide components that SEA determined could pot[illegible]ly be cumulatively affected by other large-scale past, present and reasonably foresee[illegible]ons.

Consistent with the EIS scope, SEA also considered projects on railroad property that would not normally be subject to the Board approval but are reasonably related to the proposed Conrail Acquisition. As described in Chapters 1 and 2, these "related actions" have been included in SEA's analysis for this Draft EIS.

The scope of this EIS also notes that SEA will consider cumulative effects of other local or site-specific projects when they are brought before the Board with sufficient information describing the projects, their relationship to the proposed Conrail Acquisition, and the anticipated type and severity of environmental impacts. The cumulative effects of projects brought before the Board to date have been considered in Chapter 5, "State Setting, Impacts, and Proposed Mitigation." If, during the public comment period, SEA receives additional information on local projects that could have cumulative effects, these effects will be evaluated in the Final EIS.

In the site-specific cumulative effects analysis in Chapter 5, SEA evaluated cumulative impacts related to safety. This is because safety concerns are, in general, potentially affected from a cumulative perspective at the localized level. For example, localized non-railroad actions such as a highway construction project could have cumulative impacts on safety issues at a highway/rail at-grade crossing affected by the proposed Conrail Acquisition.

SEA also describes, below, the cumulative impacts for Responsive Applications accepted by the Board on November 20, 1997, and the Seven Construction projects discussed in Environmental Assessments prepared by SEA on October 7, 1997. The remainder of this section describes SEA's analysis and preliminary conclusion for system-wide cumulative impacts.

For the proposed Conrail Acquisition, the geographic scope of the analysis covers 24 states and the District of Columbia. As part of its environmental review, SEA considered the anticipated operational changes on all 1,022 line segments of the Conrail, CSX, and NS railroads potentially affected by the proposed Conrail Acquisition. Of these segments, SEA determined that 119 rail segments exceeded the Board's environmental analysis thresholds. SEA evaluated the operational changes at rail yards and intermodal facilities and determined that 15 rail yards and 23 intermodal facilities exceeded the Board's thresholds for environmental analysis. SEA also evaluated 15 rail line connections, three construction projects, and four abandonments (three line segments and one pivot bridge) that are parts of the proposed Conrail Acquisition. As discussed in this section, SEA then analyzed cumulative system-wide effects on air quality, energy, and transportation and investigated cumulative effects associated with other actions that are related to the proposed Conrail Acquisition.

SEA considered the policies, activities, and conditions, both past and present, which are relevant to the analysis of potential air quality, energy, and transportation effects of the proposed Acquisition. These policies, activities and conditions are the basis for the cumulative effects analysis. They include the following:

- Past and present actions, such as technological changes and large-scale transportation projects.

- Laws and regulations, such as NEPA, the Clean Air Act Amendments, the Clean Air Act of 1970, and the Energy Policy and Conservation Act of 1975.

- Major transportation-related planning and funding programs, such as Major Investment Studies, Federal Transit Administration (FTA) commuter rail initiatives, those programs pursuant to the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, and regional transportation improvement plans.

SEA also considered other available information sources to analyze the cumulative effects of the proposed Conrail Acquisition, including the following:

- Public comments on the draft scope for this EIS that identified projects or actions.
- Public comments received from communities during SEA's analysis of land use.
- Other public comments received during preparation of the Draft EIS.

Chapter 3, Section 3.18.3, discusses how these information resources were used in the analysis of cumulative effects.

To present the system-wide cumulative effects analysis, SEA developed a narrative chart format to show past actions, present actions, proposed actions, reasonably foreseeable future actions, and a summary of cumulative effects. Each of the potential system-wide cumulative effects is discussed below.

4.15.1 Cumulative Effects - Air Quality

The system-wide cumulative effects for air quality are depicted in Table 4-19. If approved, the proposed Conrail Acquisition's potential benefits could be attributed to more efficient routing, truck-to-rail diversions of freight, fewer traffic delays, improved air quality, and improved engine technology. SEA estimates that, on a system-wide basis, decreases in nitrogen oxides, breathable particulate matter, volatile organic compounds and carbon monoxide would result from the proposed Conrail Acquisition. Because of existing conditions and regional variations in anticipated changes in railroad operations, some individual areas may show a decline in air quality. Nonetheless, on a system-wide basis that covers multiple states, the analysis shows an overall improvement in air quality.

SEA recognizes that, in magnitude, these improvements in system-wide air quality resulting from the proposed Conrail Acquisition would be relatively minor compared with widespread impacts from many of the present and future actions considered in Table 4-19. SEA also notes that the cumulative effects would largely reflect whether the assumed present and future actions actually occur at the levels assumed here. Nevertheless, SEA concludes that the proposed Conrail Acquisition, in conjunction with other past, present and future actions, would positively contribute to an overall system-wide improvement in air quality.

Table 4-19
Cumulative Effects - Air Quality

Past Actions	Present Actions	Proposed Acquisition	Future Actions	Cumulative Effect
• Clean Air Act of 1970 • Change in vehicle technology and increased fuel economy • Lowered speed limits • Interstate highway system allowed more efficient travel • Increased planning for rail systems • NEPA 1969 began regulation of emissions • NEPA and subsequent regulations made air emissions more costly • ISTEA 1991 promoted transportation projects to reduce air quality impacts	• Clean Air Act Amendments of 1990 • Improved technology • Attainment/ non-attainment standards • Commuter/ inter-city rail projects in place/being developed • FTA funds 4 rail projects in its 1997 New Starts/Major Capital Investments Program. Funding in 1997 is also available and identified for 16 new fixed rail guideway systems in the eastern U.S. • ISTEA Re-authorized • Commodity recycling reduces impacts of processing virgin materials • Some emitters/ manufacturing processors move abroad due to increased environmental regulations	• CSX and NS plan to divert traffic from truck to rail. • CSX and NS plan to increase rail traffic on portions of the system. • CSX and NS plan to eliminate rail traffic on rights-of-way of proposed abandonments.	• Enhanced Clean Air standards • Improved emission control technology • Improved intermodal system • Expanded multi-modal systems • MIS approach to mobility • The 4 rail projects in the 1997 New Starts/Major Capital Investments Program have funding into 1998 and beyond. Funding in 1998 is also available and identified for 27 new fixed rail guideway systems in the eastern U.S. • Expected re-authorization of NEXTEA (ISTEA successor program) • Recycle, reuse campaigns alter consumer behaviors	• System-wide decreases in emissions of nitrogen oxides, breathable particulate matter, volatile organic compounds and carbon monoxide • Insignificant system-wide increases of sulfur dioxide emissions • Reduced emissions due to increased use of post-consumer recycled goods • Reduced emissions in U.S. due to shift of some emissions generators to foreign soil

4.15.2 Cumulative Effects - Energy

SEA's energy analysis for this Draft EIS assesses the change in the use of fuels as a result of the proposed Conrail Acquisition. Because of the variations in energy use that can occur on a localized basis, SEA conducted its energy analysis on a system-wide basis only. Table 4-20 presents the results of the system-wide cumulative effects analysis for energy.

Table 4-20
Cumulative Effects - Energy

Past Actions	Present Actions	Proposed Acquisition	Future Actions	Cumulative Effect
• Increased fuel consumption • Energy "crisis" of 1970s due to price inflation, cartels • Long, indirect rail routes caused economic competitive disadvantage • Increased truck traffic due to inefficient interstate rail routes • Increased use of air conditioning • Trains more energy efficient than trucks for long-haul transport of freight • Trucks often more time efficient than trains • Trucking de-regulation spurred rise of independent truck contractors • Nuclear power industry reduced U.S. reliance upon fossil fuels • Advent of computers, which both consume and yet more efficiently regulate energy	• Improved engine technology • Alternative fuels research • Improved power plant air quality from the Clean Air Act • Increased energy efficiency ratings for air conditioning • Increase in auto use and ownership • Trains more energy efficient than trucks • New rail lines built to serve western U.S. coal fields • Nuclear power industry vexed by extreme costs, regulatory and environmental regulation	• Improved rail system efficiency • CSX and NS plan truck-to-rail diversions • CSX and NS plan increased rail traffic on portions of the system • Vehicle delays and very small increase in gas consumption	• Continued improved engine technology • Greater use of alternative fuels • Improved, direct rail routes • Increased power plant air quality improvements from the Clean Air Act • Trains more energy efficient than trucks • Increase in rail use over trucks • Deregulation of electric utilities • Coal shipment costs become more competitive • Improved computer technology to increase precision in energy use	• Net decrease in annual diesel fuel consumption by approximately 133 million gallons annually due to truck-to-rail diversions • Greater efficiency and competition in the transportation of coal and recyclable commodities • More competitive energy pricing for coal and, in turn, for electricity • Energy costs checked by efficiencies in production, transportation, and marketing

SEA concluded, based on currently available information, that reduced overall fuel consumption as a result of truck-to-rail diversions of freight, in concert with other regulatory and technology changes, should lead to a net reduction in energy consumption. Table 4-20 reflects, in particular,

the cumulative effects derived from the Clean Air Act Amendments, technology advancements, truck-to-rail diversions, and more efficient, more direct rail transport routes that require fewer interchange of rail traffic.

SEA recognizes that, in magnitude, the changes in system-wide energy consumption resulting from the proposed Conrail Acquisition are relatively minor compared with the larger and widespread impacts from most of the present and future actions considered in Table 4-20. SEA also notes that the cumulative effects would largely reflect whether the assumed present and future actions actually occur at the levels assumed here. Nevertheless, SEA concludes that the proposed Conrail Acquisition, in conjunction with other past, present and future actions, would positively contribute to an overall net reduction in energy consumption.

4.15.3 Cumulative Effects - Transportation

SEA's transportation analysis assesses the impact of proposed Conrail Acquisition on rail and highway systems. Table 4-21 presents the system-wide cumulative effects for transportation.

New railroad technology and operational practices will enhance rail traffic characteristics. Based on information provided by the Applicants, SEA anticipates that the proposed Conrail Acquisition would result in improved track maintenance and longer, more direct routes with fewer interchanges. Enhanced multi-modal movements would build on past and present trends in efficiency. Projected highway improvements are anticipated to result in significant reduction in highway truck traffic. Elements of the Intermodal Surface Transportation Efficiency Act (ISTEA), Major Investment Studies (MIS), and Federal Transit Administration (FTA) commuter rail initiatives would further enhance transportation efficiencies.

SEA recognizes that, in magnitude, the changes in system-wide transportation impacts resulting from the proposed Conrail Acquisition are relatively minor compared with the more significant, widespread impacts from many of the present and future actions considered in Table 4-21. SEA also notes that the cumulative effects would largely reflect whether the assumed present and future actions actually occur at the levels assumed here. Nevertheless, SEA concludes that the proposed Conrail Acquisition, in conjunction with other past, present and future actions, would positively contribute to a net overall improvement in both rail and highway transportation systems.

4.15.4 Cumulative Effects - Seven Constructions, Related Actions and Inconsistent and Responsive Applications

SEA prepared Environmental Assessments (EAs) for the construction of seven rail line connections in Sidney, Illinois; Alexandria and Willow Creek, Indiana; and Bucyus, Crestline, Greenwich, and Sidney, Ohio. The construction of these Seven Constructions would not individually have significant environmental effects, as documented in the Environmental Assessments released on October 7, 1997. These Seven Constructions are geographically

Table 4-21
Cumulative Effects - Transportation

Past Actions	Present Actions	Proposed Acquisition	Future Actions	Cumulative Effect
Rail Traffic				
• Inefficient rail systems • Decreased rail traffic • Increased truck traffic • Increased clearances of bridges and tunnels for Double Stack movement of containers by rail • Global economy promoted more import/export • Container port operations increased • North American Free Trade Agreement (NAFTA) promoted more direct trade to Canada, Mexico	• Commuter agencies operate over 300 commuter trains on CSX/NS/ Conrail lines • Amtrak trains along NE corridor between Washington, New York and Boston • Funding of 4 rail transit projects by FTA in its 1997 New Starts/ Major Capital Investments Program. Funding is also available and identified in 1997 for 16 new fixed rail guideway systems in the eastern U.S. • Computerized train operations allow more efficient movement • Major Investment Studies (MIS) approach to mobility - 18 MIS programs in process • Clearance for Double Stacks	• Improved rail system efficiency • CSX and NS plan for more than one million annual truck-to-rail diversions • Increase in rail freight traffic • CSX and NS plan to improve intermodal facilities and capability • Increased rail traffic results in greater traffic delays at some highway/rail at-grade crossings • Increased local traffic at intermodal facilities with increased activity	• Improved intermodal system • Expanded multi-modal system • More aggressive MIS approach to mobility • The 4 rail transit projects in the 1997 New Starts/Major Capital Investments Program that have funding into 1998 and beyond. • Funding available and identified in 1998 for 27 new fixed rail guideway systems throughout the eastern U.S. • 33 new MIS initiatives planned for 1998 (and beyond) depending on funding • Grade separation for increased safety and reduced roadway vehicle delay • Increased clearances for Double Stacks • Amtrak to introduce new high-speed passenger service on NE Corridor	• Potential (regional) increase of track maintenance • No significant effect on commuter rail expected • Rail intermodal improvements add economic flexibility • Overall rail system becomes more efficient • Rail becomes a more cost-competitive shipping mode

Table 4-21
Cumulative Effects - Transportation

Past Actions	Present Actions	Proposed Acquisition	Future Actions	Cumulative Effect
Highway Systems				
• Lack of national, integrated inter-city road network led to creation of Federal interstate highways • Interstate system allowed more efficient travel • Interstate system stimulated increased auto and truck traffic • Interstate system contributed to trends to decentralize, suburbanize land uses, fostering trucking as a primary means of distribution • Decentralization increased the consumption of open land for transportation use	• Aging highway infrastructure requires substantial re-investment • ISTEA funding act shifts focus to intermodal transportation planning and projects • ISTEA transportation policy seeks projects that are: - economically efficient - environmentally sensitive - energy efficient • 18 MIS programs in process	• CSX and NS plan more than one million annual truck-to-rail diversions • Minimal rail-to-truck diversions for the three abandonments proposed as part of the Conrail Acquisition	• Less truck-related pavements stress on highways • Expanded intermodal system • Expected re-authorization of ISTEA maintain intermodal focus • Improved intermodal system • Expanded multi-modal systems	• Increase in truck-to-rail diversions for new markets • Reduction of approximately 1.03 million truck loads, annually • Reduction of approximately 782 million truck miles, annually • Reduced truck vehicle emissions • Shift of freight to privately maintained and financed rail lines from publicly financed highways

dispersed and total 19,811 linear feet, compared with the total of 51,967 linear feet for all new constructions evaluated in the Draft EIS. SEA determined that these seven connections, when considered together, would not result in environmental cumulative effects. SEA also determined that these Seven Connections, when viewed with the larger Conrail Acquisition proposal would not have a significant cumulative environmental effect.

SEA reviewed more than 75 related actions that the Applicants propose to undertake as part of the proposed Acquisition. As described in Chapter 2, "Proposed Action and Alternatives," SEA reviewed these individual actions for the potential environmental effects and found that three warranted consideration in the Draft EIS. For the cumulative impacts analysis, SEA reviewed all 75 related actions and determined that, individually and collectively, they would not result in significant cumulative impacts.

The Board received no Inconsistent Applications. SEA reviewed 15 Responsive Applications. SEA found that none of these responsive applications would have environmental effects if they were approved by the Board. Thus, they are consistent with the Primary Application that is the subject of the Draft EIS. Therefore, SEA's preliminary conclusion is that these applications create no negative cumulative effects.

4.15.5 System-wide Cumulative Effects Summary

SEA determined, based on available information, that a net positive cumulative effect would result from the proposed Conrail Acquisition. This preliminary conclusion is based on the scale and dimensions of the proposed Conrail Acquisition and considered the results of the system-wide analysis of the proposed Acquisition's effects on energy, air quality, and transportation. As stated in the preceding discussion, some localized areas may be subject to negative impacts. Further, SEA recognizes that additional information on other projects relating to the proposed Acquisition may come forward during preparation of the Final EIS and that further cumulative analysis may be warranted. However, in taking the proposed Conrail Acquisition as a whole, with the information now available and given its geographic extent and magnitude, SEA considered the cumulative system-wide environmental effects to be positive.

4.16 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

NEPA guidelines suggest that EISs address short-term uses of the environment and long-term productivity. This section summarizes the extent to which implementation of the proposed Conrail Acquisition would result in long-term productivity gains at the expense of short-term use of the environment and possible environmental impacts. SEA has determined that the relationship between short-term uses of the environment and enhancement of long-term productivity would generally be positive for the proposed Acquisition.

Short-term potential impacts would result from construction activities for the new rail line constructions, and for new or expanded rail yards or intermodal facilities. Construction activities would involve the short-term use of some resources, such as labor and material. Other short-term environmental concerns include construction activities causing minor, short-term air quality impacts, such as fugitive dust from earthwork and construction equipment-related noise effects. These short-term construction impacts would be mitigated by the Applicants' Best Management Practices and SEA's recommended mitigation for fugitive dust control.

These short-term impacts, which are nearly all limited in their geographic extent as well, would be offset by the long-term system-wide gains. Long-term gains would include increased productivity and efficiency of rail operations in the eastern United States. These long-term effects would involve system-wide reductions in energy consumption, highway traffic congestion, and air pollutant emissions.

