U.S. Department of Agriculture
Chief of the Forest Service
4th Floor NW, Auditors Building
14th Street & Independence Ave., S.W.
Washington, D.C. 20250

Executive Secretary
Commerce Department
Public Utilities Division
P.O. Box 45802
Salt Lake City, UT 84145-0801

Director
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84119

3. The undersigned further certifies that a notice containing the filing of this Notice of Exemption was published in the form pursuant to 49 C.F.R. § 1105.12, as revised, as follows:

County	Newspaper	Date
Box Elder	Box Elder News Journal (Brighton City)	November 8, 1995
Weber	Standard-Examiner (Ogden)	November 9, 1995

Jeanna L. Regier

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Notice of Exemption in Docket No. AB-33 (Sub-No. 99X), Little Mountain Jct.-Little Mountain Line (portion of Little Mountain Branch), was served on November 29, 1995, by mailing a copy, first class mail postage prepaid to the following:

MTMCTEA
Attn: Railroads for National Defense
720 Thimble Shoals Blvd., Suite 130
Newport News, VA 23606-2574

U.S. Department of the Interior
National Park Service
Recreation Resources Assistance
Division
P.O. Box 37127
Washington, D.C. 20013-7127

U.S. Department of the Interior
National Park Service
Land Resources Division
1100 L Street, N.W.
Room 3135
Washington, D.C. 20240

U.S. Department of Agriculture
Chief of the Forest Service
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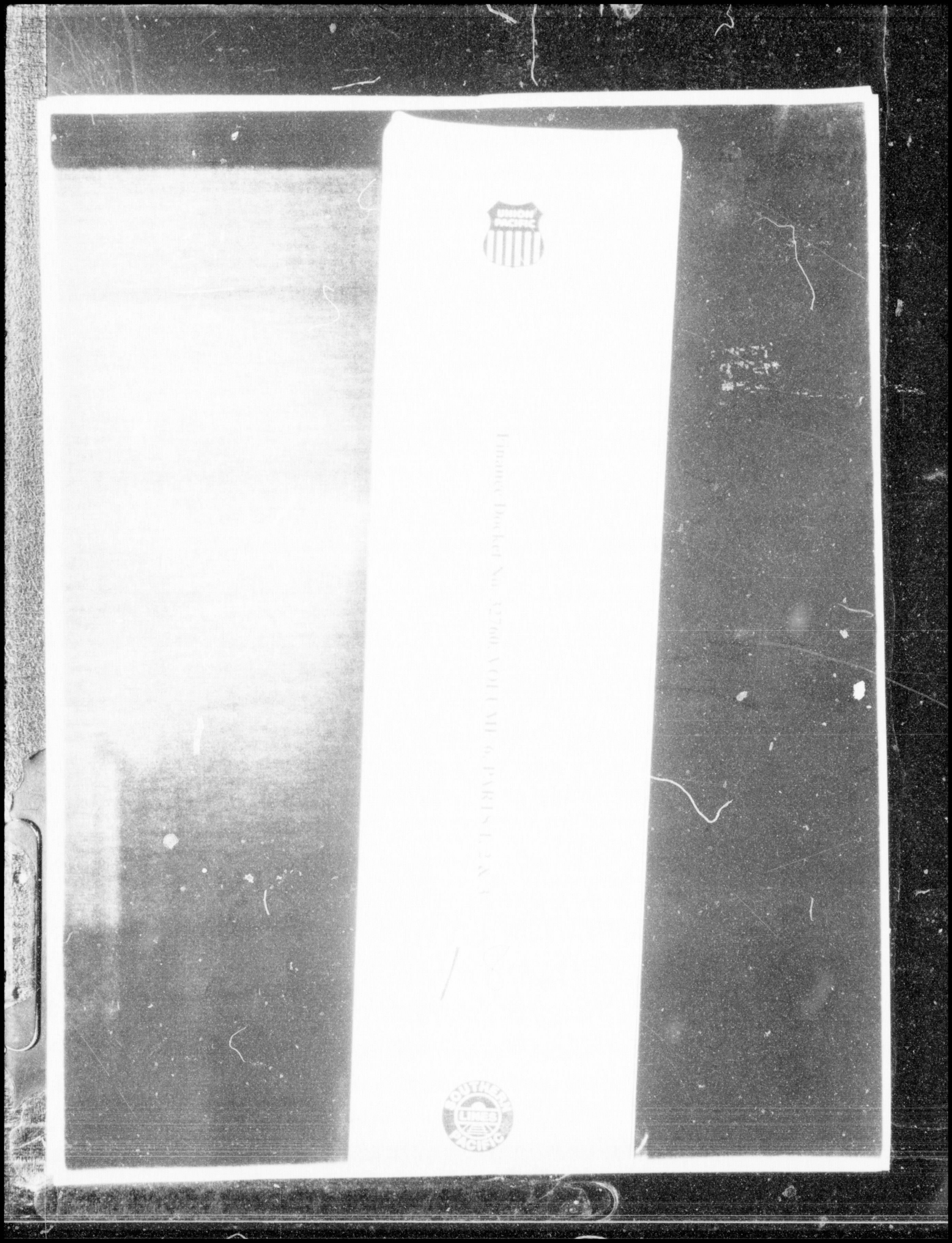
Director
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84119

The Honorable Mike Leavitt
Governor - State of Utah
State Capitol
Salt Lake City, UT 84114

Jeanna L. Regier



Before the

INTERSTATE COMMERCE COMMISSION

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 CORP. AND THE
DENVER AND RIO GRANDE WESTERN RAILROAD COMPANY

RAILROAD MERGER APPLICATION

VOLUME 6, PARTS 1, 2 & 3

ENVIRONMENTAL REPORT (EXHIBIT 4) -
PART 1 OVERVIEW
PART 2 RAIL LINE SEGMENTS
PART 3 RAIL YARDS AND INTERMODAL
AND AUTOMOTIVE FACILITIES

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November 30, 1995

ENVIRONMENTAL REPORT
UNION PACIFIC RAILROAD COMPANY/
SOUTHERN PACIFIC RAILROAD COMPANY
MERGER

OVERVIEW

PART 1 OF 6

Prepared by:

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PART 1

OVERVIEW

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UP/SP Merged System

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EXECUTIVE SUMMARY

This Environmental Report (ER) has been prepared in connection with the Railroad Merger Application submitted to the Interstate Commerce Commission (ICC) in 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 Corp., and The Denver and Rio Grande Western Railroad Company. This ER, prepared by Dames & Moore, Inc., is submitted in order to assess the impact of the proposed action on transportation, land use, energy consumption, air quality, noise, safety, biological and water resources, and historical and archaeological resources. It addresses the changes proposed by the consolidated operations as required by ICC regulations (49 CFR 1105.7).

The Railroad Merger Application (Application), which is being filed with the ICC simultaneously with this ER, describes the merger and consolidation of the respective Union Pacific (UP) and Southern Pacific (SP) railroad systems in detail and illustrates the proposed system on a combined system map as shown in the Figure following the Table of Contents. The Application addresses the benefits of the combined system, including improved service capabilities and increased operating efficiencies.

As described in the Application, the merger will result in a number of construction projects which are proposed to provide connections between the existing rail lines of the UP and SP systems at points where those lines now intersect or are in close proximity to each other. In addition, a substantial number of construction projects are designed to provide added capacity to existing rail lines to handle increased traffic. These projects include double tracking or construction of additional sidings on existing main lines and increasing the height of bridges and tunnels to accommodate double stack intermodal cars. A number of construction projects are also proposed to provide increased or new

capacity in rail yards and intermodal facilities. These projects are identified and discussed in Part 5 of the ER.

The operating plan anticipates substantial re-routing of rail traffic within the consolidated system, generating increased traffic densities on some line segments and decreases on other segments. In addition, truck-to-rail diversions, and diversions from other rail carriers, will result in increased rail traffic on certain main line route track segments as well as increased local truck traffic in and around certain intermodal facilities. The corresponding decreased volumes of long haul truck traffic on interstate highways, of truck traffic at facilities where activity is decreased, and of reduced rail traffic on some segments in the combined system or elsewhere, will result in overall fuel savings and a resulting decrease in emissions of pollutants.

Combining the UP and SP systems will also permit consolidation of yard activities at single locations within a terminal, providing the most efficient operation for that traffic. The combined system will also permit the division of traffic among existing rail yards within a terminal to provide the most efficient routing of traffic. Significantly, a number of existing intermodal facilities in the Los Angeles and Chicago terminals will be closed and consolidated with other facilities in those terminals, providing more efficient operations and capacity for increased traffic volumes. In other cases, existing rail yards will be realigned in order to specialize in intermodal traffic or other carload traffic for more efficient operation and better service to customers. A discussion of other effects of the consolidation of these facilities is provided in Volume 3 of the Application.

Combining the two systems also will permit the abandonment of 17 rail lines, totalling approximately 600 miles. In most cases these rail lines generate very little, if any, local traffic (i.e., traffic originating or terminating on the line) which would be diverted to a highway. In each case, the overhead traffic (i.e., traffic which does not originate or terminate on the line) would be diverted to another, more efficient UP/SP rail line. Part 4 of the ER discusses the environmental impacts of each of the abandonments.

The UP/SP operating plan contains the changes in operations which will result from the integration of the combined railroads. In general, it is not anticipated that the types of commodities transported would materially change. It is anticipated, however, that diversions from truck and other rail carriers will increase the amount of commodities transported on the combined UP/SP system and reduce the over the road truck transport of some of these commodities. The principal environmental benefit from the proposed merger is the significant amount of truck freight which can be diverted to rail transportation, thereby reducing traffic and the resulting air emissions and other adverse environmental impacts associated with truck transport.

The length of this ER reflects the large number of items which were reviewed and assessed based on the regulations. It also reflects the efforts of UP/SP to thoroughly identify and analyze each of the elements of the proposed merger and any of the facilities and rail lines within the existing system that will be affected, including some which would not need to be analyzed under the ICC's regulations. The number of items addressed in this report reflects the fact that a significant amount of analyses and work has been done by UP/SP in connection with the Application to plan the consolidation of the existing lines and facilities into a coherent and efficient rail system that will produce significant transportation benefits to the shipping public and overall general benefits to the environment.

1.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

1.1 OVERVIEW

This document is Part 1 of the ER prepared for the proposed UP/SP merger. This part of the ER presents a summary and overview of the other parts (Parts 2 to 6). The detailed, supporting information is presented in the following: Part 2, Rail Segments; Part 3, Rail Yards and Intermodal and Automotive Facilities; Part 4, Abandonments; Part 5, Construction; and Part 6, Appendix. Those parts are described further below.

Part 1 presents an overview of the proposed merger and summarizes the assessment methodologies, conclusions regarding potentially significant impacts, beneficial effects of the merger, and identifies agencies contacted in connection with the ER. In addition, this part contains a discussion of the effects of systemwide operational changes resulting from the UP/SP merger. These effects relate to transportation, safety, air quality, and energy consumption.

Part 2, Rail Line Segments, analyzes the environmental impacts associated with the increases in traffic on affected rail segments. The potential environmental impacts associated with rail line operations are primarily related to air quality and noise levels. These levels were analyzed for all rail line segments that are projected to have an increase in rail traffic that would meet or exceed the ICC's environmental analysis thresholds as specified in 49 CFR 1105.7(e)(5)(i) and (ii) for ambient air quality and 49 CFR 1105.7 (e)(6) for noise levels. The U.S. Environmental Protection Agency (EPA) has developed National Ambient Air Quality Standards (NAAQS) for six criteria pollutants. EPA has grouped contiguous areas of the country having similar topography and air quality management needs into Air Quality Control Regions (AQCRs) and designates each AQCR with an identification number. The ambient air quality of each AQCR is measured and compared to the NAAQS on a pollutant by pollutant basis. Areas in which ambient air quality concentrations of a pollutant are less than these standards are considered attainment areas for that pollutant. Conversely, areas where ambient concentrations

exceed the standards for a pollutant are considered nonattainment areas. The thresholds for impact analysis for rail segments are:

- Air quality threshold in attainment areas - an increase of 8 trains/day or 100% as measured in gross ton miles annually;
- Air quality threshold in nonattainment areas - an increase of 3 trains/day or 50% as measured in gross ton miles annually; and,
- Noise threshold - an increase of 8 trains/day or 100% as measured in gross ton miles annually.

A total of 70 rail segments met or exceeded the ICC's environmental analysis thresholds for air quality. Of these, 37 segments exceed ICC assessment thresholds for noise levels. Rail segments are discussed and analyzed in Section 1.2.2 and in Section 3.

Part 3, Rail Yards and Intermodal and Automotive Facilities, analyzes the environmental impacts associated with increases in rail activity at these facilities. The potential environmental impacts associated with these operations are mainly related to transportation, air quality, and noise levels. Rail yards and intermodal facilities that are projected to have an increase in activity that would meet or exceed the ICC environmental analysis thresholds for transportation, air quality, and noise levels were analyzed. The thresholds for impact analysis for rail yards and intermodal facilities are:

- Air quality threshold for rail yards in attainment areas - a 100% increase in yard activity as measured in carload activity;
- Air quality threshold for rail yards in nonattainment areas - a 20% increase in yard activity as measured in carload activity;
- Air quality threshold for intermodal facilities in attainment areas - an increase in truck traffic greater than 10% of average daily traffic or 50 trucks/day;
- Air quality threshold for intermodal facilities in nonattainment areas - an increase in truck traffic greater than 10% of average daily traffic or 50 trucks/day;

- Noise threshold for rail yards - a 100% increase in yard activity as measured in carload activity; and
- Noise threshold for intermodal facilities - an increase in truck traffic greater than 10% of average daily traffic or 50 trucks/day.

The number of rail yards and intermodal facilities identified as meeting or exceeding the ICC's thresholds for air quality and/or noise levels are 27 and 18, respectively. No automotive facilities are projected to meet or exceed the thresholds. Rail yards, intermodal, and automotive facilities are discussed and analyzed in Section 1.2.3 and in Section 4.

Part 4, Abandonments, analyzes the environmental impacts associated with the abandonment of rail line segments. The analyses include land use, water resources and wetlands, biological resources, and historic and cultural resources. Abandonments are discussed and analyzed in Section 1.2.4 and in Section 5.

Part 5, Construction, analyzes the environmental impacts associated with construction projects that are proposed for the post-merger UP/SP system. Similar to that for abandonments, the analyses focused on land use, water resources and wetlands, biological resources, and historic and cultural resources. The construction projects are discussed and analyzed in Section 1.2.5 and in Section 6.

Part 6, Appendix, presents consultation letters to federal, state, and local government agencies, agency contact lists, agency responses, and records of telephone contacts with agencies. Also presented in Part 6 is a description of the methodology used to analyze air quality, noise, transportation, safety, and energy. Lists of rare, threatened and endangered species and historic resources are found at the end of Part 6.

Any potentially significant impacts associated with each of the affected elements are identified in Parts 2 to 5. Also included in each of those parts of the ER are mitigation measures designed to lessen the likelihood and/or magnitude of any potentially significant impacts.

1.2 PROPOSED ACTION

1.2.1 Background

The proposed action is the merger of UP and SP into a new UP/SP system which is projected to result in traffic increases on 70 rail segments that exceed ICC analysis thresholds, increases in the level of activity at 27 rail yards and 18 intermodal facilities in excess of ICC analysis thresholds, abandonment of 17 rail line segments and construction of 195 merger-related projects. The proposed action is presented in four parts: Part 2 (Rail Line Segments), Part 3 (Rail Yards and Intermodal and Automotive Facilities), Part 4 (Abandonment), and Part 5 (Construction).

1.2.2 Operations On Rail Segments

The proposed merger would result in a rerouting of train traffic within the consolidated system. This rerouting would generate increased traffic densities on some line segments, decreased densities on other segments, and overall efficiencies within the system. In addition, there would be increased activity on some line segments due to diversions from rail and non-rail carriers. The rerouting activities would also permit the abandonment of some rail segments, as well as rail line construction projects to maximize effectiveness and efficiencies. The rail line segments for which thresholds were exceeded for air quality and/or noise are included in Table 1.

1.2.3 Operations at Rail Yards and Intermodal Facilities

A number of rail yards and intermodal facilities are projected to experience increased activity as a result of the proposed merger. These increases would occur from diversions from non-rail carriers, new business, internal re-routing of freight, and from the consolidation of activities at a single location in areas where both UP and SP now maintain separate facilities. Rail yards and intermodal facilities for which ICC analysis thresholds were exceeded for air quality and/or noise, and associated data on carload and traffic activity, are included in Tables 2 and 3, respectively.

The net effects of UP/SP's proposed operations at terminal locations were also analyzed. Terminals are made up of rail yards, intermodal, and/or automotive facilities within a geographical area usually corresponding to a metropolitan area. The following terminals were analyzed as shown in Table 9 to account for increases and decreases in activity at all yards and facilities within the terminal:

- Los Angeles
- Oakland
- Denver
- Chicago
- St. Louis
- Kansas City
- Portland
- Memphis
- San Antonio
- Dallas
- Fort Worth
- Seattle

1.2.4 Rail Segments Proposed for Abandonment

In connection with the proposed merger, UP/SP have proposed the abandonment of 17 existing UP and SP rail segments. These line segments are located in eight states, as listed in Table 4. Overhead traffic currently moving on these segments will be rerouted after the merger to other UP/SP lines. Any local traffic on these lines would in most cases be diverted to truck or to other truck-rail movements.

1.2.5 Construction Projects

The proposed merger would involve 195 construction projects, including:

- Common point connections - Construction to connect an existing rail line to other existing rail lines, sidings, and/or yards. The connections are generally between UP and SP; however, some involve the linking of UP or SP lines to those of BN/Santa Fe where trackage rights are involved. As described in Part 5, the common point connections will be in the form of crossovers, universal crossovers, interlockers, and curve connections.
- Corridor upgrades - Construction of new sidings, extensions and/or upgrades to existing sidings, double-tracking (construction of a second track

parallel to an existing track), and increasing clearance for tunnels and bridges.

- Construction at rail yards - Construction of new tracks or extensions of existing tracks, second main lines in and near yards, and tracks connecting main lines to yards, as well as connecting yards to yards; and construction of specific facilities within yards, such as crossovers.
- Construction at intermodal facilities - Expansion, renovation, and the addition of specific components to existing intermodal facilities, as well as the construction of new facilities.

Construction projects evaluated as part of this merger are summarized in Table 5, and more fully discussed in Part 5.

1.3 ALTERNATIVE ACTIONS

Two types of "no action" alternatives to the UP/SP merger were considered:

- The system-wide alternative; and
- The site-specific project alternatives.

System-wide, the no action or "no-merger" alternative was considered. Under this alternative, the existing rail operations of UP and SP would be maintained. There would be no new environmental impacts associated with the no action alternative, and the environmental benefits offered by the merger would not be attained.

No action alternatives to individual projects were also considered, generally by type of activity (abandonment, construction, changes in rail operations). The no action alternative to changes in rail activity on rail segments and at rail yards and intermodal facilities would result in no change from current levels of rail activity. No new environmental impacts would be expected. Under the no action alternative for segments proposed for abandonment, it is anticipated that if the merger is approved and implemented, all overhead traffic would be moved to other UP/SP routes, whether or not the abandonments are implemented. As such, there would be no new environmental

impacts on the abandoned lines. For the construction projects, the no action alternative assumes that the construction would not occur; therefore, no new environmental impacts would be expected.

TABLE 1

RAIL LINE SEGMENTS THAT MEET OR EXCEED ICC EVALUATION THRESHOLDS

SEGMENT		LENGTH (MILES)	TRAINS PER DAY			PERCENT CHANGE IN GROSS TON-MILES PER YEAR
FROM	TO		PRE MERGER	POST MERGER	CHANGE	
Brinkley AR	Pine Bluff AR	71.00	22.6	31.3	8.7	91.3
Fair Oaks AR	Brinkley AR	26.00	11.4	21.7	10.3	97.5
Paragould AR	Fair Oaks AR	69.00	11.4	19.7	8.3	68.9
Cochise AZ	Tucson AZ	78.00	29.6	44.7	15.1	27.3
Picacho AZ	Yuma AZ	203.00	25.8	39.2	13.4	23.0
Tucson AZ	Picacho AZ	50.00	25.7	41.4	15.7	38.6
Yuma AZ	West Colton CA	195.00	27.7	38.8	11.1	24.1
West Colton CA	Palmdale CA	80.00	9.2	13.1	3.9	49.1
Dunsmuir CA	Klamath Falls OR	106.00	16.5	21.7	5.2	9.6
Los Angeles CA	Slauson Jct. CA	6.00	19.4	25.6	6.2	-5.1
Martinez CA	Oakland CA	32.00	25.0	29.8	4.8	39.1
Marysville CA	Dunsmuir CA	174.00	16.7	21.9	5.2	10.4
Niles Jct. CA	Oakland CA	25.00	24.4	29.5	5.1	5.8
Roseville CA	Sacramento CA	18.00	29.1	33.8	4.6	43.2
Roseville CA	Marysville CA	34.00	16.7	20.2	3.5	7.3
Slauson Jct. CA	Long Beach CA	14.00	22.0	25.6	3.6	-19.0
Stockton/ Lathrop CA	Martinez CA	48.00	0.0	4.0	4.0	>10
Stockton/ Lathrop CA	Sacramento CA	46.00	13.3	17.6	4.2	47.3
Bond CO	Dotsero CO	38.00	6.0	12.1	6.1	202.2
Denver CO	Cheyenne WY	105.00	9.6	14.5	4.8	78.5
Denver CO	Bond CO	127.00	11.0	17.7	6.7	87.8
California Jct. CA	Fremont NE	31.00	22.6	31.1	8.5	33.7
Clinton IA	Beverly IA	81.00	42.8	47.9	5.1	8.0
Missouri Valley IA	California Jct. IA	6.00	28.9	37.4	8.5	28.0
Buda IL	Galesburg IL	43.00	17.05	23.5	5.4	17.1
Chicago IL	Villa Grove IL	127.00	16.2	19.2	3.0	24.0
Chicago-Proviso IL	West Chicago IL	15.00	92.7	106.8	14.1	22.4
Geneva IL	Nelson IL	69.00	43.8	57.9	14.1	23.0
Nelson IL	Clinton IA	34.00	43.8	47.8	4.0	7.5
Nelson IL	Buda IL	34.00	6.1	16.2	10.1	97.2

TABLE 1 (continued)

RAIL LINE SEGMENTS THAT MEET OR EXCEED ICC EVALUATION THRESHOLDS

SEGMENT		LENGTH (MILES)	TRAINS PER DAY			PERCENT CHANGE IN GROSS TON-MILES PER YEAR
FROM	TO		PRE MERGER	POST MERGER	CHANGE	
West Chicago IL	Geneva IL	6.00	78.6	92.7	14.1	22.7
Herington KS	Lost Springs KS	6.50	0.1	10.4	10.2	17005.4
Hutchinson KS	Strattford TX	274.00	11.3	20.1	8.8	24.3
Lost Springs KS	Wichita KS	64.30	1.9	11.8	9.9	362.4
Marysville KS	Valley NE	134.00	0.9	2.9	2.0	133.6
Oakley KS	Denver CO	262.00	1.8	8.7	6.8	443.6
Salina KS	Oakley KS	191.00	2.2	8.2	6.0	388.0
Wichita KS	Chickasha OK	192.00	4.4	11.8	7.4	129.3
Iowa Jct. LA	Beaumont TX	75.00	15.5	26.8	11.3	73.9
Livonia LA	Kinder LA	76.40	6.8	8.4	1.5	59.0
Shreveport LA	Lufkin TX	116.00	8.3	11.5	3.2	2.6
Dexter Jct. MO	Paragould AR	69.00	16.0	22.3	6.3	43.0
Lordsburg NM	Cochise AZ	85.00	30.3	44.9	14.6	24.2
Sparks NV	Roseville CA	139.00	13.6	22.6	9.0	67.7
Winnemucca NV	Sparks NV	175.00	13.6	23.7	10.1	64.2
Chickasha OK	Fort Worth TX	177.70	7.6	14.2	6.5	113.2
Chemult OR	Eugene OR	124.00	17.4	22.6	5.2	11.2
Eugene OR	Portland OR	124.00	12.3	17.5	5.2	47.4
Klamath Falls OR	Chemult OR	74.00	17.4	23.5	6.1	11.9
Oregon Track Jct. OR	Portland OR	84.80	24.9	27.9	3.0	7.3
Portland OR	Seattle WA	186.00	16.9	20.5	3.5	13.8
Angleton TX	Bloomington TX	101.00	6.8	10.8	3.9	49.1
Big Sandy TX	Dallas TX	98.00	27.7	34.9	7.2	50.2
Big Spring TX	Toyah TX	152.00	2.3	12.1	9.8	345.7
Dalhart TX	El Paso TX	425.00	12.0	19.6	7.6	20.7
Dallas TX	Fort Worth TX	31.50	23.5	33.7	10.1	45.3
El Paso TX	Lordsburg NM	148.00	29.3	44.7	15.4	29.4
Fort Worth TX	Big Spring TX	267.50	2.5	11.5	9.0	260.9
Odem TX	Corpus Christi TX	17.20	4.0	5.5	1.5	155.7
Sierra Blanca TX	El Paso TX	88.00	20.6	26.4	5.8	21.4
Strattford TX	Dalhart TX	31.00	13.3	21.9	8.6	34.4

TABLE 1 (concluded)

RAIL LINE SEGMENTS THAT MEET OR EXCEED ICC EVALUATION THRESHOLDS

SEGMENT		LENGTH (MILES)	TRAINS PER DAY			PERCENT CHANGE IN GROSS TON-MILES PER YEAR
FROM	TO		PRE MERGER	POST MERGER	CHANGE	
Texarkana TX	Big Sandy TX	108.00	11.7	18.3	6.6	119.2
Toyah TX	Sierra Blanca TX	109.70	2.1	11.9	9.8	430.6
Ogden UT	Alazon NV	178.00	12.7	23.0	10.3	77.2
Provo UT	Lynndyl UT	87.00	8.7	11.7	3.0	39.1
Oak Creek WI	St. Francis WI	7.00	4.0	3.2	-0.8	153.3
Cheyenne WY	Rawlins WY	172.00	59.2	66.2	7.0	11.2
Granger WY	Ogden WY	145.20	34.4	38.2	3.8	12.7
Green River WY	Granger WY	29.90	57.9	64.7	6.7	11.0
Rawlins WY	Green River WY	134.20	57.5	64.2	6.7	11.4

TABLE 2
RAIL YARDS THAT MEET OR EXCEED CARLOAD ACTIVITY THRESHOLDS

State	Abrev/Name	AQCR Affected	AQCR Status	Railcars Handled (Cars/day)			
				Post-Merger	Pre-Merger	Change	% Change
AZ	NOGALES	501	NA	123.3	100.6	22.7	22.6%
AZ	PHOENIX	504	NA	407.8	325.4	82.4	25.3%
AZ	YUMA	503	NA	43.3	27.3	16.0	58.6%
CA	INLAND EMPIRE	24	NA	740.7	0	740.7	>100%
CA	LATHROP	31	NA	245.1	147.6	97.5	66.1%
CA	MARTINEZ	30	NA	199.0	154.2	44.8	29.1%
CA	MONTCLAIR	24	NA	129.9	99.0	30.9	31.2%
CA	NILAND	33	NA	142.8	118.6	24.2	20.4%
CA	ROSEVILLE	508	NA	1608.2	1023.3	584.9	57.2%
CO	GRAND JCT	35	NA	94.0	77.0	17.0	22.1%
CO	LA SALLE	37	NA	160.4	125.0	35.4	28.3%
CO	ROLLA	36	NA	105.2	68.4	36.8	53.8%
IL	CANAL STREET	67	NA	519.4	320.6	198.8	62.0%
IL	SALEM	74	A	133.2	64.0	69.2	108.1%
KS	HERINGTON	96	A	549.7	150.0	399.7	266.5%
LA	DE QUINCY	106	NA	37.6	21.6	16.0	74.1%
LA	LAKE CHARLES	106	NA	220.7	118.7	102.0	85.9%
LA	LIVONIA	106	NA	1375.1	1058.2	316.9	29.9%
MO	POPLAR BLUFF	138	NA	38.6	30.1	8.5	28.2%
OR	BEND	190	NA	7.6	5.6	2.0	35.7%
OR	HINKLE	191	NA	1130.9	793.7	337.2	42.5%
OR	SALEM	193	NA	26.0	16.9	9.1	53.8%
TX	AMARILLO	211	A	117.2	40.0	77.2	193.0%
TX	BELLMEAD	212	A	145.9	45.7	100.2	219.3%
TX	EL PASO	153	NA	590.6	440.5	150.1	34.1%
TX	FT WORTH	215	NA	1755.3	1460.5	294.8	20.2%
WA	SEATTLE	229	NA	649.9	508.4	141.5	27.8%

NOTES: A=Attainment, NA=NonAttainment
AQCR=Air Quality Control Region

ASSUMPTIONS:

Number of hours per shift = 8 hrs/shift

Number of railcars handled per shift = 150 railcars/shift

Operating schedule = 365 days/year

Average switch engine fuel consumption = 8.6 gal/hour

TABLE 3

INTERMODAL FACILITIES
THAT EXCEED 50 TRUCKS PER DAY THRESHOLD

State	Facility	Operator	Change Trucks/Day	Change in Truck Trips Per Day	Average Daily Traffic (ADT)	Percent Increase in ADT
AZ	Phoenix	SP	50	100	25,396	0.4%
AR	West Memphis	UP/SP	480	960	n/a	n/a
CA	East Los Angeles	UP	587	1174	27,900	4.2%
CA	Inland-Empire	UP/SP	493	986	n/a	n/a
CA	Oakland	UP	79	158	3,381	4.7%
CA	Oakland	SP	68	136	3,381	4.7%
CA	Lathrop	UP	103	206	n/a	n/a
CA	Roseville	SP	103	206	13,570	1.5%
CO	Denver	UP	61	122	10,200	1.2%
IL	Dolton	UP	85	170	n/a	n/a
IL	Global II	UP	425	850	30,000	2.8%
IL	Canal Street	UP	186	372	25,500	1.5%
IL	St. Louis (Dupo)	UP	178	356	5,300	6.7%
KS	Kansas City	SP	173	346	15,875	2.2%
OR	Portland (Albina)	UP	274	548	10,300	5.3%
TX	Dallas	SP	101	202	16,000	1.3%
TX	San Antonio	UP	116	232	17,694	1.3%
WA	Seattle	UP	59	118	14,300	0.8%

Note: n/a - ADT not available

TABLE 4
LINE SEGMENTS PROPOSED FOR ABANDONMENT

Abandonment Location	Length (miles)	Milepost Numbers
ARKANSAS		
Gurdon to Camden	28.7	428.3-457.0
CALIFORNIA		
Alturas to Wendel	85.5	445.6-360.1
Magnolia Tower to Melrose	4.9	5.8-10.7
Whittier Jct. to Colima Jct.	5.2	0.0-5.18
COLORADO		
Sage to Leadville	69.1	335.0-276.10
Malta to Cañon City	109.0	271.0-162.0
Towner to NA Jct.	122.4	747.0-869.4
ILLINOIS		
Barr to Girard	38.4	51.0-89.4
DeCamp to Edwardsville	14.6	119.2-133.8
Edwardsvilie to Madison	15.0	133.8-148.78
KANSAS		
Hope to Bridgeport	31.2	459.2-491.2
Whitewater to Newton	9.0	476.0-485.0
LOUISIANA		
Iowa Jct. to Manchester	8.5	680.0-688.5
TEXAS		
Seabrook to San Leon	10.5	30.0-40.5
Suman to Bryan	16.2	117.6-101.4
Troup to Whitehouse	7.5	0.5-8.0
UTAH		
Little Mountain Jct. to Little Mountain	12.0	0.0-12.0

TABLE 5

PROPOSED CONSTRUCTION PROJECTS

Location/Station	Construction Type	Description
ARIZONA		
Casa Grande	CU	Double track with crossovers
Razo to Luzena	CU	2nd Main Track
Rillito	CU	Double Track one train length east of Rillito
Sentinel	CU	Double Track one train length west of Sentinel
Willcox to Razo	CU	2nd Main Track
ARKANSAS		
Camden	CPC	30 mph connection in northeast quadrant to allow for Pine Bluff to El Dorado train
Fair Oaks	CPC	Upgrade existing connection in SE quadrant
Pine Bluff - East	CPC	10 mph connection north on SSW off UP line from McGehee
Pine Bluff - West	CPC	10 mph connection north on UP line off SSW from south
Texarkana	CI	New facility, 2 tracks, 1 packer
Texarkana - SE	CPC	30 mph crossover between UP yard and SP main line
West Memphis	CPC	Upgrade wye connection at Presley Junction
CALIFORNIA		
Apex (Beaumont) to Banning	CU	Double Track
Banning to Owl (West Cabazon)	CU	Double Track
Bridge Portals	CU	Increase clearance on four bridges
Donner Pass	CU	Remove snow sheds, increase clearance in tunnels and construct by-passes
Fingal to W. Palm Springs	CU	Double track
Glamis to Clyde	CU	Double track
Haggin	CT	Upgrade six tracks and construct one 8000' track
LA - ICTF	CI	Expand SP facility, add 2 tracks, add 1,000 trailer stalls
Lathrop	CPC	40 mph connection in railroad southwest quadrant
Marysville (Binney Jct.)	CPC	Upgrade existing connection from 15 to 30 mph for SP-North to UP-East moves
Montclair	CPC	15 mph connection between SP Montclair Siding to UP Montclair Yard
Oakland	CI	Expand SP facility, configure UP facility for APL
Pomona-1	CPC	60 mph connections to connect UP double main to SP double main
Pomona-2	CPC	Install No. 30 crossover (60 mph) at W.O. Tower for east end of Triple Main
Pomona to Colton	CU	2nd Main Track
Riverside Jct.	CPC	15 mph connection

TABLE 5 (continued)

PROPOSED CONSTRUCTION PROJECTS

Location/Station	Construction Type	Description
Roseville	CT	2nd main line form Antelope to "245"
Salvia to Rimlon	CU	Double Track with crossover and helper track
Stockton-1	CPC	Crossover (30 mph) from SP Main Line to UP Stockton Yard
Stockton-2	CPC	40 mph connection at El Pinal
Tracy to Martinez	CU	Two 9300' sidings (New Love and Janney)
Warm Springs	CPC	30 mph connection from staging tracks to San Jose Branch and upgrade Connection to 30 mph from UP Warm Springs Yard to SP, relay rail.
West Colton-1	CPC	30 mph connection in the southwest quadrant
West Colton-2	CPC	30 mph connection and upgrade track in the southeast quadrant, construct siding extension (6,300')
West Palm Spring to Garnet	CU	Double track
COLORADO		
Cedar Point	CU	Extend existing siding 3550'
Clifford	CU	Extend existing siding 5550'
Denver	CI	Expand 40th Street, convert to crane operation, add 1 track and parking
Denver (Pulman)	CPC	Upgrade connection (4 miles) SP Route and extend siding
Firstview	CU	9300' Siding
Mesa	CU	9300' siding
SP Denver	CPC	30 mph connection from SP Moffat Main Line to the Belt Line at North Yard
Strasburg	CU	9300' Siding
ILLINOIS		
Barr	CPC	Upgrade connection to 30 mph
Buda-1	CU	Siding north of Buda
Buda-2	CPC	Connection in northwest quadrant
Buda-3	CU	Siding on BN west of Buda
Buda-4	CPC	Construct No. 20 crossover on BN west of Buda
Dolton	CI	Expand existing facility
Dupo	CI	Expand existing site, convert to cranes
Girard	CPC	10 mph connection in southeast quadrant
Global 2	CI	Expand facility to accommodate new traffic
Salem-1	CPC	Extend 3 tracks to 8000'in the Salem Yard
Salem-2	CPC	Connection in southeast quadrant
Springfield	CPC	Crossovers, move control of Ridgely Tower to HDC
KANSAS		
Brookville	CU	9300' Siding
Bucklin	CU	Extend siding to the east to 9000'total length without closing County road, relay siding
Caldwell	CU	9300'siding

TABLE 5 (continued)

PROPOSED CONSTRUCTION PROJECTS

Location/Station	Construction Type	Description
Cline	CU	Extend siding 3304'
Dorrance	CU	9300' siding
Furley	CU	9300' siding
Grainfield	CU	9300' siding
Herington-1	CT	Construct 2 additional class tracks, wye connection and crossover
Herington-2	CT	Extend 3 tracks - disturbs new ground
Hope	CPC	30 mph connection from UP to BNSF in northeast quadrant
Kansas City Armourdale	CI	Expand for added capacity
McPherson	CU	9700' siding
Midland	CU	Extend siding 1456'
Oakley	CU	Extend siding 5500'
Page City	CU	9300' siding
Peabody	CU	9300' siding
Pratt	CU	Extend siding east to MP 296.1
Salina	CU	9300' Siding
Solomon	CU	9300' Siding
Topeka-1	CPC	Upgrade UP/SP wye connection in southwest quadrant to 15 mph, add crossover
Topeka-2	CPC	10 mph main line connection, and extend yard lead
Toulon	CU	9300' Siding
Wa Keeney	CU	9300' Siding
Weskan	CU	Extend siding 5790'
Whitewater	CU	Extend siding 4540'
Wichita	CT	Connect two connections - UP to UP and UP to BNSF
LOUISIANA		
Avondale-1	CPC	Construct universal xover
Avondale-2	CI	Expand SP facility, close Westwego
Avondale-3	CPC	Rearrange interlocker at Westbridge Jct.
Edna	CU	8500' siding
Elton	CU	8500' Siding
Farmers	CU	Crossover
Iowa Junction	CPC	30 mph connection to tie-in with SP line to Lake Charles
Kinder	CPC	30 mph connection in southeast quadrant for Iowa Junction-Livonia move
Livonia	CT	Incremental expansion at yard - one receiving track, two class tracks, wye connection in northeast quadrant, upgrade wye connection in southwest quadrant (Houston to Livonia), and finish pullback track
Shreveport	CPC	25 mph connection southwest quadrant
Taft	CU	Add new main line south of existing main line, convert old main line to siding
White Castle	CU	Siding extension to MP 78.8

TABLE 5 (continued)

PROPOSED CONSTRUCTION PROJECTS

Location/Station	Construction Type	Description
MISSOURI		
Dexter	CPC	Extend siding 2,026' south
Paront	CU	Extend siding 8000' north
NEVADA		
Alazon	CU	Install No. 14 crossover
Barth	CU	Install No. 14 crossover
Beowawe	CU	Install universal crossover
Elburz	CU	Install No. 14 crossover
MP 440 (Mt. Golconda)	CU	Install universal crossover
UP Conn	CU	Install No. 14 crossover
NEW MEXICO		
Aden	CU	Double track one train length east
Afton	CU	Double track one train length west
Akela	CU	Double track one train length east
Arabella	CU	9700' siding
Carne	CU	Double track one train length east
Deming	CU	Double track - MP1211.16-MP1205.1
Dona	CU	Double track one train length west
Gage	CU	Double track one train length west
Lanark	CU	Double track one train length west
Leoncito	CU	9700' siding
Lizard to Anapra	CU	2nd Main Track
Lordsburg to Ulmoris	CU	Double track
Oscura	CU	9700' siding
Palomas	CU	Extend siding 3120' east
Robsart	CU	9700' siding
Separ to Wilna	CU	Double track and add crossover
Strauss	CU	Double track one train length west
Tularosa	CU	9700' siding
Tunis	CU	Double track one train length west
OKLAHOMA		
Chickasha	CU	Extend siding 4225'
Concho	CU	Extend siding 1425'
Enid	CU	Extend siding 800' and install two No. 14 power operated turnouts
Jacks	CU	Extend siding 4541'
Jefferson	CU	9300' siding
Marlow	CU	9300' siding
No. Enid	CU	Extend siding 1190'

TABLE 5 (continued)

PROPOSED CONSTRUCTION PROJECTS

Location/Station	Construction Type	Description
Sunray	CU	9300' siding
Waurika	CU	Extend siding
OREGON		
Barnes	CT	Expand Barnes Yard capacity
Cascade Tunnels (CA-OR)	CU	Increase clearance in 23 tunnels
Kenton Line-1	CU	Extend Champ siding 1414' west
Kenton Line-2	CU	Extend Hemlock siding 3000' west
OT Jct.	CU	Siding to run around Hinkle to Bend trains
Portland	CI	Expand Albina Yard for increased traffic
TEXAS		
Big Sandy-1	CU	Extend siding
Big Sandy-2	CU	New siding
Boyd	CU	9300' siding
Brazos	CU	Extend siding 1848'
Bryan	CPC	Eliminate crossing frog at MP 77.8, use UP line between crossing and Bryan Junction as siding, and crossing to Bryan on SP for main line
Buford to Alfalfa-1	CU	No. 20 universal crossover
Buford to Alfalfa-2	CU	Extend double track east
Carrollton	CPC	Construct two 50-car interchange tracks
Chico	CU	Extend siding 7924'
Dallas Jct.	CPC	Connection from east to west from UP to Dallas Area Rapid Transit
Dayton	CT	Extend tracks 3 & 4 near Main Line to 4000'
El Paso	CU	Double track going north from El Paso
Flatonia to Victoria	CU	Rebuild three bridges
Ft. Worth-1	CPC	Connection at interlocker south of Ney Yard in northeast quadrant
Ft. Worth-2	CPC	Connection at interlocker south of Ney Yard in southwest quadrant
Grand Prairie	CU	Install No. 20 universal crossover
Grand Saline	CU	Extend siding 1008'
Harlingen	CI	New facility (will cover Brownsville)
Hearne	CPC	Rehab existing connection (decrease curvature) at Hearne (direct move Valley Junction to Corsicana). Serve GATX from SP and eliminate UP switch and lead
Hicks	CU	Extend siding 3801'
Houston-1	CPC	20 mph connection in northwest quadrant at Tower 26
Houston-2	CPC	10 mph connection in northwest quadrant at Tower 87
Houston-3	CPC	10 mph connection northeast quadrant at "Rabbit Crossing" (under Hwy 59)
Iatan	CU	Extend siding 1478'
Iona	CU	Extend siding 1056'
Jayell	CU	Extend siding 1848'

TABLE 5 (concluded)

PROPOSED CONSTRUCTION PROJECTS

Location/Station	Construction Type	Description
Lawrence	CU	Extend siding 1325'
Loraine	CU	9300' siding
Merkel	CU	Extend siding 1162'
Miller	CU	Double track T209 to T208 with universal crossover at T209
Mineola	CU	New siding, extend siding and install crossover
Monahans	CU	Extend siding 1425'
Morita	CU	Extend siding 1236'
Pecos	CU	9300' siding
Pegasus	CU	Extend siding 2060'
Port Laredo	CI	Add track 803, provide 500 trailer stalls, 1 additional crane
Preble	CU	Extend siding 1954'
Saginaw-1	CPC	Connection in railroad southwest quadrant (south on OKT and south on BNSF)
Saginaw-2	CU	Extend siding 3642'
San Antonio-1	CPC	Crossover at west end of yard and 10,000' siding
San Antonio-2	CPC	Universal crossover at north end of the yard, and crossover at Heafer Junction
San Antonio-3	CI	Expand UP facility. Independent switch leads both ends.
San Antonio-4	CPC	Reconstruct connection to SP Del Rio Sub at East Yard, using #2 track
San Martine	CU	9300' siding
Stoneburg	CU	Extend siding 5949'
Strang	CU	Extend yard tracks 103 & 104
Strawn	CU	Extend siding 4435'
Sweetwater	CU	Extend siding 5861' and install crossover
Tatsie/Mumford	CPC	40 mph crossover and connection, abandon diamond (consolidate UP-SP lines)
Tiffin	CU	Extend siding 2270'
Toyah	CU	Extend siding and construct crossover
Valley Jct.	CPC	Upgrade connection in southeast quadrant
Waco-1	CPC	Construct one additional 4000'yard track at Bellmead Yard
Waco-2	CPC	Construct connection between Bass Siding and Gatesville Branch, south of Waco
Westpoint	CPC	30 mph connection in northeast quadrant
Wild Horse	CU	Extend siding 5544'
Wills Point	CU	Extend siding 1795'
UTAH		
Salt Lake City	CI	Expand North Yard

CPC = Common Point Connection
CU = Corridor Upgrade
CT = Construction at Rail Yard
CI = Construction at Intermodal Facility

2.0 BENEFICIAL EFFECTS OF THE MERGER

Activities associated with the merger, including proposed changes in rail and truck traffic patterns, abandonments, and construction projects, would result in both system-wide and site-specific beneficial effects. Benefits for rail line segments are discussed in Section 3; benefits for rail yards, intermodal, and automotive facilities are discussed in Section 4; and fuel savings resulting from the merger are discussed in Section 7.

Changes in operations resulting from a combined UP/SP system, including rerouting of rail traffic, consolidation of operations, and certain truck-to-rail and rail-to-rail diversions, would have general and specific beneficial environmental effects including savings in overall fuel consumption, reductions in air emissions, improved highway safety and more efficient rail transportation service.

In addition, abandonment of rail lines would result in beneficial effects due to the cessation of railroad operations. Generally, there would be fewer human-caused disturbances and, in some cases, a gradual re-establishment of natural vegetation. Potential beneficial effects, which would vary from line to line, may include the following:

- Reduction in human-caused disturbance to water and biological resources, including ground-surface disturbance, noise, nighttime lighting, and human presence. This would include beneficial effects to both common and sensitive resources.
- Gradual re-establishment of native vegetation.
- Reduction in the likelihood of spills onto sensitive habitats and into stream courses.
- Reduction in loss of wildlife due to animal-train collisions.
- Increased contiguity in wildlife habitats, along with reduced habitat fragmentation, reduced detrimental "edge effect," and the continuance or re-establishment of movement corridors and habitat linkages.

- Removal of approximately 550 road crossings, resulting in beneficial safety effects in the form of potentially fewer accidents/incidents.
- Rerouting of train traffic onto shorter or more efficient rail lines, resulting in beneficial transportation effects.
- Availability of some abandoned lines for "Rails to Trails" programs, increasing outdoor recreation opportunities.
- Reduction of noise exposure to adjacent land uses.
- Cessation of rail traffic, resulting in a reduction of air emissions in localized areas.

The completion of construction projects would make certain operational benefits possible. They include:

- Construction projects are expected to increase efficiencies and maximize effectiveness of UP/SP consolidated activities, reducing transit times on rail lines, and delays at terminals and interchange points with other carriers. This would result in increased efficiency for the overall UP/SP transportation system and improved service to transportation customers.
- Operating efficiencies would result in overall fuel consumption savings and reductions in air emissions. In addition, the improved rail system would result in new truck-to-rail diversions, as well as more efficient internal reroutings which would result in further fuel savings and air emissions reductions.

Overall, the UP/SP merger would have substantial system-wide beneficial effects, including significant savings in fuel consumption, improved highway safety, and increased transportation efficiency. Also, the merger-related abandonments will result in safety improvements, reduced noise exposure and air emissions, and improved habitat conditions for biological resources.

3.0 RAIL LINE SEGMENTS

This section provides a summary of potential environmental impacts from rail traffic increases on identified rail segments. The consolidation of the UP/SP rail system will result in many operational changes producing increases and decreases in the amount of train traffic on rail line segments throughout the system. Based on operational data developed by UP/SP, there are 70 rail line segments (out of 389 evaluated systemwide) that are projected to experience traffic increases in excess of ICC thresholds requiring analysis of air quality and/or noise. Detailed information for the proposed rail segments is presented in Part 2, Rail Line Segments.

3.1 APPROACH

The assessment of potential environmental impacts on rail line segments focused on air quality and noise on a line-specific basis. Safety was addressed on a systemwide basis. Changes in train traffic on existing rail lines are not expected to affect other environmental resources.

3.1.1 Air Quality

Data developed by UP and SP were evaluated to identify rail line segments on which changes in traffic would meet or exceed ICC analysis thresholds for air quality and noise. Since the thresholds for air analysis differ according to the air quality status of a location, the Air Quality Control Regions (AQCRs) traversed by each segment were identified along with their status as attainment or nonattainment for certain pollutants. If an AQCR is nonattainment for one pollutant, it was considered nonattainment for all criteria pollutants, resulting in a more stringent analysis. Emissions of criteria pollutants were calculated using assumptions on typical locomotives, train composition, and fuel consumption. Emissions were calculated for each affected segment, and are shown by AQCR.

Of the 70 rail line segments that are expected to exceed air quality analysis thresholds, 37 are expected to exceed the assessment thresholds for noise. Each of these

line segments is identified and discussed in Part 2. The increase in noise exposure to sensitive receptors was estimated based on the projected number of trains and on assumptions for train composition, speed, and horn (train whistle) use. On 22 segments where noise increases of 2 decibels (dBA) or greater were predicted, land use analysis was conducted to identify noise-sensitive receptors that could be exposed to sound levels of 65 dBA or greater.

3.1.2 Noise

The ICC regulations require the performance of noise studies for all rail line segments on which traffic will increase by at least 100% as measured by gross ton miles annually or at least eight trains per day. Noise sensitive land uses where the weighted 24-hour sound exposure level L_{dn} will increase by 3 decibels (dBA) or will meet or exceed 65 dBA are required to be identified. Methods used to evaluate noise impacts along rail line segments are discussed in Part 6. For this study, any increase in L_{dn} less than 2 decibels was considered insignificant, and only segments where the projected change in traffic would cause at least a 2 decibel increase in L_{dn} were evaluated.

Part 2 of this ER presents the analysis of those line segments that exceed the ICC threshold for a noise study. For eleven of the segments the projected increase in traffic volume is sufficient to cause a 3 dBA or greater increase in noise exposure.

3.2 CONCLUSIONS

3.2.1 Air Quality

There are 64 AQCRs that contain rail line segments where traffic increases will exceed ICC analysis thresholds. Increased air emissions from each line segment exceeding ICC thresholds are identified by AQCR. Table 2-22 in Part 2 presents the emission increases projected for rail segment activity increases in excess of the ICC thresholds.

In order to provide a more realistic assessment, and to evaluate the cumulative effects within certain nonattainment AQCRs, both the increased and decreased

emissions from all rail line segment changes and truck-to-rail diversions (when available) within these AQCRs were calculated, as shown on Table 6. The principal areas of concern for this analysis are ozone nonattainment areas because nitrogen oxide (NO_x) emissions from diesel fuel are generally considered to contribute to ozone production. For this analysis, NO_x emissions were calculated for six metropolitan AQCRs based on rail segment activity increases in those areas. For these locations, a cumulative impact assessment was performed by calculating merger-related changes in NO_x emissions from all UP/SP rail lines in the AQCR (including those with traffic decreases) as well as decreased emissions from truck-to-rail diversions where data were available. The calculation did not consider the effects of changes in traffic on other rail carriers; thus, the reductions in emissions from decreases in traffic on other carriers resulting from the merger are not shown. This analysis shows that levels of NO_x emissions for these selected AQCRs are in all cases significantly reduced from increases calculated for line segments where traffic will exceed the ICC thresholds and, in some cases, absolute reductions for the AQCR are predicted.

Table 6 summarizes the net changes in NOx emissions due to all proposed rail segment activity changes and truck-to-rail diversions for the six selected AQCRs.

TABLE 6

CUMULATIVE RAIL LINE SEGMENT/TRUCK DIVERSION IMPACTS

IN SELECTED AQCRS

AQCR	AQCR NAME	ATTAINMENT STATUS	NO_x EMISSION INCREASES ON SEGMENTS WHERE TRAFFIC EXCEEDS ICC THRESHOLDS	NO_x EMISSION CHANGES -ALL SEGMENTS AND TRUCK-TO-RAIL DIVERSIONS (WHERE AVAILABLE)
24	Metropolitan Los Angeles	NA	338.4	16.3
28	Sacramento Valley	NA	485.5	-292.4*
106	Southern Louisiana-Southeast Texas	NA	957.9	-447.8
67	Metropolitan Chicago	NA	426.0	-79.4
215	Metropolitan Dallas-Ft. Worth	NA	1542.7	298.2
153	El Paso	NA	1810.9	780.1*

* Truck-to-rail diversions data not available.

The results of this analysis for each selected AQCR are detailed below.

Metropolitan Los Angeles - AQCR #24

When all UP/SP rail segments within AQCR #24 are considered, the NO_x emissions from threshold line segments are reduced from 338.4 tons to 76.59 tons per year. Additionally, this AQCR is expected to experience truck-to-rail diversions of 34,630 truckloads per year. Because of the greater fuel efficiency of rail systems in comparison to trucks, these diversions will result in an additional decrease in emissions within the AQCR of 60.3 tons per year. As a result, based on the available data, a net increase of 16.3 tons of No_x per year for the Metropolitan Los Angeles AQCR is projected.

Sacramento Valley - AQCR #28

When all UP/SP rail segments within AQCR #28 are considered, the NO_x emissions from threshold line segments are reduced from 485.5 tons to -292.4 tons per year. There are insufficient data to calculate truck-to-rail diversions for this area and no analysis could be performed.

Southern Louisiana - Southeast Texas - AQCR #106

When all UP/SP rail segments within AQCR #106 are considered, the NO_x emissions from threshold line segments are reduced from 957.9 tons to -443.6 tons per year. Additionally, this AQCR is expected to experience truck-to-rail diversions of 740 truckloads per year. Because of the greater fuel efficiency of rail systems in comparison to trucks, these diversions will result in an additional decrease in emissions within the AQCR of 4.2 tons per year. As a result, based on available data, a net decrease of 447.8 tons of NO_x per year for the Southern Louisiana - Southeast Texas AQCR is projected.

Metropolitan Chicago - AQCR #67

When all UP/SP rail segments within AQCR #67 are considered, the NO_x emissions from threshold line segments are reduced from 426 tons to -23.5 tons per year. Additionally, this AQCR is expected to experience truck-to-rail diversions of 27,101 truckloads per year. Because of the greater fuel efficiency of rail systems in comparison to trucks, these diversions will result in an additional decrease in emissions within the AQCR of 55.9 tons per year. As a result, based on available data, a net decrease of 79.4 tons of NO_x per year for the Metropolitan Chicago AQCR is projected.

Metropolitan Dallas - Fort Worth - AQCR #215

When all UP/SP rail segments within AQCR #215 are considered, the NO_x emissions from threshold line segments are reduced from 1542.7 tons to 341.9 tons per year. Additionally, this AQCR is expected to experience 16,060 truck-to-rail diversions. Because of the greater fuel efficiency of rail systems in comparison to trucks, these diversions will result in an additional decrease in emissions within the AQCR of 43.7 tons per year. As a result, based on available data, a net increase of 298.2 tons of NO_x per year for the Metropolitan Dallas - Fort Worth AQCR is projected.

El Paso - Las Cruces - Alamogordo - AQCR #153

When all UP/SP rail segments within AQCR #153 are considered, the NO_x emissions from threshold line segments are reduced from 1810 tons to 780.1 tons per year. There are insufficient data to calculate truck diversions for this area and no analysis could be performed.

3.2.2 Noise

The results of the noise impact assessment are summarized in Table 7, which shows the number of noise impacts for the pre- and post-merger train volumes. Table 7 shows that the number of noise sensitive receptors exposed to noise levels exceeding L_{dn} 65 or greater is predicted to increase for the post-merger traffic on line segments analyzed. Also, at most of these receptors the increase in noise exposure will be between 2 and 3 dBA. The increase in noise exposure will be solely due to more trains operating on the tracks; there should be no change in the noise emission from individual trains.

TABLE 7

NOISE IMPACT ASSESSMENT FOR RAIL SEGMENTS

Rail Segment		Road	Miles	Number of Sensitive Receptors*		
Origin	Destination			Pre-Merger	Post-Merger	Increase
Tucson AZ	Picacho AZ	SP	50.0	225	522	297
Fair Oaks AR	Brinkley AR	SP	26.0	114	210	96
Paragould AR	Fair Oaks AR	SP	69.0	232	341	109
Stockton/Lathrop CA	Martinez CA	SP	48.0	0	622	622
Nelson IL	Buda IL	UP	34.0	65	182	117
Herington KS	Lost Springs KS	UP	6.5	0	58	58
Hutchinson KS	Stratford TX	SP	274.0	524	914	390
Lost Springs KS	Wichita KS	UP	64.3	0	191	191
Marysville KS	Valley NE	UP	134.0	115	334	219
Oakley KS	Denver CO	UP	262.0	50	249	199
Salina KS	Oakley KS	UP	191.0	144	488	344
Wichita KS	Chickasha OK	UP	192.0	361	696	335
Iowa Jct. LA	Beaumont TX	SP	75.0	871	1384	513
Sparks NV	Roseville CA	SP	139.0	651	1143	492
Winnemucca NV	Sparks NV	SP	175.0	101	251	150
Chickasha OK	Fort Worth TX	UP	177.7	135	260	125
Big Spring TX	Toyah TX	UP	152.0	162	656	494
Fort Worth TX	Big Spring TX	UP	267.5	510	1615	1105
Stratford TX	Dalhart TX	SP	31.0	44	87	43
Toyah TX	Sierra Blanca TX	UP	109.7	78	181	103
Ogden UT	Alazon NV	SP	178.0	106	139	33
TOTAL				**4,488**	**10,523**	**6,035**

Notes:
* L_{dn} exceeds 65 dBA at noise sensitive receptors (residences, schools , libraries, nursing homes and churches).

4.0 RAIL YARDS AND INTERMODAL AND AUTOMOTIVE FACILITIES

The UP/SP merger will provide opportunities to modify and consolidate operations of rail yards, intermodal, and automotive facilities for increased efficiency. The proposed changes to these facilities are discussed in Part 3 of this ER, as are the environmental effects on air quality, noise, transportation and safety associated with the changes. Proposed changes in carload activity at 27 rail yards have been studied for air quality and five for noise, based on ICC analysis thresholds. There are 18 intermodal facilities at which ICC truck activity thresholds would be met, requiring evaluations of transportation, noise, and air quality impacts. No automotive facility activities will exceed ICC analysis thresholds.

4.1 APPROACH

Rail yard and intermodal facility air quality impacts were evaluated on a regional basis, and noise and transportation system effects on a site-specific basis. Safety was addressed on a systemwide basis. Changes in truck and rail traffic at terminals are not expected to affect other environmental resources.

4.1.1 Transportation

Increases in truck traffic at intermodal and automotive facilities were calculated to determine which facilities would exceed ICC evaluation thresholds for air quality and noise. Data on the number of intermodal unit lifts (handling of units) in pre-merger and post-merger scenarios were developed by UP and SP. A ratio of trucks to lifts was developed based on actual operating statistics to estimate changes in the number of trucks using each facility.

Impacts to local transportation systems were evaluated at each facility that met or exceeded the ICC threshold of 50 trucks per day. The assessment compared the projected number of truck trips (trucks x 2) with the Average Daily Traffic (ADT) counts for local access streets, where available. In addition to ADT increases, the location of the facility relative to interstate highways, local road conditions, and assumed traffic signalization were considered.

4.1.2 Air Quality

An analysis of air pollutant emissions was performed for each rail yard and intermodal facility that exceeded ICC analysis thresholds. Emissions increases were estimated for switch locomotives, lift equipment, yard trucks, and over-the-road trucks based on predicted operating scenarios.

In addition, a cumulative impact assessment was performed for major terminals that correspond to metropolitan AQCRs. This analysis included increased and decreased emissions predicted from all rail yard, intermodal, and automotive facilities within the terminal region.

4.1.3 Noise

The first step in the analysis of the rail yards, intermodal, and automotive facilities was to determine whether the projected increase in operations would cause noise exposure to increase by at least 2 dBA. An increase of less than 2 dBA was considered insignificant and no further noise analysis was done. For facilities where more than a 2 dBA increase is projected, approximate counts were made of noise sensitive land uses where the Day-Night Equivalent Sound Level (L_{dn}) will meet or exceed 65 dBA or will

increase by 3 dBA or more. The counts were based on USGS maps and, where possible, site visits.

In projecting noise exposure near rail yards, an adjustment was made to the noise model presented in Section C of Part 6, to account for rail cars stored in the rail yard that act as partial acoustical shields for rail yard activities. This shielding was assumed to reduce overall noise exposure by 3 dBA. This adjustment was based on observations at several rail yards.

4.2 CONCLUSIONS

4.2.1 Transportation

In 19 locations, facility consolidations are planned that will increase operations at a UP or SP facility and decrease or close nearby ramps. Of these, regional consolidations of intermodal ramps are expected to result in increased truck traffic in excess of the ICC threshold of 50 additional trucks per day at nine specific facilities, However, increased traffic at these ramps is partially or completely offset by related decreases at nearby facilities so that regional effects on the transportation system will be minimal.

On a national or systemwide basis, merger-related transportation effects include increased rail transportation and decreased long distance truck transportation. The effects of reduced long distance truck haulage on the national highway system will be positive. Based on truck diversion studies conducted by UP/SP consultants, 180,655 truckloads of freight will be transferred to rail on an annual basis. The study analyzed the origin and destination points of these commodities. Based on that analysis, it is projected that truck-to-rail diversions will reduce nationwide truck travel by 283,313,759 truck miles

per year, thereby reducing wear and tear on highways and the adverse effects of truck traffic.

Of the 18 intermodal facilities evaluated in Part 3 for transportation impacts, five were identified as having large truck traffic increases in the immediate vicinity of the facility (Table 8 lists these facilities). If warranted in the future, some type of traffic improvements in these areas such as signal phasing may be considered, as discussed in Part 3.

TABLE 8

INTERMODAL FACILITY TRAFFIC INCREASES

State	Facility	Increased Trips/Day	Average Daily Traffic	% Increase in ADT
CA	East Los Angeles	1174	27900	4.2
IL	Global II	850	30000	2.8
IL	Canal Street	372	25500	1.5
IL	Dupo	356	5300	6.7
OR	Portland	548	10300	5.3

4.2.2 Air Quality

Table 9 summarizes, by rail terminals, increases and decreases in air emissions from all UP/SP rail yards, automotive facilities and intermodal facilities within the terminal. A rail terminal is defined as a geographic area within or corresponding to a metropolitan area in which rail yards, intermodal, or automotive facilities are located. The emissions shown in Table 9 are calculated for only UP/SP facilities and do not consider the effects of reduced over-the-road truck traffic within an AQCR or terminal resulting from truck-to-rail diversions, or changes at other rail or truck facilities located there. As a result, the increases shown may overstate the actual impacts of the proposed actions.

TABLE 9

EMISSIONS FROM UP/SP YARDS AND INTERMODAL AND AUTOMOTIVE FACILITIES PER TERMINAL

FACILITY OR TERMINAL	TYPE	STATE	AQCR AFFECTED	AQCR STATUS	TOTAL CHANGE IN EMISSIONS (TON/YEAR)				
					HC	CO	NOx	SO2	PM
LOS ANGELES									
CITY OF INDUSTRY (SP)	I	CA	24	NA	-8.9547	-41.8533	-49.4453	-1.3627	-8.7600
LATC (SP)	I	CA	24	NA	-12.4806	-58.3331	-68.9144	-1.8992	-12.2093
LONG BEACH (SP)	A	CA	24	NA	-0.2071	-0.9712	-1.2083	-0.0310	-0.1995
LOS NIETOS (SP)	A	CA	24	NA	-0.0628	-0.2930	-0.3336	-0.0097	-0.0621
E. LOS ANGELES (UP)	I	CA	24	NA	14.9991	70.1043	82.8209	2.2825	14.6730
INLAND-EMPIRE (UP/SP)	I	CA	24	NA	12.5925	58.8563	69.5325	1.9163	12.3188
LONG BEACH (UP)	A	CA	24	NA	0.4100	1.9239	2.4134	0.0613	0.3941
MIRA LOMA (UP)	A	CA	24	NA	0.1675	0.7871	1.0110	0.0249	0.1598
ANAHEIM (UP)	R	CA	24	NA	-0.0285	-0.0887	-0.6643	-0.0481	-0.0144
CITY OF INDUSTRY (UP)	R	CA	24	NA	-0.3070	-0.9544	-7.1444	-0.5177	-0.1549
GEMCO (SP)	A	CA	24	NA	0.0017	0.0098	0.0452	0.0000	0.0000
GEMCO (SP)	R	CA	24	NA	0.0192	0.0595	0.4457	0.0323	0.0097
ICTF (SP)	R	CA	24	NA	-0.2926	-0.9098	-6.8101	-0.4935	-0.1476
INLAND-EMPIRE (SP)	R	CA	24	NA	1.3622	4.2352	31.7019	2.2972	0.6873
J YARD (SP)	R	CA	24	NA	-0.0797	-0.2479	-1.8557	-0.1345	-0.0402
LA-ICTF (SP)	I	CA	24	NA	-1.1753	-5.4933	-6.4897	-0.1789	-1.1498
LATC (SP)	R	CA	24	NA	0.0000	0.0000	0.0000	0.0000	0.0000
LONG BEACH (UP)	R	CA	24	NA	0.1007	0.3132	2.3443	0.1699	0.0508
LOS ANGELES (UP)	R	CA	24	NA	-0.2309	-0.7180	-5.3744	-0.3894	-0.1165
LOS NIETOS (SP)	R	CA	24	NA	-0.0166	-0.0515	-0.3857	-0.0280	-0.0084
MIRA LOMA (UP)	R	CA	24	NA	0.0241	0.0750	0.5614	0.0407	0.0122
MONTCLAIR (UP)	R	CA	24	NA	0.0569	0.1769	1.3243	0.0960	0.0287
WEST COLTON (UP)	R	CA	24	NA	0.2615	0.8130	6.0858	0.4410	0.1319
TOTAL LOS ANGELES TERMINAL IMPACT			**24**	**NA**	**6.1595**	**27.4400**	**49.6605**	**2.2692**	**5.6035**
OAKLAND									
MILPITAS (UP)	A	CA	30	NA	-0.1084	-0.5066	-0.6007	-0.0165	-0.1059
MILPITAS (UP)	R	CA	30	NA	-0.0311	-0.0968	-0.7243	-0.0525	-0.0157
OAKLAND (UP)	A	CA	30	NA	-0.3723	-1.7458	-2.1708	-0.0558	-0.3588
MARTINEZ (SP)	R	CA	30	NA	0.0825	0.2565	1.9200	0.1391	0.0416
BENECIA (SP)	A	CA	30	NA	0.4306	2.0219	2.5623	0.0642	0.4126
OAKLAND (UP)	I	CA	30	NA	2.0148	9.4170	11.1252	0.3066	1.9710
OAKLAND (SP)	I	CA	30	NA	1.7350	8.1091	9.5800	0.2640	1.6973
OAKLAND (UP)	R	CA	30	NA	0.2464	0.7661	5.7344	0.4155	0.1243
WARM SPRINGS (SP)	A	CA	30	NA	-0.2939	-1.3769	-1.6895	-0.0442	-0.2843
WARM SPRINGS (SP)	R	CA	30	NA	-0.0256	-0.0796	-0.5957	-0.0432	-0.0129
TOTAL OAKLAND TERMINAL IMPACT			**30**	**NA**	**3.6780**	**16.7649**	**25.1408**	**0.9773**	**3.4691**
DENVER									
DENVER (SP)	I	CO	36	NA	-2.1267	-9.9402	-11.7433	-0.3236	-2.0805
DENVER (SP)	A	CO	36	NA	-0.4118	-1.9306	-2.3888	-0.0618	-0.3975
DENVER (UP)	I	CO	36	NA	1.5671	7.3243	8.6529	0.2385	1.5330
ROLLA (UP)	A	CO	36	NA	0.4133	1.9410	2.4677	0.0615	0.3956
DENVER (UP)	R	CO	36	NA	0.1215	0.3779	2.8286	0.2050	0.0613

TABLE 9 (Continued)

EMISSIONS FROM UP/SP YARDS AND INTERMODAL AND AUTOMOTIVE FACILITIES PER TERMINAL

FACILITY OR TERMINAL	TYPE	STATE	AQCR AFFECTED	AQCR STATUS	TOTAL CHANGE IN EMISSIONS (TON/YEAR)				
					HC	CO	NOx	SO2	PM
ROLLA (UP)	R	CO	36	NA	0.0678	0.2107	1.5772	0.1143	0.0342
TOTAL DENVER TERMINAL IMPACT			**36**	**NA**	**-0.3689**	**-2.0169**	**1.3943**	**0.2338**	**-0.4539**
CHICAGO									
CHI - FOREST HILL (SP)	I	IL	67	NA	-2.6304	-12.2944	-14.5246	-0.4003	-2.5733
CHI - IMX (SP)	I	IL	67	NA	-5.4847	-25.6352	-30.2853	-0.8346	-5.3655
CHI-MIT (SP)	I	IL	67	NA	-1.6790	-7.8475	-9.2710	-0.2555	-1.6425
CANAL STREET (UP)	I	IL	67	NA	4.7572	22.2346	26.2678	0.7239	4.6538
GLOBAL II (UP)	I	IL	67	NA	10.8575	50.7472	59.9525	1.6522	10.6215
CHICAGO HTS (UP)	A	IL	67	NA	-0.0234	-0.1083	-0.1092	-0.0037	-0.0238
CHICAGO-BRC (UP)	R	IL	67	NA	0.9692	3.0134	22.5561	1.6344	0.4890
CHICAGO -IMX (SP)	R	IL	67	NA	-0.2350	-0.7306	-5.4687	-0.3963	-0.1186
DOLTON (UP)	I	IL	67	NA	2.1827	10.2018	12.0523	0.3322	2.1353
DOLTON JCT (UP)	R	IL	67	NA	0.0000	0.0000	0.0000	0.0000	0.0000
GLOBAL I (UP)	I	IL	67	NA	0.0000	0.0000	0.0000	0.0000	0.0000
PROVISO (UP)	R	IL	67	NA	-0.6578	-2.0452	-15.3088	-1.1093	-0.3319
W. CHICAGO (UP)	A	IL	67	NA	-0.0596	-0.2788	-0.3356	-0.0090	-0.0580
W CHICAGO (UP)	R	IL	67	NA	-0.0129	-0.0401	-0.3000	-0.0217	-0.0065
YARD CENTER (UP)	R	IL	67	NA	-0.0206	-0.0641	-0.4800	-0.0348	-0.0104
TOTAL CHICAGO TERMINAL IMPACT			**67**	**NA**	**7.9632**	**37.1527**	**44.7456**	**1.2775**	**7.7691**
ST. LOUIS									
ST. LOUIS (DUPO) (UP)	I	IL	70	NA	4.5333	21.1883	25.0317	0.6899	4.4348
VALLEY JCT (UP)	R	IL	70	NA	-1.0639	-3.3076	-24.7590	-1.7941	-0.5368
E. ST. LOUIS (SP)	I	IL	70	NA	-3.7498	-17.5261	-20.7052	-0.5706	-3.6683
ST. LOUIS (UP)	A	MO	70	NA	0.0007	0.0039	0.0181	0.0000	0.0000
TOTAL ST. LOUIS TERMINAL IMPACT			**70**	**NA**	**-0.2796**	**0.3585**	**-20.4144**	**-1.6748**	**0.2297**
KANSAS CITY									
KANSAS CITY (SP)	I	KS	94	Att.	4.4214	20.6651	24.4136	0.6728	4.3253
EIGHTEENTH ST (UP)	R	KS	94	Att.	-0.6081	-1.8906	-14.1517	-1.0254	-0.3068
FAIRFAX (UP)	A	KS	94	Att.	0.0000	0.0000	0.0000	0.0000	0.0000
MUNCIE (UP)	A	KS	94	Att.	-0.0180	-0.0839	-0.0917	-0.0028	-0.0180
KANSAS CITY (UP)	I	MO	94	Att.	-4.5333	-21.1883	-25.0317	-0.6899	-4.4348
KANSAS CITY (UP)	R	MO	94	Att.	-0.5910	-1.8373	-13.7531	-0.9966	-0.2982
TOTAL KANSAS CITY TERMINAL IMPACT			**94**	**Att.**	**-1.3290**	**-4.3349**	**-28.6145**	**-2.0418**	**-0.7325**
PORTLAND									
PORTLAND (SP)	I	OR	193	NA	-5.4288	-25.3736	-29.9762	-0.8261	-5.3108
PORTLAND (ALBINA) (UP)	I	OR	193	NA	6.9958	32.6979	38.6292	1.0646	6.8438
ALBINA (UP)	R	OR	193	NA	0.1560	0.4850	3.6301	0.2630	0.0787
BARNES (UP)	A	OR	193	NA	-0.0926	-0.4337	-0.5294	-0.0140	-0.0897

TABLE 9 (Continued)

EMISSIONS FROM UP/SP YARDS AND INTERMODAL AND AUTOMOTIVE FACILITIES PER TERMINAL

FACILITY OR TERMINAL	TYPE	STATE	AQCR AFFECTED	AQCR STATUS	TOTAL CHANGE IN EMISSIONS (TON/YEAR)				
					HC	CO	NOx	SO2	PM
BARNES (UP)	R	OR	193	NA	-0.0703	-0.2187	-1.6372	-0.1186	-0.0355
TOTAL PORTLAND TERMINAL IMPACT			**193**	**NA**	**1.5601**	**7.1569**	**10.1164**	**0.3689**	**1.4865**
MEMPHIS									
MEMPHIS (SP)	I	TN	18	Att.	-5.0370	-23.5425	-27.8130	-0.7665	-4.9275
MEMPHIS (UP)	I	TN	18	Att.	-4.1975	-19.6188	-23.1775	-0.6388	-4.1063
WEST MEMPHIS (UP/SP)	I	TN	18	Att.	12.2567	57.2868	67.6783	1.8652	11.9903
MEMPHIS (UP)	R	TN	18	Att.	0.1657	0.5153	3.8572	0.2795	0.0836
GAVIN (UP)	A	AR	18	Att.	-0.0128	-0.0593	-0.0610	-0.0020	-0.0130
TOTAL MEMPHIS TERMINAL IMPACT			**18**	**Att.**	**3.1751**	**14.5815**	**20.4840**	**0.7374**	**3.0272**
SAN ANTONIO									
SAN ANTONIO (SP)	I	TX	217	NA	-3.4699	-16.2182	-19.1601	-0.5280	-3.3945
SAN ANTONIO (UP)	I	TX	217	NA	2.9662	13.8639	16.3788	0.4514	2.9018
SAN ANTONIO (UP)	A	TX	217	NA	-0.1212	-0.5680	-0.6973	-0.0182	-0.1173
SAN ANTONIO (SP)	R	TX	217	NA	-0.2466	-0.7666	-5.7387	-0.4158	-0.1244
SO SAN ANTONIO (UP)	R	TX	217	NA	-0.4024	-1.2510	-9.3644	-0.6786	-0.2030
TOTAL SAN ANTONIO TERMINAL IMPACT			**217**	**NA**	**-1.2739**	**-4.9399**	**-18.5817**	**-1.1893**	**-0.9374**
DALLAS									
MESQUITE (UP)	A	TX	215	NA	-0.2557	-1.1987	-1.4864	-0.0384	-0.2466
MIDLOTHIAN (SP)	A	TX	215	NA	0.2184	1.0253	1.2958	0.0326	0.2094
DALLAS (SP)	I	TX	215	NA	2.5745	12.0328	14.2155	0.3918	2.5185
DALLAS (UP)	R	TX	215	NA	-0.2365	-0.7352	-5.5029	-0.3987	-0.1193
DALLAS (MESQUITE) (UP)	I	TX	215	NA	0.5037	2.3543	2.7813	0.0767	0.4928
MESQUITE (UP)	R	TX	215	NA	0.1326	0.4122	3.0858	0.2236	0.0669
TOTAL DALLAS TERMINAL IMPACT			**215**	**NA**	**2.9370**	**13.8908**	**14.3891**	**0.2875**	**2.9217**
FT WORTH									
FT WORTH (UP)	R	TX	215	NA	0.5429	1.6879	12.6345	0.9155	0.2739
TOTAL FORT WORTH TERMINAL IMPACT			**215**	**NA**	**0.5429**	**1.6879**	**12.6345**	**0.9155**	**0.2739**
SEATTLE									
KENT (UP)	A	WA	229	NA	0.0274	0.1292	0.1747	0.0040	0.0257
KENT (UP)	R	WA	229	NA	0.0129	0.0401	0.3000	0.0217	0.0065
SEATTLE (UP)	I	WA	229	NA	1.5111	7.0628	8.3439	0.2300	1.4783
SEATTLE (UP)	R	WA	229	NA	0.2606	0.8102	6.0644	0.4394	0.1315
TOTAL SEATTLE TERMINAL IMPACT			**229**	**NA**	**1.8119**	**8.0421**	**14.8830**	**0.6951**	**1.6419**

TABLE 9 (Continued)

EMISSIONS FROM UP/SP YARDS AND INTERMODAL AND AUTOMOTIVE FACILITIES PER TERMINAL

Att.=Attainment, NA=Non-Attainment, AQCR=Air Quality Control Region
HC=hydrocarbon, CO=carbon monoxide, NOx=nitrogen oxides, SO2=sulfur dioxide, PM=particulate matter
A=Automotive facility, R=Rail yard, I=Intermodal facility

4.2.3 Noise

There are five rail yards which are expected to meet or exceed ICC noise assessment thresholds. Of these five rail yards, three will have noise exposure exceeding L_{dn} 65 or noise exposure increases of at least 3 dBA. As shown on Table 10, these three rail yards are Herington, Kansas; Salem, Illinois; and Bellmead, Texas. The number of noise sensitive receptors exceeding Ldn 65 dBA is projected to increase from 10 to 20 residences at the Herington Yard, from 11 to 16 residences at the Salem Yard, and from 0 to 16 residences at the Bellmead Yard.

Noise impacts are not projected for any of the intermodal facilities. In several cases the maximum noise exposure change exceeds 2 dBA; however, there is no impact because there are no noise-sensitive receptors in the immediate vicinity of the facilities.

TABLE 10

NOISE SUMMARY AT RAIL YARDS

Facility	State	Line	Rail Cars Handled			Number of Sensitive Receptors*	
			Pre-Merger	Post-Merger	% Change	Pre-Merger	Post-Merger
Herington	KS	SP	150	550	266	10	20
Bellmead	TX	UP	46	146	219	0	16
Salem	IL	SP	64	133	108	11	16

Notes:
* Number of sensitive receptors with exposure exceeding Ldn 65 dBA.

In any community, the loudest noise source, whether it be a highway, airport or rail line, will usually dominate the noise exposure, which means that cumulative noise impacts are not common unless there are several noise sources that cause similar degrees

of noise exposure. For most of the rail segments where post-merger train volumes are projected to cause a significant increase in noise exposure, train noise is already the dominant noise source. For areas farther from the rail lines where other noise sources may cause higher levels of noise exposure than the train noise, the increase in train noise can be expected to cause only a small increase in overall noise exposure. Thus, adverse cumulative noise impacts are not anticipated.

5.0 ABANDONMENTS

A detailed discussion of the proposed abandonments is presented in Part 4, Abandonments. This section provides a summary of the analysis of environmental impacts of proposed abandonments. In connection with the proposed merger, UP/SP is proposing the abandonment of 17 rail line segments as listed in Table 4. The overhead traffic currently moving on these rail lines would be re-routed after the merger to other UP/SP lines.

5.1 APPROACH

The following areas were analyzed for each proposed abandonment: land use, water resources and wetlands, biological resources, historic and cultural resources, safety, transportation, air quality, noise, and energy. Following track removal and other salvage activities, the right of way would either: (1) contain land uses which conform to land uses on adjacent property; or (2) be used for recreational purposes, such as the "Rails to Trails" program. It is, therefore, highly unlikely that there would be negative overall community and social impacts due to the new uses.

A combination of literature review, agency contacts, resource maps, and site visits was used to characterize existing conditions for land use, water resources and wetlands, biological resources, historic and cultural resources, safety, and transportation. The focus of the characterization was on aspects of these resources which might be sensitive to potentially adverse impacts from salvage operations, including:

- Land Use - structures within 500 feet of rail lines, occurrence within coastal zone, and presence of prime farmland.

- Water Resources and Wetlands - blue-line streams; waterbodies; wetlands; canals, culverts, ditches.
- Biological Resources - vegetation types; occurrence of threatened and endangered plant/wildlife species; critical habitat; parks, forests, refuges, and sanctuaries within five miles of rail lines.
- Historic and Cultural Resources - historic or archaeological sites listed or eligible for listing on the National Register of Historic Places.
- Safety - occurrence of hazardous waste sites.
- Transportation - traffic levels.

Criteria were developed to assess possible significance of abandonment impacts on the resources itemized above. The key criteria included:

- Land Use - incompatibility with surrounding land use, inconsistency with planning policies/controls, and loss of prime farmland.
- Water Resources and Wetlands - substantial interference with drainage flow, loss of wetlands, adverse discharges to waters (sediment increases, pollutants).
- Biological Resources - loss of important vegetation types/wildlife habitats; loss of individuals or habitat for threatened and endangered plant/wildlife species; loss of critical habitat; loss or degradation of parks, forests, refuges, and sanctuaries.
- Historic and Cultural Resources - disturbance to listed or eligible sites.
- Safety - exposure of people to hazardous waste conditions.

- Transportation - substantial increase in truck traffic on local transportation systems.

Air quality impacts were discussed in the context of the projected decrease in rail traffic and the small number of rail-to-truck diversions (6 of the 17 rail lines). Noise was discussed in the context of the minimal short-term exposure during salvage operations and elimination of noise sources resulting from the removal of the rail lines. No energy assessment was done because projected rail-to-truck diversion traffic was below ICC thresholds for analysis.

5.2 CONCLUSIONS

Potential impacts were analyzed for all of the abandonments in accordance with the approach described in Section 5.1. No significant adverse impacts were identified in the areas of: land use, water resources and wetland, safety, transportation, air quality, noise, and energy. Potentially significant impacts to sensitive biological resources and historic and cultural archaeological resources are identified and discussed in Part 4. Mitigation measures related to these resources are also discussed in Part 4. The abandonments will also have beneficial effects which are discussed in Section 2 above.

6.0 CONSTRUCTION PROJECTS

A detailed discussion of the proposed construction projects is presented in Part 5, Construction. This section summarizes the analysis of environmental impacts of the proposed construction projects. The proposed construction projects are designed to link the UP/SP rail systems in order to improve the efficiency and quality of rail service offered by the merged system, and to add and expand facilities to handle increased rail traffic.

6.1 APPROACH

The proposed construction projects listed in Table 5 are located in 14 states. The proposed construction projects include common point connections, corridor upgrades, and construction at rail yards and intermodal facilities.

The following areas were analyzed for each proposed construction project: land use, water resources and wetlands, biological resources, historic and cultural resources, safety, transportation, air quality, noise, and energy.

Safety concerns during construction activities would be addressed by compliance with applicable regulatory requirements. Construction-related transportation impacts were assessed not to be significant, based on the short duration of activities (typically a few to several weeks) and limited vehicle traffic (worker vehicle and material delivery trucks). Air quality impacts during construction will be temporary and will generally involve dust from earth-moving activities and emissions from construction equipment and vehicles. Construction-related noise impacts were analyzed qualitatively, based on equipment usage, short duration of activities, and presence of sensitive receptors (if any) within 200 feet of activities. Energy consumption for construction

activities was evaluated within the context of overall merger-related fuel consumption savings. The operational impacts of construction projects for these resource areas were evaluated as part of the analysis for rail line segments and rail yards, intermodal and automotive facilities.

A combination of literature review, agency contacts, resource maps, and some site visits was used to characterize existing conditions for land use, water resources and wetlands, biological resources, and historic and cultural resources. The type of information collected was the same as described for abandonments in Section 5.1. Impacts were evaluated using the same significance criteria described above as applied to abandonments in Section 5.1.

6.2 CONCLUSIONS

Potential impacts were analyzed for all of the construction projects in accordance with the approach described in Section 6.1. For most projects, no significant adverse impacts on the resource areas were identified. In the case of the remaining projects, potentially significant impacts on one or more resource areas (water resources and wetlands, biological resources, historic and cultural resources) were identified. These projects, associated potentially significant impacts, and proposed mitigation are identified and discussed in Part 5 of this ER. The construction projects contribute to the overall efficiency of the system which will result in truck-to-rail diversions, fuel efficiency, lower emissions, and improved highway safety. These are significant beneficial effects.

7.0 SYSTEMWIDE ANALYSIS

The changes in rail operations brought about by the UP/SP merger will have systemwide effects on transportation, safety, air quality, and energy consumption. These systemwide effects are discussed in this section, and are based on data developed by UP/SP for the operating plan, which is outlined below.

The operating plan describes how a unified UP/SP system would operate and serve its customers using 1994 traffic levels, modified to take into account the estimated impacts of the UP/CNW merger, the BN/Santa Fe merger, and the conditions granted in pertinent settlement agreements. These modifications are described in the Traffic Study.

To provide as accurate an indication of operating patterns as possible, UP and SP planners identified freight train schedules and other operating data for the most recent period during 1995 for which this information was available when planning began. Like the traffic data, these data were modified to take into account anticipated changes resulting from the UP/CNW merger, the BN/Santa Fe merger, and pertinent settlement agreements. Traffic data for loaded movements during the base period were developed for each carrier by applying to each loaded movement an empty-return factor for each car type in the opposite direction to the movement of the load, except in a small number of circumstances where this would have distorted known operations involving a backhaul arrangement. Using a computer model, loaded and empty traffic in the base period for each separate system was routed across that system and assigned to appropriate trains based on the blocking plan and train schedules for the base period.[1/] The computer model

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1/ Base-period SP train schedules were identified manually by SP personnel due to variations in SP train operations from those scheduled during that period.

maintained counts of trains, cars and gross tonnage on each line segment, as well as car flows through terminals. It also compiled total car-mile, car-hour, and gross-ton-mile data. Locomotive tonnages by segment were calculated on the basis of freight gross ton miles.

To create a merged UP/SP scenario, the two traffic data bases were combined and then modified to include the impacts of extended hauls, new marketing opportunities, diversions from trucks, other mergers, and the UP/SP settlement with BN/Santa Fe. Again using the computer model, the resulting traffic was flowed across a merged UP/SP system and assigned to appropriate blocks and trains based on a merged operating scenario for the UP/SP system.

To quantify changes in line segment density and terminal activity, statistics on car miles, car hours, trains, gross ton-miles, and terminal volumes for the merged system were compared with those developed for the separate UP and SP systems. These comparisons suggested changes in routing, blocking, and train schedules, as well as the need for capacity improvements. The final UP/SP operating plan was developed through an iterative process of running the computer model with a particular blocking and train schedule scenario, reviewing the results, and then revising the plan as necessary for a subsequent computer run.

7.1 TRANSPORTATION

ICC regulations require a description of the effects of the proposed UP/SP merger on regional and local transportation systems and patterns, and an estimate of the amount of passenger or freight traffic that would be diverted to other transportation systems or modes as a result of the proposed merger. The proposed UP/SP merger is expected to result in increased local truck traffic at 34 facilities and decreased truck activity

at 40 facilities, with corresponding impacts to local roads and regional road networks in the vicinity of these facilities. These expected changes are principally the results of merger-related truck-to-rail diversions and consolidation of intermodal and automotive facility operations, and are described more fully in Parts 3 and 4. This section analyzes the net effect of the proposed merger on transportation, both rail and truck, across the nation.

Impacts to the national transportation system will be twofold. First, the proposed UP/SP merger will result in major changes to the operation of the rail systems of the two railroads, with decreased traffic in some sectors and increased traffic in other sectors. Second, the proposed merger is expected to result in a significant reduction in truck traffic on major state and interstate highway systems. Both of these represent positive effects on the national transportation system.

Studies conducted by Reebie Associates and Transmode Consultants, Inc. estimated the number of truck-to-rail diversions that could be expected as a result of the UP/SP merger. These represent truckloads of freight that would otherwise be carried over the national highway system. Table 11 shows the predicted truck-to-rail diversions originating in each major market of the combined UP/SP system and the associated truck travel miles saved based on origin-destination data developed from the diversion studies.

It is estimated that 180,655 intermodal units will be removed from the national highway system annually as a result of the UP/SP merger. These diversions are expected to save 283.3 million truck-miles per year. This reduction in truck traffic will have the effect of reducing wear and tear on highways, thereby extending the life of the national road system.

TABLE 11

SUMMARY OF PROJECTED TRUCK-TO-RAIL DIVERSIONS

Market	Total Truck-to-Rail Diversions (Units/Year)	Total Truck-Miles Avoided (1000s)
Arizona	2,920	4,807
Bay Area	24,090	42,744
Central Valley	2,190	2,920
Chicago	27,010	50,293
Dallas	16,060	22,653
Houston	11,258	18,785
Kansas City	2,555	4,174
Los Angeles	34,630	52,436
Memphis	7,665	14,945
Minneapolis	6,840	13,136
New Orleans	730	1,798
Portland	17,097	18,624
San Antonio	3,285	4,846
Seattle	17,025	21,058
St. Louis	7,300	10,095
All Markets	**180,655**	**283,314**

Rail-to-truck diversions resulting from rail line abandonments will be minor (less than 1,000 carloads per year) and will not have a significant effect on the national highway system.

Changes in operation of the combined UP/SP rail system will likewise improve rail transportation on a nationwide basis. Shorter, faster, and more efficient

routing of freight on the combined system can be expected to reduce delays and operating inefficiencies on the separate systems, as currently operated. In addition, portions of the UP/SP rail infrastructure will be upgraded as a result of the merger to accommodate increased traffic and to handle existing traffic more efficiently.

7.2 SAFETY

Public health and safety-related impacts of the UP/SP merger have been assessed on a systemwide basis. This analysis discusses safety effects related to:

- Rail-highway grade crossings;
- Increase in delay time at grade crossings;
- Train accidents, derailments, and other incidents;
- Truck accidents;
- Shipments of hazardous commodities; and
- Hazardous waste sites and hazardous material releases.

Potential health and safety impacts considered here are those that may occur as a result of significant changes in the combined operations of the railroads compared to the current operations of the individual entities. Potential safety impacts can be caused by delays at highway crossings, construction of rail-highway grade crossings, transport of hazardous materials and the presence of hazardous waste sites in the vicinity of construction activities.

Overall, on a systemwide basis, the proposed UP/SP merger is expected to have net beneficial safety impacts. A detailed discussion of safety issues, rationale, and assessment methodology is provided in Part 6 of this ER.

7.2.1 Grade Crossings

Rail-highway grade crossing accidents have been studied extensively in the United States. The Highway Safety Acts of 1973 and 1976, and the Surface Transportation Acts of 1979 and 1982, provided funding to investigate and improve safety at public grade crossings. Since the Federal Safety Act of 1970, railroads have been

required to file accident reports with the Federal Railroad Administration (FRA), providing an extensive data base for accident statistics. These data have been combined with the Department of Transportation-Association of American Railroads National Highway Crossing Inventory to provide models for predicting accidents and optimizing resource allocation for mitigation measures.

Several merger-related rail connections would require reconstruction of grade crossings or relocation and/or modification of existing grade crossings, although it is not anticipated that any new roads would be crossed by rail construction. According to FRA publications, the current UP and SP systems have the following public and private crossings:

TABLE 12

UP AND SP GRADE CROSSINGS

Railroad	Public Crossings At Grade	Private Crossings At Grade
Union Pacific	16,292	10,609
Southern Pacific	8,090	4,893
Total	24,382	15,502

There are approximately 40,000 existing crossings in the combined systems; therefore, the modification of a few crossings will not significantly affect human health or the environment and cannot be expected significantly to increase the total systemwide number of accidents or waiting time at grade crossings. In addition, approximately 550 grade crossings would be eliminated on rail segments proposed to be abandoned.

7.2.2 Accidents and Derailments

The 1994 national average accident rate for all types of rail accidents was 4.07 accidents per million train-miles. Of the total accidents, derailments accounted for 1,825 accidents, or 68.4%, while collisions accounted for 240 or 9%, and 604 or 22.6%

were classified as "other." According to railroad data, the accident rates for UP and SP for 1994 were 4.07 and 3.96 accidents per million train-miles, respectively. These rates are consistent with the national average. It should be noted, however, that UP reports accidents and derailments in a manner that is much more conservative than that required by the FRA, which increases UP's reported rate relative to other railroads.

According to UP/SP data, the merger is expected to result in a systemwide increase in train-miles travelled of 6,204,270 per year. All of this traffic will be diverted from other rail carriers or from trucks. Conservatively applying the UP (and national) reported accident rate, this would indicate a predicted increase of 25 accidents systemwide per year. Compared to nationwide annual rail accidents (e.g., 2,669 in 1994), this is a negligible increase. UP/SP have adopted a "best practice" policy relative to operating safety practices; the more stringent current practice of either railroad will be employed by the merged company. Given this, the actual accident rate likely will be lower than estimated.

The greater use of intermodal shipments will result in increased truck activity in the vicinity of some intermodal ramps, and may present a potential for increased accidents. These facilities, however, generally are located in industrial areas with low potential for contact with pedestrian and non-commercial traffic.

Any increase in accidents due to greater overall traffic levels on UP/SP would be more than offset by reductions in accidents on highways and other railroads from which the traffic was diverted. The diversion of long-haul truck traffic should have a very significant beneficial effect on safety, and should result in the merger having a net beneficial effect on safety.

7.2.3 Hazardous Commodities

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

Therefore, the types and quantities of hazardous commodities do not appear to be a factor in evaluating the safety impacts of the merger.

Both UP and SP have developed Hazardous Materials Emergency Response Plans and Hazardous Materials Emergency Action Plans for the transportation of hazardous materials. These plans are developed to provide policies and procedures for responding to and mitigating emergencies involving hazardous materials and guidance and procedures on how each will site respond to hazardous material incidents.

Emergency Action Plans prepared by UP and SP are detailed and include a state by state listing of all agencies to be contacted in the event of an emergency. UP has up to 1300 hazardous material agents throughout the country who will respond immediately to any emergency event occurring as a result of hazardous material releases, collisions, derailments or any other related events. UP is recognized as an industry leader in safe chemical handling.

A total of 420,000 and 305,000 hazardous material 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% of the shipments arrived at their destination without incident.

As previously noted, the consolidation of the companies will result in a "best practice" approach to hazardous material handling and emergency action planning.

7.2.4 Hazardous Waste Sites

Information concerning active and inactive hazardous waste sites on or adjacent to properties owned or controlled by UP and SP is included in Part 6 of this ER. The proposed merger will have no effect on the number or nature of known hazardous waste sites.

7.3 ENERGY

ICC regulations require an examination of the effects of the proposed UP/SP merger on: 1) the transportation of energy resources; 2) the transportation of recyclable commodities; and, 3) potential increases or decreases in overall energy efficiency.

7.3.1 Effects on the Transportation of Energy Resources and Recyclable Commodities

UP and SP currently handle energy producing materials and recyclables. These include coal, fuel oils, liquefied gases, wood products, chemical products, and various petroleum-based products, as well as recyclable aluminum/aluminum alloy scrap, iron or steel scrap or tailings, and paper waste or scrap.

The proposed merger will not adversely affect the transportation of energy producing materials nor the transportation of recyclable commodities. It is expected that the increased efficiencies of operation and reduced cost of post-merger operation will benefit the transportation of these commodities.

7.3.2 Effects on Energy Efficiency

To analyze energy consumption effects of the UP/SP merger, fuel consumption data were obtained from UP/SP for 1994, and an estimated fuel efficiency factor was developed for the merged system. As presented in Table 13 below, the 1994 data were averaged to obtain representative figures for the combined system.

TABLE 13

SYSTEMWIDE ENERGY CONSUMPTION BASELINE

System	Diesel Fuel Consumed (million gal)	Consumption Rate (gal/1000 GTM)	Gross Ton Miles (GTM) per Gallon
UP	629	1.409	710
SP	434	1.757	569
Combined System	1063	1.592	628

The major energy-related effect of the proposed merger is the reduction in diesel fuel consumption for the national transportation system. It is estimated that a net savings in diesel fuel consumption of more than 35 million gallons per year will be realized as a result of the following merger-related factors:

- Changes in the merged system traffic volume;
- More efficient rail yard, terminal and intermodal activities;
- Track upgrades and new construction;
- Reduction in truck fuel consumption avoided as the result of diversion to rail;
- Rail-to-truck diversions resulting from rail line abandonment.

Table 14 presents a summary of fuel consumption changes for each of these factors.

TABLE 14

SUMMARY OF MERGER-RELATED FUEL CONSUMPTION CHANGES

Category	Estimated Fuel Consumption Change (mgal / year)
Changes in merged system traffic volume	+45.0
Decreases in fuel used by other carriers	Not available
Rail yard, terminal and intermodal facility changes	+0.62
Track upgrades and new construction	Negligible
Truck-to-rail diversions (i.e., truck fuel consumption avoided)	-80.9
Rail-to-truck diversions	Negligible
Change in Total Fuel Consumption (before fuel savings realized by other carriers)	**-35.28**

Each of these factors is discussed in more detail below.

7.3.2.1 Changes in Merged System Traffic Volume

According to data provided by UP/SP, the proposed merger will result in an estimated increase of 577,513 rail car-miles per day (approximately 210 million rail car-miles per year). These changes are the result of several merger-related factors, including:

- Efficiencies created by internal reroutes of through trains;
- Expected traffic gains from other railroad carriers and from new truck-to-rail diversions;
- Elimination of inefficient operations and abandonment of inefficient rail lines;
- Expected traffic gains and losses as the result of the BN/Santa Fe merger; and,
- New extended haul opportunities.

Efficiencies gained from internal reroutes are predicted to save 25.6 million gallons of fuel per year, while increased business will require UP/SP to use 70.6 million additional gallons per year. The increased business attributable to traffic increases gained from other railroad carriers will result in a corresponding decrease in diesel fuel consumption for those other railroad systems. This factor is not reflected in Table 14; accordingly, the reduction in total fuel consumption is expected to be greater than 35 million gallons.

7.3.2.2 Rail Yard, Intermodal, and Automotive Facility Changes

Merger-related changes in activity at rail yards, intermodal facilities and automotive facilities are expected to result in a small increase (approximately 0.62 million gallons per year) in annual diesel fuel consumption. Table 15 presents a summary of estimated fuel consumption changes by facility type. These impacts were estimated using operational data and equipment fuel assumptions provided by UP/SP, which are discussed in more detail in Part 3 of this ER.

TABLE 15

SUMMARY OF FUEL CONSUMPTION CHANGES FOR RAIL YARDS, INTERMODAL AND AUTOMOTIVE FACILITIES

Facility	Estimated Fuel Consumption Impacts (mgal/year)
Rail Yards	-0.56
Intermodal Facilities	+1.15
Automotive Facilities	+0.03
Total	**+0.62**

7.3.2.3 Track Upgrades and New Construction

Increased energy consumption from construction activities is anticipated to be minimal and insignificant when compared to overall fuel consumption savings realized from other sources.

7.3.2.4 Truck-to-Rail Diversions

Reebie Associates and Transmode Consultants, Inc. conducted studies of estimated truck-to-rail diversions that are projected to occur as the result of the merger. These studies project that 180,655 truckloads of freight per year will be diverted to rail as a result of the proposed merger. Truck fuel efficiency can vary widely depending on the distance traveled, type of commodity being transported and type of truck (i.e., flatbed, van, container, etc.). This analysis used a 140 ton-mile per gallon truck fuel efficiency factor to represent an average value for trucks involved in medium-distance and long-distance hauls of various commodities (Abacus Technology Corp., 1991). Therefore, rail transportation is approximately 4.5 times more fuel efficient than truck transportation, based on the assumed fuel efficiency factors of 628 ton miles per gallon for rail. Because of this, the net effect of the merger will be an overall decrease in diesel fuel consumption as the result of new truck-to-rail diversions.

Table 16 presents a summary of estimated truck fuel consumption savings from truck-to-rail diversions for the combined UP/SP system. This analysis was based on truck-to-rail diversion estimates and origin to destination mileage estimates obtained from the Reebie Associates and Transmode Consultants, Inc. studies, plus assumptions regarding average truck weight (40 tons) and truck fuel efficiency. The table shows total expected truck-to-rail diversions originating in each major market of the combined UP/SP system. It is estimated that truck-to-rail diversions will result in an approximate reduction of 80.9 million gallons per year in diesel fuel consumed by trucks.

TABLE 16

SUMMARY OF TRUCK FUEL CONSUMPTION SAVINGS RESULTING FROM TRUCK-TO-RAIL DIVERSIONS

Market	Total Truck-to-Rail Diversions (Units/Year)	Truck Gross Ton Miles (1000s)	Truck Fuel Consumption Savings (1000 gal)
Arizona	2,920	192,267	1,373
Bay Area	24,090	1,709,765	12,212
Central Valley	2,190	116,815	834
Chicago	27,010	2,011,734	14,370
Dallas	16,060	906,134	6,472
Houston	11,258	751,403	5,367
Kansas City	2,555	166,966	1,193
Los Angeles	34,630	2,097,459	14,982
Memphis	7,665	597,782	4,270
Minneapolis	6,840	525,450	3,753
New Orleans	730	71,934	514
Portland	17,097	744,974	5,321
San Antonio	3,285	193,844	1,385

Market	Total Truck-to-Rail Diversions (Units/Year)	Truck Gross Ton Miles (1000s)	Truck Fuel Consumption Savings (1000 gal)
Seattle	17,025	842,306	6,016
St. Louis	7,300	403,807	2,884
All Markets	**180,655**	**11,332,640**	**80,946**

7.3.2.5 Rail-to-Truck Diversions

Minimal rail-to-truck diversions are expected to occur as the result of rail line abandonments. Total diversions from the 17 proposed abandonments are estimated as 978 rail cars per year over 598 miles of rail line. This number of rail-to-truck diversions does not meet the ICC threshold for energy consumption analysis. Fuel consumption impacts from these diversions are insignificant in comparison to the savings realized from truck-to-rail diversions and internal reroutes. A discussion of the rail-to-truck diversions resulting from rail line abandonment projects is presented in Part 4 of this ER.

7.4 AIR QUALITY

Systemwide changes in air pollutant emissions were calculated based on predicted changes in fuel consumption resulting from the UP/SP merger. As shown in Table 17, even without considering reductions in emissions occurring on other railroads as a result of rail-to-rail diversions, the data show that overall emissions of HC, CO, and PM will be reduced. It is quite possible that the merger will also cause a net reduction in NO_x and SO_2 emissions because the merged system will divert traffic from other railroads, resulting in reductions in fuel consumption and related emissions on the part of other railroads.

TABLE 17

SUMMARY OF SYSTEMWIDE MERGER-RELATED EMISSIONS

Category	Estimated Fuel Consumption Change (mgal/year)	Emissions				
		HC	CO	NO_x	SO_2	PM
Changes in merged system rail traffic volume	+45.0	495	1539	11,520	835	250
Decreases in fuel used by other carriers	Not Available					
Rail yard, terminal and intermodal facility changes	+0.62	14	67	79	2	14
Track upgrades and new construction	Negligible	-	-	-	-	-
Truck-to-rail diversions (i.e., truck fuel consumption avoided)	-80.9	-1861	-8697	-10,274	-283	-1820
Rail-to-truck diversions	Negligible	-	-	-	-	-
Change in Total Fuel Consumption (before fuel savings realized by other carriers)	-35.28	-1352	-7041	1325	554	-1550

8.0 AGENCY CONSULTATIONS

In the course of preparing this report, Dames & Moore consulted with numerous federal, state, and local governmental agencies, including state clearinghouses, state environmental protection agencies, state coastal zone management agencies, heads of each county, Regions of the U.S. EPA, the U.S. Fish & Wildlife Service, the U.S. Army Corps of Engineers, U.S. Soil Conservation Service, the National Park Service, and state historic preservation officers.

In each instance, the agency was provided with details of the proposed action involving its jurisdiction and was requested to provide information on any environmental or local concerns, including protected species, critical habitats, locations of parks and refuges and permitting/approval authority.

A summary of the comments received appears in each of the pertinent Parts of this Report. Letters received by November 8, 1995, in response to inquiries are included in Part 6. Consultation is ongoing and will continue to be pursued as appropriate.

LIST OF ACRONYMS AND ABBREVIATIONS

10 log	Log base 10
A	Attainment
ADT	Average daily traffic
AHPP	Arkansas Historic Preservation Program
AQCR(s)	Air Quality Control Region(s)
BMPs	Best Management Practices
BN	Burlington Northern Railroad Company
BN/Santa Fe	The new railroad system created by the merger of the holding companies of BN and Santa Fe.
CBC	Cannot be classified
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CI	Construction at Intermodal Facility
CO	Carbon Monoxide
COE	United States Army Corps of Engineers
COFC	Container on flatcar
CPC	Common Point Connection
CT	Construction at Rail Yard
CTC	Centralized Traffic Control
CU	Corridor Upgrade

db	Decibel
dBA	Decibels (of sound) A range
DNL	Day-night equivalent level
DOT	United States Department of Transportation
DRGW	The Denver and Rio Grande Western Railroad Company
DTSC	Department of Toxic Substances Control
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
HC	Hydrocarbons (in air)
HMMH	Harris Miller Miller & Hanson, Inc.
ICC	Interstate Commerce Commission
IHPA	Illinois Historic Preservation Agency
KSHS	Kansas State Historical Society
L_{dn}	Day-night equivalent sound level
L_{max}	Maximum sound level during train passby, dBA
LUST	State Inventory of Leaking Underground Storage Tanks
NA	Non-attainment
NAAQS	National Ambient Air Quality Standards

NAP	Portion of AQCR designated as non-attainment
NHPA	National Historic Preservation Act of 1966
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NS	Not Significant
NWI	National Wetlands Inventory
O_3	Ozone
OBS	Office of Biological Services/United States Fish and Wildlife Service
OSHA	Occupational Safety and Health Administration
PM_{10}	Particulate Matter (under 10 microns in diameter)
POTO	Power Operated Turnout
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
ROW	Right of Way
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 Office

SO_2	Sulfur dioxide
SP	Southern Pacific Railroad Company, includes SPT, SSW, SPCSL and DRGW
SPL	State Priority List
STATSGO	State Soil Geographic Database
SWLF	State Inventory of Solid Waste Facilities
TOFC	Trailer on flat car
TSD	Treatment, Storage, or Disposal sites
TSP	Total Suspended Particulates
U	Unclassifiable
UP	UPRR, MPRR, and CNW
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VISTA	VISTA Environmental Information, Inc.

GLOSSARY

borrow material — Earthen material used to fill depressions to create a level right-of-way.

construction footprint — The area at a construction site subject to both permanent and temporary disturbances by equipment and personnel.

criteria pollutant — Any of six substances (i.e. 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.

dBA — Adjusted decibel level. A sound measurement that adjusts noise by filtering out certain frequencies to make it analogous to that perceived by the human ear.

decibel — 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 decibels represents the level at which pain occurs.

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.

flat yard — A system of relatively level tracks within defined limits 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 1 percent (also known as a 100-year or Zone A floodplain) or greater chance of flood in any given year.
frog	A device used where two running rails intersect that 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).
haulage right	The limited right of one railroad to operate trains over the designated lines of another railroad.
hump yard	A system of tracks within defined limits provided for making up trains, storing cars, and other purposes which utilizes an artificial hill or "hump" to use gravity to sort cars into classification tracks.
interlocker	An arrangement of switch, lock, and signal appliances interconnected so that their movements succeed each other in a predetermined order.
intermodal facility	A site or hub consisting of tracks, lifting equipment, paved areas, and a control point for the transfer (receiving, loading, unloading, and dispatching) of intermodal trailers and containers between rail and highway or rail and marine modes of transport.
intermodal train	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 time-sensitive schedule. Also referred to as piggyback, TOFC (Trailer on Flat Car), COFC (Container on Flat Car), and double stacks (for containers only).
L_d	Level of noise (measured in decibels) averaged over the daytime period (0700-2200).

L_{dn}	Nighttime noise level (L_n) adjusted to account for the perception that a noise level at night is more bothersome than the same noise level would be during the day.
lift	A lift is defined as an intermodal trailer on container lifted onto or off a rail car. For calculations, lifts were used to determine the number of trucks using intermodal facilities.
locomotive, road	One or more locomotives (or engines) designed to move trains between yards or other designated points.
locomotive, switching	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.
National Wetlands Inventory	An inventory of wetland types in the United States compiled by the United States Fish and Wildlife Service.
nonattainment	An area that does not meet NAAQS specified under the Clean Air Act.
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.
right-of-way	The right held by one person over another person's land 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.
set out	To remove one or more cars from a train at an intermediate (non yard) location such as a siding, interchange track, spur track, or other track designated for the storage of cars.
take	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 normal 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.
threatened	A species that is likely to become an endangered species within the foreseeable future throughout all or part of its range, and is protected by state and/or federal law.
trackage right	The right or combination of rights of one railroad to operate over the designated trackage of another railroad including, in some cases, the right to operate trains over the designated trackage; the right to interchange with all carriers at all junctions; the right to build connections or additional tracks in order to access other shippers or carriers.
turnout	A track arrangement consisting of a switch and frog with connecting and operating parts, extending from the point of the switch to the frog, which enables engines and cars to pass from one track to another.
unit train	A train consisting of cars carrying a single commodity, e.g., a coal train.
water resources	All-inclusive term that refers to many types of permanent and seasonally wet/dry surface water features including springs, creeks, streams, rivers, pond, lakes, wetlands, canals, harbors, bays, sloughs, mudflats, and sewage-treatment and industrial waste ponds.
wetland	As defined by 40 CFR 230.3, wetlands are "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.
wye	A principal track and two connecting tracks arranged like the letter "Y," on which locomotives, cars, and trains may be turned.

CERTIFICATE OF SERVICE

I certify that I have served a copy of Exhibit 4, Environmental Report, in Finance Docket No. 32760, by first class mail, properly addressed with postage prepaid, or more expeditious form of delivery, upon all persons required to be served and set forth in 49 C.F.R. § 1105.7(b), namely:

(i) the State clearinghouse or other equivalent State agency for each State involved;

(ii) the State Environmental Protection Agency of each State involved;

(iii) the State Coastal Zone Management Agency for any state where the proposed merger would affect land or water uses within that state's coastal zone;

(iv) the appropriate regional offices of the Environmental Protection Agency;

(v) the U.S. Fish and Wildlife Service;

(vi) the U.S. Army Corps of Engineers;

(vii) the National Park Service; and

(viii) the U.S. Soil Conservation Service,

and that I have also served upon the head of each county (or comparable entity) in which any activity which triggers the thresholds in 1105.7(e)(4)(iv) and all agencies that have been consulted in preparing the Report, a conformed copy of Part 1 of the Report and an offer to mail any or all of the remaining parts upon request.

Dated at Omaha, Nebraska, this 30th day of November, 1995.

Louise A. Rinn

Louise A. Rinn
One of the Attorneys for Applicants

RAIL LINE SEGMENTS

PART 2 OF 6

Prepared by:
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PART 2

RAIL LINE SEGMENTS

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1.0 INTRODUCTION

This Part 2 of the Environmental Report (ER) prepared for the proposed UP/SP railroad merger focuses on rail line segments that are expected to experience increases in traffic as a result of operating the merged system which meet or exceed thresholds in the ICC regulations at 49 CFR 1105.7. This Part analyzes the potential environmental impacts of all traffic increases on affected line segments.

Part 1 of this ER provides an overview of the proposed merger and summarizes the potential impacts on environmental resources. Parts 3, 4, and 5 analyze potential environmental impacts of merger-related activities at rail yards and intermodal and automotive facilities, abandonments, and construction projects, respectively. Part 6 contains consultation letters and methodologies used in the analyses in the ER.

Based on operational data developed by UP and SP, there are 70 rail line segments (out of 389 segments system wide) that are projected to experience traffic increases that exceed the ICC thresholds. These line segments are located in 19 states, and are listed in Table 1-1 and shown on Figures 1-1 through 1-8.

The following Section 1.1 identifies the ICC evaluation criteria for air quality and noise, and discusses the types of impacts that can occur as a result of the increased rail traffic on a line segment.

Section 2.0 describes the air quality and noise effects of increased operations on the affected rail line segments. (Cumulative effects of the merger are described in Part 1 of this ER.) Section 3.0 discusses environmental mitigation. Section 4.0 summarizes comments from public agencies.

1.1 TYPES OF POTENTIAL ENVIRONMENTAL IMPACTS

This section summarizes the types of potential environmental impacts associated with changes in traffic activity on rail line segments. These impacts pertain to air quality, noise, and safety. Discussion of methodologies used in the air quality and noise assessments is incorporated in Part 6. Increases in rail traffic are not expected to cause physical disturbances to land use, water, historical, archeological or biological resources and, accordingly, these are not assessed.

1.1.1 Air Quality Impacts

Air quality impacts are defined as the increase or decrease in emissions from a source to the ambient air. The source evaluated for rail segment traffic changes is diesel locomotive engine emissions. Diesel locomotives are a mobile rather than stationary source. The U.S. Environmental Protection Agency (USEPA) has developed National Ambient Air Quality Standards (NAAQS) for the following six criteria pollutants to protect human health and welfare:

- Sulfur Dioxide (SO_2)
- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO_2)
- Lead (Pb)
- Ozone (O_3)
- Particulate Matter (TSP and PM_{10})

The tables contained in this Part show air emissions in hydrocarbons (HC), carbon monoxide (CO), nitrogen oxides (NO_x), Sulfur Dioxide (SO_2), and Particulate Matter (PM). Ozone (O_3) is formed during complex photochemical reactions between nitrogen oxides (NO_x) and volatile hydrocarbons (HC) in the presence of sunlight. Lead (Pb) is present in trace quantities in fuel oils. However, for purposes of this study, the magnitude

of lead emissions associated with diesel fuel combustion is not anticipated to be significant; therefore, it is not shown in the tables.

Contiguous areas of the country having similar topography and air quality management needs are grouped into Air Quality Control Regions (AQCRs). The ambient air quality concentrations in a given AQCR may exceed these NAAQS making the AQCR a nonattainment area. If pollutant concentrations are less than the standards, the AQCR is referred to as an attainment area. Table B-1 in Part 6 presents the attainment status of the AQCRs in all states affected by the proposed UP/SP merger. Air quality impacts associated with the proposed merger were evaluated for each affected AQCR. In some cases, a rail line segment crosses more than one AQCR. For purposes of this analysis a conservative approach was taken; if a portion of an AQCR is designated as nonattainment for one or more pollutants, the entire AQCR is assumed to be nonattainment.

Some areas of the country, such as National Parks and National Wildlife Areas, are further designated as Prevention of Significant Deterioration (PSD) Class I air quality areas. There are no rail line segments in PSD Class I areas which will experience increases exceeding ICC thresholds.

The threshold values which determine whether the impact to ambient air quality adjacent to a rail segment must be assessed are specified in 49 CFR 1105.7(e)(5) and summarized below.

ICC AIR QUALITY THRESHOLDS FOR IMPACT ANALYSIS

ACTIVITY	THRESHOLD
Attainment Areas [49 CFR 1105.7(e)(5)(I)]	
Rail line segment	Increase of 8 trains/day or 100% as measured in gross ton miles annually
Nonattainment Areas or PSD Class I Areas [49 CFR 1105.7(e)(5))ii)]	
Rail line segment	Increase of 3 trains/day or 50% as measured in gross ton miles annually

UP/SP operating data indicates that as a result of the merger, 70 rail segments are expected to experience increases in excess of the ICC thresholds.

1.1.2 Noise

The ICC regulations require the performance of noise studies for all rail line segments on which traffic will increase by at least 100% as measured by gross ton miles annually or at least eight trains per day. Noise sensitive land uses where the weighted 24-hour sound exposure level L_{dn} will increase by 3 decibels (dBA) or will meet or exceed 65 dBA are required to be identified. Methods used to evaluate noise impacts along rail line segments are discussed in Part 6. For this study, any increase in L_{dn} less than 2 decibels was considered insignificant, and only segments where the projected change in traffic would cause at least a 2 decibel increase in L_{dn} were evaluated.

Details of the approach used to identify noise impacts on the above-threshold segments and the models used to project noise exposure are included in Part 6. Following is a summary of the steps taken:

1. Noise sensitive land uses near line segments were identified. When possible, the towns that the rail segments pass through were visited to inventory the noise sensitive land uses. For towns that were not visited, land use along the line was analyzed on the basis of USGS 7.5 minute quad maps. In some locations it is unclear from the USGS maps whether land use

is residential or commercial/industrial. In most cases, residential land use was assumed, to ensure that potential noise impacts are not overlooked.

2. L_{dn} 65 contours were drawn on the USGS maps for each community. For the noise projections, the average train was assumed to be pulled by 3.5 locomotives, 5000 feet long, and traveling at 50 mph. It was assumed that train horns are sounded starting ¼-mile before all grade crossings and continuing until the locomotive is through the grade crossing. Where, based on either a site visit or information on USGS maps, buildings along the tracks act as acoustical shielding for buildings farther from the tracks, an assumption, based on available data was made. It was assumed that the acoustical shielding reduces levels of train noise by 5 dBA. This is an important assumption since acoustical shielding by buildings can greatly reduce the extent of noise impacts.

3. Approximate counts were made of the number of residences, schools, nursing homes and libraries and churches within the L_{dn} 65 contour for both the pre-merger and post-merger train volumes.

Table 1-2 summarizes the line segments that exceed the ICC threshold for a noise study. Also shown in Table 1-2 are the total number of trains using the line segment for the pre- and post-merger cases, the estimated sound exposure increase caused by the increase in train traffic, and whether the increase is greater than 2 dBA requiring tabulation of the noise impacts. For eleven of the segments in Table 1-2 the projected increase in volume is sufficient to cause a 3 dBA or greater increase in noise exposure. With the information available, it was not feasible to estimate the number of noise sensitive land uses where L_{dn} will increase by 3 dBA in addition to counting the number where L_{dn} will exceed 65 dBA.

1.1.3 Safety

Public safety considerations related to rail line traffic increases include accidents at highway grade crossings, spills and releases of hazardous materials.

The proposed merger will result in a rerouting of train traffic within the consolidated system, generating increased train traffic densities on some line segments, and decreases on other segments. On a particular rail line, the number of accidents/incidents related to train/vehicle collisions is statistically likely to vary in relation to rail and vehicle traffic volumes as well as with the number of grade crossings. As discussed in Part 1, however, the number of grade crossings on the combined system is not projected to increase; in fact, there will be 550 fewer crossings as a result of the proposed abandonments.

TABLE 1-1

SUMMARY OF RAIL LINE SEGMENTS MEETING ICC EVALUATION THRESHOLDS

RAIL SEGMENT		LENGTH (MILES)	TRAINS PER DAY			PERCENT CHANGE IN GROSS TON-MILES PER YEAR
ORIGIN	DESTINATION TO		PRE MERGER	POST MERGER	CHANGE	
Brinkley AR	Pine Bluff AR	71.0	22.6	31.3	8.7	91.3
Fair Oaks AR	Brinkley AR	26.0	11.4	21.7	10.3	97.5
Paragould AR	Fair Oaks AR	69.0	11.4	19.7	8.3	68.9
Cochise AZ	Tucson AZ	78.0	29.6	44.7	15.1	27.3
Picacho AZ	Yuma AZ	203.0	25.8	39.2	13.4	23.0
Tucson AZ	Picacho AZ	50.0	25.7	41.4	15.7	38.6
Yuma AZ	West Colton CA	195.0	27.7	38.8	11.1	24.1
West Colton CA	Palmdale CA	80.0	9.2	13.1	3.9	49.1
Dunsmuir CA	Klamath Falls OR	106.0	16.5	21.7	5.2	9.6
Los Angeles CA	Slauson Jct. CA	6.00	19.4	25.6	6.2	-5.1
Martinez CA	Oakland CA	32.0	25.0	29.8	4.8	39.1
Marysville CA	Dunsmuir CA	174.0	16.7	21.9	5.2	10.4
Niles Jct. CA	Oakland CA	25.0	24.4	29.5	5.1	5.8
Roseville CA	Sacramento CA	18.0	29.1	33.8	4.6	43.2
Roseville CA	Marysville CA	34.0	16.7	20.2	3.5	7.3

TABLE 1-1 (Continued)

SUMMARY OF RAIL LINE SEGMENTS MEETING ICC EVALUATION THRESHOLDS

RAIL SEGMENT		LENGTH (MILES)	TRAINS PER DAY			PERCENT CHANGE IN GROSS TON-MILES PER YEAR
ORIGIN	DESTINATION TO		PRE MERGER	POST MERGER	CHANGE	
Slauson Jct. CA	Long Beach CA	14.0	22.0	25.6	3.6	-19.0
Stockton/ Lathrop CA	Martinez CA	48.0	0.0	4.0	4.0	>100
Stockton/ Lathrop CA	Sacramento CA	46.0	13.3	17.6	4.2	47.3
Bond CO	Dotsero CO	38.0	6.0	12.1	6.1	202.2
Denver CO	Cheyenne WY	105.0	9.6	14.5	4.8	78.5
Denver CO	Bond CO	127.0	11.0	17.7	6.7	87.8
California Jct. iA	Fremont NE	31.0	22.6	31.1	8.5	33.7
Clinton IA	Beverly IA	81.0	42.8	47.9	5.1	8.0
Missouri Valley IA	California Jct. IA	6.0	28.9	37.4	8.5	28.0
Buda IL	Galesburg IL	43.0	17.05	23.5	6.4	17.1
Chicago IL	Villa Grove IL	127.0	16.2	19.2	3.0	24.0
Chicago-Proviso IL	West Chicago IL	15.0	92.7	106.8	14.1	22.4
Geneva IL	Nelson IL	69.0	43.8	57.9	14.1	23.0
Nelson IL	Clinton IA	34.00	43.8	47.8	4.0	7.5
Nelson IL	Buda IL	34.00	6.1	16.2	10.1	97.2
West Chicago IL	Geneva IL	6.0	78.6	92.7	14.1	22.7
Herington KS	Lost Springs KS	6.5	0.1	10.4	10.2	17005.4
Hutchinson KS	Strattford TX	274.0	11.3	20.1	8.8	24.3
Lost Springs KS	Wichita KS	64.3	1.9	11.8	9.9	362.4
Marysville KS	Valley NE	134.0	0.9	2.9	2.0	133.6
Oakley KS	Denver CO	262.0	1.8	8.7	6.8	443.6
Salina KS	Oakley KS	191.0	2.2	8.2	6.0	388.0
Wichita KS	Chickasha OK	192.0	4.4	11.8	7.4	129.3
Iowa Jct. LA	Beaumont TX	75.0	15.5	26.8	11.3	73.9
Livonia LA	Kinder LA	76.4	6.8	8.4	1.5	59.0
Shreveport LA	Lufkin TX	116.0	8.3	11.5	3.2	2.6
Dexter Jct. MO	Paragould AR	69.0	16.0	22.3	6.3	43.0
Lordsburg NM	Cochise AZ	85.0	30.3	44.9	14.6	24.2
Sparks NV	Roseville CA	139.0	13.6	22.6	9.0	67.7

TABLE 1-1 (Continued)

SUMMARY OF RAIL LINE SEGMENTS MEETING ICC EVALUATION THRESHOLDS

RAIL SEGMENT		LENGTH (MILES)	TRAINS PER DAY			PERCENT CHANGE IN GROSS TON-MILES PER YEAR
ORIGIN	DESTINATION TO		PRE MERGER	POST MERGER	CHANGE	
Winnemucca NV	Sparks NV	175.0	13.6	23.7	10.1	64.2
Chickasha OK	Fort Worth TX	177.7	7.6	14.2	6.5	113.2
Chemult OR	Eugene OR	124.0	17.4	22.6	5.2	11.2
Eugene OR	Portland OR	124.0	12.3	17.5	5.2	47.4
Klamath Falls OR	Chemult OR	74.0	17.4	23.5	6.1	11.9
Oregon Track Jct. OR	Portland OR	84.8	24.9	27.9	3.0	7.3
Portland OR	Seattle WA	186.0	16.9	20.5	3.5	13.8
Angleton TX	Bloomington TX	101.0	6.8	10.8	3.9	49.1
Big Sandy TX	Dallas TX	98.0	27.7	34.9	7.2	50.2
Big Spring TX	Toyah TX	152.0	2.3	12.1	9.8	345.7
Dalhart TX	El Paso TX	425.	12.0	19.6	7.6	20.7
Dallas TX	Fort Worth TX	31.5	23.5	33.7	10.1	45.3
El Paso TX	Lordsburg NM	148.0	29.3	44.7	15.4	29.4
Fort Worth TX	Big Spring TX	267.5	2.5	11.5	9.0	260.9
Odem TX	Corpus Christi TX	17.2	4.0	5.5	1.5	155.7
Sierra Blanca TX	El Paso TX	88.0	20.6	26.4	5.8	21.4
Strattford TX	Dalhart TX	31.0	13.3	21.9	8.6	34.4
Texarkana TX	Big Sandy TX	108.0	11.7	18.3	6.6	119.2
Toyah TX	Sierra Blanca TX	109.7	2.1	11.9	9.8	430.6
Ogden UT	Alazon NV	178.0	12.7	23.0	10.3	77.2
Provo UT	Lynndyl UT	87.0	8.7	11.7	3.0	39.1
Oak Creek WI	St. Francis WI	7.0	4.0	3.2	-0.8	153.3
Cheyenne WY	Rawlins WY	172.0	59.2	66.2	7.0	11.2
Granger WY	Ogden WY	145.2	34.4	38.2	3.8	12.7
Green River WY	Granger WY	29.9	57.9	64.7	6.7	11.0
Rawlins WY	Green River WY	134.2	57.5	64.2	6.7	11.4

TABLE 1-2
RAIL SEGMENTS EXCEEDING ICC TRAFFIC THRESHOLDS FOR NOISE ASSESSMENT

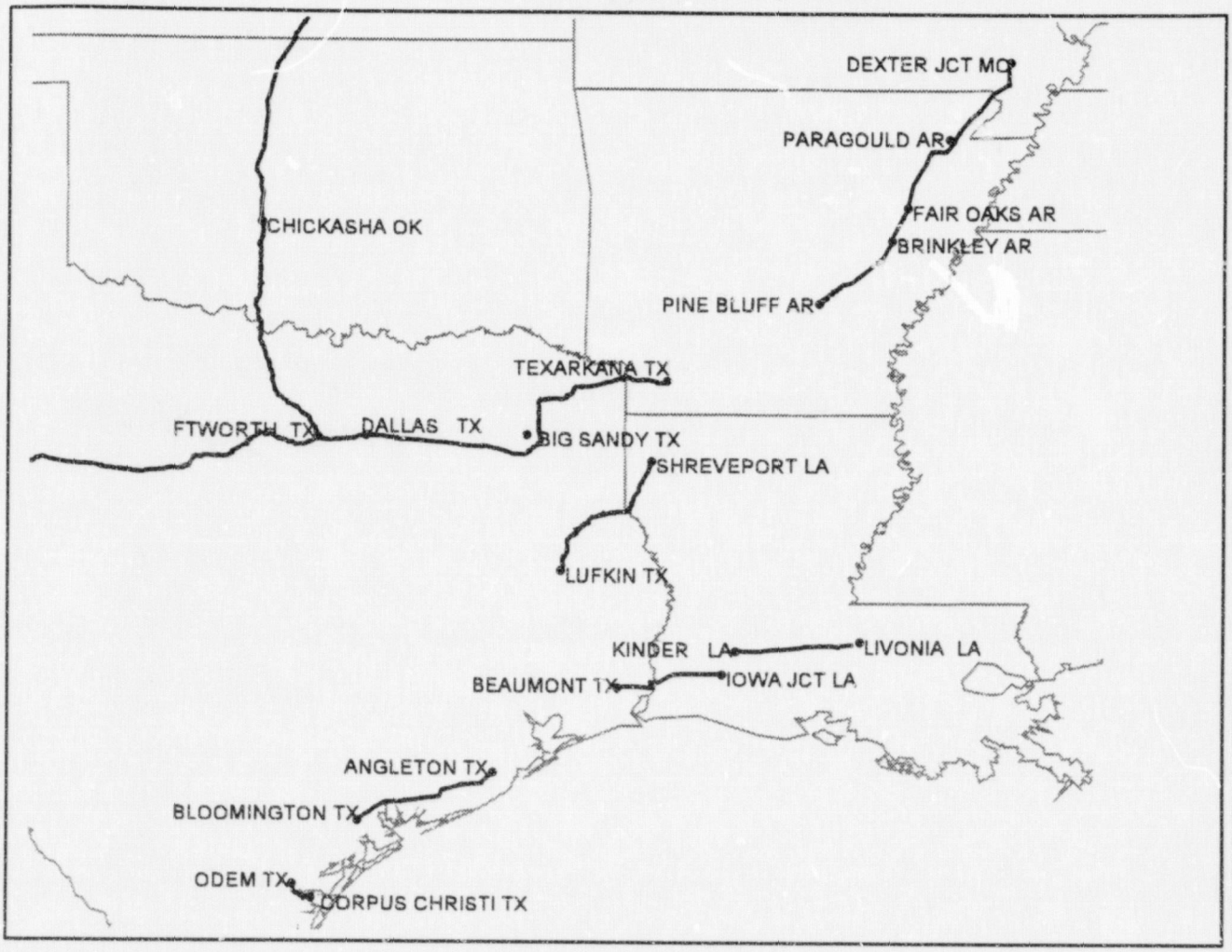
Rail Segment		Road	Miles	Trains/Day			dB*	Noise Impact
Origin	Destination			Pre	Post	Incr	Increase	Assessment
Brinkley AR	Pine Bluff AR	SP	71.0	22.6	31.3	8.7	1.4	NO
Fair Oaks AR	Brinkley AR	SP	26.0	11.4	21.7	10.3	2.8	YES
Paragould AR	Fair Oaks AR	SP	69.0	11.4	19.7	8.3	2.4	NO
Cochise AZ	Tucson AZ	SP	78.0	29.6	44.7	15.1	1.8	NO
Picacho AZ	Yuma AZ	SP	203.0	25.8	39.2	13.4	1.8	NO
Tucson AZ	Picacho AZ	SP	50.0	25.7	41.4	15.7	2.1	YES
Yuma AZ	West Colton CA	SP	195.0	27.7	38.8	11.1	1.5	NO
Stockton/Lathrop CA	Martinez CA	SP	48.0	0.00	4.0	4.0	--	YES
Bond CO	Dotsero CO	SP	38.0	6.0	12.1	6.1	3	NO
California Jct. IA	Fremont NE	UP	31.0	22.6	31.1	8.5	1.4	NO
Missouri Valley IA	California Jct. IA	UP	6.0	28.9	37.4	8.5	1.1	NO
Chicago-Proviso IL	West Chicago IL	UP	15.0	92.7	106.8	14.1	0.6	NO
Geneva IL	Nelson IL	UP	69.0	43.8	57.9	14.1	1.2	NO
Nelson IL	Buda IL	UP	34.0	6.1	16.2	10.1	4.3	YES
West Chicago IL	Geneva IL	UP	6.0	78.6	92.7	14.1	0.7	NO
Herington KS	Lost Springs KS	UP	6.5	0.1	10.4	10.3	18.7	YES
Hutchinson KS	Stratford TX	SP	274.0	11.3	20.1	8.8	2.5	YES
Lost Springs KS	Wichita KS	UP	64.3	1.9	11.9	10.0	8	YES
Marysville KS	Valley NE	UP	134.0	0.9	2.9	2.0	5	YES
Oakley KS	Denver CO	UP	262.0	1.8	8.7	6.9	6.8	YES
Salina KS	Oakley KS	UP	191.0	2.2	8.2	6.0	5.7	YES
Wichita KS	Chickasha OK	UP	192.0	4.4	11.8	7.4	4.3	YES
Iowa Jct. LA	Beaumont TX	SP	75.0	15.5	26.8	11.3	2.4	YES
Lordsburg NM	Cochise AZ	SP	85.0	30.3	44.9	14.6	1.7	NO
Sparks NV	Roseville CA	SP	139.0	13.6	22.6	9.0	2.2	YES
Winnemucca NV	Sparks NV	SP	175.0	13.6	23.7	10.1	2.4	YES
Chickasha OK	Fort Worth TX	UP	177.7	7.6	14.2	6.6	2.7	YES
Big Spring TX	Toyah TX	UP	152.0	2.3	12.1	9.9	7.3	YES
Dallas TX	Fort Worth TX	UP	31.5	23.5	33.7	10.2	1.6	NO
El Paso TX	Lordsburg NM	SP	148.0	29.3	44.7	15.4	1.8	NO
Fort Worth TX	Big Spring TX	UP	267.5	2.5	11.5	9.0	6.7	YES
Odem TX	Corpus Christi TX	UP	17.2	4.0	5.5	1.5	1.4	NO
Stratford TX	Dalhart TX	SP	31.0	13.3	21.9	8.6	2.2	YES
Texarkana TX	Big Sandy TX	SP	108.0	11.7	18.3	6.6	1.9	NO
Toyah TX	Sierra Blanca TX	UP	109.7	2.1	11.9	9.9	7.6	YES
Ogden UT	Alazon NV	SP	178.0	12.7	23.0	10.3	2.6	YES
Oak Creek WI	St. Francis WI	UP	7.0	4.0	3.2	-0.9	-1	NO

Note:

* dB = sound exposure increase in decibels. Only segments with minimum of 2 dBA sound exposure increase were evaluated for noise impacts.

** Bond - Dotsero has no sensitive receptors.

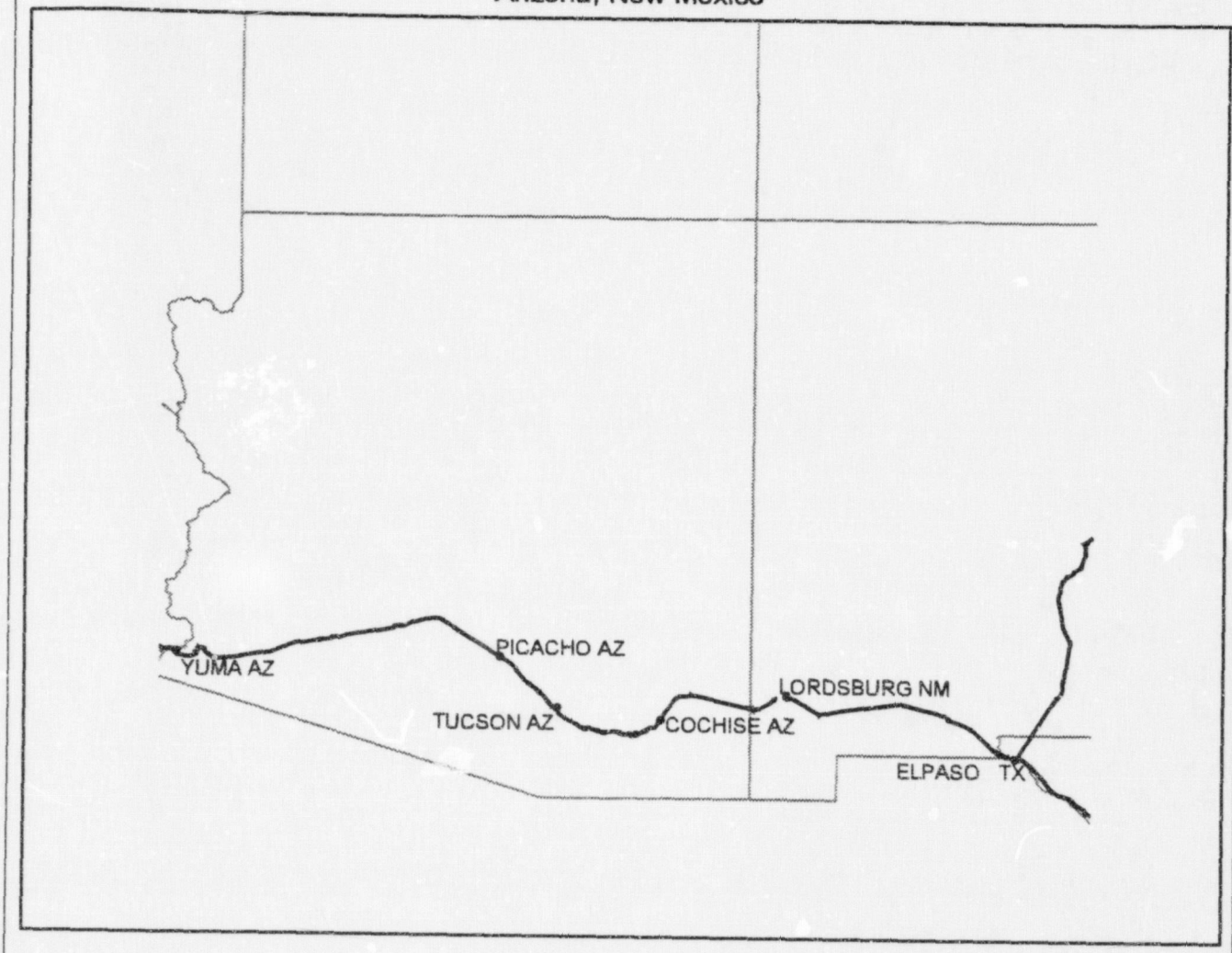
Figure 1-1
Rail Line Segments
Arkansas, Louisiana, Oklahoma, Texas



LEGEND

- Nodes
- Rail Lines
- State Border

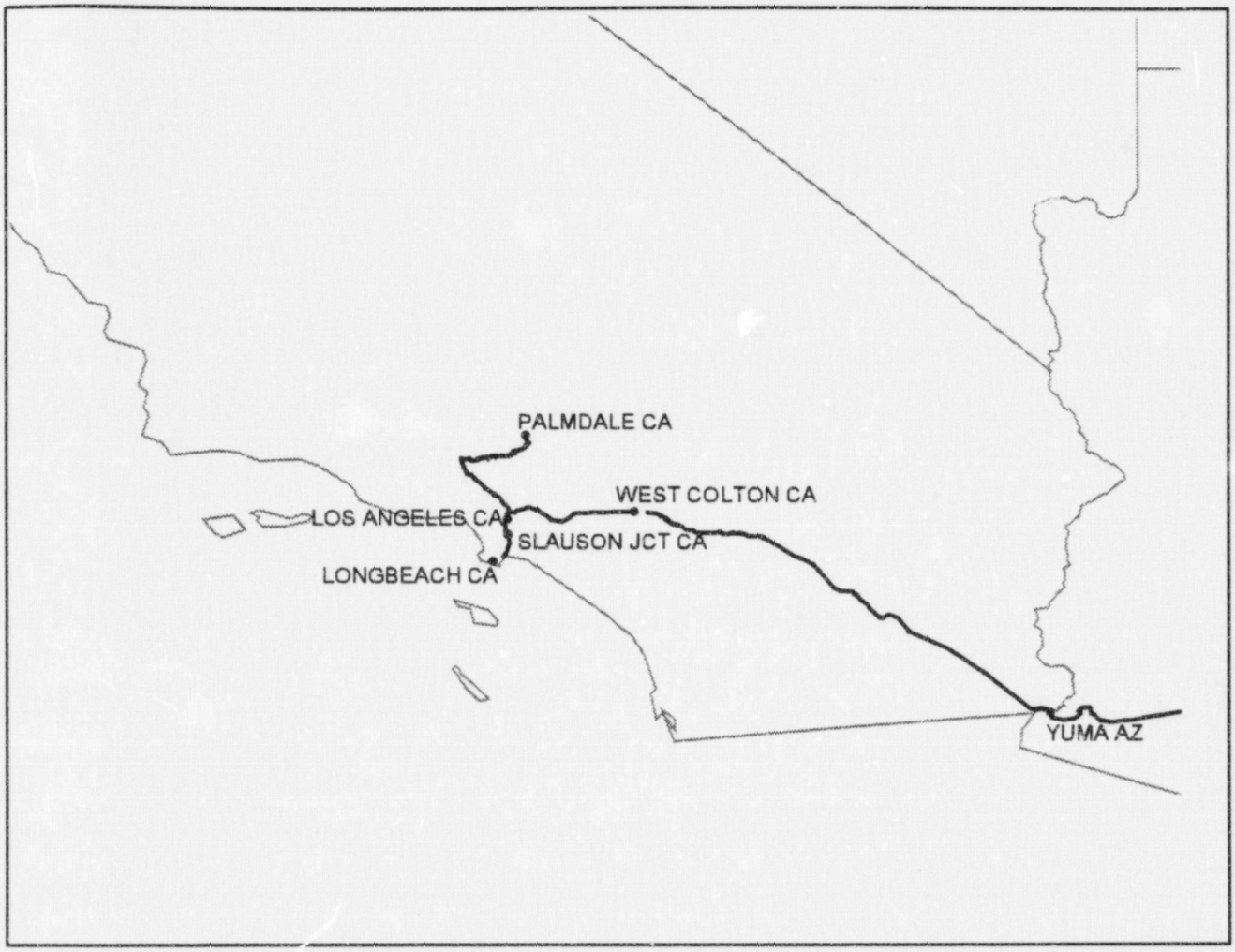
Figure 1-2
Rail Line Segments
Arizona, New Mexico



LEGEND

- Nodes
- Rail Lines
- State Border

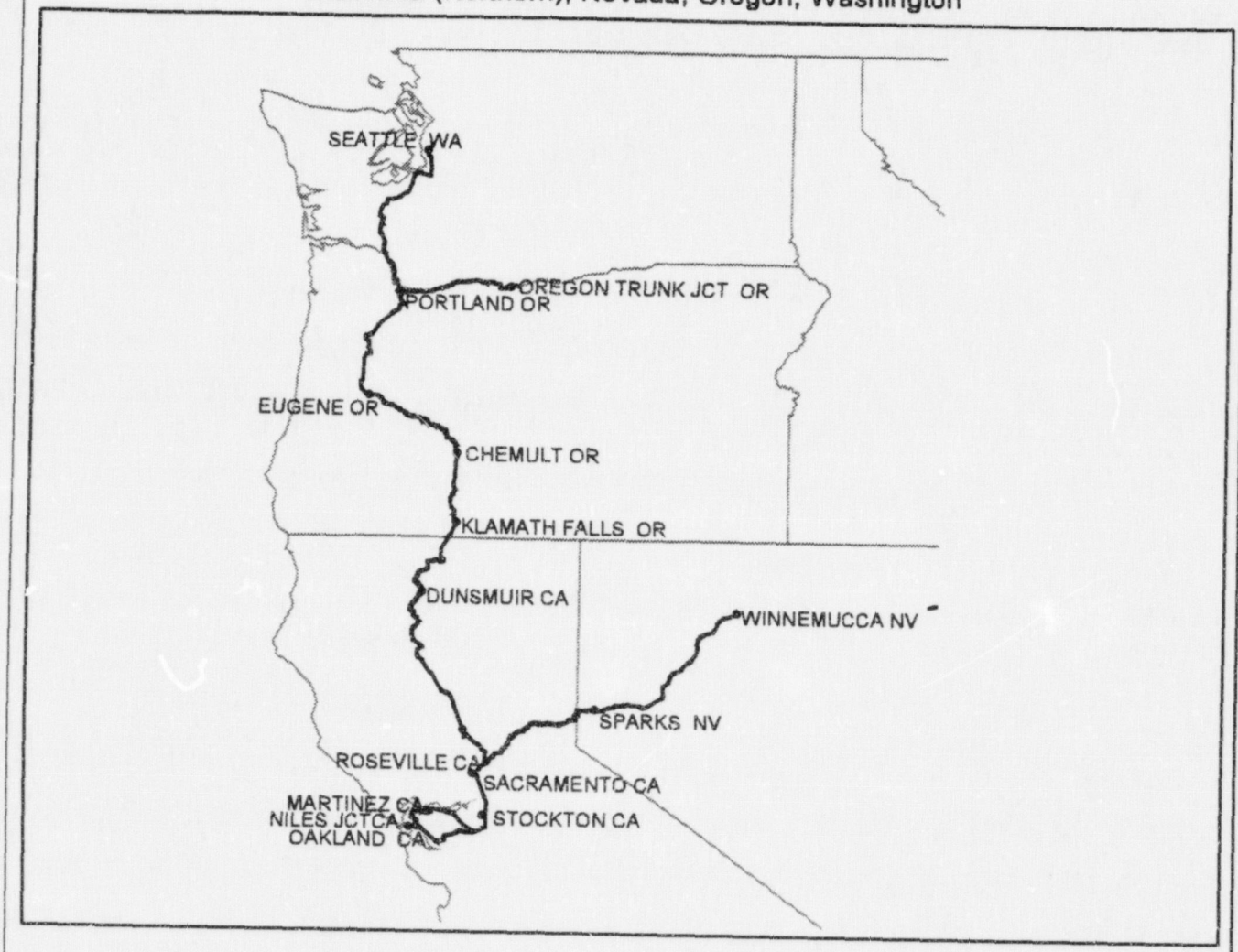
Figure 1-3
Rail Line Segments
California (Southern)



LEGEND

- Nodes
- Rail Lines
- State Border

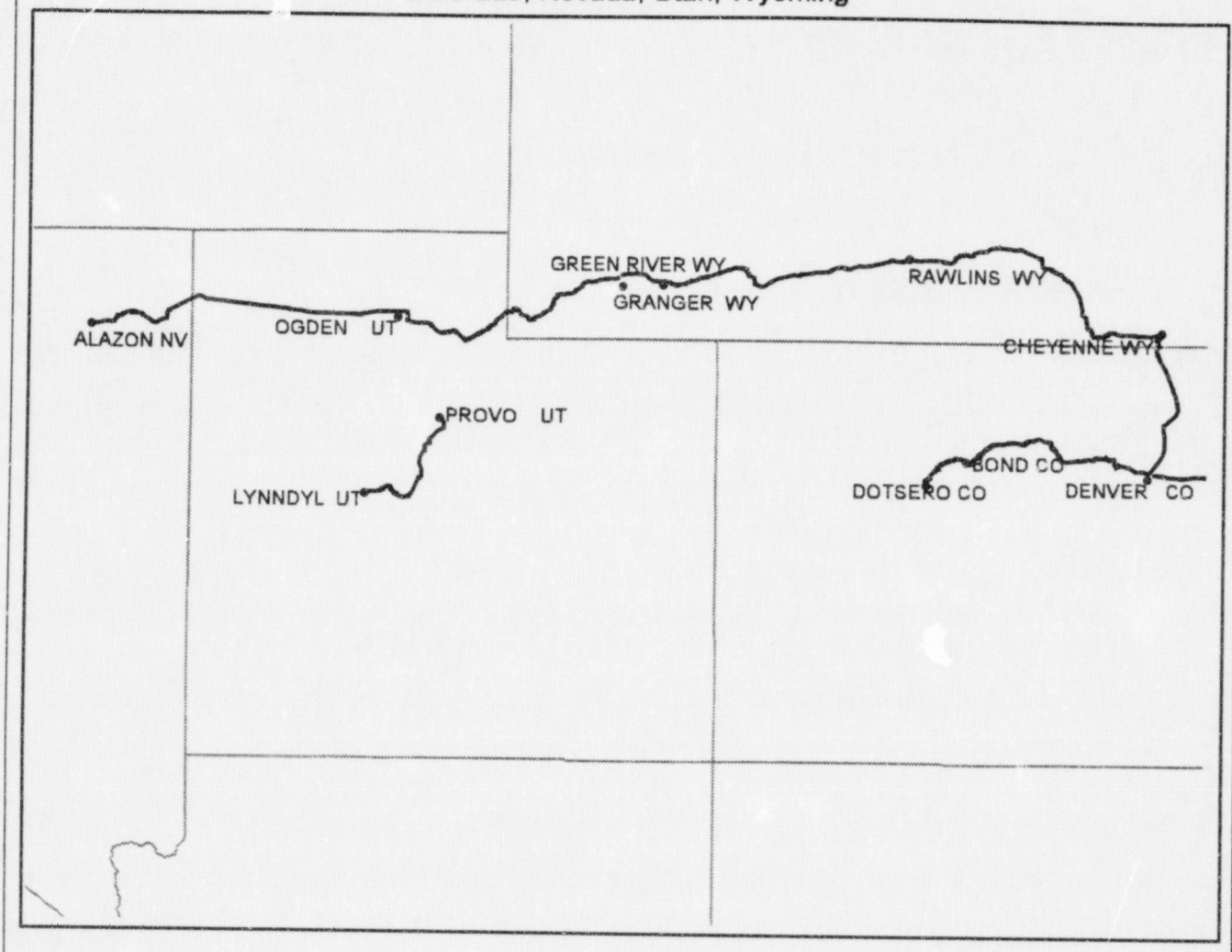
Figure 1-4
Rail Line Segments
California (Northern), Nevada, Oregon, Washington



LEGEND

- Nodes
- Rail Lines
- State Border

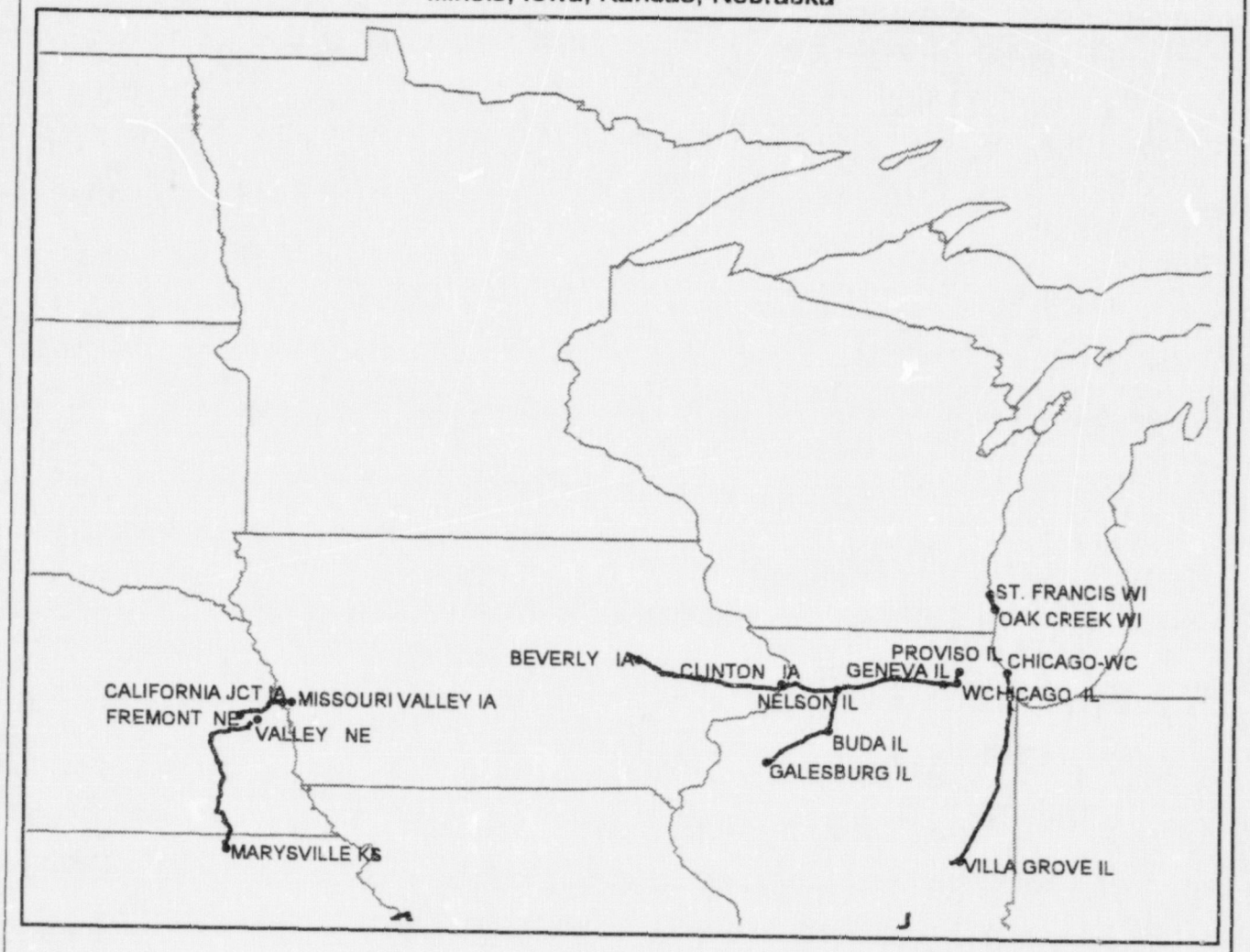
Figure 1-5
Rail Line Segments
Colorado, Nevada, Utah, Wyoming



LEGEND

- Nodes
- Rail Lines
- State Border

Figure 1-6
Rail Line Segments
Illinois, Iowa, Kansas, Nebraska



LEGEND

- Nodes
- Rail Lines
- State Border

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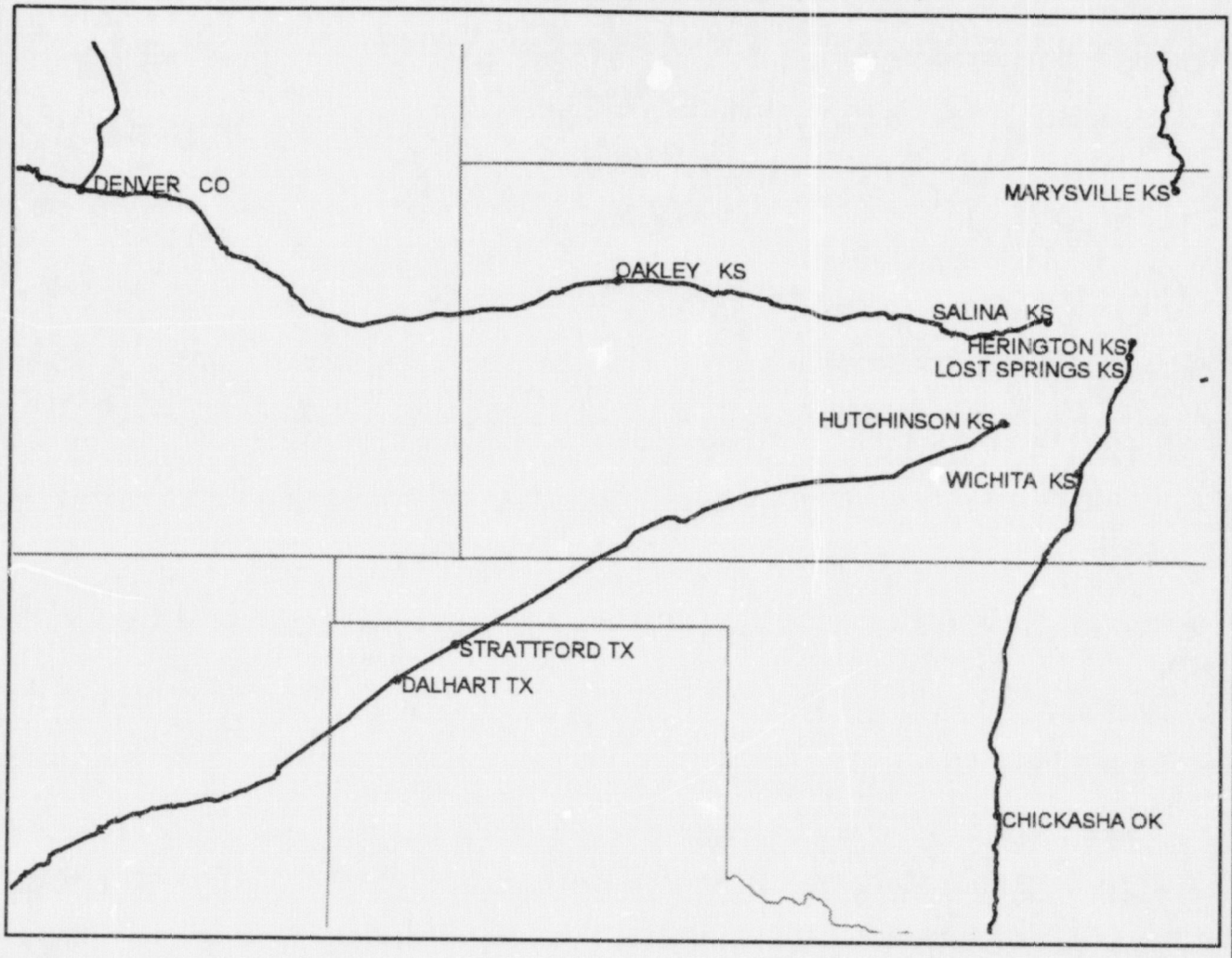
Figure 1-7
Rail Line Segments
Colorado, Kansas, Oklahoma, Texas (Northern)



LEGEND

- Nodes
- Rail Lines
- State Border

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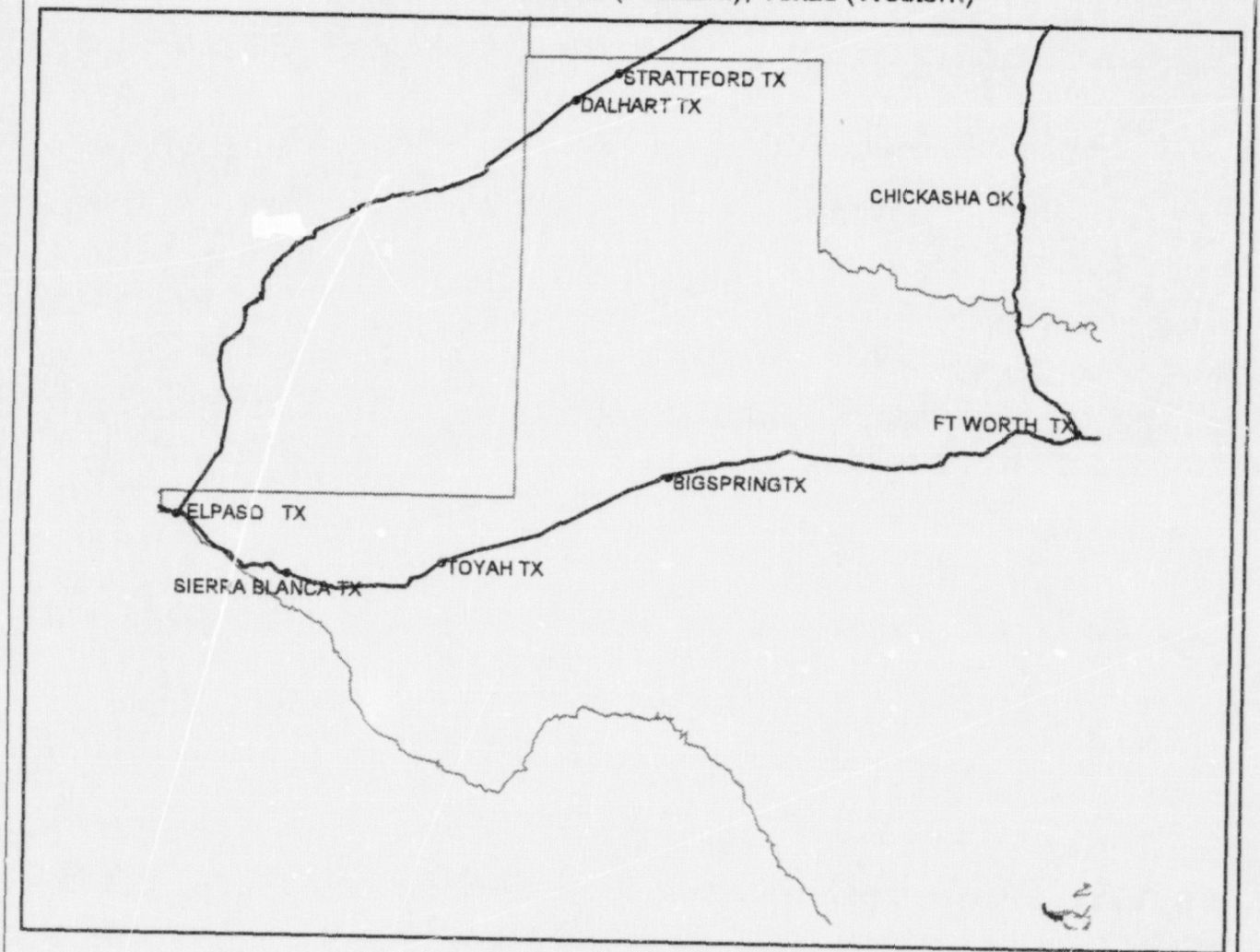
Figure 1-8
Rail Line Segments
New Mexico, Oklahoma (Western), Texas (Western)



LEGEND

- Nodes
- Rail Lines
- State Border

2.0 RAIL LINE SEGMENTS

The following text summarizes the emission increases for each rail line segment which is projected to experience a merger-related traffic increase that meets the ICC threshold for evaluation.

Table 2-22 summarizes the estimated emission increases generated by each of these rail line segments and indicates the AQCR. Many of the rail line segments analyzed affect more than one AQCR; also, a given AQCR may be impacted by several segments. The emissions increases in each AQCR shown on Table 2-22 from these rail line segments are attributable solely to the increases on the rail lines. Table 2-22 does not attempt to show the merger's overall effect on emissions within the AQCRs because it does not take into account appropriate offsets from abandonments, diversions from other rail lines and truck diversions.

The results of the noise impact assessment are summarized in Table 2-23, which shows the number of noise impacts for the pre- and post-merger train volumes. Table 2-23 shows the number of noise sensitive receptors exposed to noise levels exceeding L_{dn} 65. At most of these receptors the increase in noise exposure will be between 2 and 3 dBA. The increase in noise exposure will be solely due to more trains operating on the tracks; there should be no change in the noise emission on individual trains.

A large majority of the noise impact is due to train horns being sounded starting ¼-mile prior to grade crossings. The train horns are much louder than the trains, which means that for ¼-mile either side of a grade crossing the horns are the dominant rail noise source. In a number of the small towns that the trains pass through there are a

sufficient number of grade crossings that the train horns should be sounded virtually continuously as the trains pass through the community.

2.1 BRINKLEY, ARKANSAS TO PINE BLUFF, ARKANSAS

2.1.1 Air Quality Analysis

This rail segment (refer to Figure 2-1) will experience an increase of 8.7 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (16 and 20) which are both designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 28.81, CO 89.59, NO_x 670.60, SO_2 48.59, and PM 14.54.

2.1.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant in this study.

2.2 FAIR OAKS, ARKANSAS TO BRINKLEY, ARKANSAS

2.2.1 Air Quality Analysis

This rail segment (refer to Figure 2-1) will experience an increase of 10.3 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (20) which is designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 9.22, CO 28.67, NO_x 214.62, SO_2 15.55, and PM 4.65.

2.2.2 Noise

Affected Land Use: The areas of potential noise impact along the Brinkley to Pine Bluff alignment are as follows:

Fair Oaks, AR: There are only scattered residences in this area, most relatively close to the tracks.

Hunter, AR: The railroad tracks pass through Hunter with residences on both the east and west sides of the tracks. There are several grade crossings in Hunter.

Fargo, AR: There are approximately 30 residences near Fargo, most within about 1000 feet of the tracks.

Brinkley: The tracks run north/south through Brinkley. There is a residential neighborhood to the east of the tracks.

Noise Assessment: As shown in Table 2-1 below, approximately 94 additional residences and two additional churches are projected to be exposed to noise levels greater than Ldn 65 dBA, with most of the noise impact from locomotive warning whistles or horns at grade crossings.

TABLE 2-1

NOISE SUMMARY
FAIR OAKS, ARKANSAS TO BRINKLEY, ARKANSAS (SP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Fair Oaks, AR	6	0	1	10	0	1
Hunter, AR	44	0	2	62	0	2
Fargo, AR	19	0	1	26	0	1
Brinkley, AR	40	0	1	105	0	3
TOTAL	109	0	5	203	0	7

2.3 PARAGOULD, ARKANSAS TO FAIR OAKS, ARKANSAS

2.3.1 Air Quality Analysis

This rail segment (refer to Figure 2-1) will experience an increase of 8.3 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (20) which is designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 17.30, CO 53.77, NO_x 402.50, SO_2 29.17, and PM 8.73.

2.3.2 Noise

Affected Land Use: The following is a summary of the existing conditions in the population centers located on this line segment.

Jonesboro, AR: This segment is in the northern section of Jonesboro with BN tracks just to the north. The BN tracks act as a buffer between the SP tracks and any noise sensitive land uses to the north. There are residential land uses south of the tracks through much of Jonesboro.

Vanndale, AR: Vanndale consists of scattered residences along the railroad tracks. Because there are three grade crossings in this area, train horns are expected to be the dominant noise source.

Marmaduke, AR: The line passes through the southeast part of Marmaduke with residential areas on both sides of the tracks. There are several grade crossings in Marmaduke and several to the south of Marmaduke. For the noise analysis, it was assumed that train horns are always sounded for the 1/4-mile prior to the grade crossings.

Fair Oaks, AR: There are only scattered residences in Fair Oaks, most relatively close to the tracks.

Noise Assessment: The projected increase in train volume following the proposed merger is ex$_{pe}$cted to result in 106 additional residences and three additional churches being exposed to noise levels greater than 65 Ldn compared to the pre-merger base case, as shown in Table 2-2.

TABLE 2-2

NOISE SUMMARY
PARAGOULD, ARKANSAS TO FAIR OAKS, ARKANSAS (SP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Jonesboro, AR	50	0	1	124	0	2
Vanndale, AR	108	1	1	121	1	1
Marmaduke, AR	55	0	1	72	0	3
Fair Oaks, AR	15	0	0	17	0	0
TOTAL	228	1	3	334	1	6

2.4 COCHISE, ARIZONA TO TUCSON, ARIZONA

2.4.1 Air Quality Analysis

This rail segment (refer to Figure 2-1) will experience an increase of 15.1 trains per day as a result of the UP/SP merger. The line crosses one state and two AQCRs (501 and 502). AQCR 501 is designated as attainment for all criteria pollutants except for PM and SO_2. AQCR 502 is designated as attainment for all criteria pollutants except for PM, SO_2, and CO. Increased pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 22.45, CO 69.79, NO_x 522.41, SO_2 37.85, and PM 11.33.

2.4.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant in this study.

2.5 PICACHO, ARIZONA TO YUMA, ARIZONA

2.5.1 Air Quality Analysis

This rail segment (refer to Figure 2-2) will experience an increase of 13.4 trains per day as a result of the UP/SP merger. It crosses one state and three AQCRs

(503, 504, and 505). AQCR 503 is designated as attainment for all criteria pollutants except for PM. AQCR 504 is designated as attainment for all criteria pollutants except for PM, CO, and ozone. AQCR 505 is designated as attainment for all criteria pollutants except for SO_2 and PM. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 48.82, CO 151.79, NO_x 1136.18, SO_2 82.23, and PM 24.63.

2.5.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant in this study.

2.6 TUCSON, ARIZONA TO PICACHO, ARIZONA

2.6.1 Air Quality Analysis

This rail segment (refer to Figure 2-2) will experience an increase of 15.7 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (502 and 505). AQCR 502 is designated as attainment for all criteria pollutants except for PM, SO_2, and CO. AQCR 505 is designated as attainment for all criteria pollutants except for SO_2 and PM. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 20.12, CO 62.55, NO_x 468.18, SO_2 33.92, and PM 10.15.

2.6.2 Noise

Affected Land Use: The only population center that could be affected by noise from this line segment is Tucson. The line enters the northeastern part of Tucson, through the Pascua Yaqui Indian reservation and near dense residential areas. Residences may be as close as 100 feet from the tracks. The industrial buildings near the tracks should provide significant acoustical shielding for buildings farther from the tracks.

Noise Assessment: The projected increase in train volume following the proposed merger is expected to result in 296 additional residences and one additional

church being exposed to noise levels greater than L_{dn} 65 compared to the pre-merger base case, as shown in Table 2-3.

TABLE 2-3

NOISE SUMMARY
TUCSON, ARIZONA TO PICACHO, ARIZONA (SP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post Merger		
	Resid.	School	Church	Resid.	School	Church
Tucson, AZ	219	2	4	515	2	5
TOTAL	219	2	4	515	2	5

2.7 YUMA, ARIZONA TO WEST COLTON, CALIFORNIA

2.7.1 Air Quality Analysis

This rail segment (refer to Figure 2-3) will experience an increase of 11.1 trains per day as a result of the UP/SP merger. It crosses one state and three AQCRs (24, 33, and 503). AQCR 24 is designated as attainment for all criteria pollutants except for PM, NO_x, CO, and ozone. AQCR 33 is designated as attainment for all criteria pollutants except for PM and ozone. AQCR 503 is designated as attainment for all criteria pollutants except for PM. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 48.36, CO 150.37, NO_x 1125.58, SO_2 81.56 and PM 24.40.

2.7.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant in this study.

2.8 WEST COLTON, CALIFORNIA TO PALMDALE (VIA HILAND), CALIFORNIA

2.8.1 Air Quality Analysis

This rail segment (refer to Figure 2-3) will experience an increase of 3.9 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (24 and 33). AQCR 24 is designated as attainment for all criteria pollutants except for PM,

NO_x, CO, and ozone. AQCR 33 is designated as attainment for all criteria pollutants except for PM and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 13.00, CO 40.43, NO_x 302.63 SO_2 21.93, and PM 6.56.

2.8.2 Noise

The projected increase in train volume on this segment does not meet the ICC analysis threshold for noise.

2.9 DUNSMUIR, CALIFORNIA TO KLAMATH FALLS, OREGON

2.9.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 5.2 trains per day as a result of the UP/SP merger. It crosses two states and two AQCRs (27, 28, and 190). AQCR 27 is designated as attainment for all criteria pollutants. AQCR 28 is designated as attainment for all criteria pollutants except for PM, CO, and ozone. AQCR 190 is designated as attainment for all criteria pollutants except for PM and CO. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 5.74, CO 17.84, NO_x 133.52, SO_2 9.67, and PM 2.89.

2.9.2 Noise

The projected increase in train volume on this segment does not meet the ICC analysis threshold for noise.

2.10 LOS ANGELES, CALIFORNIA TO SLAUSON JUNCTION, CALIFORNIA

2.10.1 Air Quality Analysis

This rail segment (refer to Figure 2-3) will experience an increase of 6.2 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (24). AQCR 24 is designated as attainment for all criteria pollutants except for NO_x, PM, CO, and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC -0.16, CO -0.49, NO_x -3.67, SO_2 -0.27, and PM -0.08.

2.10.2 Noise

The projected increase in train volume on this segment does not meet the ICC analysis threshold for noise.

2.11 MARTINEZ, CALIFORNIA TO OAKLAND, CALIFORNIA

2.11.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 4.8 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (30). AQCR 30 is designated as attainment for all criteria pollutants except for PM and CO. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 2.92, CO 9.08, NO_x 67.96, SO_2 4.92, and PM 1.47.

2.11.2 Noise

The projected increase in train volume on this segment does not meet the ICC analysis threshold for noise.

2.12 MARYSVILLE, CALIFORNIA TO DUNSMUIR, CALIFORNIA

2.12.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 5.2 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (27 and 28). AQCR 27 is designated as attainment for all criteria pollutants. AQCR 28 is designated as attainment for all criteria pollutants except for PM, CO, and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 9.57, CO 29.75, NO_x 222.72, SO_2 16.14, and PM 4.83.

2.12.2 Noise

The projected increase in train traffic on this segment does not meet the ICC analysis threshold for noise.

2.13 NILES JUNCTION, CALIFORNIA TO OAKLAND, CALIFORNIA

2.13.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 5.1 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (30). AQCR 30 is designated as attainment for all criteria pollutants except for PM and CO. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 0.52, CO 1.61, NO_x 12.03, SO_2 0.87, and PM 0.26.

2.13.2 Noise

The projected increase in train volume on this segment does not meet the ICC analysis threshold for noise.

2.14 ROSEVILLE, CALIFORNIA TO SACRAMENTO, CALIFORNIA

2.14.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 4.7 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (28 and 508). AQCR 28 is designated as attainment for all criteria pollutants except for PM, CO, and ozone. AQCR 508 is designated as attainment for all criteria pollutants except for ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 5.58, CO 17.36, NO_x 129.95, SO_2 9.42, and PM 2.82.

2.14.2 Noise

The projected increase in train volume on this segment does not meet the ICC analysis threshold for noise.

2.15 ROSEVILLE, CALIFORNIA TO MARYSVILLE, CALIFORNIA

2.15.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 3.5 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (28 and 508). AQCR 28 is designated as attainment for all criteria pollutants except for PM,

CO, and ozone. AQCR 508 is designated as attainment for all criteria pollutants except for ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 1.28, CO 3.98, NO_x 29.80, SO_2 2.16, and PM 0.65.

2.15.2 Noise

The projected increase in train volume on this segment does not meet the ICC analysis threshold for noise.

2.16 SLAUSON JUNCTION, CALIFORNIA TO LONG BEACH, CALIFORNIA

2.16.1 Air Quality Analysis

This rail segment (refer to Figure 2-3) will experience an increase of 3.6 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (24). AQCR 24 is designated as attainment for all criteria pollutants except for NO_x, PM, CO, and ozone. Reduced pollutant emissions on this rail segment are estimated in tons per year, as follows: HC -1.60, CO -4.99, NO_x -37.32, SO_2 -2.70, and PM -0.81.

2.16.2 Noise

The projected increase in train volume on this segment does not meet the ICC analysis threshold for noise.

2.17 STOCKTON/LATHROP, CALIFORNIA TO MARTINEZ (VIA MOCOCO), CALIFORNIA

2.17.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 4.0 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (30 and 31). AQCR 30 is designated as attainment for all criteria pollutants except for PM and CO. AQCR 31 is designated as attainment for all criteria pollutants except for PM, CO, and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 3.08, CO 9.57, NO_x 71.61, SO_2 5.19, and PM 1.55.

2.17.2 Noise

Affected Land Use: This line segment extends from Martinez to Lathrop through a number of areas where there has been substantial residential development over the past decade. The following is a summary of the land uses that could be affected by train noise.

Martinez, CA: The line is located along the bay north of the town center and residential land uses. Martinez is an established community and there has been little new noise-sensitive development near the rail line.

Pittsburg, CA: There are a number of residential developments near the line in Pittsburg and West Pittsburg. These developments include two relatively new residential communities: River-Run, a gated community consisting of large two-story single family homes and California Seasons, which is located off of Willow Pass Road just east of Mallard Slough Road within 50 to 75 feet of the tracks. Both developments are shielded by walls that provide acoustical shielding for the first story but not the second story.

Antioch, CA: Antioch is just south of Pittsburg with a similar density of residential land uses near the tracks. New development includes two apartment complexes located on Sycamore Drive just east of Somersville Road. The complexes are within 100 to 150 feet of the tracks and are shielded by a 6-foot wall. Both complexes are near the Somersville Road grade crossing.

Oakley, CA: Most of Oakley is approximately one mile east of the SP tracks. However, there has been some development along the rail line. One new development is the Silverado Creek homes that are located along Neroly Road, which parallels the SP tracks. A wall that provides acoustical shielding for the first floor of the homes is located along the perimeter of the development.

Brentwood, CA: Brentwood is a relatively new community south of Antioch and Oakley. Most of the non-agricultural land use in the Brentwood area is residential

including a new apartment complex (Towne Center Commons) on the outskirts of Brentwood and several mobile home parks.

Byron, CA: Byron is a relatively small town with residential development on both sides of the rail line. There are two grade crossings.

Tracy, CA: The railroad tracks pass through the middle of Tracy adjacent to commercial development on both sides of the tracks. There are several grade crossings in Tracy.

Noise Assessment: Because there are no trains presently operating on this line, there are no pre-merger noise sources. The post-merger plan calls for operating four trains per day on this segment, which is projected to cause noise exposure exceeding L_{dn} 65 at 629 residences and three schools, as summarized in Table 2-4.

TABLE 2-4

NOISE SUMMARY
STOCKTON/LATHROP, CALIFORNIA TO MARTINEZ, CALIFORNIA (SP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Martinez, CA	0	0	0	41	0	0
Pittsburg, CA	0	0	0	70	1	0
Antioch, CA	0	0	0	266	1	0
Brentwood, CA	0	0	0	74	0	0
Byron, CA	0	0	0	49	0	0
Bethany, CA	0	0	0	0	0	0
Tracy	0	0	0	129	1	0
TOTAL	0	0	0	629	3	0

2.18 STOCKTON/LATHROP, CALIFORNIA TO SACRAMENTO, CALIFORNIA

2.18.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 4.3 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (28 and 31). AQCR 28 is designated as attainment for all criteria pollutants except for PM, CO, and ozone. AQCR 31 is designated as attainment for all criteria pollutants except for PM, CO, and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 14.41, CO 44.82, NO_x 335.47, SO_2 24.31, and PM 7.27.

2.18.2 Noise

The projected increase in train volume on this segment does not meet ICC analysis thresholds for noise.

2.19 BOND, COLORADO TO DOTSERO, COLORADO

2.19.1 Air Quality Analysis

This rail segment (refer to Figure 2-5) will experience an increase of 6.1 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (35). AQCR 35 is designated as attainment for all criteria pollutants except for PM. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 12.80, CO 39.80, NO_x 297.88, SO_2 21.58, and PM 6.46.

2.19.2 Noise

The line between Bond and Dotsero follows the Colorado River through sparsely populated areas. Because there are very few noise sensitive land uses near the [illegible]e and few grade crossings, L_{dn} 65 is not projected to be exceeded at any noise-sensitive land uses with either the pre- or post-merger train volumes.

2.20 DENVER, COLORADO TO CHEYENNE, WYOMING

2.20.1 Air Quality Analysis

This rail segment (refer to Figure 2-5) will experience an increase of 4.9 trains per day as a result of the UP/SP merger. It crosses two states and three AQCRs (36, 37, and 242). AQCR 36 is designated as attainment for all criteria pollutants except for PM, CO, and ozone. AQCR 37 is designated as attainment for all criteria pollutants except for PM and CO. AQCR 242 is designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 30.45, CO 94.68, NO_x 708.71, SO_2 51.35, and PM 15.36.

2.20.2 Noise

The projected increase in train volume on this segment does not meet ICC analysis thresholds for noise.

2.21 DENVER, COLORADO TO BOND, COLORADO

2.21.1 Air Quality Analysis

This rail segment (refer to Figure 2-5) will experience an increase of 6.7 trains per day as a result of the UP/SP merger. It crosses one state and three AQCRs (35, 36, and 40). AQCR 35 is designated as attainment for all criteria pollutants except for PM. AQCR 36 is designated as attainment for all criteria pollutants except for PM, CO, and ozone. AQCR 40 is designated as attainment for all criteria pollutants except PM. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 42.87, CO 133.28, NO_x 997.62, SO_2 72.29, and PM 21.63.

2.21.2 Noise

The projected increase in train volume on this segment does not meet ICC analysis thresholds for noise.

2.22 CALIFORNIA JUNCTION, IOWA TO FREMONT, NEBRASKA

2.22.1 Air Quality Analysis

This rail segment (refer to Figure 2-6) will experience an increase of 8.5 trains per day as a result of the UP/SP merger. It crosses two states and two AQCRs (93 and 146). AQCRs 93 and 146 are designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 8.79, CO 27.32, NO_x 204.47, SO_2 14.82, and PM 4.43.

2.22.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.23 CLINTON, IOWA TO BEVERLY, IOWA

2.23.1 Air Quality Analysis

This rail segment (refer to Figure 2-6) will experience an increase of 5.1 trains per day as a result of the UP/SP merger. It crosses one state and three AQCRs (69, 88, and 91). AQCR 69 is designated as attainment for all criteria pollutants except SO_2. AQCRs 88 and 91 are designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 11.07, CO 34.41, NO_x 257.55, SO_2 18.66 and PM 5.58.

2.23.2 Noise

The projected increase in train volume on this segment does not meet ICC analysis thresholds for noise.

2.24 MISSOURI VALLEY, IOWA TO CALIFORNIA JUNCTION, IOWA

2.24.1 Air Quality Analysis

This rail segment (refer to Figure 2-6) will experience an increase of 8.5 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (93). AQCR 93 is designated as attainment for all criteria pollutants. The projected increase

in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 1.79, CO 5.56, NO_x 41.65, SO_2 3.02, and PM 0.90.

2.24.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.25 BUDA, ILLINOIS TO GALESBURG, ILLINOIS

2.25.1 Air Quality Analysis

This rail segment (refer to Figure 2-6) will experience an increase of 6.4 trains per day as a result of the UP/SP merger. It crosses one state and three AQCRs (65, 69, and 71). AQCR 65 is designated as attainment for all criteria pollutants. AQCR 69 is designated as attainment for all criteria pollutants except SO_2. AQCR 71 is designated as attainment for all criteria pollutants except PM. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 4.68, CO 14.54, NO_x 108.85, SO_2 7.89, and PM 2.36.

2.25.2 Noise

The projected increase in train volume on this segment does not meet ICC analysis thresholds for noise.

2.26 CHICAGO, ILLINOIS TO VILLA GROVE, ILLINOIS

2.26.1 Air Quality Analysis

This rail segment (refer to Figure 2-6) will experience an increase of 3.0 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (66 and 67). AQCR 66 is designated as attainment for all criteria pollutants. AQCR 67 is designated as attainment for all criteria pollutanis except for PM and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 14.82, CO 46.07, NO_x 344.84, SO_2 24.99, and PM 7.48.

2.26.2 Noise

The projected increase in train volume on this segment does not meet ICC analysis thresholds for noise.

2.27 CHICAGO - PROVISO, ILLINOIS TO WEST CHICAGO, ILLINOIS

2.27.1 Air Quality Analysis

This rail segment (refer to Figure 2-6) will experience an increase of 14.1 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (67). AQCR 67 is designated as attainment for all criteria pollutants except for PM and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 5.78, CO 17.98, NO_x 134.58, SO_2 9.75, and PM 2.92.

2.27.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.28 GENEVA, ILLINOIS TO NELSON, ILLINOIS

2.28.1 Air Quality Analysis

This rail segment (refer to Figure 2-6) will experience an increase of 14.1 trains per day as a result of the UP/SP merger. It crosses one state and three AQCRs (67, 71, and 73). AQCR 67 is designated as attainment for all criteria pollutants except for PM and ozone. AQCR 71 is designated as attainment for all criteria pollutants except for PM. AQCR 73 is designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 26.60, CO 82.71, NO_x 619.08, SO_2 44.86, and PM 13.42.

2.28.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.29 NELSON, ILLINOIS TO CLINTON, IOWA

2.29.1 Air Quality Analysis

This rail segment (refer to Figure 2-6) will experience an increase of 4.0 trains per day as a result of the UP/SP merger. It crosses two states and two AQCRs (69 and 71). AQCR 69 is designated as attainment for all criteria pollutants except for SO_2. AQCR 71 is designated as attainment for all criteria pollutants except for PM. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 4.32, CO 13.42, NO_x 100.48, SO_2 7.28, and PM 2.18.

2.29.2 Noise

The projected increase in train volume on this segment does not meet ICC analysis thresholds for noise.

2.30 NELSON, ILLINOIS TO BUDA, ILLINOIS

2.30.1 Air Quality Analysis

This rail segment (refer to Figure 2-6) will experience an increase of 10.1 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (71). AQCR 71 is designated as attainment for all criteria pollutants except for PM. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 8.14, CO 25.29, NO_x 189.33, SO_2 13.72, and PM 4.10.

2.30.2 Noise

Affected Land Use: There are four small communities along this segment that could be affected by train noise. The existing land use conditions for each community are summarized below.

Nelson, IL: The line runs to the center of this small community where it connects with another line. There is one grade crossing at the end of the line. There are residences to the south and east of the line.

Normandy, IL: This is a small community located on the line. There are residences on both sides of the tracks. There is one grade crossing in the center of town.

Manlius, IL: The line runs north-south through the center of the town. There are two grade crossings in the town. There are residential areas on both sides of the tracks, with the larger residential area to the east.

Buda, IL: The rail line runs through the center of the town where there is one grade crossing. There are residences within 400 feet from both sides of the tracks.

Noise Assessment: As shown in Table 2-5, based on post-merger operating plans, there will be 115 additional residences, one school and one church exposed to noise levels exceeding L_{dn} 65 compared to the pre-merger base case. The majority of these impacts are due to horn blowing at grade crossings.

TABLE 2-5

NOISE SUMMARY
NELSON, ILLINOIS TO BUDA, ILLINOIS (UP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Nelson, IL	20	0	0	44	1	0
Normandy, IL	8	0	0	14	0	0
Manlius, IL	20	0	0	40	0	0
Buda, IL	17	0	0	82	0	1
TOTAL	65	0	0	180	1	1

2.31 WEST CHICAGO, ILLINOIS TO GENEVA, ILLINOIS

2.31.1 Air Quality Analysis

This rail segment (refer to Figure 2-6) will experience an increase of 14.1 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (67). AQCR 67 is designated as attainment for all criteria pollutants except for PM and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 2.31, CO 7.19, NO_x 53.83, SO_2 3.90, and PM 1.17.

2.31.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.32 HERINGTON, KANSAS TO LOST SPRINGS, KANSAS

2.32.1 Air Quality Analysis

This rail segment (refer to Figure 2-7) will experience an increase of 10.3 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (96 and 99). AQCRs 96 and 99 are designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 3.10, CO 9.63, NO_x 72.09, SO_2 5.22, and PM 1.56.

2.32.2 Noise

Affected Land Use: Herington is the only population center along this line segment. The line segment extends from the southern end of the Herington Yard and avoids most of the residential part of town.

Noise Assessment: As shown in Table 2-6, based on post-merger operating plans, there will be 58 residences exposed to noise levels exceeding L_{dn} 65 compared to the pre-merger base case. Most of the residences are in the southwest part of town, south of the Herington Yard.

TABLE 2-6

NOISE SUMMARY
HERINGTON, KANSAS TO LOST SPRINGS, KANSAS (UP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Herington, KS	0	0	0	58	0	0
TOTAL	0	0	0	58	0	0

2.33 HUTCHINSON, KANSAS TO STRATFORD, TEXAS

2.33.1 Air Quality Analysis

This rail segment (refer to Figure 2-7) is an SP line on which BN/Santa Fe currently has trackage rights. This line will experience an increase of 8.8 trains per day as a result of the UP/SP merger. It crosses three states and four AQCRs (99, 100, 187, and 211). These AQCRs are designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 26.64, CO 82.82, NO_x 619.90, SO_2 44.92, and PM 13.44.

2.33.2 Noise

Affected Land Use: There are a number of communities along this segment that could be affected train noise. The land use for each community is summarized below.

Hutchinson, KS: The SP yard is on the southwest side of town outside of the town limits. There are six houses 200 feet to the southeast of the tracks separated by a road. There is also a BN/Santa Fe track running parallel to the SP line at this point.

Partridge, KS: The BN/Santa Fe line diverges from the SP line just north of the city. The closest residences are 200 feet northwest of the tracks. There is a school 400 feet from the line on the north side of the tracks. Most of the noise comes from train horns at two grade crossings.

Prate, KS: The line runs through a residential area on the northwest side of town. There are approximately 50 houses within 200 feet and another 30 houses 250 to 400 feet away. There are five grade crossings in the city, and all are in or near residential areas.

Wellsford, KS: Wellsford is a small community with 15 to 20 houses. There is a grade crossing just east of Wellsford.

Haviland, KS: The line passes through the south side of Haviland. There are 8 to 10 houses within 200 feet north of the tracks on the west side of town. There is

one grade crossing 400 feet from the nearest house. There is also a school 500 feet from the tracks behind the row of houses.

Greensburg, KS: At the east end of town, there are four trailer homes near a grade crossing. At the west end of town there are 12 houses north and 10 houses south of the tracks, with the nearest being location within 100 feet. Two grade crossings are in the immediate area of the residences.

Meade, KS: The rail line passes just north of town. There are six houses within 200 feet of tracks. There is one grade crossing in town, with one house very close to the crossing.

Bloom, KS: There are eight houses within 200 feet of the line on the south side.

Kismet, KS: There are six houses near the tracks. Four of these are within 100 feet.

Liberal, KS: The line passes through the center of town where horn noise from grade crossings will occur. There are 16 houses within 200 feet north of tracks on the eastern edge of town. On the south side of the line, a trailer park is located approximately 600 feet from the tracks. Approximately 60 trailer homes and houses are located along the tracks from the center of town to the western edge of town on the north side. There are also four grade crossings in this area, and all are located near houses.

Guymon, OK: The line passes through the southeast corner of town where train noise is a noise source at many of the residences. There are approximately 50 houses less than 200 feet north of the tracks on the west side of town. There are three grade crossings located near houses.

Goodwell, OK: The line runs through the southeast side of town with two grade crossings in town. There are 10 houses within 200 feet of the line. At the west end of town there are 10 to 12 trailer homes within 150 feet of the tracks on the north side.

Stratford, TX: The line passes through the southeast part of town near several residences. There are three grade crossings within the town limits and one grade crossing just east of town. There are nine houses witnin 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.

Noise Assessment: As shown in Table 2-7, based on projected train volumes, the post-merger noise impacts (L_{dn} greater than 65 dBA) will include 386 additional residences and two additional churches. The majority of the increase is due to train horns at grade crossings.

TABLE 2-7

NOISE SUMMARY
HUTCHINSON, KANSAS TO STRATFORD, TEXAS (SP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Hutchinson,	0	0	0	6	0	0
Partridge, KS	43	2	1	62	2	1
Prate, KS	96	0	0	179	0	0
Wellsford, KS	6	0	0	10	0	0
Haviland, KS	38	0	1	75	0	1
Greensburg, KS	26	0	0	26	0	0
Bloom, KS	8	0	0	8	0	0
Meade, KS	21	0	0	40	0	0
Kismet, KS	6	0	0	6	0	0
Liberal, KS	121	0	0	247	0	0
Guymon, OK	109	0	0	158	0	0
Goodwell, OK	31	0	0	58	0	2
Stratford, TX	17	0	0	33	0	0
TOTAL	522	2	2	908	2	4

2.34 LOST SPRINGS, KANSAS TO WICHITA, KANSAS

2.34.1 Air Quality Analysis

This rail segment (refer to Figure 2-7) will experience an increase of 10.0 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (99). This AQCRs are designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 25.43, CO 79.06, NO_x 591.82, SO_2 42.88, and PM 12.83.

2.34.2 Noise

Affected Land Use: Marion, Peabody, and Wichita, Kansas are the population centers along this segment of line. The tracks are on the west side of Marion avoiding most of the residential areas.

In Peabody the rail line passes through the west side of town with residential areas on both sides of the tracks. There are four grade crossings in Peabody.

In Wichita, the land use along this segment is primarily industrial with some tank farm. No noise sensitive areas are located near the tracks.

Noise Assessment: The impact from this segment is in residential areas of Marion and Peabody. The expected post-merger volume of 11.9 trains is projected to cause noise exposure of L_{dn} 65 dBA or greater at 190 residences and one church, as shown on Table 2-8.

TABLE 2-8

NOISE SUMMARY
LOST SPRINGS, KANSAS TO WICHITA, KANSAS (UP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Marion, KS	0	0	0	58	0	1
Peabody, KS	0	0	0	132	0	0

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Peabody, KS	0	0	0	132	0	0
Wichita, KS	0	0	0	0	0	0
TOTAL	0	0	0	190	0	1

2.35 MARYSVILLE, KANSAS TO VALLEY, NEBRASKA

2.35.1 Air Quality Analysis

This rail segment (refer to Figure 2-6) will experience a 133.6% increase in gross tons transported annually as a result of the UP/SP merger. It crosses two states and four AQCRs (85, 95, 145, and 146). AQCR 85 is designated as attainment for all criteria pollutants except lead. AQCR 95, 145, and 146 are designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 4.36, CO 13.55, NO_x 101.45, SO_2 7.35, and PM 2.20.

2.35.2 Noise

Affected Land Use: The following is a summary of the population centers located on this segment.

Marysville, KS: The line segment runs north from the Marysville Yard. The north end of the yard is well outside of Marysville, where there are no noise-sensitive receptors.

Barneston, NE: The line is located on the west side of the town with most residences over 200 feet from the tracks.

Wymore, NE: The UP line passes approximately 3000 feet east of Wymore, so that train noise is not a significant source in the residential areas.

Beatrice, NE: The line passes through the west side of Beatrice just east of the Blue River and Indian Creek. Much of the area east of the tracks is probably residential.

Pickrell, NE: Pickrell is a small town lying immediately west of the rail line. There appear to be one or two residences within 100 to 200 feet west of the tracks, and 10 to 20 residences within 400 feet.

Cortland, NE: The railroad line passes near the middle of the small community of Cortland. Most of the residences are to the west of the tracks with 25 to 30 residences within 200 to 400 feet of the tracks. There are several grade crossings in town.

Roca, NE: Roca is located east of the line. Residential land uses are located over 400 feet from the tracks.

Lincoln, NE: The line parallels Salt Creek on the west side of Lincoln. Much of the area is relatively open with the exception of an area just south of the Lincoln yard that is developed. There are a number of grade crossings in this area.

West Lincoln, NE: The line passes on the west side of West Lincoln with Route 77 between the tracks and the residential area.

Wahoo, NE: The UP line passes through the east and south sides of Wahoo. Much of the east side of town is industrial. However, on the southern part of town the line passes close to residential areas and the high school.

Valley, NE: The line approaches the Valley Yard from the southwest passing Pleasure Lake and the northern part of Valley. This area includes some residential land uses, a school, and industrial land uses. There are two grade crossings close to the residential areas.

Noise Assessment: Although the volume of trains is relatively low on this segment (projected to rise from 0.9 trains per day pre-merger to 2.9 trains per day post-merger), an additional 216 residences, one church and two schools will be exposed to

noise levels exceeding 65 L_{dn} as shown in Table 2-9. Almost all of these impacts are due to horns being sounded at grade crossings.

TABLE 2-9

NOISE SUMMARY
MARYSVILLE, KANSAS TO VALLEY, NEBRASKA (UP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Marysville, KS	0	0	0	0	0	0
Barneston, NE	2	0	0	10	0	0
Wymore, NE	0	0	0	0	0	0
Beatrice, NE	30	0	0	94	0	0
Pickrell, NE	1	0	0	15	0	0
Cortland, NE	4	0	0	28	0	1
Roca, NE	0	0	0	0	0	0
Lincoln, NE	75	0	0	141	0	0
West Lincoln, NE	0	0	0	0	0	0
Wahoo, NE	0	0	0	20	1	0
Valley, NE	3	0	0	23	1	0
TOTAL	115	0	0	331	2	1

2.36 OAKLEY, KANSAS TO DENVER, COLORADO

2.36.1 Air Quality Analysis

This rail segment (refer to Figure 2-7) will experience an increase of 6.86 trains per day as a result of the UP/SP merger. It crosses two states and three AQCRs (97, 34, 36). AQCR 97 is designated as attainment for all criteria pollutants. AQCR 34 is designated as nonattainment for all criteria pollutants except PM. AQCR 36 is designated as nonattainment for all criteria pollutants except PM, PM_{10}, CO, and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 68.61, CO 213.32 , NO_x 1596.80, SO_2 115.71, and PM 34.62.

2.36.2 Noise

Affected Land Use: The following is a summary of the existing conditions along the Oakley to Denver segment.

Oakley, KS: The tracks pass through the southern part of Oakley with residential land uses north and south of the tracks. There is one grade crossing in town.

Sharon Springs, KS: Most of Sharon Springs is located south of US 40 and north of the line. A few residences are less than 200 feet from the tracks, and most are 300 feet or more from the tracks. There is one grade crossing.

Bennett, CO: Bennett is a small community with most of the town located north of the rail line. There is one grade crossing. Most residences are at least 300 feet from the tracks.

Byers, CO: The line passes through the middle of the small town of Byers. The closest residences are about 300 feet from the tracks, and there are three grade crossings in town.

Deer Trail, CO: The line passes by the west side of Deer Trail. There is one grade crossing at the south end of town. Train noise is expected to affect only a row of buildings closest to the tracks.

Limon, CO: The line passes south of Limon with I-70 between the tracks and the majority of the town. Because of shielding by the interstate, train noise is not expected to affect more than a small part of the town.

Denver, CO: The west end of this line segment passes thorough a residential area with some commercial and light industrial land use along the tracks. Some of the residences benefit from the acoustical shielding provided by the one- and two-story commercial buildings along the tracks. Between Colorado Boulevard and Quebec Street there are no residential areas close to the tracks. There are residential developments east and west of I-225. There are sound walls on both sides of I-225 to reduce traffic noise in

these communities. In addition, there is a new residential development east of Tower Road that could be affected by train noise, particularly since there is a grade crossing at Tower Road.

Noise Assessment: As shown in Table 2-10, the projected post-merger increase in train volume, it is expected that L_{dn} 65 will be exceeded at 246 residences compared to 50 for the pre-merger volumes. This increase is largely due to horn noise at grade crossings.

TABLE 2-10

NOISE SUMMARY
OAKLEY, KANSAS TO DENVER, COLORADO (UP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Oakley, KS	3	0	0	27	0	1
Sharon Springs, KS	4	0	0	21	0	0
Bennett, CO	2	0	0	37	0	0
Byers. CO	13	0	0	64	0	2
Deer Trail, CO	0	0	0	13	0	0
Limon, CO	0	0	0	0	0	0
Denver, CO	28	0	0	84	0	0
TOTAL	50	0	0	246	0	3

2.37 SALINA, KANSAS TO OAKLEY, KANSAS

2.37.1 Air Quality Analysis

This rail segment (refer to Figure 2-7) will experience an increase of 6.0 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (96, 97). Both AQCRs 96 and 97 are designated as attainment for all criteria pollutants. The

projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 49.98, CO 155.38 , NO_x 1163.07, SO_2 84.28, and PM 25.22.

2.37.2 Noise

Affected Land Use: Following is a summary of the existing conditions in the population centers located on this line.

Salina, KS: The line originates at the Salina Yard in the northern part of Salina. The BN/Santa Fe tracks parallel the UP tracks for the first 1500 to 2000 feet west of the yard. There are no noise sensitive receptors near the tracks.

Kanapolis, KS: The line passes through the north part of Kanapolis. There are only a few residences less than 200 feet from the tracks, and 20 to 30 within 500 feet of the tracks. There are two grade crossings in town near the residential areas.

Ellsworth, KS: The UP line passes through a residential area on the south side of Ellsworth. There are four grade crossings in this area.

Russell, KS: The line goes through a residential area in the northern section of Russell. There are two grade crossings in this area.

Hays, KS: The line passes through the middle of Hays, with a number of grade crossings through the town. There are noise-sensitive receptors on both sides of the tracks. These include a number of single family residences, several apartment buildings, some townhouse-style buildings, and Fort Hayes State College. Several of the college academic buildings are within 250 feet of the tracks.

Wakeeney, KS: Most of Wakeeney is located north of the line. There are three grade crossings within the boundaries of the town. Both north and south of the tracks the land use is primarily residential.

Oakley, KS: The line passes through the southern part of Oakley with residential land uses north and south of the tracks. There is one grade crossing in town.

Noise Assessment: Average trains per day are projected to increase from pre-merger volumes of 2.2 to post-merger volumes of 8.2. As a result, an additional 339 residences, one school and 4 churches will be exposed to noise levels exceeding 65 L_{dn}, as shown in Table 2-11. Most of these increases are due to noise from train horns before grade crossings.

TABLE 2-11

NOISE SUMMARY
SALINA, KANSAS TO OAKLEY, KANSAS (UP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Salina, KS	0	0	0	0	0	0
Kanapolis, KS	10	0	0	33	0	0
Ellsworth, KS	40	0	2	165	0	2
Russell, KS	6	0	0	74	0	0
Hays, KS	52	0	1	96	1	5
Wakeeney, KS	30	0	0	84	0	0
Oakley, KS	3	0	0	28	0	0
TOTAL	141	0	3	480	1	7

2.38 WICHITA, KANSAS TO CHICKASHA, OKLAHOMA

2.38.1 Air Quality Analysis

This rail segment (refer to Figure 2-7) will experience an increase of 7.4 trains per day as a result of the UP/SP merger. It crosses two states and three AQCRs (99, 185, 184). All three AQCRs are designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 67.88, CO 211.05 , NO_x 1579.77, SO_2 114.47, and PM 34.25.

2.38.2 Noise

Affected Land Use: The following is a summary of the existing land use along the Wichita to Chickasha segment.

Wichita, KS: The line passes through the southern part of Wichita and its adjacent suburbs. There are few residences in Wichita next to the line, the abutting properties consisting mainly of industrial buildings. To the south of town, near the Arkansas River, the tracks pass within 100 feet of four three-story apartment buildings. The suburb of Glenville has residences scattered along the east side of the tracks, typically within 300 feet. Further south, near Midland Park, there are residences to the west of the tracks within 300 feet.

Haysville: Residences are located about 100 feet to the west of the line in the southern part of the town. There is one grade crossing.

Wellington: The area along the line is densely populated, with residences within 200 feet from the line. Buildings close to the tracks and Route 81 will provide shielding from the train noise for areas farther from the line.

Enid: Industrial areas are located to the west of the line, except for houses about 300 feet from the tracks at the north end of town. A few residences are located about 200 feet east of the tracks. industrial buildings provide significant shielding.

Kingfisher: There are densely populated areas to the west of the line, with the nearest residences about 100 feet from the tracks. To the east of the line is mostly industrial land use; however, a mobile home park is located about 100 feet from the tracks.

El Reno: The line runs past the Canadian County Historical Museum, with a rebuilt railroad station and the Old El Reno Hotel. Residences are located along both sides of the tracks.

Chickasha: The line passes through the eastern part of town. There is no residential land use along the tracks. The closest residences are about 400 feet from the line.

Noise Assessment: As shown in Table 2-12, with the projected post-merger train volumes, the number of residences exposed to noise levels exceeding L_{dn} 65 is expected to increase by 319. In additional, two schools and 14 additional churches are expected to be exposed to noise levels exceeding L_{dn} 65.

TABLE 2-12

NOISE SUMMARY
WICHITA, KANSAS TO CHICKASHA, OKLAHOMA (UP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Wichita, KS	87	0	1	299	0	2
Haysville, KS	30	0	0	52	2	1
Wellington, KS	58	0	1	98	0	3
Enid, OK	24	0	2	24	0	4
Kingfisher, OK	60	0	0	72	0	4
El Reno, OK	80	0	0	99	0	2
Chickasha, OK	18	0	0	32	0	2
TOTAL	357	0	4	676	2	18

2.39 IOWA JUNCTION, LOUISIANA TO BEAUMONT, TEXAS

2.39.1 Air Quality Analysis

This rail segment (refer to Figure 2-1) will experience an increase of 11.3 trains per day as a result of the UP/SP merger. It crosses two states and one AQCR (106). AQCR 106 is designated as attainment for all criteria pollutants except ozone. Increased pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 28.99, CO

90.14, NO_x 674.75, SO_2 48.89, and PM 14.63. The effects of these emission increases and emission increases from other threshold rail line segments within the affected AQCRs are described in Table 2-2.

2.39.2 Noise

Affected Land Use: The existing land use conditions for each community on this line are summarized below.

Iowa, LA: The line passes through the center of town with one grade crossing in the town. There are residences to the north and south of the tracks. The residences are fairly dense in this area with a few industrial buildings to the south of the tracks providing some shielding to the residences behind them. There are also some scattered residences to the west of the town along the line.

Lake Charles, LA: The line runs through the north-central part of the town. There are many residences to the east of the city limits along the tracks. There are also residences in the town on both the north and south sides of the tracks. There are several grade crossings in these residential areas.

Westlake, LA: Westlake is west of Lake Charles. This is a residential area, with residences mostly to tne north of the line. There is one grade crossing in the residential area.

Maplewood, LA: This community is located between Lake Charles and Sulphur. There are two grade crossings. The area south of the tracks is residential.

Sulphur, LA: The line passes through what a residential areas in the center of the town. There are five grade crossings. There are also a number of churches both to the north and south of the tracks.

Edgerly, LA: This community is west of Sulphur. There is one grade crossing, and the line passes through the center of the town. There are some industrial

buildings to the south and residences on both sides of the tracks, with the south side being more densely populated.

Vinton, LA: The line goes through the center of the town, parallel to US 90, which is just to the south of the tracks. There are five grade crossings. There are residences on both sides of the line with the north side being more densely populated. There are also churches north of the tracks.

Oilla, TX: This is a small community on the Texas border. There is one grade crossing and several houses on both sides of the line.

Connell, TX: This is a residential suburb east of Beaumont. There is one grade crossing near some of the residences. The remainder of the residences are scattered along the tracks throughout the town.

Beaumont, TX: The line goes through the center of the town on the eastern side. There are residences on both sides of the track between the river and a junction with the north-south track.

Noise Assessment: As shown in Table 2-13, based on the UP/SP traffic projections, 500 additional residences, two additional schools, and 11 additional churches will be exposed to noise levels exceeding L_{dn} 65. The majority of the impact is due to train horns near grade crossings.

TABLE 2-13

NOISE SUMMARY
IOWA JCT., LOUISIANA TO BEAUMONT, TEXAS (SP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Iowa, LA	173	2	1	271	2	3
Lake Charles, LA	84	1	2	101	1	3

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Westlake, LA	79	0	0	118	0	2
Maplewood, LA	73	0	1	112	0	1
Sulphur, LA	139	0	1	225	1	5
Edgerly, LA	42	0	1	54	0	1
Vinton, LA	204	0	2	358	1	4
Oilla, TX	11	0	0	13	0	0
Connell, TX	13	0	0	44	0	0
Beaumont, TX	41	0	1	63	0	1
TOTAL	859	3	9	1359	5	20

2.40 LIVONIA, LOUISIANA TO KINDER, LOUISIANA

2.40.1 Air Quality Analysis

This rail segment (refer to Figure 2-1) will experience an increase of 59.0% (as measured in millions of gross tons) as a result of the UP/SP merger. It crosses one state and one AQCR (106). AQCR 106 is designated as attainment for all criteria pollutants except ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 11.59, CO 36.04, NO_x 269.79, SO_2 19.55, and PM 5.85.

2.40.2 Noise

The projected increase in train volume on this segment does not meet ICC analysis thresholds for noise.

2.41 SHREVEPORT, LOUISIANA TO LUFKIN, TEXAS

2.41.1 Air Quality Analysis

This rail segment (refer to Figure 2-1) will experience an increase of 3.2 trains per day as a result of the UP/SP merger. It crosses two states and two AQCRs (22, 106). AQCR 22 is designated as attainment for all criteria pollutants. AQCR 106 is designated as attainment for all criteria pollutants except ozone. The projected increase in pollutant

emissions on this rail segment are estimated in tons per year, as follows: HC 0.89, CO 2.78 , NO_x 20.81, SO_2 1.51, and PM 0.45.

2.41.2 Noise

The projected increase in train volume on this segment does not meet ICC analysis thresholds for noise.

2.42 DEXTER JUNCTION, MISSOURI TO PARAGOULD, ARKANSAS

2.42.1 Air Quality Analysis

This rail segment (refer to Figure 2-1) will experience an increase of 6.3 trains per day as a result of the UP/SP merger. It crosses two states and two AQCRs (138, 20). AQCR 20 is designated as attainment for all criteria pollutants. AQCR 138 is designated as nonattainment for PM and lead. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 14.68, CO 45.66 , NO_x 341.75, SO_2 24.76, and PM 7.41.

2.42.2 Noise

The projected increase in train volume on this segment does not meet ICC analysis thresholds for noise.

2.43 LORDSBURG, NEW MEXICO TO COCHISE, ARIZONA

2.43.1 Air Quality Analysis

This rail segment (refer to Figure 2-2) will experience an increase of 14.6 trains per day as a result of the UP/SP merger. It crosses two states and two AQCRs (510, 501). AQCR 510 is designated as attainment for all criteria pollutants except SO_2. AQCR 501 is designated as attainment for all criteria pollutants except SO_2, PM, and PM_{10}. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 21.54, CO 66.98 , NO_x 501.38, SO_2 36.33, and PM 10.87.

2.43.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.44 SPARKS, NEVADA TO ROSEVILLE, CALIFORNIA

2.44.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 9.0 trains per day as a result of the UP/SP merger. It crosses two states and two AQCRs (148, 508). AQCR 148 is designated as attainment for all criteria pollutants except PM, PM_{10}, CO, and ozone. AQCR 508 is designated as attainment for all criteria pollutants except ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 33.09, CO 102.87 , NO_x 770.04, SO_2 55.80, and PM 16.69.

2.44.2 Noise

Affected Land Use: There are a number of communities in both Nevada and California that may experience increased noise from trains on this segment. The existing land use conditions for each community are summarized below.

Sparks, NV: The area from the Sparks yard to Reno is mainly industrial, with no residences in this area.

Reno, NV: The line runs through the center of Reno. There are several grade crossings along the tracks. The area is mainly industrial and commercial, but there are residential areas near Sparks, on the western edge of town, and near the tracks throughout the middle of the town.

Verdi, NV: This is a small community to the west of Reno. The line runs through the center of the town. There is one grade crossing in the town, and the majority of the residences are on the northern side of the tracks.

Truckee, CA: This is a small community in the mountains east of Donner Pass. The line runs through the center of town, north of a river. There is one grade

crossing in the town and one to the east of the town near a residential area on both sides of the tracks.

Norden, CA: Norden is just to the west of Donner Pass. There are a few scattered residences near the snowsheds to the west of Donner Pass. Much of the rail line is in tunnels in this area.

Colfax, CA: The line runs north-south through the center of the town. There are two grade crossings in the town. There are several industrial buildings near the tracks that should provide some shielding to the residences behind them. There are numerous residences on both sides of the tracks.

Weimer, CA: This town is south of Colfax. There are no grade crossings, and most of the residences are set more than 200 feet from the tracks.

Auburn, CA: The line splits into two segments just north of Auburn. There is only one grade crossing on either line through the town. There are many residences throughout the town, but only a relatively small number near the tracks, and very few near the grade crossing.

Penryn, CA: There is a scattered residential area to the northeast of Roseville. The line passes through the center of town. There is only one grade crossing. The residences are scattered on both sides of the tracks.

Loomis, CA: The line runs through the center of town. There are industrial buildings to the east of the tracks. This community is similar to Penryn in land use patterns and density. There is one grade crossing in the center of town.

Rocklin, CA: This is a residential area just to the northeast of Roseville. The residences are much closer together than in Loomis and Penryn. The line runs through the center of the town and there are several grade crossings throughout the residential area. The residences are on both sides of the tracks, some within 200 feet of the tracks but with the majority over 500 feet distant.

Roseville, CA: The line terminates at the Roseville Yard at northeastern edge of town. There are industrial buildings to the north of the tracks, with some residential buildings on both sides of the tracks.

Noise Assessment: As shown on Table 2-14, based on projected post-merger train volumes, there are 487 additional residences, one school, and four churches that are projected to be exposed to noise levels exceeding L_{dn} 65. The principal source of increases is horn blowing at grade crossings in the affected communities.

TABLE 2-14

NOISE SUMMARY
SPARKS, NEVADA TO ROSEVILLE, CALIFORNIA (SP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Sparks, NV	0	0	0	0	0	0
Reno, NV	40	0	1	145	0	1
Verdi, NV	56	0	1	86	0	1
Truckee, CA	130	0	0	195	0	1
Norden, CA	14	0	0	14	0	0
Colfax, CA	47	0	0	101	1	1
Weimer, CA	3	0	0	16	0	0
Auburn, CA	35	0	0	67	0	0
Penryn, CA	65	0	1	78	0	1
Loomis, CA	47	0	2	91	0	4
Rocklin, CA	179	0	1	270	0	1
Roseville, CA	29	1	1	69	1	1
TOTAL	645	1	7	1132	2	11

2.45 WINNEMUCCA, NEVADA TO SPARKS, NEVADA

2.45.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 10.1 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (147, 148). AQCR 147 is designated as attainment for all criteria pollutants except SO_2 and PM. AQCR 148 is designated as attainment for all criteria pollutants except PM, PM_{10}, CO, and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 44.14, CO 137.24 , NO_x 1027.26, SO_2 74.44, and PM 22.27.

2.45.2 Noise

Affected Land Use: There are three communities along this segment that may experience increased train noise. The existing land use conditions for each community are summarized below:

Winnemucca, NV: The line run through the center of the town where are two grade crossings. There appear to be residences to both sides of the line, with a large residential area to the south of the tracks at the south end of town.

Lovelock, NV: The line runs through the center of the town to the west of I-80. There are several grade crossings throughout the town. There are residential areas on both sides of the tracks, with the larger area to the west. The buildings closest to the line provide acoustical shielding for buildings farther away.

Sparks, NV: Sparks is an eastern suburb of Reno, NV. There are only a few residences near the line where the line enters the Sparks Yard.

Noise Assessment: As shown in Table 2-15, based on UP/SP traffic projections, the post-merger noise increases will include an additional 147 residences, one school, and two churches. The majority of the increases are due to horn blowing at grade crossings in the affected communities.

TABLE 2-15

NOISE SUMMARY
WINNEMUCCA, NEVADA TO SPARKS, NEVADA (SP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Winnemucca, NV	43	0	1	120	1	2
Lovelock, NV	55	0	0	123	0	1
Sparks, NV	2	0	0	4	0	0
TOTAL	100	0	1	247	1	3

2.46 CHICKASHA, OKLAHOMA TO FORT WORTH, TEXAS

2.46.1 Air Quality Analysis

This rail segment (refer to Figure 2-1) will experience an increase of 6.5 trains per day and an annual increase in gross ton miles of 113% as a result of the UP/SP merger. It crosses two states and four AQCRs (184, 189, 210, 215). AQCRs 184, 189, and 210 are designated as attainment for all criteria pollutants. AQCR 215 is designated as attainment for all criteria pollutants except ozone and lead. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 62.67, CO 194.86 , NO_x 1458.60, SO_2 105.69, and PM 31.62.

2.46.2 Noise

Affected Land Use: The following is a summary of the existing land use along the Chickasha to Fort Worth segment:

Chickasha: The line runs through the eastern part of the town. There are two-story apartment buildings located 100 feet to the east of the tracks, but no other residential land use near this segment.

Marlow: The line runs through the eastern part of town, with the closest residences about 150 feet east of the track. Two 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.

Duncan: This town is the headquarters of Haliburton, a large oil industry supplier. Residences are located about 100 feet away from the line at 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.

Sunray: The tracks line east of an oil refinery. Grade crossings are located about a mile to the north and to the south of town, a quarter mile from the nearest home. The closest residence is about 500 feet from the tracks.

Waurika: The line runs through the center of this small town. There are grade crossings at US 70 and near an old depot, now a museum and library fenced off from the track. The closest residences are over 300 feet from the tracks with industrial buildings between the residences and the tracks that provide significant acoustical shielding of train noise.

Stoneburg: The line parallels Route 81 through the center of town. The highway provides significant shielding for the eastern half of the town.

Ft. Worth: The line enters the Diamond Hill area of Ft. Worth, just north of the stock yards. Residences are located adjacent to the tracks, within 100 feet to the east. A few other homes are located about 200 feet to the west.

Noise Assessment: As shown in Table 2-16, based on UP/SP traffic projections, the post-merger noise increases will include 113 residences, one school, and 11 churches.

TABLE 2-16

NOISE SUMMARY

CHICKASHA, OKLAHOMA TO FORT WORTH, TEXAS (UP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Chickasha, OK	18	0	0	32	1	1
Marlow, OK	39	0	1	56	0	2
Duncan, OK	21	0	0	41	0	7
Sunray, OK	0	0	0	4	0	0
Waurika, OK	13	0	0	51	0	2
Stoneburg, TX	3	0	0	3	0	0
Ft. Worth, TX	40	0	0	60	0	0
TOTAL	134	0	1	247	1	12

2.47 CHEMULT, OREGON TO EUGENE, OREGON

2.47.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 5.2 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (190, 193). AQCR 190 is designated as attainment for all criteria pollutants except PM_{10} and CO. AQCR 193 is designated as attainment for all criteria pollutants except PM, PM_{10}, CO, and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 7.28, CO 22.62, NO_x 169.34, SO_2 12.27, and PM 3.67.

2.47.2 Noise

The projected increases in train volume on this segment will not meet ICC analysis thresholds for noise.

2.48 EUGENE, OREGON TO PORTLAND, OREGON

2.48.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 5.2 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (193). AQCR 193 is designated as attainment for all criteria pollutants except PM, PM_{10}, CO, and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 22.11, CO 68.74 , NO_x 514.58, SO_2 37.29, and PM 11.16.

2.48.2 Noise

The projected increases in train volume on this segment do not meet ICC analysis thresholds for noise.

2.49 KLAMATH FALLS, OREGON TO CHEMULT, OREGON

2.49.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 6.1 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (190). AQCR 190 is designated as attainment for all criteria pollutants except PM_{10} and CO. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 4.61, CO 14.35, NO_x 107.39, SO_2 7.78, and PM 2.23.

2.49.2 Noise

The projected increases in train volume on this segment do not meet ICC analysis thresholds for noise.

2.50 OREGON TRK JUNCTION, OREGON TO PORTLAND, OREGON

2.50.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 3 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (190, 193). AQCR 190 is designated as attainment for all criteria pollutants except PM_{10} and CO. AQCR 193 is designated as attainment for all criteria pollutants except PM, PM_{10}, CO, and

ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 4.99, CO 15.52, NO_x 116.17, SO_2 8.42, and PM 2.52.

2.50.2 Noise

The projected increases in train traffic on this segment do not meet ICC analysis thresholds for noise.

2.51 PORTLAND, OREGON TO SEATTLE, WASHINGTON

2.51.1 Air Quality Analysis

This rail segment (refer to Figure 2-4) will experience an increase of 3.5 trains per day as a result of the UP/SP merger. It crosses two states and three AQCRs (193, 228, 229). AQCRs 193 and 229 are designated as attainment for all criteria pollutants except PM, PM_{10}, CO, and ozone. AQCR 228 is designated as attainment for all criteria pollutants except PM_{10}. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 10.00, CO 31.10 , NO_x 232.82, SO_2 16.87, and PM 5.05.

2.51.2 Noise

The projected increases in train volume on this segment do not meet ICC analysis thresholds for noise.

2.52 ANGLETON, TEXAS TO BLOOMINGTON, TEXAS

2.52.1 Air Quality Analysis

This rail segment (refer to Figure 2-1) will experience an increase of 3.99 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (216, 214). AQCR 214 is designated as attainment for all criteria pollutants. AQCR 216 is designated as attainment for all criteria pollutants except ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 14.64, CO 45.52, NO_x 340.72, SO_2 24.69, and PM 7.39.

2.52.2 Noise

The projected increases in train volume on this segment do not meet ICC analysis thresholds for noise.

2.53 BIG SANDY, TEXAS TO DALLAS, TEXAS

2.53.1 Air Quality Analysis

This rail segment (refer to Figure 2-1) will experience an increase of 7.2 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (22, 215). AQCR 22 is designated as attainment for all criteria pollutants. AQCR 215 is designated as attainment for all criteria pollutants except ozone and lead. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 24.34, CO 75.68, NO_x 566.48, SO_2 41.05, and PM 12.28.

2.53.2 Noise

The projected increases in train volume on this segment do not meet ICC analysis thresholds for noise.

2.54 BIG SPRING, TEXAS TO TOYAH, TEXAS

2.54.1 Air Quality Analysis

This rail segment (refer to Figure 2-8) will experience an increase of 9.8 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (218). AQCR 218 is designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 50.44, CO 156.83, NO_x 1173.94, SO_2 85.06, and PM 25.45.

2.54.2 Noise

Affected Land Use: There are nine major communities along this track segment. The existing land use conditions are summarized below.

Toyah, TX: The line runs through the center of town. There are two grade crossings. Most of the residences and a church are located north of the tracks.

Pecos, TX: The line runs through the northern part of the city. There are several grade crossings. The land use to the north of the tracks is primarily residential, while south of the tracks the first row of buildings is primarily commercial and industrial with residences farther from the tracks.

Pyote, TX: The line runs through the southern part of town, just to the north of I-20. There are two grade crossings in town. The majority of the residences and a church are north of the tracks.

Wickett, TX: The line runs through the southern part of the town. US 80 is just to the south of the tracks. There are two grade crossings in town. The majority of the land use north of the tracks is residential. Most of the houses are set back over 500 feet from the line.

Monahans, TX: The line runs through the northern part of the town with several grade crossings spaced throughout the town. The residences are in the western part of town, both north and south of the tracks.

Odessa, TX: The line runs through the southern part of town, paralleling I-20 for most of the way. The buildings closest to the tracks are primarily industrial, with residences set behind this first row of buildings. All the residences are located to the south of the tracks, along with a 20-unit apartment building and a church.

Midland, TX: The line runs through the southern part of the city. The first row of buildings to the north of the tracks are primarily commercial; the first row of buildings to the south of the tracks are mostly industrial. The majority of the residences are north of the tracks behind the commercial buildings.

Stanton, TX: The line runs through the center of the town, just south of US 80, which provides some shielding to the residences north of the tracks. There are residences on both sides of the track the length of the town. There are several grade crossings throughout the town.

Big Spring, TX: There are no residences located near the line or the Big Spring yard. There are no grade crossings in the town.

Noise Assessment: Table 2-17 summarizes the noise increases for this line segment. Based on UP/SP rail traffic projections, the post-merger traffic will cause an additional 487 residences, one school, and six churches to be exposed to noise levels exceeding L_{dn} 65. The majority of the increases are due to horn blowing near grade crossings in the affected communities. The receptors in Toyah are split between this line and the line from Sierra Blanca to Toyah (see section 2.63.2).

TABLE 2-17

NOISE SUMMARY
BIG SPRING, TEXAS TO TOYAH, TEXAS (UP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Toyah, TX	20	0	0	34	0	1
Pecos, TX	67	0	0	139	0	0
Pyote, TX	18	0	0	36	0	1
Wickett, TX	14	0	0	61	0	0
Monahans, TX	27	0	0	108	0	2
Odessa, TX	0	0	0	85	0	0
Midland, TX	0	0	0	90	0	2
Stanton, TX	16	0	0	96	1	0
Big Spring, TX	0	0	0	0	0	0
TOTAL	162	0	0	649	1	6

2.55 DALHART, TEXAS TO EL PASO, TEXAS

2.55.1 Air Quality Analysis

This rail segment (refer to Figure 2-8) will experience an increase of 7.6 trains per day as a result of the UP/SP merger. It crosses one state and four AQCRs (211,

155, 154, 153). AQCRs 211, 154, and 155 are designated as attainment for all criteria pollutants. AQCR 153 is designated as attainment for all criteria pollutants except PM_{10}, CO, and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 42.80, CO 133.08, NO_x 996.18, SO_2 72.18, and PM 21.60.

2.55.2 Noise

The projected increase in train volume on this segment does not meet ICC analysis thresholds for noise.

2.56 DALLAS, TEXAS TO FORT WORTH, TEXAS

2.56.1 Air Quality Analysis

This rail segment (refer to Figure 2-1) will experience an increase of 10.15 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (215). AQCR 215 is designated as attainment for all criteria pollutants except ozone and lead. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 6.33, CO 19.68, NO_x 147.29, SO_2 10.67, and PM 3.19.

2.56.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.57 EL PASO, TEXAS TO LORDSBURG, NEW MEXICO

2.57.1 Air Quality Analysis

This rail segment (refer to Figure 2-2) will experience an increase of 15.40 trains per day as a result of the UP/SP merger. It crosses two states and two AQCRs (153, 510). AQCR 153 is designated as attainment for all criteria pollutants except PM_{10}, CO, and ozone. AQCR 510 is designated as attainment for all criteria pollutants except PM_{10}. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 49.54, CO 154.02, NO_x 1152.93, SO_2 83.54, and PM 25.00.

2.57.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.58 FORT WORTH, TEXAS TO BIG SPRING, TEXAS

2.58.1 Air Quality Analysis

This rail segment (refer to Figure 2-8) will experience an increase of 9.01 trains per day as a result of the UP/SP merger. It crosses one state and three AQCRs (215, 210, 218). AQCRs 210 and 218 are designated as attainment for all criteria pollutants. AQCR 215 is designated as nonattainment for all criteria pollutants except ozone and lead. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 84.36, CO 262.27, NO_x 1963.22, SO_2 142.26, and PM 42.56.

2.58.2 Noise

Affected Land Use: There are a number of communities along this segment that could experience increased train noise. The existing land use conditions for each community are summarized below.

Big Spring, TX: There are no residences located near the line or the Big Spring yard, nor are there any grade crossings in town.

Sand Springs, TX: The line runs north on the outskirts of town. All of the residential areas are south of the tracks.

Coahoma, TX: The line runs through the center of the town, to the north of I-20. There are two grade crossings in the town. There are residences on both sides of the tracks, with the majority of the residences to the north.

Westbrook, TX: The line runs through the southern end of town, just to the south of I-20. I-20 should provide shielding to the residential areas to the north. There are two grade crossings in the town.

Colorado City, TX: The line runs through the southern edge of town. There is only one grade crossing in the eastern section of the town, near residential areas on both sides of the tracks.

Loraine, TX: The line runs through the northern part of town. There are two grade crossings. The land use to the south of the tracks is residential.

Roscoe, TX: There is only one grade crossing in the center of the town. The area just to the south of the line is industrial, with residential land use beyond this area. Most of the residences are not near the tracks.

Sweetwater, TX: The line passes through the center of town. There are two grade crossings in the western part of town. There are residential areas on both sides of the tracks.

Abilene, TX: The line runs through the center of town. There are a number of grade crossings. 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. There are several apartment buildings along the tracks, including 20-unit, 24-unit, 12-unit, and 50-unit apartment buildings. There are also two churches in proximity to the line.

Clyde, TX: The line runs through the center of the town, between two east-west roads. There are two grade crossings. There are residences on both sides of the tracks.

Baird, TX: The line bypass the town to the south, and there is only one group of residential buildings near the tracks on the western edge of town. There is one grade crossing in this area.

Putnam, TX: The line run through the center of the town just south of I-20. There are two grade crossings. The interstate provides some shielding to the buildings

to the north of the tracks. There are residences on both sides of the tracks, with the majority to the south.

Cisco, TX: The line runs along the northern edge of the town, through a residential area. There are two grade crossings.

Eastland, TX: The line runs north of the town through a residential area with the majority of the residences south of the tracks. There are three grade crossings.

Olden, TX: The line runs through the northern edge of this town with only a few residences to the south of the tracks. There is one grade crossing.

Ranger, TX: The line runs through the center of town, just west of US 80. There are several grade crossings. US 80 provides some acoustical shielding for residences to the east of the tracks. There are residential areas on both sides of the tracks throughout the town.

Strawn, TX: The line passes through the center of the town. There are several grade crossings throughout the town. There are residences to the north and the south of the tracks.

Gordon, TX: The line goes through the center of the town. There are a number of grade crossings through the town. There are residences scattered on both sides of the tracks the length of the town.

Weatherford, TX: The line runs through the center of town from the northwest to the southeast. There are three 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.

Aledo, TX: This is a small community just to the west of Ft. Worth. The line runs through the center of the town. There are two grade crossings. The majority of the residences appear to be north of the tracks at the east end of town.

Benbrook, TX: This community is a western suburb of Ft. Worth. There are several grade crossings on the line. There are residences on both sides of the tracks.

Ft. Worth, TX: The line runs into the Ft. Worth yard in the western part of town. There are no grade crossings. There are some scattered residences on both sides of the tracks.

Noise Assessment: As shown on Table 2-18, based on UP/SP rail traffic projections, 1087 additional residences, three additional schools, and 15 additional churches will be exposed to noise levels exceeding L_{dn} 65. The majority of the impacts in all the communities is due to the blowing of horns at grade crossings.

TABLE 2-18

NOISE SUMMARY
FORT WORTH, TEXAS TO BIG SPRING, TEXAS (UP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Big Spring, TX	0	0	0	0	0	0
Sand Springs, TX	0	0	0	1	0	0
Coahoma, TX	44	0	0	90	0	1
Westbrook, TX	13	0	0	28	0	0
Colorado City, TX	42	0	2	102	1	4
Loraine, TX	33	0	1	69	0	1
Roscoe, TX	6	0	1	19	0	1
Sweetwater, TX	12	0	0	57	0	0
Abilene, TX	55	1	0	354	1	6
Clyde, TX	52	0	1	85	0	1
Baird, TX	2	0	0	18	0	0
Putnam, TX	7	0	0	29	0	1
Cisco, TX	46	0	0	106	0	0

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Eastland, TX	25	0	0	75	0	1
Olden, TX	5	0	0	13	1	0
Ranger, TX	30	0	1	75	0	1
Strawn, TX	19	0	0	44	0	0
Gordon, TX	24	0	0	69	0	1
Weatherford, TX	24	0	0	73	0	1
Aledo, TX	24	0	0	75	1	2
Benbrook, TX	40	0	0	105	0	0
Ft. Worth, TX	0	0	0	15	0	0
TOTAL	503	1	6	1590	4	21

2.59 ODEM, TEXAS TO CORPUS CHRISTI, TEXAS

2.59.1 Air Quality Analysis

This rail segment (refer to Figure 2-1) will experience an increase of 155.7% (as measured in gross tons) as a result of the UP/SP merger. It crosses one state and one AQCR (214). AQCR 214 is designated as attainment for all criteria pollutants. The proposed increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 2.74, CO 8.51, NO_x 63.66, SO_2 4.61, and PM 1.38.

2.59.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.60 SIERRA BLANCA, TEXAS TO EL PASO, TEXAS

2.60.1 Air Quality Analysis

This rail segment (refer to Figure 2-8) will experience an increase of 5.8 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (153). AQCR 153 is designated as attainment for all criteria pollutants except PM_{10}, CO, and ozone. The proposed increase in pollutant emissions on this rail segment are estimated

in tons per year, as follows: HC 12.25, CO 38.10, NO_x 285.19, SO_2 20.66, and PM 6.18.

2.60.2 Noise

The projected increase in train volume on this segment does not meet ICC analysis thresholds for noise.

2.61 STRATTFORD, TEXAS TO DALHART, TEXAS

2.61.1 Air Quality Analysis

This rail segment (refer to Figure 2-8) will experience an increase of 8.6 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (211). AQCR 211 is designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 5.26, CO 16.36, NO_x 122.45, SO_2 8.87, and PM 2.65.

2.61.2 Noise

Affected Land Use: The two population centers on this segment are Stratford and Dalhart. The line passes through the southeast part of Stratford with a number of the residences in this part of town. There are three grade crossings within the town limits and one grade crossing just east of town. There are nine 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. In Dalhart, residences on the east side of town are separated from the rail line by approximately 300 to 400 feet. There are only seven houses within 400 feet north of the tracks on the east end of town. On the west side of Dalhart, there are two churches 200 to 250 feet from the tracks, and a grade crossing within 200 feet of six houses.

Noise Assessment: As shown in Table 2-19, the number of receptors in Stratford are divided between this segment and the Hutchinson to Stratford segment. Most of the noise increase in Dalhart is on the west side of town and due to train horns at the grade crossing.

TABLE 2-19

NOISE SUMMARY
STRATFORD, TEXAS TO DALHART, TEXAS (SP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Stratford, TX	18	0	0	33	0	0
Dalhart, TX	24	0	2	52	0	2
TOTAL	42	0	2	85	0	2

2.62 TEXARKANA, TEXAS TO BIG SANDY, TEXAS

2.62.1 Air Quality Analysis

This rail segment (refer to Figure 2-1) will experience an increase of 6.6 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (22). AQCR 22 is designated as attainment for all criteria pollutants. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 27.73, CO 86.22, NO_x 645.41, SO_2 46.77, and PM 13.99.

2.62.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.63 TOYAH, TEXAS TO SIERRA BLANCA, TEXAS

2.63.1 Air Quality Analysis

This rail segment (refer to Figure 2-8) will experience an increase of 9.86 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (218, 153). AQCR 218 is designated as attainment for all criteria pollutants. AQCR 153 is designated as nonattainment for all criteria pollutants except PM_{10}, CO, and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 36.67, CO 114.00, NO_x 853.33, SO_2 61.83, and PM 18.50.

2.63.2 Noise

Affected Land Use: There are several communities along this line segment that could experience increased train noise. The existing land use conditions for each community are summarized below.

Sierra Blanca, TX: The line passes through the center of the town near to residences and churches. There is one grade crossing in the center of the town. The closest residences are within 250 to 400 feet of the tracks.

Van Horn, TX: The line passes through the center of the town. There is one grade crossing. The area to the south of the tracks is industrial, with the majority of the residences to the north. A church is located 600 to 800 feet from the line.

Toyah, TX: The line passes through the center of town. There are two grade crossings and residences on both sides of the tracks. There is one church located to the north of the tracks that is acoustically shielded by some of the residences.

Noise Assessment: The receptors in Toyah are split between this line segment and the segment from Toyah to Big Springs. Based on UP/SP rail traffic projections, there will be an additional 99 residences and four churches exposed to noise exceeding L_{dn} 65 due to increased rail traffic. The majority of the increase is due to horn blowing at grade crossings.

TABLE 2-20

NOISE SUMMARY
TOYAH, TEXAS TO SIERRA BLANCA, TEXAS (UP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Sierra Blanca, TX	24	0	1	64	0	3
Van Horn, TX	34	0	0	79	0	1

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Toyah, TX	19	0	0	33	0	1
TOTAL	77	0	1	176	0	5

2.64 OGDEN, UTAH TO ALAZON, NEVADA

2.64.1 Air Quality Analysis

This rail segment (refer to Figure 2-5) will experience an increase of 10.3 trains per day as a result of the UP/SP merger. It crosses two states and three AQCRs (220, 219, 147). AQCR 219 is designated as attainment for all criteria pollutants. AQCR 220 is designated as nonattainment for all criteria pollutants except SO_2, PM, PM_{10}, CO, and ozone. AQCR 147 is designated as attainment for all criteria pollutants except SO_2 and PM. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 56.78, CO 176.52, NO_x 1321.33, SO_2 95.74, and PM 28.65.

2.64.2 Noise

Affected Land Use: There are a five communities along this segment. The existing land use conditions for each community are summarized below:

Ogden, UT: The yard at the terminus of the line is located in the northwest part of Ogden. The line passes through a mainly industrial area north of the yard. There are only a few residences to the south of the tracks near a grade crossing.

Garland, UT: Garland is just to the west of Ogden. It is a residential town with several grade crossings through the area. Several residences are located along and near the tracks.

Montello, NV: This is a small town near the SP line. The line is to the southeast of the town, and State Route 30 is between the town and the tracks. There are no grade crossings and all the residences are to the north of the tracks.

Wells, NV: The line runs through the northern part of the town. There are several industrial buildings to the south, and a residential area north of the tracks. US 40 runs just south of the tracks and provides acoustical shielding for residences to the south.

Alazon, NV: There are no residences in Alazon.

Noise Assessment: As shown in Table 2-21, based on UP/SP rail traffic projections, there are 32 additional residences, and one additional church that are expected to be exposed to noise levels exceeding L_{dn} 65. The majority of the increase is due to horn blowing at grade crossings in the affected communities.

TABLE 2-21

NOISE SUMMARY
OGDEN, UTAH TO ALAZON, NEVADA (SP)

Community	Number of Sensitive Receptors					
	Pre-Merger			Post-Merger		
	Resid.	School	Church	Resid.	School	Church
Ogden, UT	5	0	0	6	0	0
Garland, UT	38	0	0	63	0	0
Montello, NV	0	0	0	0	0	0
Wells, NV	63	0	0	69	0	1
Alazon, NV	0	0	0	0	0	0
TOTAL	106	0	0	138	0	1

2.65 PROVO, UTAH TO LYNNDYL, UTAH

2.65.1 Air Quality Analysis

This rail segment (refer to Figure 2-5) will experience an increase of 3.0 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (220, 219). AQCR 219 is designated as attainment for all criteria pollutants. AQCR 220 is designated as attainment for all criteria pollutants except SO_2, PM, PM_{10}, CO, and ozone.

The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 11.24, CO 39.94, NO_x 261.54, SO_2 18.95, and PM 5.67.

2.65.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.66 OAK CREEK, WISCONSIN TO ST. FRANCIS, WISCONSIN

2.66.1 Air Quality Analysis

This rail segment (refer to Figure 2-6) will experience an increase of 153.3% (as measured in gross tons) as a result of the UP/SP merger. It crosses one state and one AQCR (239). AQCR 239 is designated as attainment for all criteria pollutants except PM and ozone. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 0.08, CO 0.26, NO_x 1.97, SO_2 0.14, and PM 0.04.

2.66.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.67 CHEYENNE, WYOMING TO RAWLINS, WYOMING

2.67.1 Air Quality Analysis

This rail segment (refer to Figure 2-5) will experience an increase of 7.0 trains per day as a result of the UP/SP merger. It crosses one state and two AQCRs (242, 243). AQCR 242 is designated as attainment for all criteria pollutants. AQCR 243 is designated as attainment for all criteria pollutants except PM and PM_{10}. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 39.25, CO 122.04, NO_x 913.51, SO_2 66.19, and PM 19.80.

2.67.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.68 GRANGER, WYOMING TO OGDEN, UTAH

2.68.1 Air Quality Analysis

This rail segment (refer to Figure 2-5) will experience an increase of 3.8 trains per day as a result of the UP/SP merger. It crosses two states and three AQCRs (243, 220, 219). AQCR 219 is designated as attainment for all criteria pollutants. AQCR 220 is designated as attainment for all criteria pollutants except SO_2, PM, PM_{10}, CO, and ozone. AQCR 243 is designated as attainment for all criteria pollutants except PM and PM_{10}. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 20.57, CO 63.94, NO_x 478.61, SO_2 34.68, and PM 10.38.

2.68.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.69 GREEN RIVER, WYOMING TO GRANGER, WYOMING

2.69.1 Air Quality Analysis

This rail segment (refer to Figure 2-5) will experience an increase of 6.7 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (243). AQCR 243 is designated as attainment for all criteria pollutants except PM and PM_{10}. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 6.96, CO 21.64, NO_x 162.01, SO_2 11.74, and PM 3.51.

2.69.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

2.70 RAWLINS, WYOMING TO GREEN RIVER, WYOMING

2.70.1 Air Quality Analysis

This rail segment (refer to Figure 2-5) will experience an increase of 6.7 trains per day as a result of the UP/SP merger. It crosses one state and one AQCR (243). AQCR 243 is designated as attainment for all criteria pollutants except PM and PM_{10}. The projected increase in pollutant emissions on this rail segment are estimated in tons per year, as follows: HC 30.65, CO 95.30, NO_x 713.37, SO_2 51.69, and PM 15.47.

2.70.2 Noise

The projected increase in train volume on this segment will cause less than a 2 decibel increase, which is considered insignificant.

TABLE 2-22

SUMMARY OF RAIL LINE SEGMENT EMISSION CHANGES

Segment Origin	Segment Destination	Affected AQCR	Attainment Status	Trains per Day Change	Gross Tons per Year Change	HC	CO	NO_x	SO_2	PM
Brinkley AR	Pine Bluff AR			8.70	23.17	28.81	89.59	670.60	48.59	14.54
		20	A			18.44	57.34	429.19	31.10	9.30
		16	A			10.37	32.25	241.42	17.49	5.23
Fair Oaks AR	Brinkley AR			10.30	20.25	9.22	28.67	214.62	15.55	4.65
		20	A			9.22	28.67	214.62	15.55	4.65
Paragould AR	Fair Oaks AR			8.30	14.31	17.30	53.77	402.50	29.17	8.73
		20	A			17.30	53.77	402.50	29.17	8.73
Cochise AZ	Tucson AZ			15.10	16.43	22.45	69.79	522.41	37.85	11.33
		501	NA			11.22	34.90	261.21	18.93	5.66
		502	NA			11.22	34.90	261.21	18.93	5.66
Picacho AZ	Yuma AZ			13.40	13.73	48.82	151.79	1136.18	82.33	24.63
		505	NA			11.23	34.91	261.32	18.94	5.67
		504	NA			17.09	53.13	397.66	28.82	8.62
		503	NA			20.99	65.27	488.65	35.40	10.59

TABLE 2-22 (Con'd)

SUMMARY OF RAIL LINE SEGMENT EMISSION CHANGES

Segment Origin	Segment Destination	Affected AQCR	Attainment Status	Trains per Day Change	Gross Tons per Year Change	HC	CO	NO_x	SO_x	PM
Tucson AZ	Phoenix AZ			15.70	22.97	20.12	62.55	468.18	33.92	10.15
		502	NA			11.27	35.03	262.18	19.00	5.68
		505	NA			8.85	27.52	206.00	14.93	4.47
Yuma AZ	West Colton CA			11.10	14.16	48.36	150.37	1125.58	81.56	24.40
		503	NA			0.15	0.45	3.38	0.24	0.07
		33	NA			41.93	130.37	975.88	70.71	21.16
		24	NA			6.29	19.55	146.33	10.60	3.17
West Colton CA	Palmdale CA (via Hiland)			3.90	9.28	13.00	40.43	302.63	21.93	6.56
		24	NA			10.01	31.13	233.03	16.89	5.05
		33	NA			2.99	9.30	69.61	5.04	1.51
Dunsmuir CA	Klamath Falls OR			5.20	3.09	5.74	17.84	133.52	9.67	2.89
		28	NA			0.03	0.11	0.80	0.06	0.02
		27	A			4.61	14.34	107.35	7.78	2.33
		190	NA			1.09	3.39	25.37	1.84	0.55
Roseville CA	Marysville CA			3.50	2.15	1.28	3.98	29.80	2.16	0.65
		508	NA			0.81	2.51	18.77	1.36	0.41
		28	NA			0.47	1.47	11.03	0.80	0.24
Slauson Jct.CA	Long Beach CA			3.60	-6.54	-1.60	-4.99	-37.32	-2.70	-0.81
		24	NA			-1.60	-4.99	-37.32	-2.70	-0.81
Stockton/ Lathrop CA	Martinez CA (via Mococo)			4.00	3.66	3.08	9.57	71.61	5.19	1.55
		31	NA			1.48	4.59	34.38	2.49	0.75
		30	NA			1.60	4.97	37.24	2.70	0.81
Stockton/ Lathrop CA	Sacramento CA			4.28	17.89	14.41	44.82	335.47	24.31	7.27
		31	NA			7.93	24.65	184.51	13.37	4.00
		28	NA			6.49	20.17	150.96	10.94	3.27
Bond CO	Dotsero CO			6.10	19.23	12.80	39.80	297.88	21.58	6.46
		35	NA			12.80	39.80	297.88	21.58	6.46

TABLE 2-22 (Con'd)

SUMMARY OF RAIL LINE SEGMENT EMISSION CHANGES

Segment Origin	Segment Destination	Affected AQCR	Attainment Status	Trains per Day Change	Gross Tons per Year Change	HC	CO	NO_x	SO_2	PM
Denver CO	Cheyenne WY			4.86	16.56	30.45	94.68	708.71	51.35	15.36
		242	A			3.96	12.31	92.13	6.68	2.00
		37	NA			21.32	66.28	496.10	35.95	10.76
		36	NA			5.18	16.10	120.48	8.73	2.61
Denver CO	Bond CO			6.70	19.27	42.87	133.28	997.62	72.29	21.63
		36	NA			15.43	47.98	359.14	26.02	7.79
		40	NA			24.43	75.97	568.64	41.20	12.33
		35	NA			3.00	9.33	69.83	5.60	1.51
California Jct. IA	Fremont NE			8.54	16.18	8.79	27.32	204.47	14.82	4.43
		93	A			1.32	4.10	30.67	2.22	0.66
		146	A			7.47	23.22	173.80	12.59	3.77
Clinton IA	Beverly IA			5.10	7.80	11.07	34.41	257.55	18.66	5.58
		69	NA			3.98	12.39	92.72	6.72	2.01
		91	A			1.55	4.82	36.06	2.61	0.78
		88	A			5.53	17.20	128.77	9.33	2.79
Missouri Valley IA	California Jct. IA			8.50	17.03	1.79	5.56	41.65	3.02	0.90
		93	A			1.79	5.56	41.65	3.02	0.90
Buda IL	Galesburg IL			6.44	6.21	4.68	14.54	108.85	7.89	2.36
		71	NA			0.98	3.05	22.86	1.66	0.50
		69	NA			1.45	4.51	33.74	2.45	0.73
		65	A			2.25	6.98	52.25	3.79	1.13
Chicago IL	Villa Grove IL			3.01	6.66	14.82	46.07	344.84	24.99	7.48
		67	NA			4.89	15.20	113.80	8.25	2.47
		66	A			9.93	30.87	231.05	16.74	5.01
Chicago-Proviso IL	West Chicago IL			14.10	22.01	5.78	17.98	134.58	9.75	2.92
		67	NA			5.78	17.98	134.58	9.75	2.92
Geneva IL	Nelsen II			14.10	22.01	26.60	82.71	619.08	44.86	13.42
		67	NA			5.32	16.54	123.82	8.97	2.68
		73	A			11.17	34.74	260.02	18.84	5.64
		71	NA			10.11	31.43	235.25	17.05	5.10

TABLE 2-22 (Con'd)

SUMMARY OF RAIL LINE SEGMENT EMISSION CHANGES

Segment Origin	Segment Destination	Affected AQCR	Attainment Status	Trains per Day Change	Gross Tons per Year Change	HC	CO	NO_x	SO_2	PM
Nelson IL	Clinton IA			4.00	7.25	4.32	13.42	100.48	7.28	2.18
		69	NA			4.14	12.89	96.46	6.99	2.09
		71	NA			0.17	0.54	4.02	0.29	0.09
Nelson IL	Buda IL			10.14	13.66	8.14	25.29	189.33	13.72	4.10
		71	NA			8.14	25.29	189.33	13.72	4.10
West Chicago IL	Geneva IL			14.10	22.01	2.31	7.19	53.83	3.90	1.17
		67	NA			2.31	7.19	53.83	3.90	1.17
Herington KS	Lost Springs KS			10.29	27.21	3.10	9.63	72.09	5.22	1.56
		96	A			2.32	7.22	54.07	3.92	1.17
		99	A			0.77	2.41	18.02	1.31	0.39
Hutchinson KS	Strattford TX			8.80	5.55	26.64	82.82	619.90	44.92	13.44
		99	A			3.20	9.94	74.39	5.39	1.61
		100	A			15.45	48.03	359.54	26.05	7.79
		187	A			6.13	19.05	142.58	10.33	3.09
		211	A			1.86	5.80	43.39	3.14	0.94
Lost Springs KS	Wichita KS			9.96	22.58	25.43	79.06	591.82	42.88	12.83
		99	A			25.43	79.06	591.82	42.88	12.83
Marysville KS	Valley NE			2.00	1.86	4.36	13.55	101.45	7.35	2.20
		85	NA			0.04	0.14	1.01	0.07	0.02
		146	A			1.09	3.39	25.36	1.84	0.55
		145	A			2.92	9.08	67.97	4.93	1.47
		95	A			0.31	0.95	7.10	0.51	0.15
Oakley KS	Denver CO			6.86	14.95	68.61	213.32	1596.80	115.71	34.62
		97	A			19.90	61.86	463.07	33.55	10.04
		34	NA			33.62	104.53	782.43	56.70	16.96
		36	NA			15.09	46.93	351.30	25.46	7.62
Salina KS	Oakley KS			6.00	14.94	49.98	155.38	1163.07	84.28	25.22
		96	A			13.99	43.51	325.66	23.60	7.06
		97	A			35.98	111.87	837.41	60.68	18.15

TABLE 2-22 (Con'd)

SUMMARY OF RAIL LINE SEGMENT EMISSION CHANGES

Segment Origin	Segment Destination	Affected AQCR	Attainment Status	Trains per Day Change	Gross Tons per Year Change	HC	CO	NO_x	SO_x	PM
Wichita KS	Chickasha OK			7.43	20.18	67.88	211.05	1579.77	114.47	34.25
		99	A			17.65	54.87	410.74	29.76	8.90
		185	A			23.76	73.87	552.92	40.07	11.99
		184	A			26.47	82.31	616.11	44.64	13.36
Iowa Jct. LA	Baumont TX			11.30	22.07	28.99	90.14	674.75	48.89	14.63
		106	NA			28.99	90.14	674.75	48.89	14.63
Livonia LA	Kinder LA			1.57	8.66	11.59	36.04	269.79	19.55	5.85
		106	NA			11.59	36.04	269.79	19.55	5.85
Shreveport LA	Lufkin TX			3.20	0.44	0.89	2.78	20.81	1.51	0.45
		22	A			0.32	1.00	7.49	0.54	0.16
		106	NA			0.57	1.78	13.32	0.96	0.29
Dexter Jct. MO	Paragould AR			6.30	12.15	14.68	45.66	341.75	24.76	7.41
		138	NA			6.90	21.46	160.62	11.64	3.48
		20	A			7.78	24.20	181.13	13.12	3.93
Lordsburg NM	Cochise AZ			14.60	14.47	21.54	66.98	501.38	36.33	10.87
		510	NA			16.16	50.24	376.04	27.25	8.15
		501	NA			5.39	16.75	125.35	9.08	2.72
Sparks NV	Roseville CA			9.00	13.59	33.09	102.87	770.04	55.80	16.69
		148	NA			2.65	8.23	61.60	4.46	1.34
		508	NA			30.44	94.64	708.44	51.33	15.36
Winnemucca NV	Sparks NV			10.10	14.40	44.14	137.24	1027.26	74.44	22.27
		147	NA			33.11	102.93	770.45	55.83	16.70
		148	NA			11.04	34.31	256.82	18.61	5.57
Chickasha OK	Fort Worth TX			6.57	20.14	62.67	194.86	1458.60	105.69	31.62
		184	A			10.65	33.13	247.96	17.97	5.38
		189	A			20.68	64.30	481.34	34.88	10.44
		210	A			10.65	33.13	247.96	17.97	5.38
		215	NA			20.68	64.30	481.34	34.88	10.44

TABLE 2-22 (Con'd)

SUMMARY OF RAIL LINE SEGMENT EMISSION CHANGES

Segment Origin	Segment Destination	Affected AQCR	Attainment Status	Trains per Day Change	Gross Tons per Year Change	HC	CO	NO_x	SO_x	PM
Chemult OR	Eugene OR			5.20	3.35	7.28	22.62	169.34	12.27	3.67
		190	NA			1.96	6.11	45.72	3.31	0.99
		193	NA			5.31	16.51	123.61	8.96	2.68
Eugene OR	Portland OR			5.20	10.18	22.11	68.74	514.58	37.29	11.16
		193	NA			22.11	68.74	514.58	37.29	11.16
Klamath Falls OR	Chemult OR			6.10	3.56	4.61	14.35	107.39	7.78	2.33
		190	NA			4.61	14.35	107.39	7.78	2.33
Oregon Trk Jct OR	Portland OR			3.02	3.36	4.99	15.52	116.17	8.42	2.52
		190	NA			3.05	9.47	70.87	5.14	1.54
		193	NA			1.95	6.05	45.31	3.28	0.98
Porland OR	Seattle WA			3.58	3.07	10.00	31.10	232.82	16.87	5.05
		193	NA			5.00	15.55	116.41	8.44	2.52
		228	NA			1.10	3.42	25.61	1.86	0.56
		229	NA			3.90	12.13	90.80	6.58	1.97
Angleton TX	Bloomington TX			3.99	8.28	14.64	45.52	340.72	24.69	7.39
		216	NA			8.34	25.95	194.21	14.07	4.21
		214	A			6.30	19.57	146.51	10.62	3.18
Big Sandy TX	Dallas TX			7.20	14.18	24.34	75.68	566.48	41.05	12.28
		22	A			12.90	40.11	300.23	21.76	6.51
		215	NA			11.44	35.57	266.24	19.29	5.77
Big Spring TX	Toyah TX			9.86	18.95	50.44	156.83	1173.94	85.06	25.45
		218	A			50.44	156.83	1173.94	85.06	25.45
Dalhart TX	El Paso TX			7.60	5.75	42.80	133.08	996.18	72.18	21.60
		211	A			3.42	10.65	79.69	5.77	1.73
		155	A			7.70	23.95	179.31	12.99	3.89
		154	A			11.99	37.26	278.93	20.21	6.05
		153	NA			19.69	61.22	458.24	33.20	9.[illegible]
Dallas TX	Fort Worth TX			10.15	11.47	6.33	19.68	147.29	10.67	3.19
		215	NA			6.33	19.68	147.29	10.67	3.19

TABLE 2-22 (Con'd)

SUMMARY OF RAIL LINE SEGMENT EMISSION CHANGES

Segment Origin	Segment Destination	Affected AQCR	Attainment Status	Trains per Day Change	Gross Tons per Year Change	HC	CO	NO_x	SO_2	PM
El Paso TX	Lordsburg NM			15.40	19.11	49.54	154.02	1152.93	83.54	25.00
		153	NA			18.33	56.99	426.58	30.91	9.25
		510	NA			31.21	97.04	726.35	52.63	15.75
Fort Worth TX	Big Spring TX			9.01	18.00	84.36	262.27	1963.22	142.26	42.56
		215	NA			27.84	86.55	647.86	46.94	14.05
		210	A			48.93	152.12	1138.67	82.51	24.69
		218	A			7.59	23.60	176.69	12.80	3.83
Odem TX	Corpus Christi TX			1.50	9.08	2.74	8.51	63.66	4.61	1.38
		214	A			2.74	8.51	63.66	4.61	1.38
Sierra Blanca TX	El Paso TX			5.80	7.95	12.25	38.10	285.19	20.66	6.18
		153	NA			12.25	38.10	285.19	20.66	6.18
Strattford TX	Dalhart TX			8.60	9.69	5.26	16.36	122.45	8.87	2.65
		211	A			5.26	16.36	122.45	8.87	2.65
Texarkana TX	Big Sandy TX			6.60	14.66	27.73	86.22	645.41	46.77	13.99
		22	A			27.73	86.22	645.41	46.77	13.99
Toyah TX	Sierra Blanca TX			9.86	19.08	36.67	114.00	853.33	61.83	18.50
		218	A			9.17	28.50	213.33	15.46	4.62
		153	NA			27.50	85.50	640.00	46.37	13.87
Ogden UT	Alazon NV			10.30	18.21	56.78	176.52	1321.33	95.74	28.65
		220	NA			4.54	14.12	105.71	7.66	2.29
		219	A			31.79	98.85	739.94	53.62	16.04
		147	NA			20.44	63.55	475.68	34.47	10.31
Provo UT	Lynndyl UT			3.00	7.37	11.24	39.94	261.54	18.95	5.67
		220	NA			3.93	12.23	91.54	6.63	1.98
		219	A			7.30	22.71	170.00	12.32	3.69
Oak Creek WI	St Francis WI			-0.86	0.69	0.08	0.26	1.97	0.14	0.04
		239	NA			0.08	0.26	1.97	0.14	0.04
Cheyenne WY	Rawlins WY			7.00	13.03	39.25	122.04	913.51	66.19	19.80
		242	A			24.73	76.88	575.51	41.70	12.48
		243	NA			14.52	45.15	338.00	24.49	7.33

TABLE 2-22 (Con'd)

SUMMARY OF RAIL LINE SEGMENT EMISSION CHANGES

Segment Origin	Segment Destination	Affected AQCR	Attainment Status	Trains per Day Change	Gross Tons per Year Change	HC	CO	NO_x	SO_x	PM
Granger WY	Ogden UT			3.85	8.09	20.57	63.94	478.61	34.68	10.38
		243	NA			11.31	35.17	263.24	19.07	5.71
		220	NA			1.44	4.48	33.50	2.43	0.73
		219	A			7.81	24.30	181.87	13.18	3.94
Green River WY	Granger WY			6.73	13.29	6.96	21.64	162.01	11.74	3.51
		243	NA			6.96	21.64	162.01	11.74	3.51
Rawlings WY	Green River WY			6.72	13.04	30.65	95.30	713.37	51.69	15.47
		243	NA			30.65	95.30	713.37	51.69	15.47

NOTES:

Emission Factors (lb/1000 gallons diesel fuel):

Pollutant	Emission Factor
HC	22
CO	68.4
Nox	512
SO2	37.1
PM	11.1

Emission Factors adapted from "Locomotive Emission Study," Booz, Allen, & Hamilton, January 1991.

Fuel efficiency factor 628 (gross ton miles/gallon)

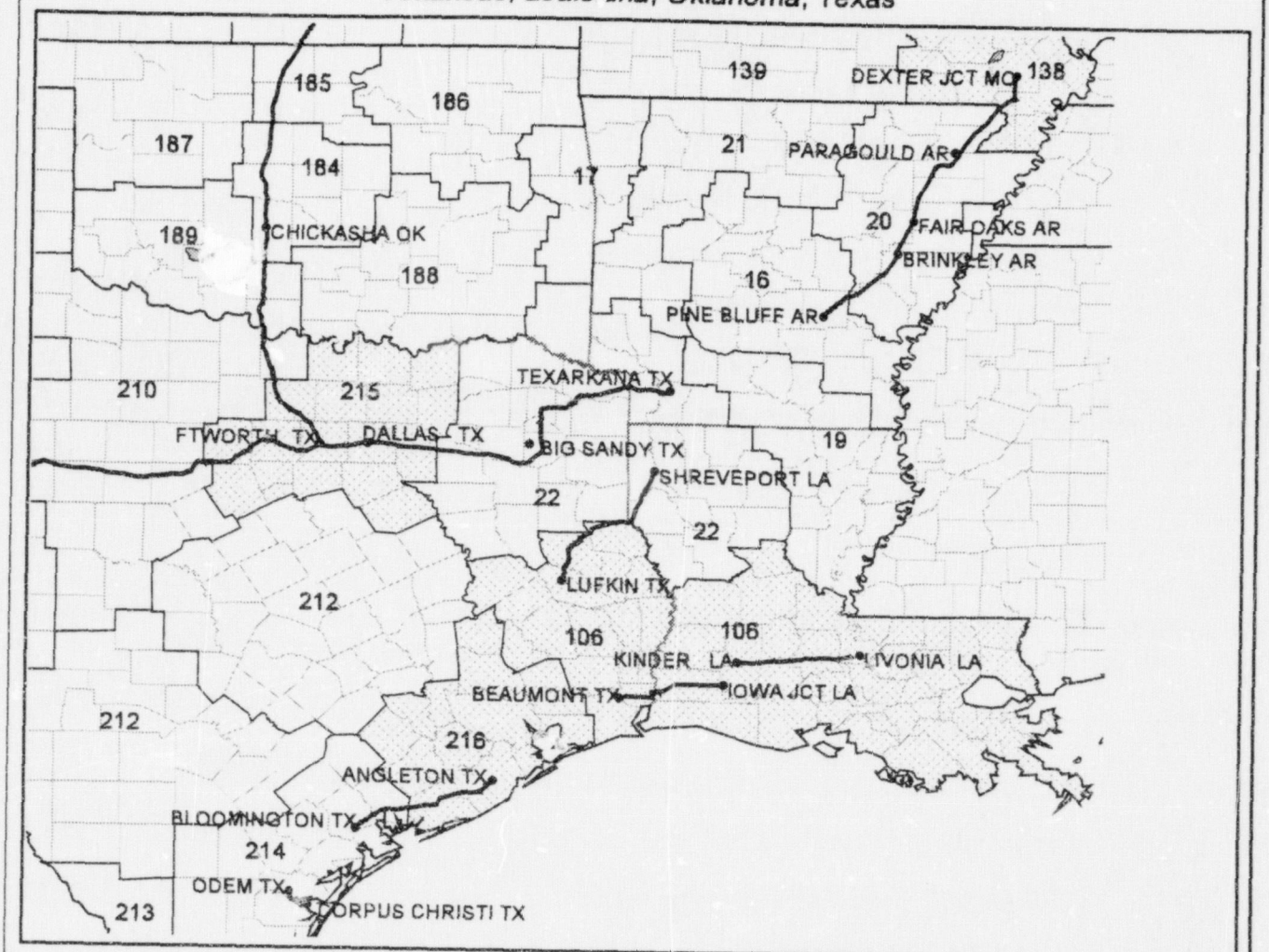
TABLE 2-23

NOISE ASSESSMENT FOR RAIL SEGMENTS

Rail Segment		Miles	Number of Sensitive Receptors*		
Origin	Destination		Pre-Merger	Post-Merger	Increase
Brinkley AR	Pine Bluff AR	71.0	**	**	**
Fair Oaks AR	Brinkley AR	26.0	114	210	96
Paragould AR	Fair Oaks AR	69.0	232	341	109
Cochise AZ	Tucson AZ	78.0	**	**	**
Picacho AZ	Yuma AZ	203.0	**	**	**
Tucson AZ	Picacho AZ	50.0	225	522	297
Yuma AZ	West Colton CA	195.0	**	**	**
Stockton/Lathrop CA	Martinez CA	48.0	0.00	622	622
Bond CO	Dotsero CO	38.0	0.00	0.0	0.0
California Jct. IA	Fremont NE	31.0	**	**	**
Missouri Valley IA	California Jct. IA	6.0	**	**	**
Chicago-Proviso IL	West Chicago IL	15.0	**	**	**
Geneva IL	Nelson IL	69.0	**	**	**
Nelson IL	Buda IL	34.0	65	182	117
West Chicago IL	Geneva IL	6.0	**	**	**
Herington KS	Lost Springs KS	6.5	0.00	58	58
Hutchinson KS	Stratford TX	274.0	524	914	390
Lost Springs KS	Wichita KS	64.3	0.00	191	191
Marysville KS	Valley NE	134.0	115	334	219
Oakley KS	Denver CO	262.0	50	249	199
Salina KS	Oakley KS	191.0	144	488	344
Wichita KS	Chickasha OK	192.0	361	696	335
Iowa Jct. LA	Beaumont TX	75.0	871	1384	513
Lordsburg NM	Cochise AZ	85.0	**	**	**
Sparks NV	Roseville CA	139.0	651	1143	492
Winnemucca NV	Sparks NV	175.0	101	251	150
Chickasha OK	Fort Worth TX	177.7	135	260	125
Big Spring TX	Toyah TX	152.0	162	656	494
Dallas TX	Fort Worth TX	31.5	**	**	**
El Paso TX	Lordsburg NM	148.0	**	**	**
Fort Worth TX	Big Spring TX	267.5	510	1615	1105
Odem TX	Corpus Christi TX	17.2	**	**	**
Stratford TX	Dalhart TX	31.0	44	87	43
Texarkana TX	Big Sandy TX	108.0	**	**	**
Toyah TX	Sierra Blanca TX	109.7	78	181	103
Ogden UT	Alazon NV	178.0	106	139	33
Oak Creek WI	St. Francis WI	7.0	**	**	**
TOTAL			**4,488**	**10,523**	**6,035**

Notes:
* L_{dn} exceeds 65 dBA at noise sensitive receptors (residences, schools and churches).
** Less than a 2 dBA increase in noise exposure.

Figure 2-1
Rail Line Segments and AQCR Status
Arkansas, Louisiana, Oklahoma, Texas



LEGEND

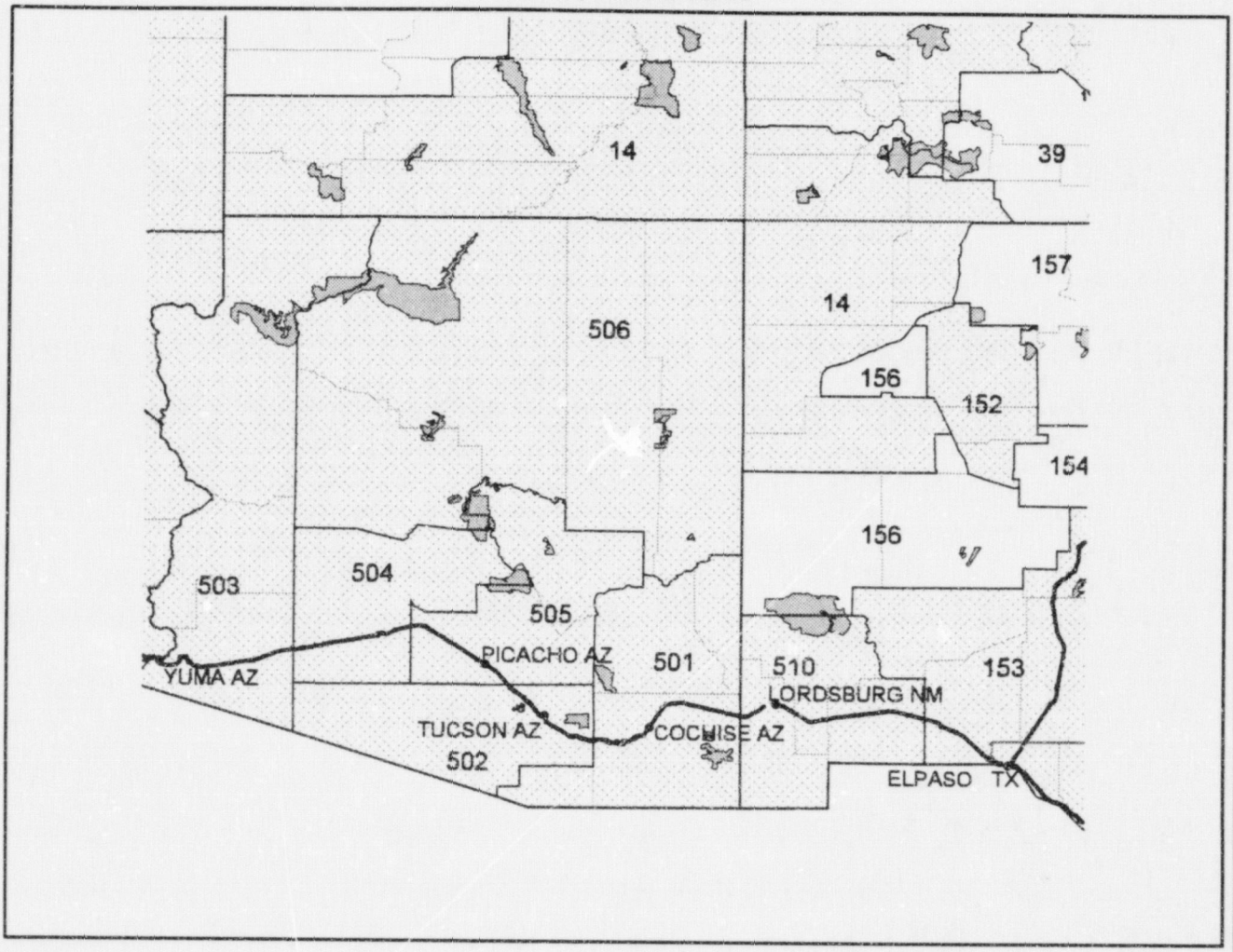
- Nodes
- Rail Lines
- AQCR Boundary
- State Border
- County Boundary
- PSD Class I Area

AQCR Status

- Attainment
- Non-Attainment

Segment	AQCR	% of Segment Within Region
Dexter Jct. to Paragould	138	47
	20	53
Paragould to Fairoaks	20	100
Fairoaks to Brinkley	20	100
Brinkley to Pine Bluff	20	64
	16	36
Shreveport to Lufkin	22	36
	106	64
Texarkana to Big Sandy	22	100
Big Sandy to Dallas	22	53
	215	47
Iowa Jct. to Beaumont	106	100
Dallas to Ft. Worth	215	100
Chikasha to Ft. Worth	184	17
	189	33
	210	17
	215	33
Livonia to Kinder	106	100
Odem to Corpus Christi	214	100
Angleton to Bloomington	216	57
	214	43

Figure 2-2
Rail Line Segments and AQCR Status
Arizona, New Mexico



LEGEND

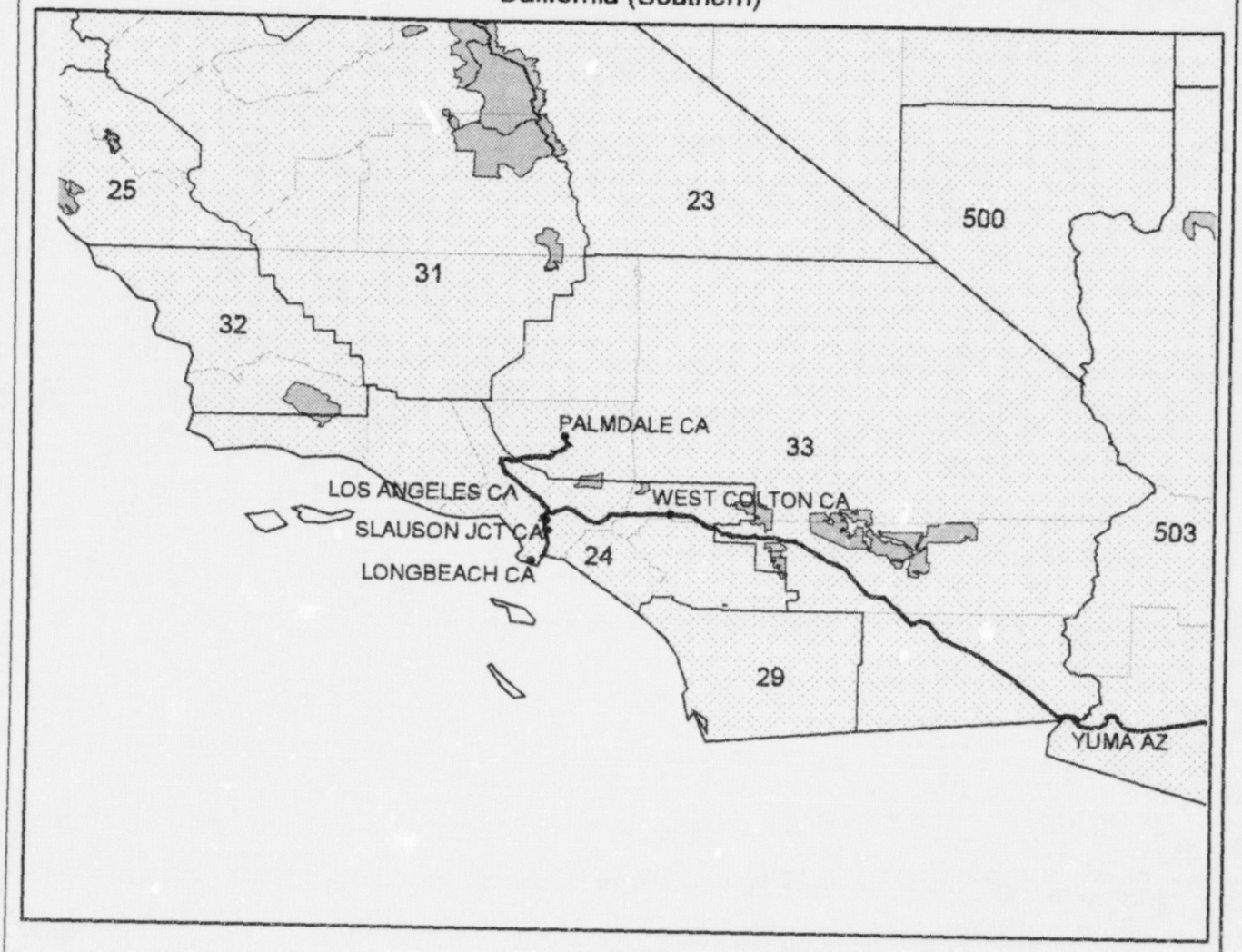
- Nodes
- Rail Lines
- AQCR Boundary
- State Border
- County Boundary
- PSD Class I Area

AQCR Status

- Attainment
- Non-Attainment

Segment	AQCR	% of Segment Within Region
El Paso to Lordsburg	153	37
	510	63
Lordsburg to Cochise	510	75
	501	25
Cochise to Tuscon	501	50
	502	50
Tuscon to Picacho	502	56
	505	44
Picacho to Yuma	505	23
	504	35
	503	42

Figure 2-3
Rail Line Segments and AQCR Status
California (Southern)



LEGEND

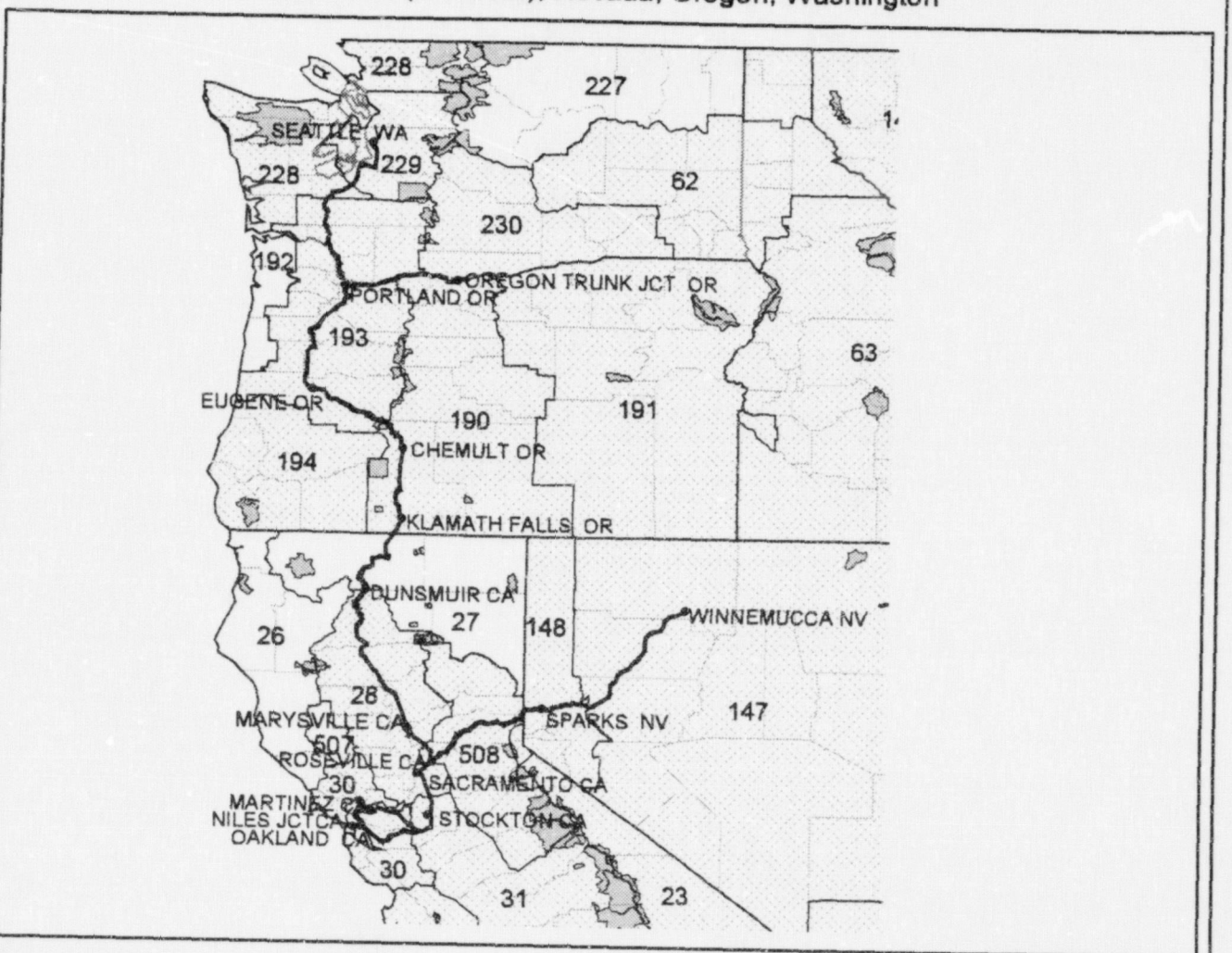
- Nodes
- Rail Lines
- AQCR Boundary
- State Border
- County Boundary
- PSD Class I Area

AQCR Status

- Attainment
- Non-Attainment

Segment	AQCR	% of Segment Within Region
Yuma to West Colton	503	0.3
	33	86.7
	24	13
Los Angeles to Slauson Jct.	24	100
Slauson Jct. to Long Beach	24	100
West Colton to Palmdale	24	77
	33	23

Figure 2-4
Rail Line Segments and AQCR Status
California (Northern), Nevada, Oregon, Washington



LEGEND

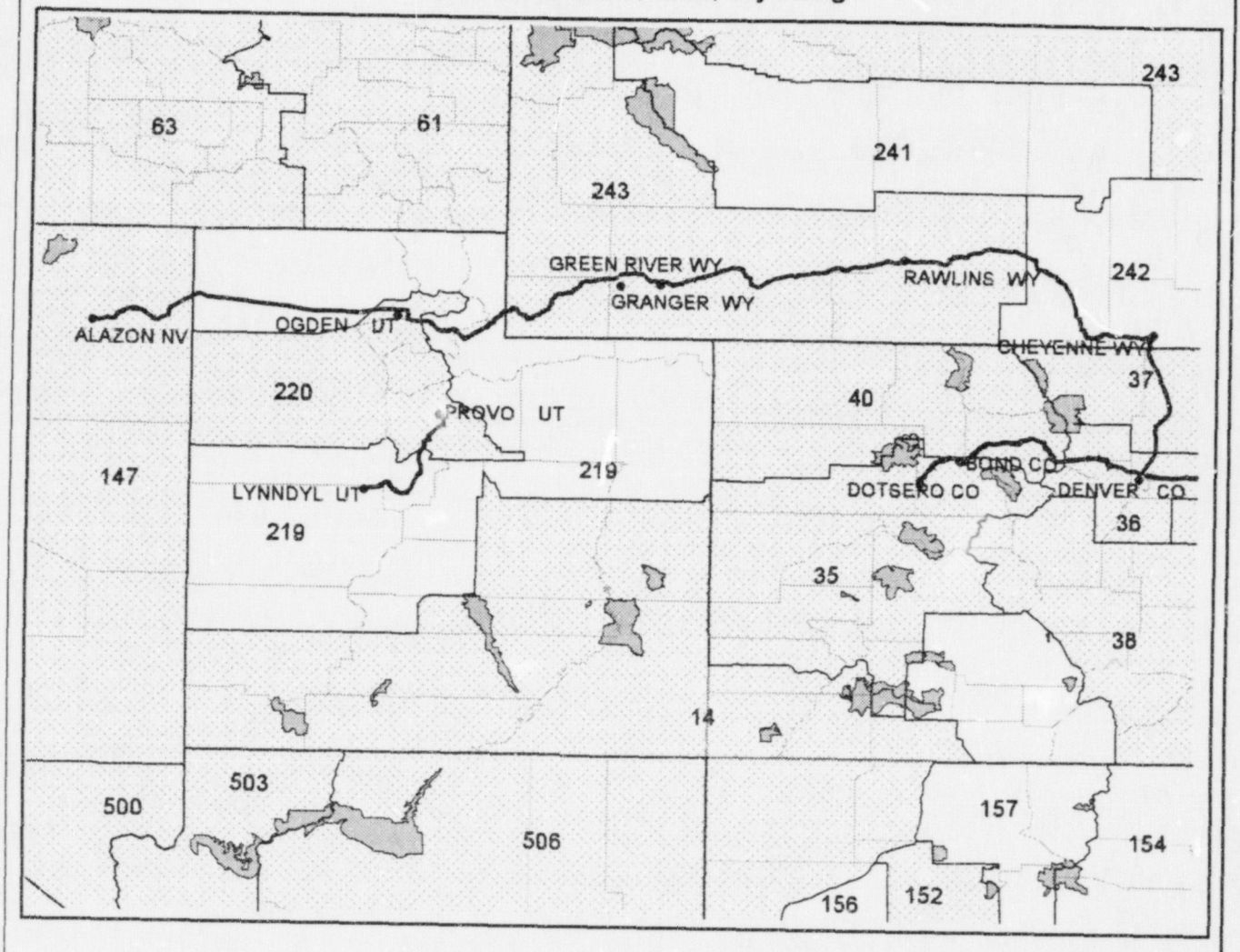
- Nodes
- Rail Lines
- AQCR Boundary
- State Border
- County Boundary
- PSD Class I Area

AQCR Status

- Attainment
- Non-Attainment

Segment	AQCR	% of Segment Within Region
Sparks to Roseville	148	8
	508	92
Roseville to Sacramento	508	22
	28	78
Stockton/Lathrop to Martinez	31	48
	30	52
Stockton to Sacramento	31	55
	28	45
Martinez to Oakland	30	100
Roseville to Marysville	508	63
	28	37
Marysville to Dunsmuir	28	100
Dunsmuir to Klamath Falls	28	0.6
	27	80.4
	190	19
Klamath Falls to Chemult	190	100
Chemult to Eugene	190	27
	193	73
Eugene to Portland	193	100
Portland to Seattle	193	50
	228	11
	229	39
Oregon Track Jct. to Portland	190	61
	193	39
Winnemucca to Sparks	147	75
	148	25
Niles Jct to Oakland	30	100

Figure 2-5
Rail Line Segments and AQCR Status
Colorado, Nevada, Utah, Wyoming



LEGEND

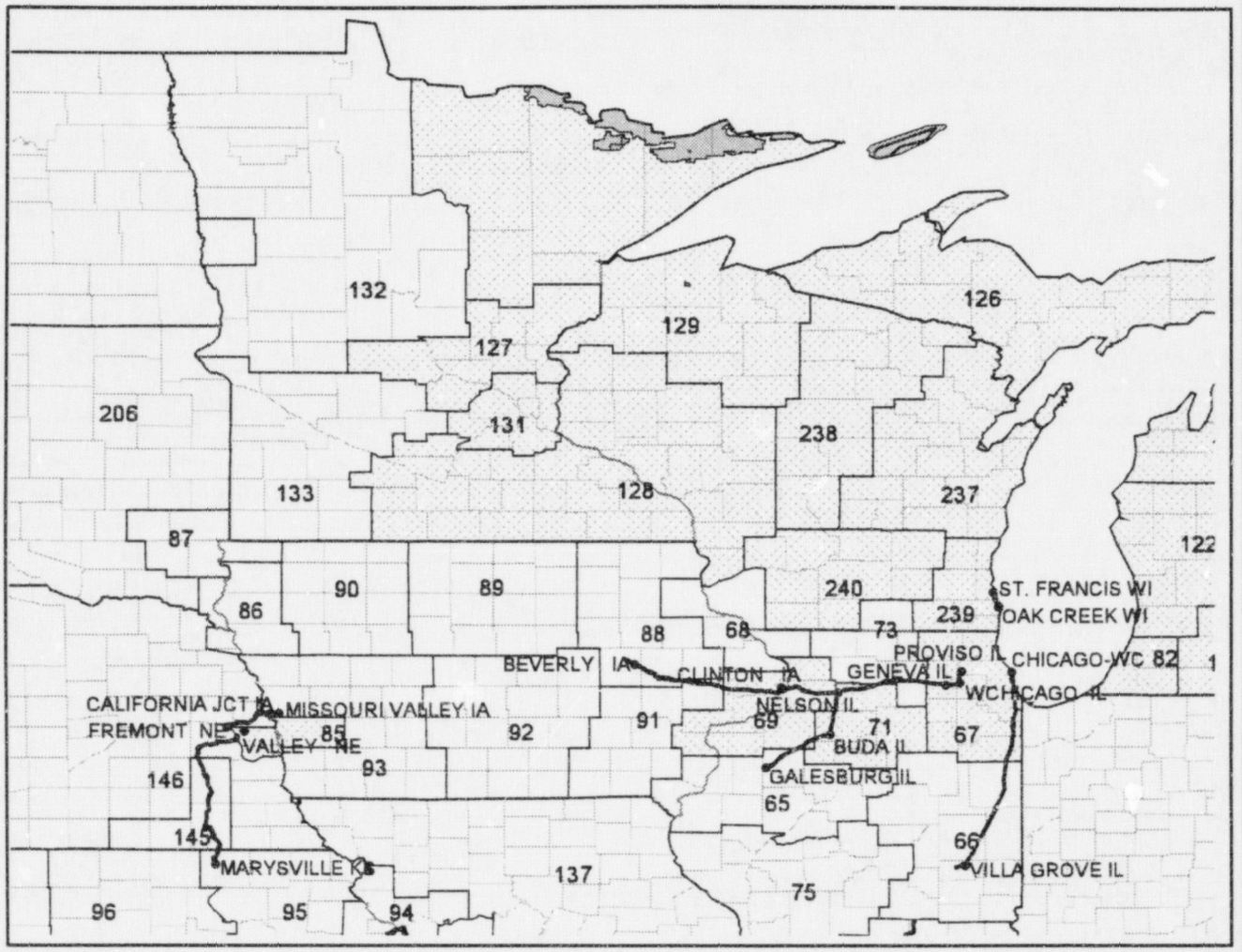
- Nodes
- Rail Lines
- AQCR Boundary
- State Border
- County Boundary
- PSD Class I Area

AQCR Status

- Attainment
- Non-Attainment

Segment	AQCR	% of Segment Within Region
Denver to Bond	36	36
	40	57
	35	7
Bond to Dotsero	35	100
Cheyenne to Rawlins	242	63
	243	37
Green River to Granger	243	100
Rawlins to Green River	243	100
Denver to Cheyenne	242	13
	37	70
	36	17
Granger to Ogden	243	55
	219	38
	220	7
Ogden to Alazon	220	8
	219	56
	147	36
Provo to Lynndyl	220	35
	219	65

Figure 2-6
Rail Line Segments and AQCR Status
Illinois, Iowa, Kansas, Nebraska



LEGEND

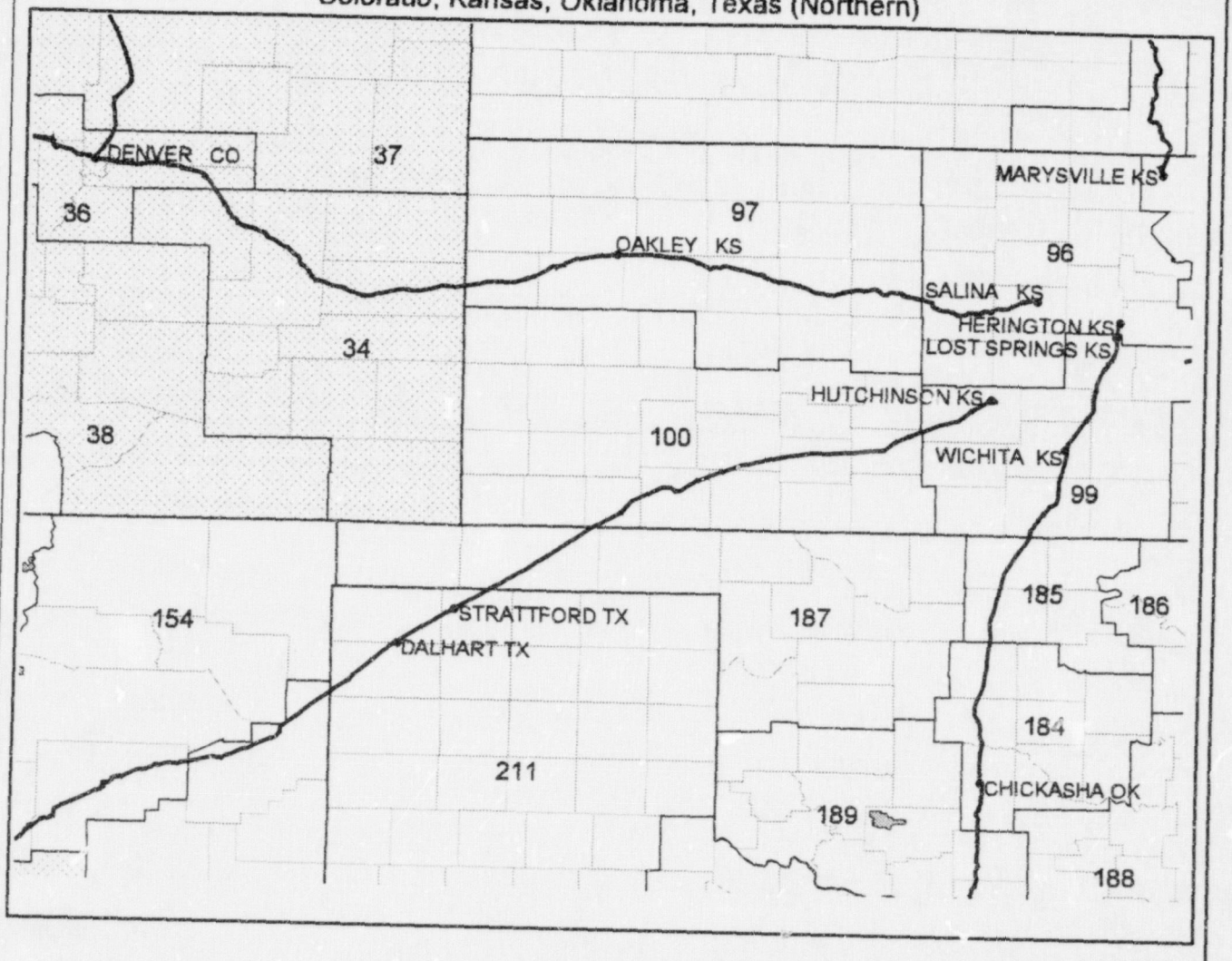
- Nodes
- Rail Lines
- AQCR Boundary
- State Border
- County Boundary
- PSD Class I Area

AQCR Status

- Attainment
- Non-Attainment

Segment	AQCR	% of Segment Within Region
Proviso to West Chicago	67	100
West Chicago to Geneva	67	100
Geneva to Nelson	67	20
	73	42
	71	38
Nelson to Clinton	71	4
	69	96
Clinton to Beverly	69	36
	91	14
	88	50
Nelson to Buda	71	100
Missouri Valley to Cal. Jct.	93	100
Cal. Jct. to Fremont	93	15
	146	85
St. Francis to Oak Creek	239	100
Buda to Galesberg	71	21
	69	31
	65	48
Chicago to Villa Grove	67	33
	66	67
Marysville to Valley	85	1
	146	25
	145	67
	95	7

Figure 2-7
Rail Line Segments and AQCR Status
Colorado, Kansas, Oklahoma, Texas (Northern)



LEGEND

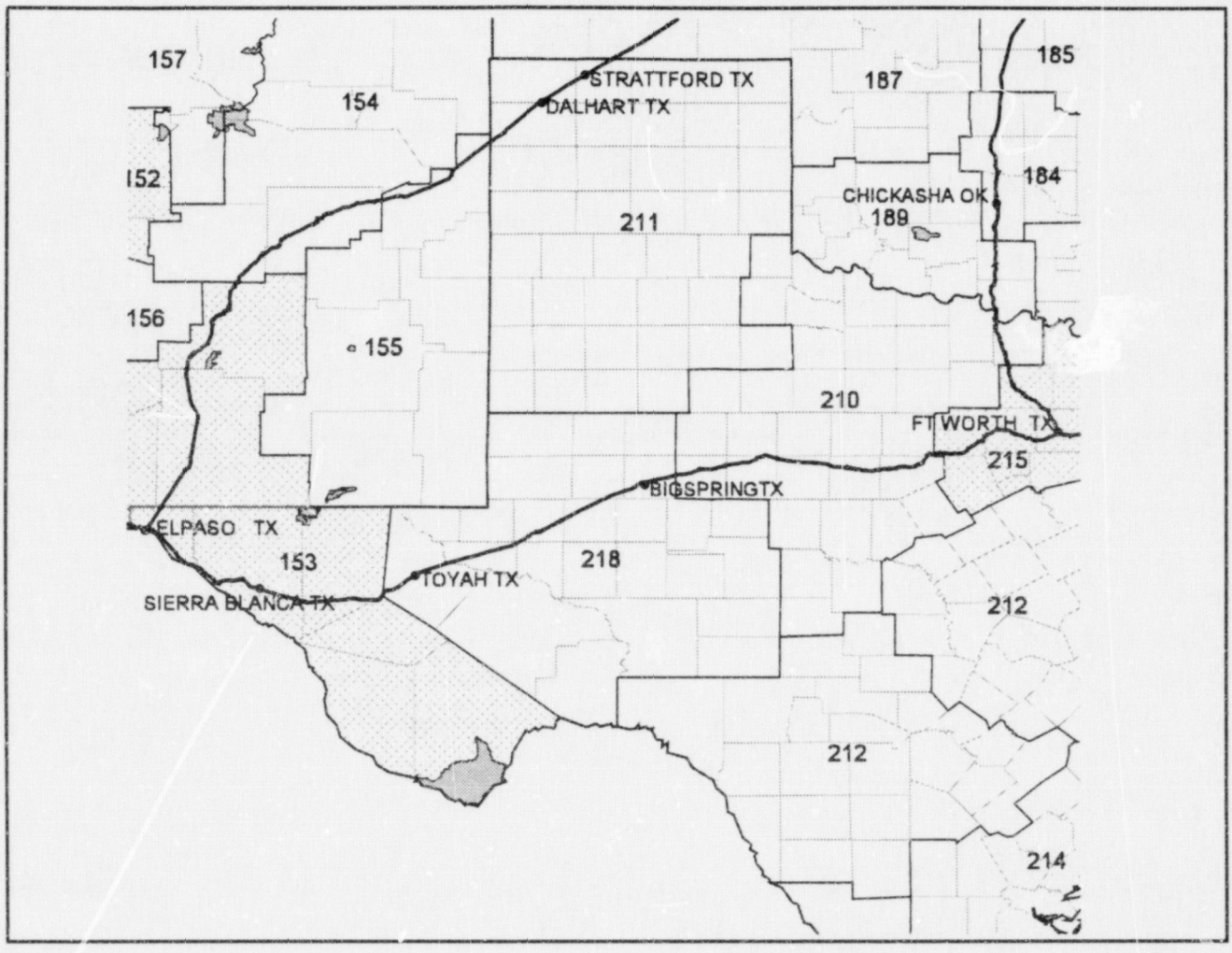
- Nodes
- Rail Lines
- AQCR Boundary
- State Border
- County Boundary
- PSD Class I Area

AQCR Status

- Attainment
- Non-Attainment

Segment	AQCR	% of Segment Within Region
Witchita to Chickasha	99	26
	185	35
	184	39
Oakley to Denver	97	29
	34	49
	36	22
Salina to Oakley	96	28
	97	72
Herington to Lost Springs	96	75
	99	25
Lost Springs to Witchita	99	100
Hutchinson to Strattford	99	12
	100	58
	187	23
	211	7

Figure 2-8
Rail Line Segments and AQCR Status
New Mexico, Oklahoma (Western), Texas (Western)



LEGEND

- Nodes
- Rail Lines
- AQCR Boundary
- State Border
- County Boundary
- PSD Class I Area

AQCR Status

- Attainment
- Non-Attainment

Segment	AQCR	% of Segment Within Region
Sierra Blanca to El Paso	153	100
Strattford to Dalhart	211	100
Dalhart to El Paso	211	8
	155	18
	154	28
	153	46
Big Spring to Toyah	218	100
Toyah to Sierra Blanca	218	25
	153	75
Ft. Worth to Big Spring	215	33
	210	58
	218	9
	211	8

3.0 MITIGATION

3.1 AIR QUALITY

The air emissions which have been calculated for each of the AQCRs from increases in train activity are from diesel locomotives operating on these line segments. Calculations were made on the basis of a 1991 study which calculated emission factors for pounds of HC, CO, NO_x, SO_2 and PM per 1000 gallons of diesel fuel. These factors will change as improvements in locomotive fuel efficiency and controls are implemented. Changes in emission regulations, under the Clean Air Act currently under consideration, if implemented, will require significant reductions in emission factors for some criteria pollutants, most notably NO_x. UP/SP continues to study ways to reduce emissions and intends to work with all appropriate agencies as well as locomotive builders to reduce air emissions from locomotives.

3.2 NOISE

It is important to recognize that the increase in noise impacts along the evaluated segments are spread out over 2,700 miles of track and that they will be in some circumstances partially counterbalanced by decreases in noise impact on lines that will be abandoned or will see a decrease in train traffic. The majority of noise impacts are in neighborhoods within 1/4-mile of grade crossings. For the noise analysis it was assumed that all trains sound their horns for the full 1/4-mile before all grade crossings. This may not be the case at all crossings, however, since local or state requirements may prohibit train whistles. Recent research by the Federal Railroad Administration has shown that the accident rate is higher at grade crossings where warning horns are not sounded.

Any effort to mitigate the principal noise impacts from train operations must focus on the noise from the train horns. In most cases, the elimination of train whistles or reduction in decibel levels could create safety concerns for vehicular or pedestrian

traffic. UP/SP will consult with local and state authorities to address noise concerns where appropriate.

4.0 SUMMARY OF AGENCY COMMENTS

To assist in assessing the potential environmental impacts of the proposed UP/SP merger, information requests were submitted to various Federal, state, and local agencies. In each instance, the agency was provided with details of the proposed action involving its jurisdiction and was requested to provide information on any environmental or local concerns, including protected species, critical habitats, locations of parks and refuges and permitting/approval authority. Copies of all correspondence received and telephone conversation notes recorded in response to the request for information are included in Part 6 of this ER. A summary of comments received prior to November 8, 1995 is listed below.

4.1 ARIZONA

There are five rail segments which are expected to experience an increase in rail activity in Arizona. For the rail segments in this state, the following agency responded: Arizona State Parks.

- Arizona State Parks operates two parks within the five-mile radius of the line segments and is unaware of any direct impacts to either park because of increased activity. The agency also provided other contacts for agencies regarding critical habitats and endangered species.

4.2 CALIFORNIA

There are thirteen rail segments which are expected to experience an increase in rail activity in California. For the rail segments in this state, the following agencies responded: California Environmental Protection Agency/Department of Toxic Control, California Environmental Protection Agency/Office of Environmental Health Hazard Assessment, State of California Air Resources Board.

- The Department of Toxic Control does not have information regarding critical habitats, protected species, or locations of parks and refuges. This

agency does not require permitting for increased rail activity unless the handling or management of hazardous waste is involved.

- The Office of Environmental Health Hazard Assessment has not been involved in any activities concerning the line segments and, therefore, has no documents, correspondence, memoranda, or reports on the rail line segments.
- The Air Resources Board does not have information on the requested information concerning the rail line segments.

4.3 COLORADO

There are four rail segments which are expected to experience an increase in rail activity in Colorado. For the rail line segments in this state, the following agency responded:

- Natural Resources Conservation Service stated that there are no known protected species or critical habitats within a five-mile radius of the segment. The agency did express concerns regarding crossing safety, increased noise pollution, and weed control and grass management of the railroad right-of-way.

4.4 KANSAS

There are seven rail segments which are expected to see an increase in rail activity in Kansas. For the rail segments in this state, the following agencies responded: Army Corps of Engineers-Kansas City District, Ellis County Environmental Office, and Logan County Clerks Office.

- The Army Corps of Engineers stated that any activities which involve excavation require permitting. The Army Corps of Engineers also assigned reference numbers to three of the rail segments.
- The Ellis County Environmental Office stated that increase rail activity would increase the possibility of unscheduled releases.

- The Logan County Clerks Office stated that they have no knowledge of impacts concerning increased rail activity.

4.5 OKLAHOMA

There are three rail segments which are expected to see an increase in rail activity in Oklahoma. For the rail segment in this state, the following agency responded: Oklahoma Department of Transportation.

- The Oklahoma Department of Transportation stated that resources agencies should be contacted and provided a list of contacts for this purpose. The Department of Transportation also forwarded the letter to the Rail Planning Branch and the Traffic Engineering Division.

4.6 TEXAS

There are sixteen rail segments which are expected to see an increase in rail activity in Texas. For the rail segments in this state, the following agency responded: Montague County.

- The Montague County Judge stated that he is unaware of any environmental situations which would be impacted by the increase in rail activity.

5.0 REFERENCES

5.1 AIR QUALITY

5.1.1 References

40 CFR Part 81, Designation of Areas for Air Quality Planning Purposes, Appendix A to Part 81.

40 CFR Part 81, Designation of Areas for Air Quality Planning Purposes, Sub Part C Section 107, Attainment Status Designation.

40 CFR Part 52, Approval and Promulgation of Implementation Plans.

40 CFR Part 70, State Operating Permit Programs.

40 CFR Part 1105, Procedures for Implementation of Environmental Laws.

Booz, Allen, Hamilton Locomotive Emission Study (Emission Factors for Locomotives), Provided by the Santa Fe Railway Company.

Booz, Allen, Hamilton, Inc., 1991. "Locomotive Emission Study," California Air Resources Board.

EPA Mobile Emissions Factors for 1995 (Heavy Duty Trucks), Provided by the Santa Fe Railway Company.

National Emissions Report, 1985, National Emissions Data System of the Aerometric and Emissions Reporting System, EPA, Research Triangle Park, North Carolina, September 1988.

Union Pacific Railroad Company. 1995. Data for rail line segments base case and post-merger scenarios.

United States Environmental Protection Agency, 1995. "Compilation of Air Pollution Emission Factors," Volume 2, January 1995.

United States Environmental Protection Agency, 1985. "Compilation of Air Pollution Emission Factors," Volume 2, January 1985.

5.2 NOISE

5.2.1 References

Union Pacific Railroad Company. 1995. Data for rail line segments base case and post-merger scenarios.

RAIL YARDS

AND INTERMODAL AND AUTOMOTIVE FACILITIES

PART 3 OF 6

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PART 3

RAIL YARDS AND INTERMODAL AND AUTOMOTIVE FACILITIES

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1.0 INTRODUCTION

This Part 3 of the Environmental Report (ER) prepared in connection with the proposed UP/SP merger analyzes, by geographic location, the potential environmental impacts from increased activities at rail yards and intermodal facilities that meet or exceed thresholds in the ICC regulations at 49 CFR 1105.7. An analysis of the merger's effects on transportation, air quality by Air Quality Control Region (AQCR), and noise is provided in Part 1, Overview.

Part 1 of this ER provides an overview of the proposed merger and summarizes the potential impacts on environmental resources. Parts 2, 4 and 5 analyze potential environmental impacts of merger-related activity on rail line segments, abandonments, and construction projects, respectively. Part 6 contains consultation letters and methodologies used in the analyses in the ER.

1.1 TYPES OF POTENTIAL ENVIRONMENTAL IMPACTS

This section summarizes the types of environmental impacts associated with changes in activity at the subject rail yards and intermodal facilities. Figure 1-1 shows the locations of these rail yards and intermodal facilities. Changes projected at automotive facilities do not meet the ICC's activity thresholds for analysis.

The types of impacts addressed in this section include transportation, air quality, noise, and safety. Because physical disturbance to land or water resources is not associated with the increases in activity described in this part of the ER, impacts are not expected to land use, water resources and wetlands, biological resources, and historic and cultural resources.

1.1.1 Transportation

ICC regulations require a description of the potential effects of the proposed merger on regional and local transportation systems and patterns, and an estimate of the amount of passenger or freight traffic that might be diverted to other transportation systems

or modes. The regulations call for an analysis of potential air quality and noise impacts of actions that could result in a traffic increase of 50 trucks per day or an increase of 10% in average daily traffic (ADT) on any given road segment. It is anticipated that these thresholds would be met at certain intermodal facilities because of increased activity, as discussed in Section 3.0.

The major transportation-related effect of the proposed UP/SP merger is a significant reduction in vehicular traffic on interstate highways and regional transportation routes in UP/SP operating territory. According to data prepared for UP/SP by Reebie Associates (1995) and Transmode Consultants, Inc. (1995), the merger would result in a significant number of trucks being diverted from highways to intermodal rail trains. As discussed in Part 4, Abandonments, minimal diversions of existing rail traffic to truck may occur as a result of rail line abandonments.

The UP/SP merger system will affect local transportation systems by increasing or decreasing truck traffic at UP or SP intermodal and automotive facilities. Traffic changes are expected as a result of a variety of factors, including new truck-to-rail diversions and the consolidation of operations now conducted in separate UP/SP facilities located within the same terminal. Table 1-1 summarizes the estimated intermodal truck traffic changes and Table 1-2 summarizes the estimated change in truck traffic from automotive facilities. Table 1-3 presents a summary of intermodal facilities at which truck traffic increases are expected to meet or exceed the ICC threshold of 50 additional trucks per day. Based on available data, there are no locations where increased truck traffic would constitute 10% of ADT. No automotive facilities are expected to meet or exceed the 50-truck-a-day or 10%-of-ADT thresholds. Projected increases and decreases in traffic at individual intermodal facilities are discussed in Section 3.0, Intermodal Facilities, and regional/national transportation effects are discussed in Part 1, Overview, Section 4.

1.1.2 Air Quality Impacts

Air quality impacts are defined as the increase or decrease in pollutant emissions from a source to the ambient air. The U.S. Environmental Protection Agency has developed National Ambient Air Quality Standards (NAAQS) for the following six criteria pollutants:

- Sulfur Dioxide (SO_2);
- Nitrogen Dioxide (NO_2);
- Ozone (O_3);
- Carbon Monoxide (CO);
- Lead (Pb); and
- Particulate Matter (TSP and PM_{10}).

The tables contained in this Part show air emissions in hydrocarbons (HC), carbon monoxide (CO), nitrogen oxides (NO_x), Sulfur Dioxide (SO_2), and Particulate Matter (PM). Ozone (O_3) is formed during complex photochemical reactions between nitrogen oxides (NO_x) and volatile hydrocarbons (HC) in the presence of sunlight. Lead (Pb) is present in trace quantities in fuel oils. However, for purposes of this study, the magnitude of lead emissions associated with diesel fuel combustion is not anticipated to be significant; therefore, it is not shown in the tables.

Contiguous areas of the country having similar topography and air quality management needs are grouped into Air Quality Control Regions (AQCRs). Table B-1 in Section B, Part 6, Consultation and Methodologies, shows the attainment status of the AQCRs in all states affected by the proposed UP/SP merger. The ambient air quality concentrations in a given AQCR may exceed these NAAQS (considered nonattainment areas) or may be less than these standards (considered attainment areas). In this analysis, if a portion of an AQCR is designated as nonattainment for one or more of these pollutants, the entire AQCR is considered to be nonattainment.

A few intermodal facilities in nonattainment areas could possibly generate increases of over-the-road traffic sufficient to trigger traffic control management standards contained in the respective States' Implementation Plans. If so, UP/SP would comply with those standards. Some areas of the country, such as National Parks and National Wildlife

Areas, are further designated as Prevention of Significant Deterioration (PSD) Class I air quality areas. There are no rail yards or intermodal facilities in PSD Class I areas which will experience increases exceeding ICC thresholds.

The threshold values for rail yards and intermodal facilities are set forth in 49 CFR 1105.7(e)(5) and summarized in Table 1-4. Information provided by UP/SP indicates that, as a result of the merger, several rail yards and intermodal facilities when viewed individually are expected to experience increases that meet or exceed thresholds listed in Table 1-4. No automotive facilities are projected to exceed thresholds. Tables 1-5 through 1-9 show the affected AQCRs and the emission estimates resulting from the increased activity in individual rail yards and intermodal facilities. In arriving at the emission estimates, the following expected activities within the yard were analyzed: switch engines, yard trucks, over-the-road trucks, and yard equipment. Section 2.0, Rail Yards and Section 3.0, Intermodal Facilities discuss air quality impacts at each rail yard and intermodal facility that meets or exceeds the ICC thresholds. Cumulative impacts of merger-related activities on air quality in relation to a geographical location (defined as a terminal) and AQCRs are discussed in Part 1, Overview, Section 4.

1.1.3 Noise

ICC regulations require that noise studies be performed for rail yards where there will be a 100% or greater increase in rail yard activity, as measured by carload activity, or an increase in truck traffic greater than 10% of the ADT or 50 trucks per day on any affected road segment. The approach and models used to evaluate noise impacts from rail yard and intermodal facilities are included in Section C of Part 6. For this analysis, carload activity is determined by the number of cars actually switched, or classified, by physical handling. Trains running through a yard, or blocks of cars set out and subsequently moved in the same block were not included in rail car activity. The potential for noise impacts at all facilities that meet or exceed the ICC thresholds has been evaluated and is discussed below.

The first step in the analysis of rail yards and intermodal facilities was to determine whether the projected increase in operations would cause noise exposure to receptors to increase by at least 2 dBA. As discussed in Section C of Part 6, an increase less than 2 dBA was considered insignificant and no further noise analysis was done. For facilities where more than a 2 dBA increase to receptors is projected, approximate counts were made of noise sensitive land uses where the Day-Night Equivalent Sound Level (L_{dn}) would meet or exceed 65 dBA or would increase by 3 dBA or more. The counts were based on USGS maps and, where possible, site visits.

In projecting noise exposure near rail yards, an adjustment was made to the noise model that is presented in Section C of Part 6 to account for rail cars stored in the rail yard that act as partial acoustical shields for rail yard activities. This shielding was assumed to reduce overall noise exposure by 3 dBA. This adjustment was based on observations at several rail yards.

The results of the noise analysis are summarized in Tables 1-10 and 1-11. Table 1-10 shows the assessment for potential impact for the rail yards where a 100% or greater increase in rail car activity is projected. Increases in rail yard activity are not expected to effect an increase in truck traffic on any affected road segment and, accordingly, no noise analysis based on the threshold for increases in truck traffic, as set out in § 1105.7(e)(5)(C), was made for rail yards. For the intermodal and automotive facilities, the number of rail cars handled and truck trips associated with the facility were considered separately. The potential impact from additional truck trips is shown in Table 1-11. No automotive facilities are expected to meet the ICC activity thresholds.

The following summarizes the noise impacts for rail yards and intermodal facilities:

Rail Yards: Table 1-10 shows the five rail yards which are expected to meet or exceed ICC activity thresholds. These rail yards are Inland Empire, California; Herington, Kansas; Bellmead and Amarillo, Texas; and Salem, Illinois. Three of these rail

yards will have either noise exposure exceeding L_{dn} 65 or noise exposure increases of at least 3 dBA. These three rail yards are Herington, Kansas; Bellmead, Texas; and Salem, Illinois. The number of potentially affected residences is projected to increase from 10 to 20 residences at the Herington Yard, 0 to 16 residences at the Bellmead Yard, and 11 to 16 residences at the Salem Yard, No sensitive receptors other than residences were identified.

Intermodal Facilities: Analysis of impacts from traffic noise is required where there is a projected increase of more than 10% of ADT or 50 vehicles per day on any affected road segment. As Table 1-11 indicates, eighteen intermodal facilities are projected to exceed the thresholds. Since most of the facilities that require a noise analysis are located in areas with easy access to major truck routes, the additional trucks into and out of intermodal facilities would not have a significant effect on the total traffic volume or the total noise.

In estimating the effects of the increase in truck traffic on overall noise exposure, the following assumptions were made:

1. Truck volume was estimated as the truck volume associated with the facility pre-merger, and projected for the facility post-merger, plus 4% of the ADT in each case to account for other truck traffic not originating from or destined to the facility.
2. The maximum increase in traffic noise exposure was estimated as: Change (dB) = 10*log*(post-merger volume ÷ pre-merger volume).

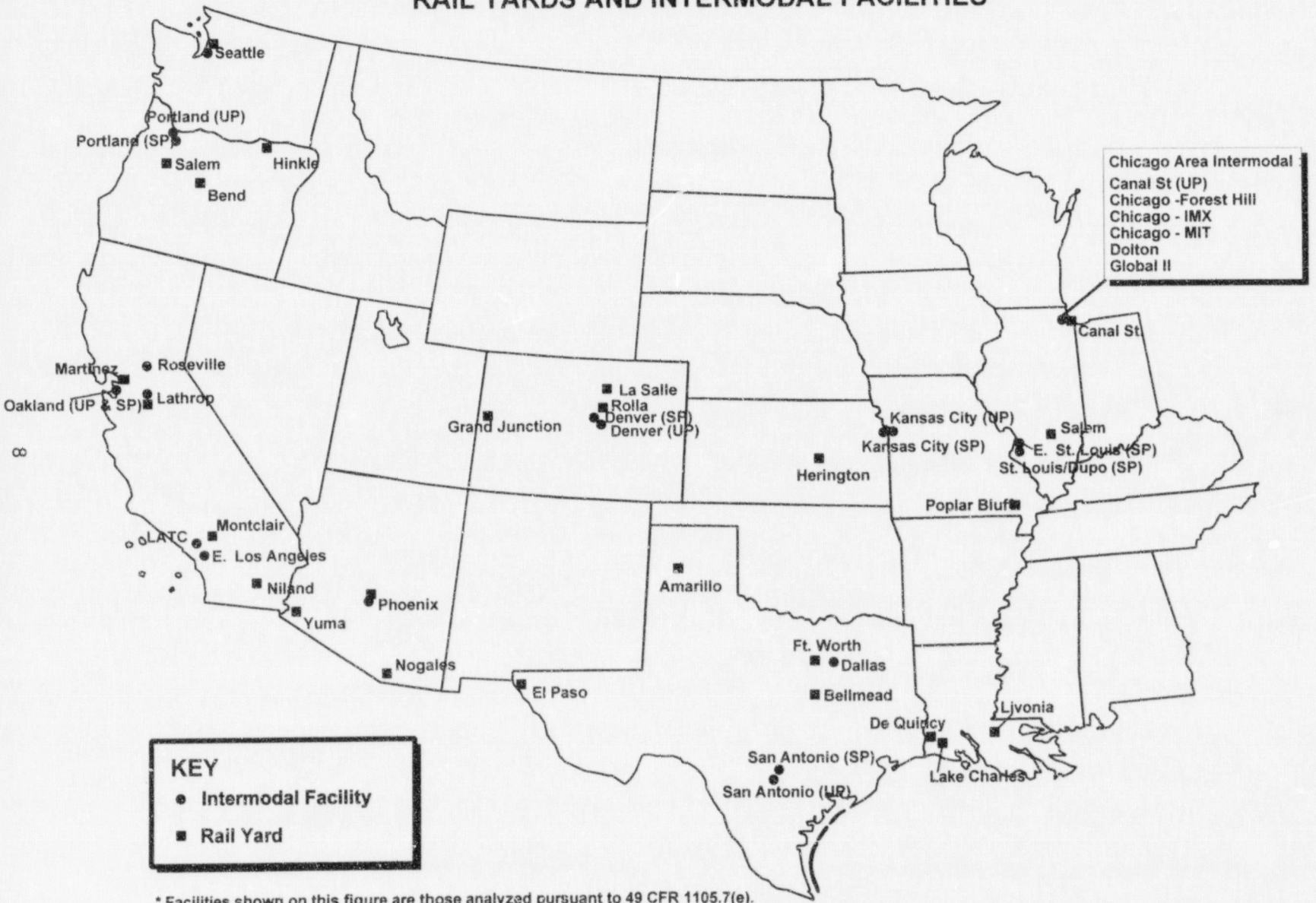
This approach tends to overstate the truck noise impact because it does not account for the noise from automobile traffic. As seen in Table 1-11, noise impacts on sensitive receptors are not projected for any of the intermodal facilities. In several cases the maximum noise exposure change exceeds 2 dBA; however, there is no impact because there are no noise-sensitive receptors in the immediate vicinity of the facilities.

1.1.4 Safety

The proposed merger will result in increased rail and truck activity at certain intermodal and automotive facilities. The post merger increase in the use of rail for intermodal and automotive shipments will result in a decrease in the number of trucks on interstate highways. Changes to local truck traffic in and around intermodal and automotive facilities (i.e., trucks entering and exiting facilities from local roads to pick-up or drop-off containers or trailers which have been or will be transported by rail) are shown on Tables 1-1 and 1-2. Overall, the decrease in over-the-road truck traffic should result in a decrease in accidents, as discussed in Part 1 of this ER.

In order to handle increased traffic resulting from the merged UP/SP system, construction of new or expanded facilities is planned at some rail yard and intermodal locations. The traffic and safety impacts from these projects are detailed in Part 5, Construction. Construction at these facilities will be conducted in accordance with applicable regulatory requirements.

FIGURE 1-1
RAIL YARDS AND INTERMODAL FACILITIES*



* Facilities shown on this figure are those analyzed pursuant to 49 CFR 1105.7(e). New facilities (Inland-Empire and West Memphis) are not shown.

TABLE 1-1

ESTIMATE OF INTERMODAL TRUCK TRAFFIC CHANGES

State	Facility	Operator	Pre-Merger Lifts/Year	Pre-Merger Trucks/Day	Post-Merger Lifts/Year	Post-Merger Trucks/Day	Change Trucks/Day
AR	**Little Rock**[a]	UP	15,000	33	25,000	55	22
	Pine Bluff	SP	10,000	22	0	0	-22
AR/TN	**West Memphis (new)**[a]	UP/SP	0	0	219,000	480	480
	Memphis	SP	90,000	197	0	0	-197
	Memphis	UP	75,000	164	0	0	-164
AZ	Phoenix	SP	31,000	68	54,000	118	50
CA	**East Los Angeles**[a]	UP	339,000	743	607,000	1,330	587
	LATC	SP	223,000	489	0	0	-489
CA	Los Angeles ICTF	SP	653,000	1,431	632,000	1,385	-46
CA	**Inland Empire (new)**[a]	UP/SP	0	0	225,000	493	493
	City of Industry	SP	160,000	351	0	0	-351
CA	Fresno	SP	11,000	24	16,000	35	11
CA	Lathrop	UP	103,000	226	150,000	329	103
CA	Oakland	UP	152,000	333	188,000	412	79
CA	Oakland	SP	149,000	327	180,000	395	68
CA	Roseville	SP	40,000	88	87,000	191	103
CO	**Denver**[a]	UP	82,000	180	110,000	241	61
	Denver	SP	38,000	83	0	0	-83
ID	Nampa	UP	3,000	7	3,000	7	0
IL	Dolton	UP	180,000	395	219,000	480	85
IL	Global I	UP	326,000	715	326,000	715	0
IL	**Global II**[a]	UP	194,000	425	388,000	850	425
	Canal Street[a]	UP	150,000	329	235,000	515	186
	CHI - IMX	SP	98,000	215	0	0	-215
	CHI - Forest Hill	SP	47,000	103	0	0	-103
	CHI-MIT	SP	30,000	66	0	0	-66
IL	**St. Louis (Dupo)**[a]	UP	131,000	287	212,000	465	178
	E. St. Louis	SP	67,000	147	0	0	-147

TABLE 1-1 (Continued)

ESTIMATE OF INTERMODAL TRUCK TRAFFIC CHANGES

State	Facility	Operator	Pre-Merger Lifts/Year	Pre-Merger Trucks/Day	Post-Merger Lifts/Year	Post-Merger Trucks/Day	Change Trucks/Day
KS	**Kansas City**[a]	SP	56,000	123	135,000	296	173
	Kansas City	UP	81,000	178	0	0	-178
LA	**Avondale**[a]	SP	66,000	145	44,000	96	-48
	Westwego	UP	24,000	53	0	0	-53
MN	Twin Cities	UP	34,000	75	42,000	92	18
NE	Omaha	UP	26,000	57	20,000	44	-13
NV	Las Vegas	UP	10,000	22	10,000	22	0
NV	**Sparks**[a]	SP	14,000	31	29,000	64	33
	Reno	UP	26,000	57	0	0	-57
OR	Hinkle	UP	2,000	4	2,000	4	0
OR	**Portland (Albina)**[a]	UP	132,000	289	257,000	563	274
	Portland	SP	97,000	213	0	0	-213
TX	Barbours Cut	SP	52,000	114	52,000	114	0
TX	Dallas (Mesquite)	UP	188,000	412	197,000	432	20
TX	Dallas	SP	179,000	392	225,000	493	101
TX	El Paso	SP	54,000	118	54,000	118	0
TX	Harlingen	UP	5,000	11	5,000	11	0
TX	Houston	SP	194,000	425	185,000	405	-20
TX	Houston	UP	110,000	241	112,000	245	4
TX	Laredo	UP	88,000	193	88,000	193	0
TX	**San Antonio**[a]	UP	15,000	33	68,000	149	116
	San Antonio	SP	62,000	136	0	0	-136
TX	**Texarkana**[a]	UP	0	0	15,000	33	33
LA	Shreveport	SP	5,000	11	0	0	-11
TX	Marshall	UP	10,000	22	0	0	-22
UT	**Salt Lake City**[a]	UP	97,000	213	86,000	188	-24
	Salt Lake City	SP	31,000	68	0	0	-68
WA	Seattle	UP	256,000	561	283,000	620	59

TABLE 1-1 (Continued)

ESTIMATE OF INTERMODAL TRUCK TRAFFIC CHANGES

State	Facility	Operator	Pre-Merger Lifts/Year	Pre-Merger Trucks/Day	Post-Merger Lifts/Year	Post-Merger Trucks/Day	Change Trucks/Day
WA	Tacoma	UP	19,000	42	19,000	42	0
WY	Green River	UP	8,000	18	8,000	18	0

Note: * Denotes facilities at which consolidation of intermodal traffic from other facilities in the terminal is projected.

TABLE 1-2

AUTOMOTIVE FACILITIES
ESTIMATE OF TRUCK TRAFFIC CHANGES

State	Facility	Operator	Pre-Merger Lifts/ Year	Pre-Merger Trucks/Day	Post-Merger Lifts/Year	Post-Merger Trucks/Day	Change Trucks/Day
AR	Gavin	UP	1,100	4.2	855	3.3	-0.9
AZ	Phoenix	SP	4,480	17.1	4,354	16.6	-0.5
CA	**Benecia**[a]	SP	17,204	65.6	24,997	95.4	29.7
	Oakland	UP	6,777	25.9	0	0.0	-25.9
CA	Gemco	SP	2,466	9.4	2,466	9.4	0.0
CA	**Long Beach**[a]	UP	5,572	21.3	13,016	49.7	28.4
	Long Beach	SP	3,769	14.4	0	0.0	-14.4
CA	Milipitas	UP	16,948	64.7	16,948	64.7	0.0
CA	**Mira Loma**[a]	UP	29,868	114.0	32,886	125.5	11.5
	Los Nietos	SP	1,173	4.5	0	0.0	-4.5
CA	Warm Springs	SP	20,519	78.3	15,148	57.8	-20.5
CO	**Rolla**[a]	UP	14,574	55.6	22,046	84.1	28.5
CO	Denver	SP	7,508	28.6	0	0.0	-28.6
IL	Chicago Heights	UP	10,523	40.2	10,073	38.4	-1.7
IL	West Chicago	UP	6,929	26.4	5,834	22.3	-4.2
KS	Fairfax	UP	15,494	59.1	15,494	59.1	0.0
KS	Muncie	UP	3,938	15.0	3,598	13.7	-1.3
LA	Port Allen (Addis)	UP	6,623	25.3	6,641	25.3	0.1
LA	Reisor	UP	23,484	89.6	23,484	89.6	0.0
MO	St. Louis	UP	884	3.4	884	3.4	0.0
NV	Reno	UP	318	1.2	287	1.1	-0.1

TABLE 1-2 (Continued)

AUTOMOTIVE FACILITIES
ESTIMATE OF TRUCK TRAFFIC CHANGES

State	Facility	Operator	Pre-Merger Lifts/ Year	Pre-Merger Trucks/Day	Post-Merger Lifts/Year	Post-Merger Trucks/Day	Change Trucks/Day
NV	Valley	UP	3,200	12.2	3,200	12.2	0.0
OR	Barnes	UP	13,164	50.2	11,469	43.8	-6.5
TX	Arlington	UP	25,829	98.6	25,829	98.6	0.0
TX	**Midlothian**[a]	SP	8,869	33.1	12,626	48.2	14.4
	Mesquite	UP	4,658	17.8	0	0.0	-17.8
TX	San Antonio	UP	5,601	21.4	3,386	12.9	-8.5
TX	**Spring**[a]	UP	16,828	64.2	23,394	89.3	25.1
	Galena Park	SP	775	3.0	0	0.0	-3.0
UT	**Salt Lake City**[a]	SP	5,445	20.8	7,371	28.1	7.3
	Clearfield	UP	7,067	27.0	0	0.0	-27.0
WA	Fife	UP	4,635	17.7	4,635	17.7	0.0
WA	Kent	UP	9,452	36.1	9,937	37.9	1.9
WA	Spokane	UP	2,208	8.4	2,208	8.4	0.0
WI	Belvidere	UP	9,571	36.5	9,571	36.5	0.0
WI	Janesville	UP	28,354	108.2	28,354	108.2	0.0
WI	Granville	UP	3,877	14.8	3,833	14.6	-0.2

Note: [a] Denotes facilities at which consolidation of automotive traffic from other facilities is projected.

TABLE 1-3

INTERMODAL FACILITIES
THAT EXCEED THRESHOLDS

State	Facility	Operator	Change Trucks/Day	Change in Truck Trips Per Day	Average Daily Traffic (ADT)	Percent Increase in ADT
AR	West Memphis	UP/SP	480	960	n/a	??
AZ	Phoenix	SP	50	100	25,396	0.4%
CA	East Los Angeles	UP	587	1174	27,900	4.2%
CA	Inland-Empire	UP/SP	493	986	n/a	n/a
CA	Oakland	UP	79	158	3,381	4.7%
CA	Oakland	SP	68	136	3,381	4.7%
CA	Lathrop	UP	103	206	n/a	n/a
CA	Roseville	SP	103	206	13,570	1.5%
CO	Denver	UP	61	122	10,200	1.2%
IL	Dolton	UP	85	170	n/a	n/a
IL	Global II	UP	425	850	30,000	2.8%
IL	Canal Street	UP	186	372	25,500	1.5%
IL	St. Louis (Dupo)	UP	178	356	5,300	6.7%
KS	Kansas City	SP	173	346	15,875	2.2%
OR	Portland (Albina)	UP	274	548	10,300	5.3%
TX	Dallas	SP	101	202	16,000	1.3%
TX	San Antonio	UP	116	232	17,694	1.3%
WA	Seattle	UP	59	118	14,300	0.8%

Note: n/a - ADT not available

TABLE 1-4

ICC AIR QUALITY THRESHOLDS FOR IMPACT ANALYSIS

ACTIVITY	THRESHOLD
Attainment Areas [49 CFR 1105.7(e)(5)(i)]	
Rail Yards	100% increase as measured in carload activity
Intermodal Facilities	Increase in truck traffic greater than 10% of average daily traffic or 50 trucks per day
Nonattainment Areas [49 CFR 1105.7(e)(5)ii)]	
Rail Yards	20% increase as measured in carload activity
Intermodal Facilities	Increase in truck traffic greater than 10% of average daily traffic or 50 trucks per day

TABLE 1-5

AIR QUALITY IMPACTS FROM INCREASED ACTIVITY AT RAIL YARDS

STATE	ABREV/NAME	AQCR AFFECTED	AQCR STATUS	CARLOAD ACTIVITY (CARS/DAY)				EMISSIONS INCREASES (TON/YR)				
				POST-MERGER	PRE-MERGER	CHANGE	% CHANGE	HC	CO	NO_x	SO_2	PM
AZ	NOGALES	501	NA	123.3	100.6	22.7	22.6%	0.04	0.13	0.97	0.07	0.02
AZ	PHOENIX	504	NA	407.8	325.4	82.4	25.3%	0.15	0.47	3.53	0.26	0.08
AZ	YUMA	503	NA	43.3	27.3	16.0	58.6%	0.03	0.09	0.69	0.05	0.01
CA	INLAND EMPIRE	24	NA	740.7	0	740.7	>100%	1.36	4.24	31.70	2.30	0.69
CA	LATHROP	31	NA	245.1	147.6	97.5	66.1%	0.18	0.56	4.18	0.30	0.09
CA	MARTINEZ	30	NA	199.0	154.2	44.8	29.1%	0.08	0.26	1.92	0.14	0.04
CA	MONTCLAIR	24	NA	129.9	99.0	30.9	31.2%	0.06	0.18	1.32	0.10	0.03
CA	NILAND	33	NA	142.8	118.6	24.2	20.4%	0.04	0.14	1.04	0.08	0.02
CA	ROSEVILLE	508	NA	1608.2	1023.3	584.9	57.2%	1.08	3.35	25.07	1.82	0.54
CO	GRAND JCT	35	NA	94.0	77.0	17.0	22.1%	0.03	0.10	0.73	0.05	0.02
CO	LA SALLE	37	NA	160.4	125.0	35.4	28.3%	0.07	0.20	1.52	0.11	0.03
CO	ROLLA	36	NA	105.2	68.4	36.8	53.8%	0.07	0.21	1.58	0.11	0.03
IL	CA[illegible]AL STREET	67	NA	519.4	320.6	198.8	62.0%	0.37	1.14	8.52	0.62	0.18
IL	SALEM	74	A	133.2	64.0	69.2	108.1%	0.13	0.40	2.97	0.21	0.06
KS	HERINGTON	96	A	549.7	150.0	399.7	266.5%	0.74	2.29	17.13	1.24	0.37
LA	DE QUINCY	106	NA	37.6	21.6	16.0	74.1%	0.03	0.09	0.69	0.05	0.01
LA	LAKE CHARLES	106	NA	220.7	118.7	102.0	85.9%	0.19	0.58	4.37	0.32	0.09
LA	LIVONIA	106	NA	1375.1	1058.2	316.9	29.9%	0.58	1.81	13.58	0.98	0.29
MO	POPLAR BLUFF	138	NA	38.6	30.1	8.5	28.2%	0.02	0.05	0.36	0.03	0.01
OR	BEND	190	NA	7.6	5.6	2.0	35.7%	0.00	0.01	0.09	0.01	0.00
OR	HINKLE	191	NA	1130.9	793.7	337.2	42.5%	0.62	1.93	14.45	1.05	0.31

TABLE 1-5 (Continued)

AIR QUALITY IMPACTS FROM RAIL YARDS

				CARLOAD ACTIVITY (CARS/DAY)				EMISSIONS INCREASES (TON/YR)				
STATE	ABREV/NAME	AQCR AFFECTED	AQCR STATUS	POST-MERGER	PRE-MERGER	CHANGE	% CHANGE	HC	CO	NO_x	SO_2	PM
OR	SALEM	193	NA	26.0	16.9	9.1	53.8%	0.02	0.05	0.39	0.03	0.01
TX	AMARILLO	211	A	117.2	40.0	77.2	193.0%	0.14	0.44	3.31	0.24	0.07
TX	BELLMEAD	212	A	145.9	45.7	100.2	219.3%	0.18	0.57	4.29	0.31	0.09
TX	EL PASO	153	NA	590.6	440.5	150.1	34.1%	0.28	0.86	6.43	0.47	0.14
TX	FT WORTH	215	NA	1755.3	1460.5	294.8	20.2%	0.54	1.69	12.63	0.92	0.27
WA	SEATTLE	229	NA	649.9	508.4	141.5	27.8%	0.26	0.81	6.06	0.44	0.13

NOTES: A=Attainment, NA=NonAttainment
AQCR=Air Qua;ity Control Region
HC=hydrocarbon, CO=carbon monoxide, NO_x=nitrogen oxides, SO_2=sulfur dioxide, PM=particulate matter

ASSUMPTIONS:

EMISSION FACTORS (adapted from "Locomotive Emission Study", Booz, Allen, & Hamilton, January 1991)

Pollutant	(lb/1000 gal)
HC	22
CO	68.4
NOx	512
SO2	37.1
PM	11.1

Number of hours per shift = 8 hrs/shift

Number of railcars handled per shift = 150 railcarscars/shift

Operating schedule = 365 days/year

Average switch engine fuel consumption = 8.6 gal/hour

TABLE 1-6

AIR QUALITY IMPACTS FROM INTERMODAL OPERATIONS - OVER-THE-ROAD TRUCK EMISSIONS[1]

STATE	FACILITY	AQCR AFFECTED	AQCR STATUS	CHANGE IN LIFTS PER YEAR	CHANGE IN NO. TRUCKS PER DAY	OTR TRUCK EMISSIONS (ton/yr)				
						HC	CO	NO_x	SO_2	PM
AR	West Memphis	18	A	23,000	480	4.70	21.97	25.96	0.72	4.60
AZ	Phoenix	504	NA	268,000	50	0.49	2.31	2.73	0.08	0.48
CA	East Los Angeles	24	NA	225,000	587	5.75	26.89	31.77	0.88	5.63
CA	Inland-Empire	24	NA	47,000	493	4.83	22.58	26.67	0.74	4.73
CA	Lathrop	31	NA	36,000	103	1.01	4.72	5.57	0.15	0.99
CA	Oakland	30	NA	31,000	79	0.77	3.61	4.27	0.12	0.76
CA	Oakland	30	NA	47,000	68	0.67	3.11	3.67	0.10	0.65
CA	Roseville	508	NA	28,000	103	1.01	4.73	5.59	0.15	0.99
CO	Denver	36	NA	85,000	61	0.60	2.81	3.32	0.09	0.59
IL	Canal Street	67	NA	194,000	186	1.82	8.53	10.08	0.28	1.79
IL	Global II	67	NA	81,000	425	4.16	19.46	23.00	0.63	4.07
IL	St. Louis (Dupo)	70	NA	39,000	178	1.74	8.13	9.60	0.26	1.70
IL	Dolton	67	NA	79,000	85	0.84	3.91	4.62	0.13	0.82
KS	Kansas City	94	A	125,000	173	1.70	7.93	9.36	0.26	1.66
OR	Portland (Albina)	193	NA	219,000	274	2.68	12.54	14.82	0.41	2.63
TX	San Antonio	217	A	53,000	116	1.14	5.32	6.28	0.17	1.11
TX	Dallas	215	NA	46,000	101	0.99	4.62	5.45	0.15	0.97
WA	Seattle	229	NA	27,000	59	0.58	2.71	3.20	0.09	0.57

NOTES: Inland Empire and West Memphis are new facilities
A=Attainment, NA=Non-Attainment
AQCR=Air Quality Control Region
OTR=Over-the-road
ADT=Average daily traffic
HC=hydrocarbon, CO=carbon monoxide, NO_x=nitrogen oxides, SO_2=sulfur dioxide, PM=particulate matter

[1] Emissions from over-the-road trucks are calculated for the period within the facility.

ASSUMPTIONS:

EMISSION FACTORS (lb/1000 gallons diesel fuel):

Pollutant	Emission Factor
HC	46
CO	215
NO_x	254
SO_2	7
PM	45

Source of emission factors = USEPA, AP-42, 1995.

TABLE 1-7

AIR QUALITY IMPACTS FROM INTERMODAL OPERATIONS LIFT EQUIPMENT EMISSIONS

STATE	FACILITY	AQCR AFFECTED	AQCR STATUS	CHANGE IN LIFTS PER YEAR	CHANGE IN NO. TRUCKS PER DAY	LIFT EQUIPMENT EMISSIONS (ton/yr)				
						HC	CO	NO_x	SO_2	PM
AR	West Memphis	18	A	23,000	480	1.63	7.62	9.00	0.25	1.59
AZ	Phoenix	504	NA	268,000	50	0.17	0.80	0.95	0.03	0.17
CA	East Los Angeles	24	NA	225,000	587	1.99	9.32	11.01	0.30	1.95
CA	Inland-Empire	24	NA	47,000	493	1.67	7.83	9.24	0.25	1.64
CA	Lathrop	31	NA	36,000	103	0.35	1.63	1.93	0.05	0.34
CA	Oakland	30	NA	31,000	79	0.27	1.25	1.48	0.04	0.26
CA	Oakland	30	NA	47,000	68	0.23	1.08	1.27	0.04	0.23
CA	Roseville	508	NA	28,000	103	0.35	1.63	1.93	0.05	0.34
CO	Denver	36	NA	85,000	61	0.21	0.97	1.15	0.03	0.20
IL	Canal Street	67	NA	194,000	186	0.63	2.96	3.49	0.10	0.62
IL	Global II	67	NA	81,000	425	1.44	6.75	7.97	0.22	1.41
IL	St. Louis (Dupo)	70	NA	39,000	178	0.60	2.82	3.33	0.09	0.59
IL	Dolton	67	NA	79,000	85	0.29	1.36	1.60	0.04	0.28
KS	Kansas City	94	A	125,000	173	0.59	2.75	3.25	0.09	0.58
OR	Portland (Albina)	193	NA	219,000	274	0.93	4.35	5.14	0.14	0.91
TX	San Antonio	217	A	53,000	116	0.39	1.84	2.18	0.06	0.39
TX	Dallas	215	NA	46,000	101	0.34	1.60	1.89	0.05	0.33
WA	Seattle	229	NA	27,000	59	0.20	0.94	1.11	0.03	0.20

NOTES: Inland Empire and West Memphis are new facilities
A=Attainment, NA=Non-Attainment
AQCR=Air Quality Control Region
ADT=Average daily traffic
HC=hydrocarbon, CO=carbon monoxide, NO_x=nitrogen oxides, SO_2=sulfur dioxide, PM=particulate matter

ASSUMPTIONS:

EMISSION FACTORS (lb/1000 gallons diesel fuel):

Pollutant	Emission Factor
HC	46
CO	215
NO_x	254
SO_2	7
PM	45

Source of emission factors = USEPA, AP-42, 1995.

TABLE 1-8

AIR QUALITY IMPACTS FROM INTERMODAL OPERATIONS - YARD TRUCK EMISSIONS

STATE	FACILITY	AQCR AFFECTED	AQCR STATUS	CHANGE IN LIFTS PER YEAR	CHANGE IN NO. TRUCKS PER DAY	YARD TRUCK EMISSIONS (ton/yr)				
						HC	CO	NO_x	SO_2	PM
AR	West Memphis	18	A	219,000	480	5.93	27.70	32.72	0.90	5.80
AZ	Phoenix	504	NA	23,000	50	0.62	2.91	3.44	0.09	0.61
CA	East Los Angeles	24	NA	268,000	587	7.25	33.89	40.04	1.10	7.09
CA	Inland-Empire	24	NA	225,000	493	6.09	28.46	33.62	0.93	5.96
CA	Lathrop	31	NA	47,000	103	1.27	5.94	7.02	0.19	1.24
CA	Oakland	30	NA	36,000	79	0.97	4.55	5.38	0.15	0.95
CA	Oakland	30	NA	31,000	68	0.84	3.92	4.63	0.13	0.82
CA	Roseville	508	NA	47,000	103	1.27	5.94	7.02	0.19	1.24
CO	Denver	36	NA	28,000	61	0.76	3.54	4.18	0.12	0.74
IL	Canal Street	67	NA	85,000	186	2.30	10.75	12.70	0.35	2.25
IL	Global II	67	NA	194,000	425	5.25	24.54	28.99	0.80	5.14
IL	St. Louis (Dupo)	70	NA	81,000	178	2.19	10.24	12.10	0.33	2.14
IL	Dolton	67	NA	39,000	85	1.06	4.93	5.83	0.16	1.03
KS	Kansas City	94	A	79,000	173	2.14	9.99	11.80	0.33	2.09
OR	Portland (Albina)	193	NA	125,000	274	3.38	15.81	18.68	0.51	3.31
TX	San Antonio	217	A	53,000	116	1.43	6.70	7.92	0.22	1.40
TX	Dallas	215	NA	46,000	101	1.24	5.82	6.87	0.19	1.22
WA	Seattle	229	NA	27,000	59	0.73	3.41	4.03	0.11	0.71

NOTES Inland Empire and West Memphis are new facilities
A=Attainment, NA=Non-Attainment
AQCR=Air Quality Control Region
HC=hydrocarbon, CO=carbon monoxide, NO_x=nitrogen oxides, SO_2=sulfur dioxide, PM=particulate matter

ASSUMPTIONS:

EMISSION FACTORS (lb/1000 gallons diesel fuel):

Pollutant	Emission Factor
HC	46
CO	215
NO_x	254
SO_2	7
PM	45

Source of emission factors = USEPA, AP-42, 1995.

TABLE 1-9

SUMMARY OF EMISSION INCREASES AT INTERMODAL FACILITIES

STATE	FACILITY	AQCR EFFECTED	AQCR STATUS	CHANGE IN LIFTS PER YEAR	CHANGE IN NO. OF TRUCKS PER DAY	EMISSION INCREASES (ton/yr)[1]				
						HC	CO	NO_x	SO_2	PM
AR	West Memphis	18	A	219,000	480	12.26	57.29	67.68	1.87	11.99
AZ	Phoenix	504	NA	23,000	50	1.29	6.02	7.11	0.20	1.26
CA	East Los Angeles	24	NA	268,000	587	15.00	70.10	82.82	2.28	14.67
CA	Inland-Empire	24	NA	225,000	493	12.59	58.86	69.53	1.92	12.32
CA	Lathrop	31	NA	47,000	103	2.63	12.29	14.52	0.40	2.57
CA	Oakland	30	NA	36,000	79	2.01	9.42	11.13	0.31	1.97
CA	Oakland	30	NA	31,000	68	1.73	8.11	9.58	0.26	1.70
CA	Roseville	508	NA	47,000	103	2.63	12.31	14.54	0.40	2.58
CO	Denver	36	NA	28,000	61	1.57	7.32	8.65	0.24	1.53
IL	Canal Street	67	NA	85,000	186	4.76	22.23	26.27	0.72	4.65
IL	Global II	67	NA	194,000	425	10.86	50.75	59.95	1.65	10.62
IL	St. Louis (Dupo)	70	NA	81,000	178	4.53	21.19	25.03	0.69	4.43
IL	Dolton	67	NA	39,000	85	2.18	10.20	12.05	0.33	2.14
KS	Kansas City	94	A	79,000	173	4.42	20.67	24.41	0.67	4.33
OR	Portland (Albina)	193	NA	125,000	274	7.00	32.70	38.63	1.06	6.84
TX	San Antonio	217	A	53,000	116	2.97	13.86	16.38	0.45	2.90
TX	Dallas	215	NA	46,000	101	2.57	12.03	14.22	0.39	2.52
WA	Seattle	229	NA	27,000	59	1.51	7.06	8.34	0.23	1.48

Notes: [1] Summary of Tables 1-6, 1-7, 1-8.
A=Attainment, NA=Non-Attainment
AQCT=Air Quality Control Region
OTR=Over-the-Road
HC=hydrocarbon, CO=carbon monoxide, NO_x=nitrogen oxides, SO_2=sulfur dioxide, PM=particulate matter

TABLE 1-10

SUMMARY OF NOISE ASSESSMENT AT RAIL YARDS

Facility	State	Line	Rail Cars Handled			Number of Sensitive Receptors*	
			Pre-Merger	Post-Merger	% Change	Pre-Merger	Post-Merger
Inland Empire	CA	(new)	0	741	>100	--	--
Herington	KS	SP	150	550	266	10	20
Bellmead	TX	UP	46	146	219	0	16
Amarillo	TX	SP	40	117	193	0	0
Salem	IL	SP	64	133	108	11	16

Notes:

* Number of sensitive receptors within L_{dn} 65 dBA contour.

-- Inland Empire was not analyzed for noise since the location of the rail yard has not yet been determined.

TABLE 1-11

SUMMARY OF NOISE ASSESSMENT AT INTERMODAL FACILITIES

Facility	State	Line	Estimated Number of Trucks		Estimated Change in Noise Exposure (dBA)	Number of Sensitive Receptors
			Change Trucks Per Day	% ADT Change		
West Memphis	AR	UP/SP	480	*site has not been selected*		
Phoenix	AZ	SP	50	0.4%	0.4	0
East Los Angeles	CA	UP	587	4.2%	1.9	0
Inland-Empire	CA	UP/SP	493	*site has not been selected*		
Oakland	CA	UP	79	4.7%	0.8	0
Oakland	CA	SP	68	4.7%	0.4	0
Lathrop	CA	UP	103	n/a	0.4	0
Roseville	CA	SP	103	1.5%	0.2	0
Denver	CO	UP	61	1.2%	0.6	0
Dolton	IL	UP	85	n/a	0.9	0
Global II	IL	UP	425	2.8%	3.0	0
Canal Street	IL	UP	186	1.5%	0.9	0
St. Louis (Dupo)	IL	UP	178	6.7%	0.7	0
Kansas City	KS	SP	173	2.2%	1.4	0
Portland (Albina)	OR	UP	274	5.3%	1.9	0
Dallas	TX	SP	101	1.3%	1.0	0
San Antonio	TX	UP	116	1.4%	1.2	0
Seattle	WA	UP	59	0.8%	0.4	0

Note: n/a - ADT not available

2.0 RAIL YARDS

2.1 ARIZONA

The Nogales, Phoenix, and Yuma rail yards in Arizona are projected to have post-merger carload activity increases equal to or greater than the ICC threshold of 20% for air quality assessment in nonattainment AQCRs. The increases in criteria pollutant emissions associated with increased carload activity projected at these rail yards are presented in Table 1-5. Figure 2-1 depicts the location of the rail yards in Arizona. Noise impacts are discussed below.

2.1.1 Nogales

2.1.1.1 Air Quality

The Nogales rail yard is located in the Southeast Arizona AQCR (AQCR 501), which is presently designated as nonattainment. Figure 2-2 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.04, 0.13, 0.97, 0.07, and 0.02 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

2.1.1.2 Noise

The Nogales rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.1.2 Phoenix

2.1.2.1 Air Quality

The Phoenix rail yard is located in the Maricopa AQCR (AQCR 504) which is presently designated as nonattainment. Figure 2-3 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.15, 0.47, 3.53, 0.26, and 0.08 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

2.1.2.2 Noise

The Phoenix rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.1.3 Yuma

2.1.3.1 Air Quality

The Yuma rail yard is located in the Mojave-Yuma AQCR (AQCR 503) which is presently designated as nonattainment. Figure 2-4 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.03, 0.09, 0.69, 0.05, and 0.01 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

2.1.3.2 Noise

The Yuma rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.2 CALIFORNIA

The Inland Empire, Lathrop, Martinez, Montclair, Niland, and Roseville rail yards in California are projected to have post-merger carload activity increases equal to or greater than the ICC threshold of 20% for air quality assessment in nonattainment AQCRs. The increases in criteria pollutant emissions associated with increased operations projected at these rail yards are presented in Table 1-5. Figure 2-5 depicts the location of the rail yards in California. Noise impacts are discussed below.

2.2.1 Inland Empire

Inland Empire is a planned new facility which will be located in San Bernardino County in the East Los Angeles Basin. Since an exact location of the facility has not yet been determined, noise impacts could not be analyzed.

2.2.1.1 Air Quality

When developed, Inland Empire will be located in the Metropolitan Los Angeles AQCR (AQCR 24), which is presently designated as nonattainment. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 1.36, 4.24, 31.70, 2.30, and 0.69 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

The Inland Empire rail yard is part of the Los Angeles Terminal. An analysis of the change in emissions associated with changes in operations at all rail yards, intermodal, and automotive facilities in the Los Angeles Terminal is presented in Part 1, Overview, Section 4.

2.2.1.2 Noise

Potential noise impacts from rail car movements into and out of the Inland Empire rail yard could not be evaluated because a specific site has not yet been selected.

2.2.2 Lathrop

2.2.2.1 Air Quality

The Lathrop rail yard is located in the San Joaquin Valley AQCR (AQCR 31) which is presently designated as nonattainment. Figure 2-6 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.18, 0.56, 4.18, 0.30, and 0.09 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

2.2.2.2 Noise

The Lathrop rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.2.3 Martinez

2.2.3.1 Air Quality

The Martinez rail yard is located in the San Francisco Bay area AQCR (AQCR 30) which is presently designated as nonattainment. Figure 2-7 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.08, 0.26, 1.92, 0.14, and 0.04 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

The Martinez rail yard is part of the Oakland Terminal. An analysis of the change in emissions associated with changes in operations at all rail yards, intermodal and automotive facilities in the Oakland Terminal is presented in Part 1, Overview, Section 4.

2.2.3.2 Noise

The Martinez rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.2.4 Montclair

2.2.4.1 Air Quality

The Montclair rail yard is located in the Metropolitan Los Angeles AQCR (AQCR 24) which is presently designated as nonattainment. Figure 2-8 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.06, 0.18, 1.32, 0.10, and 0.03 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

The Montclair rail yard is part of the Los Angeles Terminal. An analysis of the change in emissions associated with changes in operations at all rail yards, intermodal and automotive facilities in the Los Angeles Terminal is presented in Part 1, Overview, Section 4.

2.2.4.2 Noise

The Montclair rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.2.5 Niland

2.2.5.1 Air Quality

The Niland rail yard is located in the Southeast Desert AQCR (AQCR 33) which is presently designated as nonattainment. Figure 2-9 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.04, 0.14, 1.04, 0.08, and 0.02 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

2.2.5.2 Noise

The Niland rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.2.6 Roseville

2.2.6.1 Air Quality

The Roseville rail yard is located in the Mountain Counties AQCR (AQCR 508) which is presently designated as nonattainment. Figure 2-10 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 1.08, 3.35, 25.07, 1.82, and 0.54 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

2.2.6.2 Noise

Construction of a new mainline track is planned at the Roseville Yard to increase the capacity of the facility. Although there are several residential communities bordering the Roseville Yard, operations on the planned mainline track will be within the confines of the existing yard and therefore do not represent a new noise source. The

projected increase in carload activity is less than 100%; therefore, a noise impact assessment is not required for the Roseville Yard.

2.3 COLORADO

The Grand Junction, LaSalle, and Rolla rail yards in Colorado are projected to have carload activity increases equal to or greater than the ICC threshold of 20% for air quality assessment in nonattainment AQCRs. The increases in criteria pollutant emissions associated with increased operations at these rail yards are presented in Table 1-5. Figure 2-11 depicts the location of rail yards in Colorado. Noise impacts are discussed below.

2.3.1 Grand Junction

2.3.1.1 Air Quality

The Grand Junction rail yard is located in the Grand Mesa AQCR (AQCR 35) which is presently designated as nonattainment. Figure 2-12 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.03, 0.10, 0.73, 0.05, and 0.02 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

2.3.1.2 Noise

The Grand Junction rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.3.2 LaSalle

2.3.2.1 Air Quality

The LaSalle rail yard is located in the Pawnee AQCR (AQCR 37) which is presently designated as nonattainment. Figure 2-13 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.07, 0.20, 1.52, 0.11, and 0.03 tons per year, respectively.

A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

2.3.2.2 Noise

The LaSalle rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.3.3 Rolla

2.3.3.1 Air Quality

The Rolla rail yard is located in the Metropolitan Denver AQCR (AQCR 36) which is presently designated as nonattainment. Figure 2-14 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.07, 0.21, 1.58, 0.11, and 0.03 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

The Rolla rail yard is part of the Denver Terminal. An analysis of the change in emissions associated with changes in operations at all rail yards, intermodal and automotive facilities in this terminal is presented in Part 1, Overview, Section 4.

2.3.3.2 Noise

The Rolla rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.4 ILLINOIS

The Canal Street rail yard located in Chicago, Illinois is projected to have a post-merger carload activity increase equal to or greater than the ICC threshold of 20% for air quality assessment in nonattainment AQCRs. The Salem rail yard in Illinois is projected to have a carload activity increase equal to or greater than the ICC threshold of 100% for attainment AQCRs. The increases in criteria pollutant emissions associated with increased operations at these rail yards are presented in Table 1-5. Figure 2-15 depicts the location of rail yards in Illinois. Noise impacts are discussed below.

2.4.1 Canal Street

2.4.1.1 Air Quality

The Canal Street rail yard is located in the Metropolitan Chicago AQCR (AQCR 67) which is presently designated as nonattainment. Figure 2-16 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.37, 1.14, 8.52, 0.62, and 0.18 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

The Canal Street rail yard is part of the Chicago Terminal. An analysis of the change in emissions associated with changes in operations at all rail yards, intermodal and automotive facilities in this terminal is presented in Part 1 Overview, Section 4.

2.4.1.2 Noise

The Canal Street rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.4.2 Salem

2.4.2.1 Air Quality

The Salem rail yard is located in the Southeast Illinois AQCR (AQCR 74) which is presently designated as attainment. Figure 2-17 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.13, 0.40, 2.97, 0.21, and 0.06 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1. Overview, Section 4.

2.4.2.2 Noise

This yard is located in a rural area northeast of Salem, IL. Although the yard is in a sparsely populated area, there are several houses to the east of the yard, with homes approximately 100 feet from the yard boundary. The carload activity at this facility

is projected to increase from 64 to 133, representing a potential L_{dn} increase of 3 dBA in the vicinity of the yard. Following is a summary of the projected noise impacts.

Condition	Number of Residences	
	Pre-Merger	Post-Merger
L_{dn} > 65 dBA	11	12
L_{dn} < 65 and increase > 3 dBA	--	4
Total	11	16

2.5 KANSAS

The Herington rail yard in Kansas is projected to have a carload activity increase equal to or greater than the ICC threshold of 100% for attainment AQCRs. The post-merger increases in criteria pollutant emissions associated with increased operations at this rail yard are presented in Table 1-5. Figure 2-18 depicts the location of rail yards in Kansas. Noise impacts are discussed below.

2.5.1 Herington

2.5.1.1 Air Quality

The Herington rail yard is located in the North Central Kansas AQCR (AQCR 96) which is presently designated as attainment. Figure 2-19 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.74, 2.29, 17.13, 1.24, and 0.37 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

2.5.1.2 Noise

The Herington Yard is a relatively low-volume yard used for classification and consolidation. The closest residential area is located 500 to 1000 feet west of the yard, in the vicinity of 8th Street. To the east of the yard, there is a park and residential area,

which are beyond a heavily wooded slope and more than 1000 feet from the yard. Based on the existing rail car volume of 150 cars per day, the existing L_{dn} is projected to be less than 65 dBA at all of these noise sensitive sites. The post-merger transportation plan is to increase carload activity by an average of 400 per day, resulting in a projected L_{dn} increase of 5.6 dBA. Following is a summary of projected noise impacts. Most of the projected noise impact is in the residential area west of the yard.

Condition	Number of Residences	
	Pre-Merger	Post-Merger
L_{dn} > 65 dBA	0	10
L_{dn} < 65 and increase > 3 dBA	--	10
Total	0	20

2.6 LOUISIANA

The DeQuincy, Lake Charles, and Livonia rail yards in Louisiana are projected to have post-merger carload activity increases equal to or greater than the ICC threshold of 20% for air quality assessment in nonattainment AQCRs. The increases in criteria pollutant emissions associated with increased operations at these rail yards are presented in Table 1-5. Figure 2-20 depicts the location of rail yards in Louisiana. Noise impacts are discussed below.

2.6.1 DeQuincy

2.6.1.1 Air Quality

The DeQuincy rail yard is located in the Southern Louisiana - Southeast Texas AQCR (AQCR 106) which is presently designated as nonattainment. Figure 2-21 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.03, 0.09, 0.69, 0.05, and 0.01 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

2.6.1.2 Noise

The De Quincy rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.6.2 Lake Charles

2.6.2.1 Air Quality

The Lake Charles rail yard is located in the Southern Louisiana - Southeast Texas AQCR (AQCR 106) which is presently designated as nonattainment. Figure 2-22 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.19, 0.58, 4.37, 0.32, and 0.09 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

2.6.2.2 Noise

The Lake Charles rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.6.3 Livonia

2.6.3.1 Air Quality

The Livonia rail yard is located in the Southern Louisiana - Southeast Texas AQCR (AQCR 106) which is presently designated as nonattainment. Figure 2-23 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.58, 1.81, 13.58, 0.98, and 0.29 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

2.6.3.2 Noise

Incremental expansion of rail facilities is planned at several locations in the Livonia Yard. There are no noise sensitive receptors close enough to the yard to be affected by any additional noise that might be caused by operations within the expanded

facilities. The Livonia rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.7 MISSOURI

The Poplar Bluff rail yard in Missouri is projected to have a carload activity increase equal to or greater than the ICC threshold of 20% for air quality assessment in nonattainment AQCRs. The increases in criteria pollutant emissions associated with increased operations at this rail yard are presented in Table 1-5. Figure 2-24 depicts the location of this rail yard in Missouri.

2.7.1 Poplar Bluff

2.7.1.1 Air Quality

The Poplar Bluff rail yard is located in the Southeast Missouri AQCR (AQCR 138) which is presently designated as nonattainment. Figure 2-25 depicts the location of this rail yard. The estimated post-merger increases in HC, CO, NO_x, SO_2, and PM emissions from sources within the yard are 0.02, 0.05, 0.36, 0.03, and 0.01 tons per year, respectively. A summary of rail yard and intermodal facility impacts for each AQCR is presented in Part 1, Overview, Section 4.

2.7.1.2 Noise

The Poplar Bluff rail yard is projected to have a carload activity increase below the ICC threshold of 100%; therefore, noise impacts were not addressed.

2.8 OREGON

The Bend, Hinkle, and Salem rail yards in Oregon are projected to have post-merger carload activity increases equal to or greater than the ICC threshold of 20% for air quality assessment in nonattainment AQCRs. The increases in criteria pollutant emissions associated with increased operations at these rail yards are presented in Table 1-5. Figure 2-26 depicts the location of the rail yards in Oregon. Noise impacts are discussed below.