

of 50 trucks or more per day, SEA analyzed the impacts of this increased traffic on the local roadway system in terms of increases in daily and peak hour traffic. SEA collected traffic count data from local and state transportation officials for this analysis. While the offsetting benefits of the proposed merger were not quantified at the local level, the traffic impacts from added truck traffic at intermodal facilities would be partially offset in many localities by truck-to-rail diversions and consolidation of operations. Because there are no intermodal facilities in Nevada that would experience an increase in truck traffic above the Board's analysis threshold as a part of the proposed merger, SEA concludes that there would be no adverse impacts to the local transportation system.

SEA addressed the concerns of local communities about increased traffic delays at grade crossing through an evaluation of vehicle delay and wait times at grade crossing locations. It is important to note that the acceptability of delays at grade crossings varies substantially based on local conditions such as the location of land uses by type, availability of alternative travel routes, the degree of use by emergency vehicles, and other local variables. While the time of delay at grade crossings would increase proportionately with the increase in train traffic, most of the grade crossings in Nevada carry fewer 5,000 vehicles per day. SEA concludes that increases in vehicle delay and/or wait time due to merger-related market changes would not be excessive.

# 12.4.1 Grade Crossings

In order to another the effects of the number of the number of rails segments that would exceed the delays over the course of 24 hours were calculated and all queue lengths. While an increase in the number of trains would result in more the closings per day, the length of the queue at each individual crossing closing event would change only if the train length changes. Vehicle delay impacts at rail line segments in Nevada are summarized below:

#### Roseville, California to Sparks

Average rail traffic on the Roseville, California to Sparks line would increase from 13.6 to 24.9 trains per day, a train volume increase of about 83 percent. There are 18 grade crossings along this segment; 8 of these have Average Daily Traffic (ADT) counts greater than 5,000 vehicles per day. At typical and low speed grade crossings along the route (e.g., train speed of 20 mph), delay to vehicle traffic would increase from 48 minutes (pre-merger) to 88 minutes (post-merger) over a 24-hour period. At the highest speed grade crossings (e.g., train speed of 40 mph), delay to vehicle traffic would increase from 29 minutes (p:e-merger) to 52 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak-hour vehicle traffic would range from 1 to 80 vehicles, and the corresponding delay per vehicle would vary from 1.35 to 2.06 minutes.

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# Sparks to Winnemucca

On the Sparks to Winnemucca line, average rail traffic would increase from 13.6 to 26.0 trains per day, a train volume increase of about 90 percent. There are 24 grade crossings along this segment; none of these have ADT counts greater than 5,000 vehicles per day. At typical and high speed grade crossings along the route (e.g., train speed of 60 mph), delay to vehicle traffic would increase from 22 minutes (pre-merger) to 42 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings (e.g., train speed of 40 mph), delay to vehicle traffic would increase from 29 minutes (pre-merger) to 55 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak-hour vehicle traffic would range from 1 to 11 vehicles, and the corresponding delay per vehicle would vary from 1.11 to 1.35 minutes.

# Winnemucca to Alazon

On the Winnemucca to Alazon line, average rail traffic would increase from 13.3 to 35.3 trains per day, a train volume increase of about 13 percent. There are 18 grade crossings along this segment, none of which have ADT counts greater than 5,000 vehicles per day. At typical and high speed grade crossings along the route (e.g., train speed of 60 mph), delay to vehicle traffic would increase from 51 minutes (pre-merger) to 57 minutes (post-merger) over a 24-hour period. A the lowest speed grade crossings (e.g., train speed of 25 mph), delay to vehicle traffic would increase from 92 minutes (pre-merger) to 104 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic ranges from 1 to 11 vehicles, and the corresponding delay per vehicle varies from 1.11 to 1.77 minutes.

# Ogden, Utah to Alazon

Average rail traffic on the Ogden, Utah to Alazon line would increase from 12.7 to 23.0 trains per day, a train volume increase of about 81 percent. At low speed grade crossings along the route (e.g., train speed of 30 mph), delay to vehicle traffic would increase from 34 minutes (pre-merger) to 61 minutes (post-merger) over a 24-hour period. At higher speed crossings (e.g., train speed of 50 mph), delay would increase from 24 minutes (pre-merger) to 43 minutes (post-merger) over a 24-hour period.

# 12.5 Safety

SEA assessed a number of safety issues associated with the proposed merger, including the probability of increased accidents at grade crossings, and the risks associated with increased shipments of hazardous commodities.

# 12.5.1 Grade Crossing Safety

Accidents at grade crossings are a function of the number of trains, train speed, number of train tracks, grade crossing condition and warning facilities, roadway condition and number of lanes, and amount of roadway traffic. Since the proposed merger would not result in any new grade crossings and vould affect only the number of trains passing through existing grade crossings, the probability of an increase in the number of accidents at grade crossings would depend on the increased number of on trains on rail segments. SEA concludes that the accident exposure in Nevada will range from an increase of 90 percent to a decrease of 52 percent depending on rail segment.

# 12.5.2 Hazardous Commodities

Federal regulations govern the transport of hazardous commodities. The proposed merger is not expected to affect the policies or operation of UP/SP concerning the type or quantity of hazardous commodities transported or the method of handling. A total of 420,000 and 305,000 hazardous commodity shipments were transported by UP and SP, respectively, in 1994. These shipments resulted in 118 reportable incidents for UP and 35 incidents for SP. Therefore, 99.98 percent of the shipments arrived at their destination without incident. The Applicants have noted that the consolidation of the companies will result in a "best practice" approach to hazardous commodity handling. SEA concludes that, using the same rate of safe transport, the projected increases in accidents and shipments of hazardous materials as a result of the proposed merger do not constitute a significant safety risk.

#### 12.6 Summary of Agency Comments

In considering the potential environmental impacts of the increased rail line segment, rail yard, and intermodal facility activity associated with the proposed UP/SP merger, SEA sent consultation letters to various Federal, state, and local agencies on January 29, 1996. These letters, samples of which are included in **Volume 5**, Appendix D, Exhibits D-1 through D-9, provided early notification of this EA and requested information and comments on the effects to the environment of the proposed merger and related operational changes. Each letter included a state information packet and maps that listed the specific merger-related proposals. A sample packet is shown in **Volume 5**, Appendix D, Exhibit D-10. SEA contacted agencies by telephone to alert them to the distribution of the consultation letter and to confirm its receipt. The Applicant also contacted these agencies in preparation of the Environmental Report which accompanied the merger application. That correspondence and all responses were reviewed, verified, and considered by SEA in the preparation of this EA.

All comments received (through mid-March 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted

additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. Agency comments regarding the proposed increases in rail line segment activities in Nevada are summarized below:

- Nevada Department of Conservation and Natural Resources expressed concerns that all existing orders, agreements, court decrees and stipulations remain in effect and be complied with by the parent company. Furthermore, both railroads likely have facilities that will require environmental cleanup, and these should be identified during the environmental assessment process.
- State Bureau of Air Quality indicates that a change in nonattainment status for AQCR 147 has been requested since the former Kennecott copper smelter ceased operation in 1983. The PM<sub>10</sub> standard is no longer applicable in AQCRs 147 and 148, or the State of Nevada. The Bureau believes it is imperative that a detailed air quality impact study of the complete rail network involved in the merger and possible additions of traffic due to trackage rights agreements be completed so the true impacts, both negative and positive, can be evaluated. The Bureau suggests that the air quality analysis be conducted on state air quality basins rather than AQCRs, citing the smaller areas of air sheds versus vast areas of ACQRs.
- Nevada Department of Transportation indicates that increased rail traffic volumes will require re-analyzing the Statewide Hazard Index based on the projected traffic counts on each line segment. The closure of Carlin Yard will require relocation of flashing signal lights. The rail traffic changes affect Reno branch line and planned future safety projects. If the UP TOFC yard is served at the southern end, major traffic disruptions can be expected on local streets and existing crossings will have to be upgraded. Abandonments in other states probably have no effect on plans unless traffic is diverted though Nevada, in which case, the Hazard Index would be affected and schedules rearranged. It was noted that the State has formally intervened.
- SEA notes that the UP/SP operating plan states that the UP TOFC yard in Reno would be closed.
- State Historic Preservation Office states that by law they have 30 days for consultation. The SP rail yards in Carlin and Sparks, as well as the UP facility in Reno, have not been surveyed.
- City of Reno is concerned that the proposed merger will almost double the train frequency (from 13 to 23/day) through the downtown Reno hotel/casino district. Frequency of UP/SP, BN/SF, Amtrak train service will be increased to more than 30 trains per day, not including local service. Eight of the 15 at-grade crossings are located in

downtown Reno which will affect substantial pedestrian and vehicular traffic, as well as police, fire and ambulance equipment movements. Environmental impacts on air quality, congestion and noise levels as a result of the proposed merger are also under study.

# 12.7 Suggested Mitigation

No specific mitigation measures were suggested for the proposed changes to rail line segment operations in Nevada by the various parties consulted in the process of preparing the EA for the proposed merger. (See **Volume 5**, Appendices D and E, for agency consultation lists.)

# 12.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any final decision approving proposed changes in rail line segment operations in Nevada. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA's recommended mitigation is as follows.

# Air Quality

 UP/SP shall consult with appropriate Federal, state and local agencies responsible for regulating air quality in AQCRs 147 and 148, concerning any possible mitigation measures to reduce any potential adverse emissions from the rail segments in these two regions. UP/SP shall advise SEA of the results of these consultations.

### Noise

 To reduce potential noise level impacts to sensitive receptors along the Roseville, California to Sparks, Sparks to Winnemucca, and Ogden, Utah to Alazon rail line segments, UP/SP shall consult with appropriate state and local agencies to develop noise abatement plans. The Applicant shall advise SEA of the results of these consultations and provide SEA with a copy of any resulting noise abatement plans.

#### **Transportation and Safety**

 UP/SP shall conduct individual traffic/safety studies in consultation with the Cities of Sparks and Winnemucca, respectively. Each study shall assess safety and highway traffic impacts associated with the proposed merger, and specify sitespecific mitigation, as appropriate. UP/SP shall periodically advise SEA of the status of the consultations and shall submit the final version of each study.

- 2. SEA recognizes the unique characteristics of the City of Reno. This includes tourism, heavy concentration of hotels, and high levels of rail, vehicular, and pedestrian traffic 24 hours a day. SEA is aware that the City of Reno is conducting studies and negotiations with the Applicant to develop plans to alleviate railroad-highway grade crossings and pedestrian conflicts in the downtown region. SEA encourages these efforts, and recommends the following mitigation measures:
  - a. UP/SP shall continue to cooperate with the City of Reno in the development of a final plan and agreement. UP/SP shall negotiate a final agreement with the City of Reno within one and one-half years after the effective date of the merger, if approved. However, this deadline may be extended by the mutual consent of the City of Reno and UP/SP. UP/SP shall advise SEA whether or not a final agreement has been reached.
  - If no agreement can be reached within the time provided above, SEA recommends the following mitigation:
    - In consultation with the City of Reno, UP/SP shall construct a minimum of three grade-separated crossings. The following streets are to be given first consideration for selection: Keystone Street, Vine Street, Evans Street, Washington Street, Ralston Street, West Street, Sierra Street, Virginia Street, Center Street, Lake Street, and Sutro Street. UP/SP shall consult with the City of Reno concerning the financing of these crossings. SEA anticipates that the City would apply for shared funding for these crossings from appropriate Federate and state sources.
    - UP/SP shall cooperate with the City of Reno in selecting the location of the three grade-separated crossings. Selection criteria shall include, but not be limited to, safety, construction costs, highway traffic flows, downtown redevelopment plans, and aesthetics. The potential for street closings in conjunction with the new grade separations should also be studied.
    - SEA recognizes the unique pedestrian-oriented nature of downtown Reno. UP/SP shall study the safety and adequacy of pedestrian

circulation in the downtown region. If found warranted, UP/SP shall construct up to two pedestrian grade separations.

- UP/SP, in consultation with the City of Reno, shall study the adequacy of existing warning devices for those highway-railroad crossings that remain at-grade. Based on this study, UP/SP shall upgrade warning devices as needed. Enhancements such as full barricade gating of traffic lanes, non-mountable curbs, and constant time systems for grade crossing warning signals shall be considered (these are signals capable of providing prior warning of approximately 20 to 25 seconds for trains approaching crossings at various speeds). UP/SP shall advise SEA of the results of the study.
- UP/SP shall maintain all rail line and grade crossing warning devices according to Federal Railroad Administration Standards (49 CFR Part 213).
- UP/SP shall transport all hazardous materials in compliance with the U.S. Department of Transportation Hazardous Materials Regulations (49 CFR Parts 171 to 180).
- 5. In the case of a hazardous materials spill, UP/SP shall follow appropriate emergency response procedures outlined in their Emergency Response Plans.

# CHAPTER 13.0 RAIL LINE SEGMENT, RAIL YARD, AND INTERMODAL FACILITY IMPACTS NEW MEXICO

This chapter provides an analysis of the potential environmental impacts resulting from increased traffic on rail segments and increased activity at rail yards and intermodal facilities in New Mexico as part of the proposed merger. In analyzing these impacts, the Surface Transportation Board's (Board) Section of Environmental Analysis (SEA), consistent with its environmental rules at 49 CFR Part 1105.7(e), specifically considered: (1) impacts to air quality, (2) impacts to noise, (3) impacts to local, regional and national transportation systems, and (4) impacts to safety.

The following rail line segments would meet or exceed the Board's environmental analysis thresholds:

- El Paso, Texas to Dalhart, Texas (SP).
- El Paso, Texas to Lordsburg (SP).
- Cochise, Arizona to Lordsburg (SP).

Each rail line segment is discussed in this chapter by impact category, as follows:

- Air quality (Section 13.1).
- Air quality at grade crossings (Section 13.2).
- Noise (Section 13.3).
- Transportation systems (Section 13.4).
- Safety (Section 13.5).

If a rail line segment would not experience impacts in any one of these categories as a result of proposed merger, no analysis was necessary. Accordingly, no discussion is provided.

Chapter 1 of this volume describes the thresholds established for analysis of potential air quality and noise impacts and the methods used to evaluate these and other potential impacts.

# 13.1 Air Quality Analysis

New Mexico contains one AQCR in which rail segments are located that would experience increased activity as a result of the proposed merger and thereby trigger one or more of the Board's thresholds for analysis. In this region, increased emissions along the length of rail segments through the AQCR (sometimes over a distance of hundreds of miles) could result in a potential for adverse air quality impacts. SEA concludes that increased rail operation activities in



these regions would result in increases in nitrogen dioxide (NO<sub>2</sub>) which contributes to the formation of ozone. Increases in emissions, however, would be partially offset by decreases in train activity on other segments.

Potential adverse impacts to air quality in the one AQCR as a result of the proposed merger are discussed below.

# 13.1.1 New Mexico Southern Border (AQCR 12)

Rail operations in the New Mexico Southern Border AQCR (12) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of two rail segments (El Paso, Texas, to Lordsburg and Cochise, Arizona, to Lordsburg). There are no rail yards or intermodal facilities in this AQCR that exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the New Mexico Southern Border AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail operations activity in this AQCR.

The New Mexico Southern Border AQCR (12) includes the counties of Grant, Hidalgo, and Luna, portions of which are designated as nonattainment for sulfur dioxide ( $SO_2$ ). In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along two rail segments. SEA concludes that increased rail line operations along the rail segments could contribute to the formation of ozone as well as other pollutants in the New Mexico Southern Border nonattainment area.

# **Emissions from Increased Line Segment Activity**

The proposed merger would lead to changed activity on two rail segments that pass through or are connected New Mexico Southern Border AQCR (12). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of these segments would be as follows:

Origin Station	Destination Station	Miles	Change in # of Trains/Day	%Change in Trains/Day	%Change in Tons/Year
El Paso TX	Lordsburg NM	148	15.4	53%	29%
Cochise AZ	Lordsburg NM	85	14.6	48%	24%

Both of the rail segments listed above (El Paso, Texas, to Lordsburg and Cochise, Arizona, to Lordsburg) were assessed for air quality impacts because they would exceed the Board's thresholds. The increased emissions from these two segments are shown below. The impacts of these emissions are discussed below in the section on Analysis of Activity.



Rail Segment	AQCR	Estimated Increase in Emissions (tons per year)						
	(ID No.)	НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10		
El Paso - Lordsburg	12	31.2	97.0	726.3	52.6	15.7		
Cochise - Lordsburg	12	16.2	50.2	376.0	27.2	8.2		
Total		47.4	147.2	1102.3	79.8	23.9		

#### Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

#### Analysis of Activity

The increased rail segment activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the New Mexico Southern Border AQCR, primarily from mobile rail segment emissions.

# 13.1.2 Northeastern Plains (AQCR 154)

Rail operations in the Northeastern Plains AQCR (154) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of a portion of one rail segment (El Paso, Texas, to Dalhart, Texas). There are no rail yards or intermodal facilities in this AQCR that exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Northeastern Plains AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail operations activity in this AQCR.

The Northeastern Plains AQCR (154) includes the counties of Colfax, Guadalupe, Harding, Mora, San Miguel, Torrance, and Union, all of which are designated as in attainment. In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along the rail segment. SEA concludes that increased rail line operations could contribute to the increased levels of ozone as well as other pollutants in the Northeastern Plains attainment area.

# Emissions from Increased Rail Line Segment Activity

The proposed merger would lead to changed activity on one rail segment that passes through or is connected Northeastern Plains AQCR (154). The segment length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for this segment would be as follows:

Origin	Destination	Miles	Change in #	%Change	%Change
Station	Station		of Trains/Day	in Trains/Day	in Tons/Year
El Paso TX	Dalhart TX	425	7.6	63%	21%

The rail segment listed above (El Paso, Texas, to Dalhart, Texas) was assessed for air quality impacts because it would exceed the Board's thresholds. The estimated increased emissions from this segment are shown below. The impact of these emissions are discussed below in the section on Analysis of Activity.

Rail	AQCR	Estin	nated Increa	se in Emissio	ns (tons per	year)
Segment	(ID No.)	НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
El Paso - Dalhart	154	11.9	36.9	276.5	20.0	6.0

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

#### Analysis of Activity

The increased rail segment activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, because they do not account for offsetting decreases that could result from truck to rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Northeastern Plains AQCR, primarily from mobile rail segment emissions.

# 13.1.3 Pecos-Permian Basin (AQCR 155)

Rail operations in the Pecos-Permian Basin AQCR (155) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of a portion of one rail segment (El Paso, Texas, to Dalhart, Texas). There are no rail yards or intermodal facilities in this AQCR that exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Pecos-

Permian Basin AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Pecos-Permian Basin AQCR (155) includes the counties of Chaves, Curry, De Baca, Eddy, Lea, Quay, Roosevelt, all of which are designated as in attainment. In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along the rail segment. SEA concludes that increased rail line operations would contribute to the formation of ozone as well as other pollutants in the Pecos-Permian Basin attainment area.

# **Emissions from Increased Rail Segment Activity**

The proposed merger would lead to changed activity on one rail segment that passes through or is connected Pecos-Permian Basin AQCR (155). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for this segment would be as follows:

Origin	Destination	Miles	Change in #	%Change	%Change
Station	Station		of Trains/Day	in Trains/Day	in Tons/Year
El Paso TX	Dalhart TX	425	7.6	63%	21%

The rail segment listed above (El Paso, Texas, to Dalhart, Texas) was assessed for air quality impacts because it would exceed the Board's thresholds (while the Pecos-Permian Basin AQCR is in attainment, this segment exceeds the threshold because at least a portion of it passes through a nonattainment AQCR). The estimated increased emissions from this segment are shown below. The impact of these emissions are discussed below in the section on Analysis of Activity.

Rail AQCR Segment (ID No.)	AQCR	Estir	nated Increa	se in Emissio	ns (tons per	year)
	НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10	
El Paso - Dalhart	155	7.6	23.7	177.8	12.9	3.9

Key:

HC = hydrocarbons, CO = carbon monoxide, NO<sub>2</sub> = nitrogen dioxide, SO<sub>2</sub> = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

# Analysis of Activity

The increased rail segment activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in  $NO_2$ . These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger

would result in increased levels of all pollutants in the Pecos-Permian Basin AQCR, primarily from mobile rail segment emissions.

# 13.2 Air Quality Impacts at Grade Crossings

SEA assessed the overall air quality impacts of emissions from idling vehicles waiting at grade crossings. On average, annual emissions at a grade crossing with 5,000 vehicles per day would be 0.0021 ton of volatile organic compounds, 0.0013 ton of hydrocarbons, 0.0111 ton of carbon monoxide, and 0.0003 ton of nitrogen dioxide (NO<sub>2</sub>) per train crossing. Traffic volumes of more than 5,000 vehicles per day would increase the estimated emissions accordingly. Railroad grade crossings tend to be grade-separated when roadway and/or train traffic volumes become high, so the air quality impacts at grade crossings would generally be relatively minor. In New Mexico, most grade crossings carry 5,000 or fewer vehicles. SEA concludes that no adverse air quality impacts would result from increased grade crossing delays as a result of the proposed merger. Section 13.4.1 of this chapter contains information on the transportation impacts of grade crossing delays associated with increased rail segment activity.

## 13.3 Noise Analysis

SEA performed noise analyses to identify noise-sensitive land uses where the proposed changes in operations could result in increases in noise exposure that meet or exceed the Board's environmental analysis thresholds at 49 CFR 1105.7(e)(6). The following discussion provides an estimate of the number of noise-sensitive receptors (e.g., residences, schools, churches) where the Board's thresholds would be exceeded, potentially causing an adverse increase in noise exposure. The noise level impact assessment was based on the baseline and projected activity level data provided by UP/SP.

# 13.3.1 Increased Rail Segment Activity

# El Paso, Texas to Lordsburg

This rail segment, which currently has 29.3 trains/day, would experience an increase of 15.4 trains/day (a 29.4 percent change in gross ton-miles per year) as a result of the proposed merger. The projected increase in train volume and gross ton-miles on this segment would cause less than a 2 dBA increase in the  $L_{dn}$  No adverse noise impacts are expected.

# Cochise, Arizona to Lordsburg

This rail segment, which currently has 30.3 trains/day, would experience an increase of 14.6 trains/day (a 24.2 percent change in gross ton-miles per year) as a result of the proposed merger.

The projected increase in train volume and gross ton-miles on this segment would cause less than a 2 dBA increase in the  $L_{dn}$ . No adverse noise impacts are expected.

## 13.4 Transportation Systems

The Board's environmental rules at 49 CFR 1105.7(e)(2) require a description of the effects of the merger action on local and regional transportation systems. The primary transportation impacts of the proposed merger are related to: (1) additional truck traffic generated at those intermodal facilities where intermodal activity is projected to increase, and (2) increases in roadway delays at grade crossings as a result of increased train traffic on rail segments.

The impacts near intermodal facilities would result from increased truck traffic using local roadways to enter and exit the intermodal facility. For those facilities with an expected increase of 50 trucks or more per day, SEA analyzed the impacts of this increased traffic on the local roadway system in terms of increases in daily and peak hour traffic. SEA collected traffic count data from local and state transportation officials for this analysis. While the offsetting benefits of the proposed merger were not quantified at the local level, the traffic impacts from added truck traffic at intermodal facilities would be partially offset in many localities by truck-to-rail diversions and consolidation of operations. Because there are no intermodal facilities in New Mexico that would experience an increase in truck traffic above the Board's analysis threshold as a part of the proposed merger, SEA concludes that there are no significant impacts to the local transportation system.

SEA addressed the concerns of local communities about increased traffic delays at grade crossings through an evaluation of vehicle delay and wait times at grade crossing locations. It is important to note that the acceptability of delays at grade crossings varies substantially based on local conditions such as the location of land uses by type, availability of alternative travel routes, the degree of use by emergency vehicles, and other local variables. While the time of delay at grade crossings would increase proportionately with the increase in train traffic, most of the grade crossings in New Mexico carry fewer than 5,000 vehicles per day. SEA concludes that increases in vehicle delay and/or wait time due to merger-related operational changes would not be excessive.

# 13.4.1 Grade Crossings

In order to analyze the effects of the proposed merger on the roadway system at grade crossings, SEA determined the number of crossings along rail segments that would exceed the Board's analysis thresholds for air quality analysis. Approximate delays over the course of 24 hours were calculated, as were average queue lengths. While an increase in the number of trains would result in more crossing closings per day, the length of the queue at each individual crossing

closing event would change only if the train length changes. Vehicle delay impacts at rail line segments in New Mexico are summarized below

#### El Paso, Texas to Dalhart, Texas

On the El Paso to Dalhart (via New Mexico) line, average rail traffic would increase from 12 to 19.6 trains per day, a train volume increase of about 63 percent. There are 58 grade crossings along this segment in New Mexico, none of which have Average Daily Traffic (ADT) counts greater than 5,000 vehicles per day. At low speed grade crossings along the route (e.g., train speed of 30 mph), delay to vehicle traffic would increase from 31 minutes (pre-merger) to 50 minutes (post-merger) over a 24-hour period. At the typical and high speed crossings (e.g., train speed of 70 mph), delay to vehicle traffic would increase from 18 minutes (pre-merger) to 29 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from one to two vehicles, and the corresponding delay per vehicle would vary from 1.04 to 1.58 minutes.

#### El Paso, Texas to Lordsburg

Average rail traffic on the El Paso, Texas to Lordsburg line would increase from 29.3 to 44.7 trains per day, a train volume increase of about 53 percent. There are 13 grade crossings on the line, none of which have an ADT count greater than 5,000 vehicles per day. At low speed grade crossings along the route (e.g., train speed of 30 mph), delay to vehicle traffic would increase from 75 minutes (pre-merger) to 114 minutes (post-merger) over a 24-hour period. At higher speed crossings (e.g., train speed of 50 mph), delay would increase from 53 minutes (pre-merger) to 81 minutes (post-merger) over a 24-hour period.

#### Lordsburg to Cochise, Arizona

On the Lordsburg to Cochise, Arizona, average rail traffic would increase from 30.3 to 44.9 trains per day, a train volume increase of about 48 percent. There are 11 grade crossings of the line, none of which have ADT counts greater than 5,000 vehicles per day. At the grade crossings along the route (e.g., train speed of 65 mph) delay to vehicle traffic would increase from 47 minutes (pre-merger) to 69 minutes (post-merger) over a 24-hour period.

### 13.5 Safety

SEA assessed a number of safety issues associated with the proposed merger, including the probability of increased accidents at grade crossings, and the risks associated with increased shipments of hazardous commodities.

# 13.5.1 Grade Crossing Safety

Accidents at grade crossings are a function of the number of trains, train speed, number of train tracks, grade crossing condition and warning facilities, roadway condition and number of lanes, and amount of roadway traffic. Since the proposed merger would not result in any new grade crossings and would affect only the number of trains passing through existing grade crossings, the probability of an increase in the number of accidents at grade crossings would depend on the increased number of trains on rail segments. SEA concludes that the accident exposure in New Mexico will increase between 48 and 64 percent, depending on rail segment.

# 13.5.2 Hazardous Commodities

Federal regulations govern the transport of hazardous commodities. The proposed merger is not expected to affect the policies or operation of UP/SP concerning the type or quantity of hazardous commodities transported or the method of handling. A total of 420,000 and 305,000 hazardous commodity shipments were transported by UP and SP, respectively, in 1994. These shipments resulted in 118 reportable incidents for UP, and 35 incidents for SP. Therefore, 99.98 percent of the shipments arrived at their destination without incident. The Applicants have noted that the consolidation of the companies will result in a "best practice" approach to hazardous commodity handling. SEA concludes that, using the same rate of safe transport. the projected increases in accidents and shipments of hazardous materials as a result of the proposed merger do not constitute a significant safety risk.

#### 13.6 Summary of Agency Comments

In considering the potential environmental impacts of the increased rail line segment, rail yard, and intermodal facility activity associated with the proposed UP/SP merger, SEA sent consultation letters to various Federal, state, and local agencies on January 29, 1996. These letters, samples of which are included in **Volume 5**, Appendix D, Exhibits D-1 through D-9, provided early notification of this EA and requested information and comments on the effects to the environment of the proposed merger and related operational changes. Each letter included a state information packet and maps that listed the specific merger-related proposals. A sample packet is shown in **Volume 5**, Appendix D, Exhibit D-10. SEA contacted agencies by telephone to alert them to the distribution of the consultation letter and to confirm its receipt. The Applicant also contacted these agencies in preparation of the Environmental Report which accompanied the merger application. That correspondence and all responses were reviewed, verified, and considered by SEA in the preparation of this EA.

All comments received (through mid-March 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. Agency

comments regarding the proposed increases in rail line segment activities in New Mexico are summarized below:

 U.S. Army Corps of Engineers stated that if the proposed actions involve a discharge of dredged or fill materials into waters or wetlands, a Section 404 permit would be required.

## 13.7 Suggested Mitigation

No specific mitigation measures were suggested for the proposed changes to rail line segment operations in New Mexico by the various parties consulted in the process of preparing the EA for the proposed merger. (See **Volume 5**, Appendices D and E, for agency consultation lists.)

## 13.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any final decision approving the proposed changes to rail line segment operations in New Mexico. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA's recommended mitigation is as follows.

# Air Quality

 UP/SP shall consult with appropriate Federal, state and local agencies responsible for regulating air quality in AQCRs 12, 154 and 155 concerning any possible mitigation measures to reduce any potential adverse emissions from the rail segments in these three regions. UP/SP shall advise SEA of the results of these consultations.

#### Noise

 To reduce potential noise level impacts to sensitive receptors along the El Paso to Dalhart, Texas; El Paso, Texas to Lordsburg; and Cochise, Arizona to Lordsburg rail line segments, UP/SP shall consult with appropriate state and local agencies to develop noise abatement plans. The Applicants shall advise SEA of the results of these consultations and provide SEA with a copy of any resulting noise abatement plans.

# **Transportation and Safety**

- 1. UP/SP shall maintain all rail line and grade crossing warning devices according to Federal Railroad Administration Standards (49 CFR Part 213).
- UP/SP shall transport all hazardous materials in compliance with the U.S. Department of Transportation Hazardous Materials Regulations (49 CFR Parts 171 to 180).
- 3. In the case of a hazardous materials spill, UP/SP shall follow appropriate emergency response procedures outlined in its Emergency Response Plans.

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# CHAPTER 14.0 RAIL LINE SEGMENT, RAIL YARD, AND INTERMODAL FACILITY IMPACTS OKLAHOMA

This chapter provides an analysis of the potential environmental impacts resulting from increased traffic on rail segments and increased activity at rail yards and intermodal facilities in Oklahoma as part of the proposed merger. In analyzing these impacts, the Surface Transportation Board's (Board) Section of Environmental Analysis (SEA), consistent with its environmental rules at 49 CFR Part 1105.7(e), specifically considered: (1) impacts to air quality, (2) impacts to noise, (3) impacts to local, regional and national transportation systems, and (4) impacts to safety.

The following rail line segments would meet or exceed the Board's environmental analysis thresholds:

- Chickasha to Wichita, Kansas (UP).
- Fort Worth, Texas to Chickasha (UP).
- Stratford, Texas to Hutchinson, Kansas (SP).

Each rail line segment is discussed in this chapter by impact category, as follows:

- Air quality (Section 14.1).
- Air quality at grade crossings (Section 14.2).
- Noise (Section 14.3).
- Transportation systems (Section 14.4).
- Safety (Section 14.5).

If a rail line segment would not experience impacts in any one of these categories as a result of proposed merger, no analysis was necessary. Accordingly, no discussion is provided.

Chapter 1 of this volume describes the thresholds established for analysis of potential air quality and noise impacts and the methods used to evaluate these and other potential impacts.

#### 14.1 Air Quality Analysis

Oklahoma contains four Air Quality Control Regions (AQCRs) with rail segments, rail yards, and/or intermodal facilities that would experience increased activity as a result of the proposed merger and thereby trigger one or more of the Board's thresholds for analysis. In each of these

regions, increased emissions along the length of rail segments through the AQCR (sometimes over a distance of hundreds of miles) could result in a potential for adverse air quality impacts. SEA concludes that increased rail operation activities in these regions would result in increased emissions of nitrogen dioxide (NO<sub>2</sub>), which contributes to the formation of ozone. Increases in emissions, however, would be partially offset by decreases in train activity on other segments. None of the four AQCRs in Oklahoma is designated as nonattainment for ozone.

Potential adverse impacts to air quality in these four AQCRs as a result of the proposed merger are discussed individually below.

### 14.1.1 Central Oklahoma (AQCR 184)

Rail operations in the Central Oklahoma AQCR (184) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of two rail segments (Fort Worth, Texas to Chickasha and Chickasha to Wichita, Kansas). There are no rail yards or intermodal facilities in this AQCR that would exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Southeast Arizona AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Central Oklahoma AQCR (184) includes the counties of Canadian, Cleveland, Grady, Lincoln, Logan, Kingfisher, McClain, Oklahoma, and Pottawatomie, all of which are designated as in attainment. In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along two rail segments. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the Central Oklahoma nonattainment area.

### **Emissions from Increased Rail Segment Activity**

The proposed merger would lead to changes in activity on two rail segments that pass through or are connected to the Central Oklahoma AQCR (184). The segment length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles would be as follows:

	-	
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	_	
	_	_

Origin Station	Destination Station	Miles	Change in # of Trains/Day	%Change in Trains/Day	%Change in Tons/Year
Fort Worth TX	Chickasha OK	178	6.6	87%	113%
Purcell OK	Fort Worth TX	169	-2.0	-11%	-4%
Chickasha OK	Wichita KS	192	7.4	168%	129%
Winfield KS	Purcell OK	168	-2.0	-11%	-3%

Two of the four rail segments listed above (Fort Worth, Texas to Chickasha and Chickasha to Wichita, Kansas) were assessed for air quality impacts because they would exceed the Board's thresholds. The estimated increased emissions from these two segments are shown below. The impacts of these emissions are discussed below in the section on Analysis of Activity.

Rail Segment	AQCR	AQCR Estimated Increase in Emissions (tons per year)						
	(ID No.)	HC	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10		
Fort Worth - Chickasha	184	10.7	33.1	248.0	18.0	5.4		
Chickasha - Wichita	184	26.5	82.3	616.0	44.6	13.4		
Total		37.2	115.4	864.0	62.6	18.8		

Key:

HC = hydrocarbons, CO  $\approx$  carbon monoxide, NO<sub>2</sub> = nitrogen dioxide, SO<sub>2</sub> = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

# Analysis of Activity

The increased rail segment activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Central Oklahoma AQCR, primarily from mobile source rail line segment emissions.

# 14.1.2 North Central Oklahoma (AQCR 185)

Rail operations in the North Central Oklahoma AQCR (185) associated with the proposed merger that require analysis as specified by the Board's environmental rules at 49 CFR

1105.7(e)(5), consist of portions of one rail segment (Chickasha to Wichita, Kansas). There are no intermodal facilities or rail yards in this AQCR that would exceed the Board's analysis thresholds. Based on the increased activity levels as a result of the proposed merger, SEA examined the North Central Oklahoma area for potential air quality impacts. SEA concludes that adverse impacts could result from increased rail segment activity in this AQCR.

The North Central Oklahoma AQCR (185) includes the counties of Garfield, Grant, Kay, Noble, and Payne, all of which are designated as in attainment. In considering the potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along the rail segments. SEA concludes that increased rail operations would contribute to increased levels of ozone and other pollutants in the North Central Oklahoma attainment area.

# **Emissions from Increased Rail Segment Activity**

The proposed merger would lead to changes in activity on two rail segments that pass through or are connected to the North Central Oklahoma AQCR. The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of these segments would be as follows:

Origin Station	Destination Station	Miles	Change in # of Trains/Day	%Change in Trains/Day	%Change in Tons/Year
Chickasha OK	Wichita KS	192	7.4	168%	129%
Winfield KS	Purcell OK	168	-2.0	-11%	-3%

One of the two rail segments listed above (Chickasha to Wichita, Kansas) were assessed for air quality impacts because they exceed the Board's analysis thresholds. The increased emissions from these two segments are shown below. The impacts of these emissions are discussed below in the section on Analysis of Activity.

Rail AQCI Segment (ID No	AQCR	Estin	nated Increa	se in Emissio	ns (tons per	year)
	(ID No.)	HC	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Chickasha - Wichita	185	23.8	73.9	552.8	40.1	12.0

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

# Analysis of Activity

The increased rail segment activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject of National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the North Central Oklahoma AQCR, primarily from mobile rail segment emissions.

## 14.1.3 Northwestern Oklahoma (AQCR 187)

Rail operations in the Northwestern Oklahoma AQCR (187) associated with the proposed UP/SP merger that require analysis, as specified by Board's environmental rules at 49 CFR 1105.7(e)(5), consist of a portion of one rail segment (Stratford, Texas to Hutchinson). There are no intermodal or rail yard facilities in this AQCR that would exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Northwestern Oklahoma AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Northwestern Oklahoma AQCR (187) includes the counties of Alfalfa, Beaver, Blaine, Cimarron, Custer, Dewey, Ellis, Harper, Major, Roger Mills, Texas, Woods, and Woodward, all of which are designated as in attainment. In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along the rail segment. SEA concludes that increased rail operations would contribute to increased levels of ozone and other pollutants in the Northwestern Oklahoma attainment area.

# **Emissions from Increased Rail Segment Activity**

The proposed merger would lead to changes in activity on the rail segments that pass through or are connected to Northwestern Oklahoma (187). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of these segments would be as follows:

Origin Station	Destination Station	Miles	Change in # of Trains/Day	%Change in Trains/Day	%Change in Tons/Year
Stratford TX	Hutchinson KS	274	8.8	78%	24%
La Junta CO	Stratford TX	171	2.7	31%	42%

One of the two rail segments listed above (Stratford, Texas to Hutchinson) was assessed for air quality impacts because it would exceed the Board's analysis thresholds. The increased emissions from the rail line segment are listed below. The impacts of these emissions are discussed below in the section on Analysis of Activity.

Rail	AQCR	Estin	ns (tons per	er year)		
Segment	(ID No.)	НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Stratford - Hutchinson	187	6.1	19.0	142.6	10.3	3.1

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

# Analysis of Activity

The increased rail segment activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of ozone and other pollutants in the Northwestern Oklahoma AQCR from mobile rail segment emissions.

## 14.1.4 Southwestern Oklahoma AQCR (189)

Rail operations in the Southwestern Oklahoma AQCR (189) are associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of one rail segment (Fort Worth, Texas to Chickasha). There are no rail yards or intermodal facilities in this AQCR that would exceed the Board's analysis thresholds. Based on the increased activity levels as a result of the proposed merger, SEA examined the Southwestern Oklahoma AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Southwestern Oklahoma AQCR (189) Beckham, Caddo, Commanche, Cotton, Greer, Harmon, Jackson, Jefferson, Kiowa, Stephens, Tillman, and Washita, all of which are designated as in attainment. In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along the rail segments. SEA concludes that increased rail



operations would contribute to increased levels of ozone and other pollutants in the Southwestern Oklahoma attainment area.

# Emissions from Increased Rail Segment Activity

The proposed merger would lead to changes in activity on some rail segments that pass through or are connected to the Southwestern Oklahoma AQCR. The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of these segments would be as follows:

Origin Station	Destination Station	Miles	Change in # of Trains/Day	%Change in Trains/Day	%Change in Tons/Year
Fort Worth TX	Chickasha OK	178	6.6	87%	113%
Purcell OK	Fort Worth TX	169	-2.0	-11%	-4%

One of the rail segments listed above (Fort Worth, Texas to Chickasha) was assessed for air quality impacts because it would exceed the Board's analysis thresholds. The increased emissions from the segments is shown below. The impacts of these emissions are discussed below in the section on Analysis of Activity.

Rail	AQCR	Estimated Increase in Emissions (tons per year)						
Segment	(ID No.)	НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10		
Fort Worth - Chickasha	189	20.7	64.3	481.4	34.9	10.4		

Key:

HC = hydrocarbons, CO = carbon monoxide, NO<sub>2</sub> = nitrogen dioxide, SO<sub>2</sub> = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

### Analysis of Activity

The increased rail segment activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards (NAAQS) General Conformity regulations, the proposed merger would result in increased levels of pollution in the Southwestern Oklahoma AQCR, primarily from mobile rail segment emissions.

## 14.2 Air Quality Impacts at Grade Crossings

SEA assessed the overall air quality impacts of emissions from idling vehicles waiting at grade crossings. On average, annual emissions at a grade crossing with 5,000 vehicles per day would be 0.0021 ton of volatile organic compounds, 0.0013 ton of hydrocarbons, 0.0111 ton of carbon monoxide, and 0.0003 ton of nitrogen dioxide (NO<sub>2</sub>) per train crossing. Traffic volumes of more than 5,000 vehicles per day would increase the estimated emissions accordingly. Railroad crossings tend to be grade-separated when roadway and/or train traffic volumes become high, so the air quality impacts at grade crossings would generally be relatively minor. In Oklahoma, most grade crossings carry 5,000 or fewer vehicles. SEA concludes that no adverse air quality impacts would result from increased grade crossing delays as a result of the proposed merger. Section 14.4.1 of this chapter contains information on the transportation impacts of grade crossing delays associated with increased rail segment activity.

## 14.3 Noise Analysis

SEA performed noise analyses to identify noise-sensitive land uses where the proposed changes in operations could result in increases in noise exposure that meet or exceed the Board's environmental analysis thresholds at 49 CFR 1105.7(e)(6). The following discussion provides an estimate of the number of noise-sensitive receptors (e.g., residences, schools, churches) where the Board's thresholds would be exceeded, potentially causing an adverse increase in noise exposure. The noise level impact assessment was based on the baseline and projected activity level data provided by UP/SP.

# 14.3.1 Increased Rail Segment Activity

#### Stratford, Texas to Hutchinson, Kansas

This rail segment currently has 11.3 trains/day and would experience an increase of 8.8 trains/day (a change of 24.3 percent in gross ton-miles per year) as a result of the proposed merger. This change in through train activity would result in an increase in the  $L_{dn}$  of 2.5 dBA along the alignment. The Oklahoma portion of this segment runs from Tyrone, near the Kansas border, to Texhoma, on the Texas border. The majority of noise impacts occur at or near grade crossings where train horns are sounded as a warning. Currently, the noise impact zone at grade crossings extends 610 feet perpendicular to the tracks, whereas after the proposed merger the noise impact zone would increase to about 740 feet. Potential noise impacts along the segment are described below.

<u>Tyrone</u>. The tracks pass diagonally through the center of Tyrone, in which there are four grade crossings. There is residential land use on both sides of the tracks, and there is a church approximately 700 feet northwest of the tracks. Currently 20 residences are within the 65  $L_{dn}$  contour. An additional 15 residences and 1 church would lie within the postmerger contour.

<u>Hooker.</u> The line runs through the southeastern part of the town. There are noise-sensitive receptors, including several churches, within 800 feet on both sides of the tracks. There are several grade crossings which expose most of the town to horn soundings. Currently 70 residences and 1 church are within the 65  $L_{dn}$  contour. An additional 50 residences and 1 church the post-merger contour.

<u>Optima.</u> The line passes along the northwest edge of this small town. Two grade crossings, one on each side of Optima, require the trains to sound their horns through most of the town. Currently 10 residences are within the 65  $L_{dn}$  contour. An additional two residences would lie within the post-merger contour.

<u>Guymon.</u> The line passes through the southeast corner of town where train noise affects many residences. There are approximately 50 houses less than 200 feet north of the tracks on the west side of town, and numerous houses within 800 feet. There are four grade crossings located near houses. Currently 100 residences are within the 65  $L_{dn}$  contour. An additional 50 residences would lie within the post-merger contour.

<u>Goodwell.</u> The line runs along the southeast side of town, which has two grade crossings. There are a few residences within 200 feet of the line. At the west end of town there are some trailer homes within 150 feet of the tracks on the north side. Currently 20 residences are within the 65  $L_{dn}$  contour. An additional 15 residences and 1 church would lie within the post-merger contour.

<u>Texhoma.</u> The line passes through the southeast corner of this small town on the Texas border. Although land use adjacent to the tracks is mostly commercial and industrial, the three grade crossings in town require horn soundings which affect some residential areas. Currently 17 residences are within the 65  $L_{dn}$  contour. An additional 10 residences and 2 churches would lie within the post-merger contour.

In the Oklahoma portion of the Stratford, Texas to Hutchinson, Kansas line segment, there are currently 237 residences, no schools, and 1 church within the 65  $L_{dn}$  contour. The majority of the impacts are due to train horns near grade crossings. With the proposed increase in train traffic,

this would increase by 142 residences and 5 churches, for a total of 379 residences and 6 churches within the post-merger 65  $L_{dn}$  contour, as shown below:

	Number of Sensitive Receptors							
Community		Pre-Merge	r	Post-Merger				
	Resid.	School	Church	Resid.	School	Church		
Tyrone, OK	20	0	0	35	0	1		
Hooker, OK	70	0	1	120	0	2		
Optima, OK	10	0	0	12	0	0		
Guymon, OK	100	0	0	150	0	0		
Goodwell, OK	20	0	0	35	0	1		
Texhoma, OK	25	0	0	40	0	2		
TOTAL	245	0	1	392	0	6		

# NOISE SUMMARY FOR THE OKLAHOMA PORTION OF THE STRATFORD, TEXAS TO HUTCHINSON, KANSAS (SP) LINE SEGMENT

## Chickasha to Wichita, Kansas

This rail segment currently has 4.4 trains/day and would experience an increase of 7.4 trains/day (a change of 129.3 percent in gross ton-miles per year) as a result of the proposed merger. This change in through train activity would result in an increase in the  $L_{dn}$  of 4.3 dBA along the alignment. The majority of noise impacts occur at or near grade crossings where train horns are sounded as a warning. Currently, the noise impact zone at grade crossings extends 360 feet perpendicular to the tracks, whereas after the proposed merger the noise impact zone would increase to about 620 feet. Potential noise impacts along the segment are described below:

<u>Medford.</u> The line passes through the southeast corner of Medford. On the north side of the tracks at the east end of town, the land use is primarily commercial and industrial; elsewhere, the land use is residential. There are two grade crossings in town, both near residences. Currently six residences are within the 65  $L_{dn}$  contour. An additional 34 residences would lie within the post-merger contour.

<u>Pond Creek.</u> The line passes through Pond Creek, and there are residential areas on both sides of the tracks. Although much of the land use near the tracks is commercial or industrial, horn soundings at the town's four grade crossings affect some residences.

Currently 13 residences are within the 65  $L_{dn}$  contour. An additional 32 residences and 1 church would lie within the post-merger contour.

<u>Enid.</u> The tracks pass through the middle of Enid. Industrial areas are located west of the line, except for a few houses about 300 feet from the tracks at the north end of town. A few residences are also located about 200 feet east of the tracks. The industrial buildings provide some shielding. Currently 20 residences are within the 65  $L_{dn}$  contour. An additional 30 residences and 1 church would lie within the post-merger contour.

<u>Waukomis.</u> The line passes east of the center of town, but there is residential development on both sides of the tracks. The development east of the tracks is fairly dense. There is one grade crossing in town. Currently eight residences are within the 65  $L_{dn}$  contour. An additional 26 residences would lie within the post-merger contour.

<u>Hennessey</u>. The line passes through residential areas on the west side of town. The seven grade crossings in town expose many residences and a church to horn noise. Currently 20 residences and 1 church are within the 65  $L_{dn}$  contour. An additional 20 residences would lie within the post-merger contour.

<u>Kingfisher.</u> The line passes through the east side of town. There are densely populated areas to the west of the line, with the nearest residences about 100 feet from the tracks. There are also several churches in this area. To the east of the line, industrial land use predominates; however, a mobile home park is located about 100 feet from the tracks. There are six grade crossings in Kingfisher. Currently 60 residences and 1 church are within the 65  $L_{dn}$  contour. An additional 20 residences and 3 churches would lie within the post-merger contour.

<u>El Reno.</u> The line runs through the middle town, past the Canadian County Historical Museum and the Old El Reno Hotel. Residences are located along both sides of the tracks. There are two grade crossings in town, locate the ends of the small yard in the center of town. Currently 80 residences are within the 65  $L_{dn}$  contour. An additional 20 residences and 1 school would lie within the post-merger contour.

<u>Union City.</u> The line passes through the middle of this small community, which has one grade crossing. Currently six residences are within the 65  $L_{dn}$  contour. An additional 19 residences and 1 church would lie within the post-merger contour.



<u>Chickasha.</u> The line passes along the eastern side of town and terminates at the Chickasha Yard. The only grade crossing in the area is approximately 0.3 mile north of town. The closest residences to the tracks are about 400 feet from the line, but they are not particularly close to the grade crossing. Currently no residences, schools, or churches are within the 65  $L_{dn}$  contour. Two residences would lie within the post-merger contour.

<u>Other Communities.</u> Other small communities along this segment which would be affected by an increase in noise as a result of the proposed merger include: Renfrow, Jefferson, Kremlin, North Enid, Vance Air Force Base, Bison, Dover, Okarche, Minco, and Pocasset. Collectively, in these communities there are currently 13 residences within the 65 L<sub>dn</sub> contour. An additional 58 residences and 2 churches would lie within the post-merger contour.

In the Oklahoma portion of the Wichita, Kansas to Chickasha segment, there are currently 226 residences and 2 churches within the 65  $L_{dn}$  contour. The majority of the impacts are due to train horns near grade crossings. With the proposed increase in train traffic, this would increase by 261 residences, 1 school, and 8 churches, for a total of 487 residences, 1 school, and 10 churches within the post-merger 65  $L_{dn}$  contour, as shown below:

	Number of Sensitive Receptors							
Community		Pre-Merge	r	Post-Merger				
	Resid.	School	Church	Resid.	School	Church		
Renfrow, OK	0	0	0	2	0	0		
Medford, OK	6	0	0	40	0	0		
Jefferson, OK	3	0	0	4	0	0		
Pond Creek, OK	13	0	0	45	0	1		
Kremlin, OK	0	0	0	4	0	0		
North Enid, OK	1	0	0	4	0	1		
Enid, OK	20	0	0	50	0	1		
Vance AFB, OK	3	0	0	9	0	0		
Waukomis, OK	8	0	0	34	0	0		
Bison, OK	1	0	0	8	0	0		
Hennessey, OK	20	0	1	40	0	1		
Dover, OK	1	0	0	12	0	1		
Kingfisher, OK	60	0	1	80	0	4		

# NOISE SUMMARY FOR THE OKLAHOMA PORTION OF THE CHICKASHA TO WICHITA, KANSAS (UP) LINE SEGMENT

	Number of Sensitive Receptors							
Community		Pre-Merge	r	Post-Merger				
	Resid.	School	Church	Resid.	School	Church		
Okarche, OK	1	0	0	10	0	0		
El Reno, OK	80	0	0	100	1	0		
Union City, OK	6	0	0	25	0	1		
Minco, OK	3	0	0	15	0	0		
Pocasset, OK	0	0	0	3	0	0		
Chickasha, OK	0	0	0	2	0	0		
TOTAL	226	0	2	487	1	10		

#### Fort Worth, Texas to Chickasha

This rail segment currently has 7.6 trains/day and would experience an increase of 6.5 trains/day (a change of 113.2 percent in gross ton-miles per year) as a result of the proposed merger. This change in through train activity would result in an increase in the  $L_{dn}$  of 2.7 dBA along the alignment. The majority of noise impacts occur at or near grade crossings where train horns are sounded as a warning. Currently, the noise impact zone at grade crossings extends 490 feet perpendicular to the tracks, whereas after the proposed merger the noise impact zone would increase to about 615 feet. Potential noise impacts along the segment are described below:

<u>Chickasha.</u> The line commences in the Chickasha Yard on the east side of town and runs south. There is a grade crossing at the south end of the yard. Southeast and southwest of the grade crossing are residential areas which are affected by horn noise. Currently 12 residences and 1 church are within the 65  $L_{dn}$  contour. An additional 16 residences and 1 church the post-merger contour.