4.17 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA guidelines request that EIS's address the irreversible and irretrievable commitment of resources. The proposed Conrail Acquisition would involve a commitment of a range of natural, physical, human, and fiscal resources. SEA determined that operational changes on existing rail lines would redistribute resources already allocated for rail operations but would not increase irreversible and irretrievable commitments of resources. Implementation of the proposed Acquisition plan would include construction activities at various project sites throughout the eastern half of the United States. Land used for the construction projects would be an irretrievable commitment during the time period that the land is used for a railroad facility. However, if a greater need arises for use of the land or if the railroad facility is no longer needed, the land could be converted to another use.

Construction included in the proposed Conrail Acquisition would result in the use of relatively minor amounts of fossil fuels, labor, and construction materials such as steel, cement, aggregate, and bituminous material. Similarly, a relatively minor amount of labor and natural resources would be used in the fabrication and preparation of construction materials. These materials are generally not retrievable; however, they are not in short supply and their use would not have an adverse effect upon continued availability of these resources. Any construction would also require a substantial one-time expenditure of funds which would not be retrievable.

The commitment of these resources is based on the concept that residents in the immediate project areas, regions, and states would benefit by the improved quality of the national transportation system. The proposed Acquisition would result in truck-to-rail diversions, diversions and rerouting of existing rail traffic to shorter routes, and railroad hauls requiring fewer interchanges w.th traffic. More efficient rail transportation service would provide benefits from reduced fuel consumption and air pollutant emissions, as well as improved highway safety. SEA anticipates that these benefits would outweigh the commitment of the described resources.

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Decision ID No. 28629

Service Date: December 12,1997
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DRAFT ENVIRONMENTAL IMPACT STATEMENT

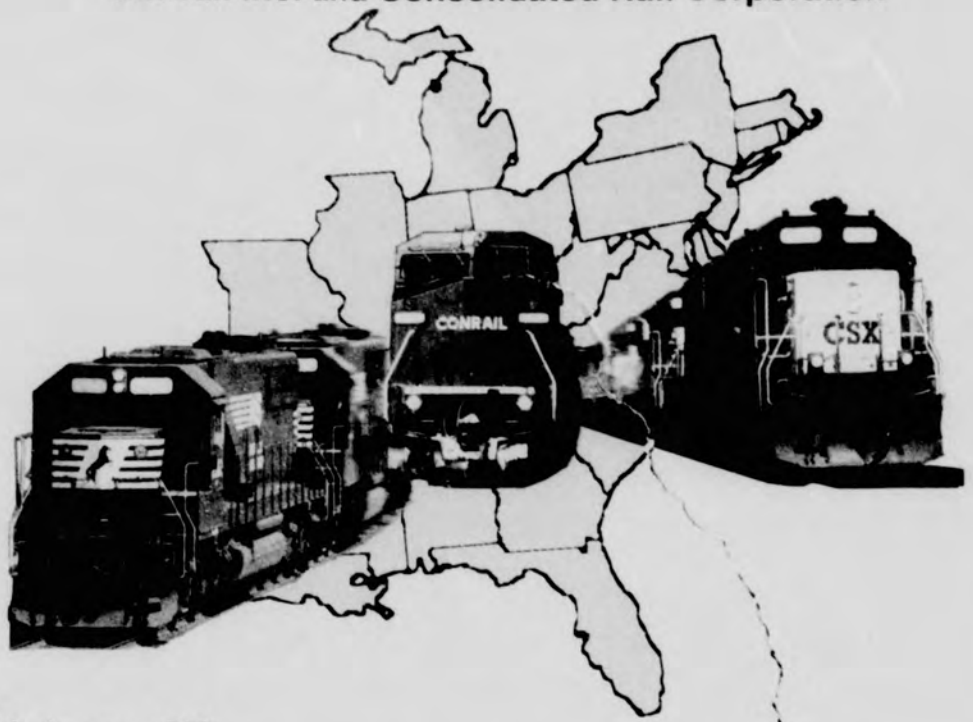
Finance Docket No. 33388

"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 3B

Chapter 5: State Settings, Impacts and Proposed Mitigation
New Jersey to Washington, D.C.

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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

GUIDE TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

This Draft Environmental Impact Statement (Draft EIS) evaluates the potential environmental effects that could result from the proposed Acquisition of Conrail Inc. and Consolidated Rail Corporation (Conrail) by CSX Corporation and CSX Transportation, Inc. (CSX) and Norfolk Southern Corporation and Norfolk Southern Railway Company (NS). The Surface Transportation Board's Section of Environmental Analysis (SEA) has prepared this document in accordance with the requirements of National Environmental Policy Act (NEPA), as amended (42 U.S.C. 4321), Council on Environmental Quality (CEQ) implementing NEPA, the Board's environmental rules (49 CFR Part 1105) and other applicable environmental statutes and regulations.

The Draft Environmental Impact Statement includes the following:

An **Executive Summary** which provides an overview and summary of the Draft EIS including and proposed mitigation.

Volume 1: Chapters 1 through 4

- Chapter 1 discusses the purpose and need for the project and sets forth the jurisdiction of the Surface Transportation Board (Board) and reviewing agencies. It also presents the parties to the proposed Acquisition, SEA's environmental review process and the agency coordination and public participation process.
- Chapter 2 describes the three railroads' existing network, the proposed Acquisition, alternatives considered, and related actions.
- Chapter 3 contains a description of the analysis methods and potential mitigation strategies.
- Chapter 4 presents system-wide and regional settings, potential effects of the proposed action, and measures to mitigate adverse effects. It also summarizes the No-Action alternative and discusses cumulative effects; the relationship between short-term uses of the environment and enhancement of long-term productivity; and irreversible and irretrievable commitments of resources.

Volume 2 (A through C): Safety Integration Plans
These volumes (2A through 2C) consist of the Applicants' Safety Integration Plans, Board Decision requiring these plans, and U.S. Department of Transportation comments on rail safety.

Volume 3: State Setting, Impacts, and Proposed Mitigation
- These two volumes (3A and 3B) consist of a series of sections which discuss the setting, impacts, and proposed mitigation by state. The potential impacts of individual segments, intermodal facilities, rail yards, new constructions, abandonments, and other types of action are part of this discussion.
- Volume 3A contains the states Alabama through Missouri.
- Volume 3B contains the states New Jersey through Washington, D.C.

Volume 4: Chapter 6 through 8 and References
- Chapters 6 describes SEA's agency coordination and public outreach efforts including the scoping process and document distribution.
- Chapter 7 presents SEA's preliminary mitigation recommendations to the Board.
- Chapter 8 contains a list of document preparers.

Volume 5: Appendices
- These three volumes (5A through 5C) contain the methods, extensive tables, and other pertinent data by discipline as well as public outreach and agency coordination documents and verified statements.
- Volume 5A contains the technical appendices.
- Volume 5B contains the public and agency correspondence, public outreach materials, and responses from other railroads.
- Volume 5C contains verified statements, relevant Board Decisions, Federal regulations, site visit summaries, and other pertinent information.

Volume 6: Proposed Abandonments
This volume provides detailed analysis and mitigation of the potential environmental impacts associated with the proposed abandonment of line segments and related salvage activities.

To assist the reader in the review of this document, a Glossary and List of Acronyms are included in front of each volume.

GLOSSARY

at-grade roadway crossing	The location where a local street or highway crosses railroad tracks at the same level or elevation.
attainment area	An area that meets National Ambient Air Quality Standards (NAAQS) specified under the Clean Air Act.
A-weighted Sound Level (dBA)	The most commonly used measure of noise, expressed in "A-weighted" decibels (dBA), is a single-number measure of sound severity that accounts for the various frequency components in a way that corresponds to human hearing.
ballast	Top surface of rail bed, usually composed of aggregate (i.e., small rocks and gravel).
Best Management Practices (BMPs)	Techniques recognized as very effective in providing environmental protection.
Board	Surface Transportation Board, the licensing agency for the proposed Conrail Acquisition.
borrow material	Earthen material used to fill depressions to create a level right-of-way.
branch line	A secondary line of railroad usually handling light volumes of traffic.
bulk train	Also known as a unit train. A complete train consisting of a single non-breakable commodity (such as coal, grain, semi-finished steel, sulfur, potash, or orange juice) with a single point of origin and destination.
consist	The make-up of a train, usually referring to the number of cars.
construction footprint	The area at a construction site subject to both permanent and temporary disturbances by equipment and personnel.
Class I Railroad	Railroads that exceed annual gross revenues of $250 million, in 1991 dollars. The amount is indexed annually to reflect inflation. For 1996, the annual gross revenue was $255 million.

Criteria of Effect — The Advisory Council on Historic Preservation's (ACHP) Criteria of Effect and Adverse Effect (35 CFR Part 800.9) provide the basis for determining potential effects on historic properties.

criteria pollutant — Any of six air emissions (lead, carbon dioxide, sulfur dioxide, nitrogen dioxide, ozone and particulate mater) regulated under the Clean Air Act, for which areas must meet national air quality standards.

cultural resource — Any prehistoric or historic district, site, building, structure, or object that warrants consideration for inclusion in the National Register of Historic Places (NRHP). For the purposes of this document, the term applies to any resource more than 50 years of age for which SEA gathered information to evaluate its significance.

Day-Night Sound (L_{dn}) — One of the most widely accepted measures of cumulative noise exposure in residential areas. The Day-Night Sound Level (L_{dn}) is the A-weighted sound level, averaged over a 24-hour period, but with levels observed during the nighttime hours between 10 p.m. and 7 a.m., increased by 10 dBA to account for increased sensitivity at night.

dBA — Adjusted decibel level. A sound measurement that adjusts noise by filtering out certain frequencies to make it analogous to that perceived by the human ear. It applies what is known as an "A-weighting" scale to acoustical measurements.

decibel (dB) — A logarithmic scale that compresses the range of sound pressures audible to the human ear over a range from 0 to 140, where 0 decibels represents sound pressure corresponding to the threshold of human hearing, and 140 decibels corresponds to a sound pressure at which pain occurs. Sound pressure levels that people hear are measured in decibels, much like distances are measured in feet or yards.

deciduous — Any plant whose leaves are shed or fall off during certain seasons; usually used in reference to tree types.

dray	A local move of a trailer, truck, or container.
emergent species	An aquatic plant with vegetative growth mostly above the water.
endangered species	A species of plant or animal that is in danger of extinction throughout all or a significant portion of its range and is protected by state and/or federal laws.
failure mode and effects analysis (FMEA)	This analysis is a method of analyzing the causes and consequences of potential spills of stored and transported hazardous materials. This procedure helps reduce the risk of such spills by eliminating known causes.
fill	The term used by the United States Army Corps of Engineers that refers to the placement of suitable materials (e.g., soils, aggregates, concrete structures, etc.) within water resources under Corps jurisdiction.
flat yard	A system of relatively level tracks within defined limits for making up trains, storing cars, and other purposes which requires a locomotive to move cars (switch cars) from one track to another.
Flood Insurance Rate Maps	Maps available from the Federal Emergency Management Agency that delineate the land surface area of 100-year and 500-year flooding events.
floodplain	The lowlands adjoining inland and coastal waters and relatively flat areas and flood prone areas of offshore islands, including, at a minimum, that area inundated by a one percent (also known as a 100-year or Zone A floodplain) or greater chance of flood in any given year.
frog	A track structure used where two running rails intersect that permits wheels and wheel flanges on either rail to cross the other rail.
habitat	The place(s) where plant or animal species generally occur(s) including specific vegetation types, geologic features, and hydrologic features. The continued survival of that species depends upon the intrinsic resources of the habitat. Wildlife habitats are often further defined as places where species derive sustenance (foraging habitat) and reproduce (breeding habitat).

haulage right — The limited right of one railroad to operate trains over the designated lines of another railroad.

hazardous materials — Any material that poses a threat to human health and/or the environment. Typical hazardous substances are toxic, corrosive, ignitable, explosive, or chemically reactive.

highway/rail at-grade crossing — The location where a local street or highway crosses railroad tracks at the same level or elevation.

historic property — Any prehistoric or historic district, site, building, structure, or object that warrants consideration for inclusion in the National Register of Historic Places (NRHP). The term "eligible for inclusion in the NRHP" includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet NRHP listing criteria.

hump yard — A railroad classification yard in which the classification of cars is accomplished by pushing them over a summit, known as a "hump," beyond which they run by gravity.

interlocking — An arrangement of switch, lock, and signal appliances interconnected so that their movements succeed each other in a predetermined order, enabling a moving train to switch onto adjacent rails. It may be operated manually or automatically.

intermodal facility — A site or hub consisting of tracks, lifting equipment, paved areas, and a control point for the transfer (receiving, loading, unloading, and dispatching) of intermodal trailers and containers between rail and highway or rail and marine modes of transportation.

intermodal train — A train consisting or partially consisting of highway trailers and containers or marine containers being transported for the rail portion of a multimodal movement on a time-sensitive schedule; also referred to as a piggyback, TOFC (Trailer on Flat Car), COFC (Container on Flat Car), and double stacks (for containers only).

key routes

As defined by the Association of American Railroads (AAR), a key route is a track that carries an annual volume of 10,000 car loads or intermodal tank loads of any hazardous material. AAR has developed voluntary industry key route maintenance and equipment guidelines designed to address safety concerns in the rail transport of hazardous materials. For analysis purposes, SEA has used the term "major key route" to identify routes where the volume of hazardous materials carried on a route would double and exceed a volume of 20,000 carloads as a result of the proposed Conrail Acquisition.

key train

The Association of American Railroads (AAR) defines a key train as any train handling five or more carloads of poison inhalation hazard (PIH) materials or a combination of 20 or more carloads containing hazardous materials. Under AAR voluntary industry guidelines, railroads impose operating restrictions on key trains to ensure safe rail transport of these materials. These restrictions include maximum speeds, and meeting and passing procedures.

L_{dn}

Nighttime noise level (L_n) adjusted to account for the perception that a noise level at night is more bothersome than the same noise level would be during the day.

Level of Service (LOS)

Level of Service (rating A through F). A measure of the functionality of a highway or intersection that factors in vehicle delay, intersection capacity and effects to the street/highway network.

lift

A lift is defined as an intermodal trailer or container lifted onto or off of a rail car. For calculations, lifts are used to determine the number of trucks using intermodal facilities.

locomotive, road

One or more locomotives (or engines) designed to move trains between yards or other designated points.

locomotive, switching

A locomotive (or engine) used to switch cars in a yard, between industries, or in other areas where cars are sorted, spotted (placed at a shipper's facility), pulled (removed from a shipper's facility), and moved within a local area.

main line	The principle line or lines of a railway.
merchandise train	A train consisting of single and/or multiple car shipments of various commodities.
mitigation	Actions to prevent or lessen negative effects.
mobile source	A term used in reference to air quality meaning a source of air emissions that are not in a fixed location, such as a locomotive or automobile.
National Register	A listing of historic places maintained by the Secretary of the Interior.
National Wetlands Inventory	An inventory of wetland types in the United States compiled by the U.S. Fish and Wildlife Service.
noise	Any undesired sound or unwanted sound.
nonattainment	An area that does not meet standards specified under the Clean Air Act.
Non-point source discharge	Pollution not associated with a specific, fixed outfall location (e.g., sewer pipe), such as runoff from a construction site.
palustrine wetland	Non-tidal wetland dominated by trees, shrubs or persistent emergent vegetation. Includes wetlands traditionally classified as marshes, swamps, or bogs.
passby	The passing of a train past a specific reference point.
pick up	To add one or more cars to a train from an intermediate (non-yard) track designated for the storage of cars.
precursor	A term used in reference to air quality, meaning an initial ingredient contributing to a subsequent air quality pollutant.
prime farmland	Land defined by the Natural Resource Conservation Service (NRCS) as having the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops.
point source	A distinct stationary source of air or water pollution such as a factory or sewer pipes.

rail spur	A track that diverges from a main line, also known as a spur track or rail siding, which typically serves one or more industries.
rail yard	A location where rail cars are switched and stored.
railbanking	A set-aside of abandoned rail corridor for recreational and/or transportation uses, including reuse for rail.
receptor/receiver	A land use or facility where sensitivity to noise or vibration is considered.
right-of-way	The strip of land for which an entity (e.g., a railroad) has a property right to build, operate, and maintain a linear structure, such as a road, railroad or pipeline.
riparian	Relating to, living, or located on, or having access to, the bank of a natural water course, sometimes also a lake or tidewater.
riprap	A loose pile or layer of broken stones erected in water or on soft ground as a guard against erosion.
riverine wetland	All wetlands and deepwater habitats contained within a channel, either naturally or artificially created.
route miles	Distance calculated along a railroad's main and branch lines.
ruderal	An introduced plant community dominated by weed species, typically adapted to disturbed areas.
scrub-shrub	Areas dominated by woody vegetation less than 6 meters (20 feet) tall, which includes shrubs and young trees.
set out	To remove one or more cars from a train at an intermediate (non-yard) location such as a siding, interchange track, spur track, or other track designated for the storage of cars.
Section 106	Refers to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended through 1992 (16 U.S.C. 470). Section 106 requires a Federal agency head performing a Federal undertaking to take into account the undertaking's effects on historic properties.

