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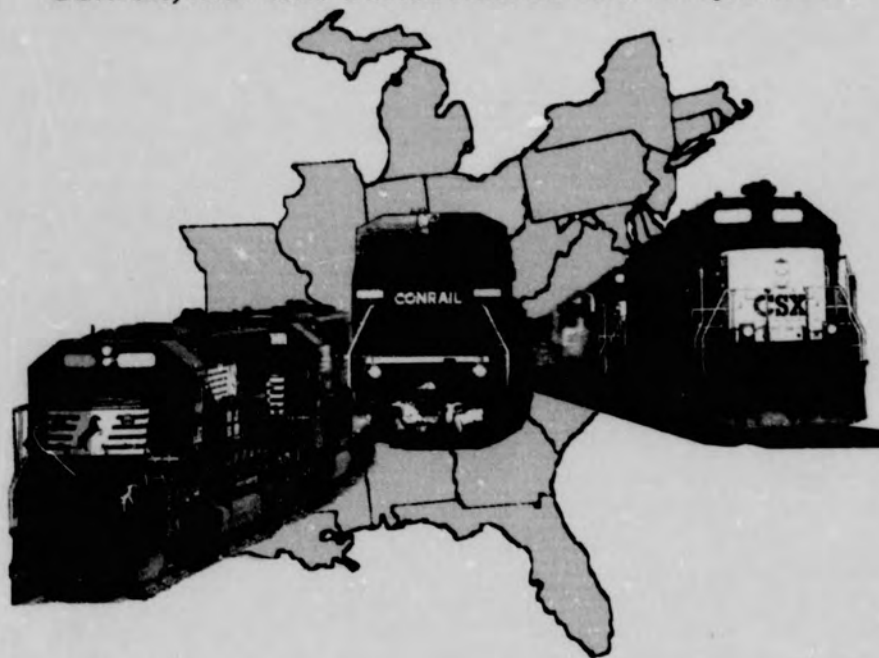
FINAL ENVIRONMENTAL IMPACT STATEMENT

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**



EXECUTIVE SUMMARY VOLUME

prepared by:

**Surface Transportation Board
Section of Environmental Analysis**
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SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Section of Environmental Analysis

May 29, 1998

Re: Finance Docket No. 33388 — CSX and Norfolk Southern — Control and Acquisition — Conrail: Final Environmental Impact Statement

Dear Interested Parties:

The Section of Environmental Analysis (SEA) is pleased to provide you with the enclosed Final Environmental Impact Statement (Final EIS) for the proposed Acquisition of Conrail, Inc. by Norfolk Southern Railroad and CSX Railroad. The Final EIS addresses written public comments that were filed since SEA's issuance of the Draft Environmental Impact Statement (Draft EIS) in December 1997. The Final EIS also includes SEA's overall conclusions regarding the environmental impacts of the proposed Conrail Acquisition and SEA's final recommendations for mitigating the potential significant adverse environmental impacts.

SEA conducted additional environmental analysis, consulted further with Federal, state, and local agencies, and fully considered all comments received in response to the Draft EIS in preparing the Final EIS and in making its final environmental recommendations to the Board. Comments were received from a broad range of interests that included Federal, state, and local agencies; elected officials; communities; businesses; associations; commuter services; and the general public.

In making its final decision whether to approve, approve with conditions (including environmental conditions), or disapprove the proposed Conrail Acquisition, the Board will consider the entire environmental record, including all public comments, the Draft EIS, the Final EIS, and SEA's final recommended environmental mitigation. The Board will conduct a formal voting conference on June 8, 1998, and plans to issue its final written decision on July 23, 1998. Parties who wish to file an administrative appeal of the Board's written decision, including any environmental conditions that the Board might impose, may do so within 20 days of July 23, 1998, as provided in the Board's rules. The Board will consider any administrative appeals in a subsequent decision.

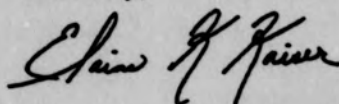
One month before this Final EIS was completed, NS submitted changes in train traffic operations for the Greater Cleveland Area to address potential significant adverse environmental impacts. The enclosed Addendum of this Final EIS discusses the specific changes. The Board

has decided that persons affected by the potential traffic changes may file comments limited to the new NS routing information, which would reduce train traffic in some areas of Cleveland and increase it in other areas of Ohio and Pennsylvania. Persons who wish to submit comments on this new information should do so no later than June 28, 1998, to allow the Board to fully consider these comments prior to the Board's final written decision on July 23, 1998. Also, parties affected by this new train traffic information will have the same opportunity as everyone else to bring their concerns to the Board's attention through an administrative appeal of the Board's final written decision.

For additional information, please contact SEA's toll-free Environmental Hotline at (888)-869-1997. Information about the proposed Conrail Acquisition, Draft EIS, and Final EIS can be found at SEA's Internet web site at <http://www.conrailmerger.com>, or the Board's web site at <http://www.stb.dot.gov>.

SEA acknowledges and appreciates the efforts of all interested parties who reviewed and commented on the Draft EIS. Thank you for your participation.

Sincerely,



Elaine K. Kaiser
Environmental Project Director
Section of Environmental Analysis

Enclosure



SURFACE TRANSPORTATION BOARD
Washington, DC 20423

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May 29, 1998

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One month before this Final EIS was completed, NS submitted changes in train traffic operations for the Greater Cleveland Area to address potential significant adverse environmental impacts. The enclosed Addendum of this Final EIS discusses the specific changes. The Board has decided that persons affected by the potential traffic changes may file comments limited to the new NS routing information, which would reduce train traffic in some areas of Cleveland and increase it in other areas of Ohio and Pennsylvania. Persons who wish to submit comments on this new information should do so no later than June 28, 1998, to allow the Board to fully consider these comments prior to the Board's final written decision on July 23, 1998. Also, parties affected by this new train traffic information will have the same opportunity as everyone else to bring their concerns to the Board's attention through an administrative appeal of the Board's final written decision.

For additional information, please contact SEA's toll-free Environmental Hotline at (888)-869-1997. Information about the proposed Conrail Acquisition, Draft EIS, and Final EIS can be found at SEA's Internet web site at <http://www.conrailmerger.com>, or the Board's web site at <http://www.stb.dot.gov>.

SEA acknowledges and appreciates the efforts of all interested parties who reviewed and commented on the Draft EIS. Thank you for your participation.

Sincerely,

Elaine K. Kaiser
Environmental Project Director
Section of Environmental Analysis

Enclosure

GUIDE TO EXECUTIVE SUMMARY VOLUME

Executive Summary Volume of the Proposed Conrail Acquisition Final EIS contains the following items:

- Contents of Executive Summary.
- Executive Summary.
- Guide to the Final EIS.
- Glossary of Terms.
- List of Acronyms and Abbreviations.
- Contents of the Final EIS.
- Information Sources.
- Index.

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EXECUTIVE SUMMARY

INTRODUCTION

The Surface Transportation Board, Section of Environmental Analysis, prepared this Final Environmental Impact Statement to identify and evaluate the potential environmental impacts of the CSX and NS proposal to acquire Conrail.¹ SEA has recommended a number of mitigation measures to address these environmental impacts. The Board will fully consider the EIS, all public comments, and other relevant environmental information in deciding whether to approve as proposed, approve with conditions (including environmental conditions), or disapprove the proposed Conrail Acquisition.

CSX, NS, and Conrail filed a joint application (hereafter, this Primary Application) with the Board on June 23, 1997. In their Application, they jointly seek authority for CSX and NS to acquire Conrail, and for the subsequent division of most of Conrail's assets and the joint operation of other Conrail assets. The proposed action would consolidate the three railroads into two railroads. The proposed action, which would affect most of the eastern United States, including 24 states and the District of Columbia, is one of the most complex transactions the Board has ever considered.

The Board will decide whether it will approve, disapprove, or approve with appropriate conditions, including environmental conditions, the proposed Conrail Acquisition at a voting conference on June 8, 1998. The Board intends to issue its final written decision on the proposed Conrail Acquisition on July 23, 1998. In that decision, the Board will address environmental, economic, and competitive transportation issues and impose any conditions it deems appropriate, including environmental conditions.

¹ The "Surface Transportation Board" is hereinafter referred to as "the Board"; "Section of Environmental Analysis" is hereinafter referred to as "SEA"; and the "Final Environmental Impact Statement" is hereinafter referred to as the "Final EIS." "Conrail" stands for "Conrail, Inc. and Consolidated Rail Corporation;" "CSX" stands for "CSX Corporation and CSX Transportation, Inc.;" and "NS" stands for "Norfolk Southern Railway Company and Norfolk Southern Corporation."

INTRODUCTION
(continued)

During its environmental review process, SEA considered a broad range of environmental issues potentially affecting a large number of communities on a general (or system-wide), regional, and local level. This approach allowed SEA to identify and assess potential environmental impacts and develop reasonable environmental mitigation that would address potential significant adverse impacts on a general, regional, and local level. Throughout its environmental review process, SEA sought public input from agencies, elected officials, organizations, businesses, and individuals. In developing reasonable environmental mitigation to address those significant adverse environmental impacts that would result directly from the proposed Conrail Acquisition, SEA balanced the various perspectives and concerns that the public raised and the range of environmental impacts and issues.

On a system-wide basis, SEA identified several environmental benefits resulting from overall improvements and operating efficiencies, but no potential significant adverse environmental impacts that would result from the proposed Conrail Acquisition. On a regional basis and a local or site-specific basis, SEA identified both benefits and potential significant adverse environmental impacts. Of the 1,022 rail line segments SEA evaluated, 201 would experience reduced train traffic and 532 rail line segments would experience no change in train traffic. For most potential significant environmental impacts, in particular regions or rail corridors, SEA identified reasonable environmental mitigation measures that the Board could require the Applicants to perform as conditions of approval. However, SEA acknowledges that even if the 65 mitigation conditions that apply to rail line segments in 19 states and the District of Columbia are successfully implemented, potential significant adverse environmental impacts would still exist in certain communities.

The Final EIS fully adopts and incorporates the Draft EIS, including the errata documents and supplemental notice that SEA issued to the public to clarify information in the Draft EIS. SEA intends that this Final EIS, which includes modifications and additions to the Draft EIS, be used in conjunction with the Draft EIS to provide complete documentation of SEA's environmental review process.

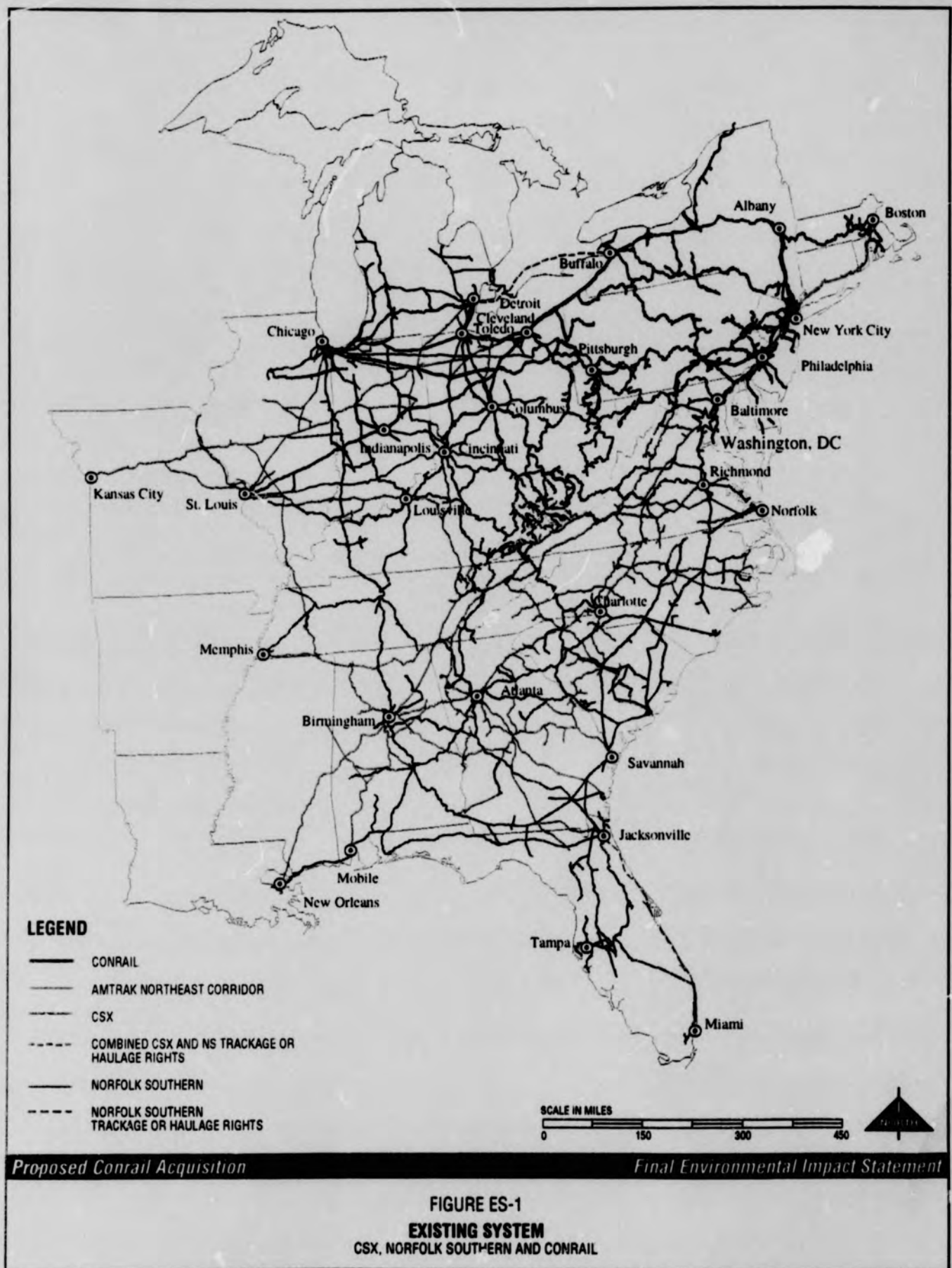
**PURPOSE AND NEED
FOR THE PROPOSED
CONRAIL
ACQUISITION**

In their Application, CSX and NS state that the proposed Conrail Acquisition is intended to provide for a more efficient rail transportation system in the eastern United States and to increase rail competition in the Northeast and Midwest.

**DESCRIPTION OF THE
PROPOSED
ACTION**

The proposed action consists of the Primary Application, including Operating Plans and any Settlement Agreements (agreements between the Applicants and other parties regarding competitive issues) that the Applicants submitted to the Board, and related construction (including new rail line connections) and abandonment projects.

This proposed action covers a large portion of the eastern United States and involves more than 44,000 miles of rail lines and related facilities in 24 states and the District of Columbia. (See Figure ES-1.) The proposed Conrail Acquisition would replace the existing Conrail system with expanded CSX and NS systems in major sections of the Northeast and upper Midwest. (See Figure ES-2.) Under the Application, most of Conrail's assets would be divided between CSX and NS, which would operate their respective enlarged systems independently and in competition with each other. In Michigan, New Jersey, and Pennsylvania, they would jointly operate former Conrail facilities as Shared Assets Areas.





Proposed Corral Acquisition

Final Environmental Impact Statement

FIGURE ES-2
PROPOSED SYSTEM
 CSX AND NORFOLK SOUTHERN

ALTERNATIVES

Based on the Applicants' Operating Plans, the proposed Conrail Acquisition would result in numerous rerouting and consolidation activities. These activities include increased or decreased rail traffic on some rail line segments and in some rail yards, diversion of long-haul highway truck shipments to rail shipments, diversion of some rail shipments to trucks, abandonment and rail line construction projects, and construction or expansion of certain rail yards and intermodal facilities. (See Chapter 2, "Scope of the Environmental Analysis," for more information.)

In this Final EIS, SEA analyzed the following three alternatives:

- **The No-Action Alternative**, under which the Board would not approve the Conrail Acquisition as proposed and the Applicants' proposed changes in rail operations would not occur. The No-Action Alternative is the "pre-Acquisition" setting. SEA compared the proposed action to the No-Action Alternative.
- **The Approval Alternative**, under which the Board would approve the Conrail Acquisition as proposed in the Application, Operating Plans, and Environmental Report the Applicants submitted to the Board on June 23, 1997; revisions presented in the Applicants' Errata and Supplemental Environmental Report filed with the Board on August 28, 1997; and additional information the Applicants provided after August 28, 1997. The Approval Alternative would include Settlement Agreements submitted by the Applicants.
- **The Approval-with-Conditions Alternative**, under which the Board would approve the proposed Conrail Acquisition with specific conditions and mitigation requirements, including environmental mitigation conditions. The Approval-with-Conditions Alternative could also include potential modifications resulting from proposals by other parties requesting modifications or alterations to the proposed Conrail Acquisition (for example, Inconsistent and Responsive [IR] Applications and requests for conditions) and Negotiated Agreements between an Applicant and communities or other governmental units that address potential environmental impacts or other issues.

**THE BOARD'S
ENVIRONMENTAL
REVIEW PROCESS
AND THE PUBLIC'S
RIGHT TO SEEK
ADMINISTRATIVE
REVIEW**

The Board is an independent Federal regulatory agency with jurisdiction over certain surface transportation matters, including railroad acquisitions and mergers. When it determines that a transaction is consistent with the public interest, based on the economic and competitive merits, the Board is required by statute to approve and authorize the proposed transaction.

The Board's decision is a major Federal action requiring environmental review under the National Environmental Policy Act (NEPA). As part of its environmental analysis, the Board considers potential beneficial and significant adverse environmental impacts. SEA is responsible for conducting the environmental review on behalf of the Board, evaluating the significance of impacts, and making final environmental mitigation recommendations to the Board.

In imposing environmental mitigation conditions, the Board has consistently focused on the potential environmental impacts that would result directly from changes in activity levels on existing rail lines and at rail facilities. The Board's practice consistently has been to mitigate only those conditions that result directly from a proposed transaction. The Board does not require mitigation for existing environmental conditions, such as impacts associated with current railroad operations.

SEA is issuing this Final EIS to the public prior to the Board's June 4, 1998, oral argument where environmental as well as economic and competitive transportation issues can be addressed and prior to the Board's voting conference on June 8, 1998. At the voting conference, the Board will decide whether it will approve or disapprove the proposed Conrail Acquisition or approve it with appropriate conditions, including environmental conditions.

The Board's final written decision on the proposed Conrail Acquisition will be served on July 23, 1998. In its decision, the Board will address environmental, economic, and transportation issues; and it will impose any conditions it deems appropriate, including environmental conditions. Parties who wish to file an administrative appeal of the Board's written decision, including any environmental conditions that the Board might impose, may do so within 20 days of that date, as provided in the Board's rules. The Board will consider any administrative appeals in a subsequent decision.

**OVERVIEW OF THE
BOARD'S AND SEA'S
ENVIRONMENTAL
ACTIVITIES SINCE
THE DRAFT EIS**

After SEA issued the Draft EIS and prior to issuing the Final EIS, the Board and SEA undertook a variety of activities related to the environmental review of the proposed Conrail Acquisition, including further analysis based on additional information received from the Applicants, agencies, and the public during the comment period. SEA has documented its methods, analysis results, responses to comments, and detailed descriptions of its other activities in this Final EIS.

**AGENCY
COORDINATION AND
PUBLIC OUTREACH**

Since SEA issued the Draft EIS, it has continued its comprehensive public information and outreach efforts. As part of the NEPA process, SEA sought input from agencies, tribal governments, elected officials, and affected communities and individuals regarding the proposed Conrail Acquisition. SEA's outreach included extensive distribution of the Draft EIS. SEA placed a notice in the Federal Register to alert the public of the document's availability and included instructions on how to comment on the Draft EIS. With regard to environmental justice, SEA conducted focused public outreach activities for low-income and minority populations potentially affected by the proposed Conrail Acquisition. (See Chapter 3, "Agency Coordination and Public Outreach," for more information.)

**OVERVIEW OF
PUBLIC COMMENTS**

SEA provided a 45-day period (ending February 2, 1998) during which the public could review and comment on the Draft EIS for the proposed Conrail Acquisition. SEA also provided an additional full 45-day comment period (ending April 15, 1998) specifically for refined hazardous materials transport, noise analyses, and environmental justice analysis. SEA refined these analyses to include information that was unavailable during its preparation of the Draft EIS and then opened this second comment period to allow the public to review and comment on all of its analyses.

To alert potentially affected communities and individuals of SEA's environmental review and to encourage their comments, SEA placed announcements in the Federal Register and local newspapers, conducted an extensive mail notification process, and made radio public service announcements. SEA encouraged all who received or reviewed the Draft EIS and additional information on refined hazardous materials transport, noise analysis, or environmental justice to comment on environmental issues, SEA's

**OVERVIEW OF
PUBLIC COMMENTS
(continued)**

technical analysis, and the scope and adequacy of SEA's preliminary recommended mitigation measures.

In preparing this Final EIS, SEA carefully reviewed the comments it received. The public and agencies provided comments in a variety of formats, including postcards, letters, and technical review reports. Overall, the public and agencies submitted approximately 260 documents. The documents contained over 1,000 comments on environmental issues. Some of the technical review reports were lengthy and posed detailed technical questions on environmental issues that prompted SEA to conduct additional analyses.

In developing final environmental mitigation recommendations, SEA fully considered all public comments and conducted additional environmental analyses including site visits where appropriate. As a result, SEA changed a number of the recommendations that had been presented in the Draft EIS to reflect concerns of the commentors. (See Chapter 5, "Summary of Comments and Responses," for more information.)

**ADDITIONAL PUBLIC
COMMENT ON
RECENT NS ROUTING
CHANGE**

One month before this Final EIS was completed, NS submitted changes in train traffic operations for the Greater Cleveland Area to address potential significant adverse impacts. The Addendum of this Final EIS discusses the specific changes. The Board has decided that persons affected by the potential traffic changes, which would reduce train traffic in some areas of Cleveland and increase it in other areas of Ohio and Pennsylvania, may file comments limited to the new NS routing information. Persons who wish to submit comments on this new information should do so no later than June 28, 1998, to allow the Board to fully consider these comments prior to the issuance of the Board's final written decision on July 23, 1998. Also, parties affected by this new train traffic information will have the same opportunity as everyone else to bring their concerns to the Board's attention through an administrative appeal of the Board's July 23, 1998, final written decision.

**OPERATIONAL
SAFETY AND SAFETY
INTEGRATION PLANS**

The Applicants' proposed increases in rail activity have the potential to affect safety in many ways, including train operations, hazardous materials transport, and motor vehicles at highway/rail at-grade crossings. Therefore, safety is a major concern of the Board. Approximately half of SEA's recommended environmental conditions address safety concerns related to day-to-day railroad operations. In the past, however, the Board has not focused on, nor has it been asked to, address an applicant's process for combining and safely integrating the infrastructure, equipment, personnel, and operating practices of two or more entities following a merger or acquisition.

For the first time in an environmental review, the Board has considered this process, called safety integration, and has required specific actions by the proposed Conrail Acquisition Applicants. Prior to issuance of the Draft EIS, the Department of Transportation's Federal Railroad Administration (FRA) expressed concern that combining the three railroad systems into two could cause safety problems, and it recommended that the Board require the Applicants to develop plans detailing the procedures that each would follow to integrate the railroads systems in a manner that would maintain safety.

In response, the Board issued Decision No. 52 requiring the Applicants to file detailed Safety Integration Plans. SEA included the Safety Integration Plans in the Draft EIS, and it encouraged FRA and the public to review and comment on these plans. SEA also independently reviewed the plans for comprehensiveness and reasonableness. This Final EIS includes SEA's responses to public comments on the Safety Integration Plans.

**OPERATIONAL
SAFETY AND SAFETY
INTEGRATION PLANS
(continued)**

Prior to issuing this Final EIS, the Board and FRA, with concurrence of DOT, agreed to a Memorandum of Understanding (MOU) to clarify the actions each would take to ensure the successful implementation of the Safety Integration Plans. Under the terms of that MOU, FRA would monitor, evaluate, and review the Applicants' efforts with respect to implementation of the Safety Integration Plans. FRA would report the Applicants' progress and provide, where appropriate, recommendations for how the Board could correct a deficiency until FRA affirms to the Board in writing that the proposed integration has been satisfactorily completed. (See Chapter 6, "Summary of Safety Integration Plan Comments, Responses, and Analysis" for more information.)

**SUMMARY OF
ENVIRONMENTAL
IMPACTS AND SEA'S
RECOMMENDED
MITIGATION**

In its environmental analysis, SEA identified both beneficial and potential significant adverse environmental effects of the proposed Conrail Acquisition. Under the Applicants' Operating Plans, the locations of rail activity would shift as shippers take advantage of the reconfigured rail system. For many regions and communities, this shift would reduce rail traffic and activities and result in environmental benefits. However, for others, the shift would increase rail activity, which could cause potential significant adverse effects.

In its environmental review, SEA carefully assessed the extent and potential significance of adverse effects related to proposed increases in rail traffic. Based on its analysis, SEA developed a set of mitigation measures that address potential significant adverse effects at multiple levels (general, regional, and local). In developing its recommended environmental mitigation measures, SEA considered a host of challenging issues that included:

- The broad geographic scope of the proposed Conrail Acquisition.
- The number of concerned communities.
- The variety of environmental issues.
- The importance of safety.
- The importance of safety integration planning.

**SUMMARY OF
ENVIRONMENTAL
IMPACTS AND SEA'S
RECOMMENDED
MITIGATION
(continued)**

- The accommodation of freight rail and passenger rail service on the same rail line.
- The concerns about environmental justice.
- The scope of the Board's jurisdiction to impose mitigation.

Many recommended mitigation measures would extend to a number of states, while others would be specific to individual communities and local needs. In all, SEA's recommended mitigation would affect numerous communities in 19 states and the District of Columbia.

SEA believes that it has developed comprehensive, reasonable, and practical environmental mitigation recommendations that would address most potential significant adverse environmental impacts associated with the proposed Conrail Acquisition. SEA's recommended mitigation falls within the scope of the Board's jurisdiction and is consistent with the Board's practice of mitigating only those environmental impacts that directly result from the proposed action (for example, traffic delay and noise that result from increases in train traffic).

SEA's overall mitigation strategy would provide safeguards to ensure that the Applicants maintain safe operations and protect the environment following consolidation of the three rail systems into two systems. However, SEA acknowledges that for a limited number of locations with identified significant adverse environmental impacts, mitigation alternatives were not reasonable or feasible. Therefore, even with all the recommended mitigation, some potential significant adverse environmental impacts still exist in certain communities.

CSX and NS have consulted with certain affected communities and have developed Negotiated Agreements with local and state governments and organizations to address specific environmental issues. As of publication of this Final EIS, CSX and NS have submitted 18 executed agreements to the Board. SEA reviewed these agreements and recommends that the Board impose conditions that require CSX and NS to comply with the negotiated terms.

**SUMMARY OF
ENVIRONMENTAL
IMPACTS AND SEA'S
RECOMMENDED
MITIGATION
(continued)**

SEA continues to encourage CSX and NS and the communities to negotiate mutually acceptable environmental solutions. If any Negotiated Agreements are executed after SEA issues the Final EIS, SEA recommends, subject to review of these agreements, that the Board include compliance with terms of those additional agreements as conditions of approval.