<u>Marlow.</u> The line runs through the eastern part of town, with the closest residences about 150 feet east of the track. A pair of two-story apartment buildings are located about 250 feet to the west of the tracks at the northern part of town near a grade crossing. Several other grade crossings in town require the trains to sound their horns through most of Marlow. Currently 40 residences are within the 65  $L_{dn}$  contour. An additional 20 residences would lie within the post-merger contour.

<u>Duncan.</u> The line passes through the middle of this relatively large town. Residences are located about 100 feet away from the line in the southern part of town. Residences in the north of town are located along a street parallel to the line. The line passes within 50 feet of

a nursing home, at the north end of town. There are several grade crossing throughout Duncan which require the trains to sound their horns through most of town. Currently 20 residences, 1 church, and 1 nursing home are within the 65  $L_{dn}$  contour. An additional 20 residences and 4 churches would lie within the post-merger contour.

<u>Comanche.</u> The line runs along the east side of this community, which has two grade crossings. There are residential areas on both sides of the alignment; the nearest house is approximately 150 feet from the tracks. Currently 25 residences are within the 65  $L_{dn}$  contour. An additional 15 residences would lie within the post-merger contour.

<u>Waurika.</u> The line runs through the west side of this town. There are grade crossings at U.S. 70 and near an old depot (now a museum) and library fenced off from the track. Other grade crossings expose most of the town to horn noise. The closest residences are more than 300 feet from the tracks with industrial buildings between the residences and the tracks that provide some acoustical shielding of train noise. Currently 25 residences and 1 church are within the 65  $L_{dn}$  contour. An additional 25 residences would lie within the post-merger contour.

<u>Other Communities.</u> Other small communities along this segment which would be affected by an increase in noise brought about by the proposed merger are East Ninnekah, Rush Springs, Sugden, Ryan, Terral. Collectively, in these communities there are currently 13 residences within the 65  $L_{dn}$  contour. An additional 29 residences and 2 churches would lie within the post-merger contour.

In the Oklahoma portion of the Chickasha to Fort Worth, Texas segment, there are currently 135 residences, no schools, 1 nursing home and 3 churches within the 65  $L_{dn}$  contour. The majority of the impacts are due to train horns near grade crossings. With the proposed increase in train traffic, this would increase by 125 residences and 7 churches, for a total of 260 residences, 1 nursing home, and 10 churches within the post-merger 65  $L_{dn}$  contour, as shown below:

# NOISE SUMMARY FOR THE OKLAHOMA PORTION OF THE FORT WORTH, TEXAS TO CHICKASHA (UP) LINE SEGMENT

	Number of Sensitive Receptors							
Community		Pre-Merge	r	Post-Merger				
	Resid.	School	Church	Resid.	School	Church		
Chickasha, OK	12	0	1	28	0	2		
East Ninnekah, OK	3	0	0	10	0	0		
Rush Springs, OK	4	0	0	12	0	0		
Marlow, OK	40	0	0	60	0	0		
Duncan, OK*	20	0	1	40	0	5		
Comanche, OK	25	0	0	40	0	0		
Waurika, OK	25	0	1	50	0	1		
Sugden, OK	3	0	0	8	0	2		
Ryan, OK	0	0	0	2	0	0		
Terral, OK	3	0	0	10	0	0		
TOTAL	135	0	3	260	0	10		

One nursing home lies within the pre-merger contour

# 14.4 Transportation Systems

The Board's environmental rules at 49 CFR 1105.7(e)(2) require a description of the effects of the proposed merger action on local and regional transportation systems. The primary transportation impacts of the proposed merger are related to: (1) additional truck traffic generated at those intermodal facilities where intermodal activity is projected to increase, and (2) increases in roadway delays at grade crossings as a result of increased train traffic on rail segments.

The impacts near intermodal facilities would result from increased truck traffic using local roadways to enter and exit the intermodal facility. For those facilities with an expected increase of 50 trucks or more per day, SEA analyzed the impacts of this increased traffic on the local roadway system in terms of increases in daily and peak hour traffic. SEA collected traffic count data from local and state transportation officials for this analysis. While the offsetting benefits of the proposed merger were not quantified at the local level, the traffic impacts from added truck traffic at intermodal facilities would be partially offset in many localities by truck-to-rail diversions and consolidation of operations. Because there are no intermodal facilities in Oklahoma that would experience an increase in truck traffic above the Board's analysis threshold as a part of the

proposed merger, SEA concludes that there would be no adverse impacts to the local transportation system.

SEA addressed the concerns of local communities about increased traffic delays at grade crossings through an evaluation of vehicle delay and wait times at grade crossing locations. It is important to note that the acceptability of delays at grade crossings varies substantially based on local conditions such as the location of land uses by type, availability of alternative travel routes, the degree of use by emergency vehicles, and other local variables. While the time of delay at grade crossings would increase proportionately with the increase in train traffic, most of the grade crossings in Oklahoma carry fewer than 5,000 vehicles per day. SEA concludes that increases in vehicle delay and/or wait time due to merger-related operational changes would not be excessive.

#### 14.4.1 Grade Crossings

In order to analyze the effects of the proposed merger on the roadway system at grade crossings, SEA determined the number of crossings along rail segments that would exceed the Board's analysis thresholds for air quality analysis. Approximate delays over the course of 24 hours were calculated, as were average queue lengths. While an increase in the number of trains would result in more crossing closings per day, the length of the queue at each individual crossing closing event would change only if the train length changes. Vehicle delay impacts along rail line segments in Oklahoma are summarized below:

#### Chickasha to Wichita, Kansas

Average rail traffic on the Chickasha to Wichita, Kansas line would increase from 4.4 to 11.8 trains per day, a train volume increase of about 168 percent. There are 238 grade crossings on this line. At low speed grade crossings along the route (e.g., train speed of 30 mph), delay to vehicle traffic would increase from 11 minutes (pre-merger) to 30 minutes (post-merger) over a 24-hour period. At higher speed crossings (e.g., train speed of 50 mph), delay would increase from 8 minutes (pre-merger) over a 24-hour period.

#### Fort Worth, Texas to Chickasha

On the Fort Worth, Texas to Chickasha line, average rail traffic would increase from 7.6 to 14.2 trains per day, a train volume increase of about 86 percent. There are 73 grade crossings in Oklahoma, three of which have Average Daily Traffic (ADT) counts greater than 5,000 vehicles per day. At typical speed crossings (e.g., train speed of 40 mph), delay would increase from 16 minutes (pre-merger) to 30 minutes (post-merger) over a 24-hour period. At the highest speed
grade crossings (e.g., train speeds of 49 mph), delay to vehicle traffic would increase from 14 minutes (pre-merger) to 26 minutes (post-merger) over a 24-hour period. At low speed grade crossings along the route (e.g., train speed of 20 mph), delay to vehicle traffic would increase from 27 minutes (pre-merger) to 50 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from 1 to 32 vehicles. The corresponding delay per vehicle would vary from 1.21 to 2.06 minutes.

#### Stratford, Texas to Hutchinson, Kansas

On the Stratford, Texas to Hutchinson, Kansas line segment, average rail traffic would increase from 11.3 to 20.1 trains per day, a train volume increase of about 78 percent. There are 63 grade crossings in Oklahoma. At low speed grade crossings along the route (e.g., train speed of 35 mph), delay to vehicle traffic would increase from 26 minutes (pre-merger) to 41 minutes (post-merger) over a 24-hour period. At typical and high speed crossings (e.g., train speed of 60 mph), delay would increase from 18 minutes (pre-merger) to 33 minutes (post-merger) over a 24-hour period.

#### 14.5 Safety

SEA assessed a number of safety issues associated with the proposed merger, including the probability of increased accidents at grade crossings, and the risks associated with increased shipments of hazardous commodities.

#### 14.5.1 Grade Crossing Safety

Accidents at grade crossings are a function of the number of trains, train speed, number of train tracks, grade crossing condition and warning facilities, roadway condition and number of lanes, and amount of roadway traffic. Since the proposed merger would not result in any new grade crossings and would affect only the number of trains passing through existing grade crossings, the probability of an increase in the number of accidents at grade crossings would depend on the increased number of trains on rail segments. SEA concludes that the accident exposure in Oklahoma will range from an increase of 168 percent to a decrease of 11 percent depending on rail segment.

### 14.5.2 Hazardous Commodities

Federal regulations govern the transport of hazardous commodities. The proposed merger is not expected to affect the policies or operation of UP/SP concerning the type or quantity of

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hazardous commodities transported or the method of handling. A total of 420,000 and 305,000 hazardous commodity shipments were transported by UP and SP, respectively, in 1994. These shipments resulted in 118 reportable incidents for UP, and 35 incidents for SP. Therefore, 99.98 percent of the shipments arrived at their destination without incident. The Applicants have noted that the consolidation of the companies will result in a "best practice" approach to hazardous commodity handling. SEA concludes that, using the same rate of safe transport, the projected increases in accidents and shipments of hazardous materials as a result of the proposed merger do not constitute a significant safety risk.

## 14.6 Summary of Agency Comments

In considering the potential environmental impacts of the increased rail line segment, rail yard, and intermodal facility activity associated with the proposed merger, SEA sent consultation letters to various Federal, state, and local agencies on January 29, 1996. These letters, samples of which are included in **Volume 5**, Appendix D, Exhibits D-1 through D-9, provided early notification of this EA and requested information and comments on the effects to the environment of the proposed merger and related operational changes. Each letter included a state information packet and maps that listed the specific merger-related proposals. A sample packet is shown in **Volume 5**, Appendix D, Exhibit D-10. SEA contacted agencies by telephone to alert them to the distribution of the consultation letter and to confirm its receipt. The Applicant also contacted these agencies in preparation of the Environmental Report which accompanied the merger application. That correspondence and all responses were reviewed, verified, and considered by SEA in the preparation of this EA.

All comments received (through mid-March 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. Agency comments regarding the proposed increases in rail line segment activities in Oklahoma are summarized below:

 U.S. Bureau of Indian Affairs, Muskogee Office, indicated concerns that additional rail traffic may result in more derailments, hazardous material releases and collisions. Significant impacts to public health and safety are not anticipated if Emergency Response Plans and Emergency Preparedness Plans are in place. Significant impacts to tribal land use, air quality, noise, biological resources, water resources, historic, cultural, archaeological resources and tribal populations are not anticipated.



Oklahoma Fish and Wildlife Department provided a list of federally-listed endangered and threatened species. The most likely one to be affected by the project is the whooping crane. There are extensive forested and emergent wetlands along Beaver River and the importance of riparian habitat was noted. Extreme care should be exercised to ensure that the fragile riparian ecosystem is protected from direct and indirect impacts due to construction, operation and maintenance. There are isolated playa wetlands adjacent to existing railroad facilities; impacts to playa wetlands should be avoided if future modifications or upgrades become necessary.

Oklahoma Department of Environmental Quality stated that it has no comments or objections to the project.

## 14.7 Suggested Mitigation

No specific mitigation measures were suggested for the proposed changes to rail line segment operations in Oklahoma by the various parties consulted in the process of preparing the EA for the proposed merger. (See **Volume 5**, Appendices D and E, for agency consultation lists.)

## 14.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any final decision approving the proposed changes to rail line segment operations in Oklahoma. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA's recommended mitigation is as follows.

## Air Quality

 UP/SP shall consult with appropriate Federal, state and local agencies responsible for regulating air quality in AQCRs 184, 185, 187, and 189 concerning any possible mitigation measures to reduce any potential adverse emissions from the rail segments in these regions. UP/SP shall advise SEA of the results of these consultations.

### Noise

1. To reduce potential noise level impacts to sensitive receptors along the Chickasha to Wichita, Kansas; Fort Worth, Texas to Chickasha; and Stratford,

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Texas to Hutchinson, Kansas rail line segments, UP/SP shall consult with appropriate state and local agencies to develop noise abatement plans. The Applicants shall advise SEA of the results of these consultations and provide SEA with a copy of any resulting noise abatement plans.

### **Transportation and Safety**

- UP/SP shall maintain all rail line and grade crossing warning devices according to Federal Railroad Administration Standards (49 CFR Part 213).
- UP/SP shall transport all hazardous materials in compliance with the U.S. Department of Transportation Hazardous Materials Regulations (49 CFR Parts 171 to 180).
- In the case of a hazardous materials spill, UP/SP shall follow appropriate emergency response procedures outlined in their Emergency Response Plans.

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# CHAPTER 15.0 RAIL LINE SEGMENT, RAIL YARD, AND INTERMODAL FACILITY IMPACTS OREGON

This chapter provides an analysis of the potential environmental impacts resulting from increased traffic on rail segments and increased activity at rail yards and intermodal facilities in Oregon as part of the proposed merger. In analyzing these impacts, the Surface Transportation Board's (Board) Section of Environmental Analysis (SEA), consistent with its environmental rules at 49 CFR Part 1105.7(e), specifically considered: (1) impacts to air quality, (2) impacts to noise, (3) impacts to local, regional and national transportation systems, and (4) impacts to safety.

The following rail line segments, rail yards, and intermodal facilities would meet or exceed the Board's environmental analysis thresholds:

- Dunsmuir, California to Klamath Falls (SP).
- Klamath Falls to Chemult (SP).
- Chemult to Eugene (SP).
- Eugene to Portland (SP).
- Portland to Oregon Trunk Junction (UP).
- Seattle, Washington to Portland (UP).
- Salem rail yard (SP).
- Hinkle rail yard (UP).
- Bend rail yard (UP).
- Portland (Albina) intermodal facility (UP).

Each rail line segment, rail yard, or intermodal facility is discussed in this chapter by impact category, as follows:

- Air quality (Section 15.1).
- Air quality at grade crossings (Section 15.2).
- Noise (Section 15.3)
- Transportation systems (Section 15.4).
  - Safety (Section 15.5).

If a rail line segment, rail yard, or intermodal facility would not experience impacts in any one of these categories as a result of proposed merger, no analysis was necessary. Accordingly, no discussion is provided.

Chapter 1 of this volume describes the thresholds established for analysis of potential air quality and noise impacts and the methods used to evaluate these and other potential impacts.

#### 15.1 Air Quality Analysis

Oregon contains three Air Quality Control Regions (AQCRs) with rail segments, rail yards, and/or intermodal facilities that would experience increased activity as a result of the proposed merger and thereby trigger one or more of the Board's thresholds for analysis. In each of these regions, increased emissions along the length of rail segments through the AQCR (sometimes over a distance of hundreds of miles) could result in a potential for adverse air quality impacts. SEA concludes that increased rail operation activities in these regions would result in increased emissions of nitrogen dioxide (NO<sub>2</sub>), which contributes to the formation of ozone. Increases in emissions, however, would be partially offset by decreases in train activity on other segments. One of the two AQCRs in Oregon (Portland-Oregon-Washington) is designated as nonattainment for ozone.

Potential adverse impacts to air quality in these five AQCRs as a result of the proposed merger are discussed individually below.

## 15.1.1 Central Oregon (AQCR 190)

Rail operations in the Central Oregon AQCR (190) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of four rail segments (Chemult to Eugene, Dunsmuir, California to Klamath Falls, Klamath Falls to Chemult, and Portland to Oregon Trunk Jct.) and the Bend rail yard. There are no intermodal facilities in this AQCR that would exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Central Oregon AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Central Oregon AQCR (190) includes the counties of Crook, Deschutes, Hood River, Jefferson, Klamath, Lake, and Sherman, portions of which are designated as nonattainment for particulate matter (PM-10) and carbon monoxide (CO). In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along eight rail segments and the rail yard. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the Central Oregon nonattainment area.

#### Emissions from Increased Rail Segment Activity

The proposed merger would lead to changes in activity on three rail segments that pass through or are connected to the Central Oregon AQCR (190). The total length (in miles), the change in the number of trains per day on the segments, and the percent change in annual gross ton miles for each of these segments would be as follows:

1	

Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
Bend OR	Chemult OR	69	0.8	17%	7%
Chemult OR	Eugene OR	124	5.2	30%	11%
Dunsmuir CA	Klamath Falls OR	106	5.2	32%	10%
Flanigan NV	Klamath Falls OR	219	0.0	0%	0%
Hinkle OR	Oregon Trk. Jct. OR	89	2.6	10%	8%
Klamath Falls OR	Chemult OR	74	8.1	37%	16%
Oregon Trunk Jct. OR	Bend OR	152	0.8	17%	1%
Portland OR	Oregon Trk. Jct. OR	85	3.0	12%	7%

Four of the rail segments listed above (Chemult to Eugene, Dunsmuir, California to Klamath Falls, Klamath Falls to Chemult, and Portland to Oregon Trunk Jct.) were assessed for air quality impacts because they exceed the Board's analysis thresholds. The increased emissions from these four segments are shown below. The impacts of these emissions are discussed below in the section on Analysis of Combined Activity.

Rail	AQCR	Estin	nated Increas	e in Emissio	ns (tons per	year)
Segment	(ID No.)	HC	CO	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Chemult - Eugene	190	2.0	6.1	45.7	3.3	1.0
Dunsmuir - Klamath Falls	190	1.1	3.4	25.4	1.8	0.5
Kiamath Falls - Chemult	190	7.2	22.4	167.7	12.2	3.6
Portland - Oregon Trunk Jct.	190	3.0	9.5	70.9	5.1	1.5
Total		13.3	41.4	309.7	22.4	6.6

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

## Emissions from Increased Rail Yard Activity

The proposed merger would lead to an increase in rail yard activity of 35.7 percent at the Bend Yard. This activity includes fueling, switching, and assembling of trains. The estimated increased emissions from this rail yard that exceed the Board's threshold are listed in the table below. The impacts of these emissions are discussed below in the section on Analysis of Combined Activity:

Rail Yard	AQCR	Estin	nated increa	se in Emissio	ons (tons per	year)
	(ID No.)		со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Bend	190	0.0	0.0	0.1	0.0	0.0

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

### Analysis of Combined Activity

This section discusses the impact to the Central Oregon AQCR based on the combined estimated emissions from rail segments and the rail yard related to the proposed merger. The total estimated increase in pollutant emissions are listed below:

Rail	AQCR	Estin	nated Increas	se in Emissio	ns (tons per	year)
Facility	(ID No.)	HC	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Rail Segments Total	190	13.3	41.4	309.7	22.4	6.6
Rail Yards Total	190	0.0	0.0	0.1	0.0	0.0
Total		13.3	41.4	309.7	22.4	6.6

Key:

HC = hydrocarbons, CO = carbon monoxide, NO<sub>2</sub> = nitrogen dioxide, SO<sub>2</sub> = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

Most of the estimated increases in pollutants that would result from the proposed merger in the Central Oregon AQCR would be from the rail line segments, which are not stationary sources. Pollutants from the Bend rail yard facility would be lower than the EPA definition of significance (as defined in Prevention of Significant Deterioration at 40 CFR 51.166) for all pollutants. The increased rail segment activity in this AQCR would result in increased levels of all pollutants, with





the greatest increase in NO<sub>2</sub>. The estimates of increased emissions is conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards (NAAQS) General Conformity regulations, the proposed merger would result in increased levels of air pollution in the Central Oregon AQCR, primarily from mobile rail segment emissions.

## 15.1.2 Eastern Oregon (AQCR 191)

Rail operations in the Eastern Oregon AQCR (191) associated with the proposed merger that require analysis as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of the Hinkle rail yard. There are no rail segments or intermodal facilities in this AQCR that would exceed the Board's analysis thresholds. Based on the increased activity levels as a result of the proposed merger, SEA examined the Eastern Oregon AQCR for potential air quality impacts. Overall, in analyzing the potential impacts, SEA concludes that adverse impacts could result from increased rail yard activity in this AQCR.

The Eastern Oregon AQCR (191) includes the counties of Baker, Gilliam, Grant, Harney, Malheur, Morrow, Umatilla, Union, Wallowa, and Wheeler, portions of which are designated as nonattainment for particulate matter (PM-10). In considering the potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along the rail segments and rail yard. SEA concludes that increased rail operations would contribute to increased levels of ozone and other pollutants in the Eastern Oregon nonattainment area.

## **Emissions from Increased Rail Yard Activity**

The proposed merger would lead to changes in rail yard activity of 42.5 percent at the Hinkle rail yard. This activity includes fueling, switching, and assembling of trains. The estimated increased emissions from this facility that exceed the Board's analysis threshold are listed below. The impacts of these emissions are discussed in the section on Analysis of Combined Activity.

Rail Yard	AQCR	Estin	nated increas	se in Emissio	ns (tons per	year)
(ID No.)		HC	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Hinkle	191	0.6	1.9	14.5	1.0	0.3

#### Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

## Analysis of Activity

Pollutants from the rail yard would be lower than the EPA definition of significance (as defined in Prevention of Significant Deterioration at 40 CFR 51.166) for all pollutants. The increased rail operations activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. This estimate of increases in emissions is conservative, as it does not account for offsetting decreases that could result in truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of air pollution in the Eastern Oregon AQCR, primarily from stationary source emissions.

### 15.1.3 Portland Oregon-Washington AQCR (193)

Rail operations in the Portland Oregon-Washington AQCR (193) are associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of four rail segments (Chemult to Eugene, Eugene to Fortland, Portland to Oregon Trunk Jct., and Seattle, Washington to Portland), the Salem rail yard, and the Portland (Albina) intermodal facility. Based on the increased activity levels as a result of the proposed merger, SEA examined the Portland, Oregon-Washington AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Portland Oregon-Washington AQCR (193) includes the counties of Benton, Clackamas, Columbia, Lane, Linn, Marion, Multnomah, Polk, Washington, and Yamhill, portions of which are designated as nonattainment for nitrogen dioxide (NO<sub>2</sub>), total suspended particulates (TSP), particulate matter (PM-10), and carbon monoxide (CO). In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along the rail segments, rail yard, and intermodal facility. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the Portland Oregon-Washington nonattainment area.

#### Emissions from Increased Rail Segment Activity

The proposed merger would lead to changes in activity on some rail segments that pass through or are connected to the Portland Oregon-Washington AQCR (193). The total length (in miles), the change in the number of trains per day on the segments, and the percent change in annual gross ton miles for each of these segments would be as follows:

Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
Chemult OR	Eugene OR	124	5.2	30%	11%
Eugene OR	Portland OR	124	5.2	42%	47%
Portland OR	Oregon Trunk Jct. OR	85	3.0	12%	7%
Portland OR	Seattle WA	186	3.6	8%	6%

All of the rail segments listed above were assessed for air quality impacts because they would exceed the Board's analysis thresholds. The estimated increased emissions from these segments are shown below. The impacts of these emissions are discussed below in the section on Analysis of Combined Activity.

Rail	AQCR	Estin	nated Increas	e in Emissio	ns (tons per	year)
Segment	(ID No.)	НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Chemult - Eugene	193	5.3	16.5	123.6	9.0	2.7
Eugene - Portland	193	22.1	68.7	514.6	37.3	11.2
Portland - Oregon Trunk Jct.	193	1.9	6.1	45.3	3.3	1.0
Portland - Seattle	193	5.0	15.5	116.4	8.4	2.5
Totai		34.3	106.8	799.9	58.0	17.4

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2 =$  nitrogen dioxide,  $SO_2 =$  sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

## **Emissions from Increased Rail Yard Activity**

The proposed merger would lead to an increase in rail yard activity of 53.8 percent in the Salem yard. This activity includes fueling, switching, and assembling of trains. The estimated increased emissions from this facility that would exceed the Board's threshold are listed below. The impacts of these emissions are discussed in the section on Analysis of Combined Activity.

Rail Yard	AQCR	Estimated Increase in Emissions (tons per year)					
	(ID No.)	HC	CO	NO <sub>2</sub>	SO2	PM-10	
Salem	193	0.0	0.1	0.4	0.0	0.0	

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

#### Emission from Increased Intermodal Activity

The proposed merger would lead to an increase of 274 trucks per day at the Portland (Albina) facility. The increased emissions from this intermodal facility are listed below. The increase in emissions would be offset by the consolidation of the UP and SP facilities.

Intermodai Facility	AQCR	Estir	mated Increas	se in Emissio	ns (tons per	year)
	(ID No.)	HC	CO	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Portland (Albina)	193	7.0	32.7	38.6	1.1	6.8

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen oxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

### Analysis of Combined Activity

This section discusses the impact to the Portland, Oregon-Washington based on the combined estimated emissions from the rail segments, the rail yard, and the intermodal facility related to the proposed merger. The total estimated increase in pollutant emissions are listed below:

Rail	AQCR	Estimated Increase in Emissions (tons per year)					
Segment	(ID No.)	HC	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10	
Rail Segments Total	193	34.3	106.8	799.9	58.0	17.4	
Rail Yards Total	193	0.0	0.1	0.4	0.0	0.0	
Intermodal Facilities Total	193	7.0	32.7	38.6	1.1	6.8	
Total		41.3	139.6	838.9	59.1	24.2	

HC = hydrocarbons, CO = carbon monoxide, NO<sub>2</sub> = nitrogen oxide, SO<sub>2</sub> = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

Most of the estimated increases in pollutants from the proposed merger in the Portland Oregon-Washington AQCR (193) would be from the rail line segments, which are not stationary sources. Pollutants from the rail yard facility and the intermodal facility would be lower than the EPA definition of significance (as defined in Prevention of Significant Deterioration at 40 CFR 51.166) for CO, NO<sub>2</sub>, and SO<sub>2</sub> pollutants. The increased rail segment activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards (NAAQS) General Conformity regulations, the proposed merger would result in increased levels of pollution in the Portland Oregon-Washington AQCR, primarily from mobile rail segment emissions.

#### 15.2 Air Quality Impacts at Grade Crossings

SEA assessed the overall air quality impacts of emissions from idling vehicles waiting at grade crossings. On average, annual emissions at a grade crossing with 5,000 vehicles per day would be 0.0021 ton of volatile organic compounds, 0.0013 ton of hydrocarbons, 0.0111 ton of carbon monoxide, and 0.0003 ton of nitrogen dioxide (NO<sub>2</sub>) per train crossing. Traffic volumes of more than 5,000 vehicles per day would increase the estimated emissions accordingly. Railroad crossings tend to be grade-separated when roadway and/or train traffic volumes become high, so the air quality impacts at grade crossings would generally be relatively minor. In Oregon, most grade crossings carry 5,000 or fewer vehicles. SEA concludes that the no adverse air quality impacts would result from increased grade crossing delays as a result of the proposed merger. Section 15.4.2 of this chapter contains information on the transportation impacts of grade crossing delays associated with increased rail segment activity.

#### 15.3 Noise Analysis

SEA performed noise analyses to identify noise-sensitive land uses where the proposed changes in operations could result in increases in noise exposure that meet or exceed the Board's environmental analysis thresholds at 49 CFR 1105.7(e)(6). The following discussion provides an estimate of the number of noise-sensitive receptors (e.g., residences, schools, churches) where the Board's thresholds would be exceeded, potentially causing an adverse increase in noise exposure. The noise level impact assessment was based on the baseline and projected activity level data provided by UP/SP.

### 15.3.1 Increased Rail Segment Activity

## Klamath Falls to Chemult

This rail segment, which currently has 22.1 trains/day, would experience an increase of 8.1 trains/day (a change of 15.5 percent in gross ton-miles per year) as a result of the proposed merger. The projected increase in train volume and gross ton-miles on this segment would cause less than a 2 dBA increase in the  $L_{dn}$ . No adverse noise impacts are expected.

#### 15.3.2 Increased Rail Yard Activity

### Hinkle

The Hinkle raii yard is a hump facility that would have a carload activity increase below the Board's threshold criterion of 100 percent however, the existing volume of 793.7 cars per day is substantial. The land use surrounding the Hinkle Yard is primarily open land, and there would be no sensitive receptors within the 65 dBA  $L_{dn}$  contour for either the pre- or post-merger conditions.

#### 15.3.3 Increased Intermodal Facility Activity

#### Portland

The UP/SP intermodal facilities in the Portland area would be consolidated at the UP Portland (Albina) facility, which is projected to have an activity increase greater than the Board's threshold criterion of 50 trucks per day. The UP Portland (Albina) intermodal facility currently serves approximately 289 trucks per day. This facility is expected to experience an average increase of 274 trucks per day due to consolidation of SP Portland intermodal activities at the UP Albina facility. The UP Portland (Albina) facility is located on North Interstate Avenue, west of Interstate 5 and Interstate 405. The primary truck transportation route to the facility is via Interstate 5, and North Interstate Avenue. The expected increase in truck traffic on Interstate Avenue near this intermodal facility is projected to cause a maximum of 1.9 dBA increase in noise exposure along this road. The increase in noise levels from the intermodal trucks and cranes at the Albina facility would exceed the Board's impact criterion of 2 dBA L<sub>dn</sub>, and the volume of intermodal activity at this facility would be significant, with 257,000 lifts/year. The land use to the northeast of this facility is residential; however the difference in elevation would reduce noise levels at these receptors. There would be no sensitive receptors within the 65 dBA L<sub>dn</sub> contour for either the preor post-merger conditions.

#### 15.4 Transportation Systems

The Board's environmental rules at 49 CFR 1105.7(e)(2) require a description of the effects

of the proposed merger on local and regional transportation systems. The primary transportation impacts of the proposed merger are related to: (1) additional truck traffic generated at those intermodal facilities where intermodal activity is projected to increase, and (2) increases in roadway delays at grade crossings as a result of increased train traffic on rail segments.

The impacts near intermodal facilities would result from increased truck traffic using local roadways to enter and exit the intermodal facility. For those facilities with an expected increase of 50 trucks or more per day, SEA analyzed the impacts of this increased traffic on the local roadway system in terms of increases in daily and peak hour traffic. SEA collected traffic count data from local and state transportation officials for this analysis. While the offsetting benefits of the proposed merger were not quantified at the local level, the traffic impacts from added truck traffic at intermodal facilities would be partially offset in many localities by truck-to-rail diversions and consolidation of operations. SEA concludes that the impacts on the local transportation system from the one intermodal facility in Oregon would not cause significant adverse impacts.

SEA addressed the concerns of local communities about increased traffic delays at grade crossing through an evaluation of vehicle delay and wait times at grade crossing locations. It is important to note that the acceptability of delays at grade crossings varies substantially based on local conditions such as the location of land uses by type, availability of alternative travel routes, the degree of use by emergency vehicles, and other local variables. While the time of delay at grade crossings would increase proportionately with the increase in train traffic, most of the grade crossings in Oregon carry fewer than 5,000 vehicles per day. SEA concludes that increases in vehicle delay and/or wait time due to merger-related operational changes would not be excessive.

## 15.4.1 Intermodal Facilities

#### Portland (Albina)

The UP and SP intermodal facilities in the Portland area would be consolidated at the UP Portland (Albina) facility. The UP Portland (Albina) facility is located on North Interstate Avenue, west of Interstate 5 and Interstate 405. The primary truck transportation route to the facility is via Interstate 5 and North Interstate Avenue. The UP Portland (Albina) intermodal facility currently serves approximately 289 trucks per day. This facility is expected to experience an average increase of 274 trucks per day due to consolidation of SP Portland intermodal activities at the UP Albina facility. This increase is greater than the ICC thresho. 4 of 50 trucks per day for this non-attainment AQCR.

Average Daily Traffic (ADT) volumes for the vicinity of the intermodal facility were obtained from the City of Portland. A count done in 1993 showed the ADT volume along North Interstate Avenue at 10,300 vehicles. The additional 274 trucks per day that are expected at this facility would represent a 5.3 percent increase in ADT volume on North interstate Avenue. Increased

traffic at the Albina facility would be offset on a regional basis by decreases at the closed SP facility.

### 15.4.2 Grade Crossings

In order to analyze the effects of the proposed merger on the roadway system at railroad grade crossings, SEA determined the number of crossings along rail segments that exceed the Board's analysis thresholds for air quality analysis. Approximate delays over the course of 24 hours were calculated, as were average queue lengths. While an increase in the number of trains would result in more crossing closings per day, the length of the queue at each individual crossing closing event would change only if the train length changes. Vehicle delay impacts along rail line segments in Oregon are summarized below.

#### **Dunsmuir, California to Klamath Falls**

On the Dunsmuir to Klamath Falls line, average rail traffic would increase from 16.5 to 21.7 trains per day, a train volume increase of about 32 percent. There are four grade crossings along this segment in Oregon, none of which have ADT counts greater than 5,000 vehicles per day. At typical and high speed grade crossings along the route (e.g., train speed of 60 mph), delay to vehicle traffic would increase from 27 minutes (pre-merger) to 35 minutes (post-merger) over a 24-hour period). The maximum queue length per train due to peak hour vehicle traffic would range from one to seven vehicles. The corresponding delay per vehicle would be approximately 1.11 minutes.

### Klamath Falls to Chemult

Average rail traffic on the Klamath Falls to Chemult line would increase from 22.1 to 30.2 trains per day, a train volume increase of about 37 percent. There are 18 grade crossings along this segment, none of which have ADT counts greater than 5,000 vehicles per day. At typical and high speed grade crossings along the route (e.g., train speed of 60 mph), delay to vehicle traffic would increase from 28 minutes (pre-merger) to 38 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings (e.g., train speed of 40 mph), delay to vehicle traffic would increase from 36 minutes (pre-merger) to 49 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from one to four vehicles. The corresponding delay per vehicle would vary from 1.11 to 1.35 minutes.

#### Chemult to Eugene

On the Chemult to Eugene line, average rail traffic would increase from 17.4 to 22.6 trains per day, a train volume increase of about 30 percent. There are 31 grade crossings along this segment, one of which has an ADT count greater than 5,000 vehicles per day. At typical speed

grade crossings along the route (e.g., train speed of 40 mph), delay to vehicle traffic would increase from 36 minutes (pre-merger) to 47 minutes (post-merger) over a 24-hour period. At the highest speed grade crossings (e.g., train speed of 60 mph), delay to vehicle traffic would increase from 28 minutes (pre-merger) to 37 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings (e.g., train speed of 20 mph), delay to vehicle traffic would increase from 61 minutes (pre-merger) to 79 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from one to seven vehicles. The corresponding delay per vehicle would vary from 1.11 to 1.77 minutes.

### **Eugene to Portland**

On the 124-mile Eugene to Portland line, average rail traffic would increase from 12.3 to 17.5 trains per day, a train volume increase of about 42 percent. There are 167 grade crossings along this segment, 29 of which have ADT counts greater than 5,000 vehicles per day. At typical and high speed grade crossings along the route (e.g., train speed of 60 mph), delay to vehicle traffic would increase from 20 minutes (pre-merger) to 28 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings (e.g., train speed of 20 mph), delay to vehicle traffic would increase from 43 minutes (pre-merger) to 61 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from 1 to 35 vehicles. The corresponding delay per vehicle would vary from 1.11 to 2.06 minutes.

#### Portland to Oregon Trunk Junction

Average rail traffic on the Portland to Oregon Trunk Junction line would increase from 24.9 to 27.9 trains per day, a train volume increase of about 12 percent. There are 58 grade crossings along this segment. At typical speed grade crossings along the route (e.g., train speed of 40 mph), delay to vehicle traffic would increase from 52 minutes (pre-merger) to 58 minutes (post-merger) over a 24-hour period. At the highest speed grade crossings (e.g., train speed of 65 mph), delay to vehicle traffic would increase from 38 minutes (pre-merger) to 43 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from 1 to 32 vehicles. The corresponding delay per vehicle would vary from 1.07 to 1.35 minutes.

#### Seattle, Washington Portland

On the 186-mile Seattle. Washington to Portland line segment, average rail traffic would increase from 46.5 to 50.1 trains per day, a train volume increase of about 8 percent. There are 82 grade crossings along this segment, 11 of which have ADT counts greater than 5,000 vehicles per day. At typical speed grade crossings along the route in Oregon (e.g., train speed of 25 mph), delay to vehicle traffic would increase from 35 minutes (pre-merger) to 43 minutes (post-merger) over a 24-hour period. At high speed grade crossings along the route (e.g., train speed of 70 mph),

delay to vehicle traffic would increase from 25 minutes (pre-merger) to 30 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings (e.g., train speed of 10 mph), delay to vehicle traffic would increase from 107 minutes (pre-merger) to 130 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from 1 to 53 vehicles. The corresponding delay per vehicle would vary from 1.01 to 3.48 minutes.

### 15.5 Safety

SEA assessed a number of safety issues associated with the proposed merger, including the probability of increased accidents at grade crossings, and the risks associated with increased shipments of hazardous commodities.

### 15.5.1 Grade Crossing Safety

Accidents at grade crossings are a function of the number of trains, train speed, number of train tracks, grade crossing condition and warning facilities, roadway condition and number of lanes, and amount of roadway traffic. Since the proposed merger would not result in any new grade crossings and would affect only the number of trains passing through existing grade crossings, the probability of an increase in the number of accidents at grade crossings would depend on the increased number of trains on rail segments. SEA concludes that the accident exposure in Oregon will range from an increase of 42 percent to a decrease of 7 percent depending on rail segment.

#### 15.5.2 Hazardous Commodities

Federal regulations govern the transport of hazardous commodities. The proposed merger is not expected to affect the policies or operation of UP/SP concerning the type or quantity of hazardous commodities transported or the method of handling. A total of 420,000 and 305,000 hazardous commodity shipments were transported by UP and SP, respectively, in 1994. These shipments resulted in 118 reportable incidents for UP, and 35 incidents for SP. Therefore, 99.98 percent of the shipments arrived at their destination without incident. The Applicants have noted that the consolidation of the companies will result in a "best practice" approach to hazardous commodity handling. SEA concludes that, using the same rate of safe transport, the projected increases in accidents and shipments of hazardous materials as a result of the proposed merger do not constitute a significant safety risk.

#### 15.6 Summary of Agency Comments

In considering the potential environmental impacts of the increased rail line segment, rail yard, and intermodal facility activity associated with the proposed merger, SEA sent consultation

letters to various Federal, state, and local agencies on January 29, 1996. These letters, samples of which are included in **Volume 5**, Appendix D, Exhibits D-1 through D-9, provided early notification of this EA and requested information and comments on the effects to the environment of the proposed merger and related operational changes. Each letter included a state information packet and maps that listed the specific merger-related proposals. A sample packet is shown in **Volume 5**, Appendix D, Exhibit D-10. SEA contacted agencies by telephone to alert them to the distribution of the consultation letter and to confirm its receipt. The Applicant also contacted these agencies in preparation of the Environmental Report which accompanied the merger application. That correspondence and all responses were reviewed, verified, and considered by SEA in the preparation of this EA.

All comments received (through mid-March 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. Agency comments regarding the proposed increases in rail line segment, rail yard, and intermodal facility activities in Oregon are summarized below:

- Public Utility Commission no longer has to staff or the information available to provide relevant comments on Finance Docket No. 32760. They referred all information to the Oregon Department of Transportation.
- Clackamas County would like to have more information regarding the proposed increase in traffic volumes on SP line. The County is concerned that increased train traffic will have an adverse safety impact at all at-grade crossings in county, specifically Railroad Avenue and Harmony Road east of Milwaukie.
- Klamath County indicated that the increase in train volume brought forth many concerns: noise pollution, geological instability, and hazardous materials. The County did indicate that segments do not meet the ICC analysis standard. The noise pollution level in the County will rise less than two decibels and will not exceed 65 dBA. The County expressed some concerns about hazardous commodities being transported through Klamath Falls. Also noted was the concern that UP/SP will move the switching yard from Klamath Falls to Crescent Lake; most housing would need to be built in order to meet the needs of the employees.
- City of Salem has 15 at-grade crossings. The increased traffic along SP line will impact citizens' ability to travel into and out the CBD. All of the at-grade crossings are locally maintained. The central and northern portions of line are adjacent to commercial, institutional and historic areas and bisects three neighborhoods. The metropolitan area is in nonattainment for CO and Ozone. Increased train traffic will

result in decline of quality of life for residents who live adjacent and impact other land uses.

## 15.7 Suggested Mitigation

No specific mitigation measures were suggested for the proposed changes to rail line segment, rail yard, or intermodal facility operations in Oregon by the various parties consulted in the process of preparing the EA for the proposed merger. (See **Volume 5**, Appendices D and E, for agency consultation lists.)

#### 15.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any tinal decision approving the proposed changes to rail line segment, rail yard, and intermodal facility operations in Oregon. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA's recommended mitigation is as follows.

### Air Quality

 UP/SP shall consult with appropriate Federal, state and local agencies responsible for regulating air quality in AQCRs 190, 191, and 193, concerning any possible mitigation measures to reduce any potential adverse emissions from the rail segments, rail yards, and intermodal facilities in these regions. UP/SP shall advise SEA of the results of these consultations.

### Noise

- To reduce potential noise level impacts to sensitive receptors along the Dunsmuir, California to Klamath Falls, Klamath Falls to Chemult, Chemult to Eugene, Eugene to Portland, Portland to Oregon Trunk Junction, and Seattle, Washington to Portland rail line segments, UP/SP shall consult with appropriate state and local agencies to cavelop noise abatement plans. The Applicant shall advise SEA of the results of these consultations and provide SEA with a copy of any resulting noise abatement plans.
- To reduce potential noise level impacts to sensitive receptors near the Salem, Bend, and Hinkle rail yards, UP/SP shall consult with appropriate state and local agencies to develop noise abatement plans. The Applicant shall advise SEA of the results of these consultations and provide SEA with a copy of any resulting noise abatement plans.

 To reduce potential noise level impacts to sensitive receptors near the Portland intermodal facility, UP/SP shall consult with appropriate state and local agencies to develop noise abatement plans. The Applicant shall advise SEA of the results of these consultations and provide SEA with a copy of any resulting noise abatement plans.

## Transportation and Safety

- UP/SP shall consult with the Clackamas County and the City of Salem which are concerned about the safety and potential effects of additional rail traffic on vehicular traffic. Accordingly, UP/SP shall develop, with the above city and county, a mutually agreeable mitigation plan. UP/SP shall periodically advise SEA of the status of these consultations and shall submit any final mitigation plans to SEA.
- 2. UP/SP shall conduct traffic studies for intermodal facilities located in Portland that could experience increases of over 5 percent in truck traffic as a result of operational changes associated with the proposed merger. This level of traffic increase could potentially result in a noticeable impact on local traffic densities around the intermodal facility. These studies will assist local jurisdictions in developing transportation plans for these areas.
- 3. UP/SP shall maintain all rail line and grade crossing warning devices according to Federal Railroad Administration Standards (49 CFR Part 213).
- UP/SP shall transport all hazardous materials in compliance with the U.S. Department of Transportation Hazardous Materials Regulations (49 CFR Parts 171 to 180).
- 5. In the case of a hazardous materials spill, UP/SP shall follow appropriate emergency response procedures outlined in their Emergency Response Plans.

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# CHAPTER 16.0 RAIL LINE SEGMENT, RAIL YARD, AND INTERMODAL FACILITY IMPACTS TEXAS

This chapter provides an analysis of the potential environmental impacts resulting from increased traffic on rail segments and increased activity at rail yards and intermodal facilities in Texas as part of the proposed merger. In analyzing these impacts, the Surface Transportation Board's (Board) Section of Environmental Analysis (SEA), consistent with its environmental rules at 49 CFR Fart 1105.7(e), specifically considered: (1) impacts to air quality, (2) impacts to noise, (3) impacts to local, regional and national transportation systems, and (4) impacts to safety.

The following rail line segments, rail yards, and intermodal facilities would meet or exceed the Board's environmental analysis thresholds:

- El Paso to Dalhart (SP).
- Dalhart to Stratford (SP).
- Stratford to Hutchinson, Kansas (SP).
- El Paso to Sierra Blanca (SP).
- Sierra Blanca to Toyah (UP).
- Toyah to Big Spring (UP).
- Big Spring to Fort Worth (UP).
- Fort Worth to Dallas (UP).
- Dallas to Big Sandy (UP).
- Big Sandy to Texarkana (UP).
- Fort Worth to Chickasha, Oklahoma (UP).
- Lufkin to Shreveport, Louisiana (SP).
- Iowa Junction, Louisiana to Beaumont (SP).
- Amarillo rail yard (SF).
- El Paso rail yard (SP).
- Bellmead rail yard (SP).
- Fort Worth rail yard (UP).
- Dallas intermodal facility (SP).
- San Antonio intermodal facility (UP).

Each rail line segment, rail yard, or intermodal facility is discussed in this chapter by impact category, as follows:

- Air quality (Section 16.1).
- Air quality at grade crossings (Section 16.2).
- Noise (Section 16.3).
- Transportation systems (Section 16.4).
- Safety (Section 16.5).



If a rail line segment, rail yard, or intermodal facility would not experience impacts in any one of these categories as a result of proposed merger, no analysis was necessary. Accordingly, no discussion is provided.

Chapter 1 of this volume describes the thresholds established for analysis of potential air quality and noise impacts and the methods used to evaluate these and other potential impacts.

## 16.1 Air Quality Analysis

Texas contains nine Air Quality Control Regions (AQCR) with rail segments, rail yards, and/or intermodal facilities that would experience increased activity as a result of the proposed merger, and thereby trigger one or more of the Board's thresholds for analysis. In each of these regions, increased emissions along the length of rail segments through the AQCR (sometimes over a distance of hundreds of miles) could result in a potential for adverse air quality impacts. SEA concludes that increased rail operation activities in these regions would result in increased emissions of nitrogen dioxide (NO<sub>2</sub>), which contributes to the formation of ozone. Increases in emissions, however, would be partially offset by decreases in train activity on other segments. Three of the AQCRs in Texas (Southern Louisiana-Southeast Texas, El Paso-Las Cruces-Almagordo, and Metropolitan Dallas-Ft. Worth) are designated as nonattainment for ozone.

Potential adverse impacts to air quality in these nine AQCRs as a result of the proposed merger are discussed individually below.

#### 16.1.1 Shreveport-Texarkana-Tyler (AQCR 22)

Rail operations in the Shreveport-Texarkana-Tyler AQCR (22) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of two rail segments (Dallas to Big Sandy and Big Sandy to Texarkana). There are no intermodal facilities or rail yards in this AQCR that would exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Shreveport-Texarkana-Tyler AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Shreveport-Texarkana-Tyler AQCR (22) includes the counties of Anderson, Bowie, Camp, Cass, Cherokee, Delta, Franklin, Gregg, Harrison, Henderson, Hopkins, Lamar, Marion, Morris, Panola, Rains, Red River, Rusk, Smith, Titus, Upshur, Van Zandt, and Wood, all of which are designated as in attainment. In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along two rail segments. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the Shreveport-Texarkana-Tyler attainment area.

## **Emissions from Increased Rail Segment Activity**

The proposed merger would lead to changes in activity on 12 rail segments that pass through or are connected to Shreveport-Texarkana-Tyler (22). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of these segments would be as follows:

Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
Dallas TX	Big Sandy TX	98	7.2	26%	50%
Big Sandy TX	Tyler TX	26	-5.3	-70%	-40%
Lewisville AR	Texarkana TX	29	3.6	31%	39%
Longview TX	Big Sandy TX	18	-2.7	-15%	-11%
Longview TX	Palestine TX	81	-5.3	-32%	0%
Marshall TX	Longview TX	23	-6.2	-18%	-5%
Palestine TX	Valley Jct. TX	94	0.6	7%	21%
Palestine TX	Spring TX	271	-4.4	-25%	-3%
Shreveport LA	Marshall TX	36	-2.7	-35%	10%
Texarkana AR	Marshall TX	67	-9.4	-2.8%	-17%
Big Sandy TX	Texarkana TX	108	6.6	56%	1.5%
Tyler TX	Corsicana TX	75	-5.3	-68%	1.5%

Two of the 12 rail segments listed above (Dallas to Big Sandy and Big Sandy to Texarkana) were assessed for air quality impacts because they would exceed the Board's analysis thresholds. The estimated increased emissions from these two rail segments are shown below. The impacts of these emissions are discussed below in the section on Analysis of Activity.

Rail	AQCR	Estimated Increase in Emissions (tons per year)					
Segment (ID No	(ID No.)	HC	со	NO <sub>2</sub>	SO2	PM-10	
Dallas - Big Sandy	22	12.9	40.1	300.2	21.8	6.5	
Big Sandy - Texarkana	22	27.7	86.2	645.4	46.8	14.0	
Total		40.6	126.3	945.6	68.5	20.5	

#### Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter



## Analysis of Activity

The increased rail segment activity in this AQCR would result in increased levels of ozone and other pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Shreveport-Texarkana-Tyler AQCR, primarily from mobile rail segment emissions.

## 16.1.2 Southern Louisiana-Southeast Texas (AQCR 106)

Rail operations in the Southern Louisiana-Southeast Texas AQCR (106) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of two rail segments (Iowa Jct., Louisiana, to Beaumont and Lufkin to Shreveport, Louisiana). There are no intermodal facilities or rail yards in this AQCR that would exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Southe siana-Southeast Texas AQCR for potential air quality impacts. SEA concludes that adverse quality could result from increased rail segment activity in this AQCR.

The Southern Louisiana-Southeas includes the counties of Angelina, Houlton, Jasper, Jefferson, Nacogoo range, Polk, Sabine, San Augustine, Jacinto, Shelby, Trinity, Tyler, and Walke which are designated as nonattainment for ozone (O<sub>3</sub>). In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along two rail segments. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the Southern Louisiana-Southeast Texas nonattainment area.

#### **Emissions from Increased Rail Segment Activity**

The proposed merger railways would lead to changes in activity on six rail segments that pass through or are connected to Southern Louisiana-Southeast Texas (106). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of these segments would be as follows:

	-	-	
1			

Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
Beaumont TX	Dayton TX	48	1.4	10%	28%
Beaumont TX	Houston TX	79	-3.3	-26%	-16%
Iowa Jct. LA	Beaumont TX	75	15.3	99%	74%
Lufkin TX	Houston TX	122	2.4	26%	1%
Palestine TX	Spring TX	271	-4.4	-25%	-3%
Lufkin TX	Shreveport LA	116	3.5	42%	3%

Two of the six rail segments listed above (Iowa Jct., Louisiana to Beaumont and Lufkin to Shreveport, Louisiana) were assessed for air quality impacts because they would exceed the Board's analysis thresholds. The estimated increased emissions from these two rail segments are shown below. The impacts of these emissions are discussed below in the section on Analysis of Activity.

Rail	AQCR	Estin	nated Increa	se in Emissio	ns (tons per	year)
Segment (ID	(ID No.)	НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
lowa Jct Beaumont	106	9.7	30.0	224.9	16.3	4.9
Lufkin - Shreveport	106	0.6	1.8	13.3	1.0	0.3
Total		10.3	31.8	238.2	17.3	5.2

Key:

HC = hydrocarbons, CO = carbon monoxide, NO<sub>2</sub> = nitrogen dioxide, SO<sub>2</sub> = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

## Analysis of Activity

This increased rail segment activity in this AQCR would result in increased levels of ozone and other pollutants. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Southern Louisiana-Southeast Texas AQCR, primarily, from mobile rail segment emissions.

## 16.1.3 El Paso-Las Cruces-Almagordo (AQCR 153)

Rail operations in the El Paso-Las Cruces-Almagordo AQCR (153) associated with the

proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of four rail segments (El Paso to Dalhart, Lordsburg, New Mexico to El Paso, El Paso to Sierra Blanca, and Sierra Blanca to Toyah). There are no proposed intermodal facilities or rail yards in this AQCR that would exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the El Paso-Las Cruces-Almagordo AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The El Paso-Las Cruces-Almagordo AQCR (153) includes the counties of Brewster, Culberson, El Paso, Hudspeth, Jeff Davis, and Presidio, portions of which are designated as nonattainment for particulate matter (PM-10), carbon monoxide (CO), and ozone (O<sub>3</sub>). In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along four rail segments. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the El Paso-Las Cruces-Almagordo nonattainment area.

## **Emissions from Increased Rail Segment Activity**

The proposed merger would lead to changes in activity on five rail segments that pass through or are connected to El Paso-Las Cruces-Almagordo AQCR (153). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of these segments would be as follows:

Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
El Paso TX	Dalhart TX	425	7.6	63%	21%
Lordsburg NM	El Paso TX	148	15.4	53%	29%
El Paso TX	Sierra Blanca TX	88	5.8	27%	21%
Spotford TX	Sierra Blanca TX	378	-4.1	-21%	-32%
Sierra Blanca TX	Toyah TX	110	9.9	471%	431%

Four of the five rail segments listed above (El Paso to Dalhart, Lordsburg, New Mexico to El Paso, El Paso to Sierra Blanca, and Sierra Blanca to Toyah) were assessed for air quality impacts because they would exceed the Board's analysis thresholds. The estimated increased emissions from the rail segments are shown below. The impacts of these emissions are discussed below in the section on Analysis of Combined Activity.

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Rail	AQCR	Estimated Increase in Emissions (ton per year)					
Segment	(ID No.)	НС	со	NO <sub>2</sub>	SO2	PM-10	
El Paso - Dalhart	153	19.5	60.7	454.3	32.9	9.8	
Lordsburg - El Paso	153	18.3	57.0	426.6	30.9	9.2	
El Paso - Sierra Blanca	153	12.3	38.1	285.2	20.7	6.2	
Sierra Blanca - Toyah	153	27.5	85.5	639.9	46.4	13.9	
Total		77.6	241.3	1806.0	130.9	39.1	

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2 = r_{el}$  rogen dioxide,  $SO_2 =$  sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

## **Emissions from Increased Rail Yard Activity**

The proposed merger would lead to an increase in rail yard activity of 34.1 percent at the El Paso rail yard. This activity includes fueling, switching, and assembling of trains. The estimated increased emissions from this rail yard are shown below. The impacts of these emissions are discussed below in the section on analysis of Combined Activity.

Rail Yard	AQCR	Estin	nated Increa	se in Emissio	ons (tons per	year)
	(ID No.)	HC	со	NO2	SO <sub>2</sub>	PM-10
El Paso	153	0.3	0.9	6.4	0.5	0.1

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

## **Analysis of Combined Activity**

This section discusses the impact to the El Paso-Las Cruces-Almagordo AQCR based on the combined estimated emissions from the rail segments and the rail yard related to the proposed merger. The total estimated increases in pollutant emissions are listed below:

Rail Facility	AQCR	Estimated Increase in Emissions (tons per year)					
	(ID No.)	НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10	
Rail Segments Total	153	77.6	241.3	1806.0	130.9	39.1	
Rail Yards Total	153	0.3	0.9	6.4	0.5	0.1	
Total		77.9	242.2	1812.4	131.4	39.2	

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

Almost all of the estimated increase in pollutants that would result from the proposed merger in the El Paso-Las Cruces-Almagordo AQCR (153) would be from rail segments, which are not stationary sources. Pollutants from the El Paso rail yard facility would be lower than the EPA definition of significance (as defined in Prevention of Significant Deterioration at 40 CFR 51.166) for all pollutants. The increased rail segment activity in this AQCR would result in increased levels of ozone and other pollutants, with the greatest increased in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the El Paso-Las Cruces-Almagordo AQCR, primarily from mobile rail segment emissions.

#### 16.1.4 Abilene-Wichita Falls (AQCR 210)

Rail operations in the Abilene-Wichita Falls AQCR (210) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of two rail segments (Fort Worth to Chickasha, Oklahoma and Big Spring to Fort Worth). There are no intermodal facilities or rail yards in this AQCR that would exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Abilene-Wichita Falls AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Abilene-Wichita Falls AQCR (210) includes the counties Archer, Baylor, Brown, Callahan, Childress, Clay, Coke, Coleman, Commanche, Concho, Cottle, Eastland, Fisher, Foard, Hardeman, Haskell, Jack, Jones, Kent, Knox, McCulloch, Menard, Mitchell, Montague, Nolan, Runnels, Scurry, Shackelford, Stephens, Stonewall, Taylor, Throckmorton, Wichita, Wilbarger, and Young, all of which are designated as in attainment. In considering potential environmental

impacts, SEA assessed the potential air quality impacts of increased activity along two rail segments. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the Abilene-Wichita Falls attainment area.

## **Emissions from Increased Rail Segment Activity**

The proposed merger would lead to changes in activity on four rail segments that pass through or are connected to Abilene-Wichita Falls AQCR (210). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of these segments would be as follows:

Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
Amarillo TX	Fort Worth TX	368	2.2	12%	17%
Fort Worth TX	Chickasha OK	178	6.6	87%	113%
Big Spring TX	Fort Worth TX	268	9.0	360%	261%
Purcell OK	Fort Worth TX	169	-2.0	-11%	-4%

Two of the four rail segments listed above (Fort Worth to Chickasha, Oklahoma and Big Spring to Fort Worth) were assessed for air quality impacts because they would exceed the Board's analysis thresholds. The estimated increased emissions from these two segments are shown below. The impacts of these emissions are discussed below in the section on Analysis of Activity.

Rail Segment	AQCR	Estimated Increase in Emissions (tons per year)					
	(ID No.)	НС	со	NO <sub>2</sub>	SO2	PM-10	
Fort Worth - Chickasha	210	10.7	33.1	248.0	18.0	5.4	
Big Spring - Fort Worth	210	48.9	152.1	1138.4	82.5	24.7	
Total		59.6	185.2	1386.4	100.5	30.1	

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

## Analysis of Activity

The increased rail segment activity in this AQCR would result in increased levels of ozone and other pollutants. These estimates of increased emissions are conservative, however, because they do not account for cffsetting decreases that could result from truck-to-rail diversions. Overall,



SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Abilene-Wichita Falis AQCR, primarily from mobile rail segment emissions.

## 16.1.5 Amarillo-Lubbock (AQCR 211)

Rail operations in the Amarillo-Lubbock AQCR (211) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of three rail segments (El Paso to Dalhart, Stratford to Hutchinson, Kansas and Dalhart to Stratford) and the Amarillo rail yard. There are no proposed intermodal facilities in this AQCR that exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Amarillo-Lubbock AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality may result from increased rail segment activity in this AQCR.

The Amarillo-Lubbock AQCR (211) includes the counties of Armstrong, Bailey, Briscoe, Carson, Castro, Cochran, Collingsworth, Crosby, Dallam, Deaf Smith, Dickens, Donley, Floyd, Garza, Gray, Hale, Hall, Hansford, Hartley, Hemphill, Hockley, Hutchinson, King, Lamb, Lipscomb, Lubbock, Lynn, Moore, Motley, Ochiltree, Oldham, Parmer, Potter, Randall, Roberts, Sherman, Swisher, Terry, Wheeler, and Yoakum, all of which are designated as in attainment. In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along three rail segments and the rail yard. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the Amarillo-Lubbock attainment area.

#### **Emissions from Increased Rail Segment Activity**

The proposed merger would lead to changes in activity on seven rail segments that pass through or are connected to Amarillo-Lubbock AQCR (211). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of these segments would be as follows:

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Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
Amarillo TX	Fort Worth TX	368	2.2	12%	17%
El Paso TX	Dalhart TX	425	7.6	63%	21%
Dalhart TX	Amarillo TX	82	2.8	18%	9%
Stratford TX	Hutchinson KS	274	8.8	78%	24%
La Junta CO	Stratford TX	171	2.7	31%	42%
Stratford TX	Amarillo TX	88	1.7	25%	32%
Dalhart TX	Stratford TX	31	8.6	65%	34%

Three of the seven rail segments listed above (El Paso to Dalhart, Stratford to Hutchinson, Kansas and Dalhart to Stratford) were assessed for air quality impacts because they would exceed the Board's analysis thresholds. The estimated increased emissions from these three segments are shown below. The impacts of these emissions are discussed below in the section on Analysis of Combined Activity.

Rail Segment	AQCR (ID No.)	Estimated Increase in Emissions (tons per year)					
		НС	СО	NO <sub>2</sub>	SO <sub>2</sub>	PM-10	
El Paso - Dalhart	211	3.4	10.6	79.0	5.7	1.7	
Stratford - Hutchinson	211	1.9	5.8	43.4	3.1	0.9	
Dalhart - Stratford	211	5.3	16.4	122.5	8.9	2.7	
Total		10.6	32.8	244.9	17.7	5.3	

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

## **Emissions from Increased Rail Yard Activity**

The proposed merger would lead to an increase in rail yard activity of 193.0 percent at the Amarillo rail yard. This activity includes fueling, switching, and assembling of trains. The estimated increased emissions from this rail yard are shown below. The impacts of these emissions are discussed below in the section on Analysis of Combined Activity.

Rail Yard	AQCR (ID No.)	Estimated Increase in Emissions (tons per year)					
		НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10	
Amarillo	211	0.1	0.4	3.3	0.2	0.1	

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

#### Analysis of Combined Activity

This section discusses the impact to the Amarillo-Lubbock AQCR based on the combined estimated emissions from the rail segments and the rail yard related to the proposed merger. The total estimated increases in pollutant emissions are listed below:

Rail Facility	AQCR (ID No.)	Estimated Increase in Emissions (tons per year)					
		НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10	
Rail Segments Total	211	10.6	32.8	244.9	17.7	5.3	
Rail Yards Total	211	0.1	0.4	3.3	0.2	0.1	
Total		10.7	33.2	248.2	17.9	5.4	

Key:

HC = hydrocarbons, CO = carbon monoxide, NO<sub>2</sub> = nitrogen oxide, SO<sub>2</sub> = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

Most of the estimated increase in pollutants that would result from the proposed merger in the Amarillo-Lubbock AQCR (211) would be from rail line segments, which are not stationary sources. Pollutants from the Amarillo rail yard facility would be lower than the EPA definition of significance (as defined in Prevention of Significant Deterioration at 40 CFR 51.166) for all pollutants. The increased rail segment activity would result in increased levels of ozone and other pollution, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Amarillo-Lubbock AQCR, primarily from mobile rail segment emissions.

# 16.1.6 Austin-Waco (AQCR 212)

Rail operations in the Austin-Waco AQCR (212) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of the Bellmead rail yard. There are no rail segments or intermodal facilities in this AQCR that would exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Austin-Waco AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail yard activity in this AQCR.

The Austin-Waco AQCR (212) includes the counties of Bastrop, Bell, Blanco, Bosque, Brazos, Burleson, Burnet, Caldwell, Coryell, Falls, Fayette, Freestone, Grimes, Hamilton, Hays, Hill, Lampasas, Lee, Leon, Limestone, Llano, McLennan, Madison, Milam, Robertson, San Saba, Travis, Washington, and Williamson, all of which are designated as in attainment. In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity at the rail yard. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the Austin-Waco attainment area.

## **Emissions from Increased Rail Yard Activity**

The proposed merger would lead to an changes in rail yard activity of 219.3 percent at the Bellmead Yard. This activity includes fueling, switching, and assembling of trains. The estimated increased emissions from this rail yard are shown below. The impacts of these emissions are discussed below in the section on Analysis of Activity.

Rail Yard	AQCR	Estimated Increase in Emissions (tons per year)					
	(ID No.)	НС	СО	NO <sub>2</sub>	SO <sub>2</sub>	PM-10	
Bellmead	212	0.2	0.6	4.3	0.3	0.1	

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen oxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter
### Analysis of Activity

Pollutants from the Bellmead rail yard facility would be lower than the EPA definition of significance (as defined in Prevention of Significant Deterioration at 40 CFR 51.166) for all pollutants. The increased rail yard activity in this AQCR would result in increased levels of ozone pollution. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in slightly increased levels all pollutants, with the greatest increase in NO<sub>2</sub>, in the Austin-Waco AQCR.

#### 16.1.7 Metropolitan Dallas-Ft. Worth (AQCR 215)

Rail operations in the Metropolitan Dallas-Ft. Worth AQCR (215) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of four rail segments (Dallas to Big Sandy, Fort Worth to Chickasha, Oklahoma, Fort Worth to Dallas, and Big Spring to Fort Worth), the Fort Worth rail yard, and the Dallas intermodal facility. Based on increased activity levels as a result of the proposed merger, SEA examined the Metropolitan Dallas-Ft. Worth AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Metropolitan Dallas-Ft. Worth AQCR (215) includes the counties of Colin, Cooke, Dallas, Denton, Ellis, Erath, Fannin, Grayson, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwell, Somervell, Tarrant, and Wise, portions of which are designated as nonattainment for ozone (O<sub>3</sub>) and lead (Pb). In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along four rail segments, the rail yard, and the intermodal facility. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the Metropolitan Dallas-Ft. Worth nonattainment area.

#### Emissions from Increased Rail Segment Activity

The proposed merger would lead to changes in activity on 15 rail segments that pass through or are connected to the Metropolitan Dallas-Ft. Worth AQCR (215). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of these segments would be as follows:

Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
Amarillo TX	Fort Worth TX	368	2.2	12%	17%
Dallas TX	Big Sandy TX	98	7.2	26%	50%
Fort Worth TX	Chickasha OK	178	6.6	87%	113%
Corsicana TX	Hearne TX	90	-6.9	-34%	-23%
Fort Worth TX	Dallas TX	32	10.2	43%	45%
Dalias TX	Garrett TX	35	-3.6	-67%	-85%
Denison TX	Fort Worth TX	97	-6.4	-43%	-60%
Big Spring TX	Fort Worth TX	268	9.0	360%	261%
Fort Worth TX	Waco Jct. TX	85	-5.2	-26%	-12%
Fort Worth TX	Garrett TX	52	1.0	14%	12%
Garrett TX	Corsicana TX	24	-2.6	-21%	-28%
Longview TX	Big Sandy TX	18	-2.7	-15%	-11%
McAlester OK	Denison TX	96	-6.6	-46%	-61%
Purcell OK	Fort Worth TX	169	-2.0	-11%	-4%
Tyler TX	Corsicana TX	75	-5.3	-68%	-40%

Four of the 15 rail segments listed above (Dallas to Big Sandy, Fort Worth to Chickasha, Oklahoma, Fort Worth to Dallas and Big Spring to Fort Worth) were assessed for air quality impacts because they would exceed the Board's analysis thresholds. The estimated increased emissions from these four segments are shown below. The impacts of these emissions are discussed below in the section on Analysis of Combined Activity.

Rail	AQCR	Estin	nated Increa	se in Emissio	ns (tons per	year)
Segment	(ID No.)	HC	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Dallas - Big Sandy	215	11.4	35.6	266.2	19.3	5.8
Fort Worth - Chickasha	215	20.7	64.3	481.4	34.9	10.4
Fort Worth - Dallas	215	6.3	19.7	147.3	10.7	3.2
Big Spring - Fort Worth	215	27.8	86.5	647.7	46.9	14.0
Total		66.2	206.1	1542.6	111.8	33.4

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

### Emissions from Increased Rail Yard Activity

The proposed merger would lead to an increase in rail yard activity of 20.2 percent at the Fort Worth Yard. This activity includes fueling, switching, and assembling of trains. The estimated increased emissions from this rail yard are shown below. The impacts of these emissions are discussed below in the section on Analysis of Combined Activity.

Rail Yard	AQCR	Estin	Estimated Increase in Emissions (tons per year)					
	(ID No.)	HC CO NO2 SO2 PM-10						
Ft. Worth	215	0.5	1.7	12.6	0.9	0.3		

Key:

HC = hydrocarbons, CO = carbon monoxide, NO<sub>2</sub>  $\approx$  nitrogen dioxide, SO<sub>2</sub>  $\approx$  sulfur dioxide, PM-10  $\approx$  particulate matter less than 10 microns in diameter

### Emissions from Increased Intermodal Activity

The proposed merger would lead to an increase in intermodal activity of 101 trucks per day at the Dallas intermodal facility. The estimated increased emissions from this intermodal facility are shown below. The impacts of these emissions are discussed below in the section on Analysis of Combined Activity.

Intermodal Facility	AQCR	Estin	nated Increas	se in Emissio	ns (tons per	year)
	(ID No.)	HC	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Dallas	215	2.6	12.0	14.2	0.4	2.5

Key:

HC = hydrocarbons, CO = carbon monoxide, NO<sub>2</sub> = nitrogen dioxide, SO<sub>2</sub> = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

#### Analysis of Combined Activity

This section discusses the impact to the Metropolitan Dallas-Ft. Worth AQCR based on the combined estimated emissions from changes in rail segment, rail yard, and intermodal facility activity related to the proposed merger. The total estimated increase in pollutant emissions are listed below:

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Rail	AQCR	Estimated Increase in Emissions (tons per year)						
Facility	(ID No.)	НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10		
Rail Segments Total	215	66.2	206.1	1542.6	111.8	33.4		
Rail Yards Total	215	0.5	1.7	12.6	0.9	0.3		
Intermodal Facilities Total	215	2.6	12.0	14.2	0.4	2.5		
Total		69.3	219.8	1569.4	113.1	36.2		

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

Most of the estimated increases in pollutants that would result from the proposed merger in the Metropolitan Dallas-Ft. Worth AQCR (215) would be from rail segments, which are not stationary sources. Pollutants from the Ft. Worth rail yard and the Dallas intermodal facility would be lower than the EPA definition of significance (as defined in Prevention of Significant Deterioration at 40 CFR 51.166) for all pollutants. The increased rail segment activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Metropolitan Dallas-Ft. Worth AQCR, primarily from mobile rail segment emissions.

# 16.1.8 Metropolitan San Antonio (AQCR 217)

Rail operations in the Metropolitan San Antonio AQCR (217) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of the San Antonio intermodal facility. There are no rail segments or rail yards in this AQCR that would exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Metropolitan San Antonio AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality may result from increased intermodal facility activity in this AQCR.

The Metropolitan San Antonio AQCR (217) includes the counties of Atascosa, Bandera, Bexar, Comal, Dimmit, Edwards, Frio, Gillespie, Gonzales, Guadalupe, Karnes, Kendall, Kerr,

Kimble, Kinney, La Salle, Mason, Maverick, Medina, Real, Uvalde, Val Verde, Wilson, and Zavala, all of which are designated as in attainment. In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity at the intermodal facility. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the Metropolitan San Antonio attainment area.

## Emissions from Increased Intermodal Activity

The proposed merger would lead to changes in intermodal activity of 116 trucks per day at the San Antonio facility. The estimated increased emissions from this intermodal facility are shown below. The impacts of these emissions are discussed below in the section on Analysis of Activity.

Intermodal Facility	AQCR	Estir	mated Increas	se in Emissio	ns (tons per	year)
	(ID No.)	HC	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
San Antonio	217	3.0	13.9	16.4	0.5	2.9

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

#### Analysis of Activity

Pollutants from the San Antonio intermodal facility would be lower than the EPA definition of significance (as defined in Prevention of Significant Deterioration at 40 CFR 51.166) for all pollutants. The increased intermodal facility activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Metropolitan San Antonio AQCR.

#### 16.1.9 Midland-Odessa-San Angelo (AQCR 218)

Rail operations in the Midland-Odessa-San Angelo AQCR (218) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of three rail segments (Toyah to Big Spring, Big Spring to Fort Worth and Sierra Blanca to Toyah). There are no intermodal facilities or rail yards in this AQCR that would exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Midland-Odessa-San Angelo AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Midland-Odessa-San Angelo AQCR (218) includes the counties of Andrew, Borden, Crane, Cracked, Dawson, Actor, Gains, Glassock, Howard, Irion, Loving, Martin, Midland, Pecos, Reagan, Reeves, Schleicher, Sterling, Sutton, Terrell, Tom Green, Upton, Ward, and Winkler, all of which are designated as in attainment. In considering potential environmental impacts, SEA





assessed the potential air quality impacts of increased activity along three rail segments. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the Midland-Odessa-San Angelo attainment area.

# **Emissions from Increased Rail Segment Activity**

The proposed merger would lead to changes in activity on four rail segments that pass through or are connected to the Midland-Odessa-San Angelo AQCR (218). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of these segments would be as follows:

Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
Toyah TX	Big Spring TX	152	9.9	430%	346%
Big Spring TX	Fort Worth TX	268	9.0	360%	261%
Spotford TX	Sierra Blanca TX	378	-4.1	-21%	-32%
Sierra Blanca TX	Toyah TX	110	9.9	471%	431%

Three of the four rail segments listed above (Toyah to Big Spring, Big Spring to Fort Worth and Sierra Blanca to Toyah) were assessed for air quality impacts because they would exceed the Board's analysis thresholds. The estimated increased emissions from these three segments are shown below. The impacts of these emissions are discussed below in the section on Analysis of Activity.

Rail	AQCR	Estir	nated Increas	se in Emissio	ns (tons per	year)
Segment	(ID No.)	HC	СО	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Toyah - Big Spring	218	50.5	156.9	1174.2	85.1	25.5
Big Spring - Fort Worth	218	7.6	23.6	176.7	12.8	3.8
Sierra Blanca - Toyah	218	9.2	28.5	213.3	15.5	4.6
Total		67.3	209.0	1564.2	113.4	33.9

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

# Analysis of Activity

The increased rail segment activity would result in increased levels all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Midland-Odessa-San Angelo AQCR, primarily from mobile rail segment



emissions.

#### 16.2 Air Quality Impacts at Grade Crossings

SEA assessed the overall air quality impacts of emissions from idling vehicles waiting at grade crossings. On average, annual emissions at a grade crossing with 5,000 vehicles per day would be 0.0021 ton of volatile organic compounds, 0.0013 ton of hydrocarbons, 0.0111 ton of carbon monoxide, and 0.0003 ton of nitrogen dicxide (NO<sub>2</sub>) per train crossing. Traffic volumes of more than 5,000 vehicles per day would increase the estimated emissions accordingly. Railroad crossings tend to be grade-separated when road vay and/or train traffic volumes become high, so the air quality impacts at grade crossings would generally be relatively minor. In Texas, most grade crossings carry 5,000 or fewer vehicles. SEA concludes that no adverse air quality impacts would result from increased grade crossing delays as a result of the proposed merger. Section 16.4.2 of this chapter contains information on the transportation impacts of grade crossing delays associated with increased rail segment activity.

#### 16.3 Noise Analysis

SEA performed noise analyses to identify noise-sensitive land uses where the proposed changes in operations could result in increases in noise exposure that meet or exceed the Board's environmental analysis thresholds at 49 CFR 1105.7(e)(6). The following discussion provides an estimate of the number of noise-sensitive receptors (e.g., residences, schools, churches) where the Board's thresholds would be exceeded, potentially causing an adverse increase in noise exposure. The noise level impact assessment was based on the baseline and projected activity level data provided by UP/SP.

#### 16.3.1 Increased Rail Segment Activity

#### Stratford to Hutchinson, Kansas

This rail segment currently has 11.3 trains/day and would experience an increase of 8.8 trains/day (a change of 24.3 percent in gross ton-miles per year) as a result of the proposed merger. This change in through train activity would result in an increase in the L<sub>dn</sub> of 2.5 dBA along the alignment. The Texas portion of this segment runs from Texhoma, on the Oklahoma border, to Stratford. The majority of noise impacts occur at or near grade crossings where train horns are sounded as a warning. Currently, the noise impact zone at grade crossings extends approximately 610 feet perpendicular to the tracks, whereas after the proposed merger the noise impact zone would increase to about 740 feet. Potential noise impacts along the segment are described below:

<u>Texhoma</u>. The line passes through the northwest corner of this small town, which mirrors its Oklahoma namesake across the state border. The grade crossings in the area require warning signals, which expose some residences to horn noise. Currently eight residences are within the 65  $L_{dn}$  contour. An additional five residences would lie within the post-merger contour.

<u>Stratford.</u> The line enters Stratford from the northeast, passing several residences at the edge of town. The segment terminates halfway through the town at the second of the three grade crossings. (Noise-sensitive receptors beyond this point are included in the Stratford to Dalhart line segment discussion). Land uses adjacent to the tracks are primarily

commercial or industrial. There are a few houses within 200 feet of the tracks on the north side and a number of residences within 400 feet of the tracks both to the north and south. Currently six residences are within the 65  $L_{dn}$  contour. An additional four residences would lie within the post-merger contour.

In the Texas portion of the Stratford to Hutchinson, Kansas segment, there are currently 14 residences within the 65  $L_{dn}$  contour. The majority of the impacts are due to train horns near grade crossings. With the proposed increase in train traffic, this would increase by 9 residences, for a total of 23 residences within the post-merger 65  $L_{dn}$  contour, as shown below.

### NOISE SUMMARY FOR THE TEXAS PORTION OF THE STRATFORD TO HUTCHINSON, KANSAS (SP) LINE SEGMENT

Community	Number of Sensitive Receptors									
		Pre-Merger		Post-Merger						
	Resid.	School	Church	Resid.	School	Church				
Texhoma	8	0	0	13	0	0				
Stratford	6	0	0	10	0	0				
TOTAL	14	0	0	23	0	4				

# Beaumont to Iowa Junction, Louisiana

This rail segment currently has 15.5 trains/day and would experience an increase of 15.3 trains/day (a change of 73.9 in gross ton-miles per year) as a result of the proposed merger. This change in through train activity would result in an increase in the  $L_{dn}$  of 3 dBA along the alignment. The Texas portion of this segment runs from Echo, near the Louisiana border, to Beaumont. The majority of noise impacts occur at or near grade crossings where train horns are sounded as a warning. Currently, the noise impact zone at grade crossings extends approximately 600 feet perpendicular to the tracks, whereas after the proposed merger the noise impact zone would increase to about 900 feet. Potential noise impacts along the segment are described below:

<u>Echo.</u> The line passes approximately 800 feet south the small town of Echo. Residences and an industrial plant are located along Echo Road. A grade crossing is located east of the residences. The residences are located at about 1000 feet from the track. No noise-sensitive receptors are currently within the 65  $L_{dn}$  contour, nor would there be any within the post-merger contour.

<u>Orange.</u> The line runs through the middle of Orange. Four grade crossings exist in the area, with residences and commercial buildings along the line. The closest residences are 150 feet from the track. Currently 303 residences, 3 schools, and 11 churches are within the 65  $L_{dn}$  contour. An additional 208 residences, 3 schools, and 4 churches would lie within the post-merger contour.

<u>Tulane</u>. Tulane is a sparsely populated area near the intersection of the tracks with State Route 62. Currently four residences in this area are within the 65  $L_{dn}$  contour. An additional five residences would lie within the post-merger contour.

<u>Oilla.</u> This is a sparsely populated area about midway between Orange and Beaumont. There is one grade crossing and several houses on both sides of the line. Outside of Oilla, the line passes near residences on Terry Road. Currently 16 residences in this area are within the 65  $L_{dn}$  contour. An additional 16 residences would lie within the post-merger contour.

<u>Connell.</u> This is a residential suburb of Vidor. There is one grade crossing near some of the residences. The remainder of the residences are scattered along the tracks throughout the town. Currently 34 residences are within the 65  $L_{dn}$  contour. An additional 18 residences would lie within the post-merger contour.

<u>Rose City.</u> Many residences are located along the track for about 0.5 mile, the closest being about 100 feet from the track. There are no grade crossings in the area. Currently 10 residences are within the 65  $L_{dn}$  contour. An additional 13 residences would lie within the post-merger contour.

<u>Beaumont.</u> The line goes through the center of the town and terminates at the yard in the suburb of Sunnyside. There are scattered residences on both sides of the track, but all are over 1,000 feet away. Most of the land use adjacent to the tracks is commercial, which provides some acoustical shielding for the residences. There is a grade crossing near the town's civic buildings. There is also a church in this area. Currently no noise-sensitive receptors are within the 65  $L_{dn}$  contour. The church near the civic center would also lie within the post-merger contour.

In the Texas portion of the Iowa Jct., Louisiana to Beaumont segment, there are currently 367 residences, 3 schools, and 11 churches within the 65  $L_{dn}$  contour. With the proposed increase in train traffic, a total of 627 residences, 6 schools, and 15 churches would be located within the postmerger 65  $L_{dn}$  contour, as shown below:

		Num	ber of Sens	sitive Recep	otors		
Community		Pre-Merger		Post-Merger			
	Resid.	School	Church	Resid.	School	Church	
Echo	0	0	0	0	0	0	
Orange	303	3	11	511	6	15	
Tulane	4	0	0	9	0	0	
Oilla	16	0	0	32	0	0	
Connell	34	0	0	52	0	0	
Rose City	10	0	0	23	0	0	
Beaumont	0	0	0	0	0	1	
TOTAL	367	3	11	627	6	16	

### NOISE SUMMARY FOR THE TEXAS PORTION OF THE BEAUMONT TO IOWA JCT., LOUISIANA (SP) LINE SEGMENT

#### Fort Worth to Chickasha, Oklahoma

This rail segment currently has 7.6 trains/day and would experience an increase of 6.5 trains/day (a change of 113.2 percent in gross ton-miles per year) as a result of the proposed merger. This change in through train activity would result in an increase in the  $L_{dn}$  of 2.7 dBA along the alignment. The Texas portion of this segment runs from Ringgold, near the Oklahoma border, to Fort Worth. The majority of noise impacts occur at or near grade crossings where train horns are sounded as a warning. Currently, the noise impact zone at grade crossings extends approximately 490 feet perpendicular to the tracks, whereas after the proposed merger the noise impact zone would increase to about 615 feet. Potential noise impacts along the segment are described below:

<u>Bowie.</u> The line passes the southwest corner of the town. There is one residential area where State Route 59 enters the southwest corner of town that is affected by train horn noise. In this area there are currently eight residences and one church are within the 65  $L_{dn}$  contour. An additional six residences would lie within the post-merger contour.

<u>Chico.</u> The tracks run along the west side of Chico, where there are two grade crossings. There are some residential areas near the grade crossings, but they are sparsely built. Currently four residences are within the 65  $L_{dn}$  contour. An additional 11 residences would lie within the post-merger contour.

<u>Bridgeport.</u> The line passes through the small yard at the west end of Bridgeport. There are several grade crossings along the line which expose some residences at this end of town to horn noise. Currently six residences are within the 65  $L_{dn}$  contour. An additional 14 residences would lie within the post-merger contour.

<u>Paradise</u>. The line goes through the northeastern corner of this small residential community. There is one grade crossing in Paradise. Currently six residences are within the 65  $L_{dn}$  contour. An additional eight residences would lie within the post-merger contour.

<u>Boyd.</u> The tracks curve around the northeastern corner of Boyd, where there are three grade crossings. Many of the residences in this part of town are exposed to train horn soundings. Currently 10 residences are within the 65  $L_{dn}$  contour. An additional eight residences would lie within the post-merger contour.

<u>Newark.</u> The line passes through the middle of this community, which has many scattered residences outside the town core. There are enough grade crossings throughout this area to expose a number of residences in and around the town to horn noise. There is a church approximately 200 feet from the tracks in the center of town. Currently 20 residences and 1 church are within the 65  $L_{dn}$  contour. An additional 10 residences would lie within the postmerger contour.

<u>Ft. Worth.</u> The line enters the Diamond Hill area of Ft. Worth, just north of the stockyards. Residences are located adjacent to the tracks, within 100 feet to the east. A few other homes are incated about 200 feet to the west. There are numerous grade crossings throughout the area. Currently 40 residences are within the 65  $L_{dn}$  contour. An additional 20 residences would lie within the post-merger contour.



<u>Other Communities.</u> There are other small communities along this line segment that would be affected by a noise increase as a result of the proposed merger. They include: Ringgold, Stoneburg and Park Springs. Collectively, these three communities have five residences and one church currently within the L<sub>an</sub> contour. An additional 15 residences would be within the post-merger contour.

In the Texas portion of the Chickasha, Oklahoma to Fort Worth segment, there are currently 99 residences and 3 churches within the 65  $L_{dn}$  contour. The majority of the impacts are due to train horns near grade crossings. With the proposed increase in train traffic, this would increase by 92 residences, for a total of 191 residences and 3 churches within the post-merger 65  $L_{dn}$  contour, as shown below:

		Num	ber of Sen	sitive Rece	ptors	]	
Community		Pre-Merge	r	Post-Merger			
	Resid.	School	Church	Resid.	School	Church	
Ringgold, TX	0	0	0	4	0	0	
Stoneburg, TX	3	0	1	8	0	1	
Bowie, TX	8	0	1	14	0	1	
Park Springs, TX	2	0	0	8	0	0	
Chico, TX	4	0	0	15	0	0	
Bridgeport, TX	6	0	0	20	0	0	
Paradise, TX	6	0	0	14	0	0	
Boyd, TX	10	0	0	18	0	0	
Newark, TX	20	0	1	30	0	1	
Ft. Worth, TX	40	0	0	60	0	0	
TOTALS	99	0	3	191	0	3	

# NOISE SUMMARY FOR THE TEXAS PORTION OF THE FORT WORTH TO CHICKASHA, OKLAHOMA (UP) LINE SEGMENT

### **Big Spring to Toyah**

This UP rail segment currently has 2.3 trains/day and would experience an increase of 9.8 trains/day (a change of 345.7 percent in gross ton miles per year) as a result of the proposed merger. This change in though train activity would result in an increase in the  $L_{dn}$  by 7.3 dBA. The majority of impacts occur at grade crossings where train horns are sounded as a warning. Prior to merger the noise impact zone at grade crossings extends approximately 250 feet perpendicular to the tracks, whereas after the proposed merger, the noise impact zone would increase to approximately 560 feet. There are nine major communities and several smaller towns along this track segment. Potential noise impacts by community along this segment are summarized below.

<u>Big Spring.</u> There are no grade crossings in the city west of Gregg Street, which crosses over to the yard. No residences are located sufficiently close to the line to be affected west of the Big Spring yard. Consequently, there are currently no receptors within the  $L_{dn}$  65 contour, nor would there be impact after the proposed merger in this portion of the line segment in Big Spring.

Stanton. The UP tracks run through the center of the town parallel with U.S. Highway 80,

with commercial buildings on the north side of the road. Interstate 20 skirts Stanton to the north. There are residences on both sides of the track for the length of the town. There are 11 grade crossings between the intersection of I-20 and US 80 on the east and west. Currently there are 25 residences within the 65  $L_{dn}$  contour. An additional 80 residences plus 1 school and 2 churches would lie within the post-merger contour.

<u>Midland.</u> The line runs through the southern part of the city. The first row of buildings north of the tracks are primarily commercial, especially in the central business district. The first row of buildings south of the tracks in the western part of the city are mostly industrial. The majority of the affected residences are north of the tracks behind the commercial buildings, but there also are affected residences south of the tracks. There are nine grade crossings in the city and two to the east of town. Currently there are only seven residences within the 65  $L_{dn}$  contour. An additional 217 residences and 2 churches would lie within the postmerger contour.

<u>Odessa.</u> The line runs through the southern part of town, paralleling Interstate 20 for most of the way. The buildings closest to the tracks are primarily commercial or industrial, with residences set behind this first row of buildings, except for those areas with scattered residences. All except one of the affected residences are west of Route 338. All of the affected residences are south of the tracks except for a 23-building apartment complex at the intersection of US Highway 80 and 8th Street. There are ten grade crossings in the city and one to the east of town. Currently there are 22 residences and 1 church within the 65 L<sub>dn</sub> contour. An additional 39 residences and 1 church would lie within the post-merger contour.

<u>Monacans.</u> The line runs through the northern part of the town with three grade crossings within town and one on the western edge near the city airport. There are affected residences on both sides of the tracks, but mostly on the northern side. Currently there are nine residences within the 65  $L_{dn}$  contour. An additional 86 residences and 4 churches would lie within the post-merger contour.

<u>Pyote.</u> The UP line runs along the southern edge of this small community. There are two grade crossings in town. There are only a few residences within 600 feet of the tracks. Currently there are four residences within the 65  $L_{dn}$  contour. An additional seven residences would lie within the post-merger contour.

<u>Pecos.</u> The line runs through the northern part of the city. There are five grade crossings in town and two to the west. The land use north of the tracks is primarily residential. South of the tracks the first row of buildings in the center of town are primarily commercial, with residences farther from the tracks. Currently there are 17 residences within the 65  $L_{dn}$  contour. An additional 90 residences would lie within the post-merger contour.

<u>Toyah.</u> The line runs through the center of town. There are two grade crossings. Most of the affected residences are located north of the tracks. Currently there are five residences within the 65  $L_{dn}$  contour. An additional nine residences would lie within the post-merger contour. All other receptors in Toyah are included in the discussion of noise impacts for the Toyah to Sierra Blanca line segment.

<u>Other Communities.</u> There are other small communities along this line segment that would be affected by an increase in noise associated with the proposed merger. They include

Penwell, Thortonville, and Wickett. Collectively these three communities have five residences currently within the 65  $L_{dn}$  contour. An additional 11 residences would lie within the post-merger contour.

In the Big Spring to Toyah segment, there are currently 89 residences and 1 church within the 65  $L_{dn}$  contour. The post-merger traffic would cause an additional 539 residences, 1 school, and 9 churches to be exposed to noise levels exceeding  $L_{dn}$  65. The majority of the increases would be due to horn blowing near grade crossings in the affected communities.

	Number of Sensitive Receptors								
Community	Pre-Merger			Post-Merger					
	Resid.	School	Church	Resid.	School	Church			
Big Spring	0	0	0	0	0	0			
Stanton	25	0	0	105	1	2			
Midland	7	0	0	224	0	2			
Odessa	22	0	1	61	0	2			
Penwell	2	0	0	7	0	0			
Monacans	9	0	0	95	0	4			
Thortonville	1	0	0	2	0	0			
Wickett	2	0	0	7	0	0			
Peyote	4	0	0	11	0	0			
Pecos	17	0	0	107	0	0			
TOTAL	89	0	1	619	1	10			

# NOISE SUMMARY BIG SPRING TO TOYAH (UP)

### Fort Worth to Dallas

This rail segment, which currently has 23.5 trains/day, would experience an increase of 10.1 trains/day (a 45.3 percent change in gross ton-miles per year) as a result of the proposed merger. The projected increase in train volume and gross ton-miles on this segment would cause less than a 2 dBA increase in the  $L_{dn}$ . No adverse noise impacts are expected.

#### El Paso to Lordsburg, New Mexico

This rail segment, which currently has 29.3 trains/day, would experience an increase of 15.4 trains/day (a 29.4 percent change in gross ton-miles per year) as a result of the proposed merger. The projected increase in train volume and gross ton-miles on this segment would cause less than a 2 dBA increase in the  $L_{dn}$ . No adverse noise impacts are expected.

### **Big Spring to Fort Worth**

This UP rail segment currently has 2.5 trains/day and would experience an increase of 9.0 trains/day (a change of 261 percent in gross ton miles per year) as a result of the proposed merger. There are several cities (including Fort Worth, Wetherford, Abilene, Sweetwater, Colorado City and Big Spring), several towns (including Ranger, Eastland, Cisco and Merkel), and numerous smaller communities along this segment that could experience increased train noise. The proposed change in through-train activity would result in an increase in the L<sub>dn</sub> of 6.6 dBA. The majority of noise impacts occur at or near grade crossings where train horns are sounded as a warning. Currently, the noise impact zone at grade crossings extends approximately 260 feet perpendicular to the tracks, whereas after the proposed merger, the noise impact zone would increase to 580 feet. The following discussion summarizes the potential noise impacts for communities located along this line segment.

<u>Et. Worth.</u> The line runs into the downtown Fort Worth yard in the center of town. There are no grade crossings between the downtown yard and just east of Benbrook, a suburb of Fort Worth. There are some scattered residences on both sides of the tracks between the downtown and the Centennial/Lancaster yards. Most of the residences are sufficiently far away as to not be affected, except for two apartment buildings off Pennsylvania Avenue and one single family residence in the Mistletoe neighborhood which overlooks the tracks. Between the Centennial/Lancaster yards and Benbrook there are residences fronting Vickery Boulevard just north of the tracks. Just east of Route 183 there is a grade crossing for a street that enters a residential development with apartment buildings and new single family homes being built within approximately 300 feet of the tracks. West of Route 183 there are residences and a church on both sides of the tracks. Currently there are seven residences within the 65  $L_{dn}$  contour. An additional 65 residences and a church would lie within the postmerger contour.

<u>Benbrook.</u> This community is a western suburb of Fort Worth west of Route 183. There is one grade crossing on the line in Benbrook, but no nearby residences. A few of the residences on the south side of the tracks and at the eastern edge of the town are close enough to the tracks to be affected. Currently there are no residences within the 65  $L_{dn}$  contour. Seven residences would lie within the post-merger contour.

<u>Aledo.</u> This is a small community just to the west of Fort Worth. The line runs through the center of the town. There are two grade crossings. It assumed that there are residences on both sides of the line with the majority of the residences north of the tracks at the east end of town. Currently there are three residences within the 65  $L_{dn}$  contour. An additional 49 residences and 1 church would lie within the post-merger contour.

<u>Weatherford.</u> The line runs through the center of town from the northwest to the southeast. There are two grade crossings. There are residential areas on both sides of the tracks, with the majority of the residences on the southwestern side of the tracks. Currently there are no residences within the 65  $L_{dn}$  contour. Thirty-six residences would lie within the post-merger contour.

<u>Millsap.</u> The line passes to through the center of town, with residences on both sides of the tracks. Currently there are 13 residences within the 65  $L_{dn}$  contour. An additional 16

residences and 1 church would lie within the post-merger contour.

<u>Santo.</u> This small community is situated on Route 4 with the line running on the north edge of town, with residences on both sides of the tracks. There are two grade crossings in town. Currently there are six residences within the 65  $L_{dn}$  contour. An additional 23 residences, 1 school and 1 church would lie within the post-merger contour.

<u>Gordon.</u> The line goes through the center of this small community. There are three grade crossings in town. Residences are scattered on both sides of the tracks the length of the town and a commercial district in the center of town. Currently there are three residences within the 65  $L_{dn}$  contour. An additional 42 residences would lie within the post-merger contour.

<u>Strawn.</u> The line passes through the center of the town. There are four grade crossings in town. There are residences north and south of the tracks and churches to the north, only one of which would be affected. Currently there are four residences within the 65  $L_{dn}$  contour. An additional 54 residences and 1 church would lie within the post-merger contour.

<u>Ranger.</u> The line runs through the center of town, just west of US 80. There are three grade crossings in town and one each to the east and west of town. There are residential areas on both sides of the tracks throughout the town and Ranger College on the western edge of town. The college is far enough west from the nearest grade crossing so as not to be affected. Currently there are three residences and one church within the 65  $L_{dn}$  contour. An additional 75 residences and an additional 2 churches would lie within the post-merger contour.

<u>Olden.</u> The line runs through the northern edge of this town with only a few residences to the south of the tracks. There are two grade crossings. Currently there are six residences within the 65  $L_{dn}$  contour. An additional 12 residences would lie within the post-merger contour.

<u>Eastland</u>. The line runs north of the town through a residential area, with the majority of the residences south of the tracks. There are four grade crossings. Currently, there are 10 residences within the 65  $L_{dn}$  contour. An additional 42 residences would lie within the post-merger contour.

<u>Cisco.</u> The line runs along the northern edge of the town, with residences both north and south of the tracks. There is a commercial district centered on Conrad Hilton Avenue and along 8th Avenue. There are two grade crossings. Currently there are four residences within the 65  $L_{dn}$  contour. An additional 21 residences would lie within the post-merger contour.

<u>Putnam.</u> The line run through the center of the town just south of I-20. There are two grade crossings. The overpass of Interstate 20 provides some acoustical shielding to the buildings north of the tracks. There are residences on both sides of the tracks, with the majority to the south. Currently there are no residences within the 65  $L_{dn}$  contour. Eleven residences would lie within the post-merger contour.

Baird. The line passes along the south edge of this town, and there is only one group of

residential buildings close enough to the tracks on the western edge of town to be affected. The residences in the center of town are at least 200 feet from the tracks where there are no grade crossings. The only grade crossing in town is in this area. Currently there are no residences within the 65  $L_{dn}$  contour. Thirteen residences would lie within the post-merger contour.

<u>Clyde.</u> The line runs through the center of the town, between two east-west roads running parallel to the tracks. There are two grade crossings in town. There are residences on both sides of the tracks. Two new churches have been constructed close to the rail line. Currently there are 20 residences and 1 church within the 65  $L_{dn}$  contour. An additional 72 residences and an additional church would lie within the post-merger contour.

<u>Abilene.</u> The line runs through the center of town. There are seven grade crossings in the center of town and one to the east of town. There are residential land uses just west of the city limits. Within the city limits, the first row of buildings on both sides of the tracks is commercial, with residential land uses beyond the commercial areas. The placement of commercial buildings on the north side of the tracks is more continuous than on the south and therefore offers more acoustical shielding. There are several apartment buildings along the tracks, including 20-unit, 24-unit, 12-unit, and 50-unit complexes. There are also churches in proximity to the line. On the west end of town there is the Westgate Mobile Home Park, the northern edge of which is close enough to be affected. To the east of the central business district there are residences, some of which are close enough to be affected. Currently there are two residences within the 65  $L_{dn}$  contour. An additional 142 residences, 1 school, and 1 church would lie within the post-merger contour. The majority of the affected receptors are on the south side of the line.

<u>Tye.</u> This small community, which is located just south of Interstate 20, has the UP railroad tracks running along the northern edge of town. There are two grade crossings in town. Residential buildings are on both sides of the tracks and commercial establishments are along the main road just north of the tracks. Currently there are six residences within the 65  $L_{dn}$  contour. An additional 40 residences and 1 church would lie within the post-merger contour.

<u>Merkel.</u> The UP line passes through the center of this small city. There are residences on both sides of the line with a commercial district along the north side of the tracks and along Route 126 which runs south out of town. There are three grade crossings in town. Based on building density, currently there are 14 residences and 1 church within the 65  $L_{dn}$  contour. An additional 49 residences would lie within the post-merger contour.

<u>Trent.</u> This small town is situated just south of Interstate 20 with the line running through the center of town. There are residences on both sides of the tracks and two grade crossings in town. Currently there are five residences within the 65  $L_{dn}$  contour. An additional 29 residences and 2 churches would lie within the post-merger contour.

<u>Sweetwater.</u> The line passes through the center of town. There are two grade crossings in the western part of town. On the northern side of the tracks the land use is commercial, except on the western edge of town. South of the line there are primarily residences and several churches. Currently there are 12 residences within the 65  $L_{dn}$  contour. An additional 34 residences and 1 church would lie within the post-merger contour.

<u>Roscoe.</u> There is one grade crossing in the center of the town, and also one grade crossing to the west and two to the east of town. The area in the center of town just to the south of the line is mixed commercial and industrial, with residential land use beyond this area to the south of Route 237. Most of the residences are not near the tracks. Currently there is one residence within the 65  $L_{dn}$  contour. An additional seven residences would lie within the post-merger contour.

<u>Loraine</u>. The UP line runs through the northern part of this town. There are three grade crossings. The land use to the south of the tracks is residential with a commercial district in the center of town just south of the tracks. Currently there are two residences within the 65  $L_{dn}$  contour. An additional 24 residences would lie within the post-merger contour.

<u>Colorado City.</u> The line runs through the southern edge of town parallel with the Colorado River which is south of the tracks. There is only one grade crossing (Austin Street) in the eastern section of the town, near the residential areas on both sides of the tracks. The western end of town between the railroad tracks and West 2nd Street is commercial. Currently there are 11 residences and 1 church within the 65  $L_{dn}$  contour. An additional 22 residences would lie within the post-merger contour.

<u>Coahoma.</u> The line runs through the center of the town, north of Interstate 20. There are two grade crossings in town and two grade crossings east of town. There are residences in proximity to the line on both sides of the tracks, with the majority of the residences north in the town. Currently there are 24 residences within the 65  $L_{dn}$  contour. An additional 62 residences and 2 churches would lie within the post-merger contour.

<u>Big Spring.</u> Except on the eastern edge of town, there are no residences located near the line that would be affected. There are two grade crossings. The only affected receptors are in a mobile home park east of Marcy Drive off the frontage road along Interstate 20. Currently there is one residence within the 65  $L_{dn}$  contour. An additional nine residences (mobile homes) would lie within the post-merger contour.

<u>Other Communities.</u> Other small communities along this line segment which would be affected by an increase in noise associated with the proposed merger include: Anneta, Bennett, Brazos, Mingus, Westbrook, and Sand Springs. Collectively these small communities have six residences within the 65  $L_{dn}$  contour. An additional 26 residences would lie within the post-merger contour.

In the Big Spring to Fort Worth segment, there are 160 residences and 4 churches currently within the 65  $L_{dn}$  contour. After the proposed merger, 982 additional residences, 2 additional schools, and 16 additional churches would be exposed to noise levels exceeding  $L_{dn}$  65. The majority of the impacts in all the communities would be due to the blowing of horns at grade crossings in the affected communities.



# NOISE SUMMARY BIG SPRING TO FORT WORTH (UP)

	Number of Sensitive Receptors								
Community		Pre-Merge	er	Post-Merger					
	Resid.	School	Church	Resid.	School	Church			
Ft. Worth	7	0	0	72	0	1			
Benbrook	0	0	0	7	0	0			
Aledo	3	0	0	52	0	2			
Anneta	2	0	0	6	0	0			
Weatherford	0	0	0	36	0	0			
Millsap	13	0	0	29	0	1			
Bennett	1	0	0	7	0	0			
Brazos	0	0	0	5	0	0			
Santo	6	0	0	29	1	1			
Gordon	3	0	0	45	0	0			
Mingus	3	0	0	9	0	0			
Strawn	4	0	0	58	0	1			
Ranger	3	0	1	78	0	3			
Olden	6	0	0	18	0	0			
Eastland	10	0	0	52	0	0			
Cisco	4	0	0	25	0	0			
Putnam	0	0	0	11	0	0			
Baird	0	0	0	13	0	0			
Clyde	20	0	1	92	0	2			
Abilene	2	0	0	144	1	1			
Туе	6	0	0	46	0	1			
Merkel	14	0	1	63	0	1			
Trent	5	0	0	34	0	2			
Sweetwater	12	0	0	46	0	1			
Roscoe	1	0	0	8	0	0			
Loraine	2	0	0	26	0	0			
Colorado City	11	0	1	33	0	1			
Westbrook	0	0	0	3	0	0			
Coahoma	24	0	0	86	0	2			
Sand Springs	0	0	0	2	0	0			
Big Spring	1	0	0	10	0	0			
TOTAL	163	0	4	1145	2	20			





#### Dalhart to Stratford

This rail segment currently has 13.3 trains/day and would experience an increase of 8.6 trains/day (a change of 34.4 percent in gross ton-miles per year) as a result of the proposed merger. This change in through train activity would result in an increase in the  $L_{dn}$  of 2.2 dBA along the alignment. The majority of noise impacts occur at or near grade crossings where train horns are sounded as a warning. Currently, the noise impact zone at grade crossings extends approximately 590 feet perpendicular to the tracks, whereas after the proposed merger, the noise impact zone would increase to about 780 feet. Potential noise impacts along the segment are described below:

<u>Stratford.</u> The line commences at the grade crossing in the middle of the siding tracks at the center of town. (Noise-sensitive receptors before this point are included in the Stratford to Hutchinson, Kansas discussion). There is another grade crossing where the tracks cross U.S. Route 287. There are houses on both sides of the tracks, some within 200 feet. Currently six residences are within the 65  $L_{dn}$  contour. An additional four residences would lie within the post-merger contour.

<u>Conlen.</u> Conlen contains a small group of residential and commercial buildings at the intersection of U.S. Route 54 and State Route 807. The line runs along the north side of U.S. Route 54, which lies between the tracks and the residences of Conlen. There is a grade crossing where the tracks intersect State Route 807. Currently two residences are within the 65  $L_{dn}$  contour. An additional residence would lie within the post-merger contour.

<u>Dalhart.</u> The line terminates in the yard at the northeast corner of town. Although there are some residences east of the yard, they are not exposed to horn noise because there are no grade crossings in the area. No noise-sensitive receptors are currently within the 65  $L_{dn}$  contour, nor would there be any within the post-merger contour.

On the Stratford to Dalhart line segment there are currently eight residences within the 65  $L_{dn}$  contour. The majority of the impacts are due to train horns near grade crossings. With the proposed increase in train traffic, this would increase by 5 residences, for a total of 13 residences within the post-merger 65  $L_{dn}$  contour, as shown below:

	Number of Sensitive Receptors								
Community		Pre-Merger	r	Post-Merger					
	Resid.	School	Church	Resid.	Church				
Stratford	6	0	0	10	0	0			
Conlen	2	0	0	3	0	0			
Dalhart	0	0	0	0	0	0			
TOTAL	8	0	0	13	0	0			

### NOISE SUMMARY DALHART TO STRATFORD (SP) LINE SEGMENT

### **Big Sandy to Texarkana**

This rail segment, which currently has 11.7 trains/day, would experience an increase of 6.6 trains/day (a 119.2 percent change in gross ton-miles per year) as a result of the proposed merger. The projected increase in train volume and gross ton-miles on this segment would cause less than a 2 dBA increase in the  $L_{dn}$ . No adverse noise impacts are expected.