sound	A physical disturbance in a medium (e.g., air) that is capable of being detected by the human ear.
Sound Exposure Level (SEL)	A quantitative measure of the noise exposure produced by a given noise event. The sound exposure level (SEL) is equivalent in magnitude to a reference signal with a duration of one second. The SEL accounts for both the magnitude and duration of the noise event and can be used to calculate the contribution of specific events to the overall noise environment. The SEL is representative of the total sound energy produced by the event at an observation point; it indicates the constant sound level with one second duration that corresponds to the same total sound energy as the given event.
take or taking	Refers to a removal of property, an acquisition of right-of-way, or a loss and/or degradation of species' habitat.
threatened	A species that is likely to become an endangered species within the foreseeable future throughout all or part of its range, and is protected by state and/or federal law.
trackage rights	The right or combination of rights of one railroad to operate over the designated trackage of another railroad including, in some cases, the right to operate trains over the designated trackage; the right to interchange with all carriers at all junctions; the right to build connections or additional tracks in order to access other shippers or carriers.
turnout	A track arrangement consisting of a switch and frog with connecting and operating parts, extending from the point of the switch to the frog, which enables engines and cars to pass from one track to another.
unit train	A train consisting of cars carrying a single commodity, e.g., a coal train (see also bulk train).
water resources	An all inclusive term that refers to many types of permanent and seasonally wet/dry surface water features including springs, creeks, streams, rivers, ponds, lakes, wetlands, canals, harbors, bays, sloughs, mudflats, and sewage-treatment and industrial waste ponds.

wetland — As defined by 40 CFR Part 230.3, wetlands are "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands generally include swamps, marshes, bogs, and similar areas.

wye track — A principal track and two connecting tracks arranged like the letter "Y" on which locomotives, cars and trains may be turned.

yard truck — Any truck that has delivery into a rail yard.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
AQCR(s)	Air Quality Control Region(s)
BIA	Bureau of Indian Affairs
BMPs	Best Management Practices
BN	Burlington Northern & Santa Fe Railroad Company
CAAA	Clean Air Act and Amendments
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CN	Canadian National
CO	Carbon Monoxide
COE	United States Army Corps of Engineers
CSX	CSX Transportation, Inc.
CTC	Centralized Traffic Control
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
db	Decibel
dBA	Decibels (of sound) A range
DOT	United States Department of Transportation
EA	Environmental Assessment
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps

FMEA	Failure Mode and Effects Analysis
FRA	Federal Railroad Administration
HC	Hydrocarbons (in air)
IC	Illinois Central
ICC	Interstate Commerce Commission (former licensing agency for the proposed Acquisition; Acquisition approval authority now with the Surface Transportation Board)
ISTEA	Intermodal Surface Transportation Efficiency Act
L_{dn}	Day-night equivalent sound level
L_{max}	Maximum sound level during train passby, dBA
LIRR	Long Island Rail Road
LOS	Level of Service
LUST	Leaking Underground Storage Tank
MARC	Maryland Rail Commuter
MNR	Metro North Railroad
MOU	Memorandum of Understanding
MP	Mile Post
MPH	Miles per Hour
NAAQS	National Ambient Air Quality Standards
NEC	Northeast Corridor
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NJT	New Jersey Transit
NO_2	Nitrogen dioxide
NO_X	Nitrogen oxides
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System

NPL	National Priorities List
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NS	Norfolk Southern Railway Company
NWI	National Wetlands Inventory
O_3	Ozone
OSHA	Occupational Safety and Health Administration
OTR	Ozone Transport Region
Pb	Lead
PDEA	Preliminary Draft Environmental Assessment
PM_{10}	Particulate Matter (under 10 microns in diameter)
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Information System
ROW	Right-of-Way
SEA	Section of Environmental Analysis
SEPTA	Southeast Pennsylvania Transit Authority
SCS	Soil Conservation Service (currently named Natural Resources Conservation Service, Division of United States Department of Agriculture)
SEL	Source sound exposure level at 100 feet, dBA
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan (for air quality)
SO_2	Sulfur dioxide
SO_X	Sulfur oxides
SPL	State Priority List
STATSGO	State Soil Geographic Database

STB	Surface Transportation Board
SWLF	State Inventory of Solid Waste Facilities
TRAA	Terminal Railroad Association of St. Louis
TSD	Treatment, Storage, or Disposal Sites
TSP	Total Suspended Particulates (particulate matter)
UP/SP	Union Pacific and Southern Pacific Railroad
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VISTA	VISTA Environmental Information, Inc.
VOC	Volatile organic compounds
VRE	Virginia Rail Express

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CHAPTER 5

State Settings, Impacts and Proposed Mitigation

5.1 INTRODUCTION

The proposed Conrail Acquisition, if approved, would result in physical and operational changes in 24 states and Washington, D.C. These changes would include construction projects and rail line abandonments as well as changes to rail yards, rail segments, and intermodal facilities. Because of the broad geographic scope of the project, the environment and the human population could be affected on several levels: system-wide, regional, and local or site-specific.

Chapter 4 focused on system-wide and regional effects, which include safety, traffic and transportation systems, air quality, and energy usage. This chapter contains SEA's evaluation of local and site-specific environmental issues. These include noise, natural resources, cultural resources, land use/socioeconomics, environmental justice, and hazardous waste, as well as the site-specific effects on safety, traffic and transportation systems, and air quality.

Section 5.2 of this chapter provides an overview of the methods used for each impact analysis area. These methods are described in detail in Chapter 3, "Analysis Methods and Potential Mitigation Strategies." Section 5.3, "Summary of Impacts and Mitigation," presents, by state, summary tables of the impacts and mitigation for each type of action.

After Section 5.3, Sections 5-AL through 5-WV discuss settings, impacts, and proposed mitigation along rail line segments, at rail yards, intermodal facilities, proposed new construction, and rail line abandonments. These sections are organized alphabetically by state using postal code abbreviations. This state-by-state organization is designed to help readers to easily identify the effects of Acquisition-related changes to their community. Each state section begins with a broad overview of the geographic, economic, industrial and agricultural characteristics as they relate to railroad operations and facilities. In each state, a table summarizes the setting for rail line segments, rail yards, intermodal facilities, and new construction and proposed abandonments that meet or exceed the Board's thresholds for environmental analysis. (See Chapter 1, "Purpose of and Need for the Conrail Acquisition," for a detailed discussion of Board thresholds.) Then, for each technical area of analysis, SEA presents the results of its evaluation of potential environmental impacts resulting from

Acquisition-related activities and possible mitigation measures to reduce environmental impacts if warranted.

The Applicants provided information about the proposed physical and operational changes presented in this chapter. As part of the evaluation process, SEA reviewed and verified this information, supplemented it with additional technical analysis, consulted with appropriate state and local officials, and conducted site inspections. In some cases, information about the proposed physical and operational changes is based on conceptual information, as CSX and NS have not completed the detailed design for new facilities. Although CSX and NS are providing updates and additional information to SEA as design and engineering refinements are made, it is likely that final design will be completed only if the Board approves the proposed Conrail Acquisition. Therefore, SEA's analysis in this Draft EIS is based on the best information available at the time the analysis was completed. Where possible, SEA incorporated minor changes, design refinements and location shifts into the impact analysis.

5.2 SITE-SPECIFIC ANALYSIS APPROACH

For the site-specific analysis, SEA evaluated each Acquisition-related activity (changes in freight train traffic on existing rail line segments, changes in activity at rail yards and intermodal facilities, new construction, and proposed rail line abandonments) that meet or exceed the Board's thresholds for environmental analysis. SEA evaluated each activity according to the technical issue areas and methods described in Chapter 3, "Analysis Methods and Potential Mitigation Strategies." In addition, as a result of the scoping process, SEA expanded the Draft EIS analysis to include an evaluation of safety and transportation impacts for any rail segment with passenger service that would have an increase of one or more freight trains per day. SEA also decided to evaluate potential safety impacts for all rail segments used for hazardous materials transport.

SEA developed evaluation methods and criteria to determine if any impact was significant. Table 2-1 in Chapter 2 details the criteria of significance by issue area. For those activities SEA determined to have a significant adverse impact, SEA considered potential mitigation measures that could be applied to reduce the impact.

The following paragraphs briefly describe the technical methods and identify which of the proposed Acquisition-related activities/changes SEA evaluated. (See Table 5-1 for the activities evaluated by each technical area.) Chapter 3 and Appendices A through K provide a more detailed discussion of the technical analysis methods.

Table 5-1
Environmental Issues Studied by Activity Types

Issues	Operations on Rail Line Segments	Constructions	Operations at Intermodal Facilities	Operations at Rail Yards	Abandonments
Safety					
- Freight Rail Operation	▲		▲	▲	
- Passenger Rail Operations	▲				
- Roadway Crossings	▲	▲			▲
- Hazardous Materials Transport	▲		▲	▲	
Traffic and Transportation					
- Passenger Rail Service	▲				
- Roadway Crossing Delay	▲	▲			▲
- Roadway Capacity			▲		▲
- Navigation	▲				▲
Energy	▲		▲	▲	▲
Air Quality	▲	▲	▲	▲	▲
Noise	▲	▲	▲	▲	
Cultural Resources		▲			▲
Hazardous Waste Sites		▲			▲
Natural Resources		▲			▲
Land Use/Socioeconomics		▲			▲
Environmental Justice	▲	▲	▲	▲	

Safety: Freight Rail Operations

For the freight rail safety analysis, SEA used a statistical method to predict potential changes in the frequency of accidents resulting from proposed Acquisition-related changes in rail operations. SEA evaluated rail line segments that meet or exceed the Board's thresholds for environmental analysis. In addition, SEA studied safety at intermodal facilities and rail yards on a system-wide basis. Using this approach, SEA analyzed potential safety impacts on freight rail operations by rail line segment in 12 states (Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New York, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia) and the District of Columbia.

For the safety analysis, SEA used data from the U.S. Department of Transportation (DOT), the Federal Railroad Administration (FRA) and the Association of American Railroads (AAR). As described furthered in Chapter 3, Section 3.2.1, "Methods of Freight Rail Safety Analysis," SEA estimated the change in accident frequency by calculating historic accident rates expressed in train accidents per million train miles (this is the standard measure the FRA employs to calculate accident statistics) and applying these rates to the proposed changes in rail operations. To determine the historic accident rate, SEA considered the number of main tracks, class of track, and signal system for each rail segment. Then, SEA applied these unit rates to the proposed rail operations on the rail line segments to determine the post-Acquisition accident rates. SEA considered mitigation for rail line segments with estimated significant safety impacts.

Safety: Passenger Rail Operations

SEA evaluated the potential for increased accidents between freight trains and passenger trains, considering both intercity and commuter trains. Since changes in the risks of passenger rail operations are directly related to changes in overall train activity, the safety analysis concentrated on rail line segments that would experience an increase in freight train traffic of one or more trains per day. Generally, changes at intermodal facilities, rail yards, new construction areas, or proposed rail line abandonments have no impact on passenger rail safety. Using this approach, SEA studied potential safety impacts to passenger rail operations by rail line segment in 20 states (Alabama, Delaware, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Virginia, and West Virginia) and the District of Columbia.

SEA used similar methods for the passenger rail safety analysis as were used for the freight rail safety analysis. Section 3.3.1, "Methods of Safety Analysis for Passenger Rail Operations," provides additional details on the methods. To determine the change in accident frequency, SEA first calculated the historic accident rate (number of annual train collisions) on rail line segments with passenger train activity. SEA then estimated the change in the annual passenger train accident rate on a train-mile basis as a result of a post-Acquisition increase in freight operations.

Safety: Highway/Rail At-Grade Crossings

Increased train activity could potentially affect the safety of roadway users at locations where railroads and roadways cross. SEA evaluated the accident potential along rail line segments at locations where railroad tracks cross roadways at the same elevation (at-grade crossings). SEA did not analyze grade-separated crossings (overpasses and underpasses) because these crossings eliminate the potential for train-vehicle accidents by physically separating the roadway from the railroad tracks. SEA analyzed highway/rail at-grade crossing safety on rail line segments that meet or exceed the Board's analysis threshold of eight additional freight trains per day. Using this approach, SEA studied potential safety impacts at highway/rail at-grade crossings in 11 states (Illinois, Indiana, Kentucky, Maryland, Michigan, New York, Ohio, Pennsylvania, Tennessee, Virginia and West Virginia).

For the safety analysis, SEA used highway/rail at-grade accident data from FRA databases. As further described in Section 3.4.1, "Methods of Safety Analysis for Highway/Rail At-Grade Crossings," SEA used standard FRA methods and formulas to estimate the pre- and post-Acquisition at-grade crossing train-vehicle accident risk. SEA applied the formulas using the characteristics of the highway/rail at-grade crossing and statistical information on historic accident experience at the crossing.

Safety: Rail Transport of Hazardous Materials

Safety issues for the rail transportation of hazardous materials are related to the rail shipment of the material from one point to another. SEA analyzed all rail line segments where the number of carloads containing hazardous material would increase, regardless of whether the Board's thresholds of environmental analysis were exceeded. Using this approach, SEA studied potential safety impacts to the transport of hazardous materials along rail line segments in 20 states (Alabama, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia) and the District of Columbia.

As described in Section 3.5.1, " Methods of Safety Analysis for Rail Transport of Hazardous Materials," SEA used historic information from the last five years to derive the probability of a hazardous materials release after the proposed Conrail Acquisition. This historic information had been reported by the rail roads to the U.S. Department of Transportation. SEA further reviewed railroad operating plans, Spill Prevention, Control, and Countermeasure (SPCC) plans, and hazardous materials handling plans to identify current hazardous materials handling procedures and procedures for responding to hazardous materials releases.

Transportation: Passenger Rail Service

SEA evaluated potential Acquisition-related effects on the ability of rail line segments to accommodate existing passenger rail service and reasonably foreseeable new or expanded passenger service. The analysis of passenger rail operations included both intercity and commuter rail service. SEA identified those rail line segments where freight operations share the line with passenger rail operations and would experience an increase of one or more freight trains per day. Using this approach, SEA analyzed potential impacts to passenger rail service on rail line segments in 24 states (Alabama, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Massachusetts, Maryland, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Virginia, and West Virginia) and the District of Columbia.

For the analysis, SEA examined existing intercity and commuter rail schedules along with pre- and post-Acquisition railroad operating plans to assess the capacity of each affected rail line segment. As further explained in Section 3.6.1, "Methods for Passenger Rail Service Capability Analysis," SEA then determined the capability of the rail line segments to accommodate higher traffic volumes resulting from proposed Acquisition-related freight train increases.

Transportation: Highway/Rail At-Grade Crossing Delay

To analyze the effects of the proposed Conrail Acquisition on delays at existing highway/rail at-grade crossings, SEA identified at-grade crossings along rail line segments that would meet or exceed the Board's environmental analysis thresholds for air quality. SEA concluded that, for roadways with average daily traffic (ADT) volumes below 5,000 vehicles, relatively few drivers would experience the potential effect of increased train traffic and the associated additional vehicle delay would be minimal. For this reason, SEA did not include highway/rail at-grade crossings with daily traffic volumes below 5,000 vehicles in their impact analysis. SEA then calculated potential changes in vehicle delay at the remaining crossings where ADT volumes are 5,000 or greater. Using this approach, SEA analyzed highway/rail at-grade crossing delay in 13 states (Alabama, Georgia, Illinois, Indiana, Kentucky, Maryland, Michigan, New York, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia).

As defined in Section 3.7.1, "Methods for Highway/Rail At-Grade Crossing Delay," SEA calculated the crossing delay per stopped vehicle, the average delay for all vehicles, and the maximum vehicle queue for the highway/rail at-grade crossings identified for analysis. Together, these calculations express the potential effects of increased train traffic on vehicular delay at highway/rail at-grade crossings. SEA identified and evaluated mitigation measures where appropriate.

Transportation: Roadway Effects from Rail Facility Modifications

SEA evaluated the impact of additional truck traffic on the roadway system resulting from increased railroad activity at existing intermodal facilities, new intermodal facilities, and proposed rail line abandonments. SEA also evaluated the impact on highway/rail at-grade crossing delay and safety resulting from the construction of new rail line connections and proposed rail line abandonments. SEA identified the proposed Acquisition-related activities that would meet or exceed the Board's thresholds for environmental analysis as described in Section 3.8.1, "Methods for Determining Transportation Impacts from Increased Railroad Activities." Using this approach, SEA analyzed potential roadway effects at intermodal facilities, new constructions, and rail line abandonments in 13 states (Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, Missouri, New Jersey, New York, Ohio, Pennsylvania, and Tennessee).

As defined in Section 3.8.1, "Methods for Determining Transportation Impacts from Increased Railroad Activities," SEA examined traffic patterns on roadways surrounding intermodal facilities. SEA identified the major truck routes and calculated the expected increases in truck traffic resulting from Acquisition-related activities. The primary factor influencing potential impacts to the adjoining roadways is the percentage increase in average daily traffic resulting from additional truck traffic.

Section 3.7, "Transportation: Highway/Rail At-Grade Crossing Delay," discusses the procedures used for analyzing highway/rail at-grade crossing delay. SEA used the same methods for analyzing highway/rail at-grade crossing delay along new constructions as for analyzing highway/rail at-grade crossing delay resulting from increased freight train traffic on rail line segments. For proposed rail line abandonments, SEA evaluated the increase in truck trips to determine whether the additional truck trips would have a measurable impact on daily traffic patterns on nearby roads. SEA also considered the effects of eliminating highway/rail at-grade crossings.

Transportation: Navigation

To evaluate the potential effects of train traffic on water-borne 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 did not analyze intermodal facilities and rail yards because they do not directly relate to waterborne transportation activities. Using this approach, SEA analyzed the potential navigation impacts to bridges on rail line segments, new connection constructions, and proposed rail line abandonments in six states (Indiana, New Jersey, Ohio, Pennsylvania, Tennessee, and Virginia) and the District of Columbia.

SEA used data from the FRA to identify railroad bridges over navigable waterways. SEA verified the proposed railroad Operating Plans and coordinated the analysis with the Coast Guard district offices with jurisdiction over potentially affected areas. As stated in Section 3.9.1, "Methods for Evaluating Navigation Issues," waterborne navigation has the right-of-way in all instances. Therefore, any operating constraints resulting from post-Acquisition activities would be placed on the railroad and not on the waterborne users at movable bridges extending across navigable waterways.

Energy

The sources of change in energy efficiency include rail-to-truck diversions; truck-to-rail diversions; traffic rerouting; and changes in operations at rail yards and intermodal facilities. SEA assessed energy effects on a system-wide basis only. System-wide energy effects are presented in Section 4.11, "Energy."

Air Quality

Post-Acquisition operational changes could lead to an increase in air pollutant emissions. SEA analyzed the effects of the proposed Conrail Acquisition on air quality by evaluating rail line segments, rail yards, and intermodal facilities that would meet or exceed the Board's analysis thresholds for air quality. Although construction emissions (vehicle exhaust and fugitive dust emissions) generated by Acquisition-related construction projects and proposed rail line abandonments could occur, SEA did not analyze the effect of these emissions because they are expected to be relatively small and temporary. Using this approach, SEA analyzed potential air quality impacts by county in 18 states (Alabama, Delaware, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, Missouri, New Jersey, New York, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia) and the District of Columbia.

SEA evaluated county-wide emissions changes for nitrogen oxides (NO_x) in 98 counties and carbon monoxide (CO) three counties using the five-step process outlined in Section 3.11.1, "Methods for Air Quality Analysis." Emissions changes of all other air pollutants sulfur dioxide (SO_2), particulate matters (PM_{10}), volatile organic compounds (VOCs), and lead (Pb) from railroad activities did not exceed emissions screening levels for any county; therefore, SEA did not analyze them for any county or jurisdiction. After calculating the total emissions for individual counties that meet or exceed Board thresholds, SEA determined the significance of emissions increases in a given county. SEA considered three factors to determine significance: the absolute magnitude of increases, the relative percentage of increases compared with county-wide emissions from all sources, and the existing air quality status within the county.

Noise

To analyze the noise impacts of the proposed Conrail Acquisition, SEA evaluated rail line segments, rail yards, and intermodal facilities that would meet or exceed the Board's noise analysis thresholds. Although new construction projects and proposed rail line abandonments can result in noise increases, the noise effects would be temporary and therefore were not evaluated. Using this approach, SEA analyzed potential noise effects for rail line segments, rail yards, and intermodal facilities in 16 states (Delaware, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, Missouri, New Jersey, New York, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia) and the District of Columbia.

The noise analysis estimates the number of sensitive receptors that would be affected by noise levels of 65 dBA L_{dn} (A-weighted decibels day/night levels) or greater as a result of Acquisition-related activities. SEA determined receptors exposed to projected noise levels of 70 dBA L_{dn} or more, as well as a 5 dBA L_{dn} increase from wheel/rail and locomotive noise alone, to be subject to substantial noise impacts. Mitigation of such impacts using noise walls or other reasonable and feasible measures is being considered.

Noise impacts from train horns at highway/rail at-grade crossings cannot be mitigated at this time because of overriding safety issues. When the FRA "quiet zone" rules designed to mitigate train horn noise are finalized, communities may establish quiet zones as provided in those rules.

Cultural Resources

Cultural resources include historic and archaeological features. SEA determined that potential effects on cultural resources would most likely occur during new construction and proposed rail line abandonment activities. For this reason, SEA did not analyze changes on rail line segments, at intermodal facilities, or at rail yards. Using this approach, SEA analyzed potential impacts to cultural resources by site in eight states (Delaware, Illinois, Indiana, Maryland, Michigan, New Jersey, New York, and Ohio).

SEA conducted site visits, archival searches, and coordination with various State Historic Preservation Offices (SHPOs) to identify any historic or archaeological sites located in the site-specific project areas that are listed in or eligible for listing in the National Register of Historic Places. SEA used the "Criteria of Effect and Adverse Effect" (36 CFR 800.9) developed by the Advisory Council on Historic Preservation (ACHP) as the criteria for an adverse impact on historic properties. SEA also identified mitigation strategies to address adverse impacts on historic and archaeological resources.

SEA has initiated the Section 106 consultation process by sending letters to the State Historic Preservation Officer in each state potentially affected by the proposed Conrail Acquisition. In these letters, SEA has requested concurrence with the findings of the cultural resource analysis.

Appendix M contains the responses to these letters. For the Final EIS, SEA will update the summary of the Section 106 consultation process.

Hazardous Materials and Waste Sites

SEA identified potential impacts on hazardous waste sites for each location where proposed Acquisition-related construction or abandonment activities would take place. For this reason, SEA did not analyze changes on rail line segments, at intermodal facilities, or at rail yards. Using this approach, SEA analyzed potential impacts on hazardous waste sites and related environmental concerns by site in seven states (Illinois, Indiana, Maryland, Michigan, New Jersey, New York, and Ohio).

Hazardous waste sites are places where releases of hazardous materials have been reported to local, state, or Federal authorities. Related environmental concerns include facilities licensed to treat, store, or dispose of hazardous materials, leaking underground storage tanks (LUSTs), solid waste facilities and landfills (SWFs/LFs), and locations where SEA observed evidence of possible hazardous materials releases. Orphan sites are sites that could not be located because of inadequate location information. SEA obtained information on hazardous waste sites and related environmental concerns through database searches conducted by Environmental Data Resources, Inc. (EDR), site visits, and contact with local and state officials. Appendix H summarizes the EDR search results and provides the data sources for information on hazardous waste sites and related environmental concerns. Section 3.14.1, "Methods for Hazardous Materials Site Analysis," provides additional details of the analysis process. SEA also analyzed the potential environmental effects associated with the rail transportation of hazardous materials; these are discussed in Section 3.5, "Safety: Rail Transport of Hazardous Materials".

CSX and NS have detailed procedures and policies that would reduce or avoid impacts at locations where hazardous materials may be used or encountered. These procedures and policies reflect the railroads' intent to handle hazardous materials safely and comply with the regulatory requirements of Federal, state, and local agencies other than the Board. Therefore, additional mitigation measures generally are not needed. CSX and NS would address hazardous materials encountered or released during construction or abandonment activities as follows:

- CSX and NS would comply with applicable Federal, state and local regulations regarding the handling and disposal of any hazardous materials.

- Site clean-up and restoration would follow procedures in CSX and NS operating plans and applicable Federal and state regulations and guidelines. A general description of the allocation of responsibility for contaminated sites is provided in Appendix H.

- CSX and NS would transport hazardous materials in compliance with U.S. Department of Transportation Hazardous Materials Regulations (49 CFR Parts 171-174 and 177-179).

- In the event of an accidental spill of a hazardous material, CSX and NS would follow the appropriate response procedures outlined in their emergency response plans.

Natural Resources

Natural Resources include water resources, wetlands, biological resources, and habitats. SEA determined that the potential for impacts to water resources, wetlands, and biological resources would most likely be associated with site-specific projects related to the proposed abandonment of rail lines and construction of new rail line connections, rail yards, and intermodal facilities. SEA determined that operational changes, such as increases or decreases in the number of trains on rail line segments, have little direct effect on natural resources. Using this approach, potential impacts to natural resources were analyzed by site in seven states (Illinois, Indiana, Maryland, Michigan, New Jersey, New York, and Ohio).

As described further in Section 3.15.1, "Methods for Natural Resources Analysis," SEA reviewed the potential effects of the proposed Conrail Acquisition on water resources, wetlands, and biological resources by conducting site visits, scientific literature research, and agency consultation. SEA assessed potential impacts to Federally-listed threatened and endangered species; protected wildlife habitats and migration corridors; wildlife refuges and sanctuaries; national, state and/or local parks or forests; and protected unique or critical habitats. SEA also noted the potential need for Federal permits and additional coordination with appropriate regulatory and review agencies. SEA evaluated potential mitigation measures as part of the impact analysis.

Land Use and Socioeconomics

For the land use/socioeconomics analysis, SEA evaluated changes in the physical environment as a result of the proposed Conrail Acquisition. The issues included consistency with current land use plans and existing Coastal Zone Management plans, potential effects on prime farmland, and suitability of abandoned rights-of-way for alternative public uses. SEA determined that potential land use/socioeconomic effects would most likely result from the construction of new rail line connections or proposed rail line abandonments. For this reason, SEA did not analyze changes on rail line segments, at intermodal facilities, or at rail yards. Using this approach, SEA analyzed potential effects on land use/socioeconomic conditions by site in seven states (Illinois, Indiana, Maryland, Michigan, New Jersey, New York, and Ohio).

Initially, SEA conducted site visits and contacted local agencies to verify existing land use descriptions. SEA also collected information on prime farmland, coastal zone management, and American Indian reservations. As described further in Section 3.16.1, "Land Use/Socioeconomics Methodology," the analysis included a comparison of proposed Acquisition-related activities with local land use plans, identification of effects on prime farmland, and determination of consistency with Coastal Zone Management Plans. SEA

evaluated whether businesses and residences would be displaced, and identified whether construction projects or proposed rail line abandonments would occur on Indian reservations. For rail line abandonments, SEA evaluated alternative public uses for abandoned rights-of-way, and identified alternative modes for the transportation of goods and services that currently use the rail segments proposed for abandonment. For locations where significant impacts could occur, SEA evaluated mitigation strategies that could be implemented by CSX, NS, or local jurisdictions.

Environmental Justice

SEA investigated whether the proposed Conrail Acquisition would result in disproportionately high and adverse impacts on minority and low-income populations. The environmental justice analysis encompassed a wide range of environmental concerns, including safety, transportation, air quality, noise, cultural resources, hazardous waste sites, natural resources, and land use/socioeconomics. Because these environmental issues are involved with proposed changes in rail line segments, intermodal facilities, rail yards, and new constructions and proposed rail line abandonments, SEA evaluated all of the various proposed Acquisition-related activities that meet or exceed the Board's thresholds for environmental analysis. Using this approach, SEA analyzed potential environmental justice effects by site in 18 states (Alabama, Connecticut, Delaware, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, Missouri, New Jersey, New York, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia) and the District of Columbia.

Section 3.17.1, "Environmental Justice Analysis," describes additional details of analysis procedures for environmental justice. In general, SEA developed a six-step process to evaluate potential environmental justice impacts, which involved the following elements:

1. Identifying the potential health and environmental effects of the proposed acquisition.

2. Determining whether these potential effects might occur in minority or low-income communities.

3. Assessing whether potential effects in minority or low-income communities could be "high" and "adverse."

4. Determining whether potentially high and adverse effects "disproportionately affect" minority or low-income communities (in other words, whether such effects would be predominantly borne, more severely or in greater magnitude, in a minority or low-income community).

5. If so, consulting with the affected minority or low-income community about alternatives to the proposed Acquisition (including disapproving the Acquisition) and potential mitigation measures.

6. Identifying potential mitigation measures and alternatives to avoid or reduce the disproportionate effect.

5.3 SUMMARY OF IMPACTS AND MITIGATION

This section presents an alphabetical listing, by state, of the potential impacts and preliminary proposed mitigation action. Table 5-2 identifies these summary impacts warranting mitigation action. These site-specific potential impacts are listed for the applicable states. No mitigation is recommended in the states of Connecticut, Massachusetts, Rhode Island, and West Virginia.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
ALABAMA					
Safety	C-267: Decatur - Black Creek	Rail Line Segment	Jefferson, Blount, Cullman, Morgan	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop a Hazardous Materials Emergency Response Plan.
	C-268: Black Creek - Birmingham	Rail Line Segment	Jefferson, Tuscaloosa	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop a Hazardous Materials Emergency Response Plan.
	C-269: Birmingham - Parkwood	Rail Line Segment	Jefferson, Shelby	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop a Hazardous Materials Emergency Response Plan.
	C-270: Parkwood - Montgomery	Rail Line Segment	Shelby, Chilton, Autauga, Elmore, Montgomery	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop a Hazardous Materials Emergency Response Plan.
	C-271: Montgomery - Flomaton	Rail Line Segment	Montgomery, Lowndes, Butler, Conecuh, Escambia	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop a Hazardous Materials Emergency Response Plan.
	C-356: Lagrange, GA - Montgomery	Rail Line Segment	Chambers, Lee, Macon, Montgomery	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop a Hazardous Materials Emergency Response Plan.
	C-373: Nashville, TN - Stevenson, AL	Rail Line Segment	Jackson	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
ALAbAMA (Continued)					
Safety	C-376: Lagrange, GA - Parkwood, AL	Rail Line Segment	Jefferson, Shelby, Talladega, Clay, Randolph, Chambers	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.
	C-380: Thomasville, GA - Montgomery, AL	Rail Line Segment	Houston, Dale, Pike, Montgomery	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-386: Flomaton - Mobile	Rail Line Segment	Escambia, Baldwin, Mobile	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.
	C-387: Mobile, AL - New Orleans, LA	Rail Line Segment	Mobile	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.
DELAWARE					
Safety	C-201: Wilsmere - Baltimore	Rail Line Segment	New Castle	*Highway/Rail At-Grade Crossing Safety*: N. College Street at Newark New London/W. Main Streets at Newark	*Highway/Rail At-Grade Crossing Safety*: Consult with community, DELDOT, and University of Delaware to address safety concerns.
Cultural Resources	N/A: Shellpot Bridge	Construction	New Castle	Rehabilitation of historic bridge at Wilmington.	NS shall complete Section 106 process prior to start of construction.
FLORIDA					
Safety	C-403: Winston - Plant City	Rail Line Segment	Hillsborough	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
GEORGIA					
Safety	C-295: Corbin, KY - Cartersville, GA	Rail Line Segment	Bartow, Gordon, Murray	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-298: Manchester - Waycross	Rail Line Segment	Meriwether, Talbot, Taylor, Macon, Doodly, Crisp, Wilcox, Turner, Ben Hill, Irwin, Coffee, Bacon, Ware	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.
	C-345: Yemassee, SC - Savannah, GA	Rail Line Segment	Chatham	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-346: Savannah - Jessup	Rail Line Segment		*Passenger Rail Safety*: Increase in risk for passenger train accidents.	*Passenger Rail Safety*: Freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point.
	C-347: Jessup - Waycross	Rail Line Segment	Ware, Pierce, Wayne	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-353: Greenwood, SC - Athens	Rail Line Segment	Clarke, Elbert, Madison	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.
	C-354: Athens - Atlanta	Rail Line Segment	Clarke, Barrow, Gwinnett, De Kalb, Fulton	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.
	C-355: Atlanta - Lagrange	Rail Line Segment	Troup	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
GEORGIA (Continued)					
Safety	C-356: Lagrange, GA - Montgomery, AL	Rail Line Segment	Fulton, Coweta, Troup	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.
	C-376: Lagrange, GA - Parkwood, AL	Rail Line Segment	Troup, Meriwether	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.
	C-377: Manchester - Lagrange	Rail Line Segment	Troup, Meriwether	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-380: Thomasville - Montgomery, AL	Rail Line Segment	Thomas, Grady, Decatur, Seminole, Early	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
ILLINOIS					
Safety	N-045: Lafayette Jct., IN - Tilton, IL	Rail Line Segment	Vermilion	*Hazardous Materials Transport*: A major key route. *Highway/Rail At-Grade Crossing Safety*: Campbell Crossing/TR 450	*Hazardous Materials Transport*: Develop a Hazardous Materials Emergency Response Plan. *Highway/Rail At-Grade Crossing Safety*. Upgrade existing safety devices.
	NC-02: Sidney Connection	Construction	Champaign	*Hazardous Materials Transport*	NS shall provide (upon request) copies of Hazardous Materials Emergency Response Plan and training for local community.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
ILLINOIS (Continued)					
Transportation	C-010: Barr Yard - Blue Island Junction	Rail Line Segment	Cook	*Highway/Rail At-Grade Crossing Delay:* Dixie Highway Broadway Street - 135th Street at Calumet Park.	*Highway/Rail At-Grade Crossing Delay:* Railroad shall consult with the County, ILDOT, and community regarding grade separations.
	C-011: Blue Island, Jct. - 59th Street	Rail Line Segment	Cook	*Highway/Rail At-Grade Crossing Delay:* 95th Street at Evergreen Park.	*Highway/Rail At-Grade Crossing Delay:* Railroad shall consult with the County, ILDOT, and community regarding grade separations.
Cultural Resources	CC-01: 75th Street SW, Chicago Connection	Construction	Cook	Interlocking Tower (impact not determined yet).	Railroad to complete Section 106 process before any steps to alter integrity of the tower.
	CC-02: Exermont Connection	Construction	St. Clair	Cahokia Mounds Historic Site (impact not determined yet).	Railroad to complete Section 106 process before construction or modification or new connection.
Natural Resources	NC-02: Sidney Connection	Construction	Champaign	Potential impact from right-of-way maintenance activities.	NS shall use only EPA-approved herbicides during right-of-way maintenance.
Landuse	NC-03: Tolono Connection	Construction	Champaign	Impact only if construction is outside the existing right-of-way.	Railroad not to disturb Daggy Street or residential properties.
Environmental Justice	CM-02: 59th Street, Chicago	Intermodal Facility	Cook	Minority population Truck route impact.	Railroad shall coordinate mitigation strategies with the local community.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
ILLINOIS (Continued)					
Environmental Justice	C-010: Barr Yard - Blue Island Jct.	Rail Line Segment	Cook	Minority population Highway/Rail At-Grade Crossing Delay. Noise.	Railroad shall coordinate mitigation strategies with the local communities.
	N-045: Lafayette, IN - Tilton, IL	Rail Line Segment	Vermilion	Minority and low-income population: Hazardous Materials Transport. Highway/Rail At-Grade Crossing Safety, Noise	Railroad shall coordinate mitigation strategies with the local communities.
Community	N/A: Chicago	Intermodal	Cook	Traffic and Noise at 59th Street Facility	CSX shall consult with community and agree on mitigation.
INDIANA					
Safety	C-025: Vincennes - Evansville	Rail Line Segment	Knox, Vanderburgh	*Hazardous Materials Transport*: A major key route. *Highway/Rail At-Grade Crossing Safety*: Hart Street (Knox) S. 15th Street (Knox) Ohio Street (Vanderburgh)	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan. *Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
	C-027: Willow Creek - Pine Jct.	Rail Line Segment	Lake, Porter	*Hazardous Materials Transport*: A major key route. *Highway/Rail At-Grade Crossing Safety*: Countyline Road (Lake) Hobart Road (Lake) Lake Street (Lake) Clark Road (Lake)	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan. *Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
INDIANA (Continued)					
Safety	C-066: Deshler, OH - Willow Creek, IN	Rail Line Segment	De Kalb, Elkhart, Kosciusko, La Porte, Marshall, Noble, Porter, St. Joseph	*Hazardous Materials Transport*: A major key route. *Highway/Rail At-Grade Crossing Safety*: Seventh Street (Kosciusko) Huntington Street (Kosciusko) Main Street (Kosciusko) 900 North Street (Porter)	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan. *Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
	C-693: Willow Creek - Ivanhoe	Rail Line Segment	Porter, Lake	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	N-040: Alexandria - Muncie	Rail Line Segment	Delaware, Madison	*Highway/Rail At-Grade Crossing Safety*: CR 100E (Madison)	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
	N-041: Butler - Ft. Wayne	Rail Line Segment	Allen, De Kalb	*Hazardous Materials Transport*: A new and major key route. *Highway/Rail At-Grade Crossing Safety*: Estella Avenue (Allen) Anthony Boulevard (Allen) Notestine Road (Allen)	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan. *Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
INDIANA (Continued)					
Safety	N-042: CP 501 - Indiana Harbor	Rail Line Segment	Lake	*Freight Rail Operations:* Increase in accident frequency.	*Freight Rail Operations:* Increase rail flaw inspection frequency and provide annual training for equipment inspectors.
	N-044: Ft. Wayne - Peru	Rail Line Segment	Allen, Huntington, Miami, Wabash	*Hazardous Materials Transport:* A major key route. *Highway/Rail At-Grade Crossing Safety:* Engle Road (Allen) Briant Street (Huntington) Olive Street (Wabash) Wolf Road (Wabash)	*Hazardous Materials Transport:* Develop Hazardous Materials Emergency Response Plan. *Highway/Rail At-Grade Crossing Safety:* Upgrade existing safety devices.
	N-045: Lafayette, IN - Tilton, IL	Rail Line Segment	Fountain, Tippecanoe, Warren	*Hazardous Materials Transport:* A major key route. *Highway/Rail At-Grade Crossing Safety:* 7th Street (Tippecanoe) Romig Street (Tippecanoe) Smith Street (Tippecanoe) Greenbush Street (Tippecanoe) 4th Street (US 231) (Tippecanoe)	*Hazardous Materials Transport:* Develop Hazardous Materials Emergency Response Plan. *Highway/Rail At-Grade Crossing Safety:* Upgrade existing safety devices.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
INDIANA (Continued)					
Safety	N-046: Peru - Lafayette	Rail Line Segment	Carroll, Cass, Miami, Tippecanoe	*Hazardous Materials Transport*: A major key route. *Highway/Rail At-Grade Crossing Safety*: Carroll Washington Street/CR 100E Meridian Line Cass 18th Street Cedar Street Tippecanoe 18th Street CR 900N CR 900N CR500E Greenbush Street Union Street 17th and Salem Street	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan. *Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
	N-497: Kalamazoo, MI - Porter, IN	Rail Line Segment	Porter, La Porte	*Passenger Rail Safety*: Increase in risk for passenger train accidents.	*Passenger Rail Safety*: If dispatched by NS, freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point.
	CC-05: Willow Creek Connection	Construction	Porter	Hazardous Materials Transport	CSX shall provide (upon request) copies of Hazardous Materials Emergency Response Plan and training for local community.
	NC-04: Alexandria Connection	Construction	Madison	Hazardous Materials Transport	NS shall provide (upon request) copies of Hazardous Materials Emergency Response Plan and training for local community.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
INDIANA (Continued)					
Transportation	C-025: Vincennes - Evansville	Rail Line Segment	Gibson, Knox, Vanderburgh	*Highway/Rail At-Grade Crossing Delay:* W. Maryland Street (Vanderburgh) W. Franklin Street (Vanderburgh) Ohio Street (Vanderburgh)	Increase train speed by 5 mph at W. Maryland Street. Railroad shall consult with the community and develop mitigation.
	C-066: Deshler, OH-Willow Creek, IN	Rail Line Segment	De Kalb, Elkhart, Kosciusko, La Porte, Marshall, Noble, Porter, St. Joseph	*Highway/Rail At-Grade Crossing Delay:* Randolph Street (De Kalb)	Railroad shall consult with the community/INDOT regarding grade separation.
	N-040: Alexandria - Muncie	Rail Line Segment	Delaware, Madison	*Highway/Rail At-Grade Crossing Delay:* State Route 9 (Madison) Harrison Street (Madison)	Railroad shall consult with the community and develop mitigation.
	N-045: Lafayette, IN - Tilton, IL	Rail Line Segment	Tippecanoe	*Highway/Rail At-Grade Crossing Delay:* Ferry Street Main Street Columbia Street South Street (SR 26) 9th Street 4th Street (US 231)	Railroad shall consult with community on interim mitigation plan until Lafayette Bypass is implemented.
	N-046: Peru - Lafayette	Rail Line Segment	Carroll, Cass, Miami, Tippecanoe	*Highway/Rail At-Grade Crossing Delay:* Underwood Street (Tippecanoe) 18th Street (Tippecanoe) 17th and Salem Streets (Tippecanoe) Union Street (Tippecanoe)	Railroad shall consult with community on interim mitigation plan until Lafayette Bypass is implemented.
Noise	CC-05: Willow Creek Connection	Construction	Porter	Wheel squeal noise.	If wheel squeal occurs CSX shall use rail lubrication.
Natural Resources	CC-05: Willow Creek Connection	Construction	Porter	Potential impacts of right-of-way maintenance activities.	CSX shall use only EPA-approved herbicides during right-of-way maintenance.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
INDIANA (Continued)					
Environmental Justice	NC-04: Alexandria Connection	Construction	Madison	Potential impacts of right-of-way maintenance activities.	NS shall use only EPA-approved herbicides during right-of-way maintenance.
	C-027: Willow Creek - Pine Jct.	Rail Line Segment	Lake, Porter	Low income and minority population: Hazardous Material Transportation Transportation/Safety Noise	Railroad shall coordinate mitigation strategies with the local communities.
	N-041: Butler - Ft. Wayne	Rail Line Segment	Allen, De Kalb	Low income population: Hazardous Material Transportation Transportation/Safety Noise	Railroad shall coordinate mitigation strategies with the local communities.
	N-045: Lafayette, IN - Tilton, IL	Rail Line Segment	Fountain, Tippecanoe, Warren	Low income and minority population: Hazardous Material Transportation Transportation/Safety Noise	Railroad shall coordinate mitigation strategies with the local communities.
Community	Lafayette	Rail Line Segment	Tippecanoe	Traffic delay and safety at 10 Highway/Rail At-Grade Crossings.	NS shall consult with the City and IDOT on interim mitigation plan.
	Muncie	Rail Line Segment	Delaware	Blocking Highway/Rail At-Grade Crossings.	NS shall consult with community on rail traffic holding practices.
	Four City Consortium	Rail Line Segment	Lake	Traffic delay at Highway/Rail At-Grade Crossings.	CSX and NS shall consult with the consortium and IDOT to address traffic delay and safety concerns.
KENTUCKY					
Safety	C-021: Evansville, IN - Amqui, TN	Rail Line Segment	Christian, Henderson, Hopkins, Todd, Webster	*Highway/Rail At-Grade Crossing Safety*: West Center Street (Hopkins) West Noel Street (Hopkins) West Dixon Street (Webster)	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
KENTUCKY (Continued)					
Safety	C-287: Latonia - Anchorage	Rail Line Segment	Kenton, Boone, Grant, Owen, Carroll, Henry, Oldham, Jefferson	*Hazardous Materials Transport*: Major key route.	*Hazardous Materials Transport*: Develop a Hazardous Materials Emergency Response Plan.
	C-288: Anchorage - Louisville	Rail Line Segment	Jefferson	*Hazardous Materials Transport*: Major key route.	*Hazardous Materials Transport*: Develop a Hazardous Materials Emergency Response Plan.
	C-289: Louisville, KY - Amqui, TN	Rail Line Segment	Jefferson, Bullit, Hardin, Hart, Barrn, Edmonson, Warren, Simpson	*Hazardous Materials Transport*: Major key route.	*Hazardous Materials Transport*: Develop a Hazardous Materials Emergency Response Plan.
	C-291: Covington - Latonia	Rail Line Segment	Boone, Kenton	*Hazardous Materials Transport*: Major key route.	*Hazardous Materials Transport*: Develop a Hazardous Materials Emergency Response Plan.
	C-292: Latonia - Winchester	Rail Line Segment	Kenton, Pendleton, Harrison, Bourbon, Clark	*Hazardous Materials Transport*: New key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-293: Winchester - Sinks	Rail Line Segment	Clark, Madison, Rockcastle	*Hazardous Materials Transport*: New key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-294: Sinks - Corbin	Rail Line Segment	Laurel, Whitley	*Hazardous Materials Transport*: New key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-295: Corbin, KY - Cartersville, GA	Rail Line Segment	Knox, Whitley	*Hazardous Materials Transport*: New key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-617: N. Hazard - Duane	Rail Line Segment	Perry	*Hazardous Materials Transport*: New key route.	*Hazardous Materials Transport*: Implement AAR guidelines.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
KENTUCKY (Continued)					
Transportation	C-021: Evansville, IN - Amqui, TN	Rail Line Segment	Christian, Henderson, Hopkins, Todd, Webster	*Highway/Rail At-Grade Crossing Delay*: West Noel Street (Hopkins) E. 9th Street (Christian)	*Highway/Rail At-Grade Crossing Delay*: Railroad consult with the community/KYDOT regarding grade separation.
LOUISIANA					
Safety	C-387: Mobile, AL - New Orleans, LA	Rail Line Segment	St. Bernard	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop a Hazardous Materials Emergency Response Plan.
MARYLAND					
Safety	C-003: Washington D.C. - Pt. Of Rocks, MD	Rail Line Segment	Frederick, Montgomery	*Passenger Rail Safety*: Increase in risk for passenger train accidents.	*Passenger Rail Safety*: Freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point.
	C-031: Alexandria Jct., MD - Washington, D.C.	Rail Line Segment	Prince Georges	*Hazardous Materials Transport*: A new key route.	Implement AAR guidelines.
	C-034: Jessup - Alexandria Jct.	Rail Line Segment	Anne Arundel, Howard, Prince Georges	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.
	C-037: Relay - Jessup	Rail Line Segment	Anne Arundel, Baltimore, Howard	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
MARYLAND (Continued)					
Safety	N-091: Harrisburg, PA - Riverton Jct., VA	Rail Line Segment	Washington	*Highway/Rail At-Grade Crossing Safety*: Lappans Road Riff Church Road Shawley Drive	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
Transportation	C-030: Alexandria Jct., MD - Benning, D.C.	Rail Line Segment	Prince Georges	*Highway/Rail At-Grade Crossing Delay*: Decatur Street at Hyattsville Upshur Street at Bladensburg Annapolis Road at Bladensburg	*Highway/Rail At-Grade Crossing Delay*: Increase train speed.
	C-032: Baltimore - Relay	Rail Line Segment	Baltimore City, Baltimore	*Highway/Rail At-Grade Crossing Delay*: Hollins Ferry Road	*Highway/Rail At-Grade Crossing Delay*: Increase train speed.
Environmental Justice	C-030: Alexandria Jct., MD - Benning, D.C.	Rail Line Segment	Prince Georges	Minority population: Transportation (Highway/Rail At-Grade crossing delay)	Railroad shall coordinate mitigation strategies with the local communities.
	C-031: Alexandria Jct., MD - Washington, D.C.	Rail Line Segment	Prince Georges	Minority Population: Hazardous Materials Transport	Railroad shall coordinate mitigation strategies with the local communities.
	C-032: Baltimore - Relay	Rail Line Segment	Baltimore, Baltimore City	Minority population: Transportation (Highway/Rail At-Grade Crossing Delay)	Railroad shall coordinate mitigation strategies with the local communities.
MICHIGAN					
Safety	C-040: Carleton, MI - Toledo, OH	Rail Line Segment	Monroe	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.
	C-214: Detroit - Plymouth	Rail Line Segment	Wayne	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
MICHIGAN (Continued)					
Safety	N-120: Jackson - Kalamazoo	Rail Line Segment	Kalamazoo, Calhoun, Jackson	*Passenger Rail Safety*: Increase in risk for passenger train accidents.	*Passenger Rail Safety*: Freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point.
	N-121: West Detroit - Jackson	Rail Line Segment	Jackson, Washtenaw, Wayne	*Highway/Rail At-Grade Crossing Safety*: Forrest Street (Washtenaw) Beech Daly Drive (Wayne)	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
				Passenger Rail Safety: Increase in risk for passenger train accidents.	*Passenger Rail Safety*: Freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point.
	N-497: Kalamazoo, MI - Porter, IN	Rail Line Segment	Berrien, Cass Van Buren, Kalamazoo	*Passenger Rail Safety*: Increase in risk for passenger train accidents.	*Passenger Rail Safety*: If dispatched by NS, freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point.
	S-020: Carleton - Ecorse	Rail Line Segment	Monroe, Wayne	*Highway/Rail At-Grade Crossing Safety*: Pennsylvania Road (Wayne)	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
Noise	S-020: Carleton - Ecorse	Rail Line Segment	Monroe, Wayne	Exceeds 70 dBA L_{dn} at 100 feet from the tracks and an increase of at least 5 dBA.	Railroad shall coordinate mitigation strategies with the local community.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
MICHIGAN (Continued)					
Safety	N-120: Jackson - Kalamazoo	Rail Line Segment	Kalamazoo, Calhoun, Jackson	*Passenger Rail Safety*: Increase in risk for passenger train accidents.	*Passenger Rail Safety*: Freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point.
	N-121: West Detroit - Jackson	Rail Line Segment	Jackson, Washtenaw, Wayne	*Highway/Rail At-Grade Crossing Safety*: Forrest Street (Washtenaw) Beech Daly Drive (Wayne) *Passenger Rail Safety*: Increase in risk for passenger train accidents.	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices. *Passenger Rail Safety*: Freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point.
	N-497: Kalamazoo, MI - Porter, IN	Rail Line Segment	Berrien, Cass Van Buren, Kalamazoo	*Passenger Rail Safety*: Increase in risk for passenger train accidents.	*Passenger Rail Safety*: If dispatched by NS, freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point.
	S-020: Carleton - Ecorse	Rail Line Segment	Monroe, Wayne	*Highway/Rail At-Grade Crossing Safety*: Pennsylvania Road (Wayne)	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
Noise	S-020: Carleton - Ecorse	Rail Line Segment	Monroe, Wayne	Exceeds 70 dBA L_{dn} at 100 feet from the tracks and an increase of at least 5 dBA.	Railroad shall coordinate mitigation strategies with the local community.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
MISSISSIPPI					
Safety	C-387: Mobile, AL - New Orleans, LA	Rail Line Segment	Hancock, Harrison, Jackson	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop a Hazardous Materials Emergency Response Plan.
MISSOURI					
Safety	N-478: Moberly - CA Jct.	Rail Line Segment	Ray, Carroll, Charlton, Randolph	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
NEW JERSEY					
Safety	C-769: Trenton - Port Reading	Rail Line Segment	Mercer, Somerset	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.
	S-032: PN - Bayway	Rail Line Segment	Union, Essex	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.
	S-211: Nave - N. Bergen	Rail Line Segment	Hudson	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.
	S-233: Frankfort Jct., PA - Camden, NJ	Rail Line Segment	Camden	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
NEW YORK					
Safety	C-052: CP Sycamore - Black Rock	Rail Line Segment	Erie	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
NEW YORK (Continued)					
Safety	N-061: Ebenezer - Buffalo	Rail Line Segment	Erie	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	N-062: Suffren - Campbell Hall	Rail Line Segment	Orange, Rockland	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	N-063: Campbell Hall - Port Jervis	Rail Line Segment	Orange	*Hazardous Materials Transport*: A new key route. *Passenger Rail Safety*: Increase in risk for passenger train accidents.	*Hazardous Materials Transport*: Implement AAR guidelines. *Passenger Rail Safety*: Freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point
	N-065: Corning - Buffalo	Rail Line Segment	Erie, Wyoming, Allegany, Steuben, Livingston	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	N-070: Buffalo FW, NY - Ashtabula, OH	Rail Line Segment	Chatauqua, Erie	*Highway/Rail At-Grade Crossing Safety*: Loomis Street (Chatauqua) *Hazardous Materials Transport*: A new and major key route.	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices. *Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.
	N-245: Port Jervis - Binghamton	Rail Line Segment	Broome, Delaware, Sullivan, Orange	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	N-246: Binghamton - Waverly	Rail Line Segment	Tioga, Broome	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
NEW YORK (Continued)					
Safety	N-247: Waverly - Corning	Rail Line Segment	Chemung, Steuben, Tioga	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
NORTH CAROLINA					
Safety	C-103: S. Richmond, VA - Weldon, NC	Rail Line Segment	Northampton	*Passenger Rail Safety*: Increase in risk for passenger train accidents.	*Passenger Rail Safety*: Freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point.
	C-334: Weldon - Rocky Mountain	Rail Line Segment	Northampton, Halifax, Nash, Edgecomb	*Passenger Rail Safety*: Increase in risk for passenger train accidents.	*Passenger Rail Safety*: Freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point.
	C-339: Pembroke, NC - Dillon, SC	Rail Line Segment	Robeson	*Hazardous Materials Transport*: A new key route.	Implement AAR guidelines.
	C-350: Hamlet - Monroe	Rail Line Segment	Union, Anson, Richmond	*Hazardous Materials Transport*: A major key route.	Develop Hazardous Materials Emergency Response Plan.
Safety	C-351: Monroe, NC - Clinton, SC	Rail Line Segment	Union	*Hazardous Materials Transport*: A major key route.	Develop Hazardous Materials Emergency Response Plan.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
NORTH CAROLINA (Continued)					
Safety	C-357: Hamlet, NC - McBee, SC	Rail Line Segment	Richmond	*Hazardous Materials Transport*: A new key route.	Implement AAR guidelines.
	N-360: Salisbury - Asheville	Rail Line Segment	Rowan, Iredell, Catawba, Berke, McDowell, Buncombe	*Hazardous Materials Transport*: A new key route.	Implement AAR guidelines.
	N-361: Asheville, NC - Leadvale, TN	Rail Line Segment	Madison, Buncombe	*Hazardous Materials Transport*: A new key route.	Implement AAR guidelines.
OHIO					
Safety	C-040: Carleton, MI - Toledo, OH	Rail Line Segment	Lucas	*Hazardous Materials Transport*: A major key route. *Highway/Rail At-Grade Crossing Safety*: Conneau Street (Lucas).	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan. *Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
OHIO (Continued)					
Safety	C-061: Berea - Greenwich	Rail Line Segment	Cuyahoga, Huron, Lorain	*Highway/Rail At-Grade Crossing Safety*: Pitts Road (Lorain) *Hazardous Materials Transport*: A major key route. *Freight Rail Operations*: Increase of accident frequency.	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices. *Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan. *Freight Rail Operations*: Increase rail flaw inspection frequency and provide annual training for equipment inspectors.
	C-064: Crestline - Bucyrus	Rail Line Segment	Crawford	*Highway/Rail At-Grade Crossing Safety*: Biddle Road (Crawford)	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
	C-065: Deshler - Toledo	Rail Line Segment	Henry, Wood	*Hazardous Materials Transport*: A major key route. *Highway/Rail At-Grade Crossing Safety*: <u>Henry County</u> Main Street North Street <u>Wood County</u> Range Line Road Washington Street Middletown Pike Roachton Road Eckel Road W. Boundary St. Bates Road Kellogg Road Tontogony Road Fire Point Road Eckel Jct. Road Eckel Road Ford Road Schrick Road	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan. *Highway/Rail At-Grade Crossing Safety*: Upgrade the existing safety devices.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
OHIO (Continued)					
Safety	C-066: Deshler, OH - Willow Creek, IN	Rail Line Segment	Defiance, Henry	*Hazardous Materials Transport*: A major key route. *Highway/Rail At-Grade Crossing Safety*: Jackson Street (Defiance).	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan. *Highway/Rail At-Grade Crossing*: Upgrade existing safety devices.
	C-067: Greenwich - Crestline	Rail Line Segment	Crawford, Huron, Richland	*Highway/Rail At-Grade Crossing Safety*: Baseline Road (Richland) Main Street (Richland)	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
	C-068: Greenwich - Willard	Rail Line Segment	Huron	*Hazardous Materials Transport*: A major key route. *Freight Rail Operations*: Increase in accident frequency.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan. *Freight Rail Operations*: Increase rail flaw inspection frequency and provide annual training for equipment inspectors.
	C-069: Marcy - Short	Rail Line Segment	Cuyahoga	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.
	C-070: Marion - Fostoria	Rail Line Segment	Seneca, Wyandot, Marion, Wood	*Highway/Rail At-Grade Crossing Safety*: Main Street (Seneca) TWP 0180 (Seneca) *Hazardous Materials Transport*: A new and major key route.	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices. *Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
OHIO (Continued)					
Safety	C-071: Marion - Ridgeway	Rail Line Segment	Hardin, Marion	*Highway/Rail At-Grade Crossing Safety*: Section Street (Marion) Marsh Road (Hardin)	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
	C-072: Mayfield - Marcy	Rail Line Segment	Cuyahoga	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.
	C-073: Quaker - Mayfield	Rail Line Segment	Cuyahoga	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.
	C-074: Short - Berea	Rail Line Segment	Cuyahoga	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.
	C-075: Willard - Fostoria	Rail Line Segment	Huron, Seneca	*Highway/Rail At-Grade Crossing Safety*: Gillick Road (Seneca) Morrison Road (Seneca) *Hazardous Materials Transport*: A major key route. *Freight Rail Operations*: Increase in accident frequency.	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices. *Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan. *Freight Rail Operations*: Increase rail flaw inspection frequency and provide annual training for equipment inspectors.
	C-081: New Castle, PA - Youngstown, OH	Rail Line Segment	Mahoning	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
OHIO (Continued)					
Safety	C-206: Fostoria - Deshler	Rail Line Segment	Henry, Wood, Hancock	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.
	C-228: Fostoria - Toledo	Rail Line Segment	Wood	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.
	C-229: Columbus - Marion	Rail Line Segment	Marion, Delaware, Franklin	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-695: CP Maumee - Oak	Rail Line Segment	Wood, Lucas	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.
	N-070: Buffalo, NY - Ashtabula, OH	Rail Line Segment	Ashtabula	*Hazardous Materials Transport*: A new and major key route.	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.
	N-071: Bellevue - Bucyrus	Rail Line Segment	Crawford, Sandusky, Seneca	*Highway/Rail At-Grade Crossing Safety*: Chatfield (Crawford)	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
	N-072: Vermilion - Bellevue	Rail Line Segment	Huron, Erie, Sandusky	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines .
	N-073: Fairgrounds (Columbus) - Bucyrus	Rail Line Segment	Crawford, Delaware, Franklin, Marion	*Highway/Rail At-Grade Crossing Safety*: Berlin Station Road (Delaware) Galion-Marseilles (Marion) Likens Street (Marion) Scott TWP Road-190 (Marion)	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
OHIO (Continued)					
Safety	N-075: Ashtabula - Cleveland	Rail Line Segment	Cuyahoga, Lake, Ashtabula	*Highway/Rail At-Grade Crossing Safety*: Walter Main Road (Ashtabula) *Hazardous Materials Transport*: A new and major key route.	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices. *Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan.
	N-077: Oak Harbor to Miami	Rail Line Segment	Lucas, Ottawa, Wood	*Freight Rail Operations*: Increase in accident frequency.	*Freight Rail Operations*: Increase rail flaw inspection frequency and provide annual training for equipment inspectors.
	N-079: Oak Harbor - Bellevue	Rail Line Segment	Huron, Ottawa, Sandusky	*Hazardous Materials Transport*: A new key route. *Highway/Rail At-Grade Crossing Safety*: Kilbourne Street (Sandusky) FRA ID 473680 (Street name unknown) (Sandusky) CR 292 (Sandusky) CR 175 (Sandusky)	*Hazardous Materials Transport*: Implement AAR guidelines. *Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
	N-080: Cleveland - Vermilion	Rail Line Segment	Cuyahoga, Erie, Lorain	*Hazardous Materials Transport*: A new and major key route. *Highway/Rail At-Grade Crossing Safety*: Kansas Avenue (Lorain)	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan. *Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
	N-081: White - Cleveland	Rail Line Segment	Cuyahoga	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
OHIO (Continued)					
Safety	N-082: Youngstown - Ashtabula	Rail Line Segment	Ashtabula, Mahoning, Trumbull	*Hazardous Materials Transport*: A new key route. *Highway/Rail At-Grade Crossing Safety*: Bradley-Brownlee Road (Trumbull) Warren Sharon Road (Trumbull)	*Hazardous Materials Transport*: Implement AAR guidelines. *Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
	N-085: Bellevue - Sandusky Docks	Rail Line Segment	Erie, Huron	*Highway/Rail At-Grade Crossing Safety*: Skadden/CR42 (Erie)	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
	N-086: Miami - Airline	Rail Line Segment	Lucas	*Freight Rail Operations*: Increase in accident frequency.	*Freight Rail Operations*: Increase rail flaw inspection frequency and provide annual training for equipment inspectors
	N-095: Rochester, PA - Youngstown, OH	Rail Line Segment	Mahoning	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	CC-06: Greenwich Connection	Construction	Huron	Hazardous Materials Transport	CSX shall provide (upon request) copies of Hazardous Materials Emergency Response Plan and training for local community.
	CC-07: Crestline Connection	Construction	Crawford	Hazardous Materials Transport	CSX shall provide (upon request) copies of Hazardous Materials Emergency Response Plan and training for local community.
	CC-08: Sidney Connection	Construction	Shelby	Hazardous Materials Transport	CSX shall provide (upon request) copies of Hazardous Materials Emergency Response Plan and training for local community.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
OHIO (Continued)					
Safety	NC-11: Bucyrus Connection	Construction	Crawford	Hazardous Materials Transport.	NS shall provide (upon request) copies of Hazardous Materials Emergency Response Plan and training for local community.
Transportation	C-061: Berea - Greenwich	Rail Line Segment	Cuyahoga, Lorain, Huron	*Highway/Rail At-Grade Crossing Delay:* Main Street (Lorain).	*Highway/Rail At-Grade Crossing Delay:* Increase train speed.
	C-063: Cincinnati - Hamilton	Rail Line Segment	Butler, Hamilton	*Highway/Rail At-Grade Crossing Delay:* Winton Road (Hamilton) Mitchell Avenue (Hamilton) Township Avenue (Hamilton) Vine Street (Butler)	*Highway/Rail At-Grade Crossing:* Railroad consult with community and develop mitigation.
	C-074: Short - Berea	Rail Line Segment	Cuyahoga	*Highway/Rail At-Grade Crossing Delay:* Hummel Road Engle Road	*Highway/Rail At-Grade Crossing Delay:* Increase train speed.
	NC-13: Oak Harbor Connection	Construction	Ottawa	*Safety and Traffic:* Vertical alignment of new at-grade crossing.	NS shall raise elevation at Toussaint-Portage Road and install two quadrant gate.
	NC-14: Vermilion Connection	Construction	Erie	*Safety and Traffic:* Vertical alignment of new at-grade crossing.	NS shall raise elevation of Corn Road.
Noise	C-061: Berea - Greenwich	Rail Line Segment	Cuyahoga, Lorain, Huron	Exceeds 70 dBA L_{dn} at 100 feet from the tracks and an increase of at least 5 dBA.	Railroad shall coordinate mitigation strategies with the local community.
	C-065: Deshler - Toledo	Rail Line Segment	Henry, Wood	Exceeds 70 dBA L_{dn} at 100 feet from the tracks and an increase of at least 5 dBA.	Railroad shall coordinate mitigation strategies with the local community.
	C-072: Mayfield - Marcy	Rail Line Segment	Cuyahoga	Exceeds 70 dBA L_{dn} at 100 feet from the tracks and an increase of at least 5 dBA.	Railroad shall coordinate mitigation strategies with the local community.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
OHIO (Continued)					
Noise	C-073: Quaker - Mayfield	Rail Line Segment	Cuyahoga	Exceeds 70 dBA L_{dn} at 100 feet from the tracks and an increase of at least 5 dBA.	Railroad shall coordinate mitigation strategies with the local community.
	C-074: Short - Berea	Rail Line Segment	Cuyahoga	Exceeds 70 dBA L_{dn} at 100 feet from the tracks and an increase of at least 5 dBA.	Railroad shall coordinate mitigation strategies with the local community.
	N-079: Oak Harbor - Bellevue	Rail Line Segment	Huron, Ottawa, Sandusky	Exceeds dBA L_{dn} at 100 feet from the tracks and an increase of at least 5 dBA.	Railroad shall coordinate mitigation strategies with the local community.
	CC-06: Greenwich Connection	Construction	Huron	Wheel squeal noise.	If wheel squeal occurs CSX shall use rail lubrication.
Cultural Resources	CR-03: Collinwood Yard, Cleveland	Construction	Cuyahoga	Acquisition and probable destruction of 4 to 9 extant historic district contributors.	Railroad to complete HABS documentation no later than 180 days following Board decision.
	NA-04: Toledo Pivot Bridge, Toledo	Abandon-ment	Lucas	Destruction of the Wheeling & Lake Erie Swing Bridge.	Railroad to complete HABS documentation before initiating any construction or removal activities.
Natural Resources	CC-06: Greenwich Connection	Construction	Huron	Potential impacts from right-of-way maintenance activities.	CSX shall use only EPA-approved herbicides during right-of-way maintenance.
	CC-07: Crestline Connection	Construction	Crawford	Potential impacts from right-of-way maintenance activities.	CSX shall use only EPA-approved herbicides during right-of-way maintenance.
	CC-08: Sidney Connection	Construction	Shelby	Potential impacts from right-of-way maintenance activities.	CSX shall use only EPA-approved herbicides during right-of-way maintenance.
	NC-11: Bucyrus Connection	Construction	Crawford	Potential impacts from right-of-way maintenance activities.	NS shall use only EPA-approved herbicides during right-of-way maintenance.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
OHIO (Continued)					
Natural Resources	NC-14: Vermilion Connection	Construction	Erie	Potential effect on endangered Indiana Bat.	NS shall, in consultation with US Fish and Wildlife Service, conduct survey prior to initiating construction to determine potential presence of endangered Indiana Bat.
Environmental Justice	C-072: Mayfield - Marcy	Rail Line Segment	Cuyahoga	Low income population: Hazardous Materials Transportation Noise	Railroad shall coordinate mitigation strategies with the local communities.
	C-073: Quaker - Mayfield	Rail Line Segment	Cuyahoga	Minority and low income population: Hazardous Materials Transportation Noise	Railroad shall coordinate mitigation strategies with the local communities.
	N-075: Cleveland - Ashtabula	Rail Line Segment	Ashtabula, Cuyahoga, Lake	Minority population: Hazardous Materials Transportation Noise	Railroad shall coordinate mitigation strategies with the local communities.
	N-081: White - Cleveland	Rail Line Segment	Cuhayoga	Minority and low income population: Hazardous Materials Transportation Noise	Railroad shall coordinate mitigation strategies with the local communities.
	N-082: Youngstown - Ashtabula	Rail Line Segment	Ashtabula, Mahoning, Trumball	Minority and low income population: Hazardous Material Transportation Noise	Railroad shall coordinate mitigation strategies with the local communities.
	N-086: Miami - Airline	Rail Line Segment	Lucas	Minority and low income population: Transportation/Freight Rail Operations Safety	Railroad shall coordinate mitigation strategies with the local communities.
Community	Western Cleveland Suburbs	Rail Line Segment	Cuyahoga	Traffic delay and safety at Highway/Rail At-Grade Crossings.	NS shall consult with affected communities on routing plans and improvements.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
OHIO (Continued)					
Community	Cleveland	Rail Line Segment	Cuyahoga	Increased rail traffic.	CSX and NS shall consult with affected communities on routing plans and mitigation measures.
PENNSYLVANIA					
Safety	C-081: Newcastle, PA - Youngstown, OH	Rail Line Segment	Lawrence	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-766: West Falls-CP Newtown Jct	Rail Line Segment	Philadelphia	*Hazardous Materials Transport*: A new and major key route. *Highway/Rail At-Grade Crossing Safety*: Increase in accidents at : Bradley-Brownlee Road (Trumbull) Warren Sharon Road (Trumbull)	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan. *Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
	N-070: Buffalo FW, NY - Ashtabula, OH	Rail Line Segment	Erie	*Hazardous Materials Transport*: A new and major key route. *Highway/Rail At-Grade Crossing Safety*: Increase in accidents at : Peach Street Cherry Street Raspberry Street Lucas Street	*Hazardous Materials Transport*: Implement AAR guidelines and develop Hazardous Materials Emergency Response Plan. *Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices at Lucas Street. Relocation to CSX corridor for the other crossings.
	N-090: Harrisburg-Rutherford	Rail Line Segment	Dauphin	*Freight Rail Operations*: Increase in accident frequency.	*Freight Rail Operations*: Increase rail flaw inspection frequency and to provide annual training for equipment inspectors

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
PENNSYLVANIA (Continued)					
Safety	N-091: Harrisburg, PA - Riverton Jct, VA	Rail Line Segment	Cumberland, Dauphin, Franklin, York	*Highway/Rail At-Grade Crossing Safety*: York Road (Cumberland) Criswall (Cumberland) Mill (Cumberland) Guilford Springs Road (Franklin) Hayes Road (Franklin)	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.
	N-095: Rochester, PA - Youngstown, OH	Rail Line Segment	Lawrence	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	N-203: Bethlehem-Allentown	Rail Line Segment	Lehigh, Northampton	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	N-216: Reading-Reading Belt Jct.	Rail Line Segment	Berks, Montgomery, Philadelphia	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	N-245: Port Jervis, NY - Binghamtom, NY	Rail Line Segment	Broome, Delaware, Sullivan, Orange	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	S-232: Park Jct. - Frankford Jct.	Rail Line Segment	Philadelphia	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	S-233: Frankford Jct., PA - Camden, NJ	Rail Line Segment	Philadelphia	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
Transportation	C-033: Cumberland, MD - Sinns, PA	Rail Line Segment	Allegheny, Bedford, Fayette, Somerset, Westmoreland	*Highway/Rail At-Grade Crossing Delay*: Main Street (Westmoreland)	*Highway/Rail At-Grade Crossing Delay*: Railroad consult with the community and develop mitigation.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
PENNSYLVANIA (Continued)					
Transportation	N-070: Ashtabula, OH - Buffalo, NY	Rail Line Segment	Erie	*Highway/Rail At-Grade Crossing Delays:* Peach Street Sassafras Street Cherry Street Liberty Street Raspberry Street	*Highway/Rail At-Grade Crossing Delays:* Relocate NS trains to CSX corridor.
Environmental Justice	N-090: Harrisburg-Rutherford	Rail Line Segment	Dauphin	Low Income Population: Transportation/Freight Rail Operation	Railroad shall coordinate mitigation strategies with the local communities.
Community	Erie	Rail Line Segment	Erie	Traffic delay and safety on 19th street.	NS shall reroute train traffic as indicated in proposed mitigation plans.
SOUTH CAROLINA					
Safety	C-339: Pembroke, NC - Dillon, SC	Rail Line Segment	Dillon	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-341: Florence - Lane	Rail Line Segment	Williamsburg, Florence	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-343: St. Stephens - Ashely Jct.	Rail Line Segment	Berkeley	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-344: Ashely Jct. - Yemassee	Rail Line Segment	Colleton, Charleston, Hampton	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-345: Yemassee, SC - Savannah, GA	Rail Line Segment	Jasper, Hampton	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-351: Monroe, NC - Clinton, SC	Rail Line Segment	Lancaster, York, Chester, Union, New Berry, Laurens	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
SOUTH CAROLINA (Continued)					
Safety	C-352: Clinton - Greenwood	Rail Line Segment	Laurens, Greenwood	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.
	C-353: Greenwood, SC - Athens, GA	Rail Line Segment	Abbeville, Greenwood	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.
	C-357: Hamlet, NC - McBee, SC	Rail Line Segment	Chesterfield	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-358: McBee - Columbia	Rail Line Segment	Chesterfield, Kershaw, Richland	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-359: Columbia - Fairfax	Rail Line Segment	Lexington, Orangeburg	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
TENNESSEE					
Safety	C-289: Louisville, KY - Amqui, TN	Rail Line Segment	Sumner, Davidson	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.
	C-295: Corbin, KY - Cartersville, GA	Rail Line Segment	Campbell, Anderson, Knox, Blount, Monroe, McMinn, Polk	*Hazardous Materials Transport*: New key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	C-373: Nashville, TN - Stevenson, AL	Rail Line Segment	Davidson, Rutherford, Bedford, Moore, Franklin	*Hazardous Materials Transport*: A major key route.	*Hazardous Materials Transport*: Develop Hazardous Materials Emergency Response Plan.
	N-361: Asheville, NC - Leadvale, TN	Rail Line Segment	Cocke	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	N-392: New Line - Leadvale	Rail Line Segment	Cocke, Jefferson	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
TENNESSEE (Continued)					
Safety	N-399: Bulls Gap - Frisco	Rail Line Segment	Hawkins, Hablen	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	N-406: Frisco - Kingsport	Rail Line Segment	Sullivan	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
VIRGINIA					
Safety	C-101: Fredericksburg - Potomac Yard	Rail Line Segment	Stafford, Prince William, Fairfax, Alexandria City, Arlington, Fredericksburg City	*Passenger Rail Safety*: Increase in risk for passenger train accidents.	*Passenger Rail Safety*: Freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point.
	C-103: S. Richmond, VA -Weldon, NC	Rail Line Segment	Greensville, Sussex, Dinwiddie, Chesterfield, Colonial Heights City, Petersburg City, Prince George, Richmond City	*Passenger Rail Safety*: Increase in risk for passenger train accidents.	*Passenger Rail Safety*: Freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point.
	N-315: Alexandria - Manassas	Rail Line Segment	Fairfax, Prince William	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	N-432: Poe ML - Petersburg	Rail Line Segment	Prince George	*Hazardous Materials Transport*: A new key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
	N-091: Harrisburg, PA - Riverton Jct, VA	Rail Line Segment	Clarke, Warren	*Highway/Rail At-Grade Cross: .g Safety*: SR 7 (Clarke) Rockland Road (Warren)	*Highway/Rail At-Grade Crossing Safety*: Upgrade existing safety devices.

Table 5-2 Summary of Impacts Warranting Mitigation By State

Technical Area	Site ID: Name	Type of Activity	County	Potential Impact	Preliminary Recommended Mitigation
WASHINGTON, D.C.					
Safety	C-003: Washington D.C. - Pt. Of Rocks, MD	Rail Line Segment	District of Columbia	*Passenger Rail Safety*: Increase in risk for passenger train accidents.	*Passenger Rail Safety*: Freight train moving in the same or opposite direction would be clear of the track at least 15 minutes before and after the expected arrival of passenger train at any point.
	C-031: Alexandria Jct, MD - Washington D.C	Rail Line Segment	District of Columbia	*Hazardous Materials Transport*: New key route.	*Hazardous Materials Transport*: Implement AAR guidelines.
Environmental Justice	C-030: Alexandria Jct., MD - Benning, D.C.	Rail Line Segment	District of Columbia	Minority Population: Transportation/Highway/Rail At-Grade Crossing Delay	Railroad shall coordinate mitigation strategies with the local communities.
	C-031: Alexandria Jct., MD - Washington D.C.	Rail Line Segment	District of Columbia	Minority Population: Hazardous Material Transportation	Railroad shall coordinate mitigation strategies with the local communities.

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5-NJ
NEW JERSEY

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

5-NJ.1 NEW JERSEY SETTING

New Jersey is a mid-Atlantic state. Principal products of New Jersey include chemicals, food, electrical equipment, fruits and vegetables, dairy products, eggs, peaches, stone, sand, gravel and zinc. 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

The major interstate highways in New Jersey are I-95, a major north/south route for the eastern United States; I-78, an east/west route; I-80, an east/west route; I-287, a north/south and I-295, a north/south route. These interstates serve the major cities of Newark and Trenton. The Port of Philadelphia, Pennsylvania and Camden, New Jersey along the Delaware River, serves the state of New Jersey. Similarly the Port of New York and New Jersey serves several facilities in the state, from the Atlantic Ocean.

Railroad Facilities

Fifteen railroads serve New Jersey and cover a total of 1,094 rail miles. Conrail is the only Class I Railroad in the state.

- Conrail operates 950 route miles in New Jersey, which is 87 percent of the state's total rail miles.

Communities served by Conrail include Trenton, Phillipsburg, Camden, Newark, and Jersey City.

Conrail operates intermodal terminals in Jersey City, Kearny, Elizabeth, and North Bergen. Other Conrail facilities are located in Linden, Metuchen, Ridgefield Heights and the Port Jersey terminal in Greenville. Conrail's intermodal facilities in Elizabeth and Newark serve the ports of the Newark Bay.

Intercity Passenger and Commuter Rail Services

Amtrak provides passenger rail service along the Northeast Corridor (NEC) through New Jersey. Amtrak provides service daily to Trenton, Princeton, New Brunswick, Metro Park, and Newark. New Jersey Transit (NJT) also operates on the NEC between New York City and Trenton, serving additional points on the NEC.

NJT and Metro North Commuter Railroad provide commuter rail service to the northern New Jersey/New York City metropolitan area.

5-NJ.2 PROPOSED CONRAIL ACQUISITION ACTIVITIES IN NEW JERSEY

In the Operating Plans submitted to the Board, the Applicants indicate that the proposed Conrail Acquisition would result in the creation of two-carrier competition in New Jersey. CSX would serve the state of New Jersey via two routes. CSX would connect its former B&O route between southeastern states and New Jersey with Conrail's Philadelphia - West Trenton mainline. Use of the West Trenton Branch also would provide a link to CSX's Baltimore - Pittsburgh corridor and midwest markets.

CSX also would serve New Jersey via the high-capacity water level Conrail route. This route provides connections to both the Midwest and New England markets. CSX would operate its own intermodal terminals at North Bergen and Kearny, New Jersey.

NS would operate the Lehigh Line between Bound Brook, New Jersey and Allentown, Pennsylvania and operate intermodal terminals at Elizabeth, Croxton and Morrisville, Pennsylvania. NS plans to expand and improve the Conrail intermodal facilities it would operate. NS also plans to modify the tunnel near Pattenberg, New Jersey on Conrail's Lehigh Line. Tunnel modifications would permit the movement of double stack containers through the tunnel, a shorter route between the metropolitan New York market and points south and west of Harrisburg, Pennsylvania.

NS would upgrade a second main line route between northern New Jersey and the Midwest, by using the Southern Tier corridor between Croxton, New Jersey and Buffalo, New York via Port Jervis and Binghamton, New York. NS would offer Triple Crown Services (TCS) as a premium intermodal service by using the NEC to move traffic between the metropolitan New York market and markets in the Southeast.

The North Jersey Shared Asset Area would include 189 route miles extending from near Little Ferry, New Jersey, on Conrail's River Line in the north up to but not including Trenton, New Jersey, on the NEC in the south and to Port Reading Junction in the west.

The South Jersey/Philadelphia Shared Assets Area would include 240 route miles extending from Marcus Hook, PA, in the south, to Trenton in the north, and to River Interlocking in the Belmont area of Philadelphia. This includes service to South Jersey points. Chapter 2, "Description of the Proposed Actions and Alternatives," includes a discussion of the Shared Assets Area.

Both CSX and NS plan to undertake extensive activities in New Jersey 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 New Jersey include increased train operations on a total of six rail line segments, construction of two rail line connections, and increased activity at four intermodal facilities.

In New Jersey, there are no rail yards that would meet or exceed the Board's thresholds for environmental analysis and there are no proposed abandonments. Tables 5-NJ-1, 5-NJ-2, and 5-NJ-3 show rail segments, intermodal facilities or new constructions in New Jersey that required environmental analysis. Figure 5-NJ-1 presented at the end of this state discussion, shows the general location of these facilities. Following these tables are brief descriptions of the activities, where appropriate.

Table 5-NJ-1
New Jersey Rail Line Segments* which Meet or Exceed Board Environmental Thresholds

Site ID	From	To	Description	Length in Miles	County	Setting
N-050	Ridgewood Jct.	Croxton	NJT Bergen Line	14	Bergen	Residential/Commercial
				3	Hudson	Commercial/ Industrial
N-064	Suffren, NY	Ridgewood Jct.	Conrail NJT Mainline	10	Bergen	Residential/ Commercial
S-030	Lane	Union	Amtrak Northeast Corridor	1	Union	Industrial/ Commercial
				3	Hudson	Industrial/Commercial
				3	Essex	Industrial/Commercial
S-031	Midway	Morrisville, PA	Amtrak Northeast Corridor	9	Mercer	Residential/Commercial/ Industrial
				7	Middlesex	Residential/ Commercial/ Industrial

Table 5-NJ-1
New Jersey Rail Line Segments* which Meet or Exceed Board Environmental Thresholds

Site ID	From	To	Description	Length in Miles	County	Setting
S-032[a]	PN	Bayway	CRC Newark to Bayway	5	Union	Residential/ Commercial/Industrial
				4	Essex	Residential/ Commercial/Industrial
S-033	Union	Midway	Amtrak Northeast Corridor	15	Middlesex	Commercial/ Residential
				7	Union	Commercial/ Residential

N = NS; S = Shared Asset Areas as described in the Application; [a] = Shared Asset Line as described in the Application.

* None of the above exceed 8 trains/day threshold; however, all exceed the 3 train Air Quality threshold.

Table 5-NJ-2
New Jersey Intermodal Facilities Which Meet or Exceed Board Environmental Thresholds

Site ID	Location	County	Facility	Description	Setting
CM-03	Little Ferry	Bergen	Little Ferry	Increase of 177 trucks per day	Industrial
CM-04	South Kearney	Hudson	South Kearney	Increase of 78 trucks per day	Industrial
NM-10	Elizabeth	Union	E-Rail	Increase of 335 trucks per day	Urban/Industrial
SM-01	Elizabeth	Essex, Union	Portside	Increase of 50 trucks per day	Industrial/Transportation

Table 5-NJ-3
New Jersey New Constructions Which Meet or Exceed Board Environmental Thresholds

Site ID	Location	County	Length in feet	Description	Setting
CC-04	Little Ferry	Bergen	480 600	• Two connections between Conrail and NYS&W tracks	Industrial

Intermodal Facilities

Little Ferry Intermodal Facility (Bergen County, NJ) (CSX). The CSX Little Ferry intermodal facility is located in North Bergen in an area roughly bounded by the New Jersey Turnpike/Interstate 95, Interstate 80/95, and State Route 495. (See Figure 5-NJ-2, presented at the end of this state discussion.) The main gate for truck entry and exit movements is located at the end of Westside Avenue. The primary route trucks use to and from the north via U.S. Route 1/9 is along Patterson-Plank Road to Westside Avenue.

The facility currently handles approximately 215 trucks per day. The proposed Conrail Acquisition would increase this figure to 392 trucks per day. This daily increase of 177 trucks per day corresponds to 354 additional truck trips per day.

South Kearny Intermodal Facility (Hudson County, NJ) (CSX). The Conrail South Kearny intermodal facility located in southeastern Kearny would be operated by CSX after the proposed Conrail Acquisition. The main gate for truck entry and exit movements is located on Fish House Road. (See Figure 5-NJ-3, presented at the end of this state discussion.) The primary route trucks use to and from the New Jersey Turnpike/I-95 is Truck U.S. Routes 1 and 9 (Communipaw Avenue), Central Avenue and Fish House Road.

The facility currently handles approximately 410 trucks per day. The proposed Conrail Acquisition would increase this figure by 78 to a total of 488 trucks per day.

E-Rail Intermodal Facility (Union County, NJ) (NS). NS would operate the Conrail intermodal facility in Elizabeth after the proposed Conrail Acquisition. E-Rail is a conventional intermodal facility located in southeastern Elizabeth off Trumball Street. The primary route trucks use to and from E-Rail and the New Jersey Turnpike/I-95 includes North Avenue/State Route 439 and Dowd Avenue to Trumball Street. The E-Rail facility currently handles approximately 72 trucks per day. The proposed Conrail Acquisition would increase this figure to a total of 407 trucks per day.

Portside Intermodal Facility (Union and Essex Counties, NJ) (CSX/NS) Portside is a Triple Crown Service facility located in northeastern Elizabeth off North Avenue/State Route 439 on port facility property owned by the Port Authority of New York and New Jersey (PANYNJ). (See Figure 5-NJ-4, presented at the end of this state discussion.) The main gate for truck entry and exit movements for Portside is located on Bay Street on PANYNJ property. The primary route trucks use to and from Portside and the New Jersey Turnpike/I-95 is North Avenue/State Route 439 to McLester Street to PANYNJ roadways to Bay Street. The Portside Facility currently handles approximately 26 trucks per day. The proposed Conrail Acquisition would increase this figure to a total of 76 trucks per day.

Construction

Construction: Little Ferry Connections (Bergen County, NJ) (CSX). The proposed constructions would consist of one new connection divided into two pieces , one north and one south, to facilitate rail traffic in and out of the yard. They would be located within the corporate boundaries of the Village of Ridgefield Park, NJ, approximately four miles west of New York City. Existing Conrail and New York Susquehanna and Western (NYS&W) tracks would be connected to allow trains to move between Conrail lines and a CSX Little Ferry intermodal facility. CSX would construct two connections between parallel lines of Conrail and NYS&W, facilitating the traffic moving on the Northwestern Gateway Service Route. The first connection would be approximately 480 feet long and second connection would be approximately 600 feet long. These connections would be built on existing railroad rights-of-way and therefore CSX would not need to acquire additional land. (See Figure 5-NJ-5, presented at the end of this state discussion.)

An alternative to the proposed alternative would be for CSX to construct the two connections farther north and south of the proposed alternative. Because the north connection would be in proximity to the Bergen Turnpike and result in traffic delays and congestion, CSX did not consider it to be a reasonable alternative; SEA concurs. A second option would have been to construct the two connections closer together. This alternative would not allow CSX to enter the Little Ferry Intermodal Terminal at both ends, which is the purpose of the connections; therefore CSX did not consider it to be a reasonable alternative; SEA concurs. The no-action alternative would not meet the purpose or need of the proposed action. Therefore, CSX did not consider it to be a reasonable alternative; SEA concurs.

5-NJ.3 NEW JERSEY SUMMARY OF ANALYSIS

Based on the nature of the proposed Conrail Acquisition-related activities in New Jersey 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 (Freight Rail Operations; Highway/Rail At-Grade Crossings).
- Transportation (Roadway Crossing Delay).
- Energy.

Details of the environmental analysis for New Jersey follow.

5-NJ.4 NEW JERSEY SAFETY: PASSENGER RAIL OPERATIONS

In New Jersey, 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. Five of these rail line segments are located in New Jersey; these rail line segments are part of Amtrak and New Jersey Transit 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. 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-NJ.4.1 Summary of Potential Effects and Preliminary Recommended Mitigation

The pre-Acquisition accident interval for each rail line segment is shown in Table 5-NJ-4. 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-NJ-4 also shows the expected change in years between accidents for the individual rail line segments.

Table 5-NJ-4
Estimated Change in Years Between Accidents for Freight Rail Operations

Site ID	From	To	Miles in State	Pre-Acquisition Accident Interval[a]	Post-Acquisition Accident Interval[a]
N-050	Croxton	Ridgewood Jct.	17	379	225
S-030	Lane	Union	7	1,430	442
S-031	Midway	Morrisville	16	1,015	314
S-033	Union	Midway	22	743	230
N-064	Suffern, NY	Ridgewood Jct.	10	1,423	1,020

[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 this rail line segment did not exceed SEA's criteria for significance. As a result, SEA does not propose mitigation.

5-NJ.5 NEW JERSEY 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-NJ.5.1 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-NJ.5.2 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 four rail line segments in New Jersey carrying increased amounts of hazardous material are of potential concern. Table 5-NJ-5 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. A total of three routes would at least double the volume of hazardous material transported, resulting in 20,000 or more car loads per year. Two routes meet both of these significance thresholds.

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

Table 5-NJ-5
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
C-769	Trenton, NJ	Port Reading, NJ	25	7,000	20,000	X	X
S-032	PN, NJ	Bayway, NJ	9	10,000	22,000		X
S-211	Nave, NJ	N. Bergen, NJ	6	7,000	20,000	X	X
S-233	Frankford Jct., PA	Camden, NJ	1	8,000	11,000	X	

For the three segments in Table 5-NJ-5 identified as major key routes, where the volume of hazardous material car loads would at least double and exceed 20,000 car loads, SEA recommends that the Applicants develop a Hazardous Materials Emergency Response Plan to contain and minimize the potential effects of any accidents or incidents. SEA will further recommend that the Applicants conduct hazardous materials accident simulations with the voluntary participation of emergency service providers along the rail line segments at least once every two years. Participants in these plans include county and municipal government, local fire departments, and medical and other emergency response teams.

5.NJ.6 NEW JERSEY TRANSPORTATION: PASSENGER RAIL SERVICE

In New Jersey, 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 Trenton, Princeton, New Brunswick, Metro Park, and Newark areas on Amtrak's Northeast Corridor line. 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.

New Jersey Transit Rail Operations (NJT) primarily serves the metropolitan New York City area by operating on nine lines radiating from New York's Penn Station, Newark's Penn Station, and the Hoboken (NJ) Terminal. It also operates between Philadelphia (30th Station) and Atlantic City. NJT carries 42.7 million passengers annually. Nearly 600 revenue trains operate on weekdays. NJT operates trains on the Port Jervis and Pascack Valley lines in New York State under contract with Metro-North commuter railroad.

NJT owns and operates (including dispatching) approximately 324 route miles. NJT has an operating agreement with Amtrak for approximately 57 route miles on the Northeast Corridor, and an operating agreement with Conrail for about 29 route miles, in four segments. One of these segments has through freight operations on 5.5 miles between NK and Aldene of Conrail's Lehigh rail line segment from NK to Bound Brook. This rail line segment is used by NJT's Raritan Valley service. CSX and NS have assigned this segment to the Conrail Shared Assets Operation. The Railroads propose a reduction of 10.5 freight trains per day (from 36.0 to 25.5 trains) in the Operations Plan that accompanied the Joint Application.

The NJT operating agreements with Conrail and Amtrak do not have specific expiration dates. NJT's 1984 Operating Agreement with Conrail expires with six months notice by either party. NJT's Operating Agreement with Amtrak remains in effect until either party elects to terminate the agreement, on ninety days notice. The NJT agreement with Amtrak provides for incentive payments for superior performance of Northeast Corridor operations by Amtrak.

Future Services Under Study

In addition to the existing commuter rail operations in New Jersey, the New Jersey Transit Office of New Rail Construction is presently studying the feasibility of instituting diesel-electric light rail service along the Conrail Bordentown Secondary, a local service-only freight line between Trenton and Camden, NJ through Burlington county. At present, NJT has funding and is negotiating with Conrail for exclusive operating access. Freight operations would not be conducted during passenger service hours. Other light rail construction in Hudson and Bergen counties would not be affected by the Conrail transaction because the proposed alignments are not affected by the Conrail Acquisition.

New Jersey Transit is also in the very early stages of a feasibility study of options for commuter service on the Northern Branch or River Line of Conrail.

5-NJ.6.2 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 on the Croxton to Port Jervis, New York rail line segment without adverse effects on passenger train service (refer to Section 5-NY.8, " New York Transportation: Passenger Rail Service"). Therefore, SEA does not anticipate that mitigation would be required. Section 4.7.1, "Intercity Passenger Rail Service" presents additional details regarding the potential commuter rail effects of the proposed Conrail Acquisition in New Jersey.

5-NJ.7 NEW JERSEY TRANSPORTATION: ROADWAY EFFECTS FROM RAIL FACILITY MODIFICATIONS

SEA evaluated the impact on highway/rail at-grade crossing delay resulting from the construction of new rail line connections at Ridgefield Park, NJ. SEA also evaluated the impact of additional truck traffic on the roadway system resulting from increased railroad activity at four intermodal facilities in New Jersey.

5-NJ.7.1 Constructions

SEA analyzed the transportation effects of proposed new construction projects in New Jersey resulting from the proposed Conrail Acquisition. For the new rail constructions, the transportation effects are related to highway/rail at-grade crossings. Therefore, SEA used the same analysis methods as described for highway/rail at-grade crossing delay and safety.

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

CSX proposed the construction of two new rail line connections in Ridgefield Park, New Jersey that require environmental analysis. A description of the transportation analysis for the proposed Acquisition is provided below.

Construction: Little Ferry Connections (Bergen County) (CSX)

CSX proposes to build two rail connections between the existing north-south New York, Susquehanna & Western and north-south Conrail lines in the southern portion of the Village of Ridgefield Park. The new tracks would connect parallel rail lines and would be approximately 480 and 600 feet long. It would handle five trains per day. Figure 5-NJ-5 shows the area of the proposed rail line connection.

Because there are no highway/rail at-grade crossings within the limits of construction, SEA concluded that there would be no effect on highway traffic from this proposed rail line

connection. There would be no short term vehicular delays and detours during construction of this rail connection. The construction would be performed in accordance with applicable Federal, state, and local regulations for construction projects. Construction traffic would use the Bergen Turnpike to travel to and from the construction.

5-NJ.7.3 Intermodal Facilities

Four intermodal facilities in New Jersey would experience increases in truck activity as a result of the proposed Acquisition. Others would experience decreases in truck activity. The following is a summary of CSX and NS intermodal operations in New Jersey.

5-NJ.7.4 Summary of Potential Effects and Preliminary Recommended Mitigation

Intermodal Facility: Elizabeth - E-Rail (Union County) (NS)

NS would operate the existing Conrail E-Rail intermodal facility in Elizabeth after the proposed Acquisition. E-Rail is a conventional intermodal facility located in southeastern Elizabeth near Trumball Street. The main gate for truck entry and exit movements for E-Rail is located at the end of a private road that intersects with Trumball Street. The facility is served by Exit 13A of the New Jersey Turnpike/Interstate 95. The primary route used by trucks to and from E-Rail and the New Jersey Turnpike/Interstate 95 includes North Avenue/State Route 439, Dowd Avenue, and Trumball Street.

The E-Rail facility currently handles approximately 72 trucks per day. The proposed Acquisition would increase this figure to a total of 407 trucks per day. This increase of 335 trucks per day corresponds to 670 additional truck trips per day. SEA assumed that all of the additional truck trips would use the four roadways identified above. Table 5-NJ-6 summarizes the analysis of traffic volumes to determine the effects of these additional truck trips on the roadways approaching the facility. The volumes associated with the nearby Portside facility are considered in this study.

The analysis results show that the total daily increase in truck traffic due to the proposed Acquisition would be less than seven percent of the average daily traffic (ADT) for all the study area roadways. Therefore, these increases in truck traffic, in addition to the increases from the Portside facility, would have insignificant effects on the area roadways. Additionally, the proposed construction of the new Metro Mall just north of the E-Rail facility and south of North Avenue/State Route 439 would include additional access from the New Jersey Turnpike/Interstate 95. Truck traffic to both E-Rail and Portside would disperse and use both available routes. This would reduce traffic on North Avenue/State Route 439, Dowd Avenue, and Trumball Street.

Table 5-NJ-6
Traffic Analysis Summary for Elizabeth E-Rail Intermodal Facility

Roadway Name	Roadway ADT	Increased Daily Truck Trips Using Roadway	Roadway ADT Percent Increase
NJ Turnpike/Interstate 95	194,300[a]	670	0.34%
North Ave./State Route 439	10,200[a]	670	6.57%
Dowd Ave.	20,000[b]	670	3.35%
Trumball St.	10,000[b]	670	6.70%

[a] From New Jersey Department of Transportation.
[b] From Federal Railroad Administration Grade Crossing Database.

Intermodal Facility: Elizabeth - Portside (Union and Essex Counties) (CSX and NS)

Conrail currently operates the Triple Crown Service Portside intermodal facility in Elizabeth. After the proposed Acquisition, this facility would be assigned to the Conrail Shared Assets Operations. Portside is located in northeastern Elizabeth near North Avenue/State Route 439 on port facility property owned by the Port Authority of New York and New Jersey (PANYNJ). The main gate for truck entry and exit movements is located on Bay Street on PANYNJ property. The facility is served by Exit 13A of the New Jersey Turnpike/Interstate 95. The primary route used by trucks to and from the New Jersey Turnpike/Interstate 95 is North Avenue/State Route 439, McLester Street, PANYNJ roadways, and Bay Street.

The Portside facility currently handles approximately 26 trucks per day. The proposed Acquisition would increase this figure to a total of 76 trucks per day. This increase of 50 trucks per day corresponds to 100 additional truck trips per day. SEA assumed that all of the additional truck trips would use the public roadways identified above. The analysis did not consider internal roadways on PANYNJ property. Table 5-NJ-7 summarizes the analysis of traffic volumes to determine the effects of these additional truck trips on the roadways approaching the facility. SEA considered traffic volumes associated with the nearby E-Rail facility in this study.

The analysis shows that the total daily increase in truck traffic as a result of the proposed Acquisition would be less than three percent of the ADT for all study area roadways. Therefore, SEA preliminarily determined that these increases in truck traffic, in addition to the increases from the E-Rail facility, would have insignificant effects on the area roadways. Additionally, the proposed construction of the new Metro Mall just north of the E-Rail facility and south of North Avenue/State Route 439 would include additional access from the New Jersey Turnpike/Interstate 95. Truck traffic to both E-Rail and Portside would disperse and use both available routes. This would reduce traffic on North Avenue/State Route 439.

Table 5-NJ-7
Traffic Analysis Summary for Elizabeth - Portside Intermodal Facility

Roadway Name	Roadway ADT	Increased Daily Truck Trips Using Roadway	Roadway ADT Percent Increase
NJ Turnpike/Interstate 95	194,300[a]	100	0.05%
North Ave./State Route 439	10,200 [a]	100	0.98%
McLester St.	3,500 [a]	100	2.86%

[a] From New Jersey Department of Transportation.

Intermodal Facility: Little Ferry - Little Ferry (Bergen County) (CSX)

The CSX Little Ferry intermodal facility is located in North Bergen in an area roughly bounded by the New Jersey Turnpike/Interstate95, Interstate 80/95, and State Route 495. The main gate for truck entry and exit movements is located at the end of Westside Avenue. The facility is served by U.S. Route 1/9, which is a north-south roadway. The primary route trucks use to and from the north via U.S. Route 1/9 is along 83rd Street to Westside Avenue. The primary route trucks use to and from the south along U.S. Route 1/9 is along Patterson-Plank Road to Westside Avenue.

The facility currently handles approximately 215 trucks per day. The proposed Acquisition would increase this figure to 392 trucks per day. This increase of 177 trucks per day corresponds to 354 additional truck trips per day. SEA assumed that half of the additional truck trips would travel to and from the north via U.S. Route 1/9 and 83rd Street, and the other half would travel to and from the south via U.S. Route 1/9, and Patterson Plank Road. All of the additional truck trips would use U.S. Route 1/9, and Westside Avenue. Table 5-NJ-8 summarizes the analysis of traffic volumes to determine the effects of these additional truck trips on the roadways approaching the facility.

The analysis results show that the total daily increases in truck traffic with the proposed Acquisition would be less than nine percent of the ADT for all study area roadways. Therefore, it is SEA's preliminary conclusion that these increases in truck traffic would have insignificant effects on the area roadways.

Table 5-NJ-8
Traffic Analysis Summary for Little Ferry Intermodal Facility

Roadway Name	Roadway ADT	Increased Daily Truck Trips Using Roadway	Roadway ADT Percent Increase
U. S. Route 1/9	32,500 [a]	354	1.09%
83rd St.	10,240 [b]	177	1.73%
Patterson-Plank Rd.	38,100 [b]	177	0.46%
Westside Ave.	4,100 [b]	354	8.63%

[a] From New Jersey Department of Transportation.
[b] From New Jersey Transit.

Intermodal Facility: South Kearney - South Kearney (Hudson County) (CSX)

CSX would operate the existing Conrail South Kearney intermodal facility located in southeastern Kearney after the proposed Conrail Acquisition. The main gate for truck entry, and exit movements is located on Fish House Road. The New Jersey Turnpike/Interstate 95 serves the intermodal facility. The primary route trucks use to and from the New Jersey Turnpike/Interstate 95 at Exit 15A is Truck U.S. Route 1/9 (Communipaw Avenue), Central Avenue, and Fish House Road.

The facility currently handles approximately 410 trucks per day. The proposed Acquisition would increase this figure to a total of 488 trucks per day. This increase of 78 trucks per day corresponds to 156 additional truck trips per day. SEA assumed that all of the additional truck trips would use the four roadways identified above. Table 5-NJ-9 summarizes the analysis of traffic volume to determine the effects of these additional truck trips on the roadways approaching the facility.

The analysis results show that the total daily increase in truck traffic with the proposed Acquisition would be less than three percent of the ADT for all study area roadways. Therefore, these increases in truck traffic would have insignificant effects on the area roadways.

Table 5-NJ-9
Traffic Analysis Summary for South Kearney Intermodal Facility

Roadway Name	Roadway ADT	Increased Daily Truck Trips Using Roadway	Roadway ADT Percent Increase
NJ Turnpike/Interstate 95	194,300[a]	156	0.08%
Truck U.S. 1/9 (Communipaw Ave.)	63,700 [a]	156	0.24%
Central Ave.	7,400[b]	156	2.11%
Fish House Rd.	7,600[b]	156	2.05%

[a] From New Jersey Department of Transportation.
[b] From Hudsen County Department of Finance and Administration.

5-NJ.8 NEW JERSEY 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 two movable bridges which carry rail traffic over navigable waterways in New Jersey that would meet or exceed the Board's environmental analysis thresholds. Conrail owns both bridges which are on rail line segments N-050 and S-032. The bridge on rail line segment N-050 crosses the Hackensack River near Secaucus. The bridge on rail line segment S-320 crosses the Elizabeth River near Elizabeth. The proposed Conrail Acquisition would result in an increase of 3.2 and 5.3 trains per day on the two bridges, respectively.

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 bridges 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 these two bridges.