Based on its environmental analysis, SEA identified the following impacts and recommended mitigation measures.

On a general or system-wide basis, SEA's analysis indicated no potential significant adverse environmental impacts. Environmental benefits would occur on a system-wide basis, primarily from the more efficient routes that the proposed Conrail Acquisition would create. These potential benefits include reductions in fuel consumption, air pollutant emissions, and highway congestion. Nevertheless, SEA recommends several general mitigation measures to reduce the potential for accidents at highway/rail at-grade crossings and during hazardous materials transport. SEA also recommends general measures to ensure compliance with relevant laws and regulations as well as SEA's Best Management Practices.

On a regional basis, SEA identified potential significant adverse environmental impacts on passenger rail safety and hazardous materials transport and developed appropriate mitigation to reduce the potential adverse effects. SEA's recommended mitigation measures would enhance safety and service for areas where passenger rail trains share track with freight trains and for hazardous materials transport.

**SUMMARY OF
ENVIRONMENTAL
IMPACTS AND SEA'S
RECOMMENDED
MITIGATION
(continued)**

On a local or site-specific basis, SEA identified potential significant adverse environmental impacts in a number of issue areas, including highway/rail at-grade crossing safety, traffic delay at highway/rail at-grade crossings, freight rail operations, noise, cultural resources, natural resources, and environmental justice. SEA recommends mitigation measures to address potential significant adverse environmental impacts that would increase safety at highway/rail at-grade crossings, reduce traffic delay, enhance safety for hazardous materials transport, reduce noise, protect cultural and natural resources, and address environmental justice issues. SEA has recommended mitigation measures for the District of Columbia and the following 19 states that might experience significant adverse environmental impacts: Alabama, Delaware, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia.

- **Safety: Highway/rail At-grade Crossings**—The predicted accident frequency would increase to exceed SEA's criteria of significance at 89 highway/rail at-grade crossings. Therefore, SEA's recommended mitigation includes upgrading warning devices, installing advisory signs at crossings, and providing community education about highway/rail at-grade-crossing safety.
- **Safety: Hazardous Materials Transport**—Hazardous materials transport would increase to more than 10,000 carloads per year on 44 rail line segments, and the volume of hazardous materials traffic would at least double and exceed 20,000 carloads per year on 20 rail line segments. Accordingly, SEA's recommended mitigation includes requiring the Applicants to comply with industry safety standards and develop additional measures to aid in emergency response at the community level. SEA believes these approaches are appropriate and would effectively reduce risk.

**SUMMARY OF
ENVIRONMENTAL
IMPACTS AND SEA'S
RECOMMENDED
MITIGATION
(continued)**

- **Safety: Hazardous Materials Transport (continued)**—SEA also determined that the increase in rail activity would increase the risk of a hazardous materials release due to an accident by 56 percent at certain rail yards and 75 percent at certain intermodal facilities. To mitigate this potential increase in risk, SEA recommends that the Board require CSX and NS to establish programs for reducing the risk of spills associated with hazardous materials transport and storage at these facilities.
- **Safety: Passenger Rail Operations**—SEA determined that the predicted risk of a freight/passenger accident warranting mitigation would increase on five rail line segments that carry passenger trains. To mitigate this potential increase in risk, SEA recommends that the Board require CSX and NS to work with FRA and the affected passenger service providers to develop operational strategies and technology improvements that would ensure passenger train safety on the five rail line segments.
- **Safety: Freight Rail Operations**—SEA determined that the predicted risk of a freight accident would increase enough to exceed SEA's criteria of significance on eight rail line segments. As a mitigation measure, SEA recommends that the Board require CSX and NS to conduct safety inspections of their rail using FRA's proposed rule on the frequency of internal rail inspections as a guideline.
- **Safety: Integration Planning**—SEA recommends that the Board require the Applicants to comply with their Safety Implementation Plans, which may be modified and updated. SEA further recommends the Board require the Applicants to cooperate with the ongoing monitoring and review process established in the Memorandum of Understanding to which the Board and FRA, with the concurrence of DOT, have agreed.
- **Transportation: Passenger Rail Service**—All rail line segments where passenger and freight trains share track could accommodate the proposed Acquisition-related increase in freight traffic without disrupting passenger rail service schedules. SEA determined that mitigation measures would not be required.

**SUMMARY OF
ENVIRONMENTAL
IMPACTS AND SEA'S
RECOMMENDED
MITIGATION
(continued)**

- **Transportation: Highway/rail At-grade Crossing Delay—**Traffic delay would exceed SEA's criteria of significance at 13 highway/rail at-grade crossings. Where reasonable and feasible to mitigate these increases in traffic delay, SEA recommends that the Applicants be required to construct a grade-separated crossing, reroute train traffic, modify train operations, and implement operating efficiencies.

SEA examined the effect of the proposed Conrail Acquisition on emergency vehicle response times and identified five local areas that would warrant mitigation. To mitigate these effects, SEA recommends that the Board require the Applicants to provide, install, and maintain computer equipment that allows local emergency responders to monitor train locations and route emergency vehicles appropriately.

- **Transportation: Roadway Systems—**At proposed abandonments and intermodal facilities, SEA determined that the local roadways could accommodate the increased truck traffic and mitigation would not be warranted.
- **Transportation: Navigation—**SEA did not identify any adverse system-wide or site-specific impacts to navigation on waterways that rail lines cross.
- **Energy—**The proposed Conrail Acquisition would result in a potential 80-million-gallon annual decrease in diesel fuel consumption. SEA did not identify any potential significant adverse environmental impacts associated with energy.
- **Air Quality—**SEA determined that no potential significant adverse air quality impacts would result from the proposed Conrail Acquisition. Air pollution emissions would decrease system-wide for all air pollutants except sulfur dioxide, which would increase by a negligible amount.
- **Noise—**SEA found that noise would increase along selected rail line segments. SEA recommends that the Board require CSX and NS to mitigate wayside noise with either noise barriers or sound insulation at the sensitive receptor locations identified in Appendix J, "Noise Analysis."

**SUMMARY OF
ENVIRONMENTAL
IMPACTS AND SEA'S
RECOMMENDED
MITIGATION
(continued)**

- **Cultural Resources**—SEA determined that the proposed Conrail Acquisition could affect significant cultural resources at four sites. SEA recommends that the Board require the Applicants to complete appropriate cultural resources documentation and Section 106 of the National Historic Preservation Act consultation process prior to undertaking any activity involving these resources.
- **Hazardous Wastes Sites**—Because the Applicants must comply with Federal and state statutes regarding the investigation and remediation of hazardous wastes sites, SEA determined that mitigation measures would not be necessary.
- **Natural Resources**—One endangered species is potentially present near one proposed new rail line connection construction site. SEA recommends that the Applicants be required to consult with the responsible agencies to determine appropriate steps to protect this species and comply with Section 7 of the Endangered Species Act. The proposed transaction would cause no significant effect on any other natural resource, including water resources. However, to ensure protection of natural resources, SEA recommends that the Board require CSX and NS to follow Best Management Practices, which are construction practices designed to protect these resources.
- **Land Use And Socioeconomics**—The proposed Conrail Acquisition would not affect or conflict with any land use plans, prime farmlands, Native American lands, Coastal Zone Management plans, or socioeconomic factors related to job loss as a result of physical changes to the environment. In evaluating the proposed abandonments, SEA determined that alternative modes of transportation for goods and services exist. SEA determined that mitigation measures are not necessary.

**SUMMARY OF
ENVIRONMENTAL
IMPACTS AND SEA'S
RECOMMENDED
MITIGATION
(continued)**

- **Environmental Justice**—SEA conducted additional outreach and analysis activities since the Draft EIS. Where SEA identified potential disproportionately high and adverse effects to environmental justice populations, it notified those populations. SEA identified areas where there could be disproportionately high and adverse impacts for minority and low-income populations affected by the proposed Conrail Acquisition. To mitigate the effects of the proposed Conrail Acquisition on these environmental justice populations, SEA first considered the effect of the mitigation it generally recommended for all communities experiencing a similar effect. If, because of the characteristics of the environmental justice community, SEA's mitigation would be unsatisfactory to address the effect, SEA developed tailored mitigation to meet the particular needs of the identified minority and low-income populations. In all, SEA's recommended mitigation addressed potential impacts for environmental justice populations in 15 cities.
- **Cumulative Effects**—On a system-wide basis, air quality would improve, national rail and highway systems would be more efficient, and energy consumption would decrease. On a local level, SEA determined that no cumulative effects would result from the proposed Conrail Acquisition.

See Chapter 4, "Summary of Environmental Review," for more information on all of these issue areas.

CONCLUSIONS

SEA has determined that the proposed Conrail Acquisition would have several beneficial environmental effects, including system-wide reductions in fuel consumption, air pollutant emissions, and highway congestion with a resultant decrease in the likelihood of highway accidents. In addition, many regions and localities would experience environmental benefits from reductions in train traffic. Numerous other communities would experience no change in train traffic. Regional adverse effects would occur in passenger rail safety and hazardous materials transport. Local or site-specific adverse effects would occur in the following issue areas: highway/rail at-grade crossing safety, traffic delay at highway/rail at-grade crossings, freight rail operations, noise, cultural resources, natural resources, and environmental justice. SEA identified reasonable and appropriate mitigation measures to address these potential environmental impacts.

**CONCLUSIONS
(continued)**

If the Board decides to approve the proposed Conrail Acquisition, SEA recommends that the Board require the Applicants to implement SEA's 65 final recommended environmental conditions set forth in Chapter 7, "Recommended Environmental Conditions," of this Final EIS as measures to eliminate or minimize the potential significant adverse environmental impacts. These measures would not eliminate all potential significant impacts in every community; however, they are reasonable and feasible ways to address most potential significant adverse impacts associated with the proposed Conrail Acquisition.

SEA's final recommended mitigation measures would minimize the effects of increased train traffic in a manner that is reasonable and would not compromise the benefits of the proposed Conrail Acquisition. The measures also reflect the Board's practice of mitigating only the direct results of the transaction before it (not pre-existing conditions). For these reasons SEA recommends that the Board require the Applicants to comply with SEA's final recommended environmental mitigation as conditions to any final decision approving the proposed Conrail Acquisition.

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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 FINAL ENVIRONMENTAL IMPACT STATEMENT

This Final Environmental Impact Statement (Final EIS) evaluates the potential environmental impacts 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 (Board) Section of Environmental Analysis (SEA) has prepared this document in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321); the Council on Environmental Quality (CEQ) regulations implementing NEPA; the Board's environmental rules (49 CFR Part 1105); and other applicable environmental statutes and regulations.

SEA issued the Draft EIS on December 19, 1997. Subsequently, SEA issued an Errata (January 12, 1998) and a Supplemental Errata (January 21, 1998) to clarify statements and analyses in the Draft EIS. The 45-day public comment period closed February 2, 1998. This Final EIS provides responses to comments, questions, and issues that the public, agencies, and other document reviewers raised. It describes SEA's additional environmental analysis and includes SEA's final environmental mitigation recommendations to the Board.

To assist the reader in the review of this document, each volume contains a Guide to that volume and a Table of Contents for each chapter in that volume. In addition, each individual volume also contains a Guide to the Final EIS, a Glossary of Terms, a List of Acronyms and Abbreviations, and the Table of Contents of the Final EIS. Specifically, the Final EIS document includes the following volumes:

Executive Summary Volume

The **Executive Summary** provides an overview of the proposed Conrail Acquisition, including the potential environmental impacts and the mitigation measures that SEA recommends to address those impacts. In addition, the Executive Summary Volume contains the **Letter to Interested Parties** that SEA attached to copies of this Final EIS, the **Information Sources** that SEA used for preparing both the Draft EIS and the Final EIS documents, and the **Index** of keywords and phrases that appear in this Final EIS.

Volume 1: Chapters 1, 2, and 3

- Chapter 1, "Introduction and Background," describes the purpose and need for the project, the proposed action, and the alternatives to the proposed action. It also sets forth the jurisdiction of the Board and outlines SEA's environmental review process. In addition, this chapter presents an overview of SEA's agency coordination and the public comment process.
- Chapter 2, "Scope of the Environmental Analysis," identifies the proposed Conrail Acquisition-related activities that SEA analyzed. This chapter includes a table presenting the thresholds SEA used to identify activities for environmental analysis and explains project activities that differ from those set forth in the Draft EIS.
- Chapter 3, "Agency Coordination and Public Outreach," describes SEA's public outreach activities to notify interested parties and environmental justice populations of the potential environmental impacts of the proposed Conrail Acquisition and of the availability of the Draft EIS and the Final EIS. Additionally, the chapter explains SEA's distribution of the Draft EIS and the Final EIS, explains the methods that SEA used to facilitate the public comment process, and describes the agency coordination that SEA performed as part of the environmental review process. Chapter 3 also reviews the historic properties outreach activities that SEA conducted in Ohio.

Volume 2: Chapter 4

- Chapter 4, "Summary of Environmental Review," outlines the additional environmental analysis that SEA conducted for each environmental issue area since preparation of the Draft EIS. Specifically, it explains the methods of analysis, presents the public comments and additional evaluations, identifies the results of the analysis, and reviews SEA's assessment of environmental impacts. In addition, this chapter describes SEA's refinement of the mitigation measures recommended in the Draft EIS, SEA's final recommended mitigation measures, anticipated environmental benefits, and the adverse environmental impacts of the proposed Conrail Acquisition.

Volume 3: Chapter 5

- Chapter 5, "Summary of Comments and Responses," contains summaries of the comments that SEA received on the Draft EIS and SEA's responses to the comments. The chapter provides the following: (a) an overview of the comments, including those

from Federal agencies, the Applicants, and national and regional groups as well as groups and individuals within specific states; (b) general comments on the Draft EIS, including the Application review process, the environmental review process, and the system-wide technical analysis; and (c) comments on state and community issues, organized by state and environmental issue category.

Volume 4: Chapter 6

- Chapter 6, "Safety Integration Planning," sets forth the purpose and topics of the Safety Integration Plans and presents summaries of comments that reviewing agencies and the public submitted about the Safety Integration Plans. The chapter also includes SEA's analysis and response to those comments and provides SEA's conclusion and recommended conditions regarding the Safety Integration Plans.

Volume 5: Chapter 7

- Chapter 7, "Recommended Environmental Conditions," describes the final environmental mitigation conditions that SEA recommends to address significant adverse environmental impacts that could result from the proposed Conrail Acquisition.

Volume 6: Appendices

- These four volumes (6A through 6D) include appendices containing the comments on the Draft EIS and the analysis by the technical disciplines as well as appendices containing public outreach and agency consultation information and documents.

Volume 6A contains the following appendix:

- A. Comments Received on the Draft Environmental Impact Statement.

Volume 6B contains the following appendices:

- B. Draft Environmental Impact Statement Correction Letter, Errata, Supplemental Errata and Additional Environmental Information, and Board Notices to Parties of Record.
- C. Settlement Agreements and Negotiated Agreements.
- D. Agency Consultation.
- E. Safety: Highway/Rail At-Grade Crossing Safety Analysis.
- F. Safety: Hazardous Materials Transport Analysis.
- G. Transportation: Highway/Rail At-grade Crossing Traffic Delay Analysis.
- H. Transportation: Roadway Systems Analysis.
- I. Air Quality Analysis.

Volume 6C contains the following appendices:

- J. Noise Analysis.
- K. Cultural Resources Analysis.
- L. Natural Resources Analysis.
- M. Environmental Justice Analysis.

N. Community Evaluations.

Volume 6D contains the following appendices:

- O. EPA Rules on Locomotive Emissions.
- P. SEA's Best Management Practices for Construction and Abandonment Activities.
- Q. Example Public Outreach Materials.
- R. All Relevant Board Decisions.
- S. Index for the Draft Environmental Impact Statement.
- T. Final Environmental Impact Statement Rail Line Segments.
- U. List of Preparers.

Addendum Volume

The **Addendum** contains information SEA did not include in the other portions of the Final EIS because of production timing constraints. The Addendum contains SEA's evaluation and additional analyses SEA conducted for train traffic rerouting proposed as mitigation for the Greater Cleveland Area. The Addendum also contains additional analysis of the proposed connection in Alexandria, Indiana (one of the Seven Separate Connections) as well as comments received during an additional comment period and summaries of, and responses to, those comments.

GLOSSARY OF TERMS

- abandonment:** The discontinuance of service on a rail line segment and the salvaging and/or the removal of railroad-related facilities for reuse, sale, and/or disposal.
- Acquisition:** The proposal by CSX, NS, and Conrail to acquire control of Conrail's assets and its basic railroad operations.
- active warning devices:** Traffic control devices that give positive notice to highway users of the approach or presence of a train. These devices may include a flashing red light signal (a device which, when activated, displays red lights flashing alternately), a bell (a device which, when activated, provides an audible warning, usually used with a flashing red light signal), automatic gates (a mechanism added to flashing red light signals to provide an arm that can lower across the lanes of the roadway), and a cantilever (a structure equipped with flashing red light signals and extending over one or more lanes of traffic).
- Advanced Civil Speed Enforcement System (ACSES):** A supplement to the Automatic Cab Signal (ACS) and Automatic Train Control (ATC) systems currently in place within the Northeast Corridor (NEC), ACSES uses a series of transponders to communicate location and other factors to passing trains whose on-board computers utilize the information to achieve system function. These functions include: (1) civil speed enforcement; (2) temporary speed enforcement, including protection of roadway workers; and (3) enforcement of positive stop at interlocking home signals and Control Points (CPs).

adverse environmental impact:

A negative effect, resulting from the implementation of a proposed action, that serves to degrade or diminish an aspect of human or natural resources.

Advisory Council on Historic Preservation (ACHP):

An independent Federal agency charged with advising the President and Congress on historic preservation matters and administering the provisions of Section 106 of the National Historic Preservation Act.

air-brake test:

A test made prior to train departure, required by Federal Railroad Administration regulations and by railroad rules to ensure that a train's air-brake system is functioning as intended and that certain devices are within prescribed tolerances and physical parameters.

Allied Rail Unions (ARU):

A group of unions representing railroad employees, including the Brotherhood of Locomotive Engineers, the Brotherhood of Railroad Signalmen, and the Brotherhood of Maintenance-of-Way Employees.

Applicants:

CSX Corporation and CSX Transportation, Inc. (CSX), Norfolk Southern Railway Company and Norfolk Southern Corporation (NS), and Conrail Inc. and Consolidated Rail Corporation (Conrail).

Application:

A formal filing with the Surface Transportation Board related to railroad mergers, acquisitions, constructions, or abandonments. Applications may be either Primary Applications or Inconsistent and Responsive (IR) Applications. See *Primary Application* and *Inconsistent and Responsive (IR) Application*.

Area of Potential Effect(s) (AoPE):	The geographic area surrounding a rail activity where an individual (or resource) or group of individuals (or resources) could likely experience adverse environmental effects. For this Final EIS, where applicable, the different technical disciplines determined their own specific definitions of this term for their individual technical disciplines.
attainment area:	An area that EPA has classified as complying with the National Ambient Air Quality Standards specified under the Clean Air Act.
authorized speed:	Maximum permitted speed for a specific train at a specific location, taking into account the prevailing weather conditions (for example, restrictions due to heavy rain, extreme heat or cold).
Automatic Block System (ABS):	A series of railroad signals that indicate track occupancy in the block (length of track of defined limits) ahead and govern the use of a consecutive set of blocks by a train. These signals include wayside track signals and cab signals (signals displayed in the locomotive cab instead of, or in addition to, wayside track signal displays), or both. This system combines automatic detection of train position with control of signals.
Automatic Train Control (ATC):	A system that has components installed on both trains and tracks that, when working together, will cause the train brakes to apply automatically if the engineer fails to respond to a condition requiring train speed to be reduced.
Best Management Practice (BMP):	Technique that various parties (for example, the construction industry) use to provide protection from adverse impacts to the environment. The Board may designate these techniques as mitigation measures.

block group:	A small population area that the U.S. Census Bureau uses to measure and record demographic characteristics. The population of a block group typically ranges from 600 to 3,000 people and is designed to reflect homogeneous living conditions, economic status, and population characteristics. Block group boundaries follow visible and identifiable features, such as roads, canals, railroads, and above-ground high-tension power lines.
block swapping:	The process of moving groups of cars with a common destination (called "blocks") from one train to another.
Board:	The Surface Transportation Board, the licensing agency for the proposed Conrail Acquisition.
bulletins:	Documents addressed to train crews and other operating employees specifying temporary or local operating rules and restrictions.
cab signaling:	System that provides signal indications in the locomotive cab instead of, or in addition to, wayside signal displays.
carload:	A unit of measure used to describe commodities transported on a railroad typically in a boxcar, tank car, flat car, hopper car, or gondola.
centralized traffic control system:	A signal system that allows for the movement of trains in either direction on designated tracks at the maximum authorized speed, in accordance with the wayside or cab signals or both.
census tract:	Small, relatively permanent statistical subdivisions of a county containing between 2,500 and 8,000 persons. The U.S. Bureau of Census designs census tracts to reflect homogeneous living conditions, economic status, and population characteristics.

Clean Air Act (Clean Air Act Amendments):

The Clean Air Act of 1970 and the subsequent amendments, including the Clean Air Act Amendments of 1990 (42 U.S.C. 7401-7671g); the primary Federal law that protects the nation's air resources. This act establishes a comprehensive set of standards, planning processes, and requirements to address air pollution problems and reduce emissions from major sources of pollutants.

Clean Water Act:

The Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1251 *et seq.*) is the primary Federal law that protects the nation's waters, including lakes, rivers, aquifers, and coastal areas. This act provides a comprehensive framework of standards, technical tools, and financial assistance to address the many causes of pollution and poor water quality, including municipal and industrial wastewater discharges, polluted runoff from urban and rural areas, and habitat destruction. Specifically, the Clean Water Act provides for the following:

- Requires major industries to meet performance standards to ensure pollution control.
- Charges states and tribes with setting specific water quality standards appropriate for their waters and developing pollution control programs to meet them.
- Provides funding to states and communities to help them meet their clean water infrastructure needs.
- Protects valuable wetlands and other aquatic habitats through a permitting process that conducts land development activities and other activities in an environmentally sound manner.

coastal zone:

According to the Coastal Zone Management Act of 1972, lands and waters adjacent to the coast that exert an influence on the uses of the sea and its ecology, or whose uses and ecology the sea affects.

**Coastal Zone
Management Act
(CZMA):**

The Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1451-1464; P.L. 92-583), is also known as "Federal Consistency With Approved State Coastal Management Programs" (15 CFR 930). This Federal act preserves, protects, develops, and, where possible, restores or enhances the resources of the nation's coastal zone for the present and for future generations. The provisions of 15 CFR 930.30 ensure that all Federally conducted or supported activities, including development projects directly affecting the coastal zone, are consistent with approved state coastal management programs as much as possible.

**collective bargaining
agreement:**

An agreement between a union and an employer that defines the scope of work, rates of pay, rules, and working conditions for the union's members.

common corridor:

For the purposes of this Final EIS, a railroad line segment that accommodates both public mass transportation service and passenger and freight train operations by using separate tracks adjacent to each other in the same right-of-way or area.

**compensation wetlands
(compensatory
wetlands):**

Wetlands that an agency or entity creates, enhances, or preserves to mitigate for unavoidable impacts on existing wetlands that occur as a result of implementation of the agency's or entities' proposed action. These compensation (or compensatory) wetlands replace, "in kind", wetlands that an agency or entity partially or totally fills or drains during its construction or earth-moving activities.

**Comprehensive
Environmental Response,
Compensation, and
Liability Act (CERCLA):**

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601-9675; P.L. 96-510); the Federal act that provides EPA with the authority to clean up inactive hazardous waste sites and distribute the cleanup costs among the parties who generated and/or handled the hazardous substances at these sites.

**Comprehensive
Environmental Response,
Compensation, and
Liability Information
System (CERCLIS):**

Federal database containing information on potential hazardous waste sites that states, municipalities, private companies, and private persons have reported to the EPA, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act. This database contains sites that are either proposed for inclusion on, or are currently on, the National Priorities List (NPL) and sites that are in the screening and assessment phase for possible inclusion on the NPL.

condition:

A provision that the Board imposes as part of any decision approving the proposed Conrail Acquisition and that requires action by one or more of the Applicants.

conductor:

The operating employee on a train responsible for safe and efficient train movement in accordance with all railroad operating rules and special instructions.

**Conrail Shared Assets
Operations:**

See Shared Assets Areas.

consist:

The number and type of locomotives and cars included in a train, considering special factors such as the tonnage and the placement of hazardous materials cars and "high-wides" (oversize dimension cars).

constant warning time:

A motion-sensing system with the capability of measuring train speed and providing a relatively uniform warning time by warning signal devices to highway traffic at highway/rail at-grade crossings.

Control Date:

The date on which the merger can become effective, following formal approval of the Board.

**Council on
Environmental Quality
(CEQ):**

Federal agency responsible for developing regulations and guidance for agencies implementing the National Environmental Policy Act.

craft employee:

Term applied to a railroad employee qualified in a specific railroad operating or maintenance activity (for example, locomotive engineer, train dispatcher, signal maintainer, or car inspector).

crew caller:

Term applied to a railroad employee who is responsible for notifying train crews when and where to report for duty.

crew calling:

Process of notifying train crew members when and where their next tour-of-duty will start. Labor agreements commonly specify that railroads call train crews a minimum of 2 hours before crew members are required to begin their tour-of-duty.

critical habitat:

The specific sites within the geographical area occupied by a threatened or endangered species that include the physical or biological features essential to the conservation of the species. These areas may require special management considerations or protection. These areas include specific sites outside the geographical areas occupied by the species at the time of the listing that are essential for the conservation of the species.

criteria of significance:

The criteria SEA developed specifically for the proposed Conrail Acquisition to determine whether a potential adverse environmental effect is significant and may warrant mitigation.

cross-tie:

Transverse wooden, concrete, or steel beam supporting the rails of a railroad track.

- cultural resource:** Any prehistoric or historic district, site, building, structure, or object that warrants consideration for inclusion in the National Register of Historic Places. A cultural resource that is listed in or is eligible for listing in the National Register of Historic Places is considered a historic property (or a significant cultural resource). For the purposes of this Final EIS, the term applies to any resource more than 50 years old for which SEA gathered information to evaluate its significance. In addition, this Final EIS addresses potential environmental impacts of the proposed rail line construction and abandonment activities on Native American reservations and sacred sites.
- cumulative effects:** Effects resulting from the incremental impacts of the proposed Conrail Acquisition when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (Federal or non-Federal) or person undertakes such actions, as described in 40 CFR 1508.7. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.
- Day 1:** In the event that the Board approves the proposed Conrail Acquisition, the date (as the Applicants determine through mutual agreement) when operating responsibility for the acquired railroad is transferred to the Applicants' organizations.
- decibel (dB):** A unit of noise measured on 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. Noise analysts measure sound pressure levels that people hear in decibels, much like other analysts measure linear distances in yards or meters. A-weighted decibel (dBA) refers to a weighting that accounts for the various frequency components in a way that corresponds to human hearing.

degradation:	To change a habitat, either terrestrial or aquatic, so that it no longer meets the survival needs of a particular species of plant or wildlife. Such change could include reducing the feeding area, modifying the vegetation type, and limiting the available shelter.
detector car:	One of two types of rail equipment designed to detect imperfections in railroad track structure. Rail detector cars detect internal imperfections within the rail, using ultrasonic techniques. See also <i>track geometry inspection car</i> .
dimensional traffic:	A freight shipment requiring special authorization for movement because of height, width, length, or gross weight.
dispatcher (train):	The railroad operating employee responsible for issuing on-track movement and/or occupancy authority through the use of remotely controlled switches, signals, visual displays, voice control written mandatory directives, and/or all of the above.
dispatcher desk:	The workstation from which a train dispatcher controls a specific portion of a railroad's network.
dispatching:	The process of real-time planning, supervising, and controlling of train movements.
disproportionality (test for):	A comparison test to assess whether potentially high and adverse impacts of an action are predominantly borne or more severe or greater in magnitude in an Environmental Justice (EJ) population than a non-EJ population within the current analysis scale (that is, at the system, state, county, segment, or block group level).
double-stack freight service:	The transport of two intermodal containers stacked on top of each other on one platform of an intermodal rail flat car.

double tracking:	Construction of a second railroad track immediately adjacent to an existing track, to perform railroad activities similar to those occurring on the existing track.
emergent species:	Any type of aquatic plant whose vegetative growth is mostly above the water.
emissions:	Air pollutants that enter the atmosphere.
endangered species:	A species that is in danger of extinction throughout all or a significant portion of its range. Federal and state laws protect these species.
Endangered Species Act (ESA):	The Endangered Species Act of 1973 (16 U.S.C. 1531 <i>et seq.</i> ; P.L. 93-205), as amended in 1978, is the primary Federal law protecting endangered and threatened wildlife and plant species. The purpose of the law is to provide for the conservation of habitat for such species.
engineer (railroad):	Employee responsible for operating a railroad locomotive in accordance with train-handling practices, signal indications, operating rules, speed limits, and the technical requirements of the particular locomotive.
Environmental Impact Statement (EIS):	A document that the National Environmental Policy Act requires Federal agencies to prepare for major projects or legislative proposals having the potential to significantly affect the environment. A tool for decision-making, it describes the positive and negative environmental effects of the undertaking, and alternative actions and measures to reduce or eliminate potentially significant environmental impacts.

**Environmental Justice
(EJ):**

For purposes of this document, SEA defines environmental justice as the mission discussed in Executive Order (EO) 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (59 FR 7629, February 11, 1994). This EO directs Federal agencies to identify and address "disproportionately high and adverse human health or environmental effects" of their programs, policies, and activities on minority and low-income populations in the United States. EO 12898 also calls for public notification for environmental justice populations, as well as meaningful public participation of environmental justice populations. In this document, SEA used the guidance provided in the Department of Transportation Order on Environmental Justice, the Council of Environmental Quality, Environmental Justice Guidance under the National Environmental Policy Act, and the Interim Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA analysis to analyze potential disproportionately high and adverse impacts on environmental justice populations for rail segments, intermodal facilities, rail yards, and new construction.

**Environmental Justice
(EJ) population:**

A population within an Area of Potential Effect whose minority and low-income composition meets at least one of the following criteria: (1) The percentage of minority and low-income population in the Area of Potential Effect is greater than 50 percent of the total population in the Area of Potential Effect; or (2) The percentage of minority and low-income population in the Area of Potential Effect is at least ten percentage points greater than the percentage of minority or low-income population in the county of which the Area of Potential Effect is a part.

**Environmental Resource
Category:**

Any of the environmental issues that serve as the major topics of impact analysis for this EIS. Examples include land use, natural resources, noise, hazardous materials, cultural resources, water quality, or air quality.

Environmental Resource Score (ERS):

The impact score determined for an environmental resource category within a (block group) Area of Potential Effect. A typical ERS ranges from 0 to 6, reflecting the relative impact on the Area of Potential Effect compared with impacts on other Areas of Potential Effect. For the Environmental Justice analysis, SEA calculated an ERS for noise, hazardous materials transport, and traffic safety and delay.

equipment:

For a railroad, a term used to refer to the mobile assets of the railroad, such as locomotives, freight cars, and on-track maintenance machines. Also used more narrowly as a collective term for freight cars operated by the railroad.

equipment restrictions:

Operating instructions that restrict certain types of locomotives or freight cars from operating over selected line segments.

Errata:

A list of corrections to the Draft EIS, prepared to facilitate public review of the Draft EIS and to clarify some of the information contained therein.

Executive Order (EO) 12898:

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations," issued in February of 1994; directs Federal agencies to identify and address as appropriate "disproportionately high and adverse human health or environmental effects," including interrelated social and economic effects, of their programs, policies, and activities on minority populations and low-income populations in the United States.

extra board crew caller position:

Railroad employee who does not have a regularly assigned position but who works on an on-call basis.

floodplain:	The lowlands adjoining inland and coastal waters and relatively flat areas and flood-prone areas of offshore islands, including, at a minimum, those areas that have a 1 percent or greater chance of flood in any given year (also known as a 100-year or a Zone A floodplain).
Four City Consortium:	An alliance of the cities of East Chicago, Hammond, Gary, and Whiting, Indiana.
freight car inspections:	Pre-departure tests required for railroad freight cars pursuant to Federal Railroad Administration regulations.
fugitive dust:	According to EPA regulations, those particulate matter emissions that could not "reasonably pass" through a stack, chimney, vent, or other functionally equivalent opening. Examples of fugitive dust include wind-borne particulate matter from earth-moving and material handling during construction activities.
Geographic Information System (GIS):	A computer system for storing, retrieving, manipulating, analyzing, and displaying geographic data. GIS combines mapping and databases.
grade crossing:	See <i>highway/rail at-grade crossing</i> .
grade separation:	See <i>separated grade crossing</i> .
gross ton-mile:	A measure of railroad production that represents the weight of cars and freight movement in terms of total tons per mile transported system-wide or over a specific rail line segment. Specifically, 1 ton of railroad car and loading carried 1 mile.

haulage right(s):	The limited right (or combination of limited rights) of one railroad to have their freight traffic moved by another railroad over the designated lines of the other railroad.
hazardous materials:	Substances or materials that the Secretary of Transportation has determined are capable of posing an unreasonable risk to human health, safety, and property when transported in commerce, as designated under 49 CFR Parts 172 and 173.
hazardous wastes:	Waste materials that, by their nature, are inherently dangerous to handle or dispose of (for example, old explosives, radioactive materials, some chemicals, some biological wastes). Usually, industrial operations produce these waste materials.
high-and-wide load:	Load on a freight car that exceeds the normal height and/or width limits for general operation over a railroad. Such loads may move only with special operating precautions to prevent damage to wayside structures and trains on adjacent tracks.
high-profile crossings:	A condition at a highway/rail at-grade crossing where the elevation of the tracks is above the elevation of the approaching roadway. This condition, generally the result of the periodic raising of the tracks for maintenance of the track bed, can affect sight distance for highway users and can become a hazard for trucks and trailers with low ground-clearance. This is also referred to as "hump crossings".
highway/rail at-grade crossing:	The general area of an intersection of a public or private road and a railroad where the intersecting rail and highway traffic are at the same level.

historic property:	Any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NRHP). The term "eligible for inclusion in the NRHP" pertains to both properties that the Secretary of the Interior has formally determined to be eligible and to all other properties that meet NRHP listing criteria.
horn noise (train):	Noise that occurs when locomotives sound warning horns in the vicinity of highway/rail at-grade crossings.
hours-of-service regulations:	Federal Hours of Service Law, which Federal Railroad Administration enforces, governing maximum shift lengths and minimum rest periods for railroad operating employees. These employees include train crew, train dispatchers, and signal maintainers, as well as mechanical employees such as hostlers who move equipment for the purpose of test and inspection.
Implementing Agreement:	An agreement between a railroad company and an employee union regarding working conditions on a combined system, and specifying the corresponding seniority districts, work locations, and other terms and conditions of employment.
Inconsistent and Responsive (IR) application:	Proposal to the Surface Transportation Board that Parties of Record submitted prior to October 21, 1997, requesting modifications of, or alternatives to, the proposed Conrail Acquisition.
Indian tribe:	According to Indian Self-Determination and Education Assistance Act (25 U.S.C. 450-458; P.L. 93-638), any Indian tribe, band, nation, or other organized group or community recognized as eligible for the special programs and services that the United States provides to Indians because of their status as Indians.

interchange point:	Point at which two or more railroads join to exchange freight traffic.
interlocking:	An arrangement of switch, lock, and signal devices that is located where rail tracks cross, join, or separate. The devices are interconnected in such a way that their movements must succeed each other in a predetermined order, thereby preventing opposing or conflicting movements.
intermodal facility:	A site consisting of tracks, lifting equipment, paved and/or unpaved areas, and a control point for the transfer (receiving, loading, unloading, and dispatching) of trailers and containers between rail and highway, or between rail and marine modes of transportation.
jurisdictional wetland:	Wetlands that the U.S. Army Corps of Engineers regulates under Section 404 of the Clean Water Act (33 U.S.C. 1344).
key route:	For the purposes of this Final EIS, a rail line segment that carries an annual volume of 10,000 or more carloads of hazardous material.
key train:	Any train with five or more tank carloads of chemicals classified as a Poison Inhalation Hazard (PIH), or with a total of 20 rail cars with any combination of PIHs, flammable gases, explosives, or environmentally sensitive chemicals.
L_{dn}:	The day-night average noise sound level, which is the receptor's cumulative noise exposure from all noise events over a full 24 hours. This is adjusted to account for the perception that noise at night is more bothersome than the same noise during the day.
L_{eq(h)}:	The hourly energy-averaged noise level.

- labor relations culture:** Philosophy by which an employer and/or parties to a collective bargaining agreement conduct labor-management relations.
- land use consistency:** Determination of whether the proposed Conrail Acquisition represents a change that is consistent with local land use plans in effect, based on consultation with local and/or regional planning agencies and/or a review of the official planning documents that such agencies have prepared.
- Level of Service (LOS):** A measure of the operational efficiency of a roadway vehicle traffic stream using procedures that consider factors such as vehicle delay, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Traffic analysts express LOS as letter grades, ranging from Level of Service A (free flowing) to Level of Service F (severely congested); they measure LOS by the average delay for all vehicles. Specifically, Level of Service A describes operations with very low delay (less than 5.0 seconds per vehicle); Level of Service B describes operations with delay in the range of 5.1 to 15.0 seconds per vehicle; Level of Service C describes operations with delay in the range of 15.1 to 25.0 seconds per vehicle; Level of Service D describes operations with delay in the range of 25.1 to 40.0 seconds per vehicle; Level of Service E describes operations with delay in the range of 40.1 to 60.0 seconds per vehicle; and Level of Service F describes operations with delay in excess of 60.0 seconds per vehicle.
- low-income population:** A population composed of persons whose median household income is below the Department of Health and Human Services poverty guidelines.
- maintenance area:** An area classified by EPA as meeting National Ambient Air Quality Standards (NAAQS) and which previously (within the last 10 years before reclassification) did not meet NAAQS.

maintenance-of-way:	The activity of maintaining the track and structures of a railroad.
major key route:	For the purposes of this Final EIS, a rail line segment where the annual volume of hazardous material it carries is projected to double and also exceed 20,000 carloads as a result of the proposed Conrail Acquisition.
Mechanical Department:	Department of the railroad primarily responsible for the maintenance and inspection of locomotives, freight cars, and other moving equipment.
Memorandum of Agreement (MOA):	With regard to cultural resources for the Final EIS, a legally binding document executed under 36 CFR 800.5(e)(4) that either specifies the process a Federal agency will undertake in order to avoid, reduce, or mitigate adverse effects on historic properties by the implementation of a proposed action, or documents the acceptance of such effects in the public interest. The parties who sign a MOA generally include the lead agency, the State Historic Preservation Office, the Advisory Council on Historic Preservation, and sometimes other interested parties.
Memorandum of Understanding (MOU):	An agreement that two or more parties execute that sets forth the specific duties and responsibilities of each party. For the purposes of this Final EIS, MOU is an agreement that the Applicants may negotiate with communities.
minority population:	A population composed of persons who are Black (non-Hispanic), Hispanic, Asian American, American Indian, or Alaskan Native.
mitigation:	An action taken to prevent, reduce, or eliminate adverse environmental effects.

motive power:	Locomotives operated by the railroad.
multi-level rail car:	A two- or three-level freight car, designed for transporting automotive vehicles.
Multiple Resource Score (MRS):	For the Environmental Justice analysis, a measure of aggregate impacts used to identify the geographic areas of greatest concern. This score sums the environmental resource scores for hazardous materials transport, noise, and traffic safety and delay and forms the basis for the tests for disproportionality.
National Ambient Air Quality Standards (NAAQS):	Air pollutant concentration limits established by the EPA for the protection of human health, structures, and the natural environment.
National Environmental Policy Act (NEPA):	The National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321-4347; P.L. 91-190) is the basic national charter for the protection of the environment. It establishes policy, sets goals, and provides means for carrying out the policy. Its purpose is to provide for the establishment of a Council on Environmental Quality and to instruct Federal agencies on what they must do to comply with the procedures and achieve the goals of NEPA.
National Historic Preservation Act (NHPA):	The National Historic Preservation Act of 1966, as amended (16 U.S.C. 470-470t <i>et seq.</i> ; P.L. 89-665), is the basic legislation of the Nation's historic preservation program that established the Advisory Council on Historic Preservation and the Section 106 review process. Section 106 of the NHPA requires every Federal agency to "take into account" the effects of its undertakings on historic properties.

National Priorities List (NPL):	A subset of CERCLIS; EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund Program.
National Register of Historic Places (NRHP):	Administered by the National Park Service, the Nation's master inventory of known historic properties, including buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the Federal, state, and local levels.
Native American:	According to the Native American Graves Protection and Repatriation Act of 1990, as amended (25 U.S.C. 3001 <i>et seq.</i> ; P.L. 101-601), of, or relating to, a tribe, people, or culture that is indigenous to the United States.
Native American lands:	According to the regulations of the Advisory Council on Historic Preservation in 36 CFR 800.2, as modified by the scope of this EIS, all lands under the jurisdiction or control of an Indian tribe, including all lands within the exterior boundaries of any American Indian reservation.
Negotiated Agreement:	An agreement between CSX, NS, or both, and one or more communities or other governmental units that addresses potential environmental impacts or other issues.
No-Action Alternative:	The proposed acquisition of Conrail by CSX and NS does not take place under this alternative; also the present setting for the pre-Acquisition conditions.

noise:	A disturbance or annoyance of an intruding or unwanted sound. Noise impacts essentially depend on the amount and nature of the intruding sound, the amount of background sound already present before the intruding or unwanted sound occurred, and the nature of working or living activity of the people occupying the area where the sound occurs.
noise contour:	Lines plotted on maps or drawings connecting points of equal sound levels.
noise-sensitive receptor:	Location where noise can interrupt ongoing activities and can result in community annoyance, especially in residential areas. The Board's environmental regulations include schools, libraries, hospitals, residences, retirement communities, and nursing homes as examples of noise-sensitive receptors.
nonattainment area:	An area that EPA has classified as not complying with the National Ambient Air Quality Standards promulgated under the Clean Air Act.
Northeast Corridor (NEC):	Railroad right-of-way between Boston, Massachusetts and Washington, D.C. on which Amtrak and others operate; Amtrak is responsible for operation and maintenance on all of the route, except the route segment between New Haven, Connecticut and New Rochelle, New York.

Northeast Operating Rules:

Rules that govern railroad operations, adapted by members of the Northeast Operating Rules Advisory Committee (NORAC). These operating rules apply to all railroads when working on any NORAC member's territory. The NORAC members are Bay Colony Railroad, Conrail Inc. and Consolidated Rail Corporation (Conrail), Delaware & Hudson Railway company, Guildford Transportation Industries, National Railroad Passenger Corporation (Amtrak), New Jersey Transit (NJT), New York Susquehanna & Western Railway Corporation, Providence & Worcester Railroad Company, and Southeastern Pennsylvania Transportation Authority (SEPTA).

notices:

Documents addressed to engineers and other operating employees detailing temporary or local operating rules and restrictions.

on-track (maintenance) equipment:

Track and other maintenance equipment provided with flanged wheels and able to move along railroad track.

operating employee:

Railroad employee engaged in the operation of trains, including a member of the train crew; a train dispatcher; and a track, a signal, and an equipment maintenance employee.

Operating Plans:

Documents that CSX and NS provided as part of the Application, detailing their planned railroad operations following the proposed Conrail Acquisition.

operating practices:

Safety and operating rules, practices, and procedures contained in operating rulebook, timetable, special instructions, or any other company-issued instructions and the management decisions implementing those rules and instructions that govern the movement of trains and work on or around active tracks.

- operating rules:** Written rules of a railroad governing the operation of trains and the conduct of employees responsible for train operations when working on or around active tracks.
- Operation Lifesaver:** A non-profit public information and safety education program dedicated to eliminating collisions, deaths, and injuries at highway/rail at-grade crossings and on railroad rights-of-way. It is composed of a broad-based coalition of Federal, state, and local government agencies, private safety groups, and transportation industry representatives.
- particulate matter (PM):** Airborne dust or aerosols.
- Party of Record (POR):** Party that notified the Board of their active participation in the proceeding about the proposed Conrail Acquisition. When submitting a filing to the Board, the POR must also notify the entire POR service list.
- passive warning devices:** Traffic control devices that do not give positive notice to highway users of the approach or presence of a train. These devices may include signs and pavement markings, located at, or in advance of, railroad crossings to indicate the presence of a crossing and the presence of a train. These signs are either regulatory or non-regulatory and may include parallel track signs, crossbucks, stop signs, yield signs, and constantly flashing lights.
- positive train separation:** Mechanism included in positive train control, an experimental, automated safety system, using Global Positioning System (GPS) technology, onboard computers and wayside information inputs to control train movement. In the event of failure on the primary safety system, positive train control reduces the risk of single-point failure (that is, human error).

posted speed:	Maximum speed permitted at a specific location on the railroad network irrespective of train type.
Prevention of Significant Deterioration (PSD) Class I Areas:	National parks and wilderness areas designated under the Clean Air Act as areas for which users are to maintain air quality at pristine levels, with very small increases in air pollution levels allowed.
Primary Application:	The formal filing of documents with the Surface Transportation Board by applicants for railroad mergers, acquisitions, constructions, or abandonments. The Primary Application contains Operating Plans and information describing related construction projects. It also includes an Environmental Report, describing the physical and operational changes associated with the proposed action and the potential environmental effects of that action.
prime farmland:	According to Natural Resources Conservation Service, land having the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops.
proposed Conrail Acquisition:	The proposed acquisition of Conrail's physical assets and operating systems by CSX and NS, for which the Applicants are seeking approval from the Board.
public uses:	According to 49 U.S.C. 10905 and STB Regulations "Surface Transportation Manual," Section 1105.7(3)iv, those identified alternative public purposes for the use of rail properties proposed for abandonment or discontinuance, including highways, other forms of mass transportation, conservation, energy production or transmission, or recreation.
queue:	A line of vehicles waiting at a highway/rail at-grade crossing for an obstruction to clear.

rail line segment:	For the purposes of this Final EIS, portions of rail lines that extend between two terminals or junction points.
rail route:	Line of railroad track between two points on a rail system.
rail spur:	A railroad track that typically connects to the main line at only one end and provides rail service to one or more railroad freight customers. A rail spur could also parallel the main line.
rail yard:	A location or facility with multiple tracks where rail operators switch and store rail cars.
receptor:	<i>See noise-sensitive receptor.</i>
regional and system gang:	A group of railroad maintenance-of-way employees that work a particular region or an entire railroad system.
remediation (remedial actions):	Actions taken to mitigate the adverse effects, or potential adverse effects, to the environmental or to the public health and welfare resulting from the release or spill of hazardous substances.
Request for Conditions:	A document filed with the Board by a party to this proceeding on or before October 21, 1997, that requests the Board to impose one or more specified requirements on the Applicants as a condition to the Board's approval of the proposed Conrail Acquisition.
Resource Conservation and Recovery Act (RCRA):	The Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6901 <i>et seq.</i> ; P.L. 94-580) is a Federal act governing the generating, storing, transporting, treating, and disposing of hazardous waste.

Resource Conservation and Recovery Information System (RCRIS):	Federal database containing information on facilities that generate, transport, store, treat, and/or dispose of hazardous waste.
Responsive Environmental Report (RER):	A report, submitted by an Inconsistent and Responsive applicant, that contains detailed environmental information regarding the activities proposed in its IR Application and complies with the requirements for environmental reports in the Board's rules at 49 CFR 1105.7(e).
restricted speed:	A speed that will permit a train to stop within one-half the range of vision of the railroad employee controlling the movement of the train; the train must stop before passing improperly aligned switches, a defect in the track structure, deliberately placed objects, or striking other railroad equipment. According to Federal Railroad Administration regulations, this speed is not to exceed 20 miles per hour.
retarder:	In railroad yards, a braking device, usually power-operated, built into a railroad track to reduce the speed of cars by means of brake-shoes which, when set in braking position, press against the sides of the lower portions of the wheels.
right-of-way:	The strip of land for which an entity (for example, a railroad) has a property right to build, operate, and maintain a linear structure (for example, a rail line).
roadmaster:	Railroad supervisor responsible for track inspection and maintenance over a specified portion of the railroad network.
Safety Assurance and Compliance Program (SACP):	Federal Railroad Administration program to audit railroad safety practices and to ensure compliance with Federal regulations.

safety culture:	The manner in which management and employees in an organization view and approach the issue of safety, including both formalized rules and informal practices in the organization.
Safety Implementation Plan Guidelines (SIPG):	A series of acquisition-related guidelines that the Federal Railroad Administration developed for CSX and NS, detailing a list of safety concerns that CSX and NS must address in their Safety Integration Plans.
Safety Integration Plans:	Plans that the Applicants prepared and submitted to the Board to explain how they propose to provide for the safe integration of their separate corporate cultures and operating systems, if the Board approves the proposed Conrail Acquisition.
Section 106 review process:	The review process set forth in Section 106 of the NHPA (16 U.S.C. 470) that requires every Federal agency to "take into account" the effects of its undertakings on historic properties and affords the ACHP the opportunity to comment on those undertakings and their effects.
seniority district:	A geographic area within which a group of employees in a specific labor union (for example, engineers, dispatchers) are authorized and expected to work.
seniority rights:	The priority one employee has over another employee in bidding for available positions, choice of work assignments, and similar matters, based on length of employment in a specified category. Agreements between railroad companies and labor unions specify such rights.
sensitive receptor:	See <i>noise-sensitive receptor</i> .

- separated grade crossing:** The site where a local street or highway crosses railroad tracks at a different level or elevation, either as an overpass or as an underpass.
- service:** The official notification and delivery of Board decisions and notices (including EAs and EISs) by the Secretary of the Board to persons involved in a particular proceeding.
- Settlement Agreement:** An agreement negotiated between CSX or NS or both and one or more parties, including other railroads, that addresses concerns or requests of the party (or parties). Generally, such an agreement addresses competitive customer service or labor issues.
- Seven Separate Connections:** Seven new rail line connection construction projects in Illinois, Indiana, and Ohio. These projects total approximately 4 miles of new track. CSX and NS requested that the Board give early consideration and approval to the physical construction of these particular connections.
- Shared Assets Areas:** Areas comprising Conrail facilities in southeastern Michigan, northern New Jersey, and southern New Jersey/Philadelphia that CSX and NS would share and Conrail Shared Assets Operations would operate for the benefit of both CSX and NS, if the Board approves the proposed Conrail Acquisition.
- shifted load:** An improperly secured freight car load that has moved and may protrude beyond the allowed dimensional limits.
- shipment:** A unit of freight given to the railroad for movement to its destination by an individual customer.

siding:	A track parallel to a main track that is connected to the main track at each end. A siding is used for the passing and/or storage of trains.
signal maintainer:	Railroad employee who maintains signal and communications systems.
socioeconomic:	For this Final EIS, job loss directly attributable to changes in the physical environment as a result of construction and abandonment activities and other activities related to the proposed Conrail Acquisition project.
Sound Exposure Level (SEL):	For a transient noise event such as a passing train, equivalent to the maximum A-weighted sound level that would occur if all of the noise energy associated with the event were restricted to a time period of 1 second. The SEL accounts for both the magnitude and the duration of the noise event; noise analysts use SEL to calculate the day-night average noise level.
Spill Prevention, Control, and Countermeasures Plan (SPCCP):	A site-specific document written to detail measures to prevent discharges of oil into waters of the United States (as defined in the Clean Water Act). Facilities with aboveground storage capacities in a single container greater than 660 gallons, or the aggregate aboveground storage capacity greater than 1,320 gallons, or total underground storage capacity greater than 42,000 gallons are required to prepare SPCCPs.
superior train:	For purposes of this Final EIS, a passenger train operating on the same track network with freight trains. Superior trains must have track clear of all trains not less than 15 minutes prior to their arrival. See <i>temporal train separation</i> .

**Supplemental
Environmental Report:**

A report that analyzes the environmental impacts of operating changes related to a Settlement Agreement between an Applicant and another railroad that exceed the Board's thresholds when added to changes proposed in the Applicants' Operating Plans.

switch:

The portion of the track structure used to direct cars and locomotives from one track to another.

switching:

The activity of moving cars from one track to another in a yard or where tracks go into a railroad customer's facility.

**temporal train
separation:**

The time separation of passenger trains that share rail lines with freight trains, in order to reduce the possibility of train collisions. See *superior train*.

territory:

The portion of a railroad's track network under the management of a particular supervisor.

threatened species:

A species that is likely to become endangered within the foreseeable future throughout all or part of its range. Federal and state laws protect these species.

**threshold for
environmental analysis:**

A level of proposed change in railroad activities that determines the need for SEA's environmental review. For the proposed Conrail Acquisition, SEA used the Board's environmental rules at 49 CFR Part 1105 to determine the activities that it would examine for air and noise impacts ("Board thresholds"). For other issue areas, SEA developed appropriate thresholds to guide its environmental review ("SEA thresholds"). The term "Board thresholds", as used in this EIS, may refer to either Board or SEA thresholds.

timetable:	A document that identifies key railroad line features over a defined portion of the network. The features usually include distances, speed limits, track layout, type of signaling, location and length of passing sidings, and the local applicability of specific operating rules. Operating rules are often published with the timetable.
track geometry:	Dimensional description of railroad track and individual rails compared to optimal design criteria.
track geometry inspection car:	Rail vehicle equipped with instruments to make continuous, in-motion measurements of variations in the track gauge, alignment, and cross level.
trackage right(s):	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 to access other shipper or carriers. See also <i>haulage right(s)</i> .
trackage rights agreement:	An agreement between two parties that defines the trackage rights granted to one party over the tracks of a second party.
traffic volume (highway):	The number of highway vehicles that pass over a given point during a given period of time, often expressed on an annual, daily, hourly, and sub-hourly basis. For the purposes of this Final EIS, SEA expressed highway traffic volumes on a daily basis.
traffic volume (rail):	The total volume of rail traffic that passes over a given rail line segment, typically expressed in either trains per day or annual million gross tons per year.

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train (freight):	A conveyance transported by one or more locomotives typically with 40 to 150 freight cars, measuring approximately 5,000 to 8,000 feet in length. For the purposes of this Final EIS, does not apply to locals, work trains, switch-engine movements, or engine-only movements.
train (passenger):	Equipment composed of one or more rail cars designed to carry passengers, propelled by a locomotive or self-propelled, moving from one place to another.
train crew:	Employees assigned to operate a train, usually an engineer, a conductor, and one or more trainmen.
train defect detector:	An electronic device located alongside a rail track that monitors passing trains to determine the presence of certain potentially dangerous conditions, such as an overheated wheel bearing ("hot box") or a shifted load that protrudes from the rail car.
trainman:	Member of a train crew responsible for assisting the engineer and conductor in operating the train, especially with switching cars.
trainmaster:	Railroad operations supervisor responsible for managing train and yard operations and operating employees on a defined portion of the railroad network.
transient noise event:	An intermittent occurrence of noise, such as the passing of a train that generates such noise.
Transportation Department:	Department of the railroad responsible for day-to-day train operations and dispatching.

Triple Crown Service (TCS):

An expedited intermodal service offered by both Conrail and NS. TCS trains do not require the use of flat cars, but rather use specially designed dual-mode highway trailers that are coupled together with two-axle rail wheel sets that support the ends of the trailers for the rail portion of the rail-highway movement. The equipment used is similar to "RoadRailer" equipment.

turnout:

The portion of railroad track structure where a single track divides into two tracks.

Verified Statement:

A party's sworn statement that provides information to the Board.

vibration velocity:

The rate of change of displacement of a vibration. Noise analysts often express measurements of vibration in terms of velocity because velocity correlates well with human response to vibration.

waybill:

Document or computer record containing details of a rail shipment: origin, destination, route, commodity, freight rate, car or cars used, and similar information.

wayside:

Adjacent to the railroad track, as in "wayside signals" or "wayside defect detectors."

wayside noise:

Train noise adjacent to the right-of-way that comes from sources other than the horn, such as engine noise, exhaust noise, and noise from steel train wheels rolling on steel rails.

wetlands:

According to 40 CFR Part 230.41, those "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions," generally including swamps, marshes, bogs, and similar areas.

yardmaster:

Railroad operations supervisor responsible for railroad operations and employees in a railyard.

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LIST OF ACRONYMS AND ABBREVIATIONS

AAR	Association of American Railroads
ABS	Automatic Block System
ACHP	Advisory Council on Historic Preservation
ACS	Automatic Cab Signals
ACSES	Advanced Civil Speed Enforcement System
ADT	Average Daily Traffic
Amtrak	The National Railroad Passenger Corporation
ANSI	American National Standards Institute
AoPE	Area of Potential Effect(s)
APL	American Presidents Line
APTA	American Public Transit Association
ARU	Allied Rail Unions
ASTM	American Society for Testing and Materials
ATC	Automatic Train Control
B&O	Baltimore & Ohio Railroad Company
B&OCT	Baltimore & Ohio Chicago Terminal Railroad Company
BIA	Bureau of Indian Affairs
BMP	Best Management Practice
Board	Surface Transportation Board
BOCT	Baltimore & Ohio Chicago Terminal Railroad Company
BRL	The Cities of Bay Village, Rocky River, and Lakewood, Ohio
CAA	Clean Air Act of 1970
CAAA	Clean Air Act Amendments of 1990
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CO	carbon monoxide
Conrail	Conrail, Inc. and Consolidated Rail Corporation
CP	Control Point
CPR	Canadian Pacific Railway
CRC	Comments and Requests for Conditions
CSX	CSX Corporation and CSX Transportation, Inc.

CTC	Centralized Traffic Control
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act of 1972
dB	decibel
dBA	A-weighted decibels
DES	Division of Endangered Species
DOI	U.S. Department of the Interior
DOT	U.S. Department of Transportation
EA	Environmental Assessment
EDR	Environmental Data Resources, Inc.
EIS	Environmental Impact Statement
EJ	Environmental Justice
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERS	Environmental Resource Score
ESA	Endangered Species Act of 1973
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMEA	Failure Mode and Effects Analysis
FRA	Federal Railroad Administration
FRA ID	Federal Railroad Administration Identification Number
FTA	Federal Transit Administration
GIS	Geographic Information System
GPS	Global Positioning System
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HCM	The Transportation Research Board's <i>Highway Capacity Manual</i>
HMERP	Hazardous Materials Emergency Response Plan
HMIS	Hazardous Materials Information System
HUD	Department of Housing and Urban Development
ICC	Interstate Commerce Commission
ID	Identification
IHB	Indiana Harbor Belt Railroad Company
IR	Inconsistent and Responsive [application]
ISTEA	Intermodal Surface Transportation Efficiency Act
IT	Information Technology
LAL	Livonia, Avon, and Lakeville Railroad Corporation
L_{dn}	day-night equivalent sound level
L_{eq(h)}	hourly energy-averaged sound level
LOS	Level of Service
LUST	Leaking Underground Storage Tank

MARC	Maryland Rail Commuter (Maryland's Mass Transit Administration's Commuter Rail Service)
MBTA	Massachusetts Bay Transportation Authority
Metra	Northeast Illinois Regional Commuter Railroad Corporation
min./veh	minutes per vehicle
MNR	Metro-North Railroad (Metro-North Commuter Railroad Company)
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
mph	miles per hour
MRS	Multiple Resource Score
MRTA	Metro Regional Transit Authority of Akron, Ohio
MUTC	Manual of Uniform Traffic Control Devices
N/A	Not Applicable
NAAQS	National Ambient Air Quality Standards
NEC	Northeast Corridor
NEPA	National Environmental Policy Act of 1969
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act of 1966
NHTSA	National Highway Traffic Safety Administration
NJT	New Jersey Transit
NORAC	Northeast Operating Rules Advisory Committee
NO_x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPS	National Park Service
NRC	Nuclear Regulatory Commission
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NS	Norfolk Southern Railway Company and Norfolk Southern Corporation
NWI	National Wetlands Inventory
NYCH	New York Cross Harbor
O₃	ozone
OAR	Office of Air and Radiation (within Environmental Protection Agency)
OHPO	Ohio Historic Preservation Office
OMS	Office of Mobile Sources (within Environmental Protection Agency)
OTR	Ozone Transport Region
PCB	polychlorinated biphenyl
PDEA	Preliminary Draft Environmental Assessment
PIH	Poison Inhalation Hazard
P.L.	Public Law
PM	particulate matter
PM₁₀	particulate matter less than 10 microns in diameter
POR	Party of Record

PSD	Prevention of Significant Deterioration
P&W	Providence & Worcester
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act of 1976
RCRIS	Resource Conservation and Recovery Information System
RER	Responsive Environmental Report
RQ	Reportable Quantity
SACP	Safety Assurance and Compliance Program
SARA	Superfund Amendments and Reauthorization Act of 1986
SCS	Soil Conservation Service
SEA	Section of Environmental Analysis
sec/veh	seconds per vehicle
SEL	Sound Exposure Level
SEPTA	Southeastern Pennsylvania Transportation Authority
SHPO	State Historic Preservation Office
SIPG	Safety Implementation Plan Guidelines
SPCCP	Spill Prevention, Control, and Countermeasures Plan
Stat.	Statute
STB	Surface Transportation Board
SO₂	sulfur dioxide
TCS	Triple Crown Service
TLCPA	Toledo-Lucas County Port Authority
TMACOG	Toledo Metropolitan Area Council of Governments
Tri-Rail	Florida Tri-County Commuter Rail Authority
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRE	Virginia Railway Express
WMATA	Washington Metropolitan Area Transit Authority

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APPLICABLE LEGISLATIVE CITATIONS

The United States Code contains the text of current Public Laws that Congress has enacted; it does not include regulations that executive branch agencies have issued, nor does it contain decisions of the Federal courts, or treaties. The Code of Federal Regulations contains Federal regulations issued by these executive branch agencies; the Federal Register contains proposed regulations and regulations adopted so recently that they are not yet included in the Code of Federal Regulations.

SEA referenced numerous acts, regulations, and guidelines throughout its preparation of both the Draft EIS and the Final EIS. The following list contains applicable Acts of Congress, identified by the appropriate United States Code (U.S.C.), Public Law (P.L.), and/or Statute (Stat.) information. This list also contains applicable Federal regulations from the Code of Federal Regulations (CFR) and recent regulations published in the Federal Register, identified by the appropriate issuing agency name.

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- American Indian Religious Freedom Act of 1978* [as amended]. 42 U.S.C. 1996 *et seq.*; P.L. 95-341 (August 11, 1978).
- Antiquities Act of 1906* (also known as "American Antiquities Preservation Act"). 16 U.S.C. 31-433; P.L. 59-209 (June 8, 1906).
- Archeological and Historic Preservation Act of 1960* [as amended]. 16 U.S.C. 469-469c; P.L. 86-532 (June 27, 1960).
- Archeological Resources Protection Act of 1979* [as amended]. 16 U.S.C. 470 *et seq.*; P.L. 96-95 (October 31, 1979).

- Clean Air Act (also known as "Air Pollution Prevention and Control Act")* [as amended]. 42 U.S.C. 7401-7671g; P.L. Chapter 360 (July 14, 1955).
- Clean Water Act (also known as "Federal Water Pollution Control Act")* [as amended and reauthorized]. 33 U.S.C. 1251 *et seq.*; P.L. Chapter 758 (June 30, 1948).
- Coastal Zone Management Act of 1972* [as amended and reauthorized]. 16 U.S.C. 1451-1464; P.L. 92-583 (October 27, 1972).
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- Historical and Archeological Data-Preservation Act (also known as "Preservation of Historic and Archaeological Data")* [as amended]. 16 U.S.C. 469 *et seq.*; P.L. 93-291 (May 24, 1974).
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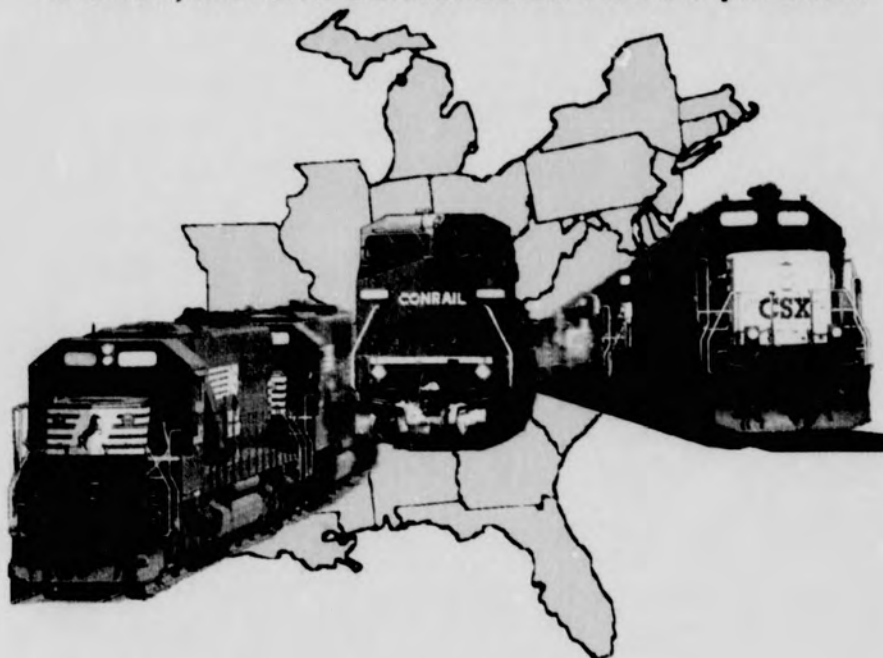
FINAL ENVIRONMENTAL IMPACT STATEMENT

Finance Docket No. 33388

"PROPOSED CONRAIL ACQUISITION"

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

**Control and Operating Leases/Agreements
Conrail, Inc. and Consolidated Rail Corporation**



VOLUME 2

Chapter 4: Summary of Environmental Review

prepared by:

**Surface Transportation Board
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GUIDE TO VOLUME 2

Volume 2 of the Proposed Conrail Acquisition Final EIS contains the following items:

- Contents of Chapter 4.
- Chapter 4, "Summary of Environmental Review".
- Guide to the Final EIS.
- Glossary of Terms.
- List of Acronyms and Abbreviations.
- Contents of the Final EIS.

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CHAPTER 4

SUMMARY OF ENVIRONMENTAL REVIEW

This chapter describes SEA's overall environmental review process, analysis methods, and the additional environmental analyses that the Section of Environmental Analysis (SEA) conducted since it issued the Draft Environmental Impact Statement (Draft EIS). In conducting these additional environmental analyses, SEA sought to refine the evaluation of potential environmental effects and the preliminary recommended environmental mitigation measures presented in the Draft EIS. The additional analyses described in this chapter complement and clarify the analysis SEA presented in the Draft EIS. This chapter also describes how SEA used the results of the additional analyses to develop its final recommended mitigation measures to address the adverse environmental impacts resulting from the proposed Conrail Acquisition.

Chapter 4 is organized by environmental issue area related to the proposed Conrail Acquisition (for example, noise, cultural resources, environmental justice). For each of these issue areas, this chapter summarizes the following:

- Analysis methods.
- Criteria of significance.
- Public comments.
- Additional evaluations that SEA conducted since the Draft EIS.
- Analysis results and impacts.
- Mitigation measures.

Section 4.22, "Anticipated Environmental Benefits," and Section 4.23, "Summary of Adverse Environmental Impacts," summarize the results of SEA's environmental analyses.

4.1 BACKGROUND

This section summarizes the framework of thresholds for analysis and criteria of significance that SEA applied to the potential environmental effects of the proposed Conrail Acquisition. It also discusses the Surface Transportation Board's (the Board's) and SEA's activities since issuing the Draft EIS that resulted in additional analyses and refinements to the proposed mitigation measures.

4.1.1 Framework of SEA's Analysis

The framework for SEA's environmental analysis is based on the concepts of "thresholds" and "criteria of significance." Although this framework consistently focused SEA's environmental analysis for both the Draft and Final EIS, SEA also reviewed communities with unique circumstances.

Environmental Thresholds

According to the Operating Plans CSX Corporation and CSX Transportation (CSX) and Norfolk Southern Railway Company and Norfolk Southern Corporation (NS) submitted with their June 23, 1997 Application, the proposed Conrail Acquisition would increase or decrease rail activities in various areas of the eastern United States. To identify activities likely to cause adverse environmental effects, SEA used thresholds that the Board had previously established for air quality and noise.

SEA also developed new thresholds, as necessary, for the proposed Conrail Acquisition. The Board's thresholds for environmental analysis (*49 Code of Federal Regulations* [CFR] 1105.7) mandate SEA to conduct an air quality and noise analysis based on increases in activity along rail line segments, at rail yards, and at intermodal facilities. The thresholds for air quality analysis depend on whether the increased activity is in an air quality attainment area or a nonattainment area. Table 4-1 shows the Board's thresholds for environmental analysis.

To identify activities that would require SEA's environmental analysis in issue areas other than air quality and noise, SEA developed thresholds appropriate to the magnitude of the proposed Conrail Acquisition, the type of potential environmental impact, and the type of rail activity. Chapter 2, Table 2-1, "SEA's Thresholds for Environmental Analysis," shows SEA's complete set of thresholds for environmental analysis by type of rail activity and environmental impact category.

Communities With Unique Circumstances

SEA did not rely solely on the thresholds to determine whether to evaluate the potential environmental impacts of increased rail activities associated with the proposed Conrail Acquisition. Where appropriate, SEA considered a community's unique circumstances to determine whether an environmental analysis of the potential effects of the proposed Conrail Acquisition would be necessary. SEA evaluated potential alternative train routes as possible mitigation in four areas (Greater Cleveland Area, Ohio; Erie, Pennsylvania; Lafayette, Indiana; and Four City Consortium in Indiana). SEA evaluated possible impacts on passenger rail service capacity for these alternatives. Section 4.19, "Community Evaluations," summarizes the results of these additional evaluations.

TABLE 4-1
SURFACE TRANSPORTATION BOARD
THRESHOLDS FOR ENVIRONMENTAL ANALYSIS^a

Activity/ Site	Noise	Air Quality	
		Attainment and Maintenance Areas ^b	Nonattainment Areas ^b
Rail Line Segments	Increase of eight trains per day or increase of 100 percent in annual gross ton-miles.		Increase of three trains per day or increase of 50 percent in annual gross ton-miles.
Rail Yards	Increase of 100 percent in carload activity per day.		Increase of 20 percent in carload activity per day.
Intermodal Facilities	Increase of 50 trucks per day or increase of 10 percent in average daily traffic volume on any affected road segment.		

^a 49 CFR 1105.7(e)

^b Attainment areas are areas of the U.S. that meet National Ambient Air Quality Standards (NAAQS) as specified under the Clean Air Act (CAA). Maintenance areas are areas that the U.S. Environmental Protection Agency (EPA) had previously designated as nonattainment but has since redesignated as attainment because of improvement in air quality. Nonattainment areas do not meet NAAQS as specified under CAA.

Criteria of Significance

To determine whether the environmental effects SEA identified through its analysis would be significant and adverse, SEA developed "criteria of significance" or mitigation criteria for each environmental issue area. The following discussions of environmental issues present the criteria of significance for each environmental issue area. As a result of additional analyses, SEA further refined the proposed mitigation measures in the Draft EIS for almost all of the environmental issue areas where it identified potentially significant effects. SEA also revised recommended mitigation measures based on the unique circumstances of individual communities. Chapter 7, "Recommended Environmental Conditions," presents detailed descriptions of SEA's final recommended mitigation measures.

4.1.2 Additional Activities Resulting in Refinements to the Draft EIS

After SEA issued the Draft EIS and prior to its issuing this Final EIS, SEA and the Board undertook many additional activities to complete its environmental review of the proposed Conrail Acquisition. One of SEA's key activities during this time was to review and consider all public comments on the Draft EIS. In many cases, SEA chose to conduct additional environmental analyses and consult with communities and agencies to address issues raised by commentors. SEA conducted its review and consideration of public comments in accordance with the Council on Environmental Quality (CEQ) guidelines implementing the National

Environmental Policy Act (NEPA). Chapter 5, "Summary of Comments and Responses," presents SEA's responses to public comments on the Draft EIS.

The following list summarizes the activities and analyses that SEA undertook:

- The Board served a Correction Letter to the Draft EIS that (1) corrected the dates for filing rebuttals in support of Inconsistent and Responsive (IR) Applications and for submitting briefs, (2) clarified the organization of the Draft EIS, and (3) provided further instructions for filing comments on the Draft EIS.
- The Board served an errata document to clarify certain information in the Draft EIS and to correct certain data discrepancies.
- SEA conducted additional analyses of highway/rail at-grade crossing delays.
- The Board served a supplemental errata document to the Draft EIS to provide revised values for highway/rail at-grade crossing delays and the resultant changes in preliminary mitigation recommendations and related environmental justice analyses.
- SEA reanalyzed hazardous materials transport based on refined calculations and data that the Applicants provided.
- SEA refined the Draft EIS noise analysis by considerably extending its use of the geographic information system (GIS) modeling for this Final EIS because the complete set of aerial photographs was not available until after the preparation of the Draft EIS.
- SEA conducted additional analysis using screening modeling of ambient pollutant concentrations in response to public comments regarding rail line segments and highway/rail at-grade crossings.
- SEA placed a notice in the Federal Register to advise the public (1) of the availability of the revised hazardous materials transport and noise analyses, related environmental justice analysis, and preliminary mitigation recommendations; and (2) that SEA was seeking public comment on those issues.
- SEA conducted additional site visits and analyses in response to public comments received on the Draft EIS.
- SEA continued its public outreach activities, particularly with regard to minority and low-income populations that could experience disproportionately high and adverse impacts.
- SEA conducted further screening to refine the list of minority and low-income populations that could experience disproportionately high and adverse impacts.

- SEA considered and responded to public comments on the Draft EIS.
- SEA further analyzed the potential environmental effects of IR Applications and Comments and Requests for Conditions.
- SEA considered the potential environmental effects of Settlement Agreements and Negotiated Agreements.

4.2 SAFETY: HIGHWAY/RAIL AT-GRADE CROSSINGS

The safety analysis for highway/rail at-grade crossings focuses on the safety implications to roadway users from increased train operations. SEA performed analyses in accordance with the Board's rules at 49 CFR 1105.7(e)(7), which required the Applicants to provide information on the effects of the proposed Conrail Acquisition on the local, regional, and national transportation systems. SEA conducted safety analysis of highway/rail at-grade crossings by predicting the accident frequency after the proposed Conrail Acquisition.

4.2.1 Analysis Methods

Accident Frequency Calculation

As more fully described in Chapter 3 of the Draft EIS, "Analysis Methods and Potential Mitigation Strategies," SEA used databases, which the Federal Railroad Administration (FRA) maintains, containing information about train-vehicle accidents. SEA also reviewed CSX and NS's Environmental Report for information on anticipated changes in the level of activity on particular rail line segments. Using standard FRA methods and formulas, SEA calculated the accident frequency for highway/rail at-grade crossings on rail line segments where the number of trains would increase by eight or more per day as a result of the proposed Conrail Acquisition. SEA's analysis considered crossing-specific factors such as the type of warning device, the accident history at the highway/rail at-grade crossing, the daily number of trains, train speeds, and the roadway average daily traffic volumes.

SEA initially used roadway average daily traffic (ADT) volumes contained in the FRA database in order to have a consistent base of information for its analysis of highway/rail at-grade crossing safety. SEA then used updated ADT volumes at locations where state and local government agencies provided such information. At highway/rail at-grade crossings where other individuals or groups provided updated ADT volumes, SEA confirmed these figures with the appropriate government agencies before it utilized these data for the analysis.

Criteria of Significance

To identify possible candidates for site-specific mitigation measures, SEA established two levels of increases in accident frequency likely to result in a significant adverse environmental impact. SEA considered mitigation for those highway/rail at-grade crossings with a high accident

frequency estimated to have a predicted increase in accident frequency of five additional accidents every 100 years for crossings that are currently a high-accident frequency crossing. For other crossings, SEA used a more conservative measure based on vehicle traffic and railroad operations after the proposed Conrail Acquisition. For these crossings, SEA considered mitigation if the accident frequency would increase by one or more accidents every 100 years. A high-accident crossing would have an accident frequency following the proposed Conrail Acquisition of 15 accidents every 100 years or have an accident frequency at or above the state's 50th highest accident rate.

4.2.2 Public Comments and Additional Evaluations

Public Comments

SEA evaluated comments received during the 45-day Draft EIS comment period and, as appropriate, conducted additional analysis for safety at specific highway/rail at-grade crossings. Most of the comments received required SEA to respond or to clarify specific issues raised by the commentors but required no additional technical analysis. Chapter 5, "Summary of Comments and Responses," contains specific responses.

The Applicants stated that consultation with state departments of transportation is necessary because safety improvements at highway/rail at-grade crossings are the responsibility of state departments of transportation. SEA recognizes that the states are responsible for determining highway/rail at-grade crossing safety improvements. SEA further acknowledges that the Board is authorized to impose conditions to protect public health and safety in its decisions regarding actions such as the proposed Conrail Acquisition.

Some commentors requested that SEA include specific additional highway/rail at-grade crossings in the mitigation recommendations and disagreed with the level of the warning device upgrade proposed for certain crossings in the Draft EIS. Commentors also requested that SEA conduct investigations of potential rail-corridor impacts where highway/rail at-grade crossings are near to each other along a portion of a rail line segment. Other commentors stated that SEA did not consider high-profile crossings (where the track elevation is higher than the roadway at a crossing, also known as hump crossings) in its analysis of highway/rail at-grade crossings. Commentors also requested that SEA conduct analyses of pedestrian safety for school children. In response to these comments, SEA revised the recommended mitigation as warranted as a result of additional review of the specific crossing locations and rail corridors cited in the comments. High-profile crossings are an existing condition that is accounted for in the highway/rail at-grade crossing safety accident prediction formula by incorporation of accident history data. Where communities identified specific pedestrian safety issues, SEA recommends education and safety training by the Applicants through their Operation Lifesaver programs on a regular basis at the request of potentially affected schools.

SEA received a small group of comments that resulted in additional analyses. The Applicants commented that some highway/rail at-grade crossings already had the upgraded warning devices

proposed in the Draft EIS. Other commentors provided more recent highway traffic counts. Commentors also suggested revisions to assumed train operating speeds. SEA evaluated this information and performed additional analysis where it deemed appropriate. Some commentors noted concerns about the potential safety impacts of delays to emergency response vehicles. These issues are more fully discussed in Section 4.7.5, "Delay of Emergency Vehicles;" Chapter 5, "Summary of Comments and Responses;" and Chapter 7, "Recommended Environmental Conditions."

Additional Evaluations

As a part of its overall environmental review process, SEA evaluated potential alternative train routes that SEA or the commentors proposed as possible mitigation in four areas (Greater Cleveland Area, Ohio; Erie, Pennsylvania; Lafayette, Indiana; and Four City Consortium in Indiana). Where appropriate, SEA evaluated possible impacts on highway/rail at-grade crossing safety for these alternatives. Section 4.19, "Community Evaluations," summarizes the results of these additional evaluations.

Revised Crossing Data. For safety at highway/rail at-grade crossings, SEA conducted site visits and determined that, in some cases, the FRA database utilized for the Draft EIS did not describe the current conditions at the crossings. SEA also conducted a field review and a data source review of the crossing data from the FRA database and obtained updated information from the Applicants and state and local departments of transportation. SEA revised its analysis of the potential changes in highway/rail at-grade crossing safety to reflect additional information. For some locations, SEA determined that state or local jurisdictions had recently upgraded the highway/rail at-grade crossing warning device. SEA recalculated projected accident rates that occurred based on the upgraded warning devices at the highway/rail at-grade crossings. In this recalculation, SEA used only the data on accidents that occurred since installation of the upgraded warning devices. If SEA determined that a warning device upgrade recommended in the Draft EIS was already in place, SEA decided not to recommend mitigation measures. See Appendix E, "Safety: Highway/Rail At-grade Crossing Safety Analysis," for the results of SEA's revised analysis.

Summary of Updated Information. Based upon comments and additional field visits, SEA developed the following categories of updated information:

- Physical setting including type of warning device, number of tracks, number of highway lanes, and the closure status of adjacent highway/rail at-grade crossings.
- Train volumes.
- Highway traffic volumes.
- Accident history.

4.2.3 Analysis Results and Impacts

Overall, SEA's recalculations in this Final EIS more accurately forecast the projected increases in accident frequency that would result at highway/rail at-grade crossings from the proposed Conrail Acquisition. Table 4-2 summarizes SEA's revised findings and recommendations.

**TABLE 4-2
REVISED FINDINGS AND RECOMMENDATIONS
FOR HIGHWAY/RAIL AT-GRADE CROSSING SAFETY**

Finding/Recommendation	Number of Locations That Warrant Mitigation
Draft EIS Recommendations	118
Mitigation in the Draft EIS That Is No Longer Recommended	19
New Locations Identified for Mitigation as a Result of Refined Analysis in the Final EIS	19
Locations with the Recommended Mitigation Already in Place	29
Final EIS Recommendations	89

Based on additional analyses for this Final EIS, SEA determined that 89 locations in the states of Illinois, Indiana, Maryland, Michigan, New York, Ohio, Pennsylvania, and Virginia would exceed the criteria of significance for highway/rail at-grade crossing safety. Table 4-7 of the Final EIS, "Summary of Adverse Environmental Impacts by State," lists the rail line segments and highway/rail at-grade crossings for which SEA recommends mitigation. Appendix E, "Safety: Highway/Rail At-grade Crossing Safety Analysis," provides the complete results of the analysis for this Final EIS.

4.2.4 Mitigation

Mitigation Strategies Considered

As more fully described in Chapter 3 of the Draft EIS, "Analysis Methods and Potential Mitigation Strategies," SEA has considered the following mitigation measures in other railroad mergers and acquisitions to enhance safety at highway/rail at-grade crossings:

- Installing or upgrading automatic gates and other warning devices.
- Adding or improving demarcation of "Stop" lines and other traffic control pavement markings.
- Installing new or additional warning signs, such as those stating, "Do not stop on the tracks."

- Constructing or installing a roadway median barrier to reduce the opportunity for vehicles to maneuver around a lowered gate.
- Establishing and posting a toll-free telephone number at crossings to enable drivers to report malfunctioning warning devices, stalled vehicles, or other dangerous conditions.
- Improving visibility at highway/rail at-grade crossings by clearing vegetation or installing lighting to illuminate passing or stopped trains.

Mitigation Recommended in the Draft EIS

As described in Chapter 4 of the Draft EIS, "System-wide and Regional Setting, Impacts, and Proposed Mitigation," SEA concluded that no system-wide mitigation was appropriate, except to recommend that CSX and NS prominently display a toll-free telephone number and a unique highway/rail at-grade crossing identifier for the public to call and report warning device problems. SEA's recommended site-specific mitigation measures from the Draft EIS for highway/rail at-grade crossings included:

- Upgrading existing warning devices at 105 highway/rail at-grade crossings.
- Relocating rail traffic to an alternative rail corridor to address safety impacts at 13 highway/rail at-grade crossings in Erie, Pennsylvania and Lafayette, Indiana.

Final Recommended Mitigation

Since issuing the Draft EIS, SEA reviewed the recommended mitigation strategies contained in the Draft EIS and determined the recommended mitigation measures for this Final EIS. Also, SEA tailored the recommended mitigation measures as appropriate for local conditions and included additional general conditions to ensure safety at highway/rail at-grade crossings.

Based on the additional analysis and SEA's review of public comments, SEA recommends that the Board require the Applicants to upgrade highway/rail at-grade crossing warning devices at 103 crossings in the states of Illinois, Indiana, Kentucky, Maryland, Michigan, New York, Ohio, Pennsylvania, Tennessee, and Virginia as listed in Section 7.3.1, "Final Recommended System-wide Conditions" of Chapter 7, "Recommended Environmental Conditions," of this Final EIS. SEA includes with these recommendations the requirement that the Applicants install gates at crossings that warrant an upgrade from a passive warning device and that currently have two or more tracks to protect against collisions with trains traveling from two directions.

To the extent practicable, the Applicants shall prioritize for improvement those highway/rail at-grade crossings that have the greatest level of projected train traffic increases. If the Applicants reach agreement with the affected local jurisdictions and the state department of transportation, they may implement alternate safety improvements in the vicinity of these identified highway/rail at-grade crossings that achieve at least an equivalent level of safety enhancement.

The Applicants shall complete these upgrades or improvements within 2 years of the effective date of the Board's decision and shall certify to the Board such completion on a quarterly basis during this 2-year period.

For the Final EIS, SEA identified 52 rail line segments as having an increase in traffic of 8 or more trains per day or a 100 percent increase in annual gross ton miles as a result of the proposed Conrail Acquisition. However, because some of those rail line segments do not have any highway/rail at-grade crossings, SEA is recommending mitigation at 44 of those 52 rail line segments. Therefore, SEA is recommending that the Applicants make Operation Lifesaver programs available to communities, schools, and organizations along these 44 rail line segments. In the Final EIS, SEA does not recommend mitigation at highway/rail at-grade crossings that SEA determined through field verification have been upgraded to the mitigation measure proposed in the Draft EIS.

Therefore, based on its independent environmental analysis of the proposed Acquisition, review of available information, and consideration of public comments, SEA recommends that any final Board decision approving the proposed Conrail Acquisition include as conditions the following mitigation measures for safety at highway/rail at-grade crossings.

- For each of the public highway/rail at-grade crossings on the 44 rail line segments, the Applicants shall provide and maintain permanent signs prominently displaying both a toll-free telephone number and a unique highway/rail at-grade crossing identification number.
- On the 44 rail line segments, the Applicants shall install temporary notification signs or message boards at each public highway/rail at-grade crossing clearly advising motorists of the impending increase in train traffic and displaying a crossing safety advisory message.
- At each of the public highway/rail at-grade crossings on the 44 rail line segments, the Applicants shall enhance crossing safety by promptly conducting the maintenance required to attain compliance with all applicable Federal, state, and local regulations.

Chapter 7, "Recommended Environmental Conditions," includes the proposed language for SEA's recommended mitigation measures for the enhancement of safety at highway/rail at-grade crossings.

4.3 SAFETY: HAZARDOUS MATERIALS TRANSPORT

SEA's primary safety concern pertaining to hazardous materials transport is the risk of a spill or release while moving hazardous materials from one point to another along a rail line segment, mainly from a train accident or derailment. Based on railroad industry statistics, the probability of a rail accident that involves hazardous materials is usually very low, and the Applicants'

historical rail accident rates are well below the industry average. Nevertheless, SEA realizes that the potential for a rail accident resulting in widespread environmental effects exists.

SEA assessed the potential safety-related effects of the proposed Conrail Acquisition, both site-specific and system-wide. In its analysis, SEA considered the Applicants' required compliance with the following laws and rules governing hazardous materials transport:

- U.S. Department of Transportation (DOT) regulations at 49 CFR 170 through 179 and FRA's enforcement.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).
- Resource Conservation and Recovery Act of 1976 (RCRA).
- Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III.
- FRA regulations covering track and signal safety standards, and locomotive and freight car safety standards.
- Railroad operating rules and practices.

4.3.1 Analysis Methods

SEA's analysis methods for hazardous materials transport remain unchanged from those described in Chapter 3 of the Draft EIS, "Analysis Methods and Potential Mitigation Strategies." SEA based its hazardous materials analysis on data from DOT's Hazardous Materials Incident Reporting System, anticipated changes in levels of activity from the Applicants' Environmental Report, and other published information on hazardous materials releases relating to rail transportation. After issuing the Draft EIS, SEA determined that additional analysis was not required for rail yards and intermodal facilities.

SEA determined that fewer than 5 percent of the Applicants' hazardous materials incidents involving a spill or release from 1992 to 1996 resulted from accidents or derailments. More than 95 percent of the accidents resulted from human error, package failure, or similar causes, and they occurred mainly in rail yards. However, SEA determined that rail line accidents or derailments result in incidents that are generally more serious (such as those that result in larger releases), and the potential for adverse environmental effects is much greater than for the other incidents.

After it issued the Draft EIS, SEA performed further analytical review using hazardous materials transport data that CSX had provided on October 3 and December 23, 1997, and on February 20, 1998. SEA used this information to refine the hazardous materials transport analysis for rail line segments. SEA evaluated the change in the volume of hazardous materials transported as the

most relevant indication of potential environmental impacts that might occur as a result of the proposed Conrail Acquisition. SEA evaluated all rail line segments upon which the volume of hazardous materials transported would increase as a result of the proposed Conrail Acquisition. SEA determined that calculating the increase in the probability of a release was not an appropriate analysis method. Fewer than 5 percent of hazardous materials incidents result from accidents or derailments.

Criteria of Significance

SEA determined that a potential change in the volume of hazardous materials transported would be significant and warrant mitigation if it satisfied either of the following criteria:

- **A rail line segment would become a key route.** For the purposes of this EIS, SEA defines a key route as a rail line segment that carries at least 10,000 carloads of hazardous materials per year.
- **A rail line segment would become a major key route.** For the purposes of this EIS, SEA defines a major key route as a rail line segment that would carry a projected annual increase of at least twice the volume of hazardous materials currently transported on the rail line segment and also would exceed 20,000 hazardous materials carloads per year.

4.3.2 Public Comments and Additional Evaluations

Public Comments

A number of parties expressed concern about the number of hazardous materials shipments, the increased volume of hazardous materials transported, and the potential consequences of a hazardous materials release. SEA shares these concerns and recognizes that safe hazardous materials transport is paramount. However, SEA did not receive any comments that required modification to the evaluation methodology. As part of their comments, the Applicants expressed concern about the preliminary recommended mitigation for hazardous materials transport at rail yards and intermodal facilities. See Chapter 5, "Summary of Comments and Responses," for a detailed summary of comments and responses related to hazardous materials transport.

Additional Evaluations

As a part of its overall environmental review process, SEA evaluated potential alternative train routes that SEA or the commentors proposed as possible mitigation in Greater Cleveland Area, Ohio; Erie, Pennsylvania; Lafayette, Indiana; and Four City Consortium in Indiana. Where appropriate, SEA evaluated possible impacts on hazardous materials transport for these alternatives. Section 4.19, "Community Evaluations," summarizes the results of these additional evaluations.

Revised Applicant Data. After SEA issued the Draft EIS, CSX provided revised data for the quantities of hazardous materials anticipated for rail car shipments by rail line segment. CSX stated that the data previously provided for the Draft EIS had generally overstated the volumes of hazardous materials that the Applicants would transport on rail line segments following the proposed Conrail Acquisition. In a letter to SEA, CSX revised its calculations of equivalent carloads for shipping containers and refined its data to avoid duplicate counting of hazardous materials carloads.

For this Final EIS, SEA evaluated the revised data and found them to be reasonable estimates of hazardous materials carloads transported. SEA revised its analysis based on these data to determine the potential for a release or spill of hazardous materials resulting from train accidents. Appendix F, "Safety: Hazardous Materials Transport Analysis," contains the calculations supporting this revised analysis.

Transport of Ozone-Depleting Materials and Risk of Mixing Hazardous Materials. In accordance with the Board's regulations at 49 CFR 1105.7, SEA assessed the potential environmental effects of transporting ozone-depleting materials following the proposed Conrail Acquisition. Based on 1996 data submitted by the Applicants, SEA tabulated the Applicants' combined number of carloads transporting ozone-depleting materials system-wide and assessed the changes in routing that would occur as a result of the proposed Conrail Acquisition. SEA used the results of the tabulation and assessment to determine the net effects of the transport of ozone-depleting materials as a result of the proposed Conrail Acquisition.

An additional concern associated with hazardous materials transport involves the transport of incompatible materials and the increased risk posed by the inadvertent mixing of these materials. In some instances, if two or more materials mix after their release, the combined hazard can be worse than the hazard posed by the release of the individual materials. For the proposed Conrail Acquisition, SEA reviewed the types of hazardous materials transported by the Applicants and determined that each Applicant transports nearly all classes of hazardous material. Also, SEA used the Applicants' hazardous materials release data to determine any changes in the risk of hazardous materials mixing during an accident following the proposed Conrail Acquisition.

4.3.3 Analysis Results and Impacts

Rail Line Segments

Draft EIS Results. In the Draft EIS, SEA determined that, system-wide, the Applicants would operate approximately 1 percent fewer rail car miles of hazardous materials following the proposed Conrail Acquisition because of more efficient routes. SEA also determined that this reduction would result in a small decrease in predicted hazardous materials releases and spills from derailments. SEA concluded that, system-wide, the proposed Conrail Acquisition would result in a slight safety improvement for hazardous materials transport. SEA also concluded that the proposed Conrail Acquisition would not cause any significant adverse impacts related to hazardous materials transport. SEA identified specific rail line segments where improved safety

measures were warranted as a result of proposed increases in the volume of hazardous materials transported.

Final EIS Results. The expanded CSX and NS rail systems resulting from the proposed Conrail Acquisition will allow CSX and NS to increase the length of their share of the rail line haul on many routes, especially with western U.S. railroads. For example, chemical traffic moving between northern New Jersey and the Texas gulf coast is moved by Conrail to Illinois and interchanged with the Union Pacific Railroad. If the Board approves the proposed Conrail Acquisition, that same traffic may be interchanged with the Union Pacific Railroad in Louisiana, yielding a longer haul for the Applicants. Therefore, in contrast to the rail car mile reduction that SEA identified in the Draft EIS, SEA determined in the Final EIS that the proposed Conrail Acquisition would cause hazardous materials rail car miles on the Applicants' rail lines to increase by approximately 2 percent and train miles to increase by 8 percent. These increases would cause a corresponding, modest increase in projected accidents on the Applicants' rail lines involving hazardous materials. However, the expected decrease in highway truck-miles resulting from the diversion of freight goods from trucks to trains and the decrease in activity at rail yards and intermodal facilities would also reduce the risk of accidents involving trucks transporting hazardous materials. Therefore, system-wide, SEA concludes that the proposed Conrail Acquisition would not cause any significant adverse impacts.

After evaluating the revised data from CSX, SEA modified its list of designated rail line segments that would warrant key route mitigation. SEA also revised the list of those segments identified as major key routes that would require emergency response mitigation. SEA evaluated a total of 247 rail line segments that would be used to transport increased volumes of hazardous materials following the proposed Conrail Acquisition and determined that 44 would become key routes and require mitigation and 20 would be major key routes. The segments that would require key route mitigation and would be major key routes are in the states of Alabama, Georgia, Illinois, Indiana, Kentucky, Maryland, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and the District of Columbia. Table 4-7 of the Final EIS, "Summary of Adverse Environmental Impacts by State," lists the rail line segments for which SEA recommends mitigation.

Rail Yards and Intermodal Facilities

Draft EIS Results. In the Draft EIS, SEA determined that the proposed expansion of single-line rail service, which allows rail cars to be grouped for longer trips and fewer car-switching movements, would result in a 4 percent decrease in freight-car handling in rail yards system-wide. SEA determined that this overall decrease in freight car handling in rail yards would lead to an overall 14-percent decrease in the risk of a release or spill of hazardous materials arising from a rail yard accident. This would slightly reduce the system-wide risk of incidents involving hazardous materials and cause a corresponding decrease in the risk of a hazardous materials release. SEA concluded that, system-wide, the proposed Acquisition would result in a slight safety improvement for rail transport of hazardous materials and cause no significant adverse impacts related to hazardous materials transport.

Final EIS Results. On a system-wide basis, SEA concluded that the 4-percent reduction in the handling of hazardous materials at all of the rail yards would lead to increased safety. Although the system-wide risk of a release of hazardous materials at rail yards and intermodal facilities is anticipated to decrease as a result of the proposed Conrail Acquisition, certain rail yards and intermodal facilities will experience sharply increased activities that potentially increase the risk of an accident involving hazardous materials. On a site-specific basis, SEA concluded that at the 15 rail yards with activities exceeding SEA's threshold for environmental analysis, the changes proposed by the Applicants would increase the likelihood of an accidental hazardous material release at those rail yards by 56 percent. Similarly, at the 24 intermodal terminals with activities exceeding SEA's threshold for environmental analysis, SEA determined that the changes proposed by the Applicants would increase the likelihood of an accidental hazardous materials release by 75 percent. These increases are attributable to the increased activities at a small number of rail yards and intermodal facilities as a result of the proposed Conrail Acquisition. SEA concluded that this increased risk at these specific rail yards and intermodal facilities warrants mitigation. Table 4-7 of the Final EIS, "Summary of Adverse Environmental Impacts by State," lists the rail yards and intermodal facilities for which SEA recommends mitigation.

Impacts from the Transport of Hazardous Materials

On a system-wide basis, SEA concluded that the increased risk associated with hazardous materials transport resulting from increased hazardous materials car miles could be generally offset by the reduced risk resulting from the decreased rail yard activity and decreased risk from truck-to-rail diversions. However, SEA concluded that because of the increase in hazardous materials rail car miles, this projected increase in risk on all rail line segments warrants mitigation.

Regarding the transport of ozone-depleting materials, SEA determined that the total car miles and the rail yard handling of rail cars containing ozone-depleting materials would be reduced as a result of the proposed Conrail Acquisition and mitigation is not warranted. SEA determined the overall risk associated with hazardous materials mixing during an accident to be small as a result of the proposed Conrail Acquisition. Therefore, SEA determined that mitigation is not warranted for the potential of hazardous materials that could be mixed during a rail accident. Attachment F-1 in Appendix F, "Safety: Hazardous Materials Transport Analysis," compares the data and results from the Draft EIS with the data and results in the Final EIS.

4.3.4 Mitigation

Mitigation Strategies Considered

Existing Safety Programs. SEA considered mitigation strategies for safe hazardous materials handling related to the proposed Conrail Acquisition in the context of the Applicants' existing strong accident prevention programs. CSX and NS are members of the Chemical Manufacturers Association partnership program that focuses on accident prevention through its management

practices for safer chemical transport and handling. SEA reviewed the Applicants' current programs for emergency preparedness, accident prevention, and spill response plans and describes them in detail in Attachment B-9 of Appendix B of the Draft EIS, "Railroad Safety Programs." The following paragraphs summarize these existing safety provisions.

CSX. CSX's plans identify the individual responsibilities, specific notification, and resource mobilization actions to be performed in the case of a derailment, hazardous materials spill, or collision; and CSX reinforces these plans with periodic employee training. CSX's safety program includes its participation since 1988 in the Transportation Community Awareness and Emergency Response Program, under which it holds training sessions that include local emergency response units. CSX also employs private on-call contractors to provide specialized technical support, personnel, and equipment to supplement CSX's hazardous materials handling and spill response. These on-call resources can respond to the scene of a hazardous materials incident within 2 to 3 hours to support the immediate local first-responder agencies, such as a municipal fire department.

NS. NS addresses hazardous materials incidents through plans that emphasize finding and fixing deficiencies, containing and controlling hazardous materials releases, identifying and notifying appropriate agencies and officials of spills, and cleaning up and restoring after a spill. The NS plans define three risk levels for hazardous materials incidents and prescribe appropriate levels of response for each type. These plans include qualified emergency response contractors and special resources to limit potential safety and environmental impacts. NS requires annual training for all personnel involved with hazardous materials transport, and NS conducts audits to evaluate its response plans and training programs.

Mitigation Measures. To mitigate the potential effects of the proposed Conrail Acquisition on the safety of hazardous materials transport, SEA considered the specific measures listed under "Mitigation Recommended in the Draft EIS" and during the development of the "Final Recommended Mitigation" to supplement the Applicants' existing safety programs. Other additional mitigation measures SEA considered in the Draft EIS included requiring the Applicants to develop operating plans, which contain safety policies and procedures for the safe handling and transporting of hazardous materials as well as emergency preparedness, prevention, and response plans.

Mitigation Recommended in the Draft EIS

In Chapter 3, "Analysis, Methods and Potential Mitigation Strategies," of the Draft EIS, SEA recommended the following types of mitigation measures to improve the safety of hazardous materials transportation:

- For new key routes, require the Applicants to add rail car defect detectors, and implement other Association of American Railroads (AAR) key route practices.

- For major key routes, require the Applicants to conduct hazardous materials accident simulations, prepare emergency spill plans, and develop Hazardous Materials Emergency Response Plans.
- For all rail yards and intermodal facilities, require the Applicants to establish Failure Mode and Effects Analysis (FMEA) programs.

Final Recommended Mitigation

Based on the results of additional analysis of hazardous materials transport since the Draft EIS, SEA refined its recommended mitigation. SEA also refined the mitigation measures proposed for the Final EIS based on public comments from the Draft EIS.

Chapter 7 of the Final EIS, "Recommended Environmental Conditions," describes SEA's following recommendations to enhance the safety of hazardous materials transport as a result of the proposed Conrail Acquisition:

- System-wide, require the Applicants to comply with the AAR key train guidelines. A key train is defined as any train with five or more tank carloads of chemicals classified as a poison inhalation hazard or any train with a total of 20 rail cars with any combination of poison inhalation hazard, flammable gas, explosives, or environmentally sensitive chemicals. Key trains have a maximum operating speed of 50 miles per hour and must have a complete train inspection by the train crew whenever an emergency application of the train air brake causes the train to stop or a trackside defective bearing detector indicates a defect.
- On the 44 rail line segments that would become key routes as a result of the proposed Acquisition, require the Applicants to comply with AAR key route guidelines. These guidelines require internal rail defect inspections at least twice per year, annual employee training in hazardous materials handling and equipment inspection, and placing wheel bearing defect detectors at least every 40 miles along the key route.
- On the 20 rail line segments that would become major key routes, require the Applicants to develop and provide a Hazardous Materials Emergency Response Plan for each affected community's local emergency response organization or coordinating body along these rail line segments. Also, require the Applicants to implement real-time or desktop simulation emergency response drills with the voluntary participation of local emergency response organizations.
- On all of the rail line segments that would become new key routes or major key routes, require the Applicants to provide a dedicated toll-free telephone number to the emergency response organizations or coordinating bodies responsible for each community located along those rail line segments.

- On all of the rail line segments that would become new key routes or major key routes and at any rail yard or intermodal facility, require the Applicants to include the U.S. Fish and Wildlife Service (USFWS) and the appropriate state department of natural resources on notification lists prepared as part of the Applicants' Hazardous Materials Emergency Response Plans.
- For the 15 rail yards and 24 intermodal facilities where activity increases would meet or exceed the Board's threshold for environmental analysis, require the Applicants to establish a formal FMEA or an equivalent program to identify and prevent potential hazardous materials incidents. Attachment L-1, "Failure Mode and Effects Analysis (FMEA)" to Appendix L, "Natural Resources," describes the purpose and methods associated with FMEA programs.

4.4 SAFETY: PASSENGER RAIL OPERATIONS

SEA evaluated the potential impacts on passenger rail operations on the rail line segments with increases in freight train traffic resulting from the proposed Conrail Acquisition. SEA examined historical passenger and freight train accident rates and used this information to estimate accident rates that could result from the proposed Conrail Acquisition.

4.4.1 Analysis Methods

SEA's analysis methods, summarized in the following sections, remain unchanged from the Draft EIS. The Draft EIS Chapter 3, "Analysis Methods and Potential Mitigation Strategies," contains a detailed description of analysis methods.

SEA considered the effects of Acquisition-related changes in freight traffic on all 197 CSX, NS, and Shared Assets Areas rail line segments that would carry both passenger and freight trains following the proposed Conrail Acquisition. SEA's analysis showed that freight traffic would increase by an average of one train per day or more on 91 rail line segments also carrying passenger trains. SEA first calculated the historic accident rate from collisions involving freight and passenger trains on these rail line segments. SEA then calculated the change in accident rate based on the anticipated change in the number of freight trains that would operate on the segment if the Board approves the proposed Conrail Acquisition.

Criteria of Significance

To identify the rail line segments that would warrant passenger rail safety mitigation as a result of the Acquisition-related changes in freight train traffic, SEA determined whether the results of its analysis projected that the rail line segment would experience an accident more frequently than once every 150 years. This frequency reflects the historical experience for passenger train accidents along routes of the various passenger service providers. Passenger rail accidents are infrequent events and, according to FRA statistics, the national passenger train accident rate varies about 30 percent annually. SEA also determined whether the predicted change in the

projected accident rate was greater than 25 percent. SEA considered mitigation for the rail line segment if there was a likelihood of an accident occurring more frequently than once every 150 years; and the predicted change in accident rate was greater than 25 percent.

SEA's criteria of significance remain unchanged from the Draft EIS.

4.4.2 Public Comments and Additional Evaluations

Public Comments

DOT, NS, CSX, and several commuter operators expressed opposition to the recommended mitigation in the Draft EIS to establish passenger trains as "superior trains" with mandated time separation from all other trains. Their collective comments summarized the proposed mitigation as unnecessary, inappropriate, and costly in terms of lost rail line capacity, given modern communication and signal systems and FRA's plenary safety responsibility. SEA evaluated these comments and reviewed its recommended mitigation in the Draft EIS. Based on its review, SEA agrees that FRA's safety program and the U.S. railroads' modern signal systems and operating rules are effective in lowering passenger/freight train accident risk. Therefore, SEA modified its recommended mitigation as discussed in Section 4.4.4, "Mitigation," of this Final EIS.

NS and CSX also questioned the appropriateness of the data used in calculating the increased risk resulting from the addition of freight trains. In response, SEA confirmed that the Draft EIS analyzed the potential for increase in accidents and accurately identified the rail line segments that would warrant mitigation.

Southeastern Pennsylvania Transportation Authority (SEPTA) expressed concerns regarding potential impacts from changes in freight operations on the commuter rail's present and planned commuter train service. In response, SEA requested further detail of CSX's proposed Operating Plan to evaluate the potential impacts of the changes in freight operations on commuter rail safety. Based on its evaluation, SEA confirmed that CSX's Operating Plan is operationally logical and would not affect the commuter rail's safety.

Chapter 5, "Summary of Comments and Responses," summarizes all public comments received on the Draft EIS and presents SEA's responses.

Additional Evaluations

In addition to the evaluations in response to the comments, SEA conducted other evaluations since issuing the Draft EIS, resulting from the potential alternative train routes in certain areas and changes in CSX's and NS's Operating Plans:

- **Community Evaluations.** SEA evaluated potential alternative train routes that SEA or the commentors proposed as possible mitigation in four areas (Greater Cleveland Area,

Ohio; Erie, Pennsylvania; Lafayette, Indiana; and the Four City Consortium in Indiana). Where appropriate, SEA evaluated possible impacts on passenger rail safety for these alternatives. Section 4.19, "Community Evaluations," summarizes the results of the additional evaluation.

- **N-063 (Campbell Hall-to-Port Jervis in Orange County, New York).** During preparation of the Final EIS, the Applicants informed SEA that NS had reduced the proposed number of trains on rail line segment N-063 (Campbell Hall-to-Port Jervis in Orange County, New York). As a result of the change, the number of freight trains per day would go from 7.9 to 9.0, if the proposed Conrail Acquisition is approved, for a total increase of 1.1 trains per day instead of the previous increase of 4.1 trains per day. In the Draft EIS, SEA had analyzed the rail line segment for potential impacts on passenger rail safety and determined the segment would experience impacts warranting mitigation. For the Final EIS, SEA revised its analysis on the rail line segment using the updated number of projected trains. Based on the analysis, SEA determined that the line segment would no longer experience impacts warranting mitigation to ensure passenger train safety.
- **Canadian Pacific Haulage Rights Issues.** During preparation of the Final EIS, the Applicants informed SEA that NS and Canadian Pacific have not negotiated a haulage rights agreement. Therefore, for the purpose of the Final EIS, SEA has determined that no increase in freight trains would result on the following NS rail line segments: N-120 (Jackson, Michigan-to-Kalamazoo, Michigan), N-121 (West Detroit, Michigan-to-Jackson, Michigan), and N-497 (Kalamazoo, Michigan-to-Porter, Indiana). In the Draft EIS, SEA had analyzed the rail line segments for potential impacts on passenger rail safety and determined the segments would experience impacts warranting mitigation. Because SEA determined that no increase in the number of freight trains would occur, the rail line segments would no longer experience passenger safety impacts warranting mitigation.

4.4.3 Analysis Results and Impacts

Based on the analysis in the Draft EIS, modified as explained above, SEA has identified five passenger line segments located in Georgia, Maryland, North Carolina, Virginia, and the District of Columbia, where the increase in accident risk as a result of the proposed Conrail Acquisition would exceed SEA's criteria of significance and would warrant mitigation. Table 4-7, "Summary of Adverse Environmental Impacts by State," lists those five rail line segments. Chapter 5 in the Draft EIS, "State Settings, Impacts, and Proposed Mitigation," provides a detailed discussion of the passenger rail safety analysis in the applicable states.

4.4.4 Mitigation

Mitigation Strategies Considered

As Chapter 3 of the Draft EIS more fully describes, SEA considered several possible mitigation strategies that could reduce significant passenger train safety risk impacts for those individual rail line segments that exceeded the levels of significance previously noted. Specifically, SEA considered whether it would be appropriate to implement the following measures:

- Temporal separation (requiring freight trains to be clear of the main track a specified period of time before and after the scheduled arrival of a passenger train).
- Enhanced rail-safety programs such as closer spacing of rail car defect detectors along rail lines.
- Increased frequency of track inspections, freight car inspections, and highway/rail at-grade crossing signal inspections.
- Toll-free telephone numbers that community emergency response forces could use to contact railroad authorities.
- Training programs for community and emergency response personnel to enhance their ability to respond to rail-related emergencies.
- Head-hardened rail on track curves in mountainous territory to reduce the risk of broken rail and serious derailments.
- Improved rail signal systems to increase efficient and safe use of track capacity.

Mitigation Recommended in the Draft EIS

As the Draft EIS more fully discusses, SEA recommended temporal train separation, requiring all freight trains to be clear of the main track at least 15 minutes prior to the scheduled arrival of the passenger train for the nine rail segments. SEA further evaluated four NS line segments as previously described and determined that five CSX rail line segments remained to be the subject of recommended mitigation.

Final Recommended Mitigation

Based on its review of the public comments on the recommended passenger rail safety mitigation in the Draft EIS, SEA agrees that FRA's safety program and the U.S. railroads' modern signal systems and operating rules are effective in lowering passenger/freight train accident risk.

SEA modified its recommended mitigation; and for the Final EIS, SEA recommends that the Board require CSX to consult with FRA and the affected passenger service agencies to develop and refine operational strategies and technology improvements to ensure that passenger train safety is maintained, while operating on the same track as CSX freight trains, at or above pre-Acquisition levels following implementation of proposed Conrail Acquisition operations. This consultation shall be consistent with FRA's Final Rule on Passenger Train Emergency Preparedness, issued May 4, 1998 (49 CFR Parts 223 and 239). CSX shall report to the Board on the results of its consultations, with copies to FRA and the affected passenger service agencies, within 1 year of the effective date of the Board's final decision. Chapter 7, "Recommended Environmental Conditions," discusses the passenger rail safety mitigation measures detail.

4.5 SAFETY: FREIGHT RAIL OPERATIONS

SEA evaluated the potential changes in freight train accidents that could occur as a result of the proposed Conrail Acquisition both system-wide and on individual rail line segments. SEA used accident data from DOT, Association of American Railroads, and FRA to analyze potential freight rail safety issues. The Applicants supplemented these materials with certain physical facility information, including the number of main tracks, classes of track, and signal systems.

4.5.1 Analysis Methods

The following discussion summarizes SEA's freight rail safety impacts analysis methods. Chapter 3 of the Draft EIS, "Analysis Methods and Potential Mitigation Strategies," describes the analysis methods in detail. SEA's analysis methods and criteria of significance remain unchanged from the Draft EIS.

System-wide Analysis

To assess potential system-wide freight rail safety effects, SEA calculated the probability of accidents occurring before and after the proposed Conrail Acquisition based on the projected train data that both CSX and NS provided in their Operating Plans. SEA also calculated the potential reduction in truck accidents based on the projected reduction in truck vehicle miles as a result of truck-to-rail diversions stemming from the proposed Conrail Acquisition. SEA reviewed and used data that CSX and NS provided on the vehicle miles traveled. SEA calculated the potential accident rates using the accident rates published by DOT's National Highway Traffic Safety Administration.

Segment-specific Analysis

In the Draft EIS, SEA evaluated the potential change in the risk of freight train accidents for the 53 rail line segments that would have an increase of 8 or more trains per day as a result of the proposed Conrail Acquisition. SEA estimated the average annual accident rate for each specific

rail line segment from calculations based on the FRA train accident/incident database for freight operations before and after the proposed Conrail Acquisition.

Criteria of Significance

Accident risk predictions are best expressed in terms of the elapsed time expected between any two consecutive events. Based on FRA statistics, the current national average for a mainline freight train accident is one accident every 117 years on each railroad route mile. To be conservative, SEA applied an interval of one accident per 100 years as the criterion of significance for determining when mitigation is warranted.

4.5.2 Public Comments and Additional Evaluations

Public Comments

Several commentors, including FRA and the Applicants, expressed concerns about the potential confusion that would result if the Board imposed a condition similar to FRA's Proposed Rule for ton-mile-based track inspections (49 CFR Part 213.237, Docket No. RST-90-1) as SEA recommended in the Draft EIS. SEA concludes that early adoption of FRA's Proposed Rule would present no significant problems to FRA and the Applicants. SEA also concludes that adoption of the rule would significantly improve the level of safety on the seven rail line segments SEA identified in the Draft EIS as warranting mitigation. Therefore, SEA has not changed its recommended mitigation regarding FRA's Proposed Rule.

The Applicants objected to additional required training for inspectors, citing their corporate safety records and the lack of correlation between accidents and inspector training on freight rail safety presented in the Draft EIS. SEA no longer recommends the proposed mitigation measure requiring increased training for track and mechanical inspectors because CSX and NS have committed, as part of the Safety Integration Planning process, to implement effective inspection training programs.

Chapter 5, "Summary of Comments and Responses," summarizes public comments received on the Draft EIS and presents SEA's responses.

Additional Evaluations

As a part of its overall environmental review process, SEA evaluated potential alternative train routes that SEA or the commentors proposed as possible mitigation in Greater Cleveland Area, Ohio; Erie, Pennsylvania; Lafayette, Indiana; and the Four City Area in Indiana. Where appropriate, SEA evaluated possible impacts on freight rail safety for these alternatives. Section 4.19, "Community Evaluations," of the Final EIS summarizes the results of these additional evaluations.

4.5.3 Analysis Results and Impacts

System-wide Results

As the Draft EIS describes, SEA determined that the Applicants would experience a slight increase in projected rail line accidents as a result of the increases in the freight train miles and gross ton-miles from the estimated diversion from trucks and other railroads. In addition, based on the Applicants' projected decrease in the volume of cars switched in rail yards, SEA estimated that the number of potential accidents would decrease in the rail yards. The cumulative change in projected 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. Although the changes following the proposed Conrail Acquisition might not affect overall accident frequency, the shifts in train traffic from one line to another and the changes in yard operations might cause the locations of accidents to change.

SEA also noted that the Applicants have stated that the projected number of highway traffic accidents would decrease. 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 highway accidents annually.

Based on the analysis, SEA concluded that the proposed Conrail Acquisition would cause no measurable increase in the risk of freight rail accidents for the overall system.

Segment-specific Results

As the Draft EIS describes, SEA determined that the projected accident frequency would increase for all 53 rail line segments that meet or exceed the Board's thresholds for environmental analysis. Those line segments are in 13 states (Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, New York, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia). However, during preparation of the Final EIS, CSX informed SEA that it had reduced the proposed number of trains on rail line segment C-21 (Evansville, Indiana-to-Amqui, Tennessee) and C-25 (Vincennes, Indiana-to-Evansville, Indiana). As a result of the changes, the number of freight trains on the two rail line segments would no longer meet the threshold of 8 or more trains per day for freight rail safety analysis. SEA had analyzed the rail line segments for potential impacts on freight rail safety in the Draft EIS, and the rail line segments had not warranted mitigation. Because of the changes in number of trains, for the Final EIS, SEA no longer considered the two rail line segments for freight rail safety impacts.

Also, during the preparation of the Final EIS, NS provided its "Mitigation Proposal for Train Frequencies in Greater Cleveland and Vicinity," to SEA, which proposed to change rail traffic levels, in Cleveland and the surrounding area. The Addendum to this Final EIS discusses these proposed changes in more detail. As a result, two rail line segments SEA previously analyzed for freight rail safety would no longer meet the threshold of eight or more trains per day.

However, three rail line segments for which SEA had not previously analyzed would now meet this threshold. For these reasons, 52 rail line segments were analyzed for freight rail safety impacts for this Final EIS.

Of the total 52 rail line segments it analyzed, SEA identified eight rail line segments in three states (Indiana, Ohio, and Pennsylvania) that would warrant mitigation as a result of the proposed Conrail Acquisition. Table 4-7, "Summary of Adverse Environmental Impacts by State," in Section 4.23, "Summary of Adverse Environmental Impacts," lists the rail line segments for which SEA recommends mitigation. Chapter 5 of the Draft EIS, "State Settings, Impacts, and Proposed Mitigation," provides a detailed discussion of the site-specific freight rail safety analysis in the applicable states.

4.5.4 Mitigation

Mitigation Strategies Considered

As the Draft EIS describes, SEA considered several possible mitigation strategies that could reduce significant freight train safety risk impacts on individual rail line segments that exceeded the criteria of significance previously noted. Specifically, SEA considered whether the following measures would be appropriate:

- Implement FRA's proposed rule for ton-mile-based track inspections.
- Enhance rail-safety programs, such as closer spacing of rail car defect detectors along rail lines.
- Increase the frequency of track, tank car, and highway/rail at-grade crossing signal inspections.
- Provide toll-free telephone numbers for community emergency response forces to contact railroad authorities.
- Provide training programs for community and emergency response personnel to enhance their ability to respond to rail-related emergencies.
- Install head-hardened rail on track curves in mountainous territory to reduce the risk of broken rail and serious derailments.
- Replace defective rails to reduce the risk of derailment.
- Install new track to reduce the potential for train collisions and increase the capacity of certain rail line segments.
- Improve rail signal systems to increase efficient and safe use of track capacity.

Recommended Mitigation from the Draft EIS

In the Draft EIS, SEA recommended that the Applicants comply with the requirement in FRA's proposed rule for "ton-mile-based" inspection and train its mechanical and track inspectors annually at locations that dispatch trains on the seven rail line segments warranting mitigation.

In their comments on the Draft EIS, CSX and NS objected to SEA's recommended mitigation, which required additional training for inspectors. CSX and NS cited their corporate safety records and the lack of correlation between accidents and inspector training on freight rail safety presented in the Draft EIS. SEA noted that CSX and NS have committed, as part of the Safety Integration Planning process, to implement effective inspection training programs. Therefore, SEA does not recommend specific environmental mitigation for inspection training.

Final Recommended Mitigation

To reduce the risks of accidents and derailments, SEA recommends that the Board require CSX and NS to comply with FRA's Proposed Rule for "gross ton-mile-based" inspection on the seven rail line segments warranting mitigation. If FRA's Final Rule imposes a different inspection standard, then SEA recommends that the Board require CSX and NS to comply with the standard in the Final Rule. See Chapter 7, "Recommended Environmental Conditions," for a detailed description of the final recommended freight rail safety mitigation measures.

4.6 TRANSPORTATION: PASSENGER RAIL SERVICE

SEA evaluated potential impacts of the proposed Conrail Acquisition on the capability of the freight rail line segments to accommodate existing passenger rail service and new or expanded passenger rail service. To analyze passenger rail service capability, SEA identified and evaluated the impacts of the proposed Conrail Acquisition on all existing and future passenger rail operations, including Amtrak intercity trains and commuter rail trains operated by eight separate operating authorities in 12 states and the District of Columbia.

4.6.1 Analysis Methods

The following discussion summarizes SEA's analysis methods for the Final EIS. The methods remain unchanged from the Draft EIS. Chapter 4 in the Draft EIS, "Analysis Methods and Potential Mitigation Strategies," contains a detailed description of the analysis methods.

On an average weekday, Amtrak operates more than 80 intercity passenger trains on the CSX, NS, and Conrail rail lines. In addition, over 300 daily commuter trains use rail line segments owned by CSX, NS, and Conrail. Conversely, CSX, NS, and Conrail also operate on rail lines owned by Amtrak and various commuter agencies.

As a first step in analyzing passenger rail service, SEA identified rail line segments where freight operations share the line with passenger rail operations and where the shared line would

experience an increase of one or more freight trains per day after the proposed Conrail Acquisition. SEA used existing intercity and commuter passenger rail schedules to identify the existing passenger service. For segments that have existing passenger service and would have additional freight traffic after the proposed Conrail Acquisition, SEA assumed that the existing levels of freight and passenger rail traffic sharing the same rail line segments would currently operate in accordance with existing agreements between freight railroads and the passenger service operators.

Freight train schedules vary, depending on factors such as shippers' requirements and other variables. In addition, freight train operations on principal freight routes generally occur throughout a 24-hour day. The exception is Amtrak's Northeast Corridor, where through (line haul) freight trains operate almost entirely during the night to avoid conflict with heavy daytime passenger operations. SEA analyzed the potential effect of additional freight train traffic on current passenger train volumes and on any planned and funded additional passenger train operations on the affected segments. SEA considered the following factors among others that can affect rail operations:

- Number of main tracks.
- Train control system.
- Passing siding spacing and capacity.
- Cross-over tracks.
- Times and frequency of freight service.
- Times and frequency of commuter service.
- Uniformity of freight train speeds, relative to passenger train speeds.

Based on review of the information obtained for the analysis, SEA examined the capacity of each affected rail line segment. SEA then added the anticipated increases in freight train traffic that would result from the proposed Conrail Acquisition to determine the ability of the rail line segments to accommodate these higher volumes.

Criteria of Significance

SEA determined that impacts of freight operations on passenger rail service would be significant if the anticipated increases in freight operations after the proposed Conrail Acquisition resulted in the need to reduce passenger service by one or more trains per day. The current operating agreements between the passenger service operators and the freight railroads preclude reduction in passenger service. Thus, any significant impact from increased freight operations after the proposed Conrail Acquisition could occur only after expiration of a current agreement and as a result of negotiations between the passenger service operator and the host freight railroad company. SEA's criteria of significance remain unchanged from the Draft EIS.

4.6.2 Public Comments and Additional Evaluations

Public Comments

Several transit agencies provided comments on potential delays of passenger rail services and potential inaccuracies in the methodology and analysis in determining line capacities. SEA concluded that its assessment of line capacity was appropriate and that the legal and contractual provisions of the operating agreements between the passenger service operators and the freight railroads provided both a framework and enforceable means to protect each party's interests. In addition, the Rail Passenger Service Act, as amended, provides Amtrak and DOT with substantial legal powers to ensure that Amtrak trains receive dispatching preference outside the Northeast Corridor. Chapter 5, "Summary of Comments and Responses," summarizes all public comments received on the Draft EIS and presents SEA's responses.

Additional Evaluations

As a part of overall environmental review process, SEA evaluated potential alternative train routes that SEA or other commentors proposed as possible mitigation in four areas (Greater Cleveland Area, Ohio; Erie, Pennsylvania; Lafayette, Indiana; and Four City Consortium in Indiana). Where appropriate, SEA evaluated possible impacts of the alternative train routes on passenger rail service capacity. Section 4.19, "Community Evaluations," summarizes the results of these additional evaluations.

4.6.3 Analysis Results and Impacts

Based on the analysis from the Draft EIS, SEA determined that all of the rail line segments that Amtrak uses for passenger rail service have sufficient capacity not only to accommodate the projected increased numbers of freight trains but also to meet concurrent contractual commitments to Amtrak. SEA concluded that each of the rail line segments with commuter trains could accommodate the increase in freight traffic related to the proposed Conrail Acquisition.

As described more fully in the Draft EIS, SEA determined that intercity passenger rail service would not have any significant impacts as a result of the proposed Conrail Acquisition. In addition, SEA concluded that no significant system-wide, regional, or local capacity impacts would occur on commuter rail service after the proposed Conrail Acquisition.

4.6.4 Mitigation

Mitigation Recommended in the Draft EIS

Based on its analysis, SEA determined that no significant impacts on passenger rail service capability would occur as a result of the proposed Conrail Acquisition and concluded that mitigation was not warranted.

Final Recommended Mitigation

Based on SEA's analysis and review of public comments, SEA determined that no significant impacts on passenger rail service capability would result from the proposed Conrail Acquisition. Therefore, for this Final EIS, SEA has concluded that mitigation is not warranted for passenger rail service capability.

4.7 TRANSPORTATION: HIGHWAY/RAIL AT-GRADE CROSSING DELAY

SEA evaluated changes in vehicle traffic delays that would result from the proposed Conrail Acquisition because the delays stemming from increased train traffic, proposed abandonments, and rail operations on new rail line connections would affect roadway users. SEA limited its assessment of vehicle delay to highway/rail at-grade crossings on those rail line segments that met SEA's thresholds for environmental analysis. SEA did not analyze rail line segments that pass over or under roadways because rail traffic and vehicle traffic do not intersect at such grade-separated crossings.

Sections 4.7.1 through 4.7.4 address the overall subject of delay at highway/rail at-grade crossings, and Section 4.7.5 addresses delays of emergency vehicles, in particular, which are of special concern in many communities. Appendix G of the Final EIS, "Transportation: Highway/Rail At-grade Crossing Traffic Delay Analysis," and Appendix C of the Draft EIS, "Traffic and Transportation," present detailed information about the analysis (including methods) of vehicle delay at highway/rail at-grade crossings.

4.7.1 Analysis Methods

SEA's analysis methods, including methods used for additional analysis since the Draft EIS, remain unchanged from those described in Chapter 3 of the Draft EIS, "Analysis Methods and Potential Mitigation Strategies." SEA performed analyses in accordance with the Board's rules for environmental analysis at 49 CFR 1105.7(e)(7). After reviewing and verifying available data, SEA identified the rail line segments that meet or exceed SEA's thresholds for environmental analysis. On the rail line segments that meet or exceed SEA's thresholds, SEA evaluated only those that have highway/rail at-grade crossings. SEA analyzed potential changes in vehicle delay at all highway/rail at-grade crossings with an ADT count of 5,000 or more vehicles. As more fully described in the Draft EIS, SEA believes that its use of this traffic volume threshold is reasonable and conservative and that the effects of any additional vehicle delay at highway/rail at-grade crossings with lower traffic volumes would be minimal.

For the Final EIS, 123 rail line segments met the Board's thresholds for environmental analysis. SEA evaluated 278 highway/rail at-grade crossings on 61 segments that have crossings with roadways where the average daily traffic is at least 5,000 vehicles.

Measures of Vehicle Delay

For Section 3.7.1, "Methods for Highway/Rail At-grade Crossing Delay Analysis," of the Draft EIS, SEA developed the following five measures to compare roadway vehicle delay before and after the proposed Conrail Acquisition:

- Highway/rail at-grade crossing delay time per stopped vehicle.
- Maximum number of vehicles in a queue.
- Number of vehicles delayed per day.
- Average delay time for all vehicles (expressed as level of service [LOS]).¹
- Traffic LOS.

Revised Vehicle Delay Calculations

On January 21, 1998, SEA issued a Supplemental Errata to the Draft EIS located in Appendix B, "Draft Environmental Impact Statement Correction Letter, Errata, Supplemental Errata and Additional Environmental Information, and Board Notices to Parties of Record," of this Final EIS to correct an error in the formula used to calculate vehicle delay. As a result of the error, SEA had overstated the vehicle delay and the number of crossings that would have significant impacts in the Draft EIS. SEA used the corrected formula in all calculations presented in both the Supplemental Errata and in this Final EIS. In the Draft EIS, SEA had assumed that all roadways evaluated for vehicle delay have two-way operations and that they have an equal number of lanes in both directions. In the Final EIS, the calculations incorporated the actual conditions at some crossings that have one-way roadway operations or have an unequal number of directional approach lanes.

Criteria of Significance

SEA used the delays caused by a single-train event and average daily delay as the two measures for determining impacts of the proposed Conrail Acquisition. SEA considered the following vehicle traffic delay effects at highway/rail at-grade crossings to be significant:

- An increase of 30 seconds or more in average delay per stopped vehicle. (SEA considers this increment to represent a driver's threshold for perception of increased delay.)
- An increase for all vehicles in average delay that (1) lowers the LOS at the highway/rail at-grade crossing from C or better to D, or (2) regardless of the condition before the proposed Conrail Acquisition, results in a LOS E or F. (SEA considers LOS D to be the level at which traffic congestion becomes unacceptable to drivers.)

¹ Level of Service is a measure of the operational efficiency of a roadway vehicle traffic stream using procedures that consider factors such as vehicle delay, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

4.7.2 Public Comments and Additional Evaluations

Public Comments

This section summarizes the key public comments relating to vehicle delay at highway/rail at-grade crossings. Chapter 5, "Summary of Comments and Responses," summarizes all public comments received on the Draft EIS and presents SEA's responses to those comments.

Delay of Emergency Vehicles. Commentors in 41 communities expressed concern about potential delays to emergency vehicles. SEA undertook additional evaluation in the commentors' communities to determine potential increased delays of emergency vehicles. Where appropriate, SEA is recommending steps to mitigate such delays. SEA describes this additional evaluation in Section 4.7.5, "Delay of Emergency Vehicles," of the Final EIS.

Communities with Special Circumstances. Some communities in northwestern Ohio requested evaluation and/or mitigation at highway/rail at-grade crossings that do not exceed SEA's ADT threshold of 5,000 vehicles per day. The increased delay to emergency vehicles, in addition to longer and more frequent delays for all vehicles, was a concern of these communities. Because many of these communities would experience substantial increases in train traffic, SEA performed additional analysis. See Section 4.7.3, "Analysis Results and Impacts."

Use of State and Federal Funds for Mitigation. The Applicants and commentors from Ohio and Kentucky indicated that vehicle delay at highway/rail at-grade crossings is more appropriately addressed through state and Federal programs, in accordance with state priorities. In response, SEA points out that any mitigation measures it recommends would not take the place of, but would supplement, state and Federal crossing improvements. Consequently, any such SEA-recommended mitigation would result in a benefit allowing the states to reallocate state and Federal funds for other traffic-related improvements. SEA acknowledges that, where it is not feasible for SEA to mitigate increased crossing delay, communities should rely upon state and Federal agencies to develop solutions and obtain funding.

Unwanted Grade Separations. Regarding grade crossing separation in the cities of Madisonville and Hopkinsville, Kentucky, commentors expressed opposition to SEA's recommended mitigation in the Draft EIS. SEA had proposed a grade separation as a mitigation measure at the W. Noel Avenue crossing in Madisonville and the E. 9th Street crossing in Hopkinsville. However, from its revised calculations of vehicle delay, as described in the Supplemental Errata, SEA determined that the average delays at these crossings are less than the Draft EIS reported and no longer meet SEA's criteria of significance for grade separations. Therefore, for this Final EIS, SEA is not recommending grade separations at the two crossings.

Other Additional Evaluations

Community Evaluations. As a part of its overall environmental review process, SEA evaluated potential alternative train routes that SEA or the commentors proposed as possible mitigation in four areas (Greater Cleveland Area, Ohio; Erie, Pennsylvania; Lafayette, Indiana; and Four City Consortium in Indiana). Where appropriate, SEA evaluated possible impacts on highway/rail at-grade crossing delay for these alternatives. Section 4.19, "Community Evaluations," summarizes the results of these additional evaluations.

Updated Data and Methodology. After preparation of the Draft EIS, SEA reviewed its data sources and recalculated potential vehicle traffic delays through the following activities:

- SEA conducted site visits of the highway/rail at-grade crossings and identified changes in the number of highway traffic lanes, presence of grade separations, and other physical characteristics that were either not included or incorrectly described in the original data sources used for the Draft EIS.
- SEA received updated highway traffic volume information from state and local departments of transportation or planning offices since issuing the Draft EIS. SEA initially utilized roadway ADT volumes contained in the FRA database in order to have a consistent base of information for its analysis of highway/rail at-grade crossing safety. SEA then utilized updated ADT volumes at locations where state and local government agencies provided such information. At highway/rail at-grade crossings where other individuals or groups provided updated ADT volumes, SEA confirmed these figures with the appropriate government agencies before it utilized these data for the analysis.
- Since issuing the Draft EIS, SEA has received updated information from the Applicants on the train traffic volumes on certain rail line segments and updated information on train speed limits from the Applicants, government agencies, and other data sources.

4.7.3 Analysis Results and Impacts

Draft EIS and Supplemental Errata

In the Draft EIS, SEA determined that the effects of the proposed Conrail Acquisition on vehicle delay at highway/rail at-grade crossings would be local and site-specific rather than regional or system-wide. Chapter 5 of the Draft EIS, "State Settings, Impacts, and Proposed Mitigation," and the Supplemental Errata in Appendix B of the Final EIS present the analysis results for these local and site-specific traffic delays.

Additional Analysis

Revised Calculations and Results. SEA's refined analysis and revised calculations in this Final EIS more accurately forecast the potential changes in vehicle delay at highway/rail at-grade

crossings that would result from the proposed Conrail Acquisition. However, SEA's refined analysis for the Final EIS determined that 13 highway/rail at-grade crossings in the states of Illinois, Indiana, Kentucky, Ohio, and Pennsylvania would meet or exceed SEA's criteria of significance.

In northwestern Ohio, SEA conducted an analysis of vehicle delay at closely spaced highway/rail at-grade crossings along rail line segments cited by commentors. To conduct the analysis, SEA used the same methods described in Chapter 3, "Analysis Methods and Potential Mitigation Strategies," of the Draft EIS. However, for this specialized analysis, SEA considered all crossings in the group of closely spaced highway/rail at-grade crossings, not just those with ADT of 5,000 vehicles or greater. Appendix G, "Transportation: Highway/rail At-grade Crossing Traffic Delay Analysis," of this Final EIS presents the results of this additional analysis. SEA concludes that the proposed Conrail Acquisition would have no significant effect on vehicle delays along the roadway corridors associated with the closely spaced highway/rail at-grade crossings in northwestern Ohio. SEA also conducted similar analyses of vehicle delay at closely spaced highway/rail at-grade crossings in the Greater Cleveland Area and in Lafayette, Indiana.

4.7.4 Mitigation

Mitigation Strategies Considered

To mitigate significant adverse vehicle delay at highway/rail at-grade crossings, SEA considered the following strategies:

- Implementing railroad operational improvements that would reduce the amount of time a freight train blocks a crossing on a rail line segment.
- Constructing a grade separation.
- Rerouting train traffic to other existing railroad rights-of-way.
- Requiring the Applicants to consult with state and local officials to develop alternative mitigation measures.

Mitigation Recommended in the Draft EIS

In the Supplemental Errata of the Draft EIS, SEA made the following preliminary recommendations to mitigate vehicle delay at 25 highway/rail at-grade crossings:

- In Erie, Pennsylvania, SEA recommended that NS implement its proposed mitigation plan to relocate train traffic away from the 19th Street corridor.
- In Garrett, Indiana, construct a grade separation at one location.

- In areas where it may not be feasible to increase train speeds, eliminate highway/rail at-grade crossings, or construct grade separations, the Applicants should consult with local and state officials to develop alternative mitigation at nine locations in Illinois, Indiana, Kentucky, and Ohio.
- In Lafayette, Indiana, consult with local and state officials to develop strategies to fully implement the Rail Relocation Project.

To assist SEA in its mitigation recommendations for this Final EIS, SEA solicited specific comments from the public and the Applicants on the Draft EIS about appropriate locations for separated grade crossings.

Changes in Recommended Mitigation Since the Draft EIS

- In Erie, Pennsylvania, SEA recommends that CSX comply with its agreement with NS and that NS comply with the terms of the Negotiated Agreements executed between NS and the City of Erie, whereby NS will relocate its rail traffic from the 19th Street tracks to the 14th Street CSX facility. This relocation would eliminate the four crossings for which SEA identified significant traffic delay impacts.
- In Lafayette, Indiana, none of the highway/rail at-grade crossings, as a result of the revised traffic delay analysis, would exceed the criteria of significance for traffic delay. In addition, the roadway corridor analysis does not indicate a projected significant change in aggregated traffic delay to warrant mitigation. SEA notes, however, that 42 crossings would be eliminated with the completion of the Rail Relocation Project in Lafayette, Indiana.
- SEA determined that two crossings in Alexandria, Indiana, would exceed the criteria of significance for traffic delay. However, SEA determined that operational improvements were not practicable and the expense of grade separation was not reasonable. For these reasons, SEA did not recommend mitigation for these crossings.

Final Recommended Mitigation

For the Final EIS, SEA evaluated possible mitigation measures for the significant traffic delay impacts resulting from the proposed Conrail Acquisition at 13 highway/rail at-grade crossings. SEA determined that the delay impacts at four crossings in Erie, Pennsylvania, would be addressed by relocating the NS rail line to the CSX corridor. SEA also determined that a grade separation would be warranted at CSX's Randolph Street highway/rail at-grade crossing in Garrett, Indiana, and is recommending that CSX continue negotiations with De Kalb County, Indiana; the City of Garrett, Indiana; and the Indiana Department of Transportation for the expeditious implementation of the grade separation. SEA is also recommending railroad operational improvements to address traffic delays at five crossings: in Blue Island, Illinois (two

crossings); Madison, Indiana (two crossings); Madisonville, Kentucky (one crossing); Hamilton, Ohio (one crossing); and Cincinnati, Ohio (one crossing). For the one crossing in Sandusky, Ohio, SEA determined that operational improvements were not feasible and a grade separation was not reasonable. SEA did not recommend mitigation measures for traffic delay at this crossing. SEA recommended mitigation as described for the other 12 highway/rail at-grade crossings. Table 4-7 of the Final EIS, "Summary of Adverse Environmental Impacts by State," lists the rail line segments and highway/rail at-grade crossings for which SEA recommends mitigation.

Chapter 7, "Recommended Environmental Conditions," of this Final EIS describes in detail SEA's recommended mitigation measures for vehicle delay at highway/rail at-grade crossings. Section 4.7.5, "Delay of Emergency Vehicles," of this Final EIS describes SEA's recommendations for mitigating delays of emergency vehicles.

4.7.5 Delay of Emergency Vehicles

In many communities, a train blocking the road at a highway/rail at-grade crossing may delay fire, police, and emergency medical service vehicles. To anticipate such delays, communities may provide emergency response services on both sides of the tracks, construct grade-separated crossings, and/or develop techniques to inform dispatching centers about approaching trains so that an emergency vehicle can avoid a blocked crossing.

Because local conditions vary, SEA cannot predict, from a system-wide perspective, impacts on emergency vehicle response related to the proposed Conrail Acquisition. Neither can SEA predict actual site-specific delays because both emergencies and freight train occurrences are random events. SEA knows of no national standards for measuring emergency vehicle delay or the significance of delay impacts. Therefore, SEA considered the change in possibility of a traffic delay on a site-specific basis.

SEA's analysis encompassed crossings at 41 locations about which SEA received comments regarding emergency vehicle delay. For the Final EIS, SEA evaluated delay of emergency vehicles at highway/rail at-grade crossings on those rail line segments with an anticipated increase of 8 trains or more per day if the proposed Conrail Acquisition is approved. SEA determined that train traffic increases less than 8 trains per day would not have a significant impact on emergency response vehicle delay.

Analysis Methods

Draft EIS. Because emergency response vehicle delay is determined by specific local conditions, SEA completed a system-wide analysis of potential delay for the Draft EIS and relied on public comments to identify local concerns for evaluation in the Final EIS. For the Draft EIS, SEA measured potential emergency vehicle delay time at highway/rail at-grade crossings in two ways:

- Crossing delay per stopped vehicle.
- Total daily blocked crossing time.

On a system-wide basis, SEA evaluated the following two factors:

- The sensitivity of blocked crossing time to the speed and length of a train.
- The sensitivity of total daily blocked crossing times to the train speed and number of trains per day for different train lengths.

SEA compared the vehicle delays before and after the proposed Conrail Acquisition for 53 rail line segments and facilities. The Supplemental Errata to the Draft EIS and Chapter 5 of the Draft EIS, "Setting, Impacts, and Proposed Mitigation," present the results.

Final EIS. For the Final EIS, SEA addressed specific local emergency vehicle response impacts on communities along rail line segments that would experience an increase of eight trains or more per day following the proposed Acquisition. For its additional analysis, SEA used information received in the public comments and contacted the appropriate local jurisdictions and emergency service providers for detailed information on their areas and service requirements. SEA also reviewed area maps to determine service provider locations and existing transportation conditions. Specifically, SEA obtained the following information for the specific areas:

- Geographical layout of the area, including locations of populations in the emergency response service areas, and locations of hospitals and police and fire stations.
- Existing highway systems and local roadway networks.
- Locations of nearby, grade-separated crossings.
- Types of emergency services provided.
- Service area covered by emergency service providers.
- Emergency dispatch procedures.
- Available communications technology.
- Number of emergency vehicles that cross tracks on a typical day.
- Emergency service routes.
- Typical procedure when an emergency vehicle driver arrives at a blocked crossing.

- Typical train speeds (high-speed, slow-moving, or stopped).

Public Comments

SEA received numerous comments from individuals and communities concerned about delays to emergency vehicles. For this Final EIS, SEA conducted additional analyses in these communities that provided comments concerning potential emergency vehicle delay impacts.

Chapter 5 of this Final EIS, "Summary of Comments and Responses," provides more detailed information about the comments and responses summarized here.

Analysis Results and Impacts

Draft EIS. SEA concluded in the Draft EIS that no significant system-wide impact on emergency vehicle response would occur because the system-wide change in total rail traffic is small.

Final EIS. For the Final EIS, SEA conducted refined analyses of Acquisition-related delay of emergency vehicles at highway/rail at-grade crossings in response to public comments on the Draft EIS in which 41 communities specifically noted such delay concerns.

SEA analyzed the area-specific information, together with the train volumes and operations data (before and after the proposed Conrail Acquisition) for the relevant rail line segment, to determine the potential effects of the proposed Conrail Acquisition on emergency vehicle response delay at specific highway/rail at-grade crossings. SEA's analysis revealed that the local conditions that influence potential delays of emergency vehicles at highway/rail at-grade crossings vary substantially. These conditions include the configurations of the roadways and rail line segments, the location of emergency response facilities, and the time available to predict and avert a potential delay. Based on the information in the public comments and SEA's additional analysis of local emergency response conditions, SEA concluded that six local areas in Ohio warrant consideration for local emergency response mitigation.

Mitigation

Mitigation Strategies Considered. SEA considered the following options to mitigate for delay of emergency vehicles at the highway/rail at-grade crossings in the 41 communities that submitted public comments on emergency vehicle delay:

- Notifying Emergency Services Dispatching Centers electronically of train movements and crossing blockages.
- Notifying local emergency response teams in advance of train arrivals and activities such as switching and stopping maneuvers that block crossings for a time longer than the time it takes for a through-train to pass.

- Minimizing disruptions of emergency vehicle traffic, in accordance with local ordinances and maintaining communication with local emergency response centers.
- Constructing grade separations.
- Providing additional emergency response facilities or vehicles.

Mitigation Recommended in the Draft EIS. In the Draft EIS, SEA concluded that no system-wide emergency response impacts would occur and, therefore, did not recommend any system-wide mitigation. For specific communities, SEA recommended the same mitigation for emergency vehicle delay that it recommended for other vehicle delay. However, since the Draft EIS, SEA has refined its approach to respond to the unique settings in local communities and is recommending specific mitigation to address emergency vehicle delay.

Final Recommended Mitigation. To reduce the effects of emergency vehicle delays following the proposed Conrail Acquisition, SEA recommends mitigation measures in Ashtabula, Berea, Fostoria, Conneaut, Oak Harbor, and Vermilion, Ohio. As described in Chapter 7, "Recommended Environmental Conditions," of this Final EIS, SEA recommends that the Board require the Applicants to provide, install, and maintain real-time train location monitoring systems in those cities. The purpose of the monitoring systems is to alert emergency response dispatchers to the location of trains passing through the community and a real-time indication of where trains are blocking highway/rail at-grade crossings. These systems would assist dispatchers in recommending the fastest route for vehicles responding to an emergency. Based on knowing the location, speed, and length of a passing train, a dispatcher may, for example, direct an emergency vehicle to take an alternative route to avoid blocked crossings.

4.8 TRANSPORTATION: ROADWAY SYSTEMS

SEA evaluated the potential impact on the local roadway systems of additional truck traffic that would result from increased railroad activity at existing, expanded, or new intermodal facilities or from proposed new rail line construction or rail line abandonment activities if the proposed Conrail Acquisition is approved and implemented. SEA also evaluated effects on the national and regional highway systems that would result from the availability of new or expanded intermodal facilities.

4.8.1 Analysis Methods

SEA's analysis methods for the Final EIS, summarized in the following sections, remain unchanged from the Draft EIS. A detailed description of analysis methods, criteria of significance, and mitigation strategies is found in the Draft EIS in Chapter 3, "Analysis Methods and Potential Mitigation Strategies."

SEA performed analyses in accordance with the Board's rules at 49 CFR 1105.7(e)(5), which required the Applicants to describe the effects of the proposed Conrail Acquisition on the local, regional, and national transportation systems.

Intermodal Facilities

SEA evaluated increases in rail and truck activity related to the proposed Conrail Acquisition at several existing, expanded, and new intermodal facilities. SEA identified 24 intermodal facilities that would meet or exceed the Board's thresholds for environmental analysis in the states of Georgia, Illinois, Kentucky, Louisiana, Maryland, Michigan, Missouri, New Jersey, Ohio, Pennsylvania, and Tennessee.

SEA studied 24 intermodal facilities and assumed that each additional truck would make a round trip and, therefore, added two truck trips to the average daily traffic volume on affected surrounding roadways. For the analysis, SEA conducted site visits, identified truck routes on area roadways, calculated the number of trucks expected to use each roadway, supplemented average daily traffic data from CSX and NS's Environmental Report by collecting information from local and state transportation and planning agencies or by performing traffic counts, and calculated percentage increases in average daily traffic for each affected roadway based on projected additional daily truck trips. Based on this information, SEA measured the extent of the impact on local and regional roadways of the additional truck activity that would result if the proposed Conrail Acquisition is approved and implemented.

New Rail Line Construction

New rail line connections can result either in physical changes to existing highway/rail at-grade crossings or in the construction of new highway/rail at-grade crossings. Since new rail line connection proposals have effects on highway/rail at-grade crossing delay similar to those on existing line segments, SEA used the same analysis method to calculate transportation impacts resulting from new rail line connections. Section 4.7, "Transportation: Highway/Rail At-Grade Crossing Delay," discusses this method.

Rail Line Abandonments

The primary environmental roadway systems impacts that arise in connection with a proposed rail line abandonment project are diversions of freight transportation from rail to trucks or to other rail lines. The Board's rules require railroads to provide a description of the effects of proposed abandonments on regional and local transportation systems. To be conservative, SEA assumed that if the proposed abandonment projects are approved, the freight currently hauled on the rail lines would be moved by truck.

CSX and NS identified the number of freight carloads that would be diverted to trucks for each rail line segment proposed for abandonment. CSX and NS converted freight carloads to four trucks per rail carload. SEA reviewed the Applicants' data and analyses for estimating rail-to-

truck diversions. SEA found these procedures and the results reasonable. Using CSX and NS estimates, SEA determined the number of additional truck trips that would result from each proposed abandonment per year on the local, regional, and national transportation systems. SEA then converted the additional yearly truck trips to a daily rate to determine whether the additional truck trips would have a measurable impact on the daily traffic patterns on nearby roads.

Criteria of Significance

SEA established standards for studying potential impacts of increased truck activity at existing, expanded, and new intermodal facilities and from rail line abandonments that would result from the proposed Conrail Acquisition. In setting appropriate standards, SEA determined that it would examine any roadway where a 10 percent increase in traffic would result from the proposed Conrail Acquisition. Because local conditions vary, SEA did not establish one uniform standard to identify where the impacts would be significant enough to justify mitigation. Rather, on a case-by-case basis, SEA compared the average daily traffic on roadways that would experience an increase of 10 percent or greater with the traffic volume capacity determined by the number of travel lanes. SEA used this volume-to-capacity analysis method to determine the ability of the affected roadway to accommodate additional traffic and whether mitigation might be warranted.

4.8.2 Public Comments and Additional Evaluations

Public Comments

SEA received extensive comments from individuals and agencies in the New York City/Northern New Jersey Metropolitan Area. The comments addressed the perceived increase in truck traffic east of the Hudson River as a result of the proposed Conrail Acquisition. The commentors included the Connecticut Department of Transportation, the Southwestern Regional Planning Agency of Connecticut, the Tri-State Transportation Campaign, and U.S. Representative Jerrold Nadler and 23 members of Congress from the states of New York and Connecticut. Based on the extent of these comments, SEA conducted detailed additional evaluation focused on expanding the truck traffic analysis presented in the Draft EIS to more directly address and respond to commentors' concerns. SEA's expanded analysis of the proposed truck trips illustrates that any environmental impacts as a result of increased truck traffic in the New York City/New Jersey Metropolitan Area and southern New England would be negligible and insignificant both individually and cumulatively. SEA also evaluated the potential impact of Congressman Nadler's request for trackage rights over Conrail's Hudson Line so a second railroad would provide service for New York City. This discussion is included in Section 4.20, "Inconsistent and Responsive Applications and Requests for Conditions." SEA concluded that no significant impacts would occur if the Board approves the proposed Conrail Acquisition with or without imposing the commentors' proposed conditions. Appendix H, "Transportation: Roadway Systems Analysis," presents the detailed analysis SEA conducted of transportation systems in the New York City/Northern New Jersey Metropolitan Area.

Additional Evaluations

New NS Sandusky Triple Crown Service Facility, Erie County, Ohio. After issuing the Draft EIS, SEA performed additional evaluation as a result of new information regarding the new intermodal facility proposed by NS in Sandusky, Ohio. On March 3, 1998, NS confirmed its plans to establish a new intermodal facility in Sandusky, Ohio, instead of using the Conrail Crestline, Ohio, intermodal facility. NS proposes to build a new Triple Crown Service (TCS) facility at the northwest side of an existing NS rail yard approximately 2 miles southwest of downtown Sandusky. The analysis shows that the total daily increase in truck traffic as a result of the proposed Conrail Acquisition would be less than 7 percent of the average daily traffic for all of the study area roadways. SEA determined that these increases in truck traffic would not have significant impacts on the area roadways. A detailed description of the additional evaluation of the Sandusky intermodal facility is found in Appendix H, "Transportation: Roadway Systems Analysis."

New AmeriPort/South Philadelphia Intermodal Facility, Philadelphia County, Pennsylvania. On March 20, 1998, NS informed SEA that it no longer plans to expand the Morrisville Intermodal facility (analyzed in the Draft EIS). NS plans instead to construct a new intermodal facility in south Philadelphia at the northeast corner of the former Philadelphia U.S. Naval Station. SEA notes that the Morrisville facility would continue to experience an increase in truck traffic above the Board's threshold for environmental analysis but less than stated in the Draft EIS. The proposed intermodal facility would be a key component of the planned redevelopment of a large portion of the Naval Station no longer used for military purposes. This proposed intermodal facility would handle new NS intermodal traffic as well as some former Conrail intermodal traffic that currently uses the Port of Philadelphia and Camden's Delaware River Port Authority's existing AmeriPort intermodal facility. The analysis shows that the total daily increase in truck traffic as a result of the proposed Conrail Acquisition would be less than 2 percent of the average daily traffic for all the study area roadways. SEA determined that these increases in truck traffic would not have significant impacts on the area roadways. A detailed description of the additional evaluation of the new AmeriPort/South Philadelphia Intermodal Facility is found in Appendix H, "Transportation: Roadway Systems Analysis."

Community Evaluations. As a part of its overall environmental review process, SEA evaluated potential alternative train routes that SEA or the commentors proposed as possible mitigation in Greater Cleveland Area, Ohio; Erie, Pennsylvania; Lafayette, Indiana; and the Four City Consortium, Indiana. Where appropriate, SEA evaluated possible impacts on roadway systems for these alternatives. Section 4.19, "Community Evaluations," summarizes the results of these additional evaluations.

4.8.3 Analysis Results and Impacts

Based on the analysis in the Draft EIS and the results of additional evaluations for the Final EIS, SEA determined that the local roadways can adequately handle the increased truck traffic that would result from increased railroad activity at existing, expanded, or new intermodal facilities

or from proposed new rail line construction or rail line abandonment activities. SEA also determined that the proposed Conrail Acquisition will benefit the national and regional highway systems by reducing truck traffic on major state, regional, and U.S. highways. According to the Applicants, shippers would divert their freight from trucks on these major roadways to trains on the expanded CSX and NS systems, in part, because of the availability of new or expanded intermodal facilities. CSX and NS estimate that the proposed Conrail Acquisition would result in annual diversions of almost 438,000 truckloads of freight to the CSX system² and 589,000 truckloads to the NS system.³ In addition, the Applicants state that the proposed Conrail Acquisition would provide many shippers with more efficient direct long-haul rail service.

Based on the analysis in the Draft EIS and the results of additional evaluations for the Final EIS, SEA concluded that on a system-wide level, no adverse environmental impacts would result from the reduction in truck traffic because of the proposed Conrail Acquisition. SEA determined that the reduction in truck traffic would result in system-wide beneficial effects on air quality, energy consumption, and transportation. Section 4.22, "Anticipated Environmental Benefits," also discusses the beneficial aspects of the proposed Conrail Acquisition on the roadway systems.

4.8.4 Mitigation

Mitigation Recommended in the Draft EIS

For the Draft EIS, SEA identified no significant adverse impacts on roadway systems from additional truck traffic that would result from increased railroad activity at existing, expanded, or new intermodal facilities or from proposed rail line abandonment activities of the proposed Conrail Acquisition. SEA also identified no adverse impacts on roadway systems as a result of the reduction of truck traffic on major state, regional, and U.S. highways. However, SEA identified potential adverse impacts to roadway traffic associated with the construction of two new rail line connections in Vermilion and Oak Harbor, Ohio. SEA recommended that NS ensure that construction activities minimize the differences in elevation between the roadway and the railroad tracks at these connections.

Final Recommended Mitigation

Based on SEA's analysis of roadway systems impacts in the Draft EIS, review of public comments, and additional evaluations, SEA determined that no additional significant impacts on roadway systems would result and concluded that no mitigation is warranted for inclusion in

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

³ Krick, Patrick J., 1997, Verified Statement in *Railroad Control Application*, Volume 2B.

the Final EIS. SEA continues to recommend mitigation for the construction projects in Vermilion and Oak Harbor, Ohio.

4.9 TRANSPORTATION: NAVIGATION

The proposed Conrail Acquisition could affect waterborne transportation by increasing traffic on rail line segments that have movable bridges crossing navigable waters. To evaluate the impact of the proposed Conrail Acquisition on navigation for the Draft EIS, SEA reviewed the proposed activities that could affect navigable waters of the United States and thus would be subject to regulations of the U.S. Coast Guard (Coast Guard) and the U.S. Army Corps of Engineers (USACE).

4.9.1 Analysis Methods

SEA's analysis methods for the Final EIS, summarized in the following sections, remain unchanged from the Draft EIS. A detailed description of analysis methods is found in the Draft EIS, Chapter 3, "Analysis Methods and Potential Mitigation Strategies."

Using FRA data on all existing railroad bridges over navigable waters under the jurisdiction of the Coast Guard, SEA identified 181 movable bridges on CSX, NS, and Conrail lines. SEA then compared the locations of these bridges with those rail line segments that would meet or exceed the Board's thresholds for environmental analysis. SEA also determined whether the proposed rail constructions and abandonments would affect waterborne navigation. For those bridges located on a segment meeting the Board's thresholds for environmental analysis, SEA verified CSX's and NS's Operating Plans and contacted the appropriate district office of the Coast Guard.

Criteria of Significance

Coast Guard regulations state that waterborne navigation has the right-of-way in all instances. Accordingly, any operating constraints warranted as a result of the proposed Conrail Acquisition are placed on the railroad and not on the waterborne users at the location of movable bridges across navigable waterways. Because Coast Guard rules determine that waterborne navigation has the right-of-way at movable bridges, no impact on waterborne navigation would result from Acquisition-related changes in train traffic. Therefore, SEA did not establish a criterion of significance.

4.9.2 Public Comments and Additional Evaluations

Public Comments

The Coast Guard concurred with SEA's approach and conclusions in the Draft EIS. In addition, the Coast Guard stated that Federal regulations governing operation of the Lehigh Valley Bridge across Newark Bay in New Jersey require that trains delay the operation of this drawbridge no more than 5 minutes. The Coast Guard stated that Conrail has used this bridge in the past for

building trains, which caused the bridge to be inoperable for several hours. The Coast Guard commented that it has assessed civil penalties for past violations and will continue to enforce the regulations. SEA's evaluations for the Draft EIS determined that the rail line segments containing the Lehigh Valley Bridge across Newark Bay did not meet or exceed the Board's environmental analysis thresholds. The bridge is on rail line segments S-220 and S-222, which will not experience any Acquisition-related increase in train traffic. The only New Jersey rail line segments with movable bridges that exceed the Board's thresholds for environmental analysis are N-050 and S-032. The delay conditions the Coast Guard described are apparently the result of present train operations and not a result of the proposed Conrail Acquisition. Considering that the situation on this bridge is an existing condition and Coast Guard enforcement measures are in place, SEA does not recommend additional mitigation.

For a detailed review of comments and responses, see Chapter 5, "Summary of Comments and Responses."

Additional Evaluations

As a part of its overall environmental review process, SEA evaluated potential alternative train routes that SEA or the commentors proposed as possible mitigation in Greater Cleveland Area, Ohio; Erie, Pennsylvania; Lafayette, Indiana; and the Four City Consortium in Indiana. SEA evaluated possible impacts on navigation for these alternatives and determined that no additional evaluation or consultation with the Coast Guard was necessary as a result of the alternative train routes developed for these communities.

4.9.3 Analysis Results and Impacts

For the Draft EIS, SEA evaluated 13 movable bridges on 11 rail line segments where increases in railroad traffic would meet or exceed the Board's thresholds for environmental analysis. These bridges are located in the states of Indiana, New Jersey, Ohio, Pennsylvania, Tennessee, and the District of Columbia.

SEA determined that the proposed abandonment of the Toledo Pivot Bridge over the Maumee River in Lucas County, Ohio, would provide beneficial impacts for navigation due to the elimination of train traffic. On March 4, 1998, NS advised the Board that, pursuant to an agreement dated February 18, 1998, with the Toledo-Lucas County Port Authority (TLCPA) and Toledo Metropolitan Area Council of Governments (TMACOG), NS wishes to seek authorization only for discontinuance of operations over the Toledo Pivot Bridge, not for abandonment of the Bridge. NS has agreed to leave the bridge open and provide proper warning lighting so that navigation on the waterway will not be affected. NS does not plan to have an operator manning the bridge after discontinuance. In the agreement with TLCPA and TMACOG, NS agrees not to seek authorization for abandonment of the Toledo Pivot Bridge for a 4-year period from the date of the Board's final decision on the proposed Conrail Acquisition. In addition, NS, TLCPA, and TMACOG may mutually agree to request authorization for abandonment of the Pivot Bridge prior to the expiration of the 4-year period. If abandonment

is approved, NS will offer to sell the Toledo Pivot Bridge for \$1.00 to TMACOG or another agency for public use. SEA has informed the Coast Guard of NS's change in operation and request for authorization for discontinuance. The Coast Guard requested that NS or TLCPA and TMACOG discuss the agreement with the Coast Guard. SEA has advised NS to consult with the Coast Guard regarding the agreement.

Because the Coast Guard has jurisdiction over movable bridges and because, under Coast Guard regulations, ships have the right-of-way at all times over trains, SEA determined that no system-wide or site-specific adverse impacts on navigation, including service to coastal and inland ports, would result from the proposed Conrail Acquisition.

4.9.4 Mitigation

Because no potential impacts of the proposed Conrail Acquisition would occur on waterborne navigation, SEA concluded that mitigation is not warranted.

4.10 ENERGY

SEA evaluated the system-wide impacts of the proposed Conrail Acquisition on diesel fuel consumption. 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. Based on the verified statements of CSX and NS and on SEA's analysis of available data, SEA estimated the changes in fuel consumed to transport freight, primarily because of the CSX and NS estimated truck-to-rail diversions. SEA also analyzed rail yards and intermodal facilities' proposed changes in operations that could affect energy resources.

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

4.10.1 Analysis Methods

SEA's analysis methods for the Final EIS, summarized in the following sections, remain unchanged from the Draft EIS. A detailed description of analysis methods, criteria of significance, and mitigation strategies is found in the Draft EIS in Chapter 3, "Analysis Methods and Potential Mitigation Strategies." Appendix D of the Draft EIS, "Energy Methods," describes the assumptions, methods, and formulas for estimating anticipated system-wide fuel consumption changes that would result from the proposed Conrail Acquisition.

SEA based its analysis of system-wide energy impacts anticipated from the proposed Conrail Acquisition on the Board's environmental rules at 49 CFR 1105.7(e)(4), which require Applicants to describe the following:

- The effect of the proposed Conrail Acquisition on transportation of energy resources, such as coal or oil.
- The effect of the proposed Conrail Acquisition on recyclable commodities, such as aluminum, plastic, and paper.
- The degree to which the proposed Conrail Acquisition would result in an increase or decrease in overall energy efficiency.
- The change in energy consumption that would result from rail-to-truck diversions if the proposed Conrail Acquisition caused rail-to-truck diversions of more than 1,000 rail carloads per year or more than an average of 50 rail carloads per mile per year for any part of the affected rail line segment. If this occurs, the rules require that SEA quantify the resulting change in energy consumption and show the data and methods it used to obtain the results. Projected rail-to-truck diversions did not meet these thresholds and SEA did not analyze the diversions for change in energy consumption.

Because coal is the dominant energy resource transported by CSX and NS, SEA reviewed CSX and NS's Environmental Report, Operating Plans, and Verified Statements to assess the effect of the proposed Conrail Acquisition on the quantities of coal that CSX and NS would transport. SEA also reviewed the Operating Plans to determine whether CSX or NS would change the quantities of recyclable commodities transported as a result of the proposed Conrail Acquisition. SEA does not anticipate substantial changes in the quantities of energy resources or recyclable commodities transported.

SEA conducted a quantitative assessment of the effect of the proposed Conrail Acquisition on overall energy efficiency in terms of fuel consumption by the following:

- Estimating system-wide changes in fuel consumption from truck-to-rail diversions and operational changes at rail yards and intermodal facilities, within the context of overall changes in freight traffic.
- Estimating changes in fuel consumption resulting from vehicular traffic delays at highway/rail at-grade crossings.

Criteria of Significance

SEA considered the following energy resource impacts to be significant:

- An increase in system-wide fuel consumption.
- An operational change that would reduce the quantities of energy resources and/or recyclable commodities transported by rail.

- Vehicular traffic delays at highway/rail at-grade crossings that would result in an average increase in fuel consumption of at least 500 gallons of gasoline per day per highway/rail at-grade crossing studied.

4.10.2 Public Comments and Additional Evaluations

Public Comments

The Applicants indicated that the Draft EIS understated the energy savings as a result of the proposed Conrail Acquisition because SEA reduced the estimated truck fuel savings by the estimated increase in locomotive fuel consumption. However, the Applicants state that part of the increased rail activity is the result of diversions from other rail lines and does not represent an increase in fuel consumption. SEA does not believe that the Draft EIS understated the energy savings of the proposed Conrail Acquisition. SEA estimated the net system-wide fuel consumption change would be a reduction of 80.1 million gallons of diesel fuel. SEA estimated that truck-to-rail diversions would result in an annual 133.6-million-gallon reduction in diesel fuel consumption. Also, based on the Applicants' rail traffic projections, SEA estimated that an annual 53.5-million-gallon increase in fuel consumption would result from increased rail traffic not related to truck-to-rail diversions. SEA acknowledges the Applicants' comments that increased rail fuel consumption attributable to increased rail traffic does not necessarily represent an overall increase in fuel consumption, since a portion of the amount of new rail traffic is from sources such as rail-to-rail diversions. However, SEA maintains that its estimates represent a conservative measure of the net change in overall fuel consumption related to the proposed Conrail Acquisition. SEA also acknowledges, as the Applicants assert, that the Acquisition-related fuel consumption reduction represents a substantial energy benefit of the proposed Conrail Acquisition.

Chapter 5, "Summary of Comments and Responses," summarizes all public comments on the Draft EIS and presents SEA's responses.

Additional Evaluations

Based on comments that the Draft EIS overstated the average vehicle queuing time, SEA revised the traffic delay calculation formula and recalculated vehicle queuing times. SEA described this revision in the Supplemental Errata. See Appendix B of the Final EIS, "Draft Environmental Impact Statement Correction Letter, Errata, Supplemental Errata and Additional Environmental Information, and Board Notices to Parties of Record."

For the Final EIS, SEA also revised its analysis on energy effects of vehicle delays at highway/rail at-grade crossings based on the recalculated queuing times. See Section 4.10.3, "Analysis Results and Impacts."

As a part of its overall environmental review process, SEA evaluated potential alternative train routes that SEA or the commentors proposed as possible mitigation in Greater Cleveland Area,

Ohio; Erie, Pennsylvania; Lafayette, Indiana; and the Four City Consortium, Indiana. Where appropriate, SEA evaluated possible impacts on energy for these alternatives. Section 4.19, "Community Evaluations," summarizes the results of these additional evaluations.

4.10.3 Analysis Results and Impacts

The proposed Conrail Acquisition would cause system-wide changes in energy consumption resulting from new freight that would otherwise be transported by other railroads or different means of transportation (such as trucks), rail-to-truck freight diversions, and changes in operations at rail yards and intermodal facilities. The Applicants have estimated that the proposed Conrail Acquisition would result in annual diversions of almost 438,000 truckloads of freight to the CSX system⁴ and 589,000 truckloads of freight to the NS system.⁵ Based on its analysis, SEA estimated an overall annual increase of 79.1 billion gross ton-miles of freight due to the proposed Conrail Acquisition. SEA estimated 37.8 billion gross ton-miles of the overall increase would result from truck-to-rail freight diversion. Based on the increased gross ton-miles, SEA calculated an annual increase of 106.3 million gallons in CSX's and NS's locomotive diesel fuel consumption. SEA also estimated a total annual decrease of 186.4 million gallons in diesel truck fuel consumption resulting from truck-to-rail diversions. Therefore, SEA estimated an 80.1-million-gallon net reduction in total diesel fuel consumption as a result of the proposed Conrail Acquisition.

In the Primary Application, the Applicants state that they anticipate other sources of changes in energy consumption would 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 diversions (90 rail carloads, which would result in 360 additional truckloads per year based on the ratio of four truckloads per rail carload) 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 per year. SEA considers this insignificant because it is only 0.3 percent of the estimated fuel consumption change attributable to truck-to-rail diversions.

The Applicants state in their Application that the proposed Conrail Acquisition would result in greater efficiency in the transportation of coal products in most areas currently served, thereby benefitting coal producers and users on a system-wide basis. Based on available information evaluated for the Draft EIS, SEA determined that the proposed Conrail Acquisition may lead to shifts in marketing of energy resources from one area to another but would not decrease access to energy resources.

⁴ Bryan, G. B., 1997, Verified Statement in *Railroad Control Application*, Volume 2A.

⁵ Krick, Patrick J., 1997, Verified Statement in *Railroad Control Application*, Volume 2B.

Recyclable commodities transported by rail include aluminum alloy scrap, iron and steel scrap, and waste paper. In the Application, the Applicants indicate that they have no specific plans regarding changes in recyclable commodities transportation and do not anticipate changes in the quantities of recyclable commodities as a result of the proposed Conrail Acquisition. However,

the expected increase in efficiency and competition resulting from the proposed Conrail Acquisition would enhance the transportation of recyclable commodities.

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

Based on its revised analysis of vehicle delays at highway/rail at-grade crossings, SEA estimated the increase in fuel consumption from expected delays at more than 283 highway/rail at-grade crossings that would have average daily traffic of greater than 5,000 vehicles on rail line segments that meet the Board's thresholds for environmental analysis for air quality. These are the same highway/rail at-grade crossings that SEA analyzed for delay and air quality. 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 969 gallons of gasoline per day. This estimate does not account for potentially decreased fuel consumption at highway/rail at-grade crossings with an anticipated decrease in rail traffic. SEA considered this increase an insignificant impact on energy resources.

Based on the results of its analysis, SEA determined that truck-to-rail diversions and increased train traffic related to the proposed Conrail Acquisition would result in a net annual reduction in diesel fuel consumption of approximately 80 million gallons. SEA has concluded that no significant environmental impacts on energy consumption or transportation of energy resources and recyclable commodities would occur as a result of the proposed Conrail Acquisition. Section 4.22, "Anticipated Environmental Benefits," also discusses the beneficial effects on energy consumption that would result from the proposed Conrail Acquisition.

4.10.4 Mitigation

Mitigation Recommended in the Draft EIS

Because SEA identified no significant adverse energy impacts, SEA neither considered nor developed any specific mitigation measures for the Draft EIS.

Final Recommended Mitigation

Because SEA identified no significant adverse energy impacts, SEA neither considered nor developed any specific mitigation measures for the Final EIS.

4.11 AIR QUALITY

The proposed Conrail Acquisition encompasses the majority of the eastern United States and a 44,000-mile rail system; therefore, SEA undertook an extensive, multi-layered, and wide-reaching analysis to investigate the potential effects of the proposed Conrail Acquisition on air quality on a system-wide, regional, and local basis. SEA's analysis focused on projected air pollutant emissions from diesel locomotives, trucks, and automobiles because these vehicles are the major sources of air pollutant emissions that the proposed Conrail Acquisition would affect. The Draft EIS provides a detailed discussion of SEA's analysis.

Following SEA's analysis, SEA concluded that no significant adverse effects on air quality would occur on a system-wide, regional, or local basis following the proposed Conrail Acquisition. As Section 4.11.3, "Analysis Results and Impacts," and Appendix I, "Air Quality Analysis," of the Final EIS discuss, SEA estimated that the system-wide net emissions of nitrogen oxide (NO_x), particulate matter less than 10 microns in diameter, volatile organic compounds, and carbon monoxide would decrease as a result of the proposed Conrail Acquisition. Volatile organic compounds and NO_x contribute to ozone formation; therefore, these pollutant reductions would help to reduce ozone formation. SEA estimated that these pollutant emissions would decrease as a result of the projected diversions of freight traffic from trucks to rail lines. Therefore, SEA expects that the net changes in pollutant emissions would generally cause a slight system-wide benefit to air quality for states located within the analysis area.

System-wide, SEA calculated that sulfur dioxide emissions would increase slightly as a result of the proposed Conrail Acquisition; however, SEA considered the increase insignificant when compared with the several million tons of sulfur dioxide that stationary sources emit annually.

On a regional basis, SEA concluded that no adverse impacts on air quality would occur and NO_x emissions would decrease slightly in the Northeast Ozone Transport Region⁶ following the proposed Conrail Acquisition. Although SEA anticipates minor changes to the geographical distribution of NO_x emissions in some regional areas in Illinois, Indiana, Michigan, and Ohio, it determined that this change would not significantly affect ozone levels in those areas.

SEA's county-wide analysis provided the smallest geographic scope of analysis and showed that the majority of counties would not experience substantial air quality effects or increased emissions. Although carbon monoxide or NO_x emissions would increase in a small portion of counties, SEA determined that these local increases would not likely affect compliance with the National Ambient Air Quality Standards (NAAQS). SEA concurs with the Ozone Transport

⁶ The Northeast Ozone Transport Region consists of the eastern states from Maine southwest through Pennsylvania and Maryland, including the ozone nonattainment area in northern Virginia. The 1990 Clean Air Act Amendments delineated the region as an area of special concern because of the substantial transport of ozone and its precursor pollutants, NO_x and volatile organic compounds, across state and county boundaries.

Assessment Group⁷ that NO_x emissions affect ozone formation over a broad area rather than a localized area.

During its air quality analysis, SEA consulted with EPA's regional offices, EPA's Office of Federal Activities, and EPA's Office of Air Quality Planning and Standards. During these consultations, SEA explained its method for air quality analysis. EPA Region 5 representatives did not entirely agree with all aspects of SEA's air quality analysis, but EPA Region 2 representatives generally agreed that SEA's methodology presented a reasonable and conservative approach. EPA representatives concurred with SEA's determination that freight transport on rail lines is generally more energy efficient and produces lower emissions rates than truck transport for equivalent quantities of freight.

In addition, EPA has recently established national emissions standards for locomotives. (See Section 4.11.4, "Mitigation," Appendix I, "Air Quality Analysis," and Appendix O, "EPA Rules on Locomotive Emissions," of the Final EIS.) These new standards would substantially reduce emissions over the long term as CSX and NS rehabilitate their locomotive fleets over time. EPA has estimated that its locomotive emission standards will eventually reduce NO_x emissions nationwide by 700,000 tons per year. SEA's analysis shows that as a result of new locomotive emissions standards, any potential local increases in NO_x emissions that occur during the next few years as a result of the proposed Conrail Acquisition would soon reverse dramatically. Nationally, EPA has projected that the new standards would reduce national locomotive emissions to 60 percent below 1990 levels by the year 2040. At the local or county level, SEA estimates that the cumulative impacts resulting from the proposed Conrail Acquisition and EPA's locomotive emissions standards would be a net reduction in NO_x emissions in all counties by the year 2007. (See Appendix I, "Air Quality Analysis.")

During the public comment period for the Draft EIS, EPA requested SEA to address the applicability of the General Conformity Rules (40 CFR 93, Subpart B). Other commentors argued that the General Conformity Rules in the Clean Air Act Amendments should apply to the proposed Conrail Acquisition. As discussed in Section 4.11.2, "Public Comments and Additional Evaluations," and Chapter 5, "Summary of Responses and Comments," of the Final EIS, SEA determined that General Conformity Rules did not apply to the proposed Conrail Acquisition. SEA reached the conclusion because the Board does not regulate locomotive emissions from the day-to-day operations of trains and does not have the ongoing program authority to do so. SEA notes that the time required to perform general conformity analyses for actions such as the proposed Conrail Acquisition could well exceed the Congressionally mandated 15-month decision time frame for Board actions in mergers such as the proposed Conrail Acquisition. Regardless, SEA undertook a comprehensive, wide-ranging air quality

⁷ The Ozone Transport Assessment Group is an organization composed of the EPA, air quality officials from various states, and representatives of environmental and industry groups. Recently, the organization has submitted recommendations to EPA regarding implementation of the Clean Air Act Amendments related to ground-level ozone problems. The group's primary objective is to develop strategies for reducing ozone pollution on a regional scale.

analysis as described in the Draft EIS and Section 4.11, "Air Quality," and Appendix I, "Air Quality Analysis," of the Final EIS to determine the potential air quality impacts from the proposed Conrail Acquisition. For a more detailed discussion of general conformity applicability, see Section 4.11.2, "Public Comments and Additional Evaluations."

4.11.1 Analysis Methods

This section summarizes SEA's air quality analysis methods for the proposed Conrail Acquisition. Chapter 3 of the Draft EIS, "Analysis Methods and Potential Mitigation Strategies," provides a detailed discussion of analysis methods. (See Chapter 4, "System-wide and Regional Setting, Impacts, and Proposed Mitigation;" and Appendix E, "Air Quality," of the Draft EIS; and Appendix I, "Air Quality Analysis," of the Final EIS for further information.) In conducting its air quality analysis, SEA used the Board's thresholds for air quality analysis and EPA-recommended emissions guidelines to estimate air pollutant emissions.

National Ambient Air Quality Standards. Pursuant to the Clean Air Act, EPA developed NAAQS to establish concentration limits for the six criteria pollutants that most affect air quality. SEA determined that the following six criteria pollutants were the pollutants of concern for the proposed Conrail Acquisition:

- Sulfur dioxide.
- Nitrogen dioxide.
- Ozone.
- Carbon monoxide.
- Lead.
- Particulate matter less than 10 microns in diameter.

SEA compared existing emissions quantities with the projected emissions quantities associated with the proposed Conrail Acquisition for discrete geographic areas to determine whether the proposed Conrail Acquisition would affect NAAQS compliance. EPA categorizes the levels of NAAQS compliance or noncompliance on a pollutant-by-pollutant basis as follows:

- Attainment: Currently meets NAAQS for the pollutant.
- Maintenance: Currently meets NAAQS for the pollutant, but was previously out of compliance and has an EPA-approved plan in effect to maintain compliance.
- Nonattainment: Currently does not meet NAAQS for the pollutant.

The Board's Thresholds for Air Quality Analysis. The Board's environmental regulations at 49 CFR 1105.7(e)(5) specify that applicants to the Board must quantify air pollutant emissions where rail traffic would, as a result of a proposed action, meet or exceed the Board's thresholds for environmental analysis. Table 4-1, "Surface Transportation Board Thresholds for Environmental Analysis," which is in Section 4.1, "Background," of the Final EIS, provides the

Board's thresholds for environmental analysis. SEA used these thresholds to focus its evaluation of the potential air quality impacts of the proposed Conrail Acquisition.

System-wide and Regional Analysis Methods

Based on CSX and NS projections of the truck-to-rail diversions that would result from the proposed Conrail Acquisition, SEA estimated the following system-wide and regional air pollutant emissions effects:

- On a system-wide basis, SEA calculated the anticipated net changes in emissions from rail line segments as the difference between increased emissions from increased train traffic and decreased emissions from decreased truck traffic following truck-to-rail diversions. SEA derived these emissions estimates from the net changes in projected system-wide fuel use for locomotives (fuel use increases) and trucks (fuel use decreases).
- On a system-wide basis, SEA calculated the potential changes (increases and decreases) in truck or rail emissions at all affected intermodal facilities and rail yards. To estimate the anticipated system-wide changes, SEA summed the emissions changes for all individual facilities.
- On a system-wide basis, SEA calculated the potential changes in emissions from idling motor vehicles at highway/rail at-grade crossings. To estimate the anticipated system-wide changes, SEA summed the emissions changes for all individual highway/rail at-grade crossings with traffic levels greater than 5,000 vehicles per day and located on rail line segments that would exceed the Board's air quality analysis thresholds.
- For the Northeast Ozone Transport Region, SEA calculated the overall change in NO_x emissions. SEA summed NO_x emissions increases from rail-related activities with NO_x emission decreases from truck-to-rail diversion in the affected states.

Chapter 4 of the Draft EIS, "System-wide and Regional Setting, Impacts, and Proposed Mitigation," and Appendix I of the Final EIS, "Air Quality Analysis," describe SEA's system-wide and regional air quality analysis in greater detail.

County-wide Analysis Methods

SEA evaluated potential county-wide emissions resulting from the proposed Conrail Acquisition using a five-step process. Specifically, SEA performed the following:

- Determined which rail line segments, intermodal facilities, and/or rail yards would meet or exceed the Board's thresholds for air quality. See Table 4-1, "Surface Transportation Board Thresholds for Environmental Analysis," of this Final EIS for a list of the thresholds.

- Identified counties or independent jurisdictions that include portions of rail line segments, intermodal facilities, and rail yards that would meet or exceed the Board's thresholds for air quality analysis.
- Summed the estimated emissions increases on the portions of rail line segments, intermodal facilities, and/or rail yards in the counties/jurisdictions identified.
- Compared the total estimated emissions increases for the affected counties/jurisdictions with the emissions screening levels that SEA developed based on the EPA emissions levels for stationary source permitting. Refer to Table I-1, "County/Jurisdiction Emissions Screening Levels," in Appendix I, "Air Quality Analysis," of this Final EIS for more detailed information.
- Conducted a detailed emissions analysis for the counties in which the estimated emissions would increase and exceed the appropriate screening level. The detailed analysis considers all potential emissions changes (increases and decreases) that would result from the proposed Conrail Acquisition.

Criteria of Significance

System-wide and Regional. As discussed in Chapter 3 of the Draft EIS, "Analysis Methods and Potential Mitigation Strategies," at the system-wide level, SEA compared the net emissions changes with total existing emissions over the affected area to determine the potential significance of air quality effects of the proposed Conrail Acquisition. On a regional basis, SEA considered the regional aspects of ozone formation for counties located in states in the Northeast Ozone Transport Region. For this evaluation, SEA used a conservative approach to estimate the net change in NO_x (an ozone precursor pollutant) emissions for this region. SEA's analysis indicated that the overall emissions would diminish compared to the existing emissions both system-wide and within the Northeast Ozone Transport Region; therefore, SEA did not establish criteria of significance for system-wide and regional air quality impacts.

County-wide. To assess the significance of estimated emissions increases on a county-wide basis, SEA considered the following:

- The amount of any potential emissions increases in the county, measured in tons per year, compared to EPA emissions levels that require a permit for stationary sources.
- The calculated percentage increase in emissions relative to EPA's total county-wide emissions inventory for 1995.
- The attainment or nonattainment status of the county.

SEA used the following criteria to determine whether the percentage increase in emissions of a pollutant related to the proposed Conrail Acquisition would be significant:

- If the percentage increase was less than 1 percent of the total emissions inventory of a county, SEA considered it insignificant in all cases.
- If the percentage increase was greater than 1 percent and if EPA had designated the county as a nonattainment area for the pollutant, SEA considered the increase to be potentially significant. SEA judged the significance of such increases based on whether the effects of the emissions would be primarily local (as with carbon monoxide) or regional/system-wide (as with NO_x).
- If the percentage increase was greater than 1 percent and if EPA had designated the county as an attainment or maintenance area for the pollutant, SEA considered the proposed Conrail Acquisition related net emissions increase and the level of existing emissions in the county to determine the significance of the increase. SEA judged the significance of such increases based on whether the effects of the emissions would be primarily local (as with carbon monoxide) or regional/system-wide (as with NO_x).

As EPA suggested during consultations with SEA, SEA also determined whether EPA had issued a waiver for NO_x for particular areas. A NO_x waiver is a determination by EPA that local NO_x emissions do not contribute significantly to ozone formation in a nonattainment area. Therefore, SEA considered NO_x emissions increases to be insignificant for areas in which EPA had granted a NO_x waiver.

4.11.2 Public Comments and Additional Evaluations

Public Comments

Some commentors approved of SEA's methods to assess impacts on air quality. Other commentors expressed concern related to localized air quality effects of train or motor vehicle emissions. Chapter 5, "Summary of Comments and Responses," summarizes public comments received on the Draft EIS and presents SEA's responses.

Comments on General Conformity

EPA indicated that SEA should address whether the General Conformity Rules apply to the Board's potential approval of the proposed Conrail Acquisition. In addition, some state agencies expressed similar concerns regarding General Conformity Rules and their applicability to the Board's decision. The General Conformity Rules require a determination that a Federal action conforms to the requirement of a State Implementation Plan "where the total direct or indirect emissions in a nonattainment or maintenance area caused by a Federal action."

EPA has issued a guidance document that states, "It is up to each Federal agency to review its own unique legal authority and determine what emission-generating activities it has the ability

to control.”⁸ SEA has examined this issue and determined that the Board cannot practicably control railroad emissions as part of a continuing program responsibility; therefore, the conformity rules do not apply to the Board’s potential approval of the proposed Conrail Acquisition.

Emissions from CSX’s and NS’s operations subsequent to the Board’s approval of the proposed Conrail Acquisition would not cause any direct emissions as defined in 40 CFR 51.852. According to the definition, “direct emissions” are “emissions of a criteria pollutant or its precursor that are caused or initiated by the Federal action and occur at the same time and place as the Federal action.” Train traffic emissions are products of market forces that affect the flow of goods and materials. The railroads decide on a continuous and ongoing basis which routes are most efficient to customer needs. Because the Board does not regulate these factors, direct emissions cannot occur as a result of the Board’s action.

Similarly, 40 CFR 51.852 defines “indirect emissions” as “those emissions of a criteria pollutant or its precursors that 1) are caused by the Federal action, but may occur later in time and/or may be farther removed in distance from the action itself but are still reasonably foreseeable; and 2) the Federal Agency can practicably control and will maintain control over due to a continuing program responsibility of the Federal Agency.” The Board’s approval of railroad mergers such as the proposed Conrail Acquisition does not require the railroads to transport additional freight or transport freight by any specific route. Because the Board has no continuing program responsibility over railroad emissions that take place after the approval of the proposed Conrail Acquisition, no indirect emissions are associated with the Board’s action.

Under the Interstate Commerce Commission Termination Act, 49 U.S.C. 11323-25, the Board has the responsibility to review and approve or disapprove applications for the acquisition or control of railroads. The Board’s approval or disapproval must be based on an evaluation of the following issues: (1) the effect of the proposed transaction on the adequacy of transportation to the public; (2) the effect on the public interest including, or failing to include, other rail carriers in the area involved in the proposed transaction; (3) the total fixed charges that result from the proposed transaction; (4) the interest of rail carrier employees affected by the proposed transaction; and (5) the adverse effect, if any, that the proposed transaction would have on competition among rail carriers in the affected region or in the national rail system.

The Board licenses railroads as common carriers, meaning that railroads are required to accept goods and materials for transport from a customer upon reasonable request and at a reasonable rate. For railroad mergers and acquisitions, a Board decision to approve the transaction would not require the railroads involved to transport more freight or transport existing freight by any specific route. Rather, the Board’s action typically allows railroads to expand their rail line

⁸ Office of Air Quality and Planning and Standards, July 13, 1994, *General Conformity Guidance: Questions and Answers*.

systems by acquiring the facilities of other railroads and, therefore, operate more efficiently and compete more effectively with other railroads and freight transport by truck.

Although the Board has broad authority to impose conditions, including environmental conditions developed through the environmental review process, its powers are not limitless. Any conditions imposed by the Board must be reasonable and must address issues directly related to the transaction under the Board's consideration. For example, in rail merger cases, it is the Board's policy to focus on the potential environmental impacts related to changes in rail traffic patterns on existing lines. The Board's practice in deciding on previous mergers/acquisitions has consistently been to require mitigation only for those conditions that result directly from the merger. The Board has not previously imposed mitigation measures to remedy pre-existing conditions.

In developing and evaluating environmental mitigation options, the Board is also guided by the historical authority of the Interstate Commerce Commission (ICC) and the intent of Congress for railroad regulation. Over the last 20 years, Congress has continued to reduce the regulatory role of the ICC and the Board. This reduction allows carriers to compete and to increase the efficiency of their services, using regulatory intervention only as a last resort to prevent the abuse of market power.

Where appropriate, air quality concerns are a part of the agency's environmental review process. For example, in the Union Pacific and Southern Pacific Railroad merger, the Board conducted a detailed analysis of the potential impacts to air quality and imposed appropriate environmental conditions. Specifically, one condition required the railroad to minimize fugitive dust generated during their abandonment and construction projects by spraying water, installing wind barriers, and providing chemical treatment during salvaging operations. Such conditions are generally temporary measures implemented during an abandonment or a construction project; they do not provide the Board with the ability to oversee or control long-term railroad operations. In the Union Pacific and Southern Pacific Railroad merger, the Board imposed a temporary rail traffic limit in Reno, Nevada and Wichita, Kansas for 18 months to allow for its completion of mitigation studies. However, this 18-month period was limited to the determination of appropriate mitigation measures in these communities, and it is not the equivalent of continued regulatory control. In some instances a railroad voluntarily agrees to mitigation measures which the Board could not impose unilaterally, however, this does not constitute continuing program responsibility.

Finally, it also should be noted that Congress established a 15-month time frame in which the Board must render a decision on mergers involving large railroads. It is not feasible for the Board to make a conformity determination for the proposed Conrail Acquisition within the time allowed for both the environmental review and merits determination. Therefore, the Board has no control over the numbers of trains operating over a specific section of rail line, the levels of service provided by the railroads, or general day-to-day railroad operations. For these reasons, SEA concluded that the General Conformity Rules do not apply to the Board's action in the proposed Conrail Acquisition. Also, see Chapter 5, "Summary of Comments and Responses,"

for SEA's response to EPA's comment regarding the applicability of the General Conformity Rules.

Other Public Comments

Other public and agency comments that SEA received on the Draft EIS included concerns that the Draft EIS did not address the air quality impacts caused by stopped trains that block or delay motor vehicles near highway/rail at-grade crossings. SEA also received comments regarding the implications of diesel emissions on public health. Several commentors expressed concerns about projected localized NO_x emissions that would impede efforts to attain or maintain NAAQS compliance for ozone.

In response to the public comments on the Draft EIS, SEA conducted additional analyses to evaluate the following:

- Cumulative effects of the proposed Conrail Acquisition and the new EPA rules restricting locomotive NO_x emissions in ozone nonattainment and maintenance counties with NO_x emissions increases resulting from the proposed Conrail Acquisition greater than SEA's screening levels.
- Air quality impacts of motor vehicles idling while delayed by trains at highway/rail at-grade crossings.
- Air quality impacts of locomotives idling on rail sidings.
- Air quality impacts of locomotives moving along rail line segments.
- Potential health effects of known and suspected carcinogens or other noncriteria air pollutants in diesel locomotive exhaust.

Appendix I, "Air Quality Analysis," provides a detailed discussion of these analyses.

Additional Evaluations

In addition to the analyses and evaluations that SEA conducted in response to public and agency comments on the Draft EIS, SEA conducted additional air quality analyses and evaluations after it issued the Draft EIS for the following reasons:

- CSX and NS changed their Operating Plans.
- SEA identified additional rail line segments that would meet or exceed the Board's thresholds for air quality analysis based on Settlement Agreements.