#### Sierra Blanca to Toyah

This UP rail segment currently has 2.1 trains/day and would experience an increase of 9.9 trains/day (a change of 430.6 percent in gross tons miles per year) as a result of the proposed merger. This change in through train activity would result in an increase in the  $L_{dn}$  of 7.5 dBA. The majority of noise impacts occur at or near grade crossings where train horns are sounded as a warning. There are several communities along this line segment that could experience increased train noise. Currently, the noise impact zone at grade crossings extends approximately 240 feet from perpendicular to the tracks, whereas after the proposed merger, the noise impact zone would increase to 590 feet. Potential noise impacts are summarized below.

<u>Toyah.</u> The line passes through the southern edge of this small town. There are two grade crossings and residences on both sides of the tracks. Currently there are five residences within the 65  $L_{dn}$  contour. An additional nine residences would lie within the post-merger contour.

<u>Kent.</u> This tiny community lies on the north side of the line and contains one grade crossing and a cluster of buildings including a post office. The buildings north of the tracks are residences. Currently there are no residences within the 65  $L_{dn}$  contour. Five residences would lie within the post-merger contour.

<u>Van Horn.</u> The line passes through the center of the town. There are three grade crossings. The area south of the tracks is primarily commercial along the main east-west street. North of the line, the majority of buildings is residential as are the buildings south of the commercial strip. Currently there are 15 residences within the 65  $L_{dn}$  contour. An additional 47 residences would lie within the post-merger contour.

<u>Sierra Blanca.</u> The line passes through the center of this small town which is just north of Interstate 20. South of the tracks there is a commercial strip along the main east-west street in town, which includes scattered residences. There is one grade crossing in the center of town. The closest residences are within 150 feet of the tracks. One church (older) on the west end of town north of the tracks does not appear to be in use at this time. A new church (possibly using a temporary building) is now located just north of the grade crossing across from another established church. Currently there are two residences within the 65  $L_{dn}$  contour. An additional 24 residences and 2 churches would lie within the post-merger contour. The majority of these new impacts would be on the north side of the line.

In the Sierra Blanca to Toyah segment, 22 residences currently lie within the  $L_{dn}$  65 contour. There would be an additional 85 residences and 2 churches exposed to noise exceeding  $L_{dn}$  65 due to increased rail traffic. The majority of the increase would be due to horn blowing at grade crossings.





	Number of Sensitive Receptors								
Community		Pre-Merger	•	Post-Merger					
	Resid.	School	Church	Resid.	Church				
Toyah	5	0	0	14	0	0			
Kent	0	0	0	5	0	0			
Van Horn	15	0	0	62	0	0			
Sierra Blanca	2	0	0	26	0	2			
TOTAL	22	0	0	107	0	2			

# NOISE SUMMARY SIERRA BLANCA TO TOYAH (UP)

### 16.3.2 Increased Rail Yard Activity

The Amarillo and Bellmead rail yards in Texas are projected to have carload activity increases equal to or greater than the Board's threshold of a 100 percent increase in railcar activity for noise analysis.

#### Amarillo

UP/SP estimate that carload activity at the Amarillo yard would increase from 40 to 117 railcars per day (a 193 percent increase) as a result of the proposed merger. This yard is located in a predominantly industrial area, and the nearest residential areas are about 1000 feet from the yard, acoustically shielded by intervening buildings. Therefore, no adverse noise impacts are expected in the vicinity of the Amarillo yard.

### Bellmead

Both UP and SP have yards in Bellmead. Following consolidation of operations, the daily carload activity at the UP yard is projected to increase from 46 to 146, a 219 percent increase. A 5 dBA increase in  $L_{dn}$  from the increased yard activities is projected. There is a residential area approximately 300-400 feet north of the yard. Within this area, the existing noise exposure is projected to be less than  $L_{dn}$  65 dBA, and the future  $L_{dn}$  is projected to be 65 dBA or greater at only two homes. In addition, the  $L_{dn}$  is expected to increase by 3 dBA or more at approximately 14 additional homes.

#### Fort Worth

The Fort Worth rail yard is a hump facility and part of the Fort Worth Terminal. The Fort Worth rail yard is projected to have a carload activity increase below the Board's noise analysis threshold. However, the existing volume of 1,460.5 cars/day is substantial. The land use surrounding the Ft. Worth rail yard is primarily industrial and commercial, with residential areas to the northwest. Taking into account acoustical shielding provided by the industrial and commercial buildings, there are no sensitive receptors within the 65 dBA  $L_{dn}$  contour for either the pre- or post-merger conditions.

# 16.3.3 Increased Intermodal Facility Activities

A number of intermodal facilities in Texas would experience operational changes as a result of the proposed merger. Of these, the UP San Antonio and SP Dallas facilities are projected to have activity increases that exceed the Board's threshold of 50 trucks per day. In San Antonio, increased traffic would be the result of UP and SP facility consolidation.

# Dallas

The Dallas intermodal facility is part of the Dallas Terminal. The SP Dallas intermodal facility (at Miller yard) currently serves approximately 392 trucks per day, and is expected to experience an average increase of 101 trucks per day. The expected increase in truck traffic on Highway 310 near this intermodal facility is projected to cause a maximum of a 1.0 dBA increase in noise exposure. The increase in noise levels from the intermodal trucks and cranes at Miller yard would not exceed 2 dBA  $L_{dn}$ , however the volume of intermodal activity at this facility would be significant, with 225,000 lifts/year. The land use to the southeast of this facility is residential; however, there would be no sensitive receptors within the 65 dBA  $L_{dn}$  contour for either the pre- or post-merger conditions.

### San Antonio



The San Antonio intermodal facility is part of the San Antonio Terminal. Intermodal operations at the SP East Yard would be moved to the UP South San Antonio Yard. The UP San Antonio intermodal facility currently serves approximately 33 trucks per day. This facility is expected to experience an average increase in activity of 116 trucks per day due to the proposed consolidation of SP San Antonio intermodal operations at the UP San Antonio facility. The increased noise exposure due to intermodal trucks on local roads is expected to be 4.5 dB. The increase in noise levels from the intermodal trucks and cranes would exceed the Board's impact criterion of 2 dBA  $L_{dn}$ . Residences lie adjacent to the facility access, Quintana Road; however, there would be no sensitive receptors within the 65 dBA  $L_{dn}$  contour for either the pre- or postmerger conditions.

# 15.4 Transportation Systems

The Board's environmental rules at 49 CFR 1105.7(e)(2) require a description of the effects of the proposed merger on local and regional transportation systems. The primary transportation impacts of the proposed merger are related to: (1) additional truck traffic generated at those intermodal facilities where intermodal activity is projected to increase, and (2) increases in roadway delays at grade crossings as a result of increased train traffic on rail segments.

The impacts near intermodal facilities would result from increased truck traffic using local roadways to enter and exit the intermodal facility. For those facilities with an expected increase of 50 trucks or more per day, SEA analyzed the impacts of this increased traffic on the local roadway system in terms of increases in daily and peak hour traffic. SEA collected traffic count data from local and state transportation officials for this analysis. While the offsetting benefits of the proposed merger were not quantified at the local level, the traffic impacts from added truck traffic at intermodal facilities would be partially offset in many localities by truck-to-rail diversions and consolidation of operations. SEA concludes that the impacts on the local transportation system from the intermodal facilities in Texas would not cause significant adverse impacts.

SEA addressed the concerns of local communities about increased traffic delays at grade crossings through an evaluation of vehicle delay and wait times at grade crossing locations. It is important to note that the acceptability of delays at grade crossings varies substantially based on local conditions such as the location of land uses by type, availability of alternative travel routes, the degree of use by emergency vehicles, and other local variables. While the time of delay at grade crossings would increase proportionately with the increase in train traffic, most of the grade crossings in Texas carry fewer than 5,000 vehicles per day. SEA concludes that increases in vehicle delay and/or wait time due to merger-related operational changes would not be excessive.

#### 16.4.1 Intermodal Facilities

#### Dallas

The Dallas SP facility is located in the southeast quadrant of the intersection of South Central Expressway (Route 310) and Linfield Avenue, east of Interstate Route 45. The primary truck access routes to this facility are Interstate 45, State Route 310 (South Central Expressway), and Linfield Avenue. The Dallas intermodal facility would experience an increase of 46,000 lifts per year, or an average of 101 trucks per day due to proposed operational changes. The increase represents a 25.8 percent increase in the number of trucks per day. The increase in trucks per day was assumed to be distributed based on the scheduled arrivals and departures of appropriate trains.

The 1994 Average Daily Traffic (ADT) for State Route 310 (north of State Route 12) was 16,000 vehicles per day (vpd). Traffic data on Linfield Avenue was not available. Due to the absence of actual peak hour data, a factor of 10 percent of the ADT was assumed to be the peak hour volume with equal distribution of travel flow. On this basis, Route 310 (South Central Expressway) would operate below its capacity level. With a total daily increase of 202 truck trips, the increase in ADT for SR 310 would be 1.3 percent. This minor increase in ADT would have only minor impacts on SR 310, and is not expected to have significant impacts on other area traffic or roadway facilities.

### San Antonio

The UP San Antonio facility is located on the west side of Quintana Road, south of US Route 90 and north of State Route 13. The primary truck access routes to this facility are Interstate 90, General Hudnell Drive, and Quintana Road. The San Antonio (UP) facility is expected to experience an increase of 53,000 lifts per year, or an average of 116 trucks per day due to consolidation of UP/SP San Antonio intermodal facilities. The increase represents a 351.5 percent increase in the number of trucks per day. The increase in trucks per day was assumed to be distributed based on the scheduled arrivals and departures of appropriate trains.

The ADT volumes for roadways in the vicinity of this facility were obtained from the City of San Antonio, Traffic Division, and the Texas Department of Transportation. The 1994 ADT for the multi-laned US Route 90 (east of Spur 371) was 105,000 vpd. The 1995 ADT for the four-lane Quintana Road was 17,694 vpd. In the absence of actual peak hour data, a factor of 10 percent of the ADT was assumed as the peak hour volume with equal distribution of travel flow. On this basis, Quintana Road would operate below its capacity level. With a total daily increase of 232 truck trips, the increase in ADT for Quintana Road would be 1.3 percent. This minor increase in ADT would have only minor impacts on Quintana Road, and is not expected to have adverse

impacts on other area traffic or roadway facilities.

# 16.4.2 Grade Crossings

In order to analyze the effects of the proposed merger on the roadway system at railroad grade crossings, SEA determined the number of crossings along rail segments that would exceed the Board's analysis thresholds for air quality analysis. Approximate delays over the course of 24 hours were calculated as were average queue lengths. While an increase in the number of trains would result in more crossing closings per day, the length of the queue at each individual crossing closing event would change only if the train length changes. Vehicle delay impacts at rail line segments in Texas are summarized below.

# El Paso to Dalhart

On the 425-mile El Paso to Dalhart line, average rail traffic would increase from 12.0 to 19.6 trains per day, a train volume increase of about 63 percent. There are 17 grade crossings on this segment, 2 of which have ADT counts greater than 5,000 vehicles per day. At the high speed grade crossings along the route (e.g., train speed of 70 mph), delay to vehicle traffic would increase from 18 minutes (pre-merger) to 29 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings along the route (e.g., train speed of 10 mph), delay to vehicle traffic would increase from 76 minutes (pre-merger) to 124 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic ranges from 1 to 37 vehicles, and the corresponding delay per vehicle would vary from 1.04 to 3.48 minutes.

# **Dalhart to Stratford**

Average rail traffic on the Dalhart to Stratford line would increase from 13.3 to 21.9 trains per day, a train volume increase of about 65 percent. There are 13 grade crossings along this segment, none of which have ADT counts greater than 5,000 vehicles per day. At the high speed grade crossings along the route (e.g., train speed of 60 mph), delay to vehicle traffic would increase from 22 minutes (pre-merger) to 35 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings along the route (e.g., train speed of 35 mph), delay to vehicle traffic would increase from 31 minutes (pre-merger) to 50 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from one to seven vehicles and the corresponding delay per vehicle would vary from 1.11 to 1.45 minutes.

# Stratford to Hutchinson, Kansas

On the 274-mile Stratford to Hutchinson, Kansas line, average rail traffic would increase from 11.3 to 20.1 trains per day, a train volume increase of about 78 percent. There are six grade crossings on this segment, none of which have ADT counts greater than 5,000 vehicles per day. At typical speed grade crossings along the route (e.g., train speed of 60 mph), delay to vehicle traffic would increase from 18 minutes (pre-merger) to 33 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from one to two vehicles and the corresponding delay per vehicle would be about 0 to 1.11 minutes.

# El Paso to Sierra Blanca

On the El Paso to Sierra Blanca line, average rail traffic would increase from 20.6 to 26.4

trains per day, a train volume increase of about 28 percent. There are 43 grade crossings along this segment, seven of which have ADT counts greater than 5,000 vehicles per day. At the high speed grade crossings along the route (e.g., train speed of 70 mph), delay to vehicle traffic would increase from 31 minutes (pre-merger) to 39 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings along the route (e.g., train speed of 30 mph), delay to vehicle traffic would increase from 53 minutes (pre-merger) to 68 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from 1 to 40 vehicles, and the corresponding delay per vehicle would vary from 1.04 to 1.58 minutes.

#### Sierra Blanca to Toyah

On the 109.7-mile Sierra Blanca to Toyah line, average rail traffic would increase from 2.1 to 12 trains per day, a train volume increase of about 471 percent. There are 12 grade crossings along this segment, none of which have ADT counts greater than 5,000 vehicles per day. At the typical high speed grade crossings along the route (e.g., train speed of 60 mph), delay to vehicle traffic would increase from 3 minutes (pre-merger) to 19 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings along the route (e.g., train speed of 50 mph), delay to vehicle traffic would increase from 4 minutes (pre-merger) to 21 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from 1 to 4 vehicles, and the corresponding delay per vehicle would vary from 1.11 to 1.20 minutes.

### **Toyah to Big Spring**

On the 152-mile Toyah to Big Spring line, average rail traffic would increase from 2.3 to 12.2 trains per day, a train volume increase of about 430 percent. There are 73 grade crossings along this segment, seven of which have ADT counts greater than 5,000 vehicles per day. At the typical speed grade crossings along the route (e.g., train speed of 40 mph), delay to vehicle traffic would increase from 5 minutes (pre-merger) to 25 minutes (post-merger) over a 24-hour period. At the highest speed grade crossings along the route (e.g., train speed of 60 mph), delay to vehicle traffic would increase from 4 minutes (pre-merger) to 20 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings (e.g., train speed of 25 mph), delay to vehicle traffic would increase from 7 minutes (pre-merger) to 36 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from 1 to 33 vehicles, and the corresponding delay per vehicle would vary from 1.11 to 1.77 minutes.

# **Big Spring to Fort Worth**

On the 267.5-mile Big Spring to Fort Worth line, average rail traffic would increase from 2.5 to 11.5 trains per day, a train volume increase of about 360 percent. There are 132 grade crossings along this segment, 13 of which have ADT counts greater than 5,000 vehicles per day. At the typical high speed grade crossings along the route (e.g., train speed of 60 mph), delay to vehicle traffic would increase from 4 minutes (pre-merger) to 19 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings along the route (e.g., train speed of 30 mph), delay to vehicle traffic would increase from 6 minutes (pre-merger) to 29 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from 1 to 12 vehicles, and the corresponding delay per vehicle would vary from 1.11 to 1.77 minutes.

### Fort Worth to Dallas

On the Fort Worth to Dallas line, average rail traffic would increase from 23.5 to 33.7 trains per day, a train volume increase of about 43 percent. There are 30 grade crossings along this segment, 12 of which have ADT counts greater than 5,000 vehicles per day. At the typical speed grade crossings along the route (e.g., train speed of 30 mph), delay to vehicle traffic would increase from 60 minutes (pre-merger) to 86 minutes (post-merger) over a 24-hour period. At the highest speed grade crossings along the route (e.g., train speed of 50 mph), delay to vehicle traffic would increase from 42 minutes (pre-merger) to 61 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings (e.g., train speed of 25 mph), delay to vehicle traffic would increase from 83 minutes (pre-merger) to 118 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from 1 to 57 vehicles, and the corresponding delay per vehicle would vary from 1.20 to 2.03 minutes.

#### **Dallas to Big Sandy**

Average rail traffic on the Dallas to Big Sandy line would increase from 27.7 to 34.9 trains per day, a train volume increase of about 26 percent. There are 87 grade crossings along this segment, 13 of which have ADT counts greater than 5,000 vehicles per day. At the typical speed grade crossings along the route (e.g., train speed of 40 mph), delay to vehicle traffic would increase from 58 minutes (pre-merger) to 73 minutes (post-merger) over a 24-hour period. At the highest speed grade crossings along the route (e.g., train speed of 60 mph), delay to vehicle traffic would increase from 45 minutes (pre-merger) to 56 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings (e.g., train speed of 30 mph), delay to vehicle traffic would increase from 71 minutes (pre-merger) to 89 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from 1 to 18 vehicles, and the corresponding delay per vehicle would vary from 1.11 to 1.58 minutes.

#### **Big Sandy to Texarkana**

On the 108-mile Big Sandy to Texarkana line, average rail traffic would increase from 11.7 to 18.3 trains per day, a train volume increase of about 56 percent. There are 104 grade crossings along this segment, 5 of which have ADT counts greater than 5,000 vehicles per day. At the typical speed grade crossings along the route (e.g., train speed of 50 mph), delay to vehicle traffic would increase from 21 minutes (pre-merger) to 33 minutes (post-merger) over a 24-hour period. At the highest speed grade crossings along the route (e.g., train speed of 65 mph), delay to vehicle traffic would increase from 18 minutes (pre-merger) to 28 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings (e.g., train speed of 20 mph), delay to vehicle traffic would increase from 41 minutes (pre-merger) to 64 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from 1 to 38 vehicles, and the corresponding delay per vehicle would vary from 1.11 to 2.06 minutes.

#### Fort Worth to Chickasha, Oklahoma

On the 177.7-mile Fort Worth to Chickasha line, average rail traffic would increase from 7.6 to 14.2 trains per day, a train volume increase of about 87 percent. There are two grade crossings along this segment, one which has an ADT count greater than 5,000 vehicles per day. At the typical speed grade crossings along the route (e.g., train speed of 40 mph), delay to vehicle traffic would increase from 16 minutes (pre-merger) to 30 minutes (post-merger) over a 24-hour period.

At the highest speed grade crossings along the route (e.g., train speed of 49 mph), delay to vehicle traffic would increase from 14 minutes (pre-merger) to 26 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings (e.g., train speed of 10 mph), delay to vehicle traffic would increase from 48 minutes (pre-merger) to 90 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from 6 to 20 vehicles, and the corresponding delay per vehicle would vary from 1.21 to 3.48 minutes.

#### Lufkin to Shreveport, Louisiana

On the 116-mile Lufkin to Shreveport line, average rail traffic would increase from 8.3 to 11.8 trains per day, a train volume increase of about 42 percent. There are 67 grade crossings along this segment, one which has an ADT count greater than 5,000 vehicles per day. At the typical speed grade crossings along the route (e.g., train speed of 40 mph), delay to vehicle traffic would increase from 17 minutes (pre-merger) to 25 minutes (post-merger) over a 24-hour period. At the highest speed grade crossings along the route (e.g., train speed of 50 mph), delay to vehicle traffic would increase from 15 minutes (pre-merger) to 21 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings (e.g., train speed of 25 mph), delay to vehicle traffic would increase from 24 minutes (pre-merger) to 35 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from 1 to 10 vehicles, and the corresponding delay per vehicle would vary from 1.20 to 1.77 minutes.

### El Paso to Lordsburg, New Mexico

On the 148-mile El Paso to Lordsburg line, average rail traffic would increase from 29.3 to 44.7 trains per day, a train volume increase of about 53 percent. There are 13 grade crossings on the line. At low speed grade crossings along the route (e.g., train speed of 30 mph), delay to vehicle traffic due to the additional daily trains would increase from 75 minutes (pre-merger) to 114 minutes (post-merger) over a 24-hour period. At higher speed crossings (e.g., train speed of 50 mph), delay would increase from 53 minutes (pre-merger) to 81 minutes (post-merger) over a 24-hour period.

### 16.5 Safety

SEA assessed a number of safety issues associated with the proposed merger, including the probability of increased accidents at grade crossings, and the risks associated with increased shipments of hazardous commodities.

### 16.5.1 Grade Crossing Safety

Accidents at grade crossings are a function of the number of trains, train speed, number of train tracks, grade crossing condition and warning facilities, roadway condition and number of lanes, and amount of roadway traffic. Since the proposed merger will not result in any new grade crossings and will affect only the number of trains passing through existing grade crossings, the probability of an increase in the number of accidents at grade crossings would depend on the number of trains on rail segments. SEA concludes that the accident exposure in Texas would range from an increase of 471 percent to a decrease of 70 percent depending on rail segment.

# 16.5.2 Hazardous Commodities

Certain rail line segments in Texas are subject to heavy movements of chemicals and hazardous materials, as discussed in Chapter 1 of this volume. SEA has recommended mitigation measures in Section 16.8 of this chapter, "SEA Recommended Mitigation."

Federal regulations govern the transport of hazardous commodities. The proposed merger is not expected to affect the policies or operation of UP/SP concerning the type or quantity of hazardous commodities transported or the method of handling. A total of 420,000 and 305,000 hazardous commodity shipments were transported by UP and SP, respectively, in 1994. These shipments resulted in 118 reportable incidents for UP and 35 incidents for SP. Therefore, 99.98 percent of the shipments arrived at their destination without incident. The Applicants have noted that the consolidation of the companies will result in a "best practice" approach to hazardous commodity handling. SEA concludes that, using the same rate of safe transport, the projected increases in accidents and shipments of hazardous materials as a result of the proposed merger do not constitute a significant safety risk.

# 16.6 Summary of Agency Comments



All comments received (through mid-March 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. Agency comments regarding the proposed increases in rail line segment, rail yard, and intermodal facility activities in Texas are summarized below:

- Natural Resources Conservation Service indicated that the project would have no significant adverse impact on agricultural lands in Texas. Recommends that all salvage operations include plans to prevent soil erosion during and after track removal.
- Tarrant County stated that it does not have local jurisdiction at these sites, but provided contacts for entities which are in charge of air quality in the North Central Texas Area since increased train activity could result in additional air pollution.
- City of Bryan indicates that an increase in truck traffic will manifest on local streets and state highways, which will create an environmental impact on circulation and safety. Rail service to local industrial properties will be discontinued, resulting in an impact to

land use, which could possibly result in promoting blight.

#### 16.7 Suggested Mitigation

No specific mitigation measures were suggested for the proposed changes to rail line segment, rail yard, or intermodal facility operations in Texas by the various parties consulted in the process of preparing the EA for the proposed merger. (See **Volume 5**, Appendices D and E, for agency consultation lists.)

#### 16.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any final decision approving the proposed changes in rail line segment, rail yard, and intermodal facility operations in Texas. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA's recommended mitigation is as follows.

#### Air Quality

 UP/SP shall consult with appropriate Federal, state and local agencies responsible for regulating air quality in AQCRs 22, 106, 153, 210, 211, 212, 215, 217, and 218 concerning any possible mitigation measures to reduce any potential adverse emissions from the rail segments, rail yards, and intermodal facilities in these nine regions. UP/SP shall advise SEA of the results of these consultations.

### Noise

- 1. To reduce potential noise level impacts to sensitive receptors along the El Paso to Dalhart, Dalhart to Stratford, Stratford to Hutchinson, Kansas, El Paso to Sierra Blanca, Sierra Blanca to Toyah, Toyah to Big Spring, Big Spring to Fort Worth. Fort Worth to Dallas, Dallas to Big Sandy, Big Sandy to Texarkana, Fort Worth to Chickasha, Oklahoma, Lufkin to Shreveport, Louisiana, and Iowa Junction, Louisiana to Beaumont rail line segments, UP/SP shall consult with appropriate state and local agencies to develop noise abatement plans. The Applicant shall advise SEA of the results of these consultations and provide SEA with a copy of any resulting noise abatement plans.
- To reduce potential noise level impacts to sensitive receptors near the Amarillo and Bellmead rail yards, UP/SP shall consult with appropriate state and local agencies to develop noise abatement plans. The Applicant shall advise SEA of the results of these consultations and provide SEA with a copy of any resulting noise abatement plans.
- 3. To reduce potential noise level impacts to sensitive receptors near Dallas and San Antonio intermodal facilities, UP/SP shall consult with appropriate state and local agencies to develop noise abatement plans. The Applicant shall advise SEA of the results of these consultations and provide SEA with a copy of any resulting noise abatement plans.

### **Transportation and Safety**

- 1. UP/SP shall maintain all rail line and grade crossing warning devices according to Federal Railroad Administration (FRA) Standards (49 CFR Part 213).
- UP/SP shall transport all hazardous materials in compliance with the U.S. Department of Transportation Hazardous Materials Regulations (49 CFR Parts 171 to 180).
- 3. In the case of a hazardous materials spill, UP/SP shall follow appropriate emergency response procedures outlined in their Emergency Response Plans.
- 4. UP/SP shall conduct rail line capacity simulations to verify that the directional operations involving St. Louis, Missouri, Memphis, Tennessee, and Dallas, San Antonio and Houston, Texas can be safely accomplished. These simulations should also include BN/Santa Fe train movements. UP/SP shall submit these simulations to FRA for its review and shall comply with FRA's recommendations. UP/SP shall submit its analysis, as well as FRA's findings to SEA for the following rail line segments:
  - Texarkana to Big Sandy, Texas (SP).
  - Big Sandy to Dallas, Texas (UP).
  - Big Sandy to Tyler, Texas (SP).
  - Tyler to Corsicana, Texas (SP).
  - Corsicana to Hearne, Texas (SP).
  - Hearne to West Point, Texas (SP).
  - West Point to Flatonia, Texas (SP)
  - Flatonia to San Antonio, Texas (SP).
  - Texarkana, Arkansas to Marshall, Texas (UP).
  - Marshall to Longview, Texas (UP).
  - Longview to Palestine, Texas (UP).
  - Palestine to Valley Jct., Texas (UP).
  - Valley Jct. to Taylor, Texas (UP).
  - Taylor to San Marcos, Texas (UP).
  - San Marcos to San Antonio, Texas (UP).
  - Palestine to Spring, Texas (UP).
  - Spring to Houston, Texas (UP).
  - Longview to Big Sandy, Texas (UP).
  - Big Sandy to Dallas, Texas (UP).
  - Dallas to Fort Worth, Texas (UP).
  - Shreveport, Louisiana to Lufkin, Texas (SP).
  - Lufkin to Houston, Texas (SP).
- 5. UP/SP shall conduct a safety analysis of the SP line segment between Lewisville, Arkansas and Houston, Texas to determine the need for installing an Automatic Block Signal (ABS) or Centralized Traffic Control (CTC) system. This SP line between Houston and Lewisville comprises three line segments: Lewisville, Arkansas to Shreveport, Louisiana, Shreveport, Louisiana to Lufkin, Texas, and Lufkin to Houston, Texas. This analysis shall address, at a

minimum, the added level of safety that these systems provide for train movements and rail break direction. UP/SP shall submit its analysis to FRA for its review and shall comply with FRA's recommendations. UP/SP shall submit its analysis, as well as FRA's findings, to SEA for the following rail line segments: Shreveport, Louisiana to Lufkin, Texas and Lufkin to Houston, Texas.

# CHAPTER 17.0

# RAIL LINE SEGMENT, RAIL YARD, AND INTERMODAL FACILITY IMPACTS UTAH

This chapter provides an analysis of the potential environmental impacts resulting from increased traffic on rail segments and increased activity at rail yards and intermodal facilities in Utah as part of the proposed merger. In analyzing these impacts, the Surface Transportation Board's (Board) Section of Environmental Analysis (SEA), consistent with its environmental rules at 49 CFR Part 1105.7(e), specifically considered: (1) impacts to air quality, (2) impacts to noise, (3) impacts to local, regional and national transportation systems, and (4) impacts to safety.

The following rail line segments would meet or exceed the Board's environmental analysis thresholds:

- Provo to Lynndyl (UP).
- Ogden to Alazon, Nevada (SP).
- Granger, Wyoming to Ogden (UP).

Each rail line segment is discussed in this chapter by impact chapter, as follows:

- Air quality (Section 17.1).
- Air quality at grade crossings (Section 17.2).
- Noise (Section 17.3).
- Transportation systems (Section 17.4).
- Safety (Section 17.5).

If a rail line segment would not experience impacts in any one of these categories as a result of proposed merger, no analysis was necessary. Accordingly, no discussion is provided.

Chapter 1 of this volume describes the thresholds established for analysis of potential air quality and noise impacts and the methods used to evaluate these and other potential impacts.

### 17.1 Air Quality Analysis

Utah contains two Air Quality Control Regions (AQCRs) with rail segments that would experience increased activity as a result of the proposed merger and thereby trigger one or more of the Board's thresholds for analysis. In each of these regions, increased emissions along the length of rail segments through the AQCR (sometimes over a distance of hundreds of miles) could result in a potential for adverse air quality impacts. SEA concludes that increased rail operation activities in these two regions would result in increased emissions of nitrogen dioxide (NO<sub>2</sub>), which

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contributes to the formation of ozone. Increases in emissions, however, would be partially offset by decreases in train activity on other segments. One of the two AQCRs in Utah (Wasatch Front) is designated as nonattainment for ozone.

Potential adverse impacts to air quality in these two AQCRs as a result of the proposed merger are discussed individually below.

### 17.1.1 Utah (AQCR 219)

Rail operations in the Utah AQCR (219) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of three rail segments (Granger, Wyoming, to Ogden, Ogden to Alazon, Nevada, and Provo to Lynndyl). There are no rail yards or intermodal facilities in this AQCR that exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Utah AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail operations activity in this AQCR.

The Utah AQCR (219) is designated as in attainment. In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along the three rail segments. SEA concludes that increased rail operations would contribute to increased levels of ozone, as well as other pollutants, in the Utah AQCR nonattainment area.

### **Emissions from Increased Rail Segment Activity**

The proposed merger would lead to changes in activity on nine rail segments that pass through or are connected to Utah (219). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of the segments would be as follows:

Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
Grand Jct. CO	Helper UT	176	-4.3	-21%	-27%
Granger WY	Ogden UT	145	3.9	11%	13%
Helper UT	Provo UT	75	-5.3	-23%	-19%
Lynndyl UT	Milford UT	89	-2.1	-8%	1%
Milford UT	Las Vegas NV	244	-2.7	-11%	1%
Ogden UT	Alazon NV	178	10.3	81%	77%
Ogden UT	McCammon ID	111	0.0	0%	-16%
Provo UT	Lynndyl UT	87	3.0	34%	39%
Salt Lake City	Lynndyl UT	117	-4.7	-25%	-29%

Three of the nine rail segments listed above (Granger, Wyoming, to Ogden, Ogden to Alazon, Nevada, and Provo to Lynndyl) were assessed for air quality impacts because they exceed the Board's analysis thresholds. The estimated increased emissions from these three segments are shown below. The impacts of these emissions are discussed in the section on Analysis of Activity.

Rail	AQCR	Estimated Increase in Emissions (tons per year					
Segment	(ID No.)	НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10	
Granger - Ogden	219	7.8	24.3	182.0	13.2	3.9	
Ogden - Alazon	219	31.8	98.9	739.9	53.6	16.0	
Provo - Lynndyl	219	7.3	22.7	169.9	12.3	3.7	
Total		46.9	145.9	1091.8	79.1	23.6	

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter



### Analysis of Activity

The increased rail operations activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Utah AQCR (219), primarily from mobile rail segment emissions.

### 17.1.2 Wasatch Front (AQCR 220)

Rail operations in the Wasatch Front AQCR (220) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of three rail segments (Granger, Wyoming, to Ogden, Ogden to Alazon, Nevada, and Provo to Lynndyl). There are no proposed rail yards or intermodal facilities in this AQCR that exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Wasatch Front AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail operations activity in this AQCR.

The Wasatch Front AQCR (220) includes the counties of Davis, Salt Lake, Tooele, Utah, and Weber, portions of which are designated as nonattainment for sulfur dioxide (SO<sub>2</sub>), total suspended particulates (TSP), particulate matter (PM-10), carbon monoxide (CO), and ozone (O<sub>3</sub>). In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along three rail segments. SEA concludes that increased rail operations would contribute to increased levels of all pollutants in the Wasatch Front AQCR nonattainment area.

### **Emissions from Increased Rail Segment Activity**

The proposed merger would lead to changes in activity on 11 rail segments that pass through or are connected to Wasatch Front (220). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of these segments would be as follows:

Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
Granger WY	Ogden UT	145	3.9	11%	13%
Helper UT	Provo UT	75	-7.2	-31%	-19%
Ogden UT	Salt Lake City UT	36	-24.3	-45%	-47%
Ogden UT	Alazon NV	178	10.3	81%	77%
Ogden UT	McCammon ID	111	0.0	0%	-16%
Provo UT	Lynndyl UT	87	3	34%	39%
Provo UT	Salt Lake City UT	44	-8.5	-35%	-29%
Salt Lake City UT	Alazon NV	214	-9.4	-47%	-49%
Salt Lake City UT	Ogden UT	36	-24.3	-45%	-47%
Salt Lake City UT	Provo UT	44	-8.5	-35%	-29%
Salt Lake City UT	Lynndyl UT	117	-4.7	-25%	-29%

Three of the eleven rail segments listed above (Ogden to Alazon and Provo to Lynndyl) were assessed for air quality impacts because they exceed the Board's analysis thresholds. The estimated increased emissions from these two segments are shown below. The impacts of these emissions are discussed in the section on Analysis of Activity.

Rail	AQCR	Estimated Increase in Emissions (tons per year)				
Segment	(ID No.)	НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Granger - Ogden	220	1.4	4.5	33.5	2.4	0.7
Ogden - Alazon	220	4.5	14.1	105.7	7.7	2.3
Provo - Lynndyl	220	3.9	12.2	91.5	6.6	2.0
Total		9.8	30.8	230.7	16.7	5.0

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

#### Analysis of Activity

The increased rail operations activity would result in increased levels of all pollutants with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Wasatch Front AQCR, primarily from mobile rail segment emissions.

### 17.2 Air Quality Impacts at Grade Crossings

SEA assessed the overall air quality impacts of emissions from idling vehicles waiting at grade crossings. On average, annual emissions at a grade crossing with 5,000 vehicles per day would be 0.0021 ton of volatile organic compounds, 0.0013 ton of hydrocarbons, 0.0111 ton of carbon monoxide, and 0.0003 ton of nitrogen dioxide (NO<sub>2</sub>) per train crossing. Traffic volumes of more than 5,000 vehicles per day would increase the estimated emissions accordingly. Railroad crossings tend to be grade-separated when roadway and/or train traffic volumes become high, so the air quality impacts at grade crossings would generally be relatively minor. In Utah, most grade crossings carry 5,000 or fewer vehicles. SEA concludes that no adverse air quality impacts would result from increased grade crossing delays as a result of the proposed merger. Section 17.4.1 of this chapter contains information on the transportation impacts of grade crossing delays associated with increased rail segment activity.

#### 17.3 Noise Analysis

SEA performed noise analyses to identify noise-sensitive land uses where the proposed
changes in operations could result in increases in noise exposure that meet or exceed the Board's environmental analysis thresholds at 49 CFR 1105.7(e)(6). The following discussion provides an estimate of the number of noise-sensitive receptors (e.g., residences, schools, churches) where the Board's thresholds would be exceeded, potentially causing an adverse increase in noise exposure. The noise level impact assessment was based on the baseline and projected activity level data provided by UP/SP.

## 17.3.1 Increased Rail Segment Activity

#### Ogden to Alazon, Nevada

This rail segment currently has 12.7 trains/day and would experience an increase of 10.3 trains/day (a change of 77.2 percent gross ton-miles per year) as a result of the proposed merger. This change in through train activity would result in an increase in the  $L_{dn}$  of 2.6 dBA along the alignment. The Utah portion of this segment commences in Odgen and then runs west across the Great Salt Lake and the Great Salt Lake Desert until the border with Nevada. The only noise sensitive receptors in Utah are in the Ogden area. Currently, the noise impact zone at grade crossings extends approximately 575 feet perpendicular to the tracks, whereas after the proposed merger the noise impact zone would increase to about 800 feet. Noise impacts along the segment are described below.

The line goes through a mainly industrial area north of the yard; however, there are a few residences located along the track near grade crossings. The line then curves westward and passes through the Garland area, where there are a number of grade crossings with homes located nearby on both sides of the track. The closest residences are approximately 100 feet from the track. Currently 39 residences and 1 church are within the 65  $L_{dn}$  contour. An additional 27 residences would lie within the post-merger contour. In the Utah portion of the Ogden to Alazon, Nevada segment, there are currently 39 residences and 1 church within the 65  $L_{dn}$  contour. The majority of the impacts are due to train horns near grade crossings. With the proposed increase in train traffic as a result of the proposed merger, this would increase by 27 residences, for a total of 66 residences and 1 church within the post-merger 65  $L_{dn}$  contour as shown below:

## NOISE SUMMARY FOR THE UTAH PORTION OF THE OGDEN TO ALAZON, NEVADA (SP) LINE SEGMENT

Community	Number of Sensitive Receptors							
		Pre-Merge	r	Post-Merger				
	Resid.	School	Church	Resid.	School	Church		
Ogden	39	0	1	66	0	1		
TOTAL	39	0	1	66	0	1		

## Provo to Lynndyl

This rail segment, which currently has 8.7 trains/day, would experience an increase of 3 trains/day (a 39.1 percent change in gross ton-miles per year) as a result of the proposed merger. The projected increase in train volume and gross ton-miles on this segment would cause less than a 2 dBA increase in the  $L_{dn}$ . No adverse noise impacts are expected.

## Granger, Wyoming to Ogden

This rail segment, which currently has 34.4 trains/day, would experience an increase of 3.9 trains/day (a 12.7 percent change in gross ton-miles per year) as a result of the proposed merger. The projected increase in train volume and gross ton-miles on this segment would cause less than a 2 dBA increase in the  $L_{dn}$ . No adverse noise impacts are expected.

### 17.4 Transportation Systems

The Board's environmental rules at 49 CFR 1105.7(e)(2) require a description of the effects of the proposed merger on local and regional transportation systems. The primary transportation effects resulting from the increased rail traffic of the proposed merger are related to: (1) additional truck traffic generated at those intermodal facilities where intermodal activity is projected to increase, and (2) increases in roadway delays at grade crossings as a result of increased train traffic on rail segments.

The impacts near intermodal facilities would result from increased truck traffic using local roadways to enter and exit the intermodal facility. For those facilities with an expected increase of 50 trucks or more per day, SEA analyzed the impacts of this increased traffic on the local roadway system in terms of increases in daily and peak hour traffic. SEA collected traffic counts from local and state transportation officials for this analysis. While the offsetting benefits of the proposed merger were not quantified at the local level, the traffic impacts from added truck traffic at intermodal facilities would be partially offset in many localities by truck-to-rail diversions and consolidation of operations. Because there are no intermodal facilities in Utah that would experience an increase in truck traffic above the Board's analysis threshold as a part of the proposed merger, SEA concludes that there are no significant impacts to the local transportation system.

SEA addressed the concerns of local communities about increased traffic delays at grade crossing through an evaluation of vehicle delay and wait times at grade crossing locations. It is important to note that the acceptability of delays at grade crossings varies substantially based on local conditions such as the location of land uses by type, availability of alternative travel routes, the degree of use by emergency vehicles, and other local variables. While the time of delay at grade crossings would increase proportionately with the increase in train traffic, most of the grade

crossings in Utah carry fewer than 5,000 vehicles per day. SEA concludes that increases in vehicle delay and/or wait time due to merger-related operational changes would not be excessive.

#### 17.4.1 Grade Crossings

In order to analyze the effects of the proposed merger on the roadway system at railroad grade crossings, SEA determined the number of crossings along rail segments that would exceed the Board's analysis thresholds for air quality analysis. Approximate delays over the course of 24 hours were calculated, as were average queue lengths. While an increase in the number of trains would result in more crossing closings per day, the length of the queue at each individual crossing closing event would change only if the train length changes. Vehicle delay impacts along rail line segments in Utah are summarized below:

#### Ogden to Alazon, Nevada

Average rail traffic on the Ogden to Alazon, Nevada line would increase from 12.7 to 23.0 trains per day, a train volume increase of about 81 percent. At low speed grade crossings along the route (e.g., train speed of 30 mph), delay to vehicle traffic due to the additional daily trains would increase from 34 minutes (pre-merger) to 61 minutes (post-merger) over a 24-hour period. At higher speed crossings (e.g., train speed of 50 mph), delay would increase from 24 minutes (pre-merger) to 43 minutes (post-merger) over a 24-hour period.

#### Provo to Lynndyl

On the Provo to Lynndyl line, average rail traffic would increase from 8.7 to 11.7 trains per day, a train volume increase of about 35 percent. There are 49 grade crossings on this segment, none of which have ADT counts greater than 5,000 vehicles per day. At low speed grade crossings along the route (e.g., train speed of 30 mph), delay to vehicle traffic due to the additional daily trains would increase from 22 minutes (pre-merger) to 30 minutes (post-merger) over a 24-hour period. At higher speed crossings (e.g., train speed of 50 mph), delay would increase from 16 minutes (pre-merger) to 21 minutes (pcst-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic would range from zero to three vehicles, and the corresponding delay per vehicle would vary from 1.81 to 4.46 minutes.

#### 17.5 Safety

SEA assessed a number of safety issues associated with the proposed merger, including the probability of increased accidents at grade crossings, and the risks associated with increased shipments of hazardous commodities.

## 17.5.1 Grade Crossing Safety

Accidents at grade crossings are a function of the number of trains, train speed, number of train tracks, grade crossing condition and warning facilities, roadway condition and number of lanes, and amount of roadway traffic. Since the proposed merger would not result in any new grade crossings and will affect only the number of trains at existing grade crossings, the probability of an increase in the number of accidents at grade crossings would depend on the expected change in trains on rail segments. SEA concludes that the accident exposure in Utah will range from an increase of 81 percent to a decrease of 31 percent depending on the rail segment.

## 17.5.2 Hazardous Commodities

Federal regulations govern the transport of hazardous commodities. The proposed merger is not expected to affect the policies or operation of UP/SP concerning the type or quantity of hazardous commodities transported or the method of handling. A total of 420,000 and 305,000 hazardous commodity shipments were transported by UP and SP, respectively, in 1994. These shipments resulted in 118 reportable incidents for UP, and 35 incidents for SP. Therefore, 99.98 percent of the shipments arrived at their destination without incident. The Applicants have noted that the consolidation of the companies will result in a "best practice" approach to hazardous commodity handling. SEA concludes that, using the same rate of safe transport, the projected increases in accidents and shipments of hazardous materials as a result of the proposed merger do not constitute a significant safety risk.

#### 17.6 Summary of Agency Comments

In considering the potential environmental impacts of the increased rail line segment, rail yard, and intermodal facility activity associated with the proposed UP/SP merger, SEA sent consultation letters to various Federal, state, and local agencies on January 29, 1996. These letters, samples of which are included in **Volume 5**, Appendix D, Exhibits D-1 through D-9, provided early notification of this EA and requested information and comments on the effects to the environment of the proposed merger and related operational changes. Each letter included a state information packet and maps that listed the specific merger-related proposals. A sample packet is shown in **Volume 5**, Appendix D, Exhibit D-10. SEA contacted agencies by telephone to alert them to the distribution of the consultation letter and to confirm its receipt. The Applicant also contacted these agencies in preparation of the Environmental Report which accompanied the merger application. That correspondence and all responses were reviewed, verified, and considered by SEA in the preparation of this EA.

All comments received (through mid-March 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. Agency

comments regarding the proposed increases in rail line segment activities in Utah are summarized below:

- U.S. Fish and Wildlife Service have no comments at this time.
- Governor's Office of Planning and Budget, stated the following:

The application appears to be biased towards the UP and SP interests and did not adequately address impacts to nearby residents or the local environment. UP North Yard is currently under investigation under CERCLA for historic waste management practices. A preliminary CERCLA assessment indicates that the site has historically affected nearby surface waters and site pollutants have entered the Northwest Oil Drain and been distributed throughout the Farmington Bay Bird Refuge on the Great Salt Lake. On-site and adjacent soils may also be affected. The ER does not adequately identify or address the impacts of the expansion on the wetlands. Information from the NWI is not incorporated into the report. Wetlands are not adequately identified. The residential area immediately south of the yard was not counted in Table 16-1. The 1990 census data indicate that approximately 1840 persons live within 1/4 mile of the yard. Table 16-2 did not address all of the receptors sensitive to environmental change including: residential areas, commercial, schools, hospitals, churches, agriculture, institutional and water resources. Loss of prime farm land was the only issue addressed. Table 16-3 did not address all of the water resources including: water bodies, wetlands, mudflats, sewage treatment ponds, industrial waste ponds and springs. Table 16-4 did not list the Farmington Bay Bird Refuge which is four miles down gradient of the site. Bald Eagle and Peregrine Falcon were not listed as Threatened or Endangered Species. Table 16-5 did not list the Bald Eagle or the Peregrine Falcon as T&E species. Critical habitat for the falcon includes the wetlands near the yard and the Farmington Bay Bird Refuge. Bald Eagles are frequently found along the Jordan River and along the Northwest Oil Drain during the winter.

Utah Resource Development Coordinating Committee states that to address the potential for the presence of ground water contamination at these facilities and the need for remediation, if present, a program for evaluating the ground water quality and possible associated and related soil contamination should be developed. Data from these evaluations should be provided to the Utah Department of Environmental Quality. If conversion to crane operations is not offset by reduction in emissions from other former activities in the North Yard, the crane operations may represent a new, additional source of emissions impacting air quality in the area. If the merger occurs and the proposed actions in the North Yard are to become a reality, the DAQ requests that appropriate personnel representing the UP/SP Railroads meet with the DAQ and

address these issues prior to construction in the North Yard.

Salt Lake City/County Health Department, Division of Environmental Health, is investigating a petroleum release in the vicinity of the railroad yard in North Salt Lake.

## 17.7 Suggested Mitigation

No specific mitigation measures were suggested for the proposed changes to rail line segment operations in Utah by the various parties consulted in the process of preparing the EA for the proposed merger. (See **Volume 5**, Appendices D and E, for agency consultation lists.)

## 17.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any final decision approving the changes to rail line segment operations in Utah. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA's recommended mitigation is as follows.

## Air Quality

 UP/SP shall consult with appropriate Federal, state and local agencies responsible for regulating air quality in AQCRs 219 and 220, concerning any possible mitigation measures to reduce any potential adverse emissions from the rail segments in these regions. UP/SP shall advise SEA of the results of these consultations.

### Noise

 To reduce potential noise level impacts to sensitive receptors along the Provo to Lynndyl, Ogden to Alazon, Nevada, and Granger, Wyoming to Ogden rail line segments, UP/SP shall consult with appropriate state and local agencies to develop noise abatement plans. The Applicant shall advise SEA of the results of these consultations and provide SEA with a copy of any resulting noise abatement plans.

## **Transportation and Safety**

1. UP/SP shall maintain all rail line and grade crossing warning devices according to Federal Railroad Administration Standards (49 CFR Part 213).

- UP/SP shall transport all hazardous materials in compliance with the U.S. Department of Transportation Hazardous Materials Regulations (49 CFR Parts 171 to 180).
- 3. In the case of a hazardous materials spill, UP/SP shall follow appropriate emergency response procedures outlined in their Emergency Response Plans.

## CHAPTER 18.0

# RAIL LINE SEGMENT, RAIL YARD, AND INTERMODAL FACILITY IMPACTS WASHINGTON

This chapter provides an analysis of the potential environmental impacts resulting from increased traffic on rail segments and increased activity at rail yards and intermodal facilities in Washington as part of the proposed merger. In analyzing these impacts, the Surface Transportation Board's (Board) Section of Environmental Analysis (SEA), consistent with its environmental rules at 49 CFR Part 1105.7(e), specifically considered: (1) impacts to air quality, (2) impacts to noise, (3) impacts to local, regional and national transportation systems, and (4) impacts to safety.

The following rail line segments, rail yards, and intermodal facilities would meet or exceed the Board's environmental analysis thresholds:

- Seattle to Portland, Oregon (UP).
- Seattle rail yard (UP).
- Seattle intermodal facility (UP).

Each rail line segment, rail yard, or intermodal facility is discussed in this chapter by impact category, as follows:

- Air quality (Section 18.1).
- Air quality at grade crossings (Section 18.2).
- Noise (Section 18.3)
- Transportation systems (Section 18.4).
- Safety (Section 18.5).

If a rail line segment, rail yard, or intermodal facility would not experience impacts in any one of these categories as a result of proposed merger, no analysis was necessary. Accordingly, no discussion is provided.

Chapter 1 of this volume describes the thresholds established for analysis of potential air quality and noise impacts and the methods used to evaluate these and other potential impacts.

### 18.1 Air Quality Analysis



Washington contains two Air Quality Control Regions (AQCRs) with rail segments, rail yards, and/or intermodal facilities that would experience increased activity as a result of the proposed merger and thereby trigger one or more of the Board's thresholds for analysis. In each of these

regions, increased emissions along the length of rail segments through the AQCR (sometimes over a distance of hundreds of miles) could result in a potential for adverse air quality impacts. SEA concludes that increased rail operation activities in these regions would result in increased emissions of nitrogen dioxide (NO<sub>2</sub>), which contributes to the formation of ozone. Increases in emissions, however, would be partially offset by decreases in train activity on other segments. Both AQCRs in Washington are designated as nonattainment for ozone.

Potential adverse impacts to air quality in these two AQCRs as a result of the proposed merger are discussed individually below.

#### 18.1.1 Olympic-Northwest Washington (AQCR 228)

Rail operations in the Olympic-Northwest Washington AQCR (228) associated with the proposed UP/SP merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of a portion of one rail segment (Seattle to Portland, Oregon). There are no intermodal facilities or rail yards in this AQCR that would exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Olympic-Northwest Washington AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Olympic-Northwest Washington AQCR (228) includes the counties of Clallam, Grays Harbor, Island, Jefferson, Mason, Pacific, San Juan, Skagit, Thurston, and Whatcom, portions of which are designated as nonattainment for particulate matter (PM-10). In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along one segment. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the Olympic-Northwest Washington nonattainment area.

#### **Emissions from Increased Rail Segment Activity**

The proposed merger would lead to changed activity on one rail segment that passes through or is connected to Olympic-Northwest Washington (228). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for this segment would be as follows:

Origin	Destination	Miles	Change in #	%Change	%Change
Station	Station		of Trains/Day	in Trains/Day	in Tons/Year
Seattle WA	Portland OR	186	3.6	8%	6%

The rail segment listed above (Seattle to Portland, Oregon) was assessed for air quality impacts because it would exceed the Board's analysis thresholds. The increased emissions from

this segment are shown below. The impacts of these emissions are discussed below in the section on Analysis of Activity.

Rail	AQCR	Estin	nated Increa	se in Emissio	ns (tons per	year)
Segment	(ID No.)	НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Seattle - Portland	228	1.1	3.4	25.6	1.9	0.6

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

#### Analysis of Activity

This increased rail segment activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Olympic-Northwest Washington AQCR, primarily from mobile rail segment emissions.

## 18.1.2 Puget Sound (AQCR 229)

Rail operations in the Puget Sound AQCR (229) associated with the proposed merger that require analysis, as specified by Board's environmental rules at 49 CFR 1105.7(e)(5), consist of a portion of one rail segment (Seattle to Portland, Oregon), the Seattle rail yard, and the Seattle intermodal facility. Based on increased activity levels as a result of the proposed merger, SEA examined the Puget Sound AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Puget Sound AQCR (229) includes the counties of King, Snohomish, Pierce, and Kitsap, portions of which are designated as nonattainment for total suspended particulates (TSP), particulate matter (PM-10), carbon monoxide (CO), and ozone (O<sub>3</sub>). In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along one rail segment, the rail yard, and the intermodal facility. SEA concludes that increased rail operations would contribute to increased levels of ceone as well as other pollutants in the Puget Sound nonattainment area.

## **Emissions from Increased Rail Segment Activity**

The proposed merger would lead to increased activity on one rail segment that passes through or is connected to Puget Sound (229). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for this segment would be as follows:

Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
Seattle WA	Portland OR	186	3.6	8%	6%

The rail segment listed above (Seattle to Portland, Oregon) was assessed for air quality impacts because it would exceed the Board's analysis thresholds. The increased emissions from this segment are shown below. The impacts of these emissions are discussed below in the section on Analysis of Combined Activity.

Rail	AQCR	Estir	nated Increa	se in Emissio	ons (tons per	year)
Segment	(ID No.)	НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Seattle - Portland	229	3.9	12.1	90.8	6.6	2.0

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

### **Emissions from Increased Rail Yard Activity**

The proposed merger would lead to an increase in rail yard activity of 27.8 percent in the Seattle rail yard. This activity includes fueling, switching, and assembling of trains. The estimated increased emissions from this rail yard are shown below. The impacts of these emissions are discussed below in the section on Analysis of Combined Activity.

Rail Yard	AQCR	Estin	nated Increas	se in Emissio	ns (tons per	year)
	(ID No.)	НС	со	NO <sub>2</sub>	SO2	PM-10
Seattle	229	0.3	0.8	6.1	0.4	0.1

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2 \approx$  nitrogen dioxide,  $SO_2 =$  sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

## Emissions from Increased Intermodal Activity



The proposed merger would lead to an increase in intermodal activity of 59 trucks per day at the Seattle facility. The estimated increased emissions from this intermodal facility are shown below. The impacts of these emissions are discussed below in the section on Analysis of Combined Activity.

Intermodal AQCR Facility (ID No.)	AQCR	Estim	nated Increa	se in Emissio	ns (tons per	year)
	(ID No.)	HC	со	NO <sub>2</sub>	SO <sub>2</sub>	PM
Seattie	229	1.5	7.1	8.3	0.2	1.5

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

## Analysis of Combined Activity

This section discusses the impact to the Puget Sound AQCR based on the combined estimated emissions from rail segment, the rail yard, and the intermodal facility related to the proposed merger. The total estimated increase in pollutant emissions are listed below:

Rail	AQCR	Estin	nated Increas	e in Emissio	ns (tons per	ns per year)	
Facility	(ID No.)	HC	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10	
Rail Segments Total	229	3.9	12.1	90.8	6.6	2.0	
Rail Yards Total	229	0.3	0.8	6.1	0.4	0.1	
Intermodal Facilities Total	229	1.5	7.1	8.3	0.2	1.5	
Total		5.7	20.0	105.2	7.2	3.6	

#### Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

Most of the estimated increases in pollutants that would result from the proposed merger in the Puget Sound AQCR (229) would be from rail segments, which are not stationary sources. Pollutants from the Seattle rail yard facility and intermodal facility would be lower than the EPA



definition of significance (as defined in Prevention of Significant Deterioration at 40 CFR 51.166) for all pollutants. This increased rail segment activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Qua<sup>2</sup> ty Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Puget Sound AQCR, primarily from mobile rail segment emissions.

## 18.2 Air Quality Impacts at Grade Crossings

SEA assessed the overall air quality impacts of emissions from idling vehicles waiting at grade crossings. On average, annual emissions at a grade crossing with 5,000 vehicles per day would be 0.0021 ton of volatile organic compounds, 0.0013 ton of hydrocarbons, 0.0111 ton of carbon monoxide, and 0.0003 ton of nitrogen dioxide (NO<sub>2</sub>) per train crossing. Traffic volumes of more than 5,000 vehicles per day would increase the estimated emissions accordingly. Railroad crossings tend to be grade-separated when roadway and/or train traffic volumes become high, so the air quality impacts at grade crossings would generally be relatively minor. In Washington, most grade crossings carry 5,000 or fewer vehicles. SEA concludes that no adverse air quality impacts would result from increased grade crossing delays as a result of the proposed merger. Section 18.4.2 of this chapter contains information on the transportation impacts of grade crossing delays associated with increased rail segment activity.

#### 18.3 Noise Analysis

SEA performed noise analyses to identify noise-sensitive land uses where the proposed changes in operations could result in increases in noise exposure that meet or exceed the Board's environmental analysis thresholds at 49 CFR 1105.7(e)(6). The following discussion provides an estimate of the number of noise-sensitive receptors (e.g., residences, schools, churches) where the Board's thresholds would be exceeded, potentially causing an adverse increase in noise exposure. The noise level impact assessment was based on the baseline and projected activity level data provided by UP/SP.

#### 18.3.1 Increased Rail Segment Activity

#### Seattle to Portland, Oregon

This rail segment, which currently has 46.5 trains/day, would experience an increase of 3.6 trains/day (a 13.8 percent change in gross ton-miles per year) as a result of the proposed merger. The projected increase in train volume and gross ton-miles on this segment would cause less than a 2 dBA increase in the  $L_{dn}$ . No adverse noise impacts are expected.

## 18.3.2 Increased Rail Yard Activity



## Seattle

The Seattle rail yard is part of the Seattle Terminal. The increase in car volume would not exceed the Board's threshold criterion; however, the post-merger volume of 649.9 cars/day would be substantial. The land use surrounding the Seattle Yard is primarily industrial, and there would be no sensitive receptors within the 65 dBA  $L_{dn}$  contour for either the pre- or post-merger conditions.

## 18.3.3 Increased Intermodal Facility Activity

### Seattle



The Seattle intermodal facility is part of the Seattle Terminal. The UP Seattle intermodal facility in Washington is projected to have an activity increase greater than the Board's threshold of 50 trucks per day for noise analysis. The UP Seattle intermodal facility currently serves approximately 561 trucks per day, and is expected to realize an average increase of 59 trucks per day. The UP Seattle facility is located on Denver Avenue South, west of Interstate 5. The primary truck transportation route to the facility is via Interstate 5. West Seattle Freeway, and 1st Avenue. The expected increase in truck traffic on First Avenue near this intermodal facility is projected by the Applicant to cause a maximum of a 0.4 dBA increase in noise exposure along this road. This is consistent with an estimate based on facility truck traffic increases alone. The increase in noise levels from the intermodal trucks and cranes at the Seattle facilities would not exceed the Board's impact criterion of 2 dBA L<sub>dn</sub>; however, the volume of intermodal activity at this facility would be substantial, with 283,000 lifts/year. The land use surrounding this facility is industrial, and there would be no sensitive receptors within the 65 dBA L<sub>dn</sub> contour for either the pre- or post-merger conditions.

#### 18.4 Transportation Systems

The Board's environmental rules at 49 CFR 1105.7(e)(2) require a description of the effects of the proposed merger on local and regional transportation systems. The primary transportation impacts of the proposed merger are related to: (1) additional truck traffic generated at those intermodal facilities where intermodal activity is projected to increase, and (2) increases in roadway delays at grade crossings as a result of increased train traffic on rail segments.

The impacts near intermodal facilities would result from increased truck traffic using local roadways to enter and exit the intermodal facility. For those facilities with an expected increase of 50 trucks or more per day, SEA analyzed the impacts of this increased traffic on the local roadway system in terms of increases in daily and peak hour traffic. SEA collected traffic count



data from local and state transportation officials for this analysis. While the offsetting benefits of the proposed merger were not quantified at the local level, the traffic impacts from added truck traffic at intermodal facilities would be partially offset in many localities by truck-to-rail diversions and consolidation of operations. SEA concludes that the impacts from the single intermodal facility in Washington would not cause adverse impacts on the local transportation system.

SEA addressed the concerns of local communities about increased traffic delays at grade crossing through an evaluation of vehicle delay and wait times at grade crossing locations. It is important to note that the acceptability of delays at grade crossings varies substantially based on local conditions such as the location of land uses by type, availability of alternative travel routes, the degree of use by emergency vehicles, and other local variables. While the time of delay at grade crossings would increase proportionately with the increase in train traffic, most of the grade crossings in Washington carry fewer than 5,000 vehicles per day. SEA concludes that increases in vehicle delay and/or wait time due to merger-related operational changes would not be excessive.

## 18.4.1 Intermodal Facilities

## Seattle

The UP Seattle facility is located on Denver Avenue South, west of Interstate 5. Truck transportation to the facility is via Interstate 5, West Seattle Freeway, and 1st Avenue. This intermodal facility currently serves approximately 561 trucks per day. After the proposed merger, this facility would experience an average increase of 59 trucks per day based on UP/SP projections. SEA obtained Average Daily Traffic (ADT) counts for the vicinity of the intermodal facility from the City of Seattle. A count performed in 1994 showed an ADT of 14,300 along 1st Avenue, north of Hudson Avenue. The projected increase of 59 trucks per day at this facility would represent an 0.8 percent increase in ADT on 1st Avenue. SEA concludes that this small increase would not cause any adverse impacts to local transportation systems.

#### 18.4.2 Grade Crossings

In order to analyze the effects of the proposed merger on the roadway system at grade crossings, SEA determined the number of crossings along rail segments that would exceed the Board's analysis thresholds for air quality analysis. Approximate delays over the course of 24 hours were calculated, as were average queue lengths. While an increase in the number of trains would result in more crossing closings per day, the length of the queue at each individual crossing closing event would change only if the train length changes. Vehicle delay impacts at rail line segments in Washington are summarized below:

## Seattle to Portland, Oregon



Average rail traffic on the Seattle to Portland, Oregon line would increase from 46.5 to 50.1 trains per day as a result of the proposed merger; this is an increase in train volume of about 8 percent. There are 82 grade crossings along this segment, 11 of which have ADT counts greater than 5,000 vehicles per day. At typical speed grade crossings along the route in Oregon (e.g., train speed of 25 mph), delay to vehicle traffic would increase from 35 minutes (pre-merger) to 43 minutes (post-merger) over a 24-hour period. At high speed grade crossings along the route (e.g., train speed of 70 mph), delay to vehicle traffic would increase from 25 minutes (pre-merger) to 30 minutes (post-merger) over a 24-hour period. At the lowest speed grade crossings (e.g., train speed of 10 mph), delay to vehicle traffic would increase from 107 minutes (pre-merger) to 130 minutes (post-merger) over a 24-hour period. The maximum queue length per train due to peak hour vehicle traffic ranges from 1 to 53 vehicles. The corresponding delay per vehicle would vary from 1,01 to 3,48 minutes.

#### 18.5 Safety

SEA assessed a number of safety issues associated with the proposed merger, including the probability of increased accidents at grade crossings, and the risks associated with increased shipments of hazardous commodities.

#### 18.5.1 Grade Crossing Safety

Accidents at grade crossings are a function of the number of trains, train speed, number of train tracks, grade crossing condition and warning facilities, roadway condition and number of lanes, and amount of roadway traffic. Since the proposed merger would not result in any new grade crossings and would affect only the number of trains passing through existing grade crossings, the probability of an increase in the number of accidents at grade crossings would depend on the increased number of trains on rail segments. SEA concludes that the accident exposure in Washington will be an increase of 8 percent.

#### 18.5.2 Hazardous Commodities

Federal regulations govern the transport of hazardous commodities. The proposed merger is not expected to affect the policies or operation of UP/SP concerning the type or quantity of hazardous commodities transported or the method of handling. A total of 420,000 and 305,000 hazardous commodity shipments were transported by UP and SP, respectively, in 1994. These shipments resulted in 118 reportable incidents for UP, and 35 incidents for SP. Therefore, 99.98 percent of the shipments arrived at their destination without incident. The Applicants have noted that the consolidation of the companies will result in a "best practice" approach to hazardous commodity handling. SEA concludes that, using the same rate of safe transport, the projected

increases in accidents and shipments of hazardous materials as a result of the proposed merger do not constitute a significant safety risk.

#### 18.6 Summary of Agency Comments

In considering the potential environmental impacts of the increased rail line segment, rail yard, and intermodal facility activity associated with the proposed UP/SP merger, SEA sent consultation letters to various Federal, state, and local agencies on January 29, 1996. These letters, samples of which are included in **Volume 5**, Appendix D, Exhibits D-1 through D-9, provided early notification of this EA and requested information and comments on the effects to the environment of the proposed merger and related operational changes. Each letter included a state information packet and maps that listed the specific merger-related proposals. A sample packet is shown in **Volume 5**, Appendix D, Exhibit D-10. SEA contacted agencies by telephone to alert them to the distribution of the consultation letter and to confirm its receipt. The Applicant also contacted these agencies in preparation of the Environmental Report which accompanied the merger application. That correspondence and all responses were reviewed, verified, and considered by SEA in the preparation of this EA.

All comments received (through mid-March 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. Agency comments regarding the proposed increases in rail line segment, rail yard, and intermodal facility activities in Washington are summarized below:

 Cowlitz-Wahkiakum County Council of Governments stated their concern with the increased rail traffic on the line segment between Seattle and Portland and with the current projected growth, the addition of traffic in the Longview-Kelso-Kalama region, a ten percent average annual increase in mainline trips by BN/SF, and the initiative to increase passenger rail trips. The merged company needs to work with state and local public and private interests to see that capacity improvements are accomplished to meet growth projections in a timely manner.

#### 18.7 Suggested Mitigation

This section highlights the mitigation measures that various parties, consulted in the process of preparing this EA for the proposed merger, have requested:

 The County of Cowlitz noted that the Board is aware of the increased traffic of the Portland Tacoma line and believes that addition of the third track between the Port of Kalama and the Longview Wye is a priority among all rail infrastructure improvements proposed in Washington's Cascadia Corridor. They suggest that the merged company coordinate with other private and public entities to accomplish this important mitigation improvement.

## 18.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any final decision approving the proposed changes to rail line segment, rail yard, and intermodal facility operations in Washington. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA's recommended mitigation is as follows.

## Air Quality

 UP/SP shall Consult with appropriate Federal, state and local agencies responsible for regulating air quality in AQCR 228 and 229 concerning any possible mitigation measures to reduce any potential adverse emissions from the rail segment, rail yard, and intermodal facility in these two regions. UP/SP shall advise SEA of the results of these consultations.

## Noise

 To reduce potential noise level impacts to sensitive receptors along the Seattle to Portland Oregon rail line segments, around the Seattle rail yard, and near the Seattle intermodal facility, UP/SP shall consult with appropriate state and local agencies to develop noise abatement plans. The Applicant shall advise SEA of the results of these consultations and provide SEA with a copy of any resulting noise abatement plans.

### Transportation and Safety

- UP/SP shall maintain all rail line and grade crossing warning devices according to Federal Railroad Administration Standards (49 CFR Part 213).
- UP/SP shall transport all hazardous materials in compliance with the U.S. Department of Transportation Hazardous Materials Regulations (49 CFR Parts 171 to 180).
- 3. In the case of a hazardous materials spill, UP/SP shall follow appropriate emergency response procedures outlined in their Emergency Response Plans.

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## CHAPTER 19.0 RAIL LINE SEGMENT, RAIL YARD, AND INTERMODAL FACILITY IMPACTS WISCONSIN

This chapter provides an analysis of the potential environmental impacts resulting from increased traffic on rail segments in Wisconsin as part of the proposed merger. In analyzing these impacts, the Surface Transportation Board's (Board) Section of Environmental Analysis (SEA), consistent with its environmental rules at 49 CFR Part 1105.7(e), specifically considered: (1) impacts to air quality, (2) impacts to noise, (3) impacts to local, regional and national transportation systems, and (4) impacts to safety.

The following rail line segment would meet or exceed the Board's environmental analysis thresholds:

Oak Creek to St. Francis (UP).

Each rail line segment is discussed in this chapter by impact chapter, as follows:

- Air quality (Section 19.1).
- Air quality at grade crossings (Section 19.2).
- Noise (Section 19.3).
- Transportation systems (Section 19.4).
- Safety (Section 19.5).

If a rail line segment would not experience impacts in any one of these categories as a result of proposed merger, no analysis was necessary. Accordingly, no discussion is provided.

Chapter 1 of this volume describes the thresholds established for analysis of potential air quality and noise impacts and the methods used to evaluate these and other potential impacts.

## 19.1 Air Quality Analysis

Wisconsin contains one Air Quality Control Region (AQCR) with rail segments that would experience increased activity as a result of the proposed merger and thereby trigger one or more of the Board's thresholds for analysis. In this region, increased emissions along the length of rail segments through the AQCR could result in a potential for adverse air quality impacts. SEA concludes that increased rail operation activities in this region would result in increased emissions of nitrogen dioxide (NO<sub>2</sub>), which contributes to the formation of ozcne. Increases in emissions, however, would be partially offset by decreases in train activity on other segments.



Potential adverse impacts to air quality in this AQCR as a result of the proposed merger is discussed below.

#### 19.1.1 Southeastern Wisconsin (AQCR 239)

Rail operations in the Southeastern Wisconsin AQCR (239) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of a portion of one rail segment (Oak Creek to St. Francis). There are no rail yards or intermodal facilities in this AQCR that would exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Southeastern Wisconsin AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Southeastern Wisconsin AQCR (239) includes the counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha, portions of which are designated as nonattainment for total suspended particulates (TSP) and ozone  $(O_3)$ . In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along the rail segment. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the Southeastern Wisconsin nonattainment area.

#### Emissions from Increased Rail Segment Activity

The proposed merger would lead to changed activity on ten rail segments that pass through or are connected to Southeastern Wisconsin (239). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of these segments would be as follows:

Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
Harvard IL	Janesville WI	26	-1.0	-15%	-0%
K D Jct. WI	St. Francis WI	28	0.0	0%	0%
Kenosha WI	Oak Creek WI	21	-0.9	-22%	24%
Milwaukee/	Sheboygan	53	0.0	0%	0%
Butler WI	WI				
Milwaukee/	Clyman Jct.	39	0.1	3%	3%
Butler WI	WI				
Milwaukee/	Granville WI	12	0.0	0%	0%
Butler WI					
Oak Creek WI	St. Francis WI	7	-0.9	-22%	153%
St. Francis WI	Milwaukee/	15	-0.9	-7%	3%
	Butler WI				
Tower KO IL	K D Jct. WI	22	0.0	0%	0%
Waukegan IL	Kenosha WI	16	-1.4	-6%	18%

One of the ten rail segments listed above (Oak Creek to St. Francis) was assessed for air quality impacts because it would exceed the Board's analysis thresholds. The increased emissions from this segment are shown below. The impacts of these emissions are discussed below in the section on Analysis of Activity.

Rail	AQCR	Estin	nated Increas	se in Emissio	ns (tons per	year)
Segment	(ID No.)	HC	СО	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Oak Creek - St. Francis	239	0.1	0.3	2.0	0.1	0.0

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

#### Analysis of Activity

The increased rail segment activity in this AQCR would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Southeastern Wisconsin AQCR, primarily from mobile rail segment emissions.

#### 19.2 Air Quality Impacts at Grade Crossings

SEA assessed the overall air quality impacts of emissions from idling vehicles waiting at grade crossings. On average, annual emissions at a grade crossing with 5,000 vehicles per day would be 0.0021 ton of volatile organic compounds, 0.0013 ton of hydrocarbons, 0.0111 ton of carbon monoxide, and 0.0003 ton of nitrogen dioxide (NO<sub>2</sub>) per train crossing. Traffic volumes of more than 5,000 vehicles per day would increase the estimated emissions accordingly. Railroad crossings tend to be grade-separated when roadway and/or train traffic volumes become high, so the air quality impacts at grade crossings would generally be relatively minor. In Wisconsin, most grade crossings carry 5,000 or fewer vehicles. SEA concludes that no adverse air quality impacts would result from increased grade crossing delays as a result of the proposed merger. Section 19.4.1 of this chapter contains information on the transportation impacts of grade crossing delays associated with increased rail segment activity.

### 19.3 Noise Analysis

SEA performed noise analyses to identify noise-sensitive land uses where the proposed changes in operations could result in increases in noise exposure that meet or exceed the Board's environmental analysis thresholds at 49 CFR 1105.7(e)(6). The following discussion provides an estimate of the number of noise-sensitive receptors (e.g., residences, schools, churches) where the Board's thresholds would be exceeded, potentially causing an adverse increase in noise exposure. The noise level impact assessment was based on the baseline and projected activity level data provided by UP/SP.

### 19.3.1 Increased Rail Segment Activity

## Oak Creek to St. Francis

Although this rail segment would experience a decrease in the number of trains per day as a result of the proposed merger, it would have a 153.3 percent increase in gross ton-miles per year. The projected increase in gross ton-miles on this segment would cause less than a 2 dBA increase in the  $L_{dn}$ . No adverse noise impacts are expected.

#### 19.4 Transportation Systems

The Board's environmental rules at 49 CFR 1105.7(e)(2) require a description of the effects of the merger action on local and regional transportation systems. The primary transportation impacts of the proposed merger are related to: (1) additional truck traffic generated at those intermodal facilities where intermodal activity is projected to increase, and (2) increases in roadway delays at grade crossings as a result of increased train traffic on rail segments.

The impacts near intermodal facilities would result from increased truck traffic using local roadways to enter and exit the intermodal facility. For those facilities with an expected increase of 50 trucks or more per day, SEA analyzed the impacts of this increased traffic on the local roadway system in terms of increases in daily and peak hour traffic. SEA collected traffic count data from local and state transportation officials for this analysis. While the offsetting benefits of the merger were not quantified at the local level, the traffic impacts from added truck traffic at intermodal facilities would be partially cffset in many localities by truck-to-rail diversions and consolidation of operations. Because there are no intermodal facilities in Wisconsin that would experience an increase in truck traffic above the Board's analysis threshold as a part of the proposed merger, SEA concludes that there would be no significant impacts to the local transportation system.

SEA addressed the concerns of local communities about increased traffic delays at grade crossings through an evaluation of vehicle delay and wait times at grade crossing locations. It is

important to note that the acceptability of delays at grade crossings varies substantially based on local conditions such as the location of land uses by type, availability of alternative travel routes, the degree of use by emergency vehicles, and other local variables. While the time of delay at grade crossings would increase proportionately with the increase in train traffic, most of the grade crossings in Wisconsin carry less than 5,000 vehicles per day. SEA concludes that increases in vehicle delay and/or wait time due to merger-related operational changes would not be excessive.

## 19.4.1 Grade Crossings

In order to analyze the effects of the proposed merger on the roadway system at railroad grade crossings, SEA determined the number of crossings along rail segments that would exceed the Board's analysis thresholds for air quality analysis. Approximate delays over the course of 24 hours were calculated, as were average queue lengths. While an increase in the number of trains would result in more crossing closings per day, the length of the queue at each individual crossing closing event would change only if the train length changes. Vehicle delay impacts at along rail line segments in Wisconsin are summarized below.

## Oak Creek to St. Francis

Average rail traffic on the Oak Creek to St. Francis is proposed to decline from 4.0 to 3.1 trains per day, a train volume decrease of 22 percent. There are 21 grade crossings on this segment, seven of which have Average Daily Traffic (ADT) counts greater than 5,000 vehicles per day. At low speed grade crossings along the route (e.g., train speed of 30 mph), delay to vehicle traffic would decrease from 10 minutes (pre-merger) to eight minutes per day (post-merger). At higher speed crossings (e.g., train speed of 40 mph), delay would decrease from eight minutes (pre-merger) to seven minutes per day (post-merger). The maximum queue length per train due to peak hour vehicle traffic would range from 1 to 29 vehicles, and the corresponding delay per vehicle would vary from 1.35 to 1.58 minutes.

### 19.5 Safety

SEA assessed a number of safety issues associated with the proposed merger, including the probability of increased accidents at grade crossings, and the risks associated with increased shipments of hazardous commodities.

### 19.5.1 Grade Crossing Safety

Accidents at grade crossings are a function of the number of trains, train speed, number of train tracks, grade crossing condition and warning facilities, roadway condition and number of lanes, and amount of roadway traffic. Since the proposed merger would not result in any new grade crossings and would affect only the number of trains passing through existing grade

crossings, the probability of an increase in the number of accidents at grade crossings would depend on the increased number of trains on rail segments. SEA concludes that the accident exposure in Wisconsin will range from an increase of 3 percent to a decrease of 22 percent depending on rail segment.

## 19.5.2 Hazardous Commodities

Federal regulations govern the transport of hazardous commodities. The proposed merger is not expected to affect the policies or operation of UP/SP concerning the type or quantity of hazardous commodities transported or the method of handling. A total of 420,000 and 305,000 hazardous commodity shipments were transported by UP and SP, respectively, in 1994. These shipments resulted in 118 reportable incidents for UP, and 35 incidents for SP. Therefore, 99.98 percent of the shipments arrived at their destination without incident. The Applicants have noted that the consolidation of the companies will result in a "best practice" approach to hazardous commodity handling. SEA concludes that, using the same rate of safe transport, the projected increases in accidents and shipments of hazardous materials as a result of the proposed merger do not constitute a significant safety risk.

#### 19.6 Summary of Agency Comments

In considering the potential environmental impacts of the increased rail line segment, rail yard, and intermodal facility activity associated with the proposed UP/SP merger, SEA sent consultation letters to various Federal, state, and local agencies on January 29, 1996. These letters, samples of which are included in **Volume 5**, Appendix D, Exhibits D-1 through D-9, provided early notification of this EA and requested information and comments on the effects to the environment of the proposed merger and related operational changes. Each letter included a state information packet and maps that listed the specific merger-related proposals. A sample packet is shown in **Volume 5**, Appendix D, Exhibit D-10. SEA contacted agencies by telephone to alert them to the distribution of the consultation letter and to confirm its receipt. The Applicant also contacted these agencies in preparation of the Environmental Report which accompanied the merger application. That correspondence and all responses were reviewed, verified, and considered by SEA in the preparation of this EA.

All comments received (through mid-March 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. Agency comments regarding the proposed changes in rail line segment activity in Wisconsin are summarized below:

 Natural Resources Conservation Service states that because the entire area is urbanized, provisions of the Farmland Protection Act do not apply and the submission

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of a Farmland Conversion Impact Rating form is not required.

- Coastal Zone Management Program expressed interest in an evaluation of the likelihood of hazardous materials accidents due to increased traffic volumes and details about the UP/SP's response plans.
- Department of Natural Resources expect the merger would create nationwide environmental benefits due to reduction in truck miles and corresponding reduction from truck emissions and road capacity expansion needed to service trucking. The Department was unable to comment on specific environmental impacts of increased traffic volumes on St. Francis to Oak Creek segment due to lack of data in letter. The area is designated as ozone nonattainment. Construction may be constrained by existing infrastructure and may contain undesirable soil considerations.

### 19.7 Suggested Mitigation

No specific mitigation measures were suggested for the proposed changes to rail line segment operations in Wisconsin by the various parties consulted in the process of preparing the EA for the proposed merger. (See **Volume 5**, Appendices D and E, for agency consultation lists.)

## 19.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any final decision approving the proposed changes to rail line operations in Wisconsin. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA's recommended mitigation is as follows.

### Air Quality

 UP/SP shall consult with appropriate Federal, state and local agencies responsible for regulating air quality in AQCR 239 concerning any possible mitigation measures to reduce any potential adverse emissions from the rail segments, rail yards, and intermodal facilities in this region. UP/SP shall advise SEA of the results of these consultations.

#### Noise

1. To reduce potential noise level impacts to sensitive receptors along the Oak Creek to St. Francis rail line segment, UP/SP shall consult with appropriate state and local agencies to develop noise abatement plans. The Applicant shall advise SEA of the results of these consultations and provide SEA with a copy of any resulting noise abatement plans.

### Transportation and Safety

- 1. UP/SP shall maintain all rail line and grade crossing warning devices according to Federal Railroad Administration Standards (49 CFR Part 213).
- UP/SP shall transport all hazardous materials in compliance with the U.S. Department of Transportation Hazardous Materials Regulations (49 CFR Parts 171 to 180).
- 3. In the case of a hazardous material spill, UP/SP shall follow appropriate emergency response procedures outlined in their Emergency Response Plans.



## CHAPTER 20.0 RAIL LINE SEGMENT, RAIL YARD, AND INTERMODAL FACILITY IMPACTS WYOMING

This chapter provides an analysis of the potential environmental impacts resulting from increased traffic on rail segments and increased activity at rail yards and intermodal facilities in Wyoming as part of the proposed merger. In analyzing these impacts, the Surface Transportation Board's (Board) Section of Environmental Analysis (SEA), consistent with its environmental rules at 49 CFR Part 1105.7(e), specifically considered: (1) impacts to air quality, (2) impacts to noise, (3) impacts to local, regional and national transportation systems, and (4) impacts to safety.

The following rail line segments would meet or exceed the Board's environmental analysis thresholds:

- Rawlins to Cheyenne (UP).
- Granger to Ogden, Utah (UP).
- Granger to Green River (UP).
- Green River to Rawlins (UP).
- Deriver, Colorado to Cheyenne (UP).

Each rail line segment is discussed in this chapter by impact category, as follows:

- Air quality (Section 20.1).
- Air quality at grade crossings (Section 20.2).
- Noise (Section 20.3).
- Transportation systems (Section 20.4).
- Safety (Section 20.5).

If a rail line segment would not experience impacts in any one of these categories as a result of proposed merger, no analysis was necessary. Accordingly, no discussion is provided.

Chapter 1 of this volume describes the thresholds established for analysis of potential air quality and noise impacts and the methods used to evaluate these and other potential impacts.

### 20.1 Air Quality Analysis

Wyoming contains two Air Quality Control Regions (AQCRs) with rail segments, rail yards,

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and/or intermodal facilities that would experience increased activity as a result of the proposed merger and thereby trigger one or more of the Board's thresholds for analysis. In each of these regions, increased emissions along the length of rail segments through the AQCR (sometimes over a distance of hundreds of miles) could result in a potential for adverse air quality impacts. SEA concludes that increased rail operation activities in these two regions would result in increased emissions of nitrogen dioxide (NO<sub>2</sub>), which contributes to the formation of ozone. Increases in emissions, however, would be partially offset by decreases in train activity on other segments.

Potential adverse impacts to air quality in these two AQCRs as a result of the proposed merger are discussed individually below.

#### 20.1.1 Metropolitan Cheyenne (AQCR 242)

Rail operations in the Metropolitan Cheyenne AQCR (242) associated with the proposed merger that require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of two rail segments (Rawlins to Cheyenne and Denver, Colorado, to Cheyenne). There are no rail yards or intermodal facilities that would exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA examined the Metropolitan Cheyenne AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Metropolitan Cheyenne AQCR (242) includes the counties of Albany, Goshen, Laramie, and Platte, all of which are designated as in attainment. In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along two rail segments. SEA concludes that increased rail operations would contribute to increased levels of ozone in the Metropolitan Cheyenne attainment area. This is a result of increased emissions of nitrogen dioxide (NO<sub>2</sub>), a precursor to the formation of ozone.

#### Emissions from Increased Rail Segment Activity.

The proposed merger would lead to changes in activity on four rail segments that pass through or are connected to Metropolitan Cheyenne (242). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of the segments would be as follows:

Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
Rawlins WY	Cheyenne WY	172	7.0	12%	11%
Denver CO	Cheyenne WY	105	4.9	47%	79%
North Platte NE	Cheyenne WY	259	1.7	3%	5%
S. Morrill NE	Bill WY	145	-0.4	-1%	1%

Two of the four rail segments listed above (Rawlins to Cheyenne and Denver, Colorado to Cheyenne) were assessed for air quality impacts because they would exceed the Board's analysis thresholds. The estimated increased emissions from these two segments are shown below. The impacts of these emissions are discussed below in the section on Analysis of Activity.

Rail	AQCR	Estimated Increase in Emissions (tons per year)					
Segment	(ID No.)	НС	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10	
Rawlins- Cheyenne	242	24.7	76.9	575.6	41.7	12.5	
Denver - Cheyenne	242	4.0	12.3	92.1	6.7	2.0	
Total		28.7	89.2	667.7	48.4	14.5	

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2$  = nitrogen dioxide,  $SO_2$  = sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

#### Analysis of Activity

This increased rail segment activity would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of all pollutants in the Metropolitan Cheyenne AQCR, primarily from mobile rail segment emissions.

## 20.1.2 Wyoming (AQCR 243)

Rail operations in the Wyoming AQCR (243) associated with the proposed merger that

require analysis, as specified by the Board's environmental rules at 49 CFR 1105.7(e)(5), consist of portions of four rail segments (Rawlins to Cheyenne, Granger to Ogden, Utah, Granger to Green River, and Green River to Rawlins. There are no rail yards or intermodal facilities that would exceed the Board's analysis thresholds. Based on increased activity levels as a result of the proposed merger, SEA Cramined the Wyoming AQCR for potential air quality impacts. SEA concludes that adverse impacts to air quality could result from increased rail segment activity in this AQCR.

The Wyoming AQCR (43) is designated as nonattainment for total suspended particulates (TSP) and particulate matter (PM-10). In considering potential environmental impacts, SEA assessed the potential air quality impacts of increased activity along four rail segments. SEA concludes that increased rail operations would contribute to increased levels of ozone as well as other pollutants in the Wyoming nonattainment area.

#### Emissions from Increased Rail Segment Activity

The proposed merger would lead to increased activity on seven rail segments that pass through or are connected to Wyoming (243). The total length (in miles), the change in the number of trains per day on the segment, and the percent change in annual gross ton miles for each of these segments would be as follows:

Origin	Destination		Change in #	%Change	%Change
Station	Station	Miles	of Trains/Day	in Trains/Day	in Tons/Year
Rawlins WY	Cheyenne WY	172	7.0	12%	11%
Granger WY	McCammon ID	192	-2.9	-12%	-16%
Granger WY	Ogden UT	145	3.9	11%	13%
Granger WY	Green River WY	30	6.7	11%	11%
Rapid City SD	Colony WY	78	0.0	0%	0%
Green River WY	Rawlins WY	134	6.7	11%	11%
S. Morrill NE	Bill WY	145	-0.4	-1%	1%

Four of the seven rail segments listed above (Rawlins to Cheyenne, Granger to Ogden, Utah, Granger to Green River, and Green River to Rawlins) were assessed for air quality impacts because they would exceed the Board's analysis thresholds. The estimated increased emissions from these four segments are shown below. The impacts of these emissions are discussed below in the section on Analysis of Activity.

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1		

Rail	AQCR (ID No.)	Estimated Increase in Emissions (toms per year)				
Segment		HC	со	NO <sub>2</sub>	SO <sub>2</sub>	PM-10
Rawlins - Cheyenne	243	14.5	45.2	338.0	24.5	7.3
Granger - Ogden	243	11.3	35.2	263.4	19.1	5.7
Granger - Green River	243	7.0	21.7	162.1	11.7	3.5
Green River - Rawlins	243	30.7	95.3	713.4	51.7	15.5
Total		63.5	197.4	1476.9	107.0	32.0

Key:

HC = hydrocarbons, CO = carbon monoxide,  $NO_2 \approx$  nitrogen dioxide,  $SO_2 =$  sulfur dioxide, PM-10 = particulate matter less than 10 microns in diameter

## Analysis of Activity

This increased rail segment activity would result in increased levels of all pollutants, with the greatest increase in NO<sub>2</sub>. These estimates of increased emissions are conservative, however, because they do not account for offsetting decreases that could result from truck-to-rail diversions. Overall, SEA concludes that while the proposed action is not subject to National Ambient Air Quality Standards General Conformity regulations, the proposed merger would result in increased levels of pollution in the Wyoming AQCR, primarily from mobile rail segment emissions.

### 20.2 Air Quality Impacts at Grade Crossings

SEA assessed the overall air quality impacts of emissions from idling vehicles waiting at grade crossings. On average, annual emissions at a grade crossing with 5,000 vehicles per day would be 0.0021 ton of volatile organic compounds, 0.0013 ton of hydrocarbons, 0.0111 ton of carbon monoxide, and 0.0003 ton of nitrogen dioxide (NO<sub>2</sub>) per train crossing. Traffic volumes of more than 5,000 vehicles per day would increase the estimated emissions accordingly. Railroad crossings tend to be grade-separated when roadway and/or train traffic volumes become high, so the air quality impacts at grade crossings would generally be relatively minor. In Wyoming, most grade crossings carry 5,000 or vehicles. SEA concludes that no adverse air quality impacts would result from increased grade crossing delays as a result of the proposed merger. Section 20.4.1 of this chapter contains information on the transportation impacts of grade crossingdelays

associated with increased rail segment activity.

#### 20.3 Noise Analysis

SEA performed noise analyses to identify noise-sensitive land uses where the proposed changes in operations could result in increases in noise exposure that meet or exceed the Board's environmental analysis thresholds at 49 CFR 1105.7(e)(6). The following discussion provides an estimate of the number of noise-sensitive receptors (e.g., residences, schools, churches) where the Board's thresholds would be exceeded, potentially causing an adverse increase in noise exposure. The noise level impact assessment was based on the baseline and projected activity level data provided by UP/SP.

#### 20.3.1 Increased Rail Segment Activity

#### Denver, Colorado to Cheyenne

This rail segment, which currently carries 9.6 trains/day, would experience an increase of 4.9 trains/day (a 78.5 percent change in gross ton-miles per year) as a result of the proposed merger. The projected increase in train volume and gross ton-miles on this segment would cause less than a 2 dBA increase in the  $L_{dn}$ . No adverse noise impacts are expected.

#### **Rawlins to Cheyenne**

This rail segment currently carries 59.2 trains/day. It is expected to have an increase of 7 trains/day (an 11.2 percent change in gross ton-miles per year) as a result of the proposed merger. The projected increase in train volume and gross ton-miles on this segment would cause less than a 2 dBA increase in the  $L_{dn}$ . No adverse noise impacts are expected.

#### Granger to Ogden, Utah

This rail segment currently carries 34.4 trains/day. It is expected to have an increase of 3.9 trains/day (an 12.7 percent change in gross ton-miles per year) as a result of the proposed merger. The projected increase in train volume and gross ton-miles on this segment would cause less than a 2 dBA increase in the  $L_{dn}$ . No adverse noise impacts are expected.

#### **Granger to Green River**

This rail segment currently carries 57.9 trains/day. It is expected to have an increase of 6.7

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trains/day (an 11 percent change in gross ton-miles per year) as a result of the proposed merger. The projected increase in train volume and gross ton-miles on this segment would cause less than a 2 dBA increase in the L<sub>dn</sub>. No adverse noise impacts are expected.

## **Green River to Rawlins**

This rail segment currently carries 57.5 trains/day. It is expected to have an increase of 6.7 trains/day (an 11.4 percent change in gross ton-miles per year) as a result of the proposed merger. The projected increase in train volume and gross ton-miles on this segment would cause less than a 2 dBA increase in the  $L_{dn}$ . No adverse noise impacts are expected.

#### 20.4 Transportation Systems

The Board's environmental rules at 49 CFR 1105.7(e)(2) require a description of the effects of the proposed merger action on local and regional transportation systems. The primary transportation effects resulting from the increased rail traffic of the proposed merger are related to: (1) additional truck traffic generated at those intermodal facilities where intermodal activity is projected to increase, and (2) increases in roadway delays at grade crossings as a result of increased train traffic on rail segments.

The impacts near intermodal facilities would result from increased truck traffic using local roadways to enter and exit the intermodal facility. For those facilities with an expected increase of 50 trucks or more per day, SEA analyzed the impacts of this increased traffic on the local roadway system in terms of increases in daily and peak hour traffic. SEA collected traffic count data from local and state transportation officials for this analysis. While the offsetting benefits of the proposed merger were not quantified at the local level, the traffic impacts from added truck traffic at intermodal facilities would be partially offset in many localities by truck-to-rail diversions and consolidation of operations. Because there are no intermodal facilities in Wyoming that would experience an increase in truck traffic above the Board's analysis threshold as a part of the proposed merger, SEA concludes that there would be no significant impacts to the local transportation system.

SEA addressed the concerns of local communities about increased traffic delays at grade crossings through an evaluation of vehicle delay and wait times at grade crossing locations. It is important to note that the acceptability of delays at grade crossings varies substantially based on local conditions such as the location of land uses by type, availability of alternative travel routes, the degree of use by emergency vehicles, and other local variables. SEA concludes that increases in vehicle delay and/or wait time due to proposed merger-related operational changes would not

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be excessive.

#### 20.4.1 Grade Crossings

In order to analyze the effects of the proposed merger on the roadway system at railroad grade crossings, SEA determined the number of crossings along rail segments that exceed the Board's analysis thresholds for air quality analysis. Approximate delays over the course of a 24-hour day were calculated as were average queue lengths. While an increase in the number of trains would result in more crossing closings per day, the length of the queue at each individual crossing closing event would change only if the train length changes. Vehicle delay impacts along rail line segments in Wyoming are summarized below:

#### **Rawlins to Cheyenne**

Average rail traffic on this segment would from 59.2 to 66.2 trains per day, a train volume increase of about 12 percent. There are 15 grade crossings of the line. At low speed grade crossings along the route (e.g., train speed of 40 mph), delay to vehicle traffic due to the additional daily trains would increase from 124 minutes (pre-merger) to 138 minutes (post-merger) over a 24-hour period. At higher speed crossings (e.g. train speed of 55 mph), delay would increase from 101 minutes (pre-merger) to 113 minutes (post-merger) over a 24-hour period.

#### Granger to Ogden, Utah

On this 145-mile Granger to Ogden, Utah line, the average rail traffic would increase from 34.4 to 38.3 trains per day, a train volume increase of about 11 percent. There are 10 grade crossings of the line. At low speed grade crossings along the route (e.g., train speed of 30 mph), delay to vehicle traffic due to the additional daily trains would increase from 88 minutes (premerger) to 98 minutes (post merger) over a 24-hour period. At higher speed crossings (e.g. train speed of 50 mph), delay would increase from 62 minutes (per-merger) to 69 minutes (post-merger) over a 24-hour period.

#### Granger to Green River

On the Granger to Green River line, average rail traffic would increase from 57.9 to 64.6 trains per day, a train volume increase of about 11 percent. At the single grade crossing along the route, delay to vehicle traffic due to the additional daily trains would increase from 94 minutes (premerger) to 105 minutes (post-merger) over a 24-hour period.


#### Green River to Rawlins

Average rail traffic on the Green River to Rawlins line would increase from 57.5 to 64.2 trains per day, a train volume increase of about 11 percent. There are seven grade crossing of the line. At each at-grade crossing along the route, delay to vehicle traffic due to the additional daily trains would increase from 85 minutes (per-merger) to 95 minutes (post-merger) over 24-hour period.

#### Denver, Colorado to Cheyenne

On the Denver to Cheyenne, Wyoming line, average rail traffic would increase from 10.5 to 15.4 trains per day, a train volume increase of about 47 percent. At low speed grade crossings along the route (e.g., train speed of 30 mph), delay to vehicle traffic due to the additional daily trains would increase from 26 minutes (pre-merger) to 39 minutes (post-merger) over a 24-hour period. At higher speed crossings (e.g., train speed of 50 mph), delay would increase from 18 minutes (pre-merger) to 27 minutes (post-merger) over a 24-hour period.

#### 20.5 Safety

SEA assessed a number of safety issues associated with the proposed merger, including the probability of increased accidents at grade crossings, and the risks associated with increased shipments of hazardous commodities.

#### 20.5.1 Grade Crossing Safety

Accidents at grade crossings are a function of the number of trains, train speed, number of train tracks, grade crossing condition and warning facilities, roadway condition and number of lanes, and amount of roadway traffic. Since the proposed merger would not result in any new grade crossings and would affect only the number of trains at existing grade crossings, the probability of an increase in the number of accidents at grade crossings would depend on the increased number of trains on rail segments. SEA concludes that the accident exposure in Wyoming will range from an increase of 47 percent to a decrease of 12 percent, depending on rail segment.

#### 20.5.2 Hazardous Commodities

Federal regulations govern the transport of hazardous commodities. The proposed merger is not expected to affect the policies or operation of UP/SP concerning the type or quantity of hazardous commodities transported or the method of handling. A total of 420,000 and 305,000

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hazardous commodity shipments were transported by UP and SP, respectively, in 1994. These shipments resulted in 118 reportable incidents for UP, and 35 incidents for SP. Therefore, 99.98 percent of the shipments arrived at their destination without incident. The Applicants have noted that the consolidation of the companies will result in a "best practice" approach to hazardous commodity handling. SEA concludes that, using the same rate of safe transport, the projected increases in accidents and shipments of hazardous materials as a result of the proposed merger do not constitute a significant safety risk.

#### 20.6 Summary of Agency Comments

In considering the potential environmental impacts of the increased rail line segment, rail yard, and intermodal facility activity associated with the proposed UP/SP merger, SEA sent consultation letters to various Federal, state, and local agencies on January 29, 1996. These letters, samples of which are included in **Volume 5**, Appendix D, Exhibits D-1 through D-9, provided early notification of this A and requested information and comments on the effects to the environment of the proposed merger and related operational changes. Each letter included a state information packet and maps that listed the specific merger-related proposals. A sample packet is shown in **Volume 5**, Appendix D, Exhibit D-10. SEA contacted agencies by te'ophone to alert them to the distribution of the consultation letter and to confirm its receipt. The Applicant also contacted these agencies in preparation of the Environmental Report which accompanied the merger application. That correspondence and all responses were reviewed, verified, and considered by SEA in the preparation of this EA.

All comments received (through mid-March 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. No agency comments regarding the proposed increases in rail line segment activity in Wyoming were received.

#### 20.7 Suggested Mitigation

No specific mitigation measures were suggested for the proposed changes to rail line segment operations in Wyoming by the various parties consulted in the process of preparing the EA for the proposed merger. (See **Volume 5**, Appendices D and E, for agency consultation lists.)

## 20.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any final decision approving the proposed changes to rail line segment operations in Wyoming. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA's recommended mitigation is as follows.

## Air Quality

 UP/SP shall consult with appropriate Federal, state and local agencies responsible for regulating air quality in AQCR 242 and 243, concerning any possible mitigation measures to reduce any potential adverse emissions from the rail segments in these two regions. UP/SP shall advise SEA of the results of these consultations.

#### Noise

 To reduce potential noise level impacts to sensitive receptors along the rail line segments, UP/SP shall consult with appropriate state and local agencies to develop noise abatement plans. The Applicant shall advise SEA of the results of these consultations and provide SEA with a copy of any resulting noise abatement plans.

#### **Transportation and Safety**

- 1. UP/SP shall maintain all rail line and grade crossing warning devices according to Federal Railroad Administration Standards (49 CFR Part 213).
- UP/SP shall transport all hazardous materials in compliance with the U.S. Department of Transportation Hazardous Materials Regulations (49 CFR Parts 171 to 180).
- 3. In the case of a hazardous materials spill, UP/SP shall follow appropriate emergency response procedures outlined in their Emergency Response Plans.

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Service Date: April 12, 1996 Comment Due Date: May 3, 1996

## **ENVIRONMENTAL ASSESSMENT**

FINANCE DOCKET NO. 32760

UNION PACIFIC CORPORATION, UNION PACIFIC RAILROAD COMPANY, AND MISSOURI PACIFIC RAILROAD COMPANY

-CONTROL AND MERGER-

SOUTHERN PACIFIC RAIL CORPORATION, SOUTHERN PACIFIC TRANSPORTATION COMPANY, ST. LOUIS SOUTHWESTERN RAILWAY COMPANY, SPCSL CORPORATION, AND THE DENVER & RIO GRANDE WESTERN RAILROAD COMPANY

## VOLUME 3 OF 5 PROPOSED ABANDONMENTS



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Prepared by: Surface Transportation Board Section of Environmental Analysis

Service Date: April 12, 1996 Comment Due Date: May 3, 1996

# **Environmental Assessment**

Finance Docket No. 32760

Union Pacific Corporation, Union Pacific Railroad Company, and Missouri Pacific Railroad Company

--Control and Merger--

Southern Pacific Rail Corporation, Southern Pacific Transportation Company, St. Louis Southwestern Railway Company, SPCSL Corporation, and the Denver & Rio Grande Western Railroad Company

**Volume 3: Proposed Abandonments** 

Surface Transportation Board Section of Environmental Analysis Washington, D.C. 20423-0001



Surface Transportation Board Washington, D.C. 20423-0001

Section of Environmental Analysis

April 12, 1996

To: Interested Parties

The attached Environmental Assessment (EA) prepared by the Surface Transportation Board's Section of Environmental Analysis (SEA) addresses potential environmental impacts associated with the proposed merger of the Union Pacific Railroad Company and the Southern Pacific Transportation Company and their subsidiaries in the Finance Docket No. 32760.

The EA addresses potential areas of environmental impact such as safety, transportation, air quality, noise, historic and cultural resources, water quality, biological resources, land use and hazardous materials. The EA also recommends mitigation measures to address potential environmental impacts.

The EA incorporates early input received from many Federal, state and local agencies. We recognize that each community has its own local issues and interests. At this time, we welcome any additional comments on specific areas of environmental impact that may affect or be important to your community as a result of the proposed merger. Also, we invite you to submit specific and reasonable mitigation measures and your basis for recommending this particular mitigation.

Your written comments must be submitted to SEA by May 3, 1996, which is the close of the public comment period on the EA. SEA will review all comments received in response to the EA in making its final recommendations to the Surface Transportation Board. The Board will consider SEA's recommendations and the environmental comments in making its final decision on the proposed Union Pacific/Southern Pacific merger.

## SURFACE TRANSPORTATION BOARD Finance Docket No. 32760

## Union Pacific Railroad Company --Control and Merger--Southern Pacific Transportation Company

#### GUIDE TO THE ENVIRONMENTAL ASSESSMENT

This Environmental Assessment (EA) evaluates the potential environmental impacts that could result from the proposed merger of the Union Pacific Railroad Company and the Southern Pacific Transportation Company. The EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), as amended (42 USC 4321), the Surface Transportation Board's environmental rules (49 CFR Part 1105) and other applicable environmental statutes and regulations.

The Environmental Assessment includes five volumes:

**Volume 1: Environmental Overview of the Proposed Merger** provides an Executive Summary, an overview of the proposed merger, and a summary of the potential environmental impacts which could result if the proposed merger were approved. This volume also summarizes recommended mitigation measures.

Volume 2: Rail Line Segments, Rail Yards and Intermodal Facilities provides detailed analysis and mitigation of the potential environmental impacts related to proposed changes in traffic and other merger-related activities on specific rail line segments, at rail yards, or at intermodal facilities.

**Volume 3: Proposed Abandonments** provides detailed analysis and mitigation of potential environmental impacts associated with the proposed abandonment of rail line segments and related salvage activities.

**Volume 4: Proposed Construction Projects** provides detailed analysis and mitigation of the potential environmental impacts related to the proposed construction and operation of new rail lines requiring new rights-of-way.

**Volume 5: Appendices** contains additional documentation related to the preparation of the Environmental Assessment including: copies of agency correspondence, public comments on the proposed action, and descriptions of analytical methodologies.

To assist you in the review of this EA, a Glossary and List of Abbreviations and Acronyms is included in the front of each of the five volumes.

Based on an analysis of all available information, and subject to the recommended mitigation measures, the Surface Transportation Board's Section of Environmental Analysis concludes that the proposed merger of the Union Pacific and Southern Pacific railroads will not significantly affect the quality of the human environment.



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ENVIRONMENTAL ASSESSMENT PROPOSED MERGER OF UNION PACIFIC AND SOUTHERN PACIFIC RAILROADS

VOLUME 3, ABANDONMENTS

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#### LIST OF ACRONYMS AND ABBREVIATIONS

A&S	Alton & Southern Railway Company
ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
AHPP	Arkansas Historic Preservation Program
AQCR(s)	Air Quality Control Region(s)
BIA	Bureau of Indian Affairs
BMPs	Best Management Practices
BN	Burlington Northern Railroad Company
BN/SF	The new railroad system created by the merger of the holding companies of BN
	and Santa Fe.
BRGI	Brownsville and Rio Grande International Railroad
CAAA	Clean Air Act and Amendments
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of
	1980 (the "Superfund" Act)
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability
	Information System
CFR	Code of Federal Regulations
CMTA	Capital Metropolitan Transportation Authority
CNW	Chicago and Northwestern Railway Company
со	Carbon Monoxide
COE	United States Army Corps of Engineers
СТС	Centralized Traffic Control
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
db	Decibel
dBA	Decibels (of sound) A range
DNL	Day-night equivalent level
DOT	United States Department of Transportation
DRGW	Denver and Rio Grande Western Railroad Company
EA	Environmental Assessment
EPA	Environmental Protection Agency
ER	Environmental Report
ERNS	Emergency Response Notification System
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FRA	Federal Railroad Administration
GWWR	Gateway Western Railway Company
НС	Hydrocarbons (in air)
IBP	Iowa Beef Producers
нвт	Houston Belt Terminal

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IC Illinois Central ICC Interstate Commerce Commission (former licensing agency for the proposed merger; merger approval authority now with the Surface Transportation Board) IHPA Illinois Historic Preservation Agency KCS Kansas City Southern Railway Company KSHS Kansas State Historical Society Ldn Day-night equivalent sound level Maximum sound level during train passby, dBA Lmax LUST State Inventory of Leaking Underground Storage Tanks MOU Memorandum of Understanding MP Mile Post or Missouri Pacific MPH Miles per Hour MPRR Missouri Pacific Railroad Company MRL Montana Rail Link, Inc. National Ambient Air Quality Standards NAAQS NEPA National Environmental Policy Act of 1969 NHPA National Historic Preservation Act of 1966 NO. Nitrogen dioxide NO. Nitrogen oxides NPDES National Pollution Discharge Elimination System NPL National Priorities List NPS National Park Service NRCS Natural Resources Conservation Service NRHP National Register of Historic Places NWI National Wetlands Inventory 0, Ozone OBS Office of Biological Services/United States Fish and Wildlife Service OKT Oklahoma-Kansas-Texas (operating division of UP) OSHA Occupational Safety and Health Administration Pb Lead PDEA Preliminary Draft Environmental Assessment PM10 Particulate Matter (under 10 microns in diameter) PSD Prevention of Significant Deterioration RCRA Resource Conservation and Recovery Act ROW **Right of Way** SEA Section of Environmental Analysis SCS Soil Conservation Service (currently named Natural Resources Conservation Service, Division of United States Department of Agriculture) SEL Source sound exposure level at 100 feet, dBA SHPO State Historic Preservation Officer SIP State Implementation Plan SO, Sulfur dioxide

SO,	Sulfur oxides
SP	Southern Pacific Rail Corporationincludes SPT, SSW, SPCSL Corp., and DRGW
SPT	Southern Pacific Transportation Company
SSW	St. Louis Southwestern Railway Company
SPL.	State Priority List
STATSGO	State Soil Geographic Database
STB	Surface Transportation Board
SWLF	State Inventory of Solid Waste Facilities
TRAA	Terminal Railroad Association of St. Louis
TSD	Treatment, Storage, or Disposal Sites
TSP	Total Suspended Particulates (particulate matter)
UP	Union Pacific Railroad, MPRR, and CNW
UP/SP	The new railroad system to be created by the merger of the holding companies
	of UP and SP if the merger proposal is approved
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VISTA	VISTA Environmental Information, Inc.
VOCs	Volatile organic compounds
WCL	Wisconsin Central Ltd.
WEPCO	Wisconsin Electric Power Company
WSC	Western Shipper's Coalition

## GLOSSARY

Top surface of rail bed, usually composed of aggregate (i.e., small rocks and gravel). Techniques recognized as very effective in providing
Techniques recognized as very effective in providing
environmental protection.
Surface Transportation Board, the licensing agency for the proposed merger.
Earthern material used to fill depressions to create a level right-of-way.
Also known as unit train. A solid consist of a single non- breakable commodity (such as coal, grain, semi-finished steel, sulfur, potash, or orange juice) being transported at a trainload rate.
The make-up of a train, usually referring to the number of cars.
The area at a construction site subject to both permanent and temporary disturbances by equipment and personnel.
Any of six substances (lead, carbon dioxide, sulfur dioxide, nitrogen dioxide, ozone and particulate matter) regulated under the Clean Air Act, for which areas must meet national air quality standards.
Adjusted decibel level. A sound measurement that adjusts noise by filtering out certain frequencies to make it analogous to that perceived by the human ear.
A logarithmic scale that comprises over one million sound pressures audible to the human ear over a range from 0 to 140, where zero decibels represents a reference sound level necessary for a minimum sensation of hearing and 140 represents the level at which pain occurs.
Any plant whose leaves are shed or fall off during certain seasons; usually used in reference to tree types.

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

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haulage right

hump yard

interlocking

intermodal facility

intermodal train

Ld

Ldn

lift

locomotive, road

locomotive, switching

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

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

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

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

A train consisting or partially consisting of highway trailers and containers or marine containers being transported for the rail portion of a multi-modal movement on a timesensitive schedule. Also referred to as piggback, TOFC (Trailer on Flat Car), COFC (Container on Flat Car), and double stacks (for containers only).

Level of noise (measured in decibels) averaged over the "daytime" period (7 a.m.-10 p.m.).

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

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

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

Locomotive (or engine) used to switch cars in a yard, industrial, or other area where cars are sorted, spotted

(placed at a shipper's facility), pulled (removed from a shipper's facility), and moved within a local area.

merchandise train A train consisting of single and/or multiple car shipments of various commodities.

mitigation Actions to prevent or lessen negative effects.

National Wetlands InventoryAn inventory of wetland types in the United States compiled<br/>by the United States Fish and Wildlife Service.

nonattainment An area that does not meet NAAQS specified under the Clean Air Act.

non-point source discharge Pollution not associated with a specific outfall location, such as a sewer pipe.

palustrine wetlandNon-tidal wetland dominated by trees, shrubs or persistent<br/>emergent vegetation. Includes wetlands traditionally<br/>classified as marshes, swamps, or bogs.

The passing of a train past a specific reference point.

 
 pick up
 To add one or more cars to a train from an intermediate (non-yard) track designated for the storage of cars.

 
 rail spur
 A track that diverges from a main line, also known as a spur track or rail siding, which typically serves one or more industries.

A set-aside of abandoned rail corridor for recreational and/or transportation uses, including reuse for rail.

A land use or facility where sensitivity to noise or vibration is considered.

The right held by one person over the lands of another for a specific use; rights of tenants are excluded. The strip of land for which permission has been granted to build and maintain a linear structure, such as a road, railroad, or pipeline.

Relating to, living, or located on, or having acces to, the bank

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riparian

passby

railbanking

right-of-way

receptor/receiver

of a natural water course, sometimes also a lake or tidewater.

riprap

riverine wetland

ruderal

scrub-shrub

set out

take

threatened

trackage rights

turnout

A loose pile or layer of broken stones erected in water or on soft ground as a guard against erosion.

All wetlands and deepwater habitats contained within a channel, either naturally or artificially created.

An introduced plant community dominated by weed species, typically adapted to disturbed areas.

Areas dominated by woody vegetation less than 6 meters (20 feet) tall, which includes true shrubs and young trees.

To remove one or more cars from a train at an intermediate (non-yard) location such as a siding, interchange track, spur track, or other track designated for the storage of cars.

Loss of individuals of a plant or wildlife species and/or any direct or indirect action that results in mortality and/or injury. Further defined to include actions that disrupt riormal patterns of wildlife species behavior; specifically those that reduce the survival and reproductive potential of an individual. Also refers to loss and/or degradation of species' habitat.

A species that is likely to become an endangered species within the foreseeable future throughout all or part of its range, and is protected by state and/or federal law.

The right or combination of rights of one railroad to operate over the designated trackage of another railroad including, in some cases, the right to operate trains over the designated trackage; the right to interchange with all carriers at all junctions; the right to build connections or additional tracks in order to access other shippers or carriers.

A track arrangement consisting of a switch and frog with connecting and operating parts, extending from the point of the switch to the frog, which enables engines and cars to pass from one track to another. unit train

water resources

wetland

wye track

A train consisting of cars carrying a single commodity, e.g., a coal train.

All-inclusive term that refers to many types of permanent and seasonally wet/dry surface water features including springs, creeks, streams, rivers, ponds, lakes, wetlands, canals, harbors, bays, sloughs, mudflats, and sewage-treatment and industrial waste ponds.

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

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

## CHAPTER 1.0 INTRODUCTION

#### 1.1 Background

This document is **Volume 3** of the Environmental Assessment (EA) prepared for the proposed merger of the Union Pacific Railroad Company (UP) and the Southern Pacific Transportation Corporation (SP) into a combined operating railroad (UP/SP). This volume analyzes the potential environmental impacts of the 17 rail line segments that UP/SP propose to abandon as part of the proposed merger. In addition to the abandonments, UP/SP also propose to discontinue service over four lines. UP/SP state that these lines are no longer cost-effective and that rail traffic currently using these lines would be rerouted to other UP/SP lines.

The rail line segments proposed for abandonment are:

- Gurdon to Camden, Arkansas (UP) Docket No. AB-3 (Sub-No. 129x).
- Whittier Junction to Colima Junction, California (UP) Docket No. AB-33 (Sub-No. 93x).
- Magnolia Tower to Melrose, California (UP) Docket No. AB-33 (Sub-No. 94x).
- Alturas to Wendel, California (SP) Docket No. AB-12 (Sub-No. 184x).
- Sage to Leadville, Colorado (SP):
  - Docket No. AB-12 (Sub-No. 189x) SP Abandonment.
  - Docket No. AB-8 (Sub-No. 36x) Discontinuance of Service by D&RGW.
- Malta to Cañon City, Colorado (SP):
  - Docket No. AB-12 (Sub-No. 188) SP Abandonment.
  - Docket No. AB-8 (Sub-No.39) Discontinuance of Service by D&RGW.
- Towner to NA Junction, Colorado (UP):
  - Docket No. AB-3 (Sub-No. 130) Abandonment by UP.
  - Docket No. AB-8 (Sub-No. 38) Discontinuance of Service by D&RGW.
- Edwardsville to Madison, Illinois (UP) Docket No. AB-33 (Sub-No. 98x).
- DeCamp to Edwardsville, Illincis (UP) Docket No. AB-33 (Sub-No. 97x).
- Barr to Girard, Illinois (UP) Docket No. AB-33 (Sub-No. 96).
- Whitewater to Newton, Kansas (UP) Docket No. AB-3 (Sub-No. 132x).
- Hope to Bridgeport, Kansas (UP) :
  - Docket No. AB-3 (Sub-No. 131) UP Abandonment.
  - Docket No. AB-8 (Sub-No. 37) Discontinuance of Service by D&RGW.
- Iowa Junction to Manchester, Louisiana (UP) Docket No. AB-3 (Sub-No. 133x).
- Seabrook to San Leon, Texas (SP) Docket No. AB-12 (Sub-No. 187x).
- Suman to Benchley, Texas (SP) Docket No. AB-12 (Sub-No. 185x).
- Troup to Whitehouse, Texas (UP) Docket No. AB-3 (Sub-No. 134x).

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Little Mountain Junction to Little Mountain, Utah (UP) - Docket No. AB-33 (Sub-No. 99x).

Detailed descriptions of each proposed abandonment and discontinuance by location, alternative actions considered, the existing environment, the potential environmental impacts, and recommended mitigation measures are provided in Chapters 2 through 9 on a state-by-state basis.

#### 1.2 Abandonment Process

UP/SP filed abandonment applications for 17 rail line segments and 4 discontinuances as part of the proposed merger application. Approval of each abandonment proposal would result in discontinuance of the rail service on the segments and the salvaging (i.e., removal) of railroad-related facilities for reuse, sale, and/or disposal.

#### 1.2.1 Salvage and Remediation

If the abandonment is approved, UP/SP would dismantle the physical plant, commencing with the removal of rails, ties, and structures. This material would be removed for reuse or disposal. The standard process is discussed below.

Salvage of the rail line segments proposed to be abandoned would involve a minimum of surface disturbance. Nearly all salvage activities would be completed within the railroad right-of-way (ROW). Exceptions would be some bridges and areas where the railroad ROW is relatively narrow (less than 50 feet). It should be noted that construction of the original rail line involved the removal of topsoil, some subsoil grading, and the addition of fill and ballast. Salvage of the lines would add little, if any, disturbance to existing conditions.

Described below are the processes involved for removal of: (1) rail, ties, and ballast throughout a segment (comprising most of the lineal extent of the segments to be abandoned); (2) large structures (bridges, culverts, tubes under the rail, etc.); (3) appurtenances (signals, switches, phone boxes, other buildings); and (4) grade crossings.

Most of the salvage process would generally involve removal of rail. This part of the abandonment process would be completed primarily within the ROW. The process would begin at one end of the abandonment segment and work backward. The rail would be picked up by equipment moving on the tracks. That equipment would place the rail onto a rubber-tired truck driven alongside the tracks or onto a railcar moving in front of the removal equipment. The latter would be the more likely scenario. The removal and transport of rail are typically done with on-rail equipment only. Rail removed in this manner would be salvaged for other uses or sold for scrap. For those areas where high-quality welded rail (rail that can be reused elsewhere) is removed, the

rail would be removed and transported by a rail train crew. No rubber-tired equipment would be involved in removing high-quality welded rail.

After the rail is removed, rubber-tired equipment would be used to remove and transport the ties. The rubber-tired equipment would likely include a boom truck. These vehicles would use existing access roads adjacent to the railbed, or would use the actual railbed as a road. The ties would be salvaged for other uses or disposed of appropriately. In most situations, ballast would be left in place. In areas where ballast is removed and salvaged, dump trucks and front-end loaders would be used. Similar to the removal of the ties, the ballast removal process would take place from the actual railbed or from existing dirt roads adjacent to the railbed.

In situations where bridges (wooden and steel) would be removed, the rail and decking on a bridge would be removed first. This would be done from the railbed. Next, the main support structure of the bridge would be removed from the railbed and adjacent areas, including streambanks. Finally, the bridge pilings would be either taken out completely, or cut down to streambed level. Nearly all bridge removal work would be completed from the bridge decking, railbed, or adjacent areas outside of the streambed. Work in the streambed would generally be avoided. If there are bridges with larger spans that include pilings actually located in the water, streambed work might be necessary; at those locations, the amount of work within, and disturbance to, the streambed would be minimized. In the case of large steel bridges, an alternative to complete removal is the removal of only the decking, leaving the remainder of the structure and pilings in place. Other water-conveyance structures, including tubes and culverts, normally would be left in place.

Portions of some abandonment segments may be considered for "Rails to Trails" programs. In this type of program, the railroad ROW would be reused for recreation purposes. Concurrently, the ROW would be maintained for potential future transportation uses. Bridges along segments to be included in this type of program would not be removed. Bridge decking, main structure, and pilings would be maintained by the trail owner or operator.

Appurtenances, such as signals and phone boxes, would be removed down to foundation level. Some relatively smaller structures that occur in only limited areas may be left in place. An example would be rock slide detectors. Removal of appurtenances would be accomplished primarily with rubber-tired vehicles from the railbed, or occasionally, from an existing road adjacent to the railbed.

Grade crossings normally would be removed last. The rails would be removed and those areas backfilled with aggregate and the road portion resurfaced in compliance with state and local specifications. During removal of the crossings, there would be short-term disruption of vehicular traffic. A specific road might be closed completely for a short period of time during salvage operations. Alternately, the road might be reduced to one lane during the removal process.

#### 1.3 Impact Areas and Methodologies

Following track removal and other salvage activities, the ROW could, depending on underlying title issues, either: (1) convert to land uses which conform to adjacent properties; or (2) be used for recreational purposes, such as the "Rails to Trails" program; or (3) other linear uses such as local transportation or utility corridors.

The abandonment of these rail lines would likely result in long-term beneficial environmental effects. For example, the cessation of human and mechanical disturbances associated with maintenance activities would result in fewer impacts to vegetation types and wildlife habitats. In turn, that may allow native vegetation to reestablish in areas where repeated disturbance has eliminated vegetation or favored introduced and ruderal species over native species. Diversion of rail traffic would result in elimination of grade crossings and the reduction in potential rail/motor vehicle and pedestrian collisions.

In conducting its environmental analysis, the Surface Transportation Board's (Board) Section of Environmental Analysis (SEA) considered the following environmental impact areas in accordance with the Board's environmental rules at 49 CFR 1105.7(e):

- Land use.
- Water resources.
- Biological resources.
- Historic and cultural resources.
- Safety.
- Transportation.
- Air quality.
- Noise.
- Energy.

To assess the potential impacts associated with each abandonment, SEA reviewed existing conditions, consulted with public agencies and local officials, analyzed resource maps and published reports, and visited certain abandonment sites. In assessing the potential environmental impacts of the proposed abandonments, SEA considered the following:

#### Land Use

The proposed rail line abandonments could affect local or regional land uses. Consistent with the Board's environmental rules at 49 CFR 1105.7(e)(3), this EA assesses whether the proposed

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#### abandonment would:

- Conflict with existing land use, comprehensive, or master plans.
- Conflict with existing Coastal Zone Management Plans, where applicable.
- Displace prime farmland from use for agricultural production.

To inventory existing land uses, SEA's third party contractor conducted site visits, reviewed local planning and U.S. Geological Survey (USGS) maps, and analyzed aerial photos. Land uses of concern include those sensitive to environmental changes (residential, commercial, schools, hospitals, churches, agricultural, institutional), water resources, and prime farmland. To assess land use impacts, SEA consulted with local planning agencies to determine if the proposed abandonment was consistent with existing land uses and future land use plans. Determination of whether a proposed abandonment would affect any prime agricultural land is based on SEA consultations with the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) office in each affected state. Similar consultations were made with state Coastal Zone Management agencies to ensure that the proposed abandonments do not harm protected coastal areas, as required by the Board's environmental rules at 49 CFR 1105.9

Land use impacts are considered adverse if any abandonment-related changes would cause long-term changes in land use patterns which are incompatible with adjacent land uses.

#### Water Resources

The proposed abandonments could adversely affect water resources through increased erosion and sedimentation and/or degradation of water qualities. Water resources that could experience impacts as a result of the proposed abandonments include creeks, streams, wetlands, lakes, ponds, and canals. The Board's environmental rules at 49 CFR 1105.7(e)(9) require that an EA assess whether the actions related to the proposed merger are consistent with all applicable water quality standards and if Section 402 or Section 404 permits are required by the Clean Water Act (33 USC 1344)<sup>1</sup>. Also, the EA determines if an abandonment would adversely affect any designated wetlands or 100-year floodplains.

SEA consulted several data sources to determine existing conditions and assess the potential environmental impacts of the proposed abandonments on water resources, including USGS maps,

<sup>&</sup>lt;sup>1</sup> Section 402 of the Clean Water Act established the National Pollutant Discharge Elimination System (NPDES) to regulate industrial and municipal source discharge of pollutants into the nation's waters. The NPDES permit program is administered by an appropriate state agency or the U.S. EPA. Section 404 of the Clean Water Act established a permit program to regulate the non-point source discharges of dredged or fill material into the nation's waters. The Section 404 program is administered by the U.S. Army Corps of Engineers.

U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps, Federal Emergency Management Agency (FEMA) Flood Hazard maps, and aerial photographs. Where necessary, SEA conducted site visits and additional consultations with local officials. SEA also consulted with Federal and state agencies that regulate water quality, including the U.S. Army Corps of Engineers (COE), the U.S. Environmental Protection Agency (EPA), and state environmental agencies.

Impacts to water resources are considered adverse if there is substantial interference with drainage, adverse discharges (i.e., sediment, pollutants, etc.), or loss of wetlands resulting from the proposed abandonment action.

#### **Biological Resources**

Pursuant to the Board's environmental rules at 49 CFR 1105.7(e)(8), SEA evaluated the potential environmental impacts to important natural and biological resources, such as threatened and endangered species (plants and animals), critical habitats, parklands, forest preserves, and wildlife refuges resulting from proposed abandonment. Specifically, SEA assessed the following potential impacts for each abandonment location:

- Physical alteration of critical habitats.
- Physical disturbance of parks or wildlife refuges.
- Adverse effects to threatened or endangered species.
- Severance of existing habitats.

To gather information about the biological resources which may be present at each of the abandonment locations, SEA reviewed USGS maps, NRCS surveys, and USFWS lists of sensitive species (threatened, endangered, or listing candidates) and consulted with Federal, state, and local resource management agencies.

Impacts are considered adverse if the proposed action causes:

- Loss of important vegetation or wildlife habitats.
- Harm to threatened or endangered species.
- Loss of critical habitat(s).
- Loss or degradation of parklands, forest preserves or wildlife sanctuaries.

#### **Historic and Cultural Resources**

Pursuant to the Board's environmental rules at 49 CFR 1105.8, SEA is required to determine whether the proposed merger would affect historic properties, as defined in Section 106 of the

National Historic Preservation Act of 1966, as amended, and implementing regulations ("Protection of Historic Properties") at 36 CFR Part 800. Historic properties are those listed on or potentially eligible for listing on the National Register of Historic Places (NRHP). Historic properties may include districts, sites, buildings, structures, or objects, as well as archaeological sites.

To identify historic properties at each abandonment location, SEA consulted with the State Historic Preservation Officers (SHPOs) in all affected states to collect information on historic properties potentially affected by the proposed abandonments, to indicate whether further actions were needed to identify historic properties, and to provide a determination of project effect on historic properties. Follow-up contacts were made with the SHPOs to further document historic and archaeological resources in the project area, evaluate bridges identified as potentially eligible for the NRHP, and determine impacts of the abandonment process to any property or structure determined eligible for the NRHP.

Impacts to historic and archaeological resources are considered adverse if any property listed or eligible for listing on the NRHP would experience an adverse effect as defined in 36 CFR 800.9 as a result of the abandonment or subsequent salvage operations.

#### Safety

The proposed abandonments have potential safety impacts in two areas: (1) removal of existing grade crossings and (2) the creation or disturbance of hazardous waste sites and contaminated soil. Following the Board's environmental rules at 49 CFR 1105.7(e)(7), SEA assessed the potential safety impacts of each proposed abandonment.

For all proposed abandonments, SEA identified approximately 550 existing grade crossings that would be removed. As a result, the proposed line abandonments would decrease the potential for accidents that occur at grade crossings. Safety impacts associated with abandonment-related rail-to-truck diversions are expected to be negligible.

SEA reviewed data provided by UP/SP and from Federal and state environmental databases obtained through VISTA Environmental Information Inc. (VISTA) to determine if activities on or adjacent to the rail segment (within 500 feet) would threaten the environmental quality of the rail segment to be abandoned. The VISTA reports included review of the following databases: National Priorities List (NPL), Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), RCRA Treatment, Storage, or Disposal sites (TSDs), Emergency Response Notification System (ERNS) spill sites, State Priority List (SPL) or State Inventory of Solid Waste Facilities (SWLF), State Inventory of Leaking Underground Storage Tanks (LUST), and the Orphan or Unmappable Sites list. Any abandonment activities that would cause additional exposure to hazardous waste sites or hazardous materials is considered to have an adverse

#### Transportation

The proposed rail line abandonments could affect local or regional transportation systems. Consistent with the Board's environmental rules at 49 CFR 1105.7(e)(2), the transportation impacts of the merger-related abandonments were assessed. Rail-to-truck diversions resulting from rail line abandonments were the primary transportation impacts reviewed. These diversion impacts are considered adverse if there is a substantial increase in truck traffic on local, regional, or national transportation routes.

#### **Air Quality**

SEA assessed potential air quality impacts from the proposed abandonments as required by 49 CFR 1105.7(e)(5). The primary air quality impact from the proposed abandonments would be a change in emissions levels due to cessation of railroad operations and the diversion of goods movement from the abandoned segments to trucks. SEA concludes that the proposed abandonments would result in a decrease in overall emissions. Although six of the proposed abandonments (see Chapters 2-9) would generate rail-to-truck diversions, their impact to air quality would be insignificant. Also, the increased emissions from truck traffic would be offset by the decreases associated with all abandonments. Therefore, it is anticipated that the net impact on ambient (i.e., existing) air quality associated with proposed rail abandonments would be minimal.

#### Noise

Based on SEA's review of the abandonment projects, none of the proposed abandonments is expected to cause any direct adverse noise impacts. Once a rail facility is abandoned, all adjacent land uses would experience reduced noise exposure. Some minimal short-term noise increase exposure could occur in connection with salvage operations. The only potential for long-term negative impacts would be the result of moving the rail operations to another line or facility. These impacts are covered in **Volume 2**, Rail Line Segments, or **Volume 4**, Construction Projects.

#### Energy

SEA's environmental analysis thresholds, under 49 CFR 1105.7 (e)(4), require an estimate of the net change in energy consumption resulting from a rail line abandonment if the proposed abandonment causes a rail-to-truck diversion totaling 1,000 or more rail cars per year or more than 50 carloads/mile per year for an individual line segment. Based on data included in the proposed UP/SP operating plan, the total rail traffic on all lines to be abandoned is 992 cars per year, an

average of 1.7 carloads per mile. Because there are no lines proposed for abandonment which would exceed either threshold for energy analysis, no energy consumption impacts were calculated.

#### **Environmental Justice**

Executive Order 12898 (EO), entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," directs Federal agencies to analyze the environmental effects of their actions on minority and low-income communities. Significant and adverse effects should then be addressed by mitigation measures in the environmental document. In addition, Federal agencies should provide the opportunity for community input, including identifying potential effects and mitigation measures, throughout the NEPA process.

In this EA, SEA has considered the impacts of the proposed merger, which include changes in rail operations, rail constructions, and rail abandonments, on minority and low-income communities. Also, SEA has solicited comments from agencies and communities in order to identify potential impacts and devise mitigation measures, where necessary. In response to comments submitted by the Bureau of Indian Affairs, SEA is recommending that Applicants consult with American Indian Tribes near abandonment sites. SEA specifically requests comments on environmental justice issues and recommended mitigation measures.

## 1.4 Conclusion

Based on SEA's independent analysis, all information available to date, comments of interested parties, consultation with Federal, state and local agencies, and the recommended mitigation described in Chapters 2 through 9, SEA concludes that the proposed abandonments would not significantly affect the quality of the human environment. Therefore, the Environmental Impact Statement process is unnecessary.

#### 1.5 Request for Comments

SEA specifically invites comments on all aspects of the environmental analysis for each abandonment proposal, including the recommended mitigation measures. SEA will consider all comments received in response to the EA in making its final recommendations to the Board. The Board will consider SEA's final recommendations and any environmental comments in making its final decision.

Comments (an original and ten copies) regarding the abandonment analysis in this EA should be filed with the Board's Section of Environmental Analysis, Room 3219, Surface Transportation Board, Washington, D.C. 20423 to the attention of Elaine K. Kaiser. Comments should refer to **Finance Docket Number 32760** and identify the abandonment proposal(s) of concern.

Date made available to the public: April 12, 1996 Comment due date: May 3, 1996
# CHAPTER 2.0 ARKANSAS

This chapter analyzes the potential environmental impacts of the line segment in Arkansas that UP/SP propose to abandon as part of the proposed merger. The rail line segment proposed for abandonment is:

Gurdon to Camden, Arkansas (UP) - Docket No. AB-3 (Sub-No. 129x).

A detailed description of the proposed abandonment, including alternative actions considered, the existing environment, the potential environmental impacts, and recommended mitigation measures is provided below.

# 2.1 Gurdon to Camden (UP)

Docket No. AB-3 (Sub-No. 129X)

# 2.1.1 Proposed Action



The proposed merger would include the abandonment of 28.7 miles of rail line between Gurdon and Camden, Arkansas, from MP 428.3 to 457.0 (see Figure 2-1). Gurdon is located in Clark County, approximately 75 miles southwest of Little Rock, Arkansas. Camden is located in Ouachita County, approximately 80 miles southwest of Little Rock. The proposed abandonment is along the UP Gurdon Branch from Gurdon to El Dorado, Arkansas. If the proposed merger is approved, traffic from this line (one train per day) would be rerouted to an SP line through Camden.

Generally, on the line proposed for abandonment, UP/SP would remove the rails, ties, ballast, ancillary equipment (i.e., communications, signals) and grade crossings. Depending on whether there is a proposed adaptive reuse of the right-of-way, the bridges may or may not be removed. Most salvage and removal activities would occur within the existing right-of-way. The right-of-way would then be available for conversion to alternative uses such as recreation (trail use), linear public utility transmission, local transportation corridor, expansion of adjacent land uses, or in some instances, a combination of some or all of the above.

# 2.1.2 Alternative Actions Considered

Alternatives to the proposed abandonment action include: (1) discontinuance of service with no abandonment; (2) continued operations by another carrier; and (3) the no action alternative (i.e.,

denial of the abandonment). Under each of these alternatives there would be no significant impact to the environment.

#### 2.1.3 Existing Environment

#### Land Use

Land use along the 28.7-mile rail line between Gurdon and Camden is predominantly rural and undeveloped. Forested areas, which include deciduous, evergreen, and mixed (i.e., deciduous and evergreen) tracts, are adjacent to approximately 60 percent of the rail line.

The second most common feature of the land adjacent to the rail line is wetlands. These are unevenly distributed along the line and are most extensive near the Little Missouri River and along the Encore Fabre Bayou.

Less common land uses along the rail line include residential/commercial and agricultural land. Four small communities are found along the right-of-way. These include Barringer, Whelan Springs, Reader, and Chidester. Agricultural lands, including pastures, are limited in extent and found in three locations along the rail line. They are located near Gurdon, Whelan Springs, and the southern end of the line near Camden. Prime agricultural lands have not been identified adjacent to the rail line.

#### Water Resources

The proposed abandonment crosses 47 streams, including the Little Missouri River, and seven ponds and lakes. Another 23 streams and 8 ponds are located adjacent to the rail corridor. National Wetland Inventory (NWI) maps indicate that more than 30 forested wetlands are dispersed along the corridor, occurring both in and adjacent to the existing right-of-way.

#### **Biological Resources**

<u>Vegetation</u>. Existing vegetation within the right-of-way corridor is typically ruderal weeds, having been disturbed by past rail construction and current rail activities. Deciduous and mixed evergreen forests, and deciduous forested wetlands are located adjacent to the proposed rail abandonment corridor between developed or farmed lands.

<u>Wildlife</u>. The right-of-way provides habitat for a variety of terrestrial wildlife species; however, the extent of habitat is extremely limited. The adjacent forest and field areas provide cover for small mammals such as mice, moles, voles, shrews, chipmunks, and rabbits. These small mammals provide food sources for predators such as red-tailed hawk, northern harrier, owl



UP/SP RAILROAD MERGER PROPOSED ABANDONMENT GURDON - CAMDEN, ARKANSAS ENVIRONMENTAL ASSESSMENT varieties, red fox, and others. Various birds are likely to forage in these areas, including songbirds such as thrasher, sparrow, towhee, and catbird, and possibly gamebirds such as quail and woodcock. Other wildlife species that may use these habitats include American kestrel, box turtle, and garter snakes.

The wetland areas provide habitat for a variety of wildlife species. The open water areas are likely to be used by turtles, frogs, and salamanders, as well as many invertebrates, during reproduction and early life-stages. Tolerant invertebrates, including beetles, air-breathing snails, and insect larvae, are present. The presence of water also attracts many of the terrestrial species noted above and acts as a bathing and drinking area.

<u>Threatened and Endangered Species</u>. SEA consulted the U.S. Fish and Wildlife Service regarding threatened and endangered species in the area of the proposed rail line abandonment between Gurdon and Camden. The USFWS staff indicated that one federally-listed and two state-listed plant species are protected and could potentially occur in the vicinity of the proposed abandonment. These species include the federally listed silky camellia (*Stewartia malacondendron*) which is also state-listed as endangered, and the state-threatened scarlet beardtongue (*Penstemon murrayanus*) and state-threatened smooth twistflower (*Streptanthus hyacinthoides*). No occurrences of these species are known or recorded on or near the project site. Field observations on site also indicated no occurrences of these species. There is no critical habitat known or recorded in the vicinity of the proposed abandonment.

<u>Parks, Forest Preserves, Refuges, and Sanctuaries</u>. Two state parks are within 5 miles of the rail line. Sections of the Poison Springs State Park are adjacent to the right-of-way in the area between the communities of Reader and Chidester.

#### **Historic and Cultural Resources**

The Gurdon to Camden rail line was constructed in 1881 as part of the St. Louis, Iron Mountain & Southern Railway (subsequently the Missouri Pacific Railroad Company). There are 52 timber pile trestle bridges on the proposed 28.7-mile abandonment, all constructed between 1924 and 1949. Although some of these bridges are potentially historic because of their age, they are of modest scale and are undistinguished in design, and none meet the criteria for inclusion on the National Register of Historic Places (NRHP). One multi-span bridge, consisting of an 86-foot through-plate girder bridge with timber pile approach spans (MP 436.70), is shown in UP records as constructed in 1896. Although the approaches have been reconstructed, the through-girder span is an intact and early example of this bridge type, and is the sole such example within the Gurdon to Camden rail segment. SEA's evaluation of the through-girder portion of the bridge at MP 436.70 indicates that it may be eligible for NRHP listing.

SEA's review of National Register listings and information did not identify any additional historic structures or archaeological sites in the vicinity of the proposed abandonment. However, as part of the Section 106 consultation process, site-specific field surveys could be required by a SHPO to verify that no archaeological resources would be disturbed or destroyed by the abandonment or related salvage activities. UP track evaluation videotapes were examined for the entire length of the proposed abandonment and showed no additional historic structures within the project area. Consultation has been initiated with the Arkansas State Historic Preservation Officer (SHPO) to confirm these findings.

#### Safety

According to the Emergency Response Notification System lists, three hazardous waste spills have occurred within the right-of-way of the Gurdon to Camden rail segment. These consist of a nitric acid spill which occurred in 1990, an acetic acid spill in 1990, and a diesel fuel spill in 1994.

#### Transportation

Currently one train per day operates over the Gurdon to Camden line. This line provides UP access to the Camden/El Dorado area, which would be served by the SP mainline through Camden, if the proposed merger is approved.

There are 14 grade crossings located along the rail line. All of these involve local roads which carry very low daily traffic volumes.

#### **Air Quality**

The Gurdon to Camden rail line is located in Air Quality Control Region (AQCR) 19: Monroe-E Dorado. Currently, AQCR 19 is in attainment with the National Ambient Air Quality Standards (NAAQS) for all pollutants.

#### Noise

Rail, automobile and truck traffic are the primary sources of noise in this predominantly rural and undeveloped region of Arkansas. The current level of train traffic on the Gurdon to Camden rail line (one train per day) generates an estimated L<sub>dn</sub> noise levels of 65 dBA at a distance of approximately 30 feet without horns (110 feet with horns).

Automobiles and trucks are the major sources of noise in the vicinity of the 14 grade crossings found along the line. Noise levels at 50 feet from individual automobiles and trucks are estimated to be approximately 70 to 75 and 80 to 85 dBA, respectively. However, as noted above,

traffic levels at most of these road crossings are relatively low and there are few receptors for the automobile and truck noise. Most residences in the vicinity of the Gurdon to Camden line are associated with the small communities of Whelan Springs and Chidester. However, isolated and small clusters of other homes are found at several locations along the line.

## 2.1.4 Potential Environmental Impacts of Proposed Action

## Land Use

The proposed abandonment would change the existing land use designation of the railroad right-of-way from active railroad use to an inactive status. It is estimated that approximately 405 acres of land would be affected by this change. Salvaging activities generally would not disturb adjacent land uses, although the removal of some bridges could require the use of construction equipment outside of the rail line right-of-way and property. Any adjacent land that would be disturbed by salvage activities would be restored by UP/SP to its original condition. The proposed abandonment would not affect any prime farmlands.

Salvage activities would generate material that would need to be disposed of at a landfill, burned as fuel, or incinerated. Most of this material would consist of unusable rail ties and utility poles. Disposal would be carried out in accordance with applicable Federal, state, and local environmental regulations. If UP/SP select landfilling as a method of disposal, a properly permitted and designed landfill would be employed.

#### Water Resources

As discussed in Section 2.1.3, surface water resources along the proposed abandonment are abundant and include rivers, streams, and ponds. The rail line crosses a large number of streams, as indicated by the 54 bridges and culverts that are present on the line. There are also many ponds and lakes adjacent to the line, ranging in size from a few acres to several hundred acres.

Salvaging activities associated with the proposed abandonment would include removing rails, ties, spikes, plates, railroad-related utilities, signaling devices, and possibly some bridge spans and decking. Bridge removal could disturb small areas of soil, and has the potential to increase soil erosion and sedimentation of adjacent water bodies. Soil disturbance from the removal of the other materials is expected to be negligible. Actions to control erosion and sedimentation could include using sediment barriers (e.g., silt fences and straw bale dikes), diversion ditches, and sediment collection basins. Enhanced controls, such as increasing the storage capacity of sediment basins and conducting more frequent inspections and maintenance, also may be required in areas where soils are particularly susceptible to erosion. The measures selected would need to be site-specific

and would depend on local soil conditions, topography, the extent of disturbance proposed, proximity to water bodies, and applicable Federal, state or local regulations.

Bridge abutments would remain in place following salvage operations. These abutments are generally long-lived, and are not expected to fail or collapse in the near future from normal deterioration and aging.

Applicable Federal and state permits would be obtained by UP/SP if salvage activities would disturb native soils and vegetation in adjacent water bodies, floodplains, and/or wetlands. The only salvage activity that has the potential to disturb these areas would be bridge span, deck, or pier removal. Most bridges could be dismantled by equipment that would be positioned on railbeds or in upland areas. Dismantling long bridges that are located over open surface water bodies and associated floodplains or wetlands, such as the Little Missouri River crossing, could require using equipment within these protected areas.

UP/SP's compliance with Federal and state permit requirements would ensure minimal impacts to these water bodies and associated floodplains and wetlands. Actions that could be taken by UP/SP to minimize or avoid impacts include placing equipment on barges, matting, or skids. The measures selected would need to be site-specific and would depend on local wetland and floodplain characteristics, topography, the nature and duration of the proposed activity, proximity to floodplain and wetland, and the applicable Federal, state, and local regulations.

Culverts along the rail line segment could be dammed by debris, which could cause flooding and alter stream flows. During salvage operations, UP/SP would be required to open all culverts to avoid flooding and stream flow alterations. These activities would be conducted in accordance with Federal, state and local regulations.

The proposed abandonment of this rail line segment would not have adverse impacts on groundwater resources, given the small size of the project and the limited productivity of groundwater in the area. Because abandonment of the rail line would require relatively little earthwork, the project design would not alter stormwater drainage and infiltration patterns in the area.

# **Biological Resources**

<u>Vegetation</u>. Existing vegetation control practices along the right-of-way would be discontinued after salvaging operations are completed. Opportunistic plant species would quickly revegetate the cleared railbed and it would eventually evolve to a natural state. Therefore, the overall impact of the proposed abandonment on vegetation along the right-of-way should be beneficial.

<u>Wildlife</u>. The proposed abandonment would have beneficial long-term impacts on most animal species that occupy terrestrial habitats adjacent to the rail line. The proposed abandonment could ease territorial movements and enhance the quality of habitat available to wildlife. Any potentially adverse impacts associated with salvaging activities would be temporary and would not result in permanent loss of wildlife species.

Erosion and sedimentation caused by salvaging operations, particularly bridge deck and span removal, could affect downstream aquatic communities. However, adverse impacts to fish populations and habitats are not anticipated, provided that UP/SP follow permit requirements for soil erosion and sedimentation control measures and undertake adequate mitigation measures when salvaging takes place on soils that are prone to erosion. Mitigation measures could include implementing enhanced erosion and sedimentation controls such as planting a rapidly-growing vegetation cover, increasing the storage capacity and detention periods for sediment basins, and conducting more frequent inspections. Salvage activities are not expected to create long-term negative impacts on water turbidity (i.e., degree of clarity) or existing fish populations and their habitat.

<u>Threatened and Endangered Species</u>. Although USFWS has indicated that Federally-listed threatened or endangered species could potentially occur in the area of the proposed abandonment, no effects on such species or their critical habitat are anticipated. This determination is based on the lack of any recorded occurrences at or near the project site as indicated by the Arkansas Department of Game and Fish, the lack of any critical habitat at the project site, and the lack of any observations of occurrences of such species during site visits.

Parks, Forest Preserves, Refuges, and Sanctuaries. The proposed abandonment would generally have minimal or beneficial impacts on Poison Springs State Park. After salvaging, activity on the rail line would cease. The absence of train noises and intrusions could increase wildlife activity and recreational opportunities on adjacent park properties. Noise generated by equipment associated with salvage activities could, however, temporarily disrupt wildlife functions and recreational pursuits. However, these disruptions would be minor and of short duration. Based on UP/SP's preliminary salvaging plans, no area along the right-of-way should be affected for more than two days.

#### **Historic and Cultural Resources**

The proposed Gurdon to Camden abandonment would affect only one through-plate girder bridge (MP 436.70) that is potentially eligible for listing on the NRHP. Section 106 consultation with the Arkansas SHPO regarding NRHP eligibility and potential effect has been initiated. The UP/SP shall retain its interest in and take no steps to alter the bridge until the Section 106 process has been completed.

Based on SEA's initial consultations with the Arkansas SHPO, no known or documented archaeological sites exist along the rail line segment proposed for abandonment. However, there is the potential for adverse impacts on undocumented archaeological sites. SEA's recommended mitigation measures include provisions for UP/SP to continue Section 106 consultation to address discovery and treatment of archaeological sites during the abandonment or salvage process.

## Safety

The VISTA database indicates that the three known hazardous spill sites (ERNS) along the rail segment have been remediated. UP/SP would undertake coordination with appropriate agencies to confirm this prior to initiation of the salvaging activities. Because the disturbance resulting from removal of rail and ties would be limited to minor surface disturbance, no hazardous waste and safety impacts are expected as a result of the proposed abandonment. However, in the unlikely event that such a spill occurs from salvage machinery at the abandonment site, drainage ditches are expected to retain the contaminated runoff. Overall, the proposed abandonment would not be expected to increase the probability or consequences of hazardous waste contamination.

The discontinuance of rail service along the Gurdon to Camden line would eliminate the need for the 14 grade crossings and remove the potential for vehicle/train accidents.

#### Transportation

Potential through train traffic on the abandoned line segment would be rerouted along an SP line through Camden. Since there are currently no trains operating on the line, no rail-to-truck diversions are expected to result from the abandonment.

# Air Quality

The operation of heavy equipment would be the primary source of pollutant emissions during salvage activities. The pollutants resulting from such activities typically consist of:

- Particulate matter, volatile organic compounds (VOCs), carbon monoxide (CO), and nitrogen oxides (NO<sub>x</sub>), resulting from the combustion of diesel fuel.
- Fugitive dust emissions along the right-of-way and unimproved roads, resulting from the operation of heavy equipment.

All cf the emissions from salvaging operations would occur in an air quality attainment area. The fugitive particulate emissions, which would be of primary concern, can be controlled by UP/SP operators using water sprays or other suitable dust suppressants. Other emissions associated with

salvaging operations (VOCs, CO, and NO<sub>x</sub>) generally would be minor and of short duration. It should be noted that salvage activities themselves would be temporary in nature and would have insignificant, temporary effects on air quality.

Post-abandonment pollutant emissions along the right-of-way would be substantially reduced, due to the elimination of rail traffic and rail line maintenance activities.

#### Noise

As discussed in Section 2.1.3, there is currently one train per day operating on the rail line, which contributes to noise levels along the entire segment. Automobile and truck traffic contribute to noise levels in the vicinity of the 14 grade crossings along the rail line.

Salvaging operations associated with the abandonment would cause temporary increases in noise levels. This would occur during the removal of rails, ties, plates, spikes, railroad-related utilities, signaling devices, and most bridges. These salvaging activities would require the use of trucks and front-end loaders, as well as cranes at larger bridges. Noise generated by such salvage equipment generally would be less than the 65-70 dBA level reported for typical trains. Equipment-generated noise, however, might be more frequent and last longer than noise from passing trains, since the equipment would remain relatively stationary for up to two days as each mile of track is dismantled and removed. Following salvage activities, elevated noise levels from all rail-related actions would be eliminated.

Minor changes in vehicular traffic levels and patterns also would occur in the vicinity of the right-of-way during and after salvage operations. Traffic levels at most of the 14 grade crossings on the rail line would be comparable to existing levels during and after salvage activities. Small increases in traffic could occur during salvaging at grade crossings near communities where the salvaging work force is operating. This temporarily increased traffic would result in small or imperceptible changes in existing traffic noise.

Upon completion of salvaging activities, all rail service and associated noise would cease. This permanent elimination of noise from rail traffic along the Gurdon to Camden line is expected to outweigh the temporarily increased noise of salvaging and local road traffic. Human and wildlife receptors located near the line would generally benefit from a long-term reduction in noise levels.

# 2.1.5 Potential Environmental Impacts of Alternative Action

Alternatives to the proposed abandonment would include denial (and therefore no change in operations), discontinuance of service without abandonment, and continued operation by another

operator. In any of these cases, the existing quality of the human environment and energy consumption should not be affected.

# 2.1.6 Summary of Agency Comments and Concerns

In considering the potential environmental impacts of the rail line segment abandonments planned as part of the proposed UP/SP merger, SEA sent consultation letters to various Federal, state, and local agencies on January 29, 1996. These letters, samples of which are included in **Volume 5**, Appendix D, Exhibits D-1 through D-9, provided early notification of this EA and requested information and comments on the effects to the environment of the proposed merger and related abandonment and construction projects. Each letter included a state information packet and maps that listed the specific merger-related proposals. A sample packet is shown in **Volume 5**, Appendix D, Exhibit D-10. SEA contacted agencies by telephone to alert them to the distribution of the consultation letters and to confirm its receipt. The Applicant also contacted these agencies in preparation of the Environmental Report which accompanied the merger application. That correspondence and all responses were reviewed, verified, and considered by SEA in the preparation of this EA.

All comments received (through mid March, 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. Agency comments regarding the proposed abandonments are summarized below:

- Arkansas Historic Preservation Program requested a project location map (topo map) delineating project boundaries and the location (and age) of all structures to be renovated, removed, demolished or abandoned as a result of the project, including bridges, trestles, and buildings.
- Arkansas Soil & Water Conservation Commission noted that proper measures should be undertaken to minimize potentially negative stream, wetland, and sediment impacts and advised coordination with appropriate state agencies. The Commission also asked for consideration of restoring natural topography, hydrology, and vegetation if no other specific use (e.g., Rails to Trails) is planned.
- Arkansas Department of Pollution Control noted that the proposed merger would have no significant adverse impact.
- Clark County government had no environmental concerns with the proposed abandonment.

# 2.1.7 Suggested Mitigation

This section highlights the mitigation measures that various parties, consulted in the process of preparing the EA for the proposed merger, have requested:

- Arkansas Soil & Water Conservation Commission recommended measures to minimize potential negative stream, wetland, and sediment impacts and advised that coordination be established with appropriate state agencies.
- The Section 106 consultation process is still ongoing with respect to the throughplate girder bridge at MP 436.70.

# 2.1.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any final decision approving this proposed abandonment of the Gurdon to Camden line. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA recommended mitigation is as follows:

# Land Use

- UP/SP shall observe all applicable Federal, state, and local regulations regarding handling and disposal of any waste materials, including hazardous waste, encountered or generated during salvage of the proposed rail line.
- UP/SP shall dispose of all materials that cannot be reused in accordance with state and local solid waste management regulations.
- UP/SP shall restore any adjacent properties that are disturbed during right-ofway salvaging activities to pre-salvaging conditions.
- Before undertaking any salvage activities, UP/SP shall consult with any potentially affected American Indian Tribes.

# Water Resources

 UP/SP shall use appropriate technologies, such as silt screens, to minimize soil erosion during salvaging. UP/SP shall disturb the smallest area possible around streams and tributaries and shall revegetate disturbed areas immediately following salvage operations.

- UP/SP shall assure that all culverts are clear from debris to avoid potential flooding and stream flow alteration, in accordance with Federal, state and local regulations.
- 3. UP/SP shall obtain all necessary Federal, state, and local permits if salvaging activities require the alteration of wetlands, ponds, lakes, streams, or rivers, or if these activities would cause soil or other materials to wash into these water resources. UP/SP shall use appropriate techniques to minimize impacts to water bodies and wetlands, such as positioning salvaging equipment on barges, matting, or skids.

# **Biological Resources**

- To further assess the potential occurrence of threatened and endangered plants, UP/SP shall coordinate with USFWS and the Arkansas Department of Game and Fish, prior to salvage activities, to determine whether surveys of vegetation types in areas of potential disturbance due to salvage activities are needed and shall conduct any such surveys during an appropriate time of year.
- 2. UP/SP shall use Best Management Practices to encourage regrowth in disturbed areas and to stabilize disturbed soils.

# **Historic and Cultural Resources**

- UP/SP shall retain its interest in and take no steps to alter the through-plate girder bridge at MP 436.70, until the Section 106 process of the National Historic Preservation Act (16 USC 470f., as amended) has been completed for this structure.
- If previously unknown archaeological remains are found during salvage operations, UP/SP shall cease work in the area and immediately contact the Arkansas SHPO.

#### Safety

 Prior to the start of salvage operations in the vicinity of the three ERNS (hazardous waste) spill sites, UP/SP shall contact the Pollution Control and Ecology Department, Hazardous Waste Division, to confirm that remediation has been completed to agency satisfaction.

 UP/SP shall transport all hazardous materials generated by salvage activities in compliance with the U.S. Department of Transportation Federal Motor Carrier Safety Regulations (49 CFR Parts 171 to 179).

# Transportation

- 1. UP/SP shall use appropriate signs and barricades to control traffic disruptions during salvage operations at and near the 14 grade crossings.
- UP/SP shall restore roads disturbed during salvage activities to conditions as required by state or local regulations.

# **Air Quality**

3. UP/SP shall comply with all applicable Federal, state, and local regulations regarding the control of fugitive dust. Fugitive dust emissions created during salvage operations shall be minimized by using such control methods as water spraying, installation of wind barriers, and chemical treatment during salvaging.

# Noise

- UP/SP shall control temporary noise from salvage equipment through the use of work hour controls and maintenance of muffler systems on machinery.
- UP/SP shall limit salvage activities within 1,000 feet of residences to daytime hours to mitigate noise impacts on nearby receptors.

# CHAPTER 3.0 CALIFORNIA

This chapter analyzes the potential environmental impacts of three rail line segments in California that UP/SP propose to abandon as part of the proposed merger. The rail line segments proposed for abandonment are:

- Whittier Junction to Colima Junction, California (UP) Docket No. AB-33 (Sub-No. 93x).
- Magnolia Tower to Melrose, California (UP) Docket No. AB-33 (Sub-No. 94x).
- Alturas to Wendel, California (SP) Docket No. AB-12 (Sub-No. 184x).

Detailed descriptions of each proposed abandonment by location, alternative actions considered, the existing environment, the potential environmental impacts, and recommended mitigation measures, are provided below.

# 3.1 Whittier Junction to Colima Junction (UP)

Docket No. AB-33 (Sub-No. 93X)

# 3.1.1 Proposed Action

The proposed action would involve the abandonment of 5.2 miles of rail line between Whittier Junction to Colima Junction, California, from MP 0.0 to MP 5.2 (see Figure 3-1). Whittier Junction and Colima Junction are both located in Los Angeles County, approximately 15 miles east of Los Angeles. The proposed abandonment is along the UP Anaheim Branch, and is used to access the La Habra and Fullerton area. Following the merger, a parallel SP route would serve these areas.

Generally, on the line proposed for abandonment, UP/SP would remove the rails, ties, ballast, ancillary equipment (i.e., communications, signals) and grade crossings. Depending on whether there is a proposed adaptive reuse of the right-of-way, the bridges may or may not be removed. Most salvage and removal activities would occur within the existing right-of-way. The right-of-way would then be available for conversion to alternative uses such as recreation (trail use), linear public utility transmission, local transportation corridor, expansion of adjacent land uses, or in some instances, a combination of some or all of the above.

# 3.1.2 Alternative Actions Considered

Alternatives to the proposed abandonment action include: (1) discontinuance of service with no abandonment; (2) continued operations by another carrier; and (3) the no action alternative (i.e.,

denial of the abandonment). Under each of these alternatives there would be no significant impact to the environment.

#### 3.1.3 Existing Environment

## Land Use

Land use along the 5.2-mile rail line between Whittier Junction and Colima Junction is predominantly residential, extending through the City of Whittier, with a commercial area in central Whittier comprising approximately 20 per cent of the land use.

Less common land uses along the rail include transportation at the crossing of I-605 (the San Gabriel River Freeway) near the northern end of this rail line segment and other urban land uses near West Whittier proper. Prime agricultural lands have not been identified adjacent to the rail line.

# Water Resources

Whittier Junction is located on the eastern shore of the San Gabriel River. There are no other water bodies or wetlands along the remainder of this urban rail line segment.

#### **Biological Resources**

<u>Vegetation</u>. The vegetation types along and adjacent to the Whittier Junction to Colima Junction segment include non-native grasses, ornamental trees and shrubs, and ruderal weed species.

<u>Wildlife</u>. The animal communities are dominated by common, human-tolerant species and scavengers, such as raccoons, opossums, pigeons, songbirds, mice, and rabbits. These communities may also include other animals capable of exploiting human environments with limited open space and few natural habitats.

<u>Threatened and Endangered Species</u>. SEA consulted the USFWS regarding threatened and endangered species in the area of the proposed rail line abandonment between Whittier Junction and Colima Junction. The USFWS staff indicated that no Federally-listed threatened or endangered species are known to occur in the vicinity of the proposed abandonment project.

SEA consulted the California Department of Game and Fish (CDGF) regarding state-listed threatened or endangered species in the area of the proposed rail line abandonment between Whittier Junction and Colima Junction. The CDGF staff indicated that three state-listed threatened





UP/SP RAILROAD MERGER PROPOSED ABANDONMENT WHITTIER JUNCTION - COLIMA JUNCTION, CALIFORNIA ENVIRONMENTAL ASSESSMENT or endangered species have historically occurred in the vicinity of the proposed abandonment although no recent observations have been made. These species are the state-endangered Least Bell's vireo (*Vireo bellii pusillus*) which is also Federally-listed, the state-threatened bank swallow (*Riparia riparia*), and the state-endangered western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). Field observations on site have indicated no occurrences of these species. There is no critical habitat known or recorded in the vicinity of the proposed abandonment.

Parks. Forest Preserves, Refuges, and Sanctuaries. A number of public lands and parks are located in the region, but none are adjacent to the proposed abandonment corridor.

# **Historic and Cultural Resources**

The line was constructed by the Los Angeles & Salt Lake Railroad in 191 to Whittier Boulevard; it was completed to Anaheim in 1923. One known historic resource along this segment is the Warren through truss bridge over Whittier Boulevard. It is a relatively late (1930) example of a rather common type and one of its abutments was converted into a pier when Whittier Boulevard was expanded in 1956. Based on SEA's consultations with the California State Historic Preservation Office (SHPO), the bridge does not appear to meet NRHP criteria.

SEA's initial consultations with the California SHPO determined that no documented archaeological sites have been identified along the rail line segment proposed for abandonment. However, there is the potential for adverse impacts on undocumented archaeological sites. SEA's recommended mitigation measures include provisions for UP/SP to continue Section 106 consultation to address discovery and treatment of archaeological sites during the abandonment or salvage process.

#### Safety

UP safety records indicate that a 100-gallon diesel fuel spill incident occurred in 1989 at the east end of the Whittier Junction to Colima Junction rail segment. UP reports that this spill has been properly remediated.

# Transportation

This segment currently serves as a through route to serve the La Habra and Fullerton areas. An average of one through train per day operates over this segment. There is no local traffic on this line segment.

There are two grade crossings located along this rail line. Both of these involve local roads which carry very low daily traffic volumes.

3-4

## **Air Quality**

The Whittier Junction to Colima Junction rail line is located in Air Quality Control Region (AQCR) 24: Metropolitan Los Angeles. Currently, AQCR 24 is in nonattainment with the National Ambient Air Quality Standards (NAAQS) for the criteria pollutants nitrogen oxides, total suspended particulates, particulate matter, carbon monoxide, and ozone.

#### Noise

Rail, automobile and truck traffic are the primary sources of noise in this predominantly urban region of California. The current level of train traffic on the Whittier Junction to Colima Junction rail line (one train per day) generates an estimated  $L_{dn}$  of 65 dBA at a distance of approximately 30 feet without horns (110 feet with horns).

Automobiles and trucks are the major sources of noise in the vicinity of the two grade crossings found along the line. Noise levels at 50 feet from individual automobiles and trucks are estimated to be approximately 70 to 75 and 80 to 85 dBA, respectively. However, as noted above, traffic levels at most of these road crossings are relatively low and there are few receptors for the automobile and truck noise. Most residences in the vicinity of the Whittier Junction to Colima Junction line are located in Whittier and Colima.

# 3.1.4 Potential Environmental Impacts of Proposed Action

#### Land Use

The proposed abandonment would change the existing land use designation of the railroad right-of-way from active railroad use to an inactive status. It is estimated that approximately 38 acres of land would be affected by this change. Salvaging activities generally would not disturb adjacent land uses, although the removal of some bridges could require the use of construction equipment outside of the rail line right-of way and property. Any adjacent land that would be disturbed by salvage activities would is restricted by UP/SP to its original condition. The proposed abandonment would not affect any prime removal.

Salvage activities would generate material that would need to be disposed of at a landfill, burned as fuel, or incinerated. Most of this material would consist of unusable rail ties and utility poles. Disposal would be carried out in cordance with applicable Federal, state, and local environmental regulations. If UP/SP select landfilling as a method of disposal, a properly permitted and designed landfill would be employed.

# Water Resources

As discussed in Section 3.1.3, the only water resource along this rail line segment is the San Gabriel River which is adjacent to the Whittier Junction terminus.

Salvaging activities associated with the proposed abandonment would in tlude removing rails, ties, spikes, plates, railroad-related utilities, and signaling devices. Soil disturbance from the removal of these materials is expected to be negligible. For salvage operations near the San Gabriel River, UP/SP would control erosion and sedimentation by using sediment barriers (e.g., silt fences and straw bale dikes), diversion ditches, and sediment collection basins. These actions would ensure minimal impacts to the water quality and associated aquatic resources of the river.

The proposed abandonment of this rail line segment would not have adverse impacts on groundwater resources, given the small size of the project and the limited productivity of groundwater in the area. Because abandonment of the rail line would require relatively little earthwork, the project design would not alter stormwater drainage and infiltration patterns in the area.

#### **Biological Resources**

<u>Vegetation</u>. Existing vegetation control practices along the right-of-way would be discontinued after salvaging operations are completed. Opportunistic plant species would quickly revegetate the cleared railbed and it would eventually evolve to a natural state. Therefore, the overall impact of the proposed abandonment on vegetation along the right-of-way should be beneficial.

<u>Wildlife</u>. The proposed abandonment would have beneficial long-term impacts on most animal species that occupy the urban habitats adjacent to the rail line. The proposed abandonment could ease territorial movements and enhance the quality of habitat available to wildlife. Any potentially adverse impacts associated with salvaging activities would be temporary and would not result in permanent loss of wildlife species.

Erosion and sedimentation caused by salvaging operations, particularly near the San Gabriel River, could affect aquatic communities. However, adverse impacts to fish populations and habitats are not anticipated, provided that UP/SP follow permit requirements for soil erosion and sedimentation control measures and undertake adequate mitigation measures when salvaging takes place on soils that are prone to erosion. Mitigation measures could include implementing enhanced erosion and sedimentation controls such as planting a rapidly-growing vegetation cover, increasing the storage capacity and detention periods for sediment basins, and conducting more frequent inspections. Salvage activities are not expected to create long-term negative impacts on

water turbidity (i.e., degree of clarity) or existing fish populations and their habitat.

<u>Threatened and Endangered Species</u>. Although the CDGF has indicated that Federally-listed threatened or endangered species could potentially occur in the area of the proposed abandonment, no effects on such species or their critical habitat are anticipated. This determination is based on the lack of any recorded occurrences at or near the project site, the lack of any critical or suitable habitat at the project site, and the lack of any observations of occurrences of such species during site visits.

Parks, Forest Preserves, Refuges, and Sanctuaries. The proposed abandonment would generally have minimal or beneficial impacts on local parks. After salvaging, activity on the rail line would cease. The absence of train noises and intrusions could increase recreational opportunities on local park properties. Noise generated by equipment associated with salvage activities could, however, temporarily disrupt recreational pursuits. However, these disruptions would be minor and of short duration. Based on UP/SP's preliminary salvaging plans, no area along the right-of-way should be affected for more than two days.

## **Historic and Cultural Resources**

Two bridges are located on this rail segment, but, based on SEA's initial consultations with the California SHPO, they were not identified as historic; therefore, there would be no adverse effects associated with its abandonment.

These consultations also indicated that no known or documented archaeological sites exist along the rail line segment proposed for abandonment. However, there is the potential for adverse impacts on undocumented archaeological sites. SEA's recommended mitigation measures include provisions for continued Section 106 consultation to address discovery and treatment of archaeological sites during the abandonment or salvage process.

# Safety

The proposed abandonment would not affect any hazardous waste sites. Therefore the disturbance resulting from removal of rail and ties would be limited to minor surface disturbance, and no hazardous waste and safety impacts are expected as a result of the proposed abandonment. However, in the unlikely event that such a spill occurs at the abandonment site, drainage ditches are expected to retain the contaminated runoff. In the very unlikely event of a large spill that is not promptly and properly cleaned up, there could be the potential for contaminants to seep into underlying soils. Overall, the proposed abandonment would not be expected to increase the probability or consequences of hazardous waste contamination.

## Transportation

The discontinuance of rail service along the Whittier Junction to Colima Junction line would eliminate the need for the two grade crossings and remove the potential for vehicle/train accidents.

Existing through traffic to the La Habra and Fullerton area would be rerouted to a parallel SP route. Since there are currently no local trains operating on this line, no rail-to-truck diversions are expected to result from the proposed abandonment.

# Air Quality

The operation of heavy equipment would be the primary source of pollutant emissions during salvage activities. The pollutants resulting from such activities typically consist of:

- Particulate matter, volatile organic compounds (VOCs), carbon monoxide (CO), and nitrogen oxides (NO<sub>x</sub>), resulting from the combustion of diesel fuel.
- Fugitive dust emissions along the right-of-way and unimproved roads, resulting from the operation of heavy equipment.

All of the emissions from salvaging operations would occur in an air quality attainment area. The fugitive particulate emissions, which would be of primary concern, can be controlled by UP/SP operators using water sprays or other suitable dust suppressants. Other emissions associated with salvaging operations (VOCs, CO, and NO<sub>x</sub>) generally would be minor and of short duration. It should be noted that salvage activities themselves would be temporary in nature and would have insignificant, temporary effects on air quality.

Post-abandonment pollutant emissions along the right-of-way would be substantially reduced, due to the elimination of rail traffic and rail line maintenance activities.

## Noise

As discussed in Section 3.1.3, there is currently one train per day operating on the rail line, which contributes to noise levels along the entire segment. Automobile and truck traffic contribute to noise levels in the vicinity of the two grade crossings along the rail line.

Salvaging operations associated with the abandonment would cause temporary increases in noise levels. This would occur during the removal of rails, ties, plates, spikes, railroad-related utilities, signaling devices, and most bridges. These salvaging activities would require the use of trucks and front-end loaders, as well as cranes at larger bridges. Noise generated by such salvage equipment generally would be less than the 65 to 70 dBA level reported for typical trains. Equipment-generated noise, however, might be more frequent and last longer than noise from passing trains, since the equipment would remain relatively stationary for up to two days as each mile of track is dismantled and removed. Following salvage activities, elevated noise levels from all rail-related actions would be eliminated.

Minor changes in vehicular traffic levels and patterns also would occur in the vicinity of the right-of-way during and after salvage operations. Traffic levels at most of the two grade crossings on the rail line would be comparable to existing levels during and after salvage activities. Small increases in traffic could occur during salvaging at grade crossings near communities where the salvaging work force is operating. This temporarily increased traffic would result in small or imperceptible changes in existing traffic noise.

Upon completion of salvaging activities, all rail service and associated noise would chase. This permanent elimination of noise from rail traffic along the Whittier Junction to Colima Junction line is expected to outweigh the temporarily increased noise of salvaging and local road traffic. Human and wildlife receptors located near the line would generally benefit from a long-term reduction in noise levels.

#### 3.1.5 Potential Environmental Impacts of Alternative Action

Alternatives to the proposed abandonment would include denial (and therefore no change in operations), discontinuance of service without abandonment, and continued operation by another operator. In any of these cases, the existing quality of the human environment and energy consumption should not be affected.

#### 3.1.6 Summary of Agency Comments

In considering the potential environmental impacts of the rail line segment abandonments planned as part of the proposed UP/SP merger, SEA sent consultation letters to various Federal, state, and local agencies on January 29, 1996. These letters, samples of which are included in **Volume 5**, Appendix D, Exhibits D-1 through D-9, provided early notification of this EA and requested information and comments on the effects to the environment of the proposed merger and related abandonment and construction projects. Each letter included a state information packet and maps that listed the specific merger-related proposals. A sample packet is shown in **Volume 5**, Appendix D, Exhibit D-10. SEA contacted agencies by telephone to alert them to the distribution of the consultation letter and to confirm its receipt. The Applicant also contacted these agencies in preparation of the Environmental Report which accompanied the merger application. That correspondence and all responses were reviewed, verified, and considered by SEA in the preparation of this EA.



All comments received (through mid March, 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. Comments received from the various parties consulted about the proposed abandonments are summarized below:

 National Park Service indicated that the proposed abandonment has potential for conversion to a trail that would connect with other trails in the area.

## 3.1.7 Suggested Mitigation

No mitigation measures were suggested for the proposed abandonment project by the various parties in the process of preparing the EA (See **Volume 5**, Appendices D and E for agency consultation lists.)

## 3.1.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any final decision approving this proposed abandonment of the Whittier Junction to Colima Junction line. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA recommended mitigation is as follows:

#### Land Use

- UP/SP shall observe all applicable Federal, state, and local regulations regarding handling and disposal of any waste materials, including hazardous waste, encountered or generated during salvage of the proposed rail line.
- UP/SP shall dispose of all materials that cannot be reused in accordance with state and local solid waste management regulations.
- UP/SP shall restore any adjacent properties that are disturbed during right-ofway salvaging activities to pre-salvaging conditions.
- Before undertaking any salvage activities, UP/SP shall consult with any potentially affected American Indian Tribes.

# Water Resources

 UP/SP shall use appropriate technologies, such as silt screens, to minimize soil erosion during salvaging. UP/SP shall disturb the smallest area possible around

the San Gabriel River and shall revegetate disturbed areas immediately following salvage operations.

# **Biological Resources**

1. UP/SP shall use Best Management Practices to encourage regrowth in disturbed areas and to stabilize disturbed soils.

# Historic and Cultural Resources

1. If previously unknown archaeological remains are found during salvage operations, UP/SP shall cease work in the area and immediately contact the California SHPO.

# Safety

 UP/SP shall transport all hazardous materials generated by salvage activities in compliance with the U.S. Department of Transportation Federal Motor Carrier Safety Regulations (49 CFR Parts 171 to 179).

# Transportation

- 1. UP/SP shall use appropriate signs and barricades to control traffic disruptions during abandonment activities at and near grade crossings.
- UP/SP shall restore roads disturbed during abandonment activities to conditions as required by state and local regulations.

# **Air Quality**

 UP/SP shall comply with all applicable Federal, state, and local regulations regarding the control of fugitive dust. Fugitive dust emissions created during salvage operations shall be minimized by using such control methods as water spraying, installation of wind barriers, and chemical treatment during salvaging.

## Noise

 UP/SP shall control temporary noise from construction equipment through the use of work hour controls and maintenance of muffler systems on machinery.

## 3.2 Magnolia Tower to Melrose (UP)

Docket No. AB-33 (Sub-No. 94X)

## 3.2.1 Proposed Action

The proposed action would abandon 4.9 miles of rail line between Magnolia Tower and Melrose, from MP 5.8 to MP 10.7 (see Figure 3-2). Magnolia Tower and Melrose are both located in Alameda County, near Oakland. The proposed abandonment is along the UP Canyon Subdivision. Through traffic currently using this segment would be rerouted to an adjacent SP line.

Generally, on the line proposed for abandonment, UP/SP would remove the rails, ties, ballast, ancillary equipment (i.e., communications, signals) and grade crossings. Depending on whether there is a proposed adaptive reuse of the right-of-way, the bridges may or may not be removed. Most salvage and removal activities would occur within the existing right-of-way. The right-of-way would then be available, for conversion to alternative uses such as recreation (trail use), linear public utility transmission, local transportation corridor, expansion of adjacent land uses, or in some instances, a combination of some or all of the above.

# 3.2.2 Alternative Actions Considered

Alternatives to the proposed abandonment action include: (1) discontinuance of service with no abandonment; (2) continued operations by another carrier; and (3) the no action alternative (i.e., denial of the abandonment). Under each of these alternatives there would be no significant impact to the environment.

## 3.2.3 Existing Environment

#### Land Use

The 4.9-mile rail line between Magnolia Tower and Melrose is entirely urban in land use. Approximately 70 percent of this corridor is used commercially, the remaining 30 percent is used for transportation purposes along the middle portion of this segment. Prime agricultural lands have not been identified adjacent to this rail line. However, this area has been designated as a coastal zone.





UP/SP RAILROAD MERGER PROPOSED ABANDONMENT MAGNOLIA TOWER - MELROSE, CALIFORNIA ENVIRONMENTAL ASSESSMENT

# Water Resources

The rail line crosses one tidal channel, which connects Lake Merritt with the Inner Harbor. National Wetland Inventory (NWI) maps indicate that an estuarine wetland fringes this channel's shorelines.

#### **Biological Resources**

<u>Vegetation</u>. The vegetation types along and adjacent to the Magnolia Tower to Melrose segment include non-native grasses and salt marsh, tidal slough, and ruderal weed species.

<u>Wildlife</u>. The animal communities along the right-of-way are dominated by common, humantolerant species and scavengers, such as raccoons, opossums, pigeons, songbirds, mice, and rabbits. These communities may also include other animals capable of exploiting human environments with limited open space and few natural habitats.

<u>Threatened and Endangered Species</u>. SEA consulted USFWS regarding threatened and endangered species in the area of the proposed rail line abandonment between Magnolia Tower and Melrose. The USFWS staff indicated that no Federally-listed threatened or endangered species are known to occur in the vicinity of the proposed abandonment project.

SEA also consulted CDGF regarding listed threatened or endangered species in the area of the proposed rail line abandonment between Magnolia Tower and Melrose. The CDGF staff indicated that the endangered Tidewater goby (*Eucyclogobius newberryi*) has historically occurred in the vicinity of the proposed abandonment although no recent observations have been made. In addition, the endangered California clapper rail (*Rallus longirostris obsoletus*), the threatened western snowy plover (*Charadrius alexandrinus nivosus*), the endangered California least tern (*Sterna antillarum browni*), the endangered salt-marsh harvest mouse (*Reithrondontomys raviventris*), and the federally proposed-endangered California sea blite (*Sueda californica*) may be present within the area of the proposed abandonment. Field observations on site have indicated no occurrences of these species. There is no critical habitat known or recorded in the vicinity of the proposed abandonment.

Parks, Forest Preserves, Refuges, and Sanctuaries. Some public lands or non-profit managed areas occur within 5 miles of this rail line segment proposed for abandonment. None of these are adjacent to the proposed abandonment location.

#### **Historic and Cultural Resources**

This line was originally constructed by the Western Pacific Railroad (WP), between 1906 and

1908. Reconnaissance along this line revealed the following potentially historic resources related to the railroad: SP Magnolia Tower, Western Pacific Oakland depot, and numerous early 20th century industrial buildings formerly served by WP spur tracks. SEA believes that none of the bridges along this line are eligible for the NRHP. SEA has initiated consultation with the California SHPO to confirm these findings.

SEA's initial consultations with California's SHPO determined that no documented archaeological sites have been identified along the rail line segment proposed for abandonment. However, as part of the Section 106 consultation process, site-specific field surveys could be required by a SHPO to verify that no archaeological resources would be disturbed or destroyed by the abandonment or related salvage activities.

#### Safety

SEA's review of the VISTA database and UP safety records indicate there are no hazardous waste sites along the rail segment.

#### Transportation

Currently there is one through train per day on this segment. No local rail service is currently operating on this segment.

There are 19 grade crossings located along this rail line. All of these involve local roads which carry very low daily traffic volumes.

#### Air Quality

The Magnolia Tower to Melrose rail line is located in AQCR 30: San Francisco Bay Area. Currently, AQCR 30 is in nonattainment with the NAAQS for criteria pollutants total suspended particulates and carbon monoxide.

#### Noise

Rail, automobile and truck traffic are the primary sources of noise in this urban area of California. The current level of train traffic on the Magnolia Tower to Melrose rail line (one train per day) generates an estimated  $L_{dn}$  noise level of 65 dBA at a distance of approximately 30 feet without horns (110 feet with horns).

Automobiles and trucks are the major sources of noise in the vicinity of the 19 grade crossings found along the line. Noise levels at 50 feet from individual automobiles and trucks are

estimated to be approximately 70 to 75 and 80 to 85 dBA, respectively. However, as noted above, traffic levels at most of these road crossings are relatively low and there are few receptors for the automobile and truck noise.

# 3.2.4 Potential Environmental Impacts of Proposed Action

# Land Use

The proposed abandonment would change the existing land use designation of the railroad right-of-way from active railroad use to an inactive status. It is estimated that approximately 29 acres of land would be affected by this change. Salvaging activities generally would not disturb adjacent land uses, although the removal of some bridges could require the use of construction equipment outside of the rail line right-of-way and property. Any adjacent land that would be disturbed by salvage activities would be restored by UP/SP to its original condition. The proposed abandonment would not affect any prime farmlands.

Salvage activities would generate material that would need to be disposed of at a landfill, burned as fuel, or incinerated. Most of this material would consist of unusable rail ties and utility poles. Disposal would be carried out in accordance with applicable Federal, state, and local environmental regulations. If UP/SP select landfilling as a method of disposal, a properly permitted and designed landfill would be employed.

The abandonment activities would not have any impact on the state's designated coastal zone management plans.

## Water Resources

As discussed in Section 3.2.3, the only water resource is a tidal channel located near the middle portion of this segment.

Salvaging activities associated with the proposed abandonment would include removing rails, ties, spikes, plates, railroad-related utilities, signaling devices, and possibly the bridge spans over the channel. Bridge removal could disturb small areas of soil, and has the potential to increase soil erosion and sedimentation into the adjacent channel. Soil disturbance from the removal of the other materials is expected to be negligible. Actions to control erosion and sedimentation could include using sediment barriers (e.g., silt fences and straw bale dikes), diversion ditches, and sediment collection basins. Enhanced controls, such as increasing the storage capacity of sediment basins and conducting more frequent inspections and maintenance, also may be required.

Bridge abutments would remain in place following salvage operations. These abutments are generally long-lived, and are not expected to fail or collapse in the near future from normal deterioration and aging.

Applicable Federal and state permits would be obtained by UP/SP if salvage activities would disturb native soils and vegetation in the channel or wetlands. The only salvaging activity that has the potential to disturb these areas would be bridge span, deck, or pier removal. However, the bridge could be dismantled by equipment that would be positioned on the railbed or in upland areas. UP/SP's compliance with Federal and state permit requirements would ensure minimal impacts to adjacent water bodies and associated wetlands.

The proposed abandonment of this rail line segment would not have adverse impacts on groundwater resources, given the small size of the project and the limited productivity of groundwater in the area. Because abandonment of the rail line would require relatively little earthwork, the project design would not alter stormwater drainage and infiltration patterns in the area.

#### **Biological Resources**

<u>Vegetation</u>. Existing vegetation control practices along the right-of-way would be discontinued after salvaging operations are completed. Opportunistic plant species would quickly revegetate the cleared railbed and it would eventually evolve to a natural state. Therefore, the overall impact of the proposed abandonment on vegetation along the right-of-way should be beneficial.

<u>Wildlife</u>. The proposed abandonment would have beneficial long-term impacts on most animal species that occupy urban habitats adjacent to the rail line. The proposed abandonment could ease territorial movements and enhance the quality of habitat available to wildlife. Any potentially adverse impacts associated with salvaging activities would be temporary and would not result in permanent loss of wildlife species.

Erosion and sedimentation caused by salvaging operations, particularly bridge deck and span removal, could affect local aquatic communities. However, adverse impacts to fish populations and habitats are not anticipated, provided that UP/SP follow permit requirements for soil erosion and sedimentation control measures and undertake adequate mitigation measures when salvaging takes place on soils that are prone to erosion. Mitigation measures could include implementing enhanced erosion and sedimentation controls such as planting a rapidly-growing vegetation cover, increasing the storage capacity and detention periods for sediment basins, and conducting more frequent inspections. Salvage activities are not expected to create long-term negative impacts on water turbidity (i.e., degree of clarity) or existing fish populations and their habitat. <u>Threatened and Endangered Species</u>. Although the CDGF has indicated that Federally-listed threatened or endangered species could potentially occur in the area of the proposed abandonment, no effects on such species or their critical habitat are anticipated. This determination is based on the lack of any recorded occurrences at or near the project site, the lack of any critical or suitable habitat at the project site, and the lack of any observations of occurrences of such species during site visits.

Parks, Forests, Refuges, and Sanctuaries. The proposed abandonment would generally have minimal or beneficial impacts on local parks. After salvaging, activity on the rail line would cease. The absence of train noises and intrusions could increase recreational opportunities on adjacent park properties. Noise generated by equipment associated with salvage activities could, however, temporarily disrupt recreational pursuits. However, these disruptions would be minor and of short duration. Based on UP/SP's preliminary salvaging plans, no area along the right-of-way should be affected for more than two days.

#### **Historic and Cultural Resources**

With regard to project effects, abandonment of the UP main line could eliminate continued need for the Magnolia interlocking tower. The WP Oakland depot has not served passengers since the 1970s, and is currently vacant. It has, however, always existed in a railroad setting, and abandonment of the line could alter its setting in a manner that could constitute an adverse effect. The industrial buildings likewise have an historic relationship with this rail line--some still have rail spurs in place--and abandonment of the line could cause an adverse effect for the reason cited above for the depot. If any of the resources related to this line are determined eligible for listing on the NRHP, this abandonment may result in an adverse effect. SEA has initiated consultation with the California SHPO regarding these properties.

Based on SEA's initial consultations with the California SHPO, no known or documented archaeological sites exist along the rail line segment proposed for abandonment. However, there is the potential for adverse impacts on undocumented archaeological sites. SEA's recommended mitigation measures include provisions for continued Section 106 consultation to address discovery and treatment of archaeological sites during the abandonment or salvage process.

#### Safety

The proposed abandonment would not affect any known hazardous waste sites. Therefore the disturbance resulting from removal of rail and ties would be limited to minor surface disturbance, and no hazardous waste and safety impacts are expected as a result of the proposed abandonment. In addition, the probability of a major spill of hazardous or toxic materials during abandonment is very small. However, in the unlikely event that such a spill occurs at the abandonment site, drainage ditches are expected to retain the contaminated runoff. In the very unlikely event of a large spill that is not promptly and properly cleaned up, there could be the potential for contaminants to seep into underlying soils. Overall, the proposed abandonment would not be expected to increase the probability or consequences of hazardous waste contamination.

The discontinuance of rail service along the Magnolia Tower to Melrose line would eliminate the need for the 19 grade crossings and remove the potential for vehicle/train accidents.

# Transportation

Existing through traffic which now uses this segment would be rerouted to an adjacent SP line. Since there are currently no trains operating on this line, no rail-to-truck diversions of shipment would result from the proposed abandonment.

# **Air Quality**

The operation of heavy salvage equipment would be the primary source of pollutant emissions during salvage activities. The pollutants resulting from such activities typically consist of:



 Particulate matter, volatile organic compounds (VOCs), carbon monoxide (CO), and nitrogen oxides (NO<sub>x</sub>), resulting from the combustion of diesel fuel.

 Fugitive dust emissions along the right-of-way and unimproved roads, resulting from the operation of heavy equipment.

All of the emissions from salvaging operations would occur in an air quality attainment area. The fugitive particulate emissions, which would be of primary concern, can be controlled by UP/SP operators using water sprays or other suitable dust suppressants. Other emissions associated with salvaging operations (VOCs, CO, and NO<sub>x</sub>) generally would be minor and of short duration. It should be noted that salvage activities themselves would be temporary in nature and would have insignificant, temporary effects on air quality.

Post-abandonment pollutant emissions along the right-of-way would be substantially reduced, due to the elimination of rail traffic and rail line maintenance activities.

#### Noise

As discussed in Section 3.2.3, there is minimal traffic along the line. Noise impacts from the single train per day are minor. Automobile and truck traffic contribute to noise levels in the vicinity

of the 19 grade crossings along the rail line.

Salvaging operations associated with the abandonment would cause temporary increases in noise levels. This would occur during the removal of rails, ties, plates, spikes, railroad-related utilities, and signaling devices. These salvaging activities would require the use of trucks and frontend loaders, as well as cranes at larger bridges. Noise generated by such salvage equipment generally would be less than the 65-70 dBA level reported for typical trains. Equipment-generated noise, however, might be more frequent and last longer than noise from passing trains, since the equipment would remain relatively stationary for up to two days as each mile of track is dismantled and removed. Following salvage activities, elevated noise levels from all rail-related actions would be eliminated.

Minor changes in vehicular traffic levels and patterns also would occur in the vicinity of the right-of-way during and after salvage operations. Traffic levels at most of the 19 grade crossings on the rail line would be comparable to existing levels during and after salvage activities. Small increases in traffic could occur during salvaging at grade crossings near communities where the salvaging work force is operating. This temporarily increased traffic would result in small or imperceptible changes in existing traffic noise.

Upon completion of salvaging activities, all rail service and associated noise would cease. This permanent elimination of noise from rail traffic along the Magnolia Tower to Melrose line is expected to outweigh the temporarily increased noise of salvaging and local road traffic. Human and wildlife receptors located near the line would generally benefit from a long-term reduction in noise levels.

## 3.2.5 Potential Environmental Impacts of Alternative Action

Alternatives to the proposed abandonment would include denial (and therefore no change in operations), discontinuance of service without abandonment, and continued operation by another operator. In any of these cases, the existing quality of the human environment and energy consumption should not be affected.

#### 3.2.6 Summary of Agency Comments

In considering the potential environmental impacts of the rail line segment abandonments planned as part of the proposed UP/SP merger, SEA sent consultation letters to various Federal, state, and local agencies on January 29, 1996. These letters, samples of which are included in **Volume 5**, Appendix D, Exhibits D-1 through D-9, provided early notification of this EA and requested information and comments on the effects to the environment of the proposed merger and related abandonment and construction projects. Each letter included a state information packet

and maps that listed the specific merger-related proposals. A sample packet is shown in **Volume 5**, Appendix D, Exhibit D-10. SEA contacted agencies by telephone to alert them to the distribution of the consultation letter and to confirm its receipt. The Applicant also contacted these agencies in preparation of the Environmental Report which accompanied the merger application. That correspondence and all responses were reviewed, verified, and considered by SEA in the preparation of this EA.

All comments received (through mid March, 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. Comments received from the various parties consulted about the proposed abandonments are summarized below:

 The National Park Service noted that the proposed abandonment has potential for conversion to trail use.

# 3.2.7 Suggested Mitigation

No mitigation measures were suggested for the proposed abandonment project by the various parties in the process of preparing the EA (See **Volume 5**, Appendix D for agency consultation lists.)

# 3.2.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any final decision approving this proposed abandonment of the Magnolia Tower to Melrose line. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA recommended mitigation is as follows:

## Land Use

- 1. UP/SP shall observe all applicable Federal, state, and local regulations regarding handling and disposal of any waste materials, including hazardous waste, encountered or generated during salvage of the proposed rail line.
- 2. UP/SP shall dispose of all materials that cannot be reused in accordance with state and local solid waste management regulations.
- 3. UP/SP shall restore any adjacent properties that are disturbed during right-of-
way salvaging activities to pre-salvaging conditions.

 Before undertaking any salvage activities, UP/SP shall consult with any potentially affected American Indian Tribes.

# Water Resources

- UP/SP shall use appropriate technologies, such as silt screens, to minimize soil erosion during salvaging. UP/SP shall disturb the smallest area possible around streams and tributaries and shall revegetate disturbed areas immediately following salvage operations.
- UP/SP shall obtain all necessary Federal, state, and local permits if salvaging activities require the alteration the Inner Harbor channel and associated wetlands, or if these activities would cause soil or other materials to wash into these resources.

## **Biological Resources**

1. UP/SP shall use Best Management Practices to encourage regrowth in disturbed areas and to stabilize disturbed soils.

## **Historic and Cultural Resources**

- UP/SP shall retain their interest in and take no steps to alter the Magnolia Tower or WP Oakland Depot until the Section 106 process of the National Historic Preservation Act (16 U.S.C. 470f, as amended) has been completed for these structures.
- If previously unknown archaeological remains are found during salvage operations UP/SP shall cease work in the area and immediately contact the California SHPO.

# Safety

 UP/SP shall transport all hazardous materials generated by salvage activities in compliance with the U.S. Department of Transportation Federal Motor Carrier Safety Regulations (49 CFR Parts 171 to 179).

# Transportation

- 1. UP/SP shall use appropriate signs and barricades to control traffic disruptions during abandonment activities at and near grade crossings.
- UP/SP shall restore roads disturbed during abandonment activities to conditions 2. as required by state and local regulations.

# Air Quality

1. UP/SP shall comply with all applicable Federal, state, and local regulations regarding the control of fugitive dust. Fugitive dust emissions created during salvage operations shall be minimized by using such control methods as water spraying, installation of wind barriers, and chemical treatment during salvaging.

#### Noise

1. UP/SP shall control temporary noise from construction equipment through the use of work hour controls and maintenance of muffler systems on machinery.



# 3.3 Alturas to Wendel (SP)

Docket No. AB-12 (Sub-No. 184X)

#### 3.3.1 Proposed Action

As part of the proposed merger, the UP/SP would abandon a 85.5-mile line segment between Alturas and Wendel, from MP 445.6 to MP 360.1 (see Figure 3-3). Alturas is located in Modoc County, approximately 290 miles northeast of San Francisco. Wendel is located in Lassen County. approximately 50 miles northwest of Reno, Nevada. The proposed abandonment is along the SP Modoc Subdivision. If abandoned, existing overhead traffic on this segment would be diverted via Portland and the UP mainline, resulting in a shorter and faster route to East Coast destinations.

Generally, on the line proposed for abandonment, UP/SP would remove the rails, ties, ballast, ancillary equipment (i.e., communications, signals) and grade crossings. Depending on whether there is a proposed adaptive reuse of the right-of-way, the bridges may or may not be removed. Most salvage and removal activities would occur within the existing right-of-way. The right-of-way would then be available for conversion to alternative uses such as recreation (trail use), linear public utility transmission, local transportation corridor, expansion of adjacent land uses, or in some instances, a combination of some or all of the above.

# 3.3.2 Alternative Actions Considered

Alternatives to the proposed abandonment action include: (1) discontinuance of service with no abandonment; (2) continued operations by another carrier; and (3) the no action alternative (i.e., denial of the abandonment). Under each of these alternatives there would be no significant impact to the environment.

#### 3.3.3 Existing Environment

# Land Use

Land use along the 85.5-mile rail line between Alturas and Wendel is predominantly shrub/brush range land and cropland/pasture. Evergreen forested areas occur north of Pinnio, near Sylvia, north of Snowstorm Ranch, and along Snowstorm Creek.

The next most common features of the land adjacent to the rail line are residential areas and barren lands. Several communities are found along the right-of-way: Likely, Madeline, Mendiboure Ranch, Tempo, Ravendale, and Snowstorm Ranch.

Less common land uses along the rail line include mixed range land between Madeline and Pinnio, exposed rocks along Sage Hen Flat, three gravel pits, two cemeteries, and a transportation use near the junction with I-395.

# Water Resources

The proposed abandonment crosses 58 streams and 10 canals, culverts, and ditches. Another eight streams, nine waterbodies, and four canals, culverts, and ditches are located adjacent to the rail corridor.

NWI maps indicate more than 45 forested, emergent, and scrub/shrub wetlands dispersed along the corridor, occurring both in and adjacent to the existing right-of-way.

#### **Biological Resources**

<u>Vegetation</u>. Existing vegetation types along and adjacent to the Alturas-to-Wendel segment include sagebrush steppe, chamise-redshank and mixed chaparrals, juniper-shrub savanna, yellow pine-shrub/ Montane hardwood forests, and Montane riparian habitat as well as ruderal weed species.

Wildlife. The open field areas adjacent to the right-of-way provide habitat for a variety of

FIGURE 3-3



UP/SP RAILROAD MERGER PROPOSED ABANDONMENT ALTURAS - WENDEL, CALIFORNIA ENVIRONMENTAL ASSESSMENT terrestrial wildlife species, including small mammals, such as mice, voles, shrews, and rabbits. These small mammals provide food for predators such as red-tailed hawk, northern harrier, owl varieties, fox, and coyote. Other species that may inhabit the site include American kestrel, sparrow varieties, and garter snakes

<u>Threatened and Endangered Species</u>. SEA consulted USFWS regarding threatened and endangered species in the area of the proposed rail line abandonment between Alturas to Wendel. The USFWS staff indicated that there are no Federally-listed threatened or endangered species in the area. CDGF identified three state-listed threatened or endangered species that could potentially occur in the vicinity of the proposed abandonment. These species include the statethreatened Swainson's hawk (*Buteo swainsoni*), the state-threatened greater sandhill crane (*Grus canadensis tabida*), and the state-endangered western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). No occurrences of these species are known or recorded on or near the project site. Field observations on site also indicated no occurrences of these species. USFWS indicated that there is no critical habitat known or recorded in the vicinity of the proposed abandonment.

Parks, Forest Preserves, Refuges, and Sanctuaries. Public lands or non-profit managed areas that occur within 5 miles of this rail line segment include the Modoc National Wildlife Refuge, the Modoc National Forest, the Biscar State Wildlife Area, and the Honey Lake State Wildlife Area. None of these public lands are adjacent to the proposed abandonment.

## **Historic and Cultural Resources**

The Alturas to Wendel line was originally part of the Nevada-California Oregon Company system, which was organized in 1880 to build from Reno through Beckwith Pass into California and on to The Dalles, Oregon. The rail line was extended as finances permitted and reached Alturas in 1906 and Lakeview, Oregon in 1912, where the terminus was established. SP purchased the line from Wendel to Lakeview in 1926. SP rehabilitated this narrow gauge road as part of the Modoc Line. The road rebuilt to broadgauge was opened to Alturas by 1927 and to Lakeview by 1928.

SEA's preliminary archaeological record search indicates that approximately three-quarters of the right-of-way has been subjected to a field survey. Thirty prehistoric sites have been recorded on or adjacent to the right-of-way. Sixteen of these sites include historic components. Nineteen have been evaluated for inclusion on the NRHP; nine have been declared eligible. Eleven of the known prehistoric sites remain unevaluated and should be considered potentially eligible to the National Register. Consultation has been initiated with the California SHPO to confirm these findings.

## Safety

SEA's review of the VISTA database and UP safety records indicated no hazardous waste sites within the right-of-way on the Alturas to Wendel segment.

## Transportation

This segment, used infrequently, currently serves as a through route for limited traffic between northern California and Oregon and eastern terminals. Recent local traffic on the line supported a short-term construction project; no other local traffic currently uses the line. Therefore, no rail-to-truck diversions are expected to result from the abandonment.

#### Air Quality

The Alturas to Wendel rail line is located in AQCR 27: Northeast Plateau. Currently, AQCR 27 is in attainment with the NAAQS for all pollutants.

#### Noise

Automobile and truck traffic are the primary sources of noise in this predominantly rural region of California. Since there is no existing rail traffic on the Alturas to Wendel line, rail traffic is not a source of noise.

Automobiles and trucks are the major sources of noise in the vicinity of the 14 grade crossings found along the line. Noise levels at 50 feet from individual automobiles and trucks are estimated to be approximately 70 to 75 and 80 to 85 dBA, respectively. However, as noted above, traffic levels at most of these road crossings are relatively low and there are few receptors for the automobile and truck noise. Isolated and small clusters of other homes are found at several locations along the line.

#### 3.3.4 Potential Environmental Impacts of Proposed Action

## Land Use

The proposed abandonment would change the existing land use designation of the railroad right-of-way from active railroad use to an inactive status. It is estimated that approximately 1,900 acres of land would be affected by this change. Salvaging activities generally would not disturb adjacent land uses, although the removal of some bridges could require the use of construction equipment outside of the rail line right-of-way and property. Any adjacent land that would be

disturbed by salvage activities would be restored by UP/SP to its original condition. The proposed abandonment would not affect any prime farmlands.

Salvage activities would generate material that would need to be disposed of at a landfill, burned as fuel, or incinerated. Most of this material would consist of unusable rail ties and utility poles. Disposal would be carried out in accordance with applicable Federal, state, and local environmental regulations. If UP/SP select landfilling as a method of disposal, a properly permitted and designed landfill would be employed.

There would be no conversion of prime farmland to non-agricultural use.

# Water Resources

As discussed in Section 3.3.3, surface water resources along the proposed abandonment are numerous and include streams, canals, ditches, culverts, and waterbodies.

Salvaging activities associated with the proposed abandonment would include removing rails, ties, spikes, plates, railroad-related utilities, signaling devices, and possibly some bridge spans and decking. Bridge removal could disturb small areas of soil, and has the potential to increase soil erosion and sedimentation of adjacent water bodies. Soil disturbance from the removal of the other materials is expected to be negligible. Actions to control erosion and sedimentation could include using sediment barriers (e.g., silt fences and straw bale dikes), diversion ditches, and sediment collection basins. Enhanced controls, such as increasing the storage capacity of sediment basins and conducting more frequent inspections and maintenance, also may be required in areas where soils are particularly susceptible to erosion. The measures selected would need to be site-specific and would depend on local soil conditions, topography, the extent of disturbance proposed, proximity to water bodies, and applicable Federal, state or local regulations.

Bridge abutments would remain in place following salvage operations. These abutments are generally long-lived, and are not expected to fail or collapse in the near future from normal deterioration and aging.

Applicable Federal and state permits would be obtained by UP/SP if salvage activities would disturb native soils and vegetation in adjacent water bodies, floodplains, and/or wetlands. The only salvage activity that has the potential to disturb these areas would be bridge span, deck, or pier removal. Most bridges could be dismantled by equipment that would be positioned on railbeds or in upland areas. Dismantling long bridges that are located over open surface water bodies and associated floodplains or wetlands could require using equipment within these protected areas.

UP/SP's compliance with Federal and state permit requirements would ensure minimal

impacts to these water bodies and associated floodplains and wetlands. Actions that could be taken by UP/SP to minimize or avoid impacts include placing equipment on barges, matting, or skids. The measures selected would need to be site-specific and would depend on local wetland and floodplain characteristics, topography, the nature and duration of the proposed activity, proximity to floodplain and wetland, and the applicable Federal, state, and local regulations.

Culverts along the rail line segment could be dammed by debris which could cause flooding and alter stream flows. During salvage operations, UP/SP would be required to open all culverts to avoid flooding and stream flow alterations. These activities would be conducted in accordance with Federal, state and local regulations.

The proposed abandonment of this rail line segment would not have adverse impacts on groundwater resources, given the small size of the project and the limited productivity of groundwater in the area. Because abandonment of the rail line would require relatively little earthwork, the project design would not alter stormwater drainage and infiltration patterns in the area.

#### **Biological Resources**

<u>Vegetation</u>. Existing vegetation control practices along the right-of-way would be discontinued after salvaging operations are completed. Opportunistic plant species would quickly revegetate the cleared railbed and it would eventually evolve to a natural state. Therefore, the overall impact of the proposed abandonment on vegetation along the right-of-way should be beneficial.

<u>Wildlife</u>. The proposed abandonment would have beneficial long-term impacts on most animal species that occupy terrestrial habitats adjacent to the rail line. The proposed abandonment could ease territorial movements and enhance the quality of habitat available to wildlife. Any potentially adverse impacts associated with salvaging activities would be temporary and would not result in permanent loss of wildlife species.

Erosion and sedimentation caused by salvaging operations, particularly bridge deck and span removal, could affect downstream aquatic communities. However, adverse impacts to fish populations and habitats are not anticipated, provided that UP/SP follow permit requirements for soil erosion and sedimentation control measures and undertake adequate mitigation measures when salvaging takes place on soils that are prone to erosion. Mitigation measures could include implementing enhanced erosion and sedimentation controls such as planting a rapidly-growing vegetation cover, increasing the storage capacity and detention periods for sediment basins, and conducting more frequent inspections. Salvage activities are not expected to create long-term negative impacts on water turbidity (i.e., degree of clarity) or existing fish populations and their habitat.

<u>Threatened and Endangered Species</u>. USFWS has reported that there are no Federallylisted threatened or endangered species that would be affected by the proposed project.

Parks, Forest Preserves, Refuges, and Sanctuaries. The proposed abandonment would generally have no impacts on public lands listed in Section 3.3.3.

## **Historic and Cultural Resources**

SEA conducted a field survey of the built environment. No historic buildings, structures or objects were found that meet NRHP criteria along this route. Consultation with the California SHPO has been initiated to confirm this finding.

Based on SEA's initial consultations with the SHPO in California, known or documented archaeological sites exist along the rail line segment proposed for abandonment were identified. However, there is the potential for adverse impacts on undocumented archaeological sites. SEA's recommended mitigation measures include provisions for continued Section 106 consultation to address discovery and treatment of archaeological sites during the abandonment or salvage process.

#### Safety

The proposed abandonment would not impact any hazardous waste sites. Therefore the disturbance resulting from removal of rail and ties would be limited to minor surface disturbance, no hazardous waste and safety impacts are expected as a result of the proposed abandonment. In addition, the probability of a major spill of hazardous or toxic materials during abandonment is very small. However, in the unlikely event that such a spill occurs at the abandonment site, drainage ditches are expected to retain the contaminated runoff. In the very unlikely event of a large spill that is not promptly and properly cleaned up, there could be the potential for contaminants to seep into underlying soils. Overall, the proposed abandonment would not be expected to increase the probability or consequences of hazardous waste contamination.

The discontinuance of rail service along the Alturas to Wendel line would eliminate the need for the 14 grade crossings and remove the potential for vehicle/train accidents.

#### Transportation

Existing through traffic would be rerouted to the UP mainline. Since there are currently no

trains operating on this line, no rail-to-truck diversions of shipment would result from the proposed abandonment.

#### **Air Quality**

The operation of heavy equipment would be the primary source of pollutant emissions during salvage activities. The pollutants resulting from such activities typically consist of:

- Particulate matter, volatile organic compounds (VOCs), carbon monoxide (CO), and nitrogen oxides (NO<sub>x</sub>), resulting from the combustion of diesel fuel.
- Fugitive dust emissions along the right-of-way and unimproved roads, resulting from the operation of heavy equipment.

All of the emissions from salvaging operations would occur in an air quality attainment area. The fugitive particulate emissions, which would be of primary concern, can be controlled by UP/SP operators using water sprays or other suitable dust suppressants. Other emissions associated with salvaging operations (VOCs, CO, and  $NO_x$ ) generally would be minor and of short duration. It should be noted that salvage activities themselves would be temporary in nature and would have insignificant, temporary effects on air quality.

Post-abandonment pollutant emissions along the right-of-way would be substantially reduced, due to the elimination of rail traffic and rail line maintenance activities.

## Noise

As discussed in Section 3.3.3, since there is no existing rail traffic on the Alturas to Wendel line, rail traffic is not a source of noise. Automobile and truck traffic contribute to noise levels in the vicinity of the 14 grade crossings along the rail line.

Salvaging operations associated with the abandonment would cause temporary increases in noise levels. This would occur during the removal of rails, ties, plates, spikes, railroad-related utilities, signaling devices, and most bridges. These salvaging activities would require the use of trucks and front-end loaders, as well as cranes at larger bridges. Noise generated by such salvage equipment generally would be less than the 65 to 70 dBA level reported for typical trains. Equipment-generated noise, however, might be more frequent and last longer than noise from passing trains, since the equipment would remain relatively stationary for up to two days as each mile of track is dismantled and removed. Following salvage activities, elevated noise levels from all rail-related actions would be eliminated. Minor changes in vehicular traffic levels and patterns also would occur in the vicinity of the right-of-way during and after salvage operations. Traffic levels at most of the 14 grade crossings on the rail line would be comparable to existing levels during and after salvage activities. Small increases in traffic could occur during salvaging at grade crossings near communities where the salvaging work force is operating. This temporarily increased traffic would result in small or imperceptible changes in existing traffic noise.

Upon completion of salvaging activities, all rail service and associated noise would cease. This permanent elimination of noise from rail traffic along the Alturas to Wendel line is expected to outweigh the temporarily increased noise of salvaging and local road traffic. Human and wildlife receptors located near the line would generally benefit from a long-term reduction in noise levels.

# 3.3.5 Potential Environmental Impacts of Alternative Action

Alternatives to the proposed abandonment would include denial (and therefore no change in operations), discontinuance of service without abandonment, and continued operation by another operator. In any of these cases, the existing quality of the human environment and energy consumption should not be affected.

# 3.3.6 Summary of Agency Comments

In considering the potential environmental impacts of the rail line segment abandonments planned as part of the proposed UP/SP merger, SEA sent consultation letters to various Federal, state, and local agencies on January 29, 1996. These letters, samples of which are included in **Volume 5**, Appendix D, Exhibits D-1 through D-9, provided early notification of this EA and requested information and comments on the effects to the environment of the proposed merger and related abandonment and construction projects. Each letter included a state information packet and maps that listed the specific merger-related proposals. A sample packet is shown in **Volume 5**, Appendix D, Exhibit D-10. SEA contacted agencies by telephone to alert them to the distribution of the consultation letters and to confirm its receipt. The Applicant also contacted these agencies in preparation of the Environmental Report which accompanied the merger application. That correspondence and all responses were reviewed, verified, and considered by SEA in the preparation of this EA.

All comments received (through mid March, 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. Agency comments regarding the proposed abandonments are summarized below:

U.S. Bureau of Land Management, Eagle Lake Resource Area, requests that

abandonment property in Lassen and Modoc Counties be considered for other public use by only disposing of tracks, ties, and signal equipment, except when needed for public use, keeping all trail-related structures such as bridges and culverts, and by establishing a 180-day time period for imposition of Public Use Conditions.

# 3.3.7 Suggested Mitigation

This section highlights the mitigation measures that various parties, consulted in the process of preparing the EA for the proposed merger, have requested:

 U.S. Bureau of Land Management requests that the abandoned line be considered for use as a public trail.

# 3.3.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any final decision approving this proposed abandonment of the Alturas to Wendel line. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA recommended mitigation is as follows:

# Land Use

- 1. UP/SP shall observe all applicable Federal, state, and local regulations regarding handling and disposal of any waste materials, including hazardous waste, encountered or generated during salvage of the proposed rail line.
- UP/SP shall dispose of all materials that cannot be reused in accordance with state and local solid waste management regulations.
- UP/SP shall restore any adjacent properties that are disturbed during right-ofway salvaging activities to pre-salvaging conditions.
- 4. Before undertaking any salvage activities, UP/SP shall consult with any potentially affected American Indian Tribes.

# Water Resources

1. UP/SP shall use appropriate technologies, such as silt screens, to minimize soil

erosion during salvaging. UP/SP shall disturb the smallest area possible around streams and tributaries and shall revegetate disturbed areas immediately following salvage operations.

- UP/SP shall assure that all culverts are clear from debris to avoid potential flooding and stream flow alteration, in accordance with Federal, state and local regulations.
- 3. UP/SP shall obtain all necessary Federal, state, and local permits if salvaging activities require the alteration of wetlands, ponds, lakes, streams, or rivers, or if these activities would cause soil or other materials to wash into these water resources. UP/SP shall use appropriate techniques to minimize impacts to water bodies and wetlands, such as positioning salvaging equipment on barges, matting, or skids.

#### **Biological Resources**

 UP/SP shall use Best Management Practices to encourage regrowth in disturbed areas and to stabilize disturbed soils.

#### Historic and Cultural Resources

- UP/SP shall retain its interests in and take not steps to alter the integrity of the 9 eligible and 11 potentially eligible prehistroic sites until the Section 106 consultation process has been completed.
- If previously unknown archaeological remains are found during salvage operations, UP/SP shall cease work in the area and immediately contact the California SHPO.

#### Safety

 UP/SP shall transport all hazardous materials generated by salvage activities in compliance with the U.S. Department of Transportation Federal Motor Carrier Safety Regulations (49 CFR Parts 171 to 179).

#### Transportation

 UP/SP shall use appropriate signs and barricades to control traffic disruptions during abandonment activities at and near grade crossings. 2. UP/SP shall restore roads disturbed during abandonment activities to conditions as required by state or local regulations.

# Air Quality

 UP/SP shall comply with all applicable Federal, state, and local regulations regarding the control of fugitive dust. Fugitive dust emissions created during salvage operations shall be minimized by using such control methods as water spraying, installation of wind barriers, and chemical treatment during salvaging.

# Noise

1. UP/SP shall control temporary noise from construction equipment through the use of work hour controls and maintenance of muffler systems on machinery.

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# CHAPTER 4.0 COLORADO

This chapter analyzes the potential environmental impacts of three rail line segments in Colorado that UP/SP propose to abandon and/or discontinue service on as part of the proposed merger. The rail line segments proposed for abandonment and/or discontinuance of service are:

- Sage to Leadville, Colorado (SP):
  - Docket No. AB-12 (Sub-No. 189x) SP Abandonment.
  - Docket No. AB-8 (Sub-No. 36x) Discontinuance of Service by D&RGW.
- Malta to Cañon City, Colorado (SP):
  - Docket No. AB-12 (Sub-No. 188) SP Abandonment.
  - Docket No. AB-8 (Sub-No.39) Discontinuance of Service by D&RGW.
- Towner to NA Junction, Colorado (UP):
  - Docket No. AB-3 (Sub-No. 130) Abandonment by UP.
  - Docket No. AB-8 (Sub-No. 38) Discontinuance of Service by D&RGW.

Detailed descriptions of each proposed abandonment and discontinuance by location, including alternative actions considered, the existing environment, the potential environmental impacts, and recommended mitigation measures, are provided below.

## 4.1 Sage to Leadville

Docket No. AB-12 (Sub-No. 189X) - SP Abandonment Docket No. AB-8 (Sub-No. 36x) - DRGW Discontinuance of Service

#### 4.1.1 Proposed Action

The proposed merger would include the abandonment of 69.1-miles of rail line (by SP) and discontinuance of service (by DRGW) over the same line between Sage and Leadville, from MP 335.0 to 276.1 (see Figure 4-1). The end points are near Gypsum in Eagle County (approximately 110 miles west of Denver) and Leadville in Lake County (approximately 80 miles southwest of Denver). The proposed abandonment is part of the SP Central Corridor route. Following the merger, traffic currently using this segment would be diverted to other UP/SP east-west routes that are shorter, faster, and have grades lower than the three percent grade on this line.

Generally, on the line proposed for abandonment, UP/SP would remove the rails, ties, ballast, buildings, ancillary equipment (i.e., communications, signals), and grade crossings. Depending on whether there is a proposed adaptive reuse of the right-of-way, the bridges may or may not be removed. Most salvage and removal activities would occur within the existing right-of-way. The

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right-of-way would then be available for conversion to alternative uses such as recreation, linear public utility transmission, local transportation corrider, expansion of adjacent uses, or in some instances, a combination of some or all of the above.

#### 4.1.2 Alternative Actions Considered

Alternatives to the proposed abandonment action include: (1) discontinuance of service with no abandonment; (2) continued operations by another carrier; and (3) the no action alternative (i.e., denial of the abandonment). Under each of these alternatives there would be no significant impact to the environment.

#### 4.1.3 Existing Environment

#### Land Use

Land use along the 69.1-mile rail line segment between Sage and Leadville is primarily mountainous areas and forested land, though the line also passes through or is adjacent to small communities, cropland, mines, and water bodies. This segment also passes near some wetlands in the vicinity of the Tennessee Pass Tunnel.

The predominant land use along the proposed abandonment, adjacent to over 25 percent of the line, is a mixture of shrub/brush and herbaceous rangeland. Forested areas, including deciduous and evergreen forests, are along over 15 percent of the rail line. About 20 percent of the land use along the rail line is residential development in the various communities along the rail line: Eagle, Avon, Minturn, Gilman, Red Cliff, Belden, Pando, Malta, and Leadville. Less common land uses found along the right-of-way include commercial businesses and industrial facilities.

Agricultural lands are limited to cropland and pasture; most are found in the vicinity of Eagle. No prime agricultural land has been identified adjacent to the rail line.

The rail line runs through two EPA-designated Superfund sites: the Eagle Mine Site, located in and around Minturn, and the California Gulch Site, located in and around Leadville. These sites are discussed in more detail in the following "Safety" section.

#### Water Resources

National Wetland Inventory (NWI) maps indicate that the proposed abandonment corridor crosses 91 streams, including the Eagle River, and is adjacent to streams in another 43 locations, principally meanders and tributaries of the Eagle River. There are 10 canals, ditches, or culverts

FIGURE 4-1



UP/SP RAILROAD MERGER PROPOSED ABANDONMENT SAGE - LEADVILLE, COLORADO ENVIRONMENTAL ASSESSMENT intercepted by, and another 9 located adjacent to, the rail corridor. Two mapped wetlands are intercepted by the corridor, and another four are found adjacent to the corridor.

## **Biological Resources**

<u>Vegetation</u>. Several vegetation communities occur along and adjacent to the abandonment corridor. These include ponderosa pine forest, open grassland, riparian, sage brush/scrub, pinyon pine/juniper woodland, and coniferous forest. These vegetation communities are interspersed with agricultural, developed, or built lands. Within the right-of-way the vegetation is typically ruderal weeds, having been disturbed by past rail construction and current rail activities.

<u>Wildlife</u>. The right-of-way provides habitat for a variety of terrestrial wildlife species; however, the extent of the habitat is limited. Due to the length of the proposed abandonment, a number of wildlife habitats are crossed by the corridor. Migratory routes as well as winter range for mule deer and elk can be found along the entire corridor. Additional habitats include sage grouse in the Wolcott area, coyote, bobcat, mountain lion, and bighorn sheep in the Minturn area, and transient moose and black bear from the elevation of Edwards up to Leadville. Peregrine falcon have been observed near Minturn and the Eagle River provides habitat for golden eagle, goshawk, and bald eagle in winter.

<u>Threatened and Endangered Species</u>. SEA consulted the U.S. Fish and Wildlife Service (USFWS) regarding threatened and endangered species in the region of the proposed rail line abandonment between Sage and Leadville. The USFWS staff indicated that five Federally-listed threatened or endangered species could potentially occur in the vicinity of the proposed abandonment. These species include the threatened greenback cutthroat trout (*Oncorhynchus clarki stomias*), the threatened Penland alpine fen mustard (*Eutrema penlandii*), the endangered American Peregrine falcon (*Falco peregrinus anatum*), the threatened Mexican spotted owl (*Strix occidentalis lucida*), and the endangered black-footed ferret (*Mustela nigripes*). No occurrences of these species are known or recorded on or near the project site. Field observations on site also indicated no occurrences of these species. There is no critical habitat known or recorded in the vicinity of the proposed abandonment.

Parks, Forest Preserves, Refuges, and Sanctuaries. Portions of the White River National Forest are adjacent to the proposed abandonment right-of-way. The Holy Cross Wilderness and the Mount Massive Wilderness are located within 5 miles of the abandonment corridor.

#### **Historic and Cultural Resources**

The railroad was originally constructed as a narrow gauge line by the Denver and Rio Grande Western Railroad Company (D&RGW) between 1881 and 1887. The line served mines and mining

communities. It was converted to standard gauge over Tennessee Pass in 1890. An additional track was added to the main line between Tennessee Pass and Minturn between 1903 and 1909. The third rail for narrow gauge was retained between Leadville and Malta (through to Pueblo) until 1924, due to many shipments of ore to smelters, and required connections with the former South Park (now Colorado & Southern) and Florence & Cripple Creek. In the late 1920s, D&RGW conducted a major reconstruction to improve the alignment. The original construction and grades were changed as part of the conversion. The line has subsequently been upgraded over the years.

The D&RGW branch line from Malta to Leadville was determined eligible for listing on the National Register of Historic Places (NRHP) by the Colorado State Historic Preservation Officer (SHPO) in 1981. Furthermore, the SHPO has determined that main line from Sage to Cañon City via Malta, including all bridges, tunnels, and appurtenances more than 50 years old, is also eligible for the NRHP.

SEA's review of state archaeological files and records established that only a small percentage of the line segment has been subjected to systematic survey. Only one site was located within or adjacent to the right-of-way, but it was not eligible for listing in the NRHP. Consultation has been initiated with the Colorado SHPO to confirm this finding. As part of the Section 106 consultation process, site-specific field surveys could be required by a SHPO to verify that no archaeological resources would be disturbed or destroyed by the abandonment or related salvage activities.

#### Safety

SEA's review of the VISTA database and SP safety reports indicated several major hazardous waste sites along the Sage to Leadville Line. Rail ballast containing lead slag was identified in some sections of the Sage to Leadville segment. The SP rail line at MP 302 in Minturn was identified as an ERNS fuel oil spill site.

The rail line also crosses two NPL (Superfund) sites: the California Gulch-Leadville site and the Eagle Mine site. Each of these sites contain the hazardous remnants of more than 100 years of hard rock mining operations. The mine sites, which historically were and continue to be serviced by lines owned by D&RGW, are laden with mining wastes such as tailings, waste rock, slag and acid mine drainage containing heavy metals such as lead, arsenic, zinc and cadmium. According to EPA, Region VIII, high concentrations of these wastes have been released to the Eagle and Arkansas Rivers.

At the Eagle Mine Site, the rail line proposed for abandonment runs directly along the banks of the Arkansas River. The rail line also runs adjacent to the former zinc processing plant at Belden. Since the rail line is currently active, EPA Region VIII has not conducted any remedial investigations on the railbed or adjacent right-of-way to determine if it is contaminated, nor has EPA proposed a cleanup plan for this portion of the site.

The California Gulch - Leadville Superfund site is located at (and surrounding) Leadville and is crossed by the rail segment. SP owns three slag piles included in the site, referred to as the Harrison Street pile, the La Plata pile, and ASARCO pile. Prior to the designation of the site as a Superfund site in 1986, the lead slag was used as rail line ballast. That practice was discontinued beginning in 1988. Ballast-sized slag was released for use by the EPA in 1993. As a result of that ruling, SP resumed use of the appropriately sized slag as ballast in 1995.

The D&RGW has entered into a partial consent decree with EPA for remediation of slag at the California Gulch Superfund Site. As part of the consent decree, the investigation of slag fines in the railroad's right-of-way was deferred until such time as the use of the rail line may change. Abandonment of the rail line would be considered a changed use by EPA.

EPA is generally in favor of returning the abandoned railbed to recreational use, but expresses concerns over human exposure to hazardous substances existing in the former right-ofway. Similarly, should the future use of the rail line within the Town of Leadville be residential, the abandoned right-of-way would require remediation.

#### Transportation

This segment currently serves as a portion the SP Central Corridor route. An average of 12 through trains per day operate over this segment. Local traffic is limited to SP ballast shipments, which includes approximately seven railcars per year.

There are 14 grade crossings located along this rail line. These crossings are for local roads which carry low volumes of daily traffic.

# Air Quality

The Sage to Leadville line is located in two Air Quality Control Regions (AQCRs). The Lake County portion is in AQCR 38 (San Isabel) and the Eagle County portion is in AQCR 35 (Grand Mesa). Currently, AQCR 38 is nonattainment for particulate matter (PM) and carbon monoxide (CO); it is in attainment with the National Ambient Air Quality Standards (NAAQS) for all other pollutants. AQCR 35 is in attainment with the National Ambient Air Quality Standards (NAAQS) for all other pollutants except PM.

#### Noise

Rail, automobile, and truck traffic are the primary sources of noise in this rural area of Colorado. The current level of train traffic on the Sage to Leadville rail line (12 trains per day) generates an estimated  $L_{dn}$  noise level of 65 dBA at a distance of approximately 140 feet without horns (420 feet with horns).

Automobiles and trucks are the major sources of noise in the vicinity of the 14 grade crossings found along the line. Noise levels from this traffic (at 50 feet) are estimated to be between 70 to 75 and 80 to 85 dBA respectively. However, because of the land uses adjacent to the right-of-way, there are few receptors for this automobile and truck noise. Residences in the communities along the rail line are potential receptors of rail and vehicular traffic noise.

## 4.1.4 Potential Environmental Impacts of Proposed Action

#### Land Use

The proposed abandonment would change the existing land use designation of the railroad right-of-way from active railroad use to an inactive status. It is estimated that approximately 1,406 acres of land would be affected by this change. Salvaging activities generally would not disturb adjacent land uses, although the removal of some bridges could require the use of construction equipment outside of the rail line right-of-way and property. Any adjacent land that would be disturbed by salvage activities would be restored by UP/SP to its original condition. The proposed abandonment would not affect any prime farmlands.

Salvage activities would generate material that would need to be disposed of at a landfill, burned as fuel, or incinerated. Most of this material would consist of unusable rail ties and utility poles. Disposal would be carried out in accordance with applicable Federal, state, and local environmental regulations. If UP/SP select landfilling as a method of disposal, a properly permitted and designed landfill would be employed.

## Water Resources

As discussed in Section 4.1.3, surface water resources along the proposed abandonment are abundant and include rivers, streams, and ponds. The rail line crosses a large number of streams, as indicated by the 30 bridges and culverts that are present on the line. There are also many ponds and lakes adjacent to the line, ranging in size from a few acres to several hundred acres.

Salvaging activities associated with the proposed abandonment would include removing rails,

ties, spikes, plates, railroad-related utilities, signaling devices, and possibly some bridge spans and decking. Bridge removal could disturb small areas of soil, and has the potential to increase soil erosion and sedimentation of adjacent water bodies. Soil disturbance from the removal of the other materials is expected to be negligible. Actions to control erosion and sedimentation could include using sediment barriers (e.g., silt fences and straw bale dikes), diversion ditches, and sediment collection basins. Enhanced controls, such as increasing the storage capacity of sediment basins and conducting more frequent inspections and maintenance, also may be required in areas where soils are particularly susceptible to erosion. The measures selected would need to be site-specific and would depend on local soil conditions, topography, the extent of disturbance proposed, proximity to water bodies, and applicable Federal, state or local regulations.

Bridge abutments would remain in place following salvage operations. These abutments are generally long-lived, and are not expected to fail or collapse in the near future from normal deterioration and aging.

Applicable Federal and state permits would be obtained by UP/SP if salvage activities would disturb native soils and vegetation in adjacent water bodies, floodplains, and/or wetlands. The only salvage activity that has the potential to disturb these areas would be bridge span, deck, or pier removal. Most bridges could be dismantled by equipment that would be positioned on railbeds or in upland areas. Dismantling long bridges that are located over open surface water bodies and associated floodplains or wetlands, could require using equipment within these protected areas.

UP/SP's compliance with Federal and state permit requirements would ensure minimal impacts to these water bodies and associated floodplains and wetlands. Actions that could be taken by UP/SP to minimize or avoid impacts include placing equipment on barges, matting, or skids. The measures selected would need to be site-specific and would depend on local wetland and floodplain characteristics, topography, the nature and duration of the proposed activity, proximity to floodplain and wetland, and the applicable Federal, state, and local regulations.

Culverts along the rail line segment could be dammed by debris which could cause flooding and alter stream flows. During salvage operations, UP/SP would be required to open all culverts to avoid flooding and stream flow alterations. These activities would be conducted in accordance with Federal, state and local regulations.

The proposed abandonment of this rail line segment would not have adverse impacts on groundwater resources, given the small size of the project and the limited productivity of groundwater in the area. Because abandonment of the rail line would require relatively little earthwork, the project design would not alter stormwater drainage and infiltration patterns in the area.



#### **Biological Resources**

<u>Vegetation</u>. Existing vegetation control practices along the right-of-way would be discontinued after salvaging operations are completed. Opportunistic plant species would quickly revegetate the cleared railbed and it would eventually evolve to a natural state. Therefore, the overall impact of the proposed abandonment on vegetation along the right-of-way should be beneficial.

<u>Wildlife</u>. The proposed abandonment would have beneficial long-term impacts on most animal species that occupy terrestrial habitats adjacent to the rail line. The proposed abandonment could ease territorial movements and enhance the quality of habitat available to wildlife. Any potentially adverse impacts associated with salvaging activities would be temporary and would not result in permanent loss of wildlife species.

Erosion and sedimentation caused by salvaging operations, particularly bridge deck and span removal, could affect downstream aquatic communities. However, adverse impacts to fish populations and habitats are not anticipated, provided that UP/SP follow permit requirements for soil erosion and sedimentation control measures and undertake adequate mitigation measures when salvaging takes place on soils that are prone to erosion. Mitigation measures could include implementing enhanced erosion and sedimentation controls such as planting a rapidly-growing vegetation cover, increasing the storage capacity and detention periods for sediment basins, and conducting more frequent inspections. Salvage activities are not expected to create long-term negative impacts on water turbidity (i.e., degree of clarity) or existing fish populations and their habitat.

<u>Threatened and Endangered Species</u>. Although USFWS has indicated that Federally-listed threatened or endangered species could potentially occur in the area of the proposed abandonment, no effects on such species or their critical habitat are anticipated. This determination is based on the lack of any recorded occurrences at or near the project site, the lack of any critical or suitable habitat at the project site, and the lack of any observations of occurrences of such species during site visits. In addition, the Colorado Department of Natural Resources has no recorded sightings of the five threatened or endangered species listed in Section 4.1.3 within the rail line corridor.

Parks, Forests, Refuges, and Sanctuaries. The proposed abandonment would generally have minimal or beneficial impacts on White River National Forest. After salvaging, activity on the rail line would cease. The absence of train noises and intrusions could increase wildlife activity and recreational opportunities on adjacent park properties. Noise generated by equipment associated with salvage activities could, however, temporarily disrupt wildlife functions and recreational

pursuits. However, these disruptions would be minor and of short duration. Based on UP/SP's preliminary salvaging plans, no area along the right-of-way should be affected for more than two days.

#### Historic and Cultural Resources

Salvage operations could result in the physical destruction, damage, or alteration of the D&RGW branch line and the Sage to Leadville main line. These rail segments, including bridges, tunnels, and other appurtenances could undergo eventual transfer, lease or sale, or could suffer neglect, resulting in their deterioration or destruction. Consultation has been initiated with the Colorado SHPO regarding potential effects.

Based on SEA's initial consultations with the Colorado SHPO, no known or documented archaeological sites exist along the rail line segment proposed for abandonment. However, there is the potential for adverse impacts on undocumented archaeological sites. SEA's recommended mitigation measures include provisions for continued Section 106 consultation to address discovery and treatment of archaeological sites during the abandonment or salvage process.

## Safety

In accordance with SEA's recommended mitigation, UP/SP shall consult with U.S. EPA Region VIII prior to conducting any salvage activities along the Sage to Leadville line. UP/SP, in consultation with EPA, shall develop a Risk Assessment and Remediation Plan.

The discontinuance of rail service on the abandoned line would eliminate the need for 14 grade crossings and remove the potential for vehicle/train accidents.

#### Transportation

The overhead rail traffic currently using this segment would be diverted to other UP/SP routes. Local ballast shipments (7 railcars per year) would not be necessary after the line is abandoned. No rail-to-truck diversions are expected to result from abandonment of this segment.

#### **Air Quality**

The operation of heavy equipment would be the primary source of pollutant emissions during salvage activities. The pollutants resulting from such activities typically consist of:

 Particulate matter, volatile organic compounds (VOCs), carbon monoxide (CO), and nitrogen oxides (NO<sub>x</sub>), resulting from the combustion of diesel fuel. Fugitive dust emissions along the right-of-way and unimproved roads, resulting from the operation of heavy equipment.

All of the emissions from salvaging operations would occur in an air quality attainment area. The fugitive particulate emissions, which would be of primary concern, can be controlled by UP/SP operators using water sprays or other suitable dust suppressants. Other emissions associated with salvaging operations (VOCs, CO, and  $NO_x$ ) generally would be minor and of short duration. It should be noted that salvage activities themselves would be temporary in nature and have insignificant, temporary effects on air quality and would not be expected to contribute to violations of the NAAQS (in either AQCR).

Post-abandonment pollutant emissions along the right-of-way would be substantially reduced, due to the elimination of rail traffic and rail line maintenance activities.

#### Noise

As discussed in Section 4.1.3, twelve trains per day currently operate on this rail line, which contributes to increased noise levels along the entire segment. Automobile and truck traffic contribute to noise levels in the vicinity of the 14 grade crossings along the rail line.

Salvaging operations associated with the abandonment would cause temporary increases in noise levels. This would occur during the removal of rails, ties, plates, spikes, railroad-related utilities, signaling devices, and most bridges. These salvaging activities would require the use of trucks and front-end loaders, as well as cranes at larger bridges. Noise generated by such salvage equipment generally would be less than the 65 to 70 dBA level reported for typical trains. Equipment-generated noise, however, might be more frequent and last longer than noise from passing trains, since the equipment would remain relatively stationary for up to two days as each mile of track is dismantled and removed. Following salvage activities, elevated noise levels from all rail-related actions would be eliminated.

Minor changes in vehicular traffic levels and patterns also would occur in the vicinity of the right-of-way during and after salvage operations. Traffic levels at most of the grade crossings on the rail line would be comparable to existing levels during and after salvage activities. Small increases in traffic could occur during salvaging at grade crossings near communities where the salvaging work force is operating. This temporarily increased traffic would result in small or imperceptible changes in existing traffic noise.

Upon completion of salvaging activities, all rail service and associated noise would cease. This permanent elimination of noise from rail traffic along the Sage to Leadville line is expected to outweigh the temporarily increased noise of salvaging and local road traffic. Human and wildlife receptors located near the line would generally benefit from a long-term reduction in noise levels.

# 4.1.5 Potential Environmental Impacts of Alternative Action

Alternatives to the proposed abandonment would include denial (and therefore no change in operations), discontinuance of service without abandonment, and continued operation by another operator. In any of these cases, the existing quality of the human environment and energy consumption should not be affected.

## 4.1.6 Summary of Agency Comments

In considering the potential environmental impacts of the rail line segment abandonments planned as part of the proposed UP/SP merger, SEA sent consultation letters to various Federal, state, and local agencies on January 29, 1996. These letters, samples of which are included in **Volume 5**, Appendix D, Exhibits D-1 through D-9, provided early notification of this EA and requested information and comments on the effects to the environment of the proposed merger and related abandonment and construction projects. Each letter included a state information packet and maps that listed the specific merger-related proposals. A sample packet is shown in **Volume 5**, Appendix D, Exhibit D-10. SEA contacted agencies by telephone to alert them to the distribution of the consultation letter and to confirm its receipt. The Applicant also contacted these agencies in preparation of the Environmental Report which accompanied the merger application. That correspondence and all responses were reviewed, verified, and considered by SEA in the preparation of this EA.

All comments received (through mid March 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. Agency comments regarding the proposed abandonments are summarized below:

- U.S. Environmental Protection Agency, Region 8, noted concerns that abandonments may increase vehicular traffic within Rocky Mountain states and may impact noise and air quality. The Agency also stated its intent to participate in proceedings.
- U.S. Environmental Protection Agency, Region 8, also noted that the abandonment crosses two Superfund sites: Eagle Mountain and California Gulch. The agency is concerned about the apparent lack of a mitigation plan for issues related to the Superfund sites or that might be needed if the abandoned lines were converted to public use; and the lack of discussion on potential liability.

- U.S. Forest Service noted its intent to participate in proceedings, and expressed concerns about: the potential effects to their management responsibilities in the corridor; potential movement of hazardous materials; potential for railbanking; identification and inventory of reverted property rights, cultural resources, and hazardous material.
- Natural Resources Conservation Service noted there would be no apparent impacts on prime farmlands or farmland of statewide importance.
- U.S. Fish and Wildlife Service, Western Colorado Office, provided a list of federally listed and candidate Threatened and Endangered Species possible along the rail abandonment line.
- U.S. Army Corp of Engineers, Omaha District, indicates that some of the construction associated with salvage operations could take place in waterways or wetlands which are classified as waters of the U.S. and therefore regulated under Section 404 of the Clean Water Act.
- Colorado Historical Society requests that appropriate Colorado Cultural Resource Survey forms be completed for the rail lines themselves as well as their associated features and that they be submitted to the Historical Society's office for their opinion regarding their eligibility for inclusion in the NRHP.
- Lake County Board of Commissioners states that:
  - (1) Abandonment would deprive Lake County of any rail service, which could have a substantial impact on the County and its residents. Mining is an important segment of the economy and mining materials or supplies are brought by rail.
  - (2) Historically ASARCO has shipped up to 400 cars per year of a high metal concentrate. Without rail lines these would be required to travel by truck, resulting in increased air emissions, and increased risk to public health and safety.
  - (3) The lack of rail lines as a potential source of transportation may have a negative impact on the recovery of Lake County mining.
  - (4) D&RGW has agreed to remove slag piles for ballast material as part of the California Gulch Superfund Site, pursuant to CERCLA. How would these materials be removed if the rail line is abandoned? How would abandonment affect the cleanup of any remaining slag fines that may be required under CERCLA?

# 4.1.7 Suggested Mitigation

This section highlights the mitigation measures that various parties, consulted in the process of preparing the EA for the proposed merger, have requested:

- U.S. Environmental Protection Agency, Region VIII, requests that:
  - (1) UP/SP undertake and complete a remedial investigation to determine the nature and extent of the contamination of rail lines to be abandoned within the Eagle Mountain and California Gulch Superfund sites.
  - (2) Based on the results of the investigation, UP/SP shall prepare an appropriate mitigation plan be developed to EPA's satisfaction prior to final review and determination of the proposed merger.
- U.S. Forest Service requests information and inventory of reverted property rights, cultural resources, and hazardous materials.
- U.S. Army Corp of Engineers, Omaha District, states that if construction occurs in waterways or wetlands, a Section 404 permit application must be prepared and submitted.
- Colorado Historical Society requests appropriate Colorado Cultural Resource Survey forms be completed for abandoned rail lines and associated features.
  Forms should be submitted to SHPO's office for determination of eligibility for inclusion on the NRHP.

# 4.1.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any final decision approving this proposed abandonment of the Sage to Leadville line and discontinuance of service by D&RGW. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA's recommended mitigation is as follows.

# Land Use

 UP/SP shall observe all applicable Federal, state, and local regulations regarding handling and disposal of any waste materials, including hazardous waste, encountered or generated during salvage of the proposed rail line.

- 2. UP/SP shall dispose of all materials that cannot be reused in accordance with state and local solid waste management regulations.
- UP/SP shall restore any adjacent properties that are disturbed during right-ofway salvaging activities to pre-salvaging conditions.
- 4. Before undertaking any salvage activities, UP/SP shall consult with any potentially affected American Indian Tribes.

# Water Resources

- UP/SP shall use appropriate technologies, such as silt screens, to minimize scil erosion during salvaging. UP/SP shall disturb the smallest area possible around streams and tributaries and shall revegetate disturbed areas immediately following salvage operations.
- UP/SP shall assure that all culverts are clear from debris to avoid potential flooding and stream flow alteration, in accordance with Federal, state and local regulations.
- 3. A Water Pollution Control Act permit under 35 U.S.C. 1251 et. seq., may be required prior to salvage of the portion of the rail line near the Arkansas and Eagle Rivers. Prior to salvage activities, UP/SP shall contact the Colorado Department of Public Health and Environment, Water Quality Division, to determine if any permits are required and take the steps to secure these permits.
- 4. UP/SP shall obtain all other necessary Federal, state, and local permits if salvaging activities require the alteration of wetlands, ponds, lakes, streams, or rivers, or if these activities would cause soil or other materials to wash into these water resources. UP/SP shall use appropriate techniques to minimize impacts to water bodies and wetlands, such as positioning salvaging equipment on barges, matting, or skids.

# **Biological Resources**

1. UP/SP shall use Best Management Practices to encourage regrowth in disturbed areas and to stabilize disturbed soils.

## Historic and Cultural Resources

- UP/SP shall retain their interest in and take no steps to alter the D&RGW branch line from Sage to Leadville until the Section 106 process of the National Historic Preservation Act 16 USC 470f, as amended, has been completed.
- If previously unknown archaeological remains are found during salvage operations, UP/SP shall cease work in the area and immediately contact the Colorado SHPO.

# Safety

 UP/SP shall consult with U.S. EPA Region VIII prior to conducting any salvage activity for the entire line. UP/SP, in consultation with EPA, shall develop a Risk Assessment and Remediation Plan. Also, UP/SP shall advise SEA of the results of its consultations and provide SEA with a copy of the EPA-approved mitigation plans.

## Transportation

- 1. UP/SP shall use appropriate signs and barricades to control traffic disruptions during abandonment activities at and near grade crossings.
- UP/SP shall restore roads disturbed during abandonment activities to conditions as required by state and local regulations.

# Air Quality

 UP/SP shall comply with all applicable Federal, state, and local regulations regarding the control of fugitive dust. Fugitive dust emissions created during salvage operations shall be minimized by using such control methods as water spraying, installation of wind barriers, and chemical treatment during salvaging.

# Noise

1. UP/SP shall control temporary noise from construction equipment through the use of work hour controls and maintenance of muffler systems on machinery.



#### Malta to Cañon City

Docket No. AB-12 (Sub-No. 188) - SP Abandonment Docket No. AB-8 (Sub-No.39) - Discontinuance of Service by D&RGW

## 4.2.1 Proposed Action

As part of the proposed merger, UP/SP intend to abandon an SP 109-mile line segment between Malta and Cañon City, from MP 271.0 to 162.0 (see Figure 4-2) and D&RGW would discontinue service over the same line. Malta is located in Lake County, about 80 miles southwest of Denver; Cañon City is located in Fremont County, approximately 35 miles southwest of Colorado Springs. Traffic on this line would be rerouted to other UP/SP lines.

Generally, on the line proposed for abandonment, UP/SP would remove the rails, ties, ballast, buildings, ancillary equipment (i.e., communications, signals), and grade crossings. Depending on whether there is a proposed adaptive reuse of the right-of-way, the bridges may or may not be removed. Most salvage and removal activities would occur within the existing right-of-way. The right-of-way would then be available for conversion to alternative uses such as recreation, linear public utility transmission, local transportation corridor, expansion of adjacent uses, or in some instances, a combination of some or all of the above.

# 4.2.2 Alternative Actions Considered

Alternatives to the proposed abandonment action include: (1) discontinuance of service with no abandonment; (2) continued operations by another carrier; and (3) the no action alternative (i.e., denial of the abandonment). Under each of these alternatives there would be no significant impact to the environment.

#### 4.2.3 Existing Environment

#### Land Use

Land use along the 109-mile segment between Malta and Cañon City includes mountainous areas and forested land, though it also passes through or adjacent to small communities, cropland, mines, and water bodies.

The predominant land use along the proposed abandonment, adjacent to over 40 percent of the line, is a mixture of shrub/brush and herbaceous rangeland. Forested areas, including deciduous and evergreen forests, are along nearly 15 percent of the rail line. About 20 percent of the land use along the rail line is cropland or pasture, although no prime agricultural land has been identified adjacent to the rail line. Less than 10 percent of the land use along the line is residential or urbanized. Most residences are concentrated in small communities along the rail line: Kobe, Balltown, Americus, Buena Vista, Nathrop, and Salida.

The rail line runs through two EPA-designated Superfund sites: the California Gulch -Leadville site and the Smeltertown site. These sites are described in more detail in the following "Safety" section.

## Water Resources

The proposed abandonment crosses 136 streams, including the Arkansas River, and is adjacent to streams in another 72 locations, principally the Arkansas River. There are eight canals, ditches, or culverts intercepted by, and another nine located adjacent to, the rail corridor. National Wetland Inventory (NWI) maps indicate seven parcels of palustrine and riverine wetlands within or adjacent to the existing right-of-way proposed for abandonment. Each of these wetlands occur along the Arkansas River and its tributaries. The right-of-way does not cross any 100-year floodplain.

#### **Biological Resources**

<u>Vegetation</u>. Several vegetation communities are present along and adjacent to the insert abandonment corridor. These include ponderosa pine forest, open grassland, riparian, sage brush/scrub, pinyon pine/juniper woodland, and coniferous forest. These vegetation communities are interspersed with agricultural, developed, or built lands. Within the right-of-way, the vegetation is ruderal, having been disturbed by past rail construction and current rail activities.

<u>Wildlife</u>. Due to the length of the proposed abandonment, a number of wildlife habitats are crossed by the corridor. Migratory routes as well as winter range for mule deer and elk can be found along the entire corridor. The area provides additional habitats for sage grouse in the Cañon City Area, coyote, bobcat, mountain lion, and black bear from the elevation of Buena Vista up to Malta. The Arkansas River provides habitat for golden eagle, goshawk, and bald eagle in winter.

<u>Threatened and Endangered Species</u>. SEA consulted USFWS regarding threatened and endangered species in the region of the proposed rail line abandonment between Malta to Cañon City. The USFWS staff indicated that five Federally-listed threatened or endangered species could potentially occur in the vicinity of the proposed abandonment. These species include the threatened greenback cutthroat trout (*Oncorhynchus clarki stomias*), the threatened Penland alpine fen mustard (*Eutrema penlandii*), the endangered American Peregrine falcon (*Falco peregrinus anatum*), the threatened Mexican spotted owl (*Strix occidentalis lucida*), and the endangered blackfooted ferret (*Mustela nigripes*). No occurrences of these species are known or recorded on or





UP/SP RAILROAD MERGER PROPOSED ABANDONMENT MALTA - CAÑON CITY, COLORADO ENVIRONMENTAL ASSESSMENT

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near the project site. Field observations on site also indicated no occurrences of these species. There is no critical habitat known or recorded in the vicinity of the proposed abandonment.

Parks, Forest Preserves, Refuges, and Sanctuaries. Portions of the San Isabel National Forest are adjacent to the proposed abandonment right-of-way.

## **Historic and Cultural Resources**

The Malta to Cañon City line is part of the narrow gauge railroad constructed beginning in 1878 by the Atchison, Topeka and Santa Fe Railway (AT&SF) and completed in 1880 by the D&RGW. The "Royal Gorge War" in 1878-79 and subsequent court battle resulted in occupation by the D&RGW at the expense of the AT&SF, which had already completed construction of the Hanging Bridge through the gorge. It was converted to standard gauge in the 1890s. The third rail for narrow gauge was retained between Leadville (through Malta) to Pueblo until 1924, due to many shipments of ore to smelters, and required connections with the former South Park (now Colorado & Southern) and Florence & Cripple Creek. In the late 1920s D&RGW conducted a major reconstruction to improve the alignment. The original construction and grades were changed as part of the conversion. The line has subsequently been upgraded over the years.

SEA's consultation with the Colorado SHPO indicates that the D&RGW main line from Sage to Cañon City via Malta, including all bridges, tunnels and appurtenances more than 50 years old, is eligible for listing on the NRHP because of its association with the history of railroad development in Colorado. In addition, the Hanging Bridge (1879) and Royal Gorge War Revetments (1878) are individually eligible for the NRHP.

SEA's review of state archaeological files and records established that only a small percentage of the line segment has been subjected to systematic survey. A total of 14 sites were located within or adjacent to the right-of-way. Three were found not to be eligible for listing in the NRHP, and 11 were not assessed. If any of these (or newly discovered sites) are located in areas that may be affected by salvage activities with the potential to effect previously undisturbed ground, a determination of eligibility would be necessary. Consultation with the Colorado SHPO regarding eligibility is underway. As part of the Section 106 consultation process, site-specific field surveys could be required by a SHPO to verify that no archaeological resources would be disturbed or destroyed by the abandonment or related salvage activities.

#### Safety

SEA's review of the VISTA database and SP safety records indicate several major hazardous waste sites along this segment, including two EPA-designated Superfund sites. In addition, rail ballast containing lead slag was identified in some sections of the rail line.

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The rail line crosses a portion of the California Gulch - Leadville Superfund site. This site contains hazardous remnants from more than 100 years of mining operations. This site is described in detail in Section 4.1 (Sage to Leadville). The second Superfund site, Smeltertown, contains contaminated soils resulting from smelting and wood treating operations. According to EPA, both sites would require substantial remediation efforts.

## Transportation

Currently 12 through freight trains per day operate over this line. This segment is used for local shipments of mining products from ASARCO in Malta (approximately 530 railcars per year).

This rail line segment currently has 22 grade crossings with local roads which carry low daily traffic volumes

## Air Quality

The Malta to Cañon City line is located in AQCR 38: San Isabel. AQCR 38 is in nonattainment for particulate matter (PM) and carbon monoxide (CO); it is in attainment with the NAAQS for all other pollutants.

#### Noise

Rail, automobile, and truck traffic are the primary sources of noise in this rural area of Colorado. The current level of train traffic on the Malta to Cañon City rail line (12 trains per day) generates an estimated  $L_{dn}$  noise level of 65 dBA at a distance of approximately 140 feet without horns (420 feet with horns). Noise levels from these trains and the local shipments of mining products are minor due to the small number of sensitive receptors along the segment.

Automobiles and trucks are the major sources of noise in the vicinity of the 22 grade crossings found along the line. Noise levels from this traffic (at 50 feet) are estimated to be between 70 to 75 and 80 to 85 dBA respectively. However, because of the land uses adjacent to the right-of-way, there are few receptors for this automobile and truck noise.

# 4.2.4 Potential Environmental Impacts of Proposed Action

#### Land Use

The proposed abandonment would change the existing land use designation of the railroad right-of-way from active railroad use to an inactive status. It is estimated that approximately 2,487 acres of land would be affected by this change. Salvage activities generally would not disturb
adjacent land uses, although the removal of some bridges could require the use of construction equipment outside of the rail line right-of-way and property. Any adjacent land that would be disturbed by salvage activities would be restored by UP/SP to its original condition. The proposed abandonment would not affect any prime farmlands.

Salvage activities would generate material that would need to be disposed of at a landfill, burned as fuel, or incinerated. Most of this material would consist of unusable rail ties and utility poles. Disposal would be carried out in accordance with applicable Federal, state, and local environmental regulations. If landfilling is selected as a method of disposal, a properly permitted and designed landfill would be selected.

## Water Resources

As discussed in Section 4.2.3, surface water resources along the line proposed for abandonment are abundant and include rivers, streams, and ponds. The rail line crosses a large number of streams, as indicated by the 113 bridges and culverts that are present on the line. There are also many ponds and lakes adjacent to the line, ranging in size from a few acres to several hundred acres.

Salvaging activities associated with the proposed abandonment would include removing rails, ties, spikes, plates, railroad-related utilities, signaling devices, and possibly some bridge spans and decking. Bridge removal could disturb small areas of soil, and has the potential to increase soil erosion and sedimentation of adjacent water bodies. Soil disturbance from the removal of the other materials is expected to be negligible. Actions to control erosion and sedimentation could include using sediment barriers (e.g., silt fences and straw bale dikes), diversion ditches, and sediment collection basins. Enhanced controls, such as increasing the storage capacity of sediment basins and conducting more frequent inspections and maintenance, also may be required in areas where soils are particularly susceptible to erosion. The measures selected would need to be site-specific and would depend on local soil conditions, topography, the extent of disturbance proposed, proximity to water bodies, and applicable Federal, state or local regulations.

Bridge abutments would remain in place following salvage operations. These abutments are generally long-lived, and are not expected to fail or collapse in the near future from normal deterioration and aging.

Applicable Federal and state permits would be obtained by UP/SP if salvage activities would disturb native soils and vegetation in adjacent water bodies, floodplains, and/or wetlands. The only salvage activity that has the potential to disturb these areas would be bridge span, deck, or pier removal. Most bridges could be dismantled by equipment that would be positioned on railbeds or in upland areas. Dismantling long bridges that are located over open surface water bodies and

associated floodplains or wetlands could require using equipment within these protected areas.

UP/SP's compliance with Federal and state permit requirements would ensure minimal impacts to these water bodies and associated floodplains and wetlands. Actions that could be taken by UP/SP to minimize or avoid impacts include placing equipment on barges, matting, or skids. The measures selected would need to be site-specific and would depend on local wetland and floodplain characteristics, topography, the nature and duration of the proposed activity, proximity to floodplain and wetland, and the applicable Federal, state, and local regulations.

Culverts along the rail line segment could be dammed by debris which could cause flooding and alter stream flows. During salvage operations, UP/SP would be required to open all culverts to avoid flooding and stream flow alterations. These activities would be conducted in accordance with Federal, state and local regulations.

The proposed abandonment of this rail line segment would not have adverse impacts on groundwater resources, given the small size of the project and the limited productivity of groundwater in the area. Because abandonment of the rail line would require relatively little earthwork, the project design would not alter stormwater drainage and infiltration patterns in the area.

# **Biological Resources**

<u>Vegetation</u>. Existing vegetation control practices along the right-of-way would be discontinued after salvaging operations are completed. Native plant species would quickly revegetate the cleared railbed and it would eventually evolve to a natural state. Therefore, the overall impact of the proposed abandonment on vegetation along the right-of-way should be beneficial.

<u>Wildlife</u>. The proposed abandonment would have beneficial long-term impacts on most animal species that occupy terrestrial habitats adjacent to the rail line. The proposed abandonment could ease territorial movements and enhance the quality of habitat available to wildlife. Any potentially adverse impacts associated with salvaging activities would be temporary and would not result in permanent loss of wildlife species.

Erosion and sedimentation caused by salvaging operations, particularly bridge deck and span removal, could affect downstream aquatic communities. However, adverse impacts to fish populations and habitats are not anticipated, provided that UP/SP follow permit requirements for soil erosion and sedimentation control measures and undertake adequate mitigation measures when salvaging takes place on soils that are prone to erosion. Mitigation measures could include implementing enhanced erosion and sedimentation controls such as planting a rapidly-growing vegetation cover, increasing the storage capacity and detention periods for sediment basins, and conducting more frequent inspections. Salvage activities are not expected to create long-term negative impacts on water turbidity (i.e., degree of clarity) or existing fish populations and their habitat.

<u>Threatened and Endangered Species</u>. Although USFWS has indicated that Federally-listed threatened or endangered species could potentially occur in the area of the proposed abandonment, no effects on such species or their critical habitat are anticipated. This determination is based on the lack of any recorded occurrences at or near the project site, the lack of any critical or suitable habitat at the project site, and the lack of any observations of occurrences of such species during site visits. In addition, the Colorado Department of Natural Resources has no recorded sightings of the five threatened or endangered species listed in Section 4.2.3 within the rail line corridor.

Parks, Forest Preserves, Refuges, and Sanctuaries. The proposed abandonment would generally have minimal or beneficial impacts on San Isabel National Forest. After salvaging, rail activity on the rail line would cease. The absence of train noises and intrusions could increase wildlife activity and recreational opportunities on adjacent park properties. Noise generated by equipment associated with salvage activities could, however, temporarily disrupt wildlife functions and recreational pursuits. However, these disruptions would be minor and of short duration. Based on UP/SP's preliminary salvaging plans, no area along the right-of-way should be affected for more than two days.

### **Historic and Cultural Resources**

Section 106 consultation with the Colorado SHPO regarding NRHP eligibility and potential effects to resources has been initiated. The SHPO indicated several situations could produce adverse effects on historic and cultural resources:

- Salvage operations could result in the physical destruction, damage, or alteration
  of the D&RGW main line or the Hanging Bridge or isolation or alteration of the
  character of the Royal Gorge War Revetment's setting.
- All three historic crope as could undergo eventual transfer, lease or sale without adequate preservation stipulations, resulting in an adverse effect unless they are sold for future railroad use or some appropriate adaptive reuse program and with preservation stipulations.
- If the abandonment procedure does not include salvage operations, there may still be an adverse effect if neglect of all three historic properties, results in their

# deterioration or destruction in the absence of any regular maintenance program.

The UP/SP shall retain its interest in and take no steps to alter these properties until the Section 106 process has been completed. Based on SEA's initial consultations with the Colorado SHPO, no known or documented archaeological sites exist along the rail line segment proposed for abandonment. However, there is the potential for impacts on undocumented archaeological sites. SEA's recommended mitigation measures include provisions for continued Section 106 coordination to address discovery and treatment of archaeological sites during the abandonment or salvage process.

# Safety

In accordance with SEA's recommended mitigation, UP/SP shall consult with U.S. EPA Region VIII before conducting any salvage activities along the Malta to Cañon City line. UP/SP, in consultation with EPA, shall develop a Risk Assessment and Remediation Plan for the sections of the rail line that cross the Smeltertown and California Gulch Superfund sites.

#### Transportation

Current rail traffic on this segment would be rerouted to other UP/SP lines in the area. Some mining product shipments, approximately 530 cars per year, would be diverted to truck other non-rail transport modes. This would result in additional truck traffic on local highways.

The discontinuance of rail service on the abandoned line would eliminate the need for 22 grade crossings and remove the potential for vehicle/train accidents.

### Air Quality

The operation of heavy equipment would be the primary source of pollutant emissions during salvage activities. The pollutants resulting from such activities typically consist of:

- Particulate matter, volatile organic compounds (VOCs), carbon monoxide (CO), and nitrogen oxides (NO<sub>x</sub>), resulting from the combustion of diesel fuel.
- Fugitive dust emissions along the right-of-way and unimproved roads, resulting from the operation of heavy equipment.

All of the emissions from salvaging operations would occur in an air quality attainment area. The fugitive particulate emissions, which would be of primary concern, can be controlled by UP/SP operators using water sprays or other suitable dust suppressants. Other emissions associated with



salvaging operations (VOCs, CO, and NO<sub>x</sub>) generally would be minor and of short duration. It should be noted that salvage activities themselves would be temporary in nature, have insignificant, temporary effects on air quality, and would not be expected to contribute to violations of the NAAQS.

Post-abandonment pollutant emissions along the right-of-way would be substantially reduced, due to the elimination of rail traffic and rail line maintenance activities.

# Noise

As discussed in Section 4.2.3, there is active rail traffic (12 trains per day) along the line. Noise impacts from this traffic are considered insignificant due to the limited number of sensitive receptors. Automobile and truck traffic contribute to noise levels in the vicinity of the 22 grade crossings along the rail line.

Salvaging operations associated with the abandonment would cause temporary increases in noise levels. This would occur during the removal of rails, ties, plates, spikes, railroad-related utilities, signaling devices, and most bridges. These salvaging activities would require the use of trucks and front-end loaders, as well as cranes at larger bridges. Noise generated by such salvage equipment generally would be less than the 65 to 70 dBA level reported for typical trains. Equipment-generated noise, however, might be more frequent and last longer than noise from passing trains, since the equipment would remain relatively stationary for up to two days as each mile of track is dismantled and removed. Following salvage activities, elevated noise levels from all rail-related actions would be eliminated.

Minor changes in vehicular traffic levels and patterns also would occur in the vicinity of the right-of-way during and after salvage operations. Traffic levels at most of the 22 grade crossings on the rail line would be comparable to existing levels during and after salvage activities. Small increases in traffic could occur during salvaging at grade crossings near communities where the salvaging work force is operating. This temporarily increased traffic would result in small or imperceptible changes in existing traffic noise.

Upon completion of salvaging activities, all rail service and associated noise would cease. This permanent elimination of noise from rail traffic along the Malta to Cañon City line is expected to outweigh the temporarily increased noise of salvaging and local road traffic. Human and wildlife receptors located near the line would generally benefit from a long-term reduction in noise levels.

### 4.2.5 Potential Environmental Impacts of Alternative Action

Alternatives to the proposed abandonment would include denial (and therefore no change

in operations), discontinuance of service without abandonment, and continued operation by another operator. In any of these cases, the existing quality of the human environment and energy consumption should not be affected.

## 4.2.6 Summary of Agency Comments

In considering the potential environmental impacts of the rail line segment abandonments planned as part of the proposed UP/SP merger, SEA sent consultation letters to various Federal, state, and local agencies on January 29, 1996. These letters, samples of which are included in **Volume 5**, Appendix D, Exhibits D-1 through D-9, provided early notification of this EA and requested information and comments on the effects to the environment of the proposed merger and related abandonment and construction projects. Each letter included a state information packet and maps that listed the specific merger-related proposals. A sample packet is shown in **Volume 5**, Appendix D, Exhibit D-10. SEA contacted agencies by telephone to alert them to the distribution of the consultation letter and to confirm its receipt. The Applicant also contacted these agencies in preparation of the Environmental Report which accompanied the merger application. That correspondence and all responses to the SEA's consultations were reviewed, verified, and considered by SEA in the preparation of this EA.

All comments received (through mid March 1996) in response to the January 29th letter are shown in **Volume 5**, Appendix E, Exhibits E-1 through E-11. As necessary, SEA conducted additional consultation with agencies as shown in **Volume 5**, Appendix E, Table E-1. Agency comments regarding the proposed abandonments are summarized below:

- U.S. Forest Service noted its intent to participate in proceedings, and expressed concerns about: the potential effects to their management responsibilities in the corridor; potential movement of hazardous materials; potential for railbanking; identification and inventory of reverted property rights, cultural resources, and hazardous material.
- Natural Resources Conservation Service noted there would be no apparent impacts on prime farmlands or farmland of statewide importance.
- U.S. Fish and Wildlife Service, Western Colorado Office, provided a list of federally listed and candidate Threatened and Endangered Species possible along the rail abandonment line.
- U.S. Army Corp of Engineers, Albuquerque District, indicates that the rail abandonment is not anticipated to involve discharge of dredge or fill material into



waterways. However if these actions should occur, a Section 404 permit may be necessary.

- The Colorado Historical Society requests that appropriate Colorado Cultural Resource Survey forms be completed for the rail lines themselves as well as their associated features and that they be submitted to the Historical Society's office for their opinion regarding their eligibility for inclusion in the NRHP.
- People for the West, Arkansas Valley Chapter, noted the need to address impacts of disposal (salvage) and any potential for alternative use of abandoned lines, such as railbanking.

## 4.2.7 Suggested Mitigation

This section highlights the mitigation measures that various parties, consulted in the process of preparing the EA for the proposed merger, have requested:

- EPA Region VIII wants contamination investigation and mitigation for three Superfund sites.
- Colorado Historical Society requests Cultural Resource Survey forms for each rail line and associated structures.
- People for the West, Arkansas Valley Chapter, suggested conversion of the abandoned line to trail use.

### 4.2.8 SEA Recommended Mitigation

This section contains the mitigation measures that SEA recommends that the Board impose in any final decision approving this proposed abandonment of Malta to Cafion City line and discontinuance of service by D&RGW. SEA will consider all comments on the EA in making its final recommendation to the Board. The Board will consider SEA's recommendations and the environmental record in making its final decision. SEA's recommended mitigation is as follows.

### Land Use

 UP/SP shall observe all applicable Federal, state, and local regulations regarding handling and disposal of any waste materials, including hazardous waste, encountered or generated during salvage of the proposed rail